

**THE REGULATION OF FINANCIAL PRODUCT INNOVATION  
TYPIFIED BY BITCOIN-BASED DERIVATIVE CONTRACTS**

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***Abstract***

*If Bitcoin and blockchain epitomize financial “product” and financial “process” innovation, respectively, the new innovative trend does not stop with Bitcoin and blockchain themselves. Bitcoin now represents an asset that offers the basis for the further development of financial “product” innovation through derivative contracts. The presence in the American financial markets of several types of Bitcoin-based derivative contracts, such as Bitcoin non-deliverable forwards, Bitcoin options, Bitcoin futures, and Bitcoin binary options is a clear signal of the new trend.*

*It is notorious that one factor that has favored the creation and development of a market for Bitcoin-based derivative contracts is the attempt by the American-regulated derivative markets to attract the investment interests of institutional investors. Although Bitcoin-based derivative contracts offer the opportunity to gain exposure to the underlying asset through regulated designated contract markets (DCMs) and swap execution facilities (SEFs), they do not completely shield investors from some typical risks inherent in Bitcoin. Thus, there could be room for regulators to step in and support Bitcoin derivative markets in mitigating those risks. The present article aims to shed light on those risks and to suggest some regulatory interventions to mitigate them.*

*The American Bitcoin derivative markets use different mechanisms for the determination of the reference price. These mechanisms present differences that are, in some cases, significant. Competition between derivative markets will likely lead to the natural selection of those markets with the most reliable mechanisms.*

*Bitcoin-based derivative contracts may also offer the opportunity for the Commodity Futures Trading Commission (CFTC) to exercise a de-facto regulatory power over non-U.S. Bitcoin trading venues. Indeed, trading venues may be strongly incentivized—by the return they may receive in terms of reputational gain—to be selected by a U.S.-regulated derivative market (a DCM or SEF) as a source for determining the reference price of Bitcoin. The CFTC could leverage these incentives by requiring the U.S.-regulated derivative markets to*

*select, as a source for determining the reference price, those trading venues that meet certain listing and trading standards.*

*Finally, derivative markets have not envisioned yet a sufficient and predictable response to the handling of hard forks. The CFTC should conduct thorough empirical and legal analyses of the consequences of hard forks for investors who hold positions in Bitcoin-based derivative contracts, and then decide on whether a regulatory response is needed to preserve investors' rights.*

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### **I. Introduction**

In a book chapter entitled *Financial Innovation*, Professor Peter Tufano defines financial innovation as “the act of creating and then popularizing new financial instruments as well as new financial technologies, institutions and markets.”<sup>1</sup> Professor Tufano also makes a distinction between “product innovation” and “process innovation,”

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<sup>1</sup> Peter Tufano, *Financial Innovation*, in HANDBOOK OF THE ECONOMICS OF FINANCE 310 (G.M. Constantinides et al. eds., 2003).

where “product” innovation is “exemplified by new derivative contracts, new corporate securities or new forms of pooled investment products,” and “process” innovation is “typified by new means of distributing securities, processing transactions, or pricing transactions.”<sup>2</sup>

Bitcoin and blockchain epitomize, respectively, financial “product” and financial “process” innovation. However, the new innovative trend does not stop with Bitcoin and blockchain themselves: Bitcoin now represents an asset that offers the basis for the further development of financial “product” innovation through derivative contracts.<sup>3</sup> The presence in the American financial markets of several types of Bitcoin-based derivative contracts, such as Bitcoin non-deliverable forwards, Bitcoin options, Bitcoin futures, and Bitcoin binary options is a clear signal of the new trend.<sup>4</sup>

Furthermore, the proliferation of protocols that would allow the trading of derivative contracts in the form of smart contracts using the blockchain technology shows that blockchain might offer the conditions for the development of financial “process” innovation in the derivative market.<sup>5</sup>

Some scholars are hesitant about recognizing Bitcoin as either a currency<sup>6</sup> or an asset class.<sup>7</sup> Another scholar does not see that Bitcoin

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<sup>2</sup> *Id.*

<sup>3</sup> See discussion *infra* Sections III and IV (describing the different types of Bitcoin-based derivative contracts).

<sup>4</sup> *Id.*

<sup>5</sup> See, e.g., Housman B. Shadab, Professor of Law, New York Law School, Regulating Bitcoin and Block Chain Derivatives, Written Statement to the Commodity Futures Trading Commission Global Markets Advisory Committee (Oct. 9, 2014), [https://www.cftc.gov/sites/default/files/idc/groups/public/@aboutcftc/documents/file/gmac\\_100914\\_bitcoin.pdf](https://www.cftc.gov/sites/default/files/idc/groups/public/@aboutcftc/documents/file/gmac_100914_bitcoin.pdf) [<https://perma.cc/U9AY-DLSP>] (describing innovations involving blockchain and derivatives); Antonio Juliano, *dYdX: A Standard for Decentralized Derivatives* (2018), <https://whitepaper.dydx.exchange> [<https://perma.cc/5U-T9-HU5K>].

<sup>6</sup> See generally David Yermack, *Is Bitcoin a Real Currency? An Economic Appraisal*, in HANDBOOK OF DIGITAL CURRENCY 31 (David LEE Kuo Chuen ed., 2015) (discussing whether Bitcoin should be considered as a conventional currency).

<sup>7</sup> See Shaen Corbet et al., *Cryptocurrencies as a Financial Asset: A Systematic Analysis* 4 (Mar. 18, 2018), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3143122](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3143122); Aswath Damodaran, *The Bitcoin Boom: Asset, Currency, Commodity or Collectible?*, MUSINGS ON MKTS. (Oct. 24, 2017), <http://>

has the potentiality to gain a significant share in the currency marketplace, although he does not exclude its permanence in the market.<sup>8</sup> Other scholars have pointed out their uncertainty as to whether Bitcoin will remain the major crypto-asset or will be replaced by other virtual currencies.<sup>9</sup> With the backdrop of these warnings, we must still note that Bitcoin is a phenomenon that is developing in the market, and therefore the only way to know whether Bitcoin or other crypto-assets will become a permanent part of our financial system is through trial and error.

It is notorious that one factor that has favored the creation and development of a market for Bitcoin-based derivative contracts is the attempt by the American-regulated derivative markets to attract the investment interests of institutional investors.<sup>10</sup> So far, this category of sophisticated traders has been hesitant about being exposed to Bitcoin

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aswathdamodaran.blogspot.com/2017/10/the-bitcoin-boom-asset-currency.html [https://perma.cc/JH2Y-CEGC] (“Bitcoin is not an asset class.”). For an analysis of crypto-assets as an “emerging class,” see CHRIS BURNISKE & JACK TATAR, *CRYPTOASSETS: THE INNOVATIVE INVESTOR’S GUIDE TO BITCOIN AND BEYOND* 111 (2018).

<sup>8</sup> See generally Robert J. Shiller, *What is Bitcoin Really Worth? Don’t Even Ask*, N.Y. TIMES (Dec. 15, 2017), <https://www.nytimes.com/2017/12/15/business/bitcoin-investing.html>.

<sup>9</sup> See Ari Paul & Ian D’Souza, *An Introduction to Bitcoin and Cboe XBT Bitcoin Futures* 13 (Jan. 4 2018), <https://go.cboe.com/cboean-intro-to-bitcoin-and-cboe-xbt-bitcoin-futures-by-ari-paul> (“Yet tremendous uncertainty remains. Bitcoin faces ongoing competition from newer cryptocurrencies with major technological innovations, competing governance models, and more/less inflationary emission schedules.”).

<sup>10</sup> See, e.g., Cboe, *XBT-Cboe Bitcoin Futures*, <http://cfe.cboe.com/cfe-products/xbt-cboe-bitcoin-futures> [https://perma.cc/TUD9-EYA9] (last visited Jan. 31, 2019) (announcing the availability of U.S. Bitcoin futures for trading and advertising the futures to sophisticated traders and investors); Press Release, CME Grp., *CME Group Announces Launch of Bitcoin Futures* (Oct. 31, 2017), [https://www.cmegroup.com/media-room/press-releases/2017/10/31/cme\\_group\\_announceslaunchofbitcoinfutures.html](https://www.cmegroup.com/media-room/press-releases/2017/10/31/cme_group_announceslaunchofbitcoinfutures.html)

[https://perma.cc/MQ7Y-YGUG]. See also Daniel Roberts, *Why Nasdaq, CME, Cboe All Want in in Bitcoin Futures*, YAHOO! FIN. (Dec. 5, 2017), <https://finance.yahoo.com/news/nasdaq-cme-cboe-want-bitcoin-futures-183256191.html> [https://perma.cc/5JTE-SD2G]; Lanre Sarumi, *Bitcoin Futures: Make Way for a New Kind of Whale*, COINDESK (Dec. 5, 2017, 9:00 AM), <https://www.coindesk.com/bitcoin-futures-make-way-new-kind-whale> [https://perma.cc/B62Z-4RBK] (speculating about the impact of Bitcoin futures on Bitcoin miner and investor activity).

through foreign unregulated trading venues.<sup>11</sup> Although Bitcoin-based derivative contracts offer the opportunity to get exposure to the underlying asset through regulated designated contract markets (DCMs) and swap execution facilities (SEFs), they do not completely shield investors from some typical risks inherent in Bitcoin.<sup>12</sup> Thus, there could be room for regulators to step in and support Bitcoin derivative markets in mitigating those risks.<sup>13</sup>

The Commodity Futures Trading Commission (CFTC, Commission) has shown itself to be quite open to the new phenomenon of financial innovation driven by crypto-derivatives.<sup>14</sup> In response to the

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<sup>11</sup> See Noelle Acheson, *The Threat of Bitcoin Futures*, COINDESK (Dec. 8, 2017, 5:00 AM), <https://www.coindesk.com/threat-bitcoin-futures/> [<https://perma.cc/BB29-K76B>] (observing that some institutional investors for some reasons, such as internal rules and aversion to risky exchanges and wallets, cannot trade Bitcoin).

<sup>12</sup> See Press Release, Commodity Futures Trading Comm'n, Statement on Self-Certification of Bitcoin Products by CME, CFE and Cantor Exchange (Dec. 1, 2017), <https://www.cftc.gov/PressRoom/PressReleases/pr7654-17> [<https://perma.cc/JD45-VEJQ>] [hereinafter CFTC Statement on Self-Certification of Bitcoin Products] (stressing the “potentially high level of volatility and risk in trading these contracts”).

