

SECURITIES AND EXCHANGE COMMISSION
(Release No. 34-87267; File No. SR-NYSEArca-2019-01)

October 9, 2019

Self-Regulatory Organizations; NYSE Arca, Inc.; Order Disapproving a Proposed Rule Change, as Modified by Amendment No. 1, Relating to the Listing and Trading of Shares of the Bitwise Bitcoin ETF Trust Under NYSE Arca Rule 8.201-E

I. INTRODUCTION

On January 28, 2019, NYSE Arca, Inc. (“NYSE Arca”) filed with the Securities and Exchange Commission (“Commission”), pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Exchange Act”)¹ and Rule 19b-4 thereunder,² a proposed rule change to list and trade shares (“Shares”) of the Bitwise Bitcoin ETF Trust (“Trust”) under NYSE Arca Rule 8.201-E, Commodity-Based Trust Shares. The proposed rule change was published for comment in the Federal Register on February 15, 2019.³ On March 29, 2019, pursuant to Section 19(b)(2) of the Exchange Act,⁴ the Commission designated a longer period within which to approve the proposed rule change, disapprove the proposed rule change, or institute proceedings to determine whether to disapprove the proposed rule change.⁵ The Commission received comment letters in response to the Original Notice.⁶

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

³ See Securities Exchange Act Release No. 85093 (Feb. 11, 2019), 84 FR 4589 (Feb. 15, 2019) (“Original Notice”).

⁴ 15 U.S.C. 78s(b)(2).

⁵ See Securities Exchange Act Release No. 85461 (Mar. 29, 2019), 84 FR 13339 (Apr. 4, 2019). The Commission designated May 16, 2019, as the date by which it should approve, disapprove, or institute proceedings to determine whether to disapprove the proposed rule change.

⁶ See Letters from Anonymous (Feb. 15, 2019) (“Anonymous Letter I”); Roald Johansson (Feb. 15, 2019) (“Johansson Letter”); Samantha Puddifoot (Feb. 17, 2019) (“Puddifoot Letter”); Paul Jones (Feb. 17, 2019) (“Jones Letter”); Nayna Mallya (Feb. 18, 2019) (“Mallya Letter”); Chris (Feb. 18, 2019) (“Chris Letter”); Avinash Shenoy (Feb. 18, 2019) (“Shenoy Letter I”); Samidos Santos (Feb. 18, 2019) (“Santos Letter”); Vineet Jain (Feb. 19, 2019) (“Jain Letter”); Adam Malkin (Feb. 19, 2019) (“Malkin Letter”); James Perrott (Feb. 19, 2019) (“Perrott Letter”); Sarah Malone (Mar. 6, 2019) (“Malone Letter”); Anthony Darwin (Mar. 6, 2019) (“Darwin Letter”).
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On May 7, 2019, NYSE Arca filed Amendment No. 1 to the proposed rule change, which replaced and superseded the proposed rule change as originally filed. On May 14, 2019, the Commission published the proposed rule change, as modified by Amendment No. 1, for notice and comment and instituted proceedings to determine whether to approve or disapprove the proposed rule change, as modified by Amendment No. 1.⁷ And on August 12, 2019, the Commission designated a longer period for Commission action on the proposed rule change.⁸ The Commission received additional comment letters in response to the Notice and OIP.⁹

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(“Darwin Letter”); D. Barnwell (Mar. 6, 2019) (“Barnwell Letter”); Dina Pinto (Mar. 6, 2019) (“Pinto Letter”); Louise Fitzgerald (Mar. 19, 2019) (“Fitzgerald Letter I”); Hugh Neil (Mar. 23, 2019) (“Neil Letter”); Martyn Denscombe (Mar. 23, 2019) (“Denscombe Letter”); Carl Ross (Mar. 23, 2019) (“C. Ross Letter”); Rob (Mar. 24, 2019) (“Rob Letter”); Emma Buckley (Mar. 25, 2019) (“Buckley Letter”); Paul Arsov (Mar. 27, 2019) (“Arsov Letter”); Shraavan Kumar (Mar. 29, 2019) (“Kumar Letter”); John Monterio (Mar. 30, 2019) (“Monterio Letter”); Bill Blake (Apr. 18, 2019) (“Blake Letter”). All comments on the proposed rule change can be found at: <https://www.sec.gov/comments/sr-nysearca-2019-01/srnysearca201901.htm>. Bitwise Asset Management also provided the Commission with a written presentation at a meeting on March 19, 2019. See Commission Staff Memorandum to File re: Meeting with Bitwise Asset Management, NYSE Arca, Inc., and VedderPrice P.C. (Mar. 20, 2019) (attaching Presentation to the Commission by Bitwise Asset Management (“Bitwise Submission I”)), available at <https://www.sec.gov/comments/sr-nysearca-2019-01/srnysearca201901-5164833-183434.pdf>.

⁷ See Securities Exchange Act Release No. 85854 (May 14, 2019), 84 FR 23125 (May 21, 2019) (“Notice and OIP”).

⁸ See Securities Exchange Act Release No. 86629 (Aug. 12, 2019), 84 FR 42036 (Aug. 16, 2019).

⁹ See Letters from Anonymous (May 14, 2019) (“Anonymous Letter II”); Avinash Shenoy (May 15, 2019) (“Shenoy Letter II”); Sam Ahn (May 15, 2019) (“Ahn Letter I”); Hu Liang, CEO, and Thomas Eidt, General Counsel, Omniex Holdings, Inc. (May 16, 2019) (“Omniex Letter”); John Bird (May 18, 2019) (“Bird Letter”); John LeStarge (May 20, 2019) (“LeStarge Letter”); Justin Ross (May 20, 2019) (“J. Ross Letter”); Matthew Hougan, Hong Kim, and Micah Lerner, Bitwise Asset Management (May 24, 2019) (“Bitwise Submission II”); Louise Fitzgerald (May 31, 2019) (“Fitzgerald Letter II”); Fan Xia (June 7, 2019) (“Xia Letter”); Kristin Smith, Blockchain Association (June 10, 2019) (“Blockchain Association Letter”); Stephen McKeon, Assoc. Professor of Finance, University of Oregon, Partner, Collaborative Fund (June 11, 2019) (“Collaborative Fund Letter”); Sam McIngvale, Chief Executive Officer, Coinbase Custody Trust Company, LLC (June 11, 2019) (“Coinbase Custody Letter”); James C. Wiandt, Donostia Ventures LLC (June 11, 2019) (“Donostia Ventures Letter”); Matthew Hougan, Hong Kim, and Micah Lerner, Bitwise Asset Management, Annotated Commentary on the Winklevoss Order (June 11, 2019) (“Bitwise Submission III”); Matthew Hougan, Global Head of Research, Bitwise Asset Management, CFE Futures Question (June 11, 2019) (“Bitwise Submission IV”); Matthew Hougan, Global Head of Research, Bitwise Asset Management, Bitfinex Question (June 11, 2019) (“Bitwise Submission V”); Bart Mallon, Co-Managing Partner, Cole-Frieman & Mallon LLP (June 12, 2019) (“Mallon Letter”); Robert (June 13, 2019) (“Robert Letter”); Sam Ahn (June 18, 2019) (“Ahn Letter II”); Sam Ahn (June 20, 2019) (“Ahn Letter III”); Matthew P. Walsh, Founding Partner, Castle Island Ventures (June 23, 2019) (“Castle Island Ventures Letter”); Spencer Bogart, General Partner, Blockchain Capital (June 24, 2019) (“Blockchain Capital Letter”); Scott Page (July 5, 2019) (“Page Letter”); Bill Blake (July 16, 2019) (“Blake

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This order disapproves the proposed rule change, as modified by Amendment No. 1. Although the Commission is disapproving this proposed rule change, the Commission emphasizes that its disapproval does not rest on an evaluation of whether bitcoin,¹⁰ or blockchain technology more generally, has utility or value as an innovation or an investment. Rather, the Commission is disapproving this proposed rule change because, as discussed below, NYSE Arca has not met its burden under the Exchange Act and the Commission’s Rules of Practice to demonstrate that its proposal is consistent with the requirements of Exchange Act Section 6(b)(5), and, in particular, the requirement that the rules of a national securities exchange be “designed to prevent fraudulent and manipulative acts and practices.”¹¹

When considering whether NYSE Arca’s proposal to list the Shares is designed to prevent fraudulent and manipulative acts and practices, the Commission has applied the same analysis used in its orders considering previous proposals to list a bitcoin-based commodity trust—the “Winklevoss Order”—and bitcoin-based trust issued receipts.¹² For example, in the

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Letter”); Tagomi Holdings Inc. (Sept. 18, 2019) (“Tagomi Letter”); Patrick Neal (Sept. 24, 2019) (“Neal Letter”). All comments on the proposed rule change, as modified by Amendment No. 1 can be found at: <https://www.sec.gov/comments/sr-nysearca-2019-01/smysearca201901.htm>. Bitwise Asset Management also provided the Commission with a written presentation at a meeting on September 12, 2019. See Commission Staff Memorandum to File re: Meeting with Bitwise Asset Management, Inc., NYSE Arca, Inc., Vedder Price P.C., and Wilson Sonsini Goodrich & Rosati (Sept. 17, 2019) (attaching Presentation to the Commission by Bitwise Asset Management (“Bitwise Submission VI”)), available at <https://www.sec.gov/comments/sr-nysearca-2019-01/smysearca201901-6135582-192240.pdf>.

¹⁰ Bitcoins are digital assets that are issued and transferred via a decentralized, open-source protocol used by a peer-to-peer computer network through which transactions are recorded on a public transaction ledger known as the “Bitcoin Blockchain.” The Bitcoin protocol governs the creation of new bitcoins and the cryptographic system that secures and verifies bitcoin transactions. The proposed rule change, as modified by Amendment No. 1, describes the exchange-traded product’s underlying asset as a “digital asset” and as a “commodity,” see Notice and OIP, *supra* note 7, 84 FR at 23127–28, and describes the exchange-traded product as a Commodity-Based Trust. For the purpose of considering this proposal, this order describes a bitcoin as a “digital asset” and as a commodity.

¹¹ 15 U.S.C. 78f(b)(5).

¹² See Order Setting Aside Action by Delegated Authority and Disapproving a Proposed Rule Change, as Modified by Amendments No. 1 and 2, To List and Trade Shares of the Winklevoss Bitcoin Trust, Securities Exchange Act Release No. 83723 (July 26, 2018), 83 FR 37579 (Aug. 1, 2018) (SR-BatsBZX-2016-30). The
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Winklevoss Order, the Commission explained that, although surveillance-sharing agreements with markets relating to underlying assets are not the exclusive means by which an exchange-traded product (“ETP”) listing exchange can meet its obligations under Exchange Act Section 6(b)(5), such agreements are a widely used means for exchanges that list ETPs to meet their obligations, and the Commission has long recognized their importance.¹³ The Commission found in the Winklevoss Order and in orders considering bitcoin-based trust issued receipts, that, if the listing exchange for an ETP fails to establish that the underlying commodity market is inherently resistant to fraud and manipulation,¹⁴ or that other means to prevent fraudulent and manipulative acts and practices will be sufficient, the listing exchange must enter into a surveillance-sharing agreement with a regulated market of significant size relating to the underlying or reference

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Commission also notes that orders were issued by delegated authority on the following matters, which are under review before the Commission: Order Disapproving a Proposed Rule Change to List and Trade the Shares of the ProShares Bitcoin ETF and the ProShares Short Bitcoin ETF, Securities Exchange Act Release No. 83904 (Aug. 22, 2018), 83 FR 43934 (Aug. 28, 2018) (NYSEArca-2017-139) (“ProShares Order”); Order Disapproving a Proposed Rule Change Relating to Listing and Trading of the Direxion Daily Bitcoin Bear 1X Shares, Direxion Daily Bitcoin 1.25X Bull Shares, Direxion Daily Bitcoin 1.5X Bull Shares, Direxion Daily Bitcoin 2X Bull Shares, and Direxion Daily Bitcoin 2X Bear Shares Under NYSE Arca Rule 8.200-E, Securities Exchange Act Release No. 83912 (Aug. 22, 2018), 83 FR 43912 (Aug. 28, 2018) (SR-NYSEArca-2018-02) (“Direxion Order”); and Order Disapproving a Proposed Rule Change to List and Trade the Shares of the GraniteShares Bitcoin ETF and the GraniteShares Short Bitcoin ETF, Securities Exchange Act Release No. 83913 (Aug. 22, 2018), 83 FR 43923 (Aug. 28, 2018) (SR-CboeBZX-2018-001) (“GraniteShares Order”).

¹³ See Winklevoss Order, supra note 12, 83 FR at 37580. See also id., at 37592 n.202 and accompanying text (discussing previous Commission approvals of commodity-trust ETPs); GraniteShares Order, supra note 12, 83 FR at 43925–27 nn.35–39 and accompanying text (discussing previous Commission approvals of commodity-futures ETPs). The hallmarks of a surveillance-sharing agreement are that the agreement provides for the sharing of information about market trading activity, clearing activity, and customer identity; that the parties to the agreement have reasonable ability to obtain access to and produce requested information; and that no existing rules, laws, or practices would impede one party to the agreement from obtaining this information from, or producing it to, the other party. See Winklevoss Order, supra note 12, 83 FR at 37592–93.