<sup>13</sup> See generally Lee Reiners, *Bitcoin Futures: From Self-Certification to Systemic Risk*, 23 N.C. BANKING INST. 61 (2019) (describing how Bitcoin futures are introducing systemic risk and contesting the CFTC's decision of allowing the self-certification process of Bitcoin futures); Margaret Ryznar, *The Future of Bitcoin Futures*, HOUS. L. REV. 539 (2019) (discussing measures that might be introduced to manage the risk that Bitcoin futures pose to the financial system. In particular, the author suggests: “to put a limit on the number of positions that may be held by any person;” to introduce separate guarantee funds for bitcoin futures; and to use stress testing “in the bitcoin context by stress testing bitcoin-futures positions at the clearinghouse”). For an analyses of the different regulatory strategies regarding financial innovation, see generally Chris Brummer & Yesha Yadav, *Fintech and the Innovation Trilemma*, 107 GEO. L.J. 235 (2019).

<sup>14</sup> See Rostin Behnam, Commissioner, Commodity Futures Trading Comm'n, Opening Statement Before the Market Risk Advisory Committee (Jan. 31, 2018), <https://www.cftc.gov/PressRoom/SpeechesTestimony/behnamstatement013118> [<https://perma.cc/AH5W-LHZF>] [hereinafter Opening Statement of Commissioner Rostin Behnam Before the Market Risk Advisory Committee] (“The launch of the Bitcoin futures products is a testament to the forward thinking, innovative spirit of the derivatives markets. As the market and market participants continue to adopt technologies that make new products, new relationships, and new forms of conduct possible, I believe it is critical that the CFTC: (1) engage with industry in addressing risk; (2) provide

criticism of the self-certification process for the launch of Bitcoin futures, Chairman of the CFTC J. Christopher Giancarlo has noted that:

Congress framed the self-certification process deliberately so that development of new and innovative derivatives products would not be hampered by cautious regulators conscious of the political risks of approving new products. The CFTC's current product self-certification framework is consistent with public policy that encourages market-driven innovation that has made America's listed futures markets the envy of the world.<sup>15</sup>

In the present paper, I will offer an overall analysis of the CFTC's regulatory approach towards financial "product" innovation typified by Bitcoin-based derivative contracts. The research will start in Section II with an analysis of retail commodity transactions

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legal and regulatory certainty to the market; (3) educate the general public; and (4) question and challenge the status quo, in the market and within the Commission."); Christopher J. Giancarlo, Chairman, Commodity Futures Trading Comm'n, Remarks to the ABA Derivatives and Futures Section Conference (Jan. 19, 2018), <https://www.cftc.gov/PressRoom/SpeechesTestimony/opagiancarlo34> [<https://perma.cc/Z6ED-ED58>] [hereinafter Remarks of Chairman J. Christopher Giancarlo to the ABA] ("Virtual currencies demand the focused attention of this group. We cannot ignore them. This is not the time or place for denial or misunderstanding or personal preference. This is the time for recognition, reflection, and wisdom...a time to set the course for the future . . . navigating through new waters. Not tomorrow. Today."). *See also* Christopher J. Giancarlo, Chairman, Commodity Futures Trading Commission, Remarks Before the Market Risk Advisory Committee Meeting (Jan. 31, 2018), <https://www.cftc.gov/PressRoom/SpeechesTestimony/giancarlostatement013118> [<https://perma.cc/34TG-TC4F>] [hereinafter Remarks of Chairman J. Christopher Giancarlo Before the Market Risk Advisory Committee] (discussing the origins and scope of CFTC's virtual currency future self-certification process). In addition, in its proposed interpretation release on "Retail Commodity Transactions Involving Virtual Currency," the Commission has clearly stated its intent to "support further market-enhancing innovation" in the field of financial technology, *see* 82 Fed. Reg. 60,335, 60,338 (proposed Dec. 20, 2017) (to be codified at 17 C.F.R. pt. 1) ("The Commission recognizes that certain virtual currencies and their underlying blockchain technologies have the potential to yield notable advancements in applications of financial technology ('FinTech').").

<sup>15</sup> Remarks of Chairman J. Christopher Giancarlo to the ABA, *supra* note 14.

involving virtual currencies, as these transactions are subject to the same regulation as futures contracts (Section II). Then, in Sections III–IV I will analyze the different types of Bitcoin-based derivative contracts that DCMs and SEFs have created to attract both institutional investors (Bitcoin futures (Section III) and Bitcoin swaps (Section IV), for example), and retail investors (such as Bitcoin binary options (Section IV)).

An analysis of the new phenomenon of financial “product” innovation will identify those issues that still represent obstacles to the greater involvement of institutional investors in the nascent derivative market, such as the mechanism for the determination of the reference price and the framework for the handling of hard forks. The conclusion in Section V contains proposals to address those issues.

## **II. Retail Commodity Transactions Involving Virtual Currencies**

The advent of new financial products has created definitional issues that have emerged in the process of applying the existing provisions and rules to the new financial reality.<sup>16</sup> The CFTC, in *In re BFXNA Inc.*, addressed the fundamental issue of determining how to qualify a particular category of financed transactions involving cryptocurrencies that—while they do not fall within the definition of the types of derivatives contracts regulated under the Commodity Exchange Act (CEA) (*i.e.*, futures, options, swaps)—may in some circumstances be legally treated as futures contracts, in which case they must meet the existing trading requirements for this type of derivative contracts.<sup>17</sup>

After the Commission had qualified Bitcoin and other virtual currencies as commodities under Section 1a(9) of the CEA,<sup>18</sup> it

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<sup>16</sup> Definitional issues have emerged, for example, in the context of initial coin offerings, *see* Marco Dell’Erba, *Initial Coin Offerings: From Inactivity to Full Enforcement. The Implementation of the “Do No Harm” Approach* 5–6 (Dec. 2, 2018), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3194863](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3194863) (recounting the tension between the two perspectives of initial coin offerings).

<sup>17</sup> *In re BFXNA Inc.*, CFTC No. 16-19, 2016 WL 3137612 (June 2, 2016) (finding that Bitfinex engaged in illegal, off-exchange commodity transactions and failed to register as a futures commission merchant).

<sup>18</sup> 7 U.S.C. § 1a(9) (2012). In *In re Coinflip, Inc.*, the CFTC concluded that “Bitcoin and other virtual currencies are encompassed in the definition and properly defined as commodities” under § 1a(9) of the CEA. For some comments on the *Coinflip* case, *see* Client Alert from Latham & Watkins LLP,

examined a particular type of transaction, called “Margin Trading” (offered in an online platform named Bitfinex), that permitted traders to borrow money from other users to buy or sell bitcoins on Bitfinex.<sup>19</sup> The CFTC determined that this type of transaction qualified as a “retail commodity transaction” under Section 2(c)(2)(D)(i) of the CEA (as added by Section 742(a) of the Dodd-Frank Act),<sup>20</sup> namely, as a leveraged, margined, or financed transaction involving a person that is

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Vivian A. Maese et al., *Cryptocurrencies Are Commodities: CFTC’s First Bitcoin Enforcement Action* (Sept. 21, 2015), <https://www.lw.com/thought-leadership/LW-CFTC-first-bitcoin-enforcement-action> [<http://perma.cc/S5RZ-DK4V>] (explaining how from the qualification of cryptocurrencies as commodities derives that: (1) “cryptocurrency derivatives, including futures, options, or swaps are subject to CFTC jurisdiction;” and (2) “[a]ny platform for trading or executing cryptocurrency swaps must be registered as a SEF or as a DCM under Section 5h(a)(1) of the CEA”). In the Retail Commodity Transactions proposed release, the Commission stated that “virtual or digital currency: Encompasses any digital representation of value (a ‘digital asset’) that functions as a medium of exchange, and any other digital unit of account that is used as a form of a currency (i.e., transferred from one party to another as a medium of exchange); may be manifested through units, tokens, or coins, among other things; and may be distributed by way of digital ‘smart contracts,’ among other structures.” Retail Commodity Transactions Involving Virtual Currency, 82 Fed. Reg. 60,335, 60,338 (proposed Dec. 20, 2017) (to be codified at 17 C.F.R. pt. 1). In *Commodity Futures Trading Comm’n v. McDonnell*, the Court concluded that virtual currencies can be regulated by CFTC as a commodity, and that “[v]irtual currencies are ‘goods’ exchanged in a market for a uniform quality and value.” 287 F. Supp. 3d 213, 228 (E.D.N.Y. 2018). In addition, the Court has asserted its jurisdiction over crypto-currencies in cases involving fraud or manipulation. *Id.* at 229. Therefore, the CFTC has the authority to enforce the anti-fraud and anti-manipulation provisions in cases involving virtual currencies. For comments on *McDonnell*, see Memorandum from Skadden, Arps, Slate, Meagher & Flom LLP, Stuart D. Levi et al., *Federal Judge Rules Virtual Currencies Are Commodities under the Commodity Exchange Act* (Mar. 8, 2018), <https://www.skadden.com/insights/publications/2018/03/federal-judge-rules-virtual-currencies> (explaining how the court recognized a fundamental distinction between the CFTC’s full regulatory authority over derivatives and the CFTC’s limited authority over the spot market to fraud and manipulation).

<sup>19</sup> CFTC No. 16-19, 2016 WL 3137612 (June 2, 2016) (stating that Bitfinex’s Margin Trading “permits traders to borrow dollars and bitcoins from other users on the platform in order to open leveraged positions on Bitfinex’s exchange”).

<sup>20</sup> 7 U.S.C. § 2(c)(2)(D)(i) (2012).



neither an “eligible contract participant”<sup>21</sup> nor an “eligible commercial entity.”<sup>22</sup>

Unless they result in “actual delivery” within twenty-eight days, a retail commodity transaction is considered as if it was a commodity futures contract, and therefore subject to Sections 6(a), 6(b), and 6b of the CEA,<sup>23</sup> which make it unlawful to trade these contracts outside a DCM and to solicit and accept orders without being registered as a futures commission merchant (FCM).<sup>24</sup> Since Bitfinex had allowed the Margin Trading transactions without being either a DCM or a registered FCM, the CFTC concluded that Bitfinex had violated §§ 4(a) and 4d(a) of the CEA.<sup>25</sup>

This case is important because it offers a parameter for identifying a basic crypto-transaction that is treated as a derivative contract under the CEA.<sup>26</sup> As noted by the CFTC, the market for this type of transaction presents “two hallmarks of a regulated futures marketplace:” (1) the possibility for retail market participants to use margin, leverage, or financing arrangements to trade; and (2) the possibility “for such participants to speculate or capitalize on price movements of the commodity.”<sup>27</sup>

Given the impact that the *Bitfinex* case will have on the countless retail commodity transactions involving virtual currencies, the CFTC has attempted to clarify the term “actual delivery” in the context of this specific type of transaction.<sup>28</sup> In its proposed interpretative release, the Commission proposed to determine “actual delivery” when: (1) within twenty-eight days, the purchaser was able to “(i) . . . [t]ake possession and control of the entire quantity of the

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<sup>21</sup> 7 U.S.C. § 1a(18) (2012).

<sup>22</sup> 7 U.S.C. § 1a(17) (2012).

<sup>23</sup> See 7 U.S.C. 2(c)(2)(D)(iii) (2012) (stating that “[s]ections 6(a), 6(b), and 6b of [the CEA] apply to any [retail commodity transaction], as if the agreement, contract, or transaction was a contract of sale of a commodity for future delivery”).

<sup>24</sup> 7 U.S.C. § 2(a)(1)(D)(i)(V) (2012) (“Only futures commission merchants . . . [may] solicit, accept any order for, or otherwise deal in any transactions in or in connection with the security futures product.”).

<sup>25</sup> See *In re BFXNA Inc.*, CFTC No. 16-19, 2016 WL 3137612 (June 2, 2016) (“Section § 4d(a) of the [Commodity Exchange Act] requires all persons acting as futures commission merchants (‘FCMs’) to register with the CFTC.”).

<sup>26</sup> *Id.*

<sup>27</sup> Retail Commodity Transactions Involving Virtual Currency, 82 Fed. Reg. 60,335, 60,338 (proposed Dec. 20, 2017) (to be codified at 17 C.F.R. pt. 1).

<sup>28</sup> *Id.* at 60,339.

commodity” and “(ii) use it freely in commerce (both within and away from any particular platform);” and (2) at the expiration of 28 days, the offeror and the seller do not retain “any interest in or control over any of the commodity purchased.”<sup>29</sup>

The CFTC has also expressed its concern about the fact that the twenty-eight days delivery period exemption could deprive retail investors who enter into speculative financed crypto-transactions from the protection that the CEA affords in relation to the use of derivative contracts.<sup>30</sup>

The CFTC’s jurisdiction over retail commodity transactions involving virtual currency is of significance because it represents one of the two ways in which the CFTC is exercising its regulatory authority over the new phenomenon of financial “product” innovation.<sup>31</sup> One direction is to promote financial innovation,

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<sup>29</sup> *Id.* The Commission has provided four examples to clarify the meaning of “actual delivery.” The Commission has also specified that, in order to have “actual delivery,” physical settlement must occur, while a cash settlement or an offset mechanism do not qualify as “actual delivery.” Finally, the Commission has requested comments on the opportunity to establish a distinct registration and compliance regime for retail commodity transactions.

For some comments about the Retail Commodity Transactions Involving Virtual Currency proposed release, see Latham & Watkins, Conference, Regulating Innovation—Blockchain, Cryptocurrencies, and ICOs (Apr. 2018), <https://www.lw.com/events/regulating-innovation-blockchain-cryptocurrencies-ICO-seminar> [<https://perma.cc/298F-D62K>]; Client Alert from Latham & Watkins LLP, Douglas K. Yatter et al., CFTC Proposes Interpretation of “Actual Delivery” for Virtual Currencies (Jan. 19, 2018), <https://www.lw.com/thoughtLeadership/CFTC-interpretation-actual-delivery-virtual-currencies> [<https://perma.cc/X7SM-GZGA>] (describing in particular how the actual delivery standard “arguably will also serve as a reference when determining whether a virtual currency was delivered in a ‘spot’ transaction.” The authors also pointed out how the proposed release “does not address how or whether multisignature authentication structures would comply with the requirement that the buyer have full possession and control of the virtual currency”).

<sup>30</sup> Retail Commodity Transactions Involving Virtual Currency, 82 Fed. Reg. 60,335, 60,339 (proposed Dec. 20, 2017) (to be codified at 17 C.F.R. pt. 1). The Commission has asked for comments about the opportunity to recommend to Congress legislative action to shorten the delivery period to two days, as valid for foreign currency retail transactions. See *id.* at 60,340.

<sup>31</sup> See Nikhilesh De & Daniel Palmer, *CFTC Chair Giancarlo Says Institutional Investors Will Help Crypto “Mature,”* COINDESK (Oct. 12, 2018, 2:10 PM), <https://www.coindesk.com/cftc-chair-giancarlo-says-institutional->

especially by incentivizing the participation by institutional investors in the Bitcoin-based derivative markets, while the other is to protect (especially retail) investors from fraudulent and manipulative practices.<sup>32</sup> The concerns expressed by the CFTC about the length of the twenty-eight days delivery period exemption when applied in the context of a virtual currency shows that the Commission considers the Bitcoin spot market highly vulnerable to fraudulent and manipulative practices.<sup>33</sup> On the other hand, as we will see in the following sections, the CFTC has not been particularly strict in the regulation of the Bitcoin-based derivative contracts available to retail investors, such as the binary options launched by Cantor Exchange and Nadex.<sup>34</sup>

### III. *Bitcoin Futures*

Bitcoin derivatives are needed for exactly the same reasons as derivative contracts in relation to any other kind of asset: hedging and speculation.<sup>35</sup> When the price of Bitcoin was skyrocketing in 2017 and questions on the presence of the signals of a bubble became persistent, the investing community was searching for ways to take short positions on the virtual currency.<sup>36</sup> Bitcoin-based derivative contracts

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investors-will-help-crypto-mature [https://perma.cc/ME5N-UUJC] (describing a discussion by Chairman J. Christopher Giancarlo of the CFTC's "two-handed approach" towards the cryptocurrency derivatives markets).

<sup>32</sup> *Id.*

<sup>33</sup> See Retail Commodity Transactions Involving Virtual Currency, 82 Fed. Reg. 60,335, 60,338 (proposed Dec. 20, 2017) (to be codified at 17 C.F.R. pt. 1).

<sup>34</sup> See discussion *infra* Section IV.

<sup>35</sup> See ALAN N. RECHTSCHAFFEN, CAPITAL MARKETS, DERIVATIVES AND THE LAW: EVOLUTION AFTER THE CRISIS 63–66 (2014) (explaining the use of derivatives for hedging and speculative purposes).

<sup>36</sup> See Sarumi, *supra* note 10 (stating that “[f]or the most part, we have seen the power of the bulls in the cash market, but until the introduction of the futures market, we had not seen the power of the bears”); Rob Urban & Sonali Basak, *Hedge Funds Prepare to Trade Against Bitcoin*, BLOOMBERG (Dec. 4, 2017, 7:00 AM), <https://www.bloomberg.com/news/articles/2017-12-04/the-next-big-short-hedge-funds-prepare-to-trade-against-bitcoin> (explaining how Bitcoin futures will make it easier for hedge funds to short bitcoin). See also Alexander Osipovich, *Did Debut of Bitcoin Futures Trigger Crash in Price?*, WALL ST. J.: MONEYBEAT (May 8, 2018, 10:09 AM), <https://blogs.wsj.com/moneybeat/2018/05/08/debut-of-bitcoin-futures-triggered-crash-in-price> (reporting of a study from the San Francisco Fed and the Stanford Graduate School of Business showing how the launch of Bitcoin futures contributed to

represent one type of financial instrument that allows investors to take short positions in relation to the virtual currency.<sup>37</sup>

There seems, however, to be a peculiar factor that has influenced the decision of the Chicago Mercantile Exchange, Inc. (CME) and the CBOE Futures Exchange (CFE) to launch Bitcoin futures: these derivatives contracts could offer the opportunity for hedge funds and other institutional investors to have exposure to the virtual currency in American regulated markets instead of having to enter foreign unregulated Bitcoin trading venues.<sup>38</sup>

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the bitcoin price decline started in December 2017). Before the launch of the Bitcoin futures, observers had suggested alternative ways to take short positions in relation to bitcoin. See Laurence Fletcher, *After Bitcoin Futures, Watch Out for Crypto Repos*, WALL ST. J. (Jan. 23, 2018, 4:18 AM) <https://www.wsj.com/articles/after-bitcoin-futures-watch-out-for-repos-1516699108> (describing the imminent launch of a platform, called Oxygen, that will allow investors to enter into repurchase agreements where the lent instruments will be a cryptocurrency, which will allow investors to short cryptocurrencies because the holder of a cryptocurrency who lends it through the repo will receive another cryptocurrency as collateral, which the investor could sell and buy back trying to make a profit from the spread); Jeff John Roberts, *Think Bitcoin Is a Bubble? 5 Ways to Short it*, FORTUNE (Sept. 14, 2017), <http://fortune.com/2017/09/14/bitcoin-bubble-investments-short> [<https://perma.cc/X3T8-6MCT>] (suggesting the following ways to short bitcoin: to sell bitcoins on margin; to “short shares of the Bitcoin Investment Trust;” to stipulate an overt-the-counter derivative contract with an investment bank; to short a basket of stocks of companies whose prices move in correlation with the price of bitcoins).

<sup>37</sup> Consider, however, that some important brokerage firms do not allow their clients to take short positions in the Bitcoin futures markets in light of the high risk their client could be exposed to losses. Alexander Osipovich & Gunjan Banerji, *Who's Afraid of Bitcoin? The Futures Traders Going Short*, WALL ST. J. (Dec. 11, 2017, 6:50 PM), <https://www.wsj.com/articles/whos-afraid-of-bitcoin-futures-traders-going-short-1513036234> (“Many large futures-clearing firms, including JPMorgan Chase & Co. and Bank of America Merrill Lynch, told their customers they would sit out Sunday's launch of bitcoin futures . . . [because they] can suffer losses if their customers' bets go bad.”).

<sup>38</sup> Acheson, *supra* note 11 (pointing how some institutional investors for some reasons, such as internal rules and aversion to risky and exchanges and wallets, are unwilling to trade bitcoins, but might be willing to invest in the futures market). Intercontinental Exchange Inc. will soon launch a physically-settled Bitcoin futures aimed at institutional investors. Gabriel T. Rubin, *First Futures Contract to Pay Out in Bitcoin Poised for Green Light*, WALL ST. J. (Dec. 20, 2018, 5:30 AM), <https://www.wsj.com/articles/first-futures-contract-to-pay-out-in-bitcoin-poised-for-green-light-11545301801>.