¹⁴ Winklevoss Order, supra note 12, 83 FR at 37582. While the Commission has not applied a “cannot be manipulated” standard to such proposals, the burden is on the listing exchange to demonstrate the validity of its contention that the underlying market is uniquely resistant to market manipulation and fraudulent activity and to establish that the requirements of the Exchange Act have been met. See id. In the Winklevoss Order, the Commission found that, even if the record had supported the proposition that some features of bitcoin and bitcoin markets mitigate some types of manipulation to some degree, such mitigation would be insufficient to justify dispensing with the detection and deterrence of fraud and manipulation provided by surveillance-sharing agreements with significant, regulated markets. See id., at 37586.

assets since “[s]uch agreements provide a necessary deterrent to manipulation because they facilitate the availability of information needed to fully investigate a manipulation if it were to occur.”¹⁵

The listing exchange must enter into a surveillance-sharing agreement with a regulated market of significant size relating to the underlying or reference assets. In this context, the terms “significant market” and “market of significant size” include a market (or group of markets) as to which (a) there is a reasonable likelihood that a person attempting to manipulate the ETP would also have to trade on that market to successfully manipulate the ETP, so that a surveillance-sharing agreement would assist in detecting and deterring misconduct, and (b) it is unlikely that trading in the ETP would be the predominant influence on prices in that market.¹⁶ Thus, a surveillance-sharing agreement must be entered into with a “significant market” to assist in detecting and deterring manipulation of the ETP, because a person attempting to manipulate the ETP is reasonably likely to also engage in trading activity on that “significant market.” Consistent with these principles, for the commodity-trust ETPs approved to date for listing and trading, there has been in every case at least one significant, regulated market for trading futures on the underlying commodity, and the ETP listing exchange has entered into surveillance-

¹⁵ Id. at 37580 (citing Amendment to Rule Filing Requirements for Self-Regulatory Organizations Regarding New Derivative Securities Products, Securities Exchange Act Release No. 40761 (Dec. 8, 1998), 63 FR 70952, 70954, 70959 (Dec. 22, 1998) (File No. S7-13-98)). See also ProShares Order, supra note 12, 83 FR at 43936; Direxion Order, supra note 12, 83 FR at 43914; GraniteShares Order, supra note 12, 83 FR at 43924. The Commission has stated that it considers two markets that are members of the Intermarket Surveillance Group to have a comprehensive surveillance-sharing agreement with one another, even if they do not have a separate bilateral surveillance-sharing agreement. See Winklevoss Order, supra note 12, 83 FR at 37580 n.19.

¹⁶ See Winklevoss Order, supra note 12, 83 FR at 37594. This definition is illustrative and not exclusive. There could be other types of “significant markets” and “markets of significant size,” but this definition is an example that will provide guidance to market participants. See id.

sharing agreements with, or held Intermarket Surveillance Group membership in common with, that market.¹⁷

As discussed further below, Bitwise Asset Management, Inc. (collectively with its affiliates, “the Sponsor”)¹⁸ argues that the proposal addresses the Commission’s analysis because (1) the “real” bitcoin spot market—as opposed to the “fake” and non-economic bitcoin spot market—and the Trust’s net asset value (“NAV”) process are each uniquely resistant to market manipulation and fraudulent activity; and (2) NYSE Arca has entered into a surveillance-sharing agreement with a regulated bitcoin futures market of significant size.¹⁹ As support for its propositions, the Sponsor has presented an analysis of the bitcoin spot market that asserts that a small set of identified platforms have “real” trading volume, unlike the remaining 95% of the spot bitcoin market, which the Sponsor asserts is dominated by fake and non-economic activity, such as wash trades.²⁰ The Sponsor would base its pricing mechanism for the proposed ETP on this purportedly “real” segment of the market, and the Sponsor’s analyses and comments focus solely on this segment of the market when asserting that the underlying bitcoin market is uniquely resistant to manipulation.²¹ Additionally, NYSE Arca asserts that its existing surveillance procedures are adequate to properly monitor trading of the Shares and to detect and

¹⁷ See id.

¹⁸ Amendment No. 1 identifies Bitwise Investment Advisers, LLC as the Sponsor, see Notice and OIP, supra note 7, 84 FR at 23126. Bitwise Asset Management, Inc. authored the comment letters and presentations submitted on behalf of the Sponsor in support of NYSE Arca’s proposal. For purposes of this Order, the Sponsor’s affiliate Bitwise Index Services, LLC will also be referred to as the Sponsor.

¹⁹ See id. at 23128, 23134; Bitwise Submission I, supra note 6, at 84; Bitwise Submission III, supra note 9, at 51. With respect to key elements of its proposal—such as several assertions about the nature of the underlying bitcoin markets and their susceptibility to manipulation—NYSE Arca conveys the position of the Sponsor. This Order will therefore address statements in the Notice and OIP that recount what the Sponsor asserts along with other representations and comments by the Sponsor.

²⁰ See Bitwise Submission I, supra note 6, at 23, 60; Bitwise Submission II, supra note 9, at 2, 34–36. See infra Section III.B.1(c) for discussion of the Sponsor’s methodology for distinguishing “real” trading volume from fake and non-economic activity.

²¹ See Bitwise Submission I, supra note 6, at 67–69, 91, 118; Bitwise Submission II, supra note 9, at 13.

deter violations of NYSE Arca's rules and federal securities laws,²² and that approval of the proposal would be consistent with the protection of investors and the public interest.²³

Accordingly, the Commission examines below whether the proposed rule change, as modified by Amendment No. 1, is consistent with Section 6(b)(5) of the Exchange Act by addressing in Section III.B.1 below assertions that bitcoin and the relevant bitcoin market are uniquely resistant to manipulation and fraudulent activity; addressing in Section III.B.2 below assertions that other means are available to prevent fraudulent and manipulative activity in the Shares; addressing in Section III.B.3 below assertions that NYSE Arca has entered into a surveillance-sharing agreement with a regulated market of significant size related to bitcoin; and addressing in Section III.C below assertions that the proposal is consistent with the protection of investors and the public interest. Because, among other things, the Sponsor has asserted that 95% of the bitcoin spot market consists of fake and non-economic activity, but has not established that it has in fact identified the "real" bitcoin market, or that the "real" bitcoin market is isolated from the fraudulent and manipulative activity, we find, in each case, that NYSE Arca has not met its burden to demonstrate that its proposal is consistent with the requirements of Exchange Act Section 6(b)(5), and therefore the Commission disapproves this proposed rule change.

II. DESCRIPTION OF THE PROPOSED RULE CHANGE, AS MODIFIED BY AMENDMENT NO. 1

As described in detail in the Notice and OIP,²⁴ NYSE Arca proposes to list and trade the Shares under NYSE Arca Rule 8.201-E, which covers the listing and trading of Commodity-

²² See Notice and OIP, supra note 7, 84 FR at 23136.

²³ See id.

²⁴ See Notice and OIP, supra note 7.

Based Trust Shares on NYSE Arca.²⁵ Bitwise Investment Advisers, LLC would be the Sponsor of the Trust.²⁶

According to NYSE Arca, the investment objective of the Trust would be to provide exposure to bitcoin at a price that reflects the purportedly “real” bitcoin spot market—as opposed to the “fake” and non-economic bitcoin market²⁷—where investors can purchase and sell bitcoin, minus the expenses of the Trust’s operation.²⁸ The Trust would use the Bitwise Daily Bitcoin Reference Price to calculate its daily NAV, and the Sponsor would produce the Bitwise Daily Bitcoin Reference Price once per day at 4:00 p.m. E.T., using the prices and volume from selected platforms that trade bitcoin in the bitcoin spot market (“platforms” or “trading platforms”) that the Sponsor asserts currently account for substantially all of the “real” spot global volume of bitcoin traded on such platforms, excluding trading in capital-controlled countries.²⁹ To calculate the Bitwise Daily Bitcoin Reference Price, the Sponsor would examine six five-minute periods leading up to 4:00 p.m. E.T., calculate the volume-weighted median price of each of these periods, and then calculate an equal-weighted average of the six volume-weighted median prices.³⁰

²⁵ See NYSE Arca Rule 8.201-E (permitting the listing and trading of “Commodity-Based Trust Shares,” defined as a security (a) that is issued by a trust that holds a specified commodity deposited with the trust; (b) that is issued by such trust in a specified aggregate minimum number in return for a deposit of a quantity of the underlying commodity; and (c) that, when aggregated in the same specified minimum number, may be redeemed at a holder’s request by such trust, which will deliver to the redeeming holder the quantity of the underlying commodity).