From a policy perspective, an increase in the participation of institutional investors in the Bitcoin derivative markets is welcome because it could result in reduced volatility and enhanced price discovery in the Bitcoin spot market.<sup>39</sup> So far, some funds have not entered the Bitcoin market because the rules governing the management of these funds restrict the implementation of trading strategies that involve financial instruments traded in unregulated trading venues.<sup>40</sup> The new financial products open new investment opportunities for those institutional investors, although particular factors, such as margin requirements and the mechanisms for the determination of the reference price could constitute obstacles to their involvement in the new market.<sup>41</sup>

#### A. Margin Requirements and Reference Price in BTC and XBT

Despite the new opportunity offered by the Bitcoin futures launched by CME and CFE, there may be certain factors that could cause hedge funds and other institutional investors to refrain from entering the new derivative markets.<sup>42</sup> One important factor to consider is the level of the margin requirement, which affects the cost of funding investments in Bitcoin futures.<sup>43</sup> The level of margin required

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<sup>39</sup> See Atulya Sarin, *Opinion: This New Way to Trade Bitcoin Could Kill Its Rally*, MARKETWATCH (Dec. 7, 2017, 8:08 AM), <https://www.marketwatch.com/story/this-new-way-to-trade-bitcoin-could-be-what-kills-its-rally-2017-12-06> [https://perma.cc/ZDX4-XML6] (explaining that Bitcoin derivatives will attract institutional investors, whose presence “will improve liquidity and dampen volatility, leading to more orderly bitcoin trading”). Interestingly, Sarin also points out how Bitcoin futures could help investment decisions by miners, since “[a] futures contract will allow investors to lock in the selling price before investing in the mining infrastructure.” *Id.*

<sup>40</sup> Acheson, *supra* note 11 (“Many funds that are by charter prohibited from dealing in ‘alternative assets’ on unregulated exchanges will now be able to participate”).

<sup>41</sup> See *infra* Section III.A.

<sup>42</sup> See Izabella Kaminska, *Why Bitcoin futures and a Shoddy Market Structure Pose Problems*, FIN. TIMES (Nov. 29, 2017), <https://ftalphaville.ft.com/2017/11/29/2196222/why-bitcoin-futures-and-a-shoddy-market-structure-pose-problems>.

<sup>43</sup> See *id.* See also Ryznar, *supra* note 13 at 558 (noting that “Reducing margin would make bitcoin less expensive to trade and thus more appealing,

with respect to CME Bitcoin futures (BTC) and CFE Bitcoin futures (XBT) has been one of the main concerns of the CFTC, so in the context of its “heightened review” for the virtual currency self-certification process it has made sure that the derivatives clearing organizations (DCOs) would set a “substantially high initial and maintenance margin for cash-settled Bitcoin futures.”<sup>44</sup> Given the volatility of the Bitcoin spot market, CME and CFE have required a minimum level of margin that is higher than the average for other types of futures.<sup>45</sup> The margin requirements set by the exchanges are only minimum requirements; therefore, after the launch of the BTC

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but it might also mean introducing risks to CME’s clearing system. Therefore, margin requirements can offset the risk of default”).

<sup>44</sup> COMMODITY FUTURES TRADING COMM’N, CFTC BACKGROUNDER ON OVERSIGHT OF AND APPROACH TO VIRTUAL CURRENCY FUTURES MARKETS 3 (2018) [hereinafter CFTC Backgrounder], [https://www.cftc.gov/sites/default/files/idc/groups/public/@customerprotection/documents/file/backgrounder\\_virtualcurrency01.pdf](https://www.cftc.gov/sites/default/files/idc/groups/public/@customerprotection/documents/file/backgrounder_virtualcurrency01.pdf). Under Section 5b(c)(2)(D)(iv) of the Commodity Exchange Act “[t]he margin from each member and participant of a derivative clearing organization shall be sufficient to cover potential exposures in normal market conditions.”

<sup>45</sup> See Letter from Chicago Mercantile Exch. Clearing, to Clearing Firm Member Firms (Dec. 12, 2017), <https://www.cmegroup.com/content/dam/cmegroup/notices/clearing/2017/12/Chadv17-480.pdf> [https://perma.cc/BK3T-DDZD] (clarifying that Bitcoin futures are cleared by the CME clearinghouse, which has required initial and maintenance margins of 43% for hedgers and, for speculators, a 47% initial margin and a 43% maintenance margin); Regulatory Circular from Cboe Futures Exch. to Trading Privilege Holders (Dec. 4, 2017), [http://cfe.cboe.com/framed/pdf/framed?content=/publish/CFEregcirc/CFERG17-023.pdf&section=ABOUT%20CFE&title=CFERG17-023+Increase+in+Margin+Requirements+for+Cboe+Bitcoin+\(USD\)+Futures](http://cfe.cboe.com/framed/pdf/framed?content=/publish/CFEregcirc/CFERG17-023.pdf&section=ABOUT%20CFE&title=CFERG17-023+Increase+in+Margin+Requirements+for+Cboe+Bitcoin+(USD)+Futures) [https://perma.cc/D2VD-U78G] (announcing an increase in margin requirements for XBT futures wherein hedgers must have initial and maintenance margins of 40% and speculators must have initial margins of 44% and maintenance margins of 40%). See also U.S. COMMODITY FUTURES TRADING COMM’N, CFTC ADVISORY NO. 18-14, STAFF ADVISORY WITH RESPECT TO VIRTUAL CURRENCY DERIVATIVE PRODUCT LISTINGS (2018), [https://www.cftc.gov/sites/default/files/idc/groups/public/%40rlettergeneral/documents/letter/2018-05/18-14\\_0.pdf](https://www.cftc.gov/sites/default/files/idc/groups/public/%40rlettergeneral/documents/letter/2018-05/18-14_0.pdf) [https://perma.cc/6VFT-TDCG] [hereinafter CFTC Staff Advisory] (highlighting the disparities in margin requirements for commodities and virtual currency contracts).

and the XBT, brokers imposed margin requirements that were significantly higher than those required by the exchanges.<sup>46</sup>

Since both BTC and XBT contracts are cash-settled futures contracts,<sup>47</sup> another factor that could affect the level of involvement of institutional investors in those markets is the mechanism for the determination of the reference price at the settlement date. A derivative market may choose, as a reference price, the price determined in a single trading venue or the average of the prices existing in more than one trading venue.<sup>48</sup> The features of the mechanism are of extreme relevance because, on the one hand, it may affect arbitrage—one of the main trading strategies used by sophisticated investors—and, on the other hand, it may affect investors' perception of the protection against manipulation.<sup>49</sup>

The CME Bitcoin futures contract uses, as the reference price, the Bitcoin Reference Rate (BRR), which is a standardized rate governed by an oversight committee comprised of a Crypto Facilities

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<sup>46</sup> See Sonali Basak & Dakin Campbell, *Goldman Wants a 100% Margin on Some Bitcoin Futures*, BLOOMBERG (Dec. 14, 2017, 1:34 PM), <https://www.bloomberg.com/news/articles/2017-12-14/goldman-said-to-seek-100-margin-on-some-bitcoin-futures-trades> (reporting that Interactive Brokers required to trade XBT a margin of 50% for long positions and a margin of 240% for short selling). Other brokers did not offer to their brokerage customers the opportunity to trade BTC and XBT when they were launched, see Brian Louis, *As Brokers Line Up to Offer Bitcoin Futures, Others are Quiet*, BLOOMBERG (Dec. 4, 2017, 5:00 AM), <https://www.bloomberg.com/news/articles/2017-12-04/as-brokers-line-up-to-offer-bitcoin-futures-others-are-quiet>; Bob Pisani, *With Bitcoin Futures Set to Trade, Here's How It's Going to Work*, CNBC (Dec. 8, 2017, 9:39 AM), <https://www.cnbc.com/2017/12/08/with-bitcoin-futures-set-to-trade-heres-how-its-going-to-work.html> [<https://perma.cc/XA4H-C4XA>].

<sup>47</sup> See Letter from Christopher Bowen, Managing Dir. & Chief Regulatory Counsel, CME Grp., to Christopher J. Kirkpatrick, Office of the Secretariat, Commodity Futures Trading Comm'n (Dec. 1, 2017), <https://www.cmegroup.com/content/dam/cmegroup/market-regulation/rule-filings/2017/12/17-417.pdf> [<https://perma.cc/FJ6F-WKBF>] [hereinafter CME Certification] (“Each expiring contract will deliver by cash settlement via final mark-to-market reference to the contract final settlement price, . . .”). See also *Contract Specifications: Summary Product Specifications Chart for Cboe Bitcoin (USD) Futures*, CBOE, <http://cfe.cboe.com/cfe-products/xbt-cboe-bitcoin-futures/contract-specifications> [<https://perma.cc/3SMY-JPRB>] (last visited Jan. 31, 2019).

<sup>48</sup> See Paul & D'Souza, *supra* note 9, at 8.

<sup>49</sup> See Kaminska, *supra* note 42.

representative, two CME representatives, and at least two independent Bitcoin experts.<sup>50</sup> The BRR is determined based on the price data derived from four constituent exchanges (Bitstamp, GDAX, itBit, and Kraken) selected according to some pre-determined criteria.<sup>51</sup> At the moment of submission of the Bitcoin futures by CME, the BRR did not take into account the data deriving from two relevant (in terms of liquidity) trading venues (Bitfinex and OkCoin) “due to fiat transfer restrictions.”<sup>52</sup> Given the (forced) exclusion from the BRR of the largest and most liquid trading venue (Bifinex), some observers have pointed out that the reliability of the reference price could be affected, thus limiting the use of BTC by institutional investors for their arbitrage strategies.<sup>53</sup>

If we agree with this comment, then we should conclude that the reference price is less reliable in the case of the Bitcoin futures launched by CFE, whose reference price is represented by the price resulting from just one trading facility (Gemini Trust Co.). However, other commentators have noted that a reference price based on the average of the price of multiple trading venues could instead be less reliable because market participants could use more than one venue to implement manipulative trading strategies and because each venue would deal with forks differently.<sup>54</sup>

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<sup>50</sup> See CME Certification, *supra* note 47, at 4–5 (specifying that BRR is calculated by Crypto Facilities and published since 2016 and that the BRR methodology is in accordance with IOSCO Principles of Financial Benchmark).

<sup>51</sup> See *id.* at 5 (reporting that the four “exchanges collectively represent up to 35% of the total BTC:USD trade globally”).

<sup>52</sup> *Id.* at 4–5 (“At the time of submission, the BRR has six (6) constituent exchanges, two (2) of which (Bitfinex and OkCoin) are temporarily suspended from contributing to the assessment due to fiat transfer restrictions.”).

<sup>53</sup> See Kaminska, *supra* note 42 (suggesting that the reference price being drawn from marginal exchanges with lesser liquidity than Bitfinex presents an “interesting” opportunity for arbitrage). The wide discrepancy between the price of the bitcoin and the price of Bitcoin futures in the initial phase of trading has strongly attracted the attention of arbitrage traders. See Annie Massa & Sonali Basak, *Why Arbitrage Traders Are Salivating over Bitcoin Futures*, BLOOMBERG (Dec. 11, 2017, 1:42 PM), <https://www.bloomberg.com/news/articles/2017-12-11/bitcoin-futures-are-dangling-a-free-lunch-for-starving-arbs> (reporting how in the first week of trading of the XBT the futures contract was priced 13% higher than bitcoin itself).

<sup>54</sup> See Paul & D’Souza, *supra* note 9, at 8 (“Averaging prices across exchanges can introduce trading anomalies and possible manipulation



In contrast with this analysis, it appears Nasdaq's plans to launch its own Bitcoin futures.<sup>55</sup> Nasdaq has announced the launch of a Bitcoin futures contract that would be different from the BTC and XBT contracts primarily by reason of its mechanism for determining the reference price; this mechanism would consist of an index tracking price data from more than 50 trading venues.<sup>56</sup>

As discussed above, the type of mechanism for the determination of the reference price affects not only arbitrage but also investors' perception of the level of protection against manipulation.<sup>57</sup> Legal practitioners have noted that knowledge of the methodology for the

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especially at expiry moments if market participants attempt to game certain outcomes between exchanges.”). On Bitcoin indices, *see* BURNISKE & TATAR, *supra* note 7, at 242–43.

<sup>55</sup> *See* Benjamin Bain, *Nasdaq Plans to Pursue Bitcoin Futures Despite Plunging Prices, Sources Say*, BLOOMBERG (Nov. 27, 2018, 4:00 AM), <https://www.bloomberg.com/news/articles/2018-11-27/nasdaq-is-said-to-pursue-bitcoin-futures-despite-plunging-prices>; Nick Baker & Annie Massa, *Nasdaq Plans to Introduce Bitcoin Futures*, BLOOMBERG (Nov. 29, 2017, 10:40 AM), <https://www.bloomberg.com/news/articles/2017-11-29/nasdaq-is-said-to-plan-bitcoin-futures-joining-biggest-rivals>; John McCrank, *Nasdaq Plans Bitcoin Futures Contract in 2018 – Source*, REUTERS (Nov. 29, 2017, 10:36 AM), <https://www.reuters.com/article/us-nasdaq-bitcoin/nasdaq-plans-bitcoin-futures-contract-in-2018-source-idUSKBN1DT2CV> [<https://perma.cc/2WN8-8UTS>] (“Nasdaq Inc plans to launch a futures contract based on bitcoin in 2018 . . . .”); Stephanie Yang & Alexander Osipovich, *Nasdaq Plans to Launch Bitcoin Futures in First Half of 2018*, WALL ST. J. (Nov. 29, 2017, 5:20 PM), <https://www.wsj.com/articles/nasdaq-plans-to-launch-bitcoin-futures-in-first-half-2018-1511968313> (“Nasdaq aims to launch bitcoin futures in the first half of 2018 . . . .”).

<sup>56</sup> *See* Bain, *supra* note 55 (“The Nasdaq futures will be based off the Bitcoin’s price on numerous spot exchanges, as compiled by VanEck Associates Corp . . . .”); McCrank, *supra* note 55 (“One of the ways the Nasdaq futures product will differ from CME’s and CBOE’s is that it will be based on an index that takes in prices from more than 50 bitcoin exchanges . . . .”). *See also* Baker & Massa, *supra* note 55 (reporting that the Nasdaq Bitcoin futures contract would be “designed to handle bitcoin hard forks more elegantly”).

<sup>57</sup> For an analysis of price manipulation in the market for cryptocurrencies, *see* Neil Gandal et al., *Price Manipulation in the Bitcoin Ecosystem*, 95 J. MONETARY ECON. 86, 96 (2018) (concluding that “despite the 10-fold increase in market capitalization, the addition of so many ‘thin’ markets in cryptocurrencies means that price manipulation remains quite feasible today. . . . [T]hese thin markets do exhibit sudden spikes in trading volume that drive the exchange rate upwards.”).

calculation of the reference price could induce manipulators to take action.<sup>58</sup> The Bitcoin futures contract offered by CFE is especially exposed to the risk of manipulation, since—as mentioned above—the reference price for this contract is represented by a benchmark determined by Gemini, whose trading volumes are considered thin.<sup>59</sup> Experts have warned of the risk that manipulators use a scheme called “banging the close,” which consists of an attempt to affect the price of the asset underlying the futures contract during the time close to the expiration of the contract to profit from the position in the futures contract.<sup>60</sup> It seems, however, that some countermeasures exist: for example, Gemini requires traders to be identified, and CFE limits the size of the futures a trader can hold near expiration.<sup>61</sup>

The risk of having manipulative schemes executed in the futures market should be less relevant in the case of the CME Bitcoin futures contract, since the benchmark takes into consideration four different Bitcoin exchanges.<sup>62</sup> As noted above, however, there seem to be no consensus on this conclusion, since other commentators have noted that a reference price based on the price of one single trading venue may be less susceptible to manipulation.<sup>63</sup> Finally, regardless of the reference price mechanism adopted, the risk persists that those with relevant ownership of Bitcoin may profit from the massive selling of bitcoin in combination with a short position in the futures market.<sup>64</sup>

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<sup>58</sup> See *Crypto-Derivatives: New Products, for New Participants in the Futures and Swaps Markets*, ALLEN & OVERY LLP (Dec. 19, 2017), <http://www.allenoverly.com/publications/en-gb/Pages/Crypto-Derivatives-New-Products-for-New-Participants-in-the-Futures-and-Swaps-Markets.aspx> [<https://perma.cc/Y9WB-3CTN>].

<sup>59</sup> Alexander Osipovich, *Bitcoin Futures Manipulation 101: How ‘Banging the Close’ Works*, WALL ST. J. (Dec. 16, 2017, 7:00 AM), <https://www.wsj.com/articles/bitcoin-futures-manipulation-101-how-banging-the-close-works-1513425600> (observing how from January to November 2017, only “\$1.3 million in bitcoin changed hands in the auction each day” in the Gemini market).

<sup>60</sup> *Id.*

<sup>61</sup> *Id.*

<sup>62</sup> *Id.*

<sup>63</sup> See Paul & D’Souza, *supra* note 9, at 8 (describing two methods of establishing reference prices and criticizing distortions in approach based on multiple exchanges, as opposed to one exchange).

<sup>64</sup> See Osipovich, *Bitcoin Futures Manipulation 101*, *supra* note 59.

## B. The CFTC and the Risk of Manipulation of the Reference Price

The CFTC has expressed concern over the risk of Bitcoin manipulation in the initial stage of Bitcoin futures trading,<sup>65</sup> especially in light of the criticism put forth by market participants to the CFTC about the adequacy of the self-certification process for the launch of BTC and XBT.<sup>66</sup> In an attempt to allay these concerns, the CFTC has implemented the “heightened review” for virtual currency self-certification, namely an *ex-post* review of the self-certifications made

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<sup>65</sup> See Remarks of Chairman J. Christopher Giancarlo to the ABA, *supra* note 14 (expressing concern about manipulation in light of large investments in Bitcoin and other cryptocurrencies and listing specific fraudulent schemes, e.g. Ponzi scheme, pump and dump); Remarks of Chairman J. Christopher Giancarlo Before the Market Risk Advisory Committee, *supra* note 14 (considering susceptibility to manipulation of self-certified virtual currency futures product).

<sup>66</sup> *Id.* After the announcement of the launch of Bitcoin futures by CME and CFE in December 2017, the Futures Industry Association (FIA) addressed an open letter to the Chairman of the CFTC to question the use of the self-certification process for the authorization to trade exchange-traded derivatives in cryptocurrencies in light of the risk profile of the new products. See Letter from Walt Lukken, CEO, Futures Indus. Ass’n, to Christopher Giancarlo, Chairman, Futures Trading Comm’n (Dec. 6, 2017), <https://fia.org/articles/open-letter-cftc-chairman-giancarlo-regarding-listing-cryptocurrency-derivatives> [<https://perma.cc/XVK7-33EE>]. In particular, FIA maintained that a public discussion was needed to “ascertain the correct margin levels, trading limits, stress testing and related guarantee fund protections and other procedures needed in the event of excessive price movements.” *Id.* The Chairman of the CFTC replied to the argument noting that “there is no provision in statute for public input into CFTC staff review of new product self-certifications. Neither statute nor rule would have prevented CME and CFE from launching their new products before public hearings could have been called.” Remarks of Chairman J. Christopher Giancarlo to the ABA, *supra* note 14. He further pointed out that “it is DCMs and Designated Clearing Organizations (DCOs)—and not CFTC staff—that must solicit and address stakeholder concerns in new product self-certifications.” Remarks of Chairman J. Christopher Giancarlo Before the Market Risk Advisory Committee, *supra* note 14. The self-certification process for Bitcoin futures has received criticism among scholars as well. See Reiners, *supra* note 13, at 66 (noting that “[n]ot only did the CFTC fail to find fault with [CFE’s and CME’s] reference rate, they also chose to ignore clear evidence of fraud and manipulation in the bitcoin spot market”).

by CME and CFE which deviated from the standard self-certification process because the CFTC engaged with both exchanges to impose on them several conditions that would allow the derivative exchanges and the CFTC to monitor the trading of Bitcoin in the spot markets.<sup>67</sup>

We have pointed out that the CFTC has been criticized for allowing CME and CFE to use the self-certification process to launch their Bitcoin futures without holding any public hearing in advance.<sup>68</sup> We also noted that the CFTC has strongly defended the self-certification process, arguing that it is consistent with the public policy goal to encourage “market-driven innovation.”<sup>69</sup> However, as pointed out by Commissioner Rostin Behnam, “the implementation of the ‘heightened review’ process is a new regulatory approach in and of itself.”<sup>70</sup> Thus, although Chairman Giancarlo stressed the inevitability of the use by CME and CFE of the self-certification process as it is,<sup>71</sup> the CFTC has recognized that the level of innovation presented by a standard derivative contract (futures) based on a crypto-asset, like Bitcoin, is so

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<sup>67</sup> See CFTC Backgrounder, *supra* note 44, at 3 (including these conditions: “2) DCMs setting large trader reporting thresholds at five bitcoins or less; 3) DCMs entering direct or indirect information sharing agreements with spot market platforms to allow access to trade and trader data; 4) DCM monitoring of data from cash markets with respect to price settlements and other Bitcoin prices more broadly, and identifying anomalies and disproportionate moves in the cash markets compare to the futures markets; 5) DCMs agreeing to engage in inquiries, including at the trade settlement level when necessary; 6) DCMs agreeing to regular coordination with CFTC surveillance staff on trade activities, including providing the CFTC surveillance team with trade settlement data upon request; and 7) DCMs coordinating product launches so that the CFTC’s market surveillance branch can carefully monitor minute by-minute developments.”).

<sup>68</sup> See *supra* Section III.A.

<sup>69</sup> See *supra* Section I.