²⁶ See Notice and OIP, supra note 7, 84 FR at 23126.

²⁷ See infra Section III.B.1(c)(i) (describing the Sponsor’s assertions about the nature and extent of “fake” and non-economic trading in the bitcoin market).

²⁸ See Notice and OIP, supra note 7, 84 FR at 23126.

²⁹ NYSE Arca, the Sponsor, and other commenters may refer to the spot trading of bitcoin on “exchanges.” The platforms that trade bitcoin in the bitcoin spot market are not registered with the Commission as national securities exchanges. See Sections 5 and 6 of the Exchange Act, 15 U.S.C. 78e, 78f.

³⁰ See Notice and OIP, supra note 7, 84 FR at 23131. See also id. at 23130 n.20 (describing the reduction in the number of platforms used to calculate the Bitwise Daily Bitcoin Reference Price from ten to nine).

NYSE Arca would also calculate an intraday indicative value (“IIV”) every fifteen seconds during the core trading day, based on the Bitwise Real-Time Bitcoin Price. The Sponsor would calculate the Bitwise Real-Time Bitcoin Price from the same set of selected platforms with purportedly “real” volume, using a volume-weighted price methodology. Instead of equally weighting prices captured over six five-minute periods, however, the Bitwise Real-Time Bitcoin Price would use only the price from the last trade on each platform, and it would use the trailing thirty-minute volume on those platforms as a weighting factor.³¹

III. DISCUSSION

A. The Applicable Standard for Review

The Commission must consider whether NYSE Arca’s proposal is consistent with Exchange Act Section 6(b)(5), which requires, in relevant part, that the rules of a national securities exchange be designed “to prevent fraudulent and manipulative acts and practices” and “to protect investors and the public interest.”³² Under the Commission’s Rules of Practice, the “burden to demonstrate that a proposed rule change is consistent with the Exchange Act and the

³¹ See *id.* at 23132. Further details regarding the Trust and the Shares, including investment strategies, calculation of NAV and IIV, creation and redemption procedures, and additional background information about bitcoins and the Bitcoin network, among other things, can be found in the Notice and OIP (see *supra* note 7) and the registration statement filed with the Commission on Form S-1/A (File No. 333-229180) under the Securities Act of 1933 (“Registration Statement”), as applicable.

³² 15 U.S.C. 78f(b)(5). Pursuant to Section 19(b)(2) of the Exchange Act, 15 U.S.C. 78s(b)(2), the Commission must disapprove a proposed rule change filed by a national securities exchange if it does not find that the proposed rule change is consistent with the applicable requirements of the Exchange Act. Exchange Act Section 6(b)(5) states that an exchange shall not be registered as a national securities exchange unless the Commission determines that “[t]he rules of the exchange are designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest; and are not designed to permit unfair discrimination between customers, issuers, brokers, or dealers, or to regulate by virtue of any authority conferred by this title matters not related to the purposes of this title or the administration of the exchange.” 15 U.S.C. 78f(b)(5).

rules and regulations issued thereunder ... is on the self-regulatory organization [‘SRO’] that proposed the rule change.”³³

The description of a proposed rule change, its purpose and operation, its effect, and a legal analysis of its consistency with applicable requirements must all be sufficiently detailed and specific to support an affirmative Commission finding,³⁴ and any failure of an SRO to provide this information may result in the Commission not having a sufficient basis to make an affirmative finding that a proposed rule change is consistent with the Exchange Act and the applicable rules and regulations.³⁵ Moreover, “unquestioning reliance” on an SRO’s representations in a proposed rule change is not sufficient to justify Commission approval of a proposed rule change.³⁶

B. Whether NYSE Arca Has Met its Burden to Demonstrate that the Proposal Is Designed to Prevent Fraudulent and Manipulative Acts and Practices

In analyzing whether the NYSE Arca has met its burden to demonstrate that its proposal is consistent with Exchange Act Section 6(b)(5), the Commission examines below whether the record supports the Sponsor’s assertions that bitcoin and the relevant bitcoin market are uniquely resistant to manipulation and fraudulent activity such that a sufficient surveillance-sharing agreement is unnecessary. See infra Section III.B.1. The Commission first addresses whether the record demonstrates that the inherent properties of bitcoin would make the proposed ETP uniquely resistant to manipulation. See infra Section III.B.1(a). The Commission next addresses the Sponsor’s contention that, based on its analysis, “when fake and/or non-economic data is removed, the remaining or ‘real’ market for bitcoin is significantly smaller, more orderly and

³³ Rule 700(b)(3), Commission Rules of Practice, 17 CFR 201.700(b)(3).

³⁴ See id.

³⁵ See id.

³⁶ Susquehanna Int’l Group, LLP v. Securities and Exchange Commission, 866 F.3d 442, 447 (D.C. Cir. 2017).

more regulated than commonly understood,”³⁷ and whether, focusing solely on the asserted characteristics of the “real” market for bitcoin, the record demonstrates that the nature of the “real” spot market for bitcoin would make the proposed ETP uniquely resistant to manipulation. See infra Section III.B.1(b). The Commission then addresses whether the record demonstrates that the Sponsor, through its analysis, has shown that the “real” spot market for bitcoin is isolated from other trading platforms that may be dominated by fake or non-economic trading, such that the proposed ETP based on those trading platforms in the identified “real” market would be uniquely resistant to manipulation. See infra Section III.B.1(c). The Commission also considers whether the record demonstrates that any additional aspects of the Trust and its methods for determining NAV, handling creations and redemptions, and calculating fees (see infra Section III.B.1(d)), or NYSE Arca’s rules, including its surveillance procedures (see infra Section III.B.2), would provide sufficient means to prevent fraud and manipulation. The Commission concludes that NYSE Arca has not demonstrated that a surveillance-sharing agreement with a significant, regulated market is unnecessary.

The Commission then examines whether the record supports the Sponsor’s assertion that the bitcoin futures market, as represented by bitcoin futures listed and traded on the Chicago Mercantile Exchange (“CME”), is a significant, regulated market, such that a surveillance-sharing agreement with that market would provide a necessary deterrent to manipulation because it would facilitate the availability of information needed to fully investigate a manipulation if it were to occur.³⁸ See infra Section III.B.3. The Commission addresses the Sponsor’s comparison

³⁷ Notice and OIP, supra note 7, 84 FR at 23129.

³⁸ The Sponsor’s arguments address both trading on the CME and the Cboe Futures Exchange (“CFE”), see, e.g., id., at 23134, but the Commission notes that the CFE ceased offering new bitcoin futures contracts as of March 2019. See New CFE Products Being Added in March 2019 – Update, Cboe (Mar. 14, 2019), available at (footnote continued...)

of the size of the bitcoin futures and spot markets and the Sponsor’s representations about the correlation of prices between these markets, as well as whether the record establishes that there is a reasonable likelihood that a person attempting to manipulate the proposed ETP would also have to trade on the bitcoin futures market to manipulate the proposed ETP. The Commission concludes that—because NYSE Arca has not demonstrated that the bitcoin futures market is “significant,” as the Commission has interpreted that term in this context³⁹—NYSE Arca has not met its burden to demonstrate that its proposal is consistent with Exchange Act Section 6(b)(5). Finally, the Commission addresses and rejects other factors that the Sponsor contends support approval. See infra Section III.B.4.

1. Assertions That Bitcoin and the Bitcoin Market Are Uniquely Resistant to Market Manipulation and Fraudulent Activity

(a) *The Sponsor’s Assertions about the Inherent Properties of Bitcoin*

(i) Representations Made and Comments Received

The Sponsor argues that the digital nature of bitcoin makes it unique compared to other commodities in three important ways—fungibility, transportability, and “exchange tradability”—that combine to provide unique protections against, and allow bitcoin to be uniquely resistant to, attempts at price manipulation.⁴⁰ The Sponsor represents that bitcoin is a globally fungible commodity with low transaction costs, near-zero transportation costs that allow nearly

(...footnote continued)

https://markets.cboe.com/resources/product_update/2019/New-CFE-Products-Being-Added-in-March-2019-Update.pdf (last visited Oct. 7, 2019).

³⁹ See supra note 16 and accompanying text.

⁴⁰ See Notice and OIP, supra note 7, 84 FR at 23133; Bitwise Submission I, supra note 6, at 114; Bitwise Submission III, supra note 9, at 47. See also Omniex Letter, supra note 9, at 4 (stating that, as the Sponsor has detailed, the digital nature of bitcoin makes it unique due to “exchange-tradability,” fungibility, and transportability).

instantaneous transportation, and low-to-zero storage costs.⁴¹ According to the Sponsor, bitcoin is globally fungible because a bitcoin is the same anywhere in the world.⁴² In addition, a commenter compares the fungibility of bitcoin to that of gold and states that this fungibility reduces the overhead costs of evaluating the qualities of each asset to arrive at a fair price.⁴³

The Sponsor represents that bitcoin is inherently transportable at a cost approaching zero and can be safely stored at established, regulated third-party custodians, in a “limitless” amount, at costs of 0% to 1.5% a year.⁴⁴ A commenter states that bitcoin’s portability is a valuable and unprecedented attribute and states that bitcoin can be quickly and easily transferred anywhere in the world.⁴⁵ While the Sponsor points to spreads of \$0.01 on certain bitcoin platforms as evidence of low transaction costs,⁴⁶ when discussing the limitations of arbitrage quality in the bitcoin market, the Sponsor also acknowledges the presence of certain frictions, including trading fees, withdrawal fees, withdrawal times and hedging costs, risk of default or computer hacking, and difficulties operating across different countries and fiat currencies.⁴⁷

The Sponsor argues that having price discovery for bitcoin conducted on the open market—bitcoin’s purported “exchange tradability”—makes bitcoin unique as compared to other

⁴¹ See Notice and OIP, supra note 7, 84 FR at 23128; Bitwise Submission I, supra note 6, at 14.

⁴² See Notice and OIP, supra note 7, 84 FR at 23128; Bitwise Submission I, supra note 6, at 15.

⁴³ See Blockchain Capital Letter, supra note 9, at 6.

⁴⁴ See Notice and OIP, supra note 7, 84 FR at 23129; Bitwise Submission I, supra note 6, at 17–18; Bitwise Submission II, supra note 9, at 2.

⁴⁵ See Blockchain Capital Letter, supra note 9, at 5–6 (noting that bitcoin’s reduced transaction fees and accelerated transaction timeframe lower barriers to enter the market).

⁴⁶ See Notice and OIP, supra note 7, 84 FR at 23129; Bitwise Submission I, supra note 6, at 16.

⁴⁷ See Bitwise Submission II, supra note 9, at 65–66 (describing trading fees on two bitcoin platforms that range from 0.00% to 0.25% and withdrawal fees that “can range from a little to a lot,” including 3% for substantial U.S. dollar withdrawals on one bitcoin platform). The Sponsor represents that the U.S. dollar, Euro, and Japanese Yen are examples of fiat currencies. See id. at 15.

commodities that have their prices set using off-market, “coordinated fix pricing.”⁴⁸ The Sponsor points to recent market manipulation scandals that it states were driven by coordinated fix pricing, including those related to the London Interbank Offered Rate (“LIBOR”) in 2012, global forex in 2013, the gold fix in 2014, and the Australian Bank Bill Swap Rate in 2016.⁴⁹ In addition, the Sponsor asserts that bitcoin’s lack of a physical delivery location makes it unique and prevents cornering, a form of manipulation in the commodities market.⁵⁰

(ii) Analysis

The Commission concludes that the record does not demonstrate that bitcoin’s asserted fungibility, transportability, and “exchange-tradability” make bitcoin uniquely resistant to manipulation. The manipulation of asset prices can occur through trading activity that creates a false impression of supply or demand,⁵¹ and the Commission concludes that the Sponsor’s concessions that 95% of the reported trading in bitcoin is “fake” or non-economic (including wash trading or trading that is simply fabricated)⁵²—and that the early bitcoin market may have

⁴⁸ See Notice and OIP, supra note 7, 84 FR at 23133; Bitwise Submission III, supra note 9, at 47, 137. The Sponsor acknowledges that conducting price discovery in an open, transparent, online setting introduces risks, but asserts that these risks must be weighed against the benefits of open price discovery and can be controlled through the design of the Trust. See Notice and OIP, supra note 7, 84 FR at 23133; Bitwise Submission III, supra note 9, at 137.

⁴⁹ See Notice and OIP, supra note 7, 84 FR at 23133; Bitwise Submission I, supra note 9, at 116; Bitwise Submission III, supra note 9, at 137.

⁵⁰ See Notice and OIP, supra note 7, 84 FR at 23133; Bitwise Submission III, supra note 9, at 47. For example, Amendment No. 1 states that, in May 2011, the U.S. Commodity Futures Trading Commission (“CFTC”) filed suit against trading firms for attempting to manipulate the price of oil by cornering the market for oil storage in Cushing, Oklahoma. See Notice and OIP, supra note 7, 84 FR at 23133. According to Amendment No. 1, a disconnect between the size of the storage market in the reference price market (Cushing) and the much larger real market for WTI crude oil created an opportunity for individuals and firms to attempt to profit from artificially manipulating the small market for storage while holding larger positions in the underlying commodity. See id. at 23133.

⁵¹ See Winklevoss Order, supra note 12, 83 FR at 37585.

⁵² See Bitwise Submission I, supra note 6, at 23; Bitwise Submission II, supra note 9, at 2, 35–36. A “wash trade” is a transaction such as a purchase and sale simultaneously or within a short period of time, that involves no changes in beneficial ownership, and is a means of creating artificial market activity. See In re Silseth, Release No. 7317, 1996 WL 427988, at *1 & n.3 (July 30, 1996); Reddy v. CFTC, 191 F.3d 109, 115 (2d Cir. 1999).