<sup>70</sup> See Opening Statement of Commissioner Rostin Behnam Before the Market Risk Advisory Committee, *supra* note 14. See also Reiners, *supra* note 13, at 74 (“Heightened review is a new process, without statutory basis, that the CFTC is using to review new virtual currency derivatives products. There is no mention of heightened review in CFTC documents or staff statements prior to release of the backgrounder, thus, heightened review appears to be a label the CFTC attached after-the-fact to the process utilized with CME and CFE prior to the launch of their bitcoin futures contracts.”).

<sup>71</sup> See Remarks of Chairman J. Christopher Giancarlo to the ABA, *supra* note 14.

unprecedented that “the Commission must reconsider its historical regulatory approach to new products.”<sup>72</sup>

It seemed inevitable that the “heightened review” for virtual currency self-certifications, as implemented in the context of the launch of BTC and XBT, would become a new model for the CFTC’s authorization process in the context of the launch of new crypto-based derivative products.<sup>73</sup> In fact, the CFTC has issued a Staff Advisory to provide “guidance to exchanges and clearinghouses on certain enhancements when listing a derivative contract based on virtual currency,”<sup>74</sup> and those “enhancements” are substantially similar to those conditions that the CFTC imposed on CME and CFE in the context of the “heightened review” for the launch of BTC and XBT.<sup>75</sup>

The “heightened review” process represents a regulatory framework that the CFTC has created to balance the policy goal of encouraging market-driven innovation with the CFTC’s mandate to prevent manipulation in the derivative and spot markets for Bitcoin.<sup>76</sup> This approach needs to be examined in comparison with the approach adopted by the Securities and Exchange Commission (SEC) in the context of a proposed rule change filed by Bats BZX Exchange to list and trade shares of the Winklevoss Bitcoin Trust.<sup>77</sup>

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<sup>72</sup> See Opening Statement of Commissioner Rostin Behnam Before the Market Risk Advisory Committee *supra* note 14.

<sup>73</sup> *Id.* (expressing the hope that the Commission evaluates whether, for the launch of innovative products such as the Bitcoin futures, it is more appropriate to incorporate the “heightened review” process in the Commission’s existing regulatory framework or to use the power of authorization that the Commission has at its disposal within the voluntary submission process). Commissioner Behnam considered the “heightened review” process “as a hybrid between the somewhat ministerial act of self-certification and the more fulsome evaluation underlying Commission approval. In addition, he maintained that “specifically with respect to the Bitcoin contracts, the CFTC should have exercised its existing authority to accept voluntary product submissions for review and approval—by the entire Commission, instead of self-certification.” *Id.*

<sup>74</sup> CFTC Staff Advisory, *supra* note 45, at 1.

<sup>75</sup> See *id.* at 3 (stating that the “enhancements” concern the following areas: enhanced market surveillance; close coordination with CFTC Surveillance Group; large trader reporting; outreach to members and market participants; DCO’s risk management).

<sup>76</sup> Remarks of Chairman J. Christopher Giancarlo to the ABA, *supra* note 14.

<sup>77</sup> See Order Disapproving a Proposed Rule Change to List and Trade Shares Issued by the Winklevoss Bitcoin Trust, Exchange Act Release No. 34-80206, 82 Fed. Reg. 14,076, 14,077 (Mar. 10, 2017) (disapproving the proposed rule

The SEC disapproved the proposal based on its longstanding interpretation of the standards that an exchange planning to list and trade shares of commodity-trust exchange-traded products (ETPs) must meet in order to be compliant with Section 6(b)(5) of the Exchange Act, which requires national securities exchanges to have rules designed to prevent, among other things, manipulation.<sup>78</sup> According to the SEC, these standards include surveillance-sharing agreements entered by the national securities exchange listing the ETP with spot or derivative markets that meet two conditions: they must be significant and regulated markets.<sup>79</sup>

Applying these standards, the SEC concluded that Bats BZX Exchange had “not entered into a surveillance-sharing agreement with a significant, regulated, Bitcoin-related market.”<sup>80</sup> In its proposal, Bats BZX Exchange claimed that it had entered into a surveillance-sharing agreement with Gemini Exchange.<sup>81</sup> The SEC concluded, however, that Gemini Exchange did not represent a significant and regulated market, because the available data suggested that Gemini Exchange traded a volume of Bitcoin that was insignificant relative to the overall market for the asset, and because Gemini Exchange was registered neither with the SEC nor with the CFTC as a regulated market.<sup>82</sup>

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change because, among other things, it would be unable to enter into the type of surveillance-sharing agreement that is designed to prevent fraudulent and manipulative acts and practices); Order Setting Aside Action by Delegated Authority and Disapproving a Proposed Rule Change to List and Trade Shares of the Winklevoss Bitcoin Trust, Exchange Act Release No. 34-83723, 83 Fed. Reg. 37,579, 37,579 (July 26, 2018) (setting aside the prior disapproval order but disapproving the proposed rule change because of a failure to demonstrate its proposal would meet the requirement that its rules be designed to prevent fraudulent and manipulative acts and practices); BURNISKE & TATAR, *supra* note 7, at 237–8.

<sup>78</sup> Order Disapproving a Proposed Rule Change to List and Trade Shares Issued by the Winklevoss Bitcoin Trust, Exchange Act Release No. 34-80206, 82 Fed. Reg. at 14,077, 14,087 (Mar. 10, 2017).

<sup>79</sup> *Id.*

<sup>80</sup> *Id.* at 14,087.

<sup>81</sup> *Id.* at 14,084–45 (“In addition, the Exchange notes that it has entered into a comprehensive surveillance-sharing agreement with the Gemini Exchange . . .”).

<sup>82</sup> See Order Disapproving a Proposed Rule Change to List and Trade Shares Issued by the Winklevoss Bitcoin Trust, Exchange Act Release No. 34-80206, 82 Fed. Reg. at 14,085–86 (Mar. 10, 2017). Bats BZX Exchange tried to argue that Gemini Trust Company was subject to the supervision of the New York State Department of Financial Services (NYDFS). The SEC, however,

Finally, the SEC noted that there was no significant, regulated derivative market related to Bitcoin.<sup>83</sup>

If examined in conjunction with the CFTC's decision to allow the launch of Bitcoin futures by CME and CFE, the SEC's decision shows that there is an element of strident incoherence in the American regulatory framework regarding the launch of new financial products related to Bitcoin.<sup>84</sup> The degree of such incoherence is even more evident if we consider the following circumstances. First, as seen above, XBT (the Bitcoin futures contract launched by CFE) uses as its reference price a rate based on the trading of Bitcoin in the Gemini Exchange.<sup>85</sup> Secondly, in the context of the "heightened review," the CFTC has imposed a requirement on CFE (as well as on CME), to, among the other things, "enter[] direct or indirect information sharing agreements with spot market platforms to allow access to trade and trader data."<sup>86</sup> CME has entered into such an agreement with Gemini,<sup>87</sup> and the CFTC (contrary to the SEC's approach) considers it to be sufficient.

Some commentators have noted that the different approaches adopted by the CFTC and the SEC could be the result of the different mandates of the two regulators: the SEC is responsible for the protection of retail investors and capital formation, while the CFTC is called to ensure that the derivative markets (which tend to involve

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pointed that being licensed by the NYSDFS does not entail the application of the same requirements that apply to national securities exchanges.

<sup>83</sup> *Id.* at 14,085–87.

<sup>84</sup> Compare CFTC Backgrounder, *supra* note 44, at 3 (outlining the CFTC's approach to self-certification of virtual currency futures) with Order Disapproving a Proposed Rule Change to List and Trade Shares Issued by the Winklevoss Bitcoin Trust, Exchange Act Release No. 34-80206, 82 Fed. Reg. at 14,084–85 (Mar. 10, 2017) (offering the SEC's position on the differences in approach between CFTC and SEC supervision of Bitcoin-based financial products).

<sup>85</sup> See Cboe, *XBT-Cboe Bitcoin Futures*, *supra* note 10 ("XBT futures are cash-settled contracts based on the Gemini's auction price for bitcoin, denominated in U.S. dollars.").

<sup>86</sup> See CFTC Backgrounder, *supra* note 44, at 3.

<sup>87</sup> See Cameron Winklevoss, *A Proposal for a Self-Regulatory Organization for the U.S. Virtual Currency Industry*, GEMINI (Mar. 12, 2018), <https://gemini.com/blog/a-proposal-for-a-self-regulatory-organization-for-the-u-s-virtual-currency-industry> [<https://perma.cc/Y8A7-A55W>].

more sophisticated investors) work efficiently.<sup>88</sup> We also need to consider that the SEC made its decision on the Bats BZX Exchange proposal, noting that the future development in significant size of regulated Bitcoin-related markets could determine a change in the SEC's evaluation of any proposal to list ETPs.<sup>89</sup> Therefore, if the derivative markets for Bitcoin futures develop to a significant size under the supervision of the CFTC, this could mean a change in the SEC's future decisions about the launch of ETPs.<sup>90</sup>

### C. Bitcoin Futures and Hard Forks

One last issue related to the launch of BTC and XBT concerns the handling of forks.<sup>91</sup> Scholars have noted that when a fork occurs, the holder of the cryptocurrency ends up holding two cryptocurrencies.<sup>92</sup> In contrast, the holders of a Bitcoin futures will likely be entitled to the crypto-asset of the majority blockchain, but this could still lead to the other possible consequence of Bitcoin futures being

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<sup>88</sup> See Richard Hill, *SEC Waits on Sidelines as New Bitcoin Market Opens*, BLOOMBERG LAW (Aug. 28, 2017) <https://www.bna.com/sec-waits-sidelines-n73014463791> (“The SEC is primarily responsible for protecting retail investors and facilitating capital formation. The CFTC is tasked mainly with keeping derivatives markets, which typically have more sophisticated users than SEC-regulated markets, functioning efficiently.”). See also Reiners, *supra* note 13, at 90 (observing that “neither the Exchange Act nor SEC regulations differentiate between fraud and manipulation in the spot (cash) market and the market for the product the exchange is seeking to list through the rule change proposal (e.g., the Winklevoss Bitcoin Trust). Therefore, the SEC has taken a more expansive view of fraud and manipulation compared to the CFTC”).

<sup>89</sup> See Order Disapproving a Proposed Rule Change to List and Trade Shares Issued by the Winklevoss Bitcoin Trust, Exchange Act Release No. 34-80206, 82 Fed. Reg. 14,076, 14,087 (Mar. 10, 2017) (“The Commission notes that bitcoin is still in the relatively early stages of its development and that, over time, regulated bitcoin-related markets of significant size may develop. Should such markets develop, the Commission could consider whether a bitcoin ETP would, based on the facts and circumstances then presented, be consistent with the requirements of the Exchange Act.”).

<sup>90</sup> *Id.*

<sup>91</sup> See BURNISKE & TATAR, *supra* note 7, at 61–62.