(footnote continued...)

been subject to market manipulation⁵³—effectively concede that the properties of bitcoin do not make it inherently resistant to manipulation.⁵⁴

Moreover, contrary to the Sponsor’s argument, the Commission does not agree that the relative fungibility of an asset makes it inherently resistant to manipulation and notes that fungible assets, such as securities and exchange-traded derivatives, trade subject to substantial regulatory oversight and surveillance-sharing agreements that would be unnecessary if fungibility were sufficient protection against manipulation.⁵⁵ Further, transportation and storage costs for bitcoin are not zero, contrary to the Sponsor’s claims,⁵⁶ as bitcoin mining and recording transactions to the blockchain have costs. Bitcoin mining involves significant costs for electrical power and computer hardware, and the Sponsor acknowledges that bitcoin is subject to transaction fees charged by trading platforms, withdrawal fees, expenses for custody arrangements, and other factors that impose frictions on trading.⁵⁷ The Sponsor also points to the presence of a spread on bitcoin platforms,⁵⁸ which, even if small, indicates the presence of

(...footnote continued)

Wash trading is manipulative and defrauds investors. See id.; Santa Fe Indus., Inc. v. Green, 430 U.S. 462, 476–77 (1977); Ernst & Ernst v. Hochfelder, 425 U.S. 185, 199 (1976).

⁵³ See Bitwise Submission III, supra note 9, at 49 (describing reports of manipulation at the failed Mt. Gox platform in 2013).

⁵⁴ The Commission also notes that several commenters have asserted that bitcoin prices can be manipulated. See infra notes 69–73 and accompanying text.

⁵⁵ The Commission notes that, while the Sponsor asserts that bitcoin is fungible to the degree that it is “the same anywhere in the world” and that all bitcoin are treated equally, see supra notes 40–43 and accompanying text, if a market participant seeks to trade bitcoins on a trading platform that complies with Anti-Money Laundering (“AML”) and Know Your Customer (“KYC”) standards, those bitcoins may be subject to review regarding their provenance and may not be accepted if they have previously been used for money laundering, drug trades, human trafficking, or other criminal purposes.

⁵⁶ See supra notes 44–47 and accompanying text.

⁵⁷ See supra notes 44, 47, and accompanying text. See also Registration Statement, supra note 31, at 9, 12 (recognizing transaction costs and fees).

⁵⁸ See supra note 46 and accompanying text.

trading costs. Therefore claims in the record about bitcoin’s fungibility and transportability do not suffice to establish unique resistance to manipulation.⁵⁹

While the Sponsor attempts to distinguish bitcoin from certain commodities that have their prices set using off-market, coordinated fix pricing and asserts that bitcoin’s use of prices set in the open market makes it uniquely resistant to certain forms of manipulation that have been witnessed with such commodities,⁶⁰ the Commission has required the listing exchange for a derivatives securities product to have a surveillance-sharing agreement even where the underlying was exchange-traded.⁶¹ And, as discussed further below,⁶² NYSE Arca has not demonstrated that the bitcoin market itself, or the segment of the market used for the proposed ETP’s pricing mechanism, is uniquely resistant to manipulation. Thus, the Commission cannot conclude that the nature of bitcoin itself would make the proposed ETP uniquely resistant to manipulation, such that a surveillance-sharing agreement with a significant, regulated market would not be required.

(b) The Sponsor’s Assertions about the Nature of the Spot Market for Bitcoin

The Sponsor contends that it has identified a “real” spot market for bitcoin that is isolated from the remaining 95% of the bitcoin spot market, which the Sponsor asserts is dominated by “fake” or non-economic trading, and the Sponsors proffers its methodology for distinguishing this “real” bitcoin trading from fake or non-economic bitcoin trading. In this subsection of the

⁵⁹ Contrary to the Sponsor’s characterization that bitcoin is available in a “limitless” amount, see supra note 44, the Registration Statement represents that the Bitcoin protocol currently “limits both the total amount of bitcoin that will be produced and the rate at which it is released” such that the “supply of bitcoin is programmatically limited to 21 million bitcoin.” Registration Statement, supra note 31, at 1, 19.

⁶⁰ See supra notes 48–50, and accompanying text.

⁶¹ See infra note 135 and accompanying text (concerning equity options).

⁶² See infra Sections III.B.1(b) and III.B.1(c) for additional discussion of the spot market for bitcoin.

order, the Commission analyzes the Sponsor’s claims regarding the “real” spot market as identified by the Sponsor and examines whether the record demonstrates that the nature of trading in, and the degree of regulation of, this “real” bitcoin spot market make it uniquely resistant to manipulation. And, in the following subsection of this order,⁶³ the Commission analyzes the Sponsor’s proffered methodology for isolating “real” bitcoin trading activity from fake or non-economic activity—an analysis that bears on the nature of the spot market for bitcoin considered in this section, because the purportedly “real” bitcoin spot market that the Sponsor identifies cannot be uniquely resistant to manipulation unless it is free from the influence of prices derived from fake or non-economic trading, or fraudulent or manipulative activity, in the broader bitcoin market.

(i) Representations Made and Comments Received

(A) The Sponsor’s Assertions Regarding Arbitrage and Efficiency in the Bitcoin Spot Market

The Sponsor asserts that, once fake and non-economic trading have been removed, the remaining “real” market for bitcoin, as identified by the Sponsor’s research, is significantly smaller, more orderly, and more regulated “than commonly understood,” and moreover, that this “real” market is uniquely resistant to manipulation.⁶⁴ The Sponsor asserts that bitcoin trades at a single price on “real” trading platforms globally, that extremely effective arbitrage is in place between those platforms, and that a distributed market has emerged in which no single platform represents the majority of “real” trading volume.⁶⁵ The Sponsor asserts that these characteristics

⁶³ See *infra* Section III.B.1(c).

⁶⁴ See Notice and OIP, *supra* note 7, 84 FR at 23129, 23133; Bitwise Submission I, *supra* note 6, at 23.

⁶⁵ See Notice and OIP, *supra* note 7, 84 FR at 23133; Bitwise Submission I, *supra* note 6, at 117–118; Bitwise Submission III, *supra* note 9, at 47. The Sponsor argues that these characteristics of the bitcoin market arise from bitcoin’s fungibility and transportability, as discussed further above in Section III.B.1(a).

of the “real” bitcoin market provide unique resistance to manipulation because an attempt to manipulate the market would need to involve a non-trivial amount of bitcoin’s total global liquidity and either be coordinated simultaneously across multiple platforms or involve a significant spike in volume on a single platform (which would trigger review as part of the Sponsor’s NAV process).⁶⁶ Therefore, according to the Sponsor, any attempt at manipulation would be relatively difficult, risky, and costly to carry out.⁶⁷ In addition, a commenter asserts that bitcoin has a highly liquid secondary market that is conducive to an efficient market and price discovery.⁶⁸ Several commenters generally assert that manipulation is present in the bitcoin market⁶⁹ or provide evidence of manipulation in the bitcoin market, including Ponzi schemes;⁷⁰

⁶⁶ See Notice and OIP, supra note 7, 84 FR at 23133; Bitwise Submission I, supra note 6, at 118.

⁶⁷ See Notice and OIP, supra note 7, 84 FR at 23133; Bitwise Submission I, supra note 6, at 117; Bitwise Submission III, supra note 9, at 33.

⁶⁸ See Blockchain Capital Letter, supra note 9, at 6 (asserting that these characteristics are partly a byproduct of bitcoin’s divisibility, fungibility, and portability).