<sup>92</sup> See Paul & D'Souza, *supra* note 9, at 4.



priced at a discount compared to physical Bitcoin.<sup>93</sup> In its self-certification for the launch of BTC, CME mentioned its “Policy on Divisions of Bitcoin Asset” stating that in the event of a fork CME will have discretion on how “to align Bitcoin Futures position holder exposures with cash market exposures as appropriate.”<sup>94</sup> The alignment between the two exposures is especially important for arbitrageurs.<sup>95</sup> In particular, CME has mentioned three possible countermeasures that it could adopt to ensure alignment in the event of a fork: “providing cash adjustments or assigning newly listed futures or options contract positions to Bitcoin Futures position holders.”<sup>96</sup>

Forks do not only create problems of misalignment between the exposures in the Bitcoin futures and the spot market—they also create the opportunity for speculators to implement trading strategies that at best will just be opportunistic but at worst potentially manipulative.<sup>97</sup> Speculators could attempt to predict hard forks and take a position in the futures market according to the expected impact that the fork will have on the price of the Bitcoin futures.<sup>98</sup> However, we need to take into consideration a risk that the SEC stressed in the context of the Bats BZX Exchange’s proposal to list ETP, namely, the risk that some market participants may trade on material non-public information regarding how a Bitcoin futures exchange handles a fork.<sup>99</sup>

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<sup>93</sup> *Id.* (“[H]olders of bitcoin futures will likely not be entitled to assets on minority chains. For this reason, bitcoin futures may price in a ‘hard fork’ discount to the physical . . .”).

<sup>94</sup> See CME Certification, *supra* note 47, at 11.

<sup>95</sup> See Paul & D’Souza, *supra* note 9, at 12 (explaining that arbitrageurs are exposed to “the risk that a hard fork causes the economic return to holders of physical bitcoins to differ from that of holders of the futures”).

<sup>96</sup> See CME Certification, *supra* note 47, at 11 (listing appropriate actions the exchange could take). Some commentators have reported that Nasdaq’s plans to launch its own Bitcoin futures would include a mechanism to handle hard forks consisting in the reinvestment of the “proceeds from the spin-off back into the original bitcoin.” See, e.g., Baker & Massa, *supra* note 55.

<sup>97</sup> See Paul & D’Souza, *supra* note 9, at 8, 10, 12 (also indicating how the term structure of the XBT Bitcoin futures—that is the possibility for CFE to list Bitcoin futures contracts in weekly, monthly or quarterly cycles—facilitate speculators in positioning themselves in anticipation of an expected hard fork).

<sup>98</sup> See *id.*

<sup>99</sup> See Order Disapproving a Proposed Rule Change to List and Trade Shares Issued by the Winklevoss Bitcoin Trust, Exchange Act Release No. 34-80206, 82 Fed. Reg. 14,076, 14,085 (Mar. 10, 2017) (“For example, while there is no

Given the risks associated with hard forks and the absence of uniformity among the derivative markets on the policy framework for handling them, the CFTC should conduct a thorough assessment of those risks and evaluate the necessity for specific rules to preserve investors' rights.

#### ***IV. Bitcoin Swaps and Bitcoin Binary Options***

So far, we have examined two types of Bitcoin-based transactions that fall under the jurisdiction of the CFTC, retail commodity transactions<sup>100</sup> and Bitcoin futures.<sup>101</sup> Retail commodity transactions do not meet the definition of “futures,” but they are subject to the applicable regulation for this type of derivative contracts.<sup>102</sup> The CFTC’s jurisdiction over retail commodity transactions is of extreme relevance because it means that a U.S. regulator may now exercise oversight over one of the most important financial instruments used by retail investors to speculate on Bitcoins and other virtual currencies.<sup>103</sup> On the other hand, the launch of Bitcoin futures by the most important American futures exchanges represents a significant step towards a market for Bitcoin with a higher degree of participation by institutional investors.<sup>104</sup>

Beyond retail commodity transactions and Bitcoin futures, we find in the American financial markets other crypto-based derivative contracts that we can place in one of two categories: (i) financial products that may be used by institutional investors to get exposure to Bitcoin; or (ii) financial products that may be used by retail investors

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inside information related to the earnings or revenue of bitcoin, there may be material non-public information related to the actions of regulators with respect to bitcoin . . . regarding the decision of a bitcoin-based ETP with respect to how it would respond to a “fork” in the blockchain, which would create two different, noninterchangeable types of bitcoin.”).

<sup>100</sup> See *supra* Section II. See also Retail Commodity Transactions Involving Virtual Currency, 82 Fed. Reg. 60,335, 60,336 (proposed Dec. 20, 2017) (to be codified at 17 C.F.R. pt. 1).

<sup>101</sup> See CFTC Statement on Self-Certification of Bitcoin Products, *supra* note 12.

<sup>102</sup> See discussion *supra* Section II.

<sup>103</sup> See discussion *supra* Section II.

<sup>104</sup> See Acheson, *supra* note 11 (stating that Bitcoin futures markets will be bigger than the Bitcoin markets themselves, drawing institutional investors to those markets because of the size and liquidity).

for speculation.<sup>105</sup> In particular, the swaps and options that can be traded on, respectively, TeraExchange and LedgerX fall into the first category.<sup>106</sup> The binary options that can be traded on Nadex and Cantor Exchange fall into the second category.<sup>107</sup>

#### **A. The TeraExchange Bitcoin Swap and the LedgerX Bitcoin Option**

The Bitcoin swap TeraExchange, LLC (TeraExchange) launched in 2014—three years earlier than the start of trading of BTC and XBT futures contracts—represents the first attempt to meet the demand from institutional investors for exposure to the Bitcoin market through a derivative contract traded under the oversight of the CFTC.<sup>108</sup> The swap is a non-deliverable forward in which the parties exchange a cash flow in U.S. dollars determined by the difference between the Bitcoin “forward” price agreed upon on the trade date and the prevailing Tera Bitcoin Price Index on the settlement date.<sup>109</sup>

The Bitcoin swap is solely designed for institutional investors as can be inferred from the simple fact that only a party that qualifies

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<sup>105</sup> This distinction is based on whether only “eligible contract participant” under Section 1a(18) of the CEA may enter a given Bitcoin-based derivative contract. Commodity Exchange Act, 7 U.S.C. § 1a(18) (2012).

<sup>106</sup> See discussion *infra* Section IV.A (discussing TeraExchange and LedgerX options in detail).

<sup>107</sup> See discussion *infra* Section IV.B (discussing how the binary options on Nadex and Cantor Exchange can be used in depth).

<sup>108</sup> TeraExchange is a multi-asset swap execution facility that registered with the CFTC in October 2013 and its Bitcoin swaps were certified on September 11, 2014. CFTC Backgrounder, *supra* note 44, at 2 n.9. In 2015, the CFTC settled charges against TeraExchange after the CFTC found that, on October 8, 2014, TeraExchange had allowed two traders to enter into prearranged wash trades in violation of Section 5h(f)(2)(B) of the CEA and Regulation 37.203(a). See *In re TeraExchange LLC*, CFTC No. 15-33, 2014 WL 5658082 (Sept. 24, 2015) (“The October 8 transactions in the Bitcoin swap constitute wash trading.”).

<sup>109</sup> See *Instruments*, TERAEXCHANGE, on <https://www.teraexchange.com/Home/Instruments> [<https://perma.cc/35CT-3LA8>] (last visited Jan 31, 2019). See also Todd P. Zerega & Andrew P. Cross, *Swap Execution Facility to Trade Bitcoin Swaps*, PERKINS COIE LLP: DERIVATIVES & REPO REPORT (Sept. 17, 2014), <https://www.derivativesandrepo.com/2014/09/swap-execution-facility-to-trade-bitcoin-swaps> [<https://perma.cc/DAG3-2KQF>] (emphasizing how the swap “resembles a non-deliverable currency forward in terms of the product’s architecture”).

as an “eligible contract participant” under Section 1a(18) of the CEA may enter into this type of derivative contract.<sup>110</sup> The other relevant aspect to consider is the mechanism for the determination of the reference price, which consists of an index price based on multiple trading venues that meet several conditions, such as the maintenance of an information-sharing agreement with TeraExchange and compliance with regulatory, operational, and technological criteria established by TeraExchange.<sup>111</sup>

This mechanism for the selection of the trading venues by TeraExchange suggests a way in which the CFTC could spur a race to the top among unregulated Bitcoin trading venues. It is intuitively true that if a venue is selected as a source for the determination of the reference price in a derivative contract, this increases the reputation of the venue. The CFTC could leverage this incentive by requiring an American regulated derivative markets that is planning to launch Bitcoin-based derivative contracts to select, as sources for the determination of the reference price, trading venues that meet certain listing and trading standards. This mechanism would essentially establish a *de facto* regulatory power of the CFTC over foreign Bitcoin trading venues.

The other type of Bitcoin-based derivative contracts available for institutional investors is the Bitcoin options listed by LedgerX.<sup>112</sup> Specifically, the type of contract that can be traded on the LedgerX

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<sup>110</sup> 7 U.S.C. § 1a(18) (2012) (including in the definition of “eligible contract participant” investment companies, among other entities).