⁶⁹ See Bird Letter, supra note 9 (asserting that bitcoin is not immune to manipulation by a group, individual, or software); Kumar Letter, supra note 6 (calling it “common knowledge” that the bitcoin market is manipulated); Perrott Letter, supra note 6 (stating that we are still very much in a volatile and manipulated market); Pinto Letter, supra note 6 (stating that the bitcoin market is volatile and manipulated by the very few); C. Ross Letter, supra note 6 (referring to manipulation as a “prime issue”); Shenoy Letter I, supra note 6 (incorporating letter from Avinash Shoney (Sept. 29, 2018), regarding SR-CboeBZX-2018-040 (“Shenoy Letter III”), at 1, available at <https://www.sec.gov/comments/sr-cboebzx-2018-040/srcboebzx2018040-4460679-175814.pdf>) (asserting that it is a “widely known fact” that the bitcoin market is manipulated).

⁷⁰ See Kumar Letter, supra note 6 (arguing that Ponzi schemes are common and referencing the recently shut down BitConnect platform).

spoofing, layering, and front running;⁷¹ trading by dominant market participants;⁷² and suspicious trading patterns or price movements.⁷³

The Sponsor argues that the “real” bitcoin market is organized, efficient, resilient, and robust, with “extremely tight spreads and effective arbitrage.”⁷⁴ The Sponsor asserts that spreads in the “real” bitcoin market make bitcoin one of the most tightly quoted financial instruments in the world.⁷⁵ For example, the Sponsor represents that in April 2019, the average median spread on the ten platforms that it identifies as “real”—Binance, Bitfinex, Coinbase Pro, Kraken, Bitstamp, bitFlyer, Gemini, itBit, Bittrex, and Poloniex⁷⁶—was \$1.31 and the five most liquid

⁷¹ See Shenoy Letter III, supra note 69, at 1, 8 (representing that spoofing, layering, and front-running are prevalent; that pump-and-dump schemes organized through messaging apps are ubiquitous and make use of coordinated actions of trading bots and the speed at which news spreads on social media; and that trading bots have been known to artificially inflate the price of cryptocurrencies by up to 300%). See also Shenoy Letter II, supra note 9, at 1 (stating that high-frequency traders have been using trading bots to front-run other investors in the equity world for several decades). This commenter asserts that, considering past manipulation of the markets for LIBOR, foreign currencies, U.S. Treasuries, gold, and silver, it would not be so hard to manipulate a smaller market such as the market for bitcoin. See Shenoy Letter III, supra note 69, at 1.

⁷² See Shenoy Letter III, supra note 69, at 1 (stating that research by economists indicates that it is likely that past events involved manipulation of bitcoin’s price by just one or two major players, and that miners, some of whom have a large concentration of power and large bitcoin positions, have an interest in seeing the price of bitcoin rise); Bird Letter, supra note 9 (asserting that trading by a single entity recently caused the price of bitcoin to drop more than \$1,000 in minutes across the market, including on the Sponsor’s identified “real” platforms, and that this incident disproves the assertion that bitcoin is uniquely resistant to manipulation).

⁷³ One commenter asserts that an observed digital-asset-trading pattern known as “Bart” frequently occurs around bitcoin futures expiry and may be caused by high-frequency traders. See Shenoy Letter III, supra note 69, at 1–2, 6, 7. This commenter represents that it is common to see price movement that appears to be market reaction to news before the news is released, which is indicative of market manipulation and insider trading. See id. at 3–5. This commenter also states that most bitcoin platforms do not block masked VPN IP addresses, raising questions about the ability of trading platforms to restrict access to authorized users only and prevent manipulation. See id. at 2–3. Another commenter refers to an apparent “price pump” of approximately \$800 million for bitcoin in under a week. See Perrott Letter, supra note 6. Another commenter states that three small platforms lost over \$200 million in investor funds in 2019. See Blake Letter II, supra note 9.

⁷⁴ See Notice and OIP, supra note 7, 84 FR at 23131; Bitwise Submission II, supra note 9, at 13, 85; Bitwise Submission III, supra note 9, at 147; Bitwise Submission VI, supra note 9, at 10. See also Omniex Letter, supra note 9, at 4 (stating that the Sponsor’s study demonstrates that the actual market for bitcoin is more orderly and efficient than commonly perceived and exhibits robust price discovery and effective arbitrage).

⁷⁵ See Notice and OIP, supra note 7, 84 FR at 23129; Bitwise Submission II, supra note 9, at 55–56. See also Notice and OIP, supra note 7, 84 FR at 23128 (asserting that the current efficiency of the spot bitcoin market matches or exceeds that of other major financial markets).

⁷⁶ See Bitwise Submission II, supra note 9, at 34–35.

“real” platforms had median spreads ranging from \$0.01 to \$1.75, constituting a range of 0.01% to 0.03% as compared to bitcoin’s trading price of around \$5,000 that month.⁷⁷

The Sponsor provides an analysis of arbitrage across the ten identified platforms in the “real” bitcoin spot market and concludes that prices on these platforms trade closely together and have their disparities rapidly arbitrated away.⁷⁸ According to the Sponsor, this conclusion holds regardless of venue, currency pair, or any other identifiable factor.⁷⁹ For the purposes of its analysis, the Sponsor has taken, once per second, the last-traded price on each of the ten platforms and used an equal-weighted average to calculate a real-time consolidated spot price (“consolidated price”).⁸⁰ The Sponsor has plotted the price of bitcoin on each of the ten platforms from January 2018 through mid-May 2019 on a chart, and concludes that it is “difficult to see meaningful gaps” between the prices on each platform.⁸¹ The Sponsor has then calculated the average deviation from the consolidated price for each of the ten platforms on a second-by-second basis since January 2019 and finds that the average deviation for any given platform ranged from 0.06% to 0.20% during that period, with an average deviation across all platforms of

⁷⁷ See *id.* at 55–56. See also Notice and OIP, *supra* note 7, 84 FR at 23129 (describing that the bitcoin platform Coinbase Pro had a median spread in March 2019 of \$0.01, with bitcoin valued at approximately \$5,000); Bitwise Submission I, *supra* note 6, at 16 (stating that, on leading platforms, bitcoin commonly trades with a \$0.01 spread with a price of approximately \$4,000), 28 (stating that at the time of a December 12, 2018, snapshot, Coinbase Pro had a spread of \$0.01, or 0.0003% based on bitcoin’s trading price of \$3,419), 111 (stating that average spreads on the “real” platforms ranged from 0.01% to 0.10% and that two of these platforms had a single tick as their median spread). But see Bitwise Submission II, *supra* note 9, at 70 n.182 (referring to one platform (Poloniex) as “too small and illiquid to support meaningful arbitrage trading” and stating that another (Bitfinex) has a 3% fee on withdrawals that “rais[es] certain challenges for institutional arbitrage activity”).

⁷⁸ See Bitwise Submission II, *supra* note 9, at 60–65; Bitwise Submission III, *supra* note 9, at 31, 35.

⁷⁹ See Bitwise Submission III, *supra* note 9, at 37.

⁸⁰ See Bitwise Submission II, *supra* note 9, at 60 (stating that the Sponsor chose to use equal-weighting to remove any suggestion that one platform appears to trade closely to a consolidated price only because it has an undue influence over the consolidated price).