<sup>111</sup> *Strict and Objective Criteria*, TERAEXCHANGE, <https://www.teraexchange.com/Home/TeraBit#TB Accordions> [perma.cc/GW7G-L7NV] (last visited Jan. 31, 2019). Additional conditions include: serving an international customer base; providing an API with live prices; providing a bid-offer spread for an immediate sale and an immediate purchase; having a minimum trade size that is less than \$1,000 USD; having daily and monthly trading volume that meets minimum acceptable levels as determined by TeraExchange; permitting withdrawals and deposits of fiat currency as well the transfer of bitcoin within a commercially reasonable period of time; charging reasonable transaction fees; excluding exchanges that charge zero fees. *Id.*

<sup>112</sup> LedgerX’s option contracts were certified on September 19, 2017. In July 2017, LedgerX was registered as a Swap Execution Facility (SEF) and subsequently as a Derivative Clearing Organization (DCO) with the CFTC. See CFTC Release No. 7584-17, 2017 WL 2889365 (July 6, 2017) (holding that LedgerX complied with CFTC regulations of SEFs); CFTC Release No. 7592-17, 2017 WL 3124450 (July 24, 2017) (granting LedgerX registration as a DCO).

platform is a Long-Term Equity Anticipation Security, an option that gives the right to buy or sell Bitcoins at the strike price before an expiration date that is one year or more.<sup>113</sup> Only an “eligible contract participant[s]” as defined at Section 1a(18) of the CEA<sup>114</sup> may enter this type of contract.<sup>115</sup> The contract is not cash-settled, and therefore does not create issues with regard to the determination of the reference price.<sup>116</sup> However, physical settlement of Bitcoin may involve equally significant issues in the context of a hard fork, especially given the long maturity of the contracts listed by LedgerX.<sup>117</sup>

In this regard, LedgerX has formulated a policy framework for hard forks to protect the position of the party that has the obligation to deliver bitcoins whenever the option is exercised.<sup>118</sup> If a hard fork occurs and the option is exercised, the counterparty may request the delivering party to deliver the bitcoins and the other types of cryptocurrencies resulting from the fork.<sup>119</sup> These other types of cryptocurrencies could, however, end up trading in tiny, unregulated venues, exposing the delivering party to the risk of locating and purchasing the new cryptocurrency to fulfill its delivery obligation.<sup>120</sup> LedgerX’s policy framework for hard forks consists of a process in which LedgerX’s management and risk committees may essentially exclude the new coin—that resulted from the hard fork—from the delivery obligation, in the event the exchanges trading the new coin do not meet

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<sup>113</sup> See LEDGERX LLC, RULES OF LEDGERX LLC 111 (2018), <https://ledgerx.com/s/LedgerX-LLC-Rulebook-6-7-2018-APPROVED.pdf> [<https://perma.cc/7S2B-U4BY>] (discussing rules pertaining to USD/BTC options). See also Michael del Castillo, *First Long-Term LedgerX Bitcoin Option Pegs Price at \$10,000*, COINDESK (Nov. 18, 2017, 9:59 PM), <https://www.coindesk.com/first-long-term-ledgerx-bitcoin-option-pegs-price-10000-one-year> [[perma.cc/8B5W-H2RQ](https://perma.cc/8B5W-H2RQ)] (reporting the soft launch of LedgerX’s first Long-Term Equity Anticipation Security financial instrument).

<sup>114</sup> 7 U.S.C. § 1a(18) (2012).

<sup>115</sup> See LEDGERX LLC, *supra* note 113, at 33 (identifying the criteria for participants eligible to utilize the platform).

<sup>116</sup> See *id.* at 62.

<sup>117</sup> See *LedgerX’s Policy Framework for Hard Forks*, LEDGERX LLC (Oct. 27, 2017), <https://ledgerx.com/blog/2018/7/25/ledgerxs-policy-framework-for-hard-forks/> [<https://perma.cc/GW7G-L7NV>] (examining reasons why hard forks may present challenges for ledgers, and explaining why a blanket policy on hard forks cannot be articulated).

<sup>118</sup> *Id.*

<sup>119</sup> *Id.*

<sup>120</sup> *Id.*

certain standards with respect to liquidity, stability, regulatory regime and oversight, security, and legal risk.<sup>121</sup>

### B. Bitcoin Binary Options

The lack of uniformity among the derivative markets with respect to the mechanism for the determination of the reference price seems more evident when we look at the characteristics of the binary options contract launched by Cantor Futures Exchange, LP (Cantor Exchange) on December 1, 2017.<sup>122</sup> The Bitcoin binary options launched by Cantor Exchange are cash-settled, and therefore, have the structure of a swap, meaning that on the settlement date the parties will exchange cash flow depending on the level of the strike price compared to the reference price.<sup>123</sup> The party holding a long position will receive cash flow if, on the settlement date, the strike price is at or above the reference price.<sup>124</sup> Conversely, the party holding a short position will receive cash flow if, on the settlement date, the strike price is below the reference price.<sup>125</sup> The reference price of the Bitcoin cash market is determined—during the last ten minutes of trading<sup>126</sup>—by Cantor Exchange “in its sole and absolute discretion” using Bitcoin prices from, among other sources, “cryptocurrency cash exchanges that are widely followed and public available,” and “aggregates, composites or indexes of bitcoin cash prices that are widely followed and publicly available.”<sup>127</sup>

One noticeable aspect of Cantor Exchange is that it does not disclose the Bitcoin trading venues that represent its sources for determining the reference price, as this way “potential manipulators do not explicitly know and therefore cannot target any one cash exchange or pre-identified list of exchanges to impact the reference price.”<sup>128</sup> Nadex’s platform, on the other hand, allows retail investors to trade

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<sup>121</sup> *Id.*

<sup>122</sup> CFTC Statement on Self-Certification of Bitcoin Products, *supra* note 12. See CANTOR FUTURES EXCHANGE, LP, CANTOR FUTURES EXCHANGE BITCOIN SWAP CONTRACT Appendix A, arts. (e)(ii),(iii) (2017), <https://www.cftc.gov/sites/default/files/filings/ptc/17/12/ptc120117cantordcm001.pdf> [<https://perma.cc/NQH9-NC86>].

<sup>123</sup> See CANTOR FUTURES EXCHANGE, LP, *supra* note 122, at 16.

<sup>124</sup> *Id.* at 17.

<sup>125</sup> *Id.*

<sup>126</sup> *Id.* at 5.

<sup>127</sup> *Id.* at Appendix A, arts. (f)(i)(A)–(B).

<sup>128</sup> *Id.* at 5.

binary options in which the reference price is the Tera Bitcoin Price Index<sup>129</sup>—namely the same index used by TeraExchange in relation to its listed swaps.<sup>130</sup> Finally, in comparison, we should mention that the European Securities and Markets Authority (ESMA) has recently adopted a measure that prohibits the marketing, distribution and sale of binary options to retail investors.<sup>131</sup> This measure could make the CFTC appear less paternalistic towards retail investors than the European regulator. This conclusion does not seem accurate, however, if we just consider that in the context of the mentioned prohibition relating to binary options, the ESMA has not banned contracts for difference (CFDs).<sup>132</sup> Instead, based on “concerns about the integrity of the price formation process in underlying cryptocurrency markets,” the ESMA has only imposed certain restrictions on CFDs (such as leverage limits) traded by retail investors, restrictions that are more stringent for CFDs where cryptocurrencies are the underlying asset.<sup>133</sup> CFDs are riskier financial products than binary options,<sup>134</sup> and therefore, the position of the CFTC seems more coherent than that of the European regulator.

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<sup>129</sup> See *Bitcoin Contract Specifications*, NADEX, <https://www.nadex.com/markets/cryptocurrency/bitcoin-contract-specifications> [https://perma.cc/5BQE-R8SZ] (last visited Feb. 14, 2019) (indicating that the underlying market for Bitcoin trading is the TeraBit–USD Bitcoin Price Index).

<sup>130</sup> See *Instruments*, *supra* note 109.

<sup>131</sup> See EUROPEAN SEC. & MKTS. AUTH., ADDITIONAL INFORMATION ON THE AGREED PRODUCT INTERVENTION MEASURES RELATING TO CONTRACTS FOR DIFFERENCES AND BINARY OPTIONS 5 (2018) [https://www.esma.europa.eu/sites/default/files/library/esma35-43-1000\\_additional\\_information\\_on\\_the\\_agreed\\_product\\_intervention\\_measures\\_relating\\_to\\_contracts\\_for\\_differences\\_and\\_binary\\_options.pdf](https://www.esma.europa.eu/sites/default/files/library/esma35-43-1000_additional_information_on_the_agreed_product_intervention_measures_relating_to_contracts_for_differences_and_binary_options.pdf) [https://perma.cc/XMG8-SW58] (imposing, for example, a “three-month prohibition on the marketing, distribution or sale of binary options to retail investors”).

<sup>132</sup> See *id.* at 1–8 (placing restrictions on—rather than banning—contracts for differences).

<sup>133</sup> *Id.* at 5–8. The ESMA has set the leverage limit for CFDs on cryptocurrency at 2:1. Other restrictions on CFDs include: margin-close out rule; negative balance protection; restrictions on the incentives offered to trade CFDs; and firm-specific risk warning. *Id.*

<sup>134</sup> See, e.g., *Binary Trading vs. CFD trading: What is the Difference?*, LIBERTEX (Aug. 14, 2018), <https://libertex.com/blog/binary-trading-vs-cfd-trading-what-difference> [https://perma.cc/6PEU-DA8L] (“[T]he level of risk in CFD trading is considerably higher than the binary options trade.”).

## V. *Conclusions*

Based on the above analysis, we have seen that the American Bitcoin derivative markets use different mechanisms for the determination of the reference price.<sup>135</sup> These mechanisms present differences that are, in some cases, significant.<sup>136</sup> Their reliability is crucial to attracting institutional investors—especially arbitrageurs—and, in general, to protect investors against manipulation.<sup>137</sup> In deciding which derivative market to enter, investors will likely evaluate the reliability of the mechanism adopted by each market. Therefore, competition between derivative markets will result in the natural selection of those markets with the most reliable mechanisms.

On the other hand, the CFTC could improve the accuracy of the Bitcoin spot market by exercising—through a direct regulation of crypto-based derivative contracts—a *de facto* regulatory power over foreign unregulated trading venues. Indeed, trading venues may be strongly incentivized—by the return they may receive in terms of reputational gain—to be selected by an U.S.-regulated derivative market (a DCM or SEF) as a source for the determination of the reference price of Bitcoin. The CFTC could leverage these incentives by requiring that such regulated markets select those trading venues that meet certain listing and trading standards as their source for the determination of the reference price.

In turn, the incentives that the trading venues may have to be selected as sources for the determination of the Bitcoin reference price could foster a race to the top among them to meet the listing and trading standards formulated by the CFTC. In this way, the CFTC could exercise a *de facto* regulatory power over non-U.S. Bitcoin trading venues, with many consequential benefits, not only for the Bitcoin-based derivative markets, but also for the Bitcoin spot market itself.

Another issue that has not yet received a coherent response from the derivative markets is the handling of hard forks. We have seen that some markets have adopted policy frameworks to manage the occurrence of these events, but those frameworks do not ensure predictability, and in essence state that the market will have pure discretion in handling the fork. The CFTC should conduct thorough empirical and legal analyses of the consequences of hard forks for

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<sup>135</sup> See discussion *supra* Sections III.A, III.B, IV.A, IV.B.

<sup>136</sup> *Id.*

<sup>137</sup> *Id.*



investors holding positions in Bitcoin-based derivative contracts, and then decide on whether a regulatory response is needed to preserve investors' rights.

In conclusion, we have pointed out that doubts exist about whether Bitcoin will keep its role as a major crypto-asset. Should Bitcoin's position decline in favor of other virtual currencies, the overall regulatory framework for Bitcoin-based derivative contracts that is being created by the CFTC—and that legal scholars may help to shape—will nonetheless remain a useful model for the regulation of the evolving area of crypto-based derivative contracts.<sup>138</sup>

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<sup>138</sup> In the same sense, see Ryznar, *supra* note 13, at 563 (explaining that “lessons from bitcoin apply to other cryptocurrencies and similar ventures”).