⁸¹ See *id.* at 60–61. See also Bitwise Submission I, *supra* note 6, at 67 (showing graph of prices on the ten platforms from January 2018 through mid-March 2019, and stating that they form a “singular” price).

0.12%.⁸² The Sponsor asserts that these results show that the platforms trade “incredibly tightly,” with average deviations at a level within the trading fees on the platforms.⁸³ Therefore, according to the Sponsor, the results suggest that institutional-quality arbitrageurs and algorithmic programs are at work to keep prices closely aligned.⁸⁴

In addition, the Sponsor has identified instances in which the price of bitcoin on a particular “real” platform deviated by more than 1% from the consolidated price during the 12 months starting in April 2018.⁸⁵ The Sponsor has then graphed the number of instances where a platform had a price deviation greater than 1% away from the consolidated price for a specific number of seconds, both across all ten “real” platforms and for each platform.⁸⁶ The Sponsor states that, in the aggregate, the results show that more than 50% of all pricing discrepancies greater than 1% were arbitrated away within 5 seconds and that more than 90% of all such pricing discrepancies were arbitrated away within 34 seconds.⁸⁷ According to the Sponsor, these results were remarkably consistent across all platforms and show that pricing discrepancies

⁸² See Bitwise Submission II, supra note 9, at 61–62. The Sponsor provides an earlier analysis that shows average deviations for each platform ranging from 0.13% to 0.25% from January 2018 through mid-March 2019. See Notice and OIP, supra note 7, 84 FR at 23131; Bitwise Submission I, supra note 6, at 68. See also Bitwise Submission III, supra note 9, at 35 (representing that its earlier analysis shows that the average deviation in price between each of the ten platforms and the globally integrated price in April 2019 was between 0.06% and 0.19%).

⁸³ See Bitwise Submission II, supra note 9, at 62 (noting that “taker” trading fees on the ten platforms range from 0.04% to 0.35%, and that a market participant would need to incur these fees on both sides of the trade to immediately capture the arbitrage opportunity). See also Bitwise Submission I, supra note 6, at 68 (stating that average deviations are well within the expected arbitrage band when taking into account platform-level fees of around 30 basis points, volatility, and hedging costs).

⁸⁴ See Bitwise Submission II, supra note 9, at 62.

⁸⁵ See id.

⁸⁶ See id. at 62–64.

⁸⁷ See id. at 63; Bitwise Submission III, supra note 9, at 33, 35. In its earlier analysis, the Sponsor has examined deviations greater than 1% that lasted more than 100 seconds. Based on a provided histogram of these instances, the Sponsor concludes that such sustained deviations were extremely rare and of diminished frequency in recent months. See Notice and OIP, supra note 7, 84 FR at 23131; Bitwise Submission I, supra note 6, at 69; Bitwise Submission III, supra note 9, at 33, 35.

greater than 1% were rare and quickly arbitrated away.⁸⁸ The Sponsor also asserts that these results suggest that bitcoin has a global network of spot platforms that are tightly arbitrated and form a single, global price.⁸⁹ The Sponsor states that its conversations with leading market makers suggest that such market makers maintain capital at multiple platforms to facilitate this arbitrage.⁹⁰

The Sponsor argues that the efficiency of the “real” bitcoin market has improved dramatically over the past eighteen months and is now approaching its practical limit, in that prices are “nearly perfectly” arbitrated, spreads are “incredibly tight,” and the market is liquid on a twenty-four hour, seven-day-a-week basis.⁹¹ In particular, according to the Sponsor, the strength of arbitrage on the bitcoin spot market and quality of that market has improved significantly since December 2017.⁹² The Sponsor has charted the average deviation of the price of bitcoin on the ten “real” spot platforms, as measured against the consolidated price, monthly from January 2018 through April 2019, and concludes that the data show a pronounced downward trend, indicating increasingly efficient arbitrage.⁹³ The Sponsor attributes improvements in arbitrage on the bitcoin platforms in part to the December 2017 introduction of the bitcoin futures market, which allows arbitrageurs to gain short exposure in bitcoin and

⁸⁸ See Bitwise Submission II, supra note 9, at 62–63.

⁸⁹ See id. at 65.

⁹⁰ See Bitwise Submission III, supra note 9, at 33.

⁹¹ See Notice and OIP, supra note 7, 84 FR at 23131; Bitwise Submission I, supra note 6, at 111.

⁹² See Notice and OIP, supra note 7, 84 FR at 23128; Bitwise Submission II, supra note 9, at 72; Bitwise Submission III, supra note 9, at 3.

⁹³ See Notice and OIP, supra note 7, 84 FR at 23128; Bitwise Submission II, supra note 9, at 72. See also Bitwise Submission I, supra note 6, at 106 (providing a graph of aggregate monthly price deviation from December 2017 through mid-March 2019). In addition, the Sponsor has provided an updated chart showing the average deviation of the price of bitcoin on the “real” spot platforms, as measured against the consolidated price, through August 2019, showing similar average deviations in May through August 2019 as compared to the earlier portion of 2019. See Bitwise Submission VI, supra note 9, at 7, 24.

created a two-sided market with easy hedging, and to the growth of contract volume on that market.⁹⁴ The Sponsor also points to the February 2018 emergence and subsequent growth of the institutional short lending market for bitcoin, which allows arbitrageurs to capitalize on short term price dislocations in the bitcoin market.⁹⁵ The Sponsor further asserts that the 2018 entry of well-established, institutional, and algorithmic market-makers into the bitcoin market has brought increased order and efficiency to the market.⁹⁶ The Sponsor states that it “does not discount the possibility” that the bitcoin market was susceptible to market manipulation in 2013, prior to the development of material regulation or the entry of large market participants, but asserts that concerns raised about market conditions during that earlier period are mitigated by the current existence of a well-functioning, distributed market with multiple, significant platforms connected by efficient arbitrage.⁹⁷

The Sponsor asserts that efficient arbitrage exists despite the apparent existence of arbitrage opportunities in the bitcoin market (from apparent pricing discrepancies on different

⁹⁴ See Bitwise Submission I, supra note 6, at 107; Bitwise Submission II, supra note 9, at 82 (citing May 2018 letter from Federal Reserve Bank of San Francisco that explains that the impact of the futures market aligns with the impact the introduction of futures has had on other markets); Bitwise Submission III, supra note 9, at 3; Bitwise Submission VI, supra note 9, at 7. See also Bitwise Submission III, supra note 9, at 145 (quoting May 2018 letter from Federal Reserve Bank of San Francisco that stated that the rapid raise in the price of bitcoin, and subsequent price drop following the issuance of bitcoin futures, is consistent with pricing dynamics suggested elsewhere in financial theory and previously observed trading behavior).

⁹⁵ See Bitwise Submission I, supra note 6, at 110; Bitwise Submission II, supra note 9, at 82–83; Bitwise Submission III, supra note 9, at 3; Bitwise Submission VI, supra note 9, at 7.

⁹⁶ See Notice and OIP, supra note 7, 84 FR at 23128; Bitwise Submission I, supra note 6, at 108–109; Bitwise Submission II, supra note 9, at 83; Bitwise Submission III, supra note 9, at 3; Bitwise Submission VI, supra note 9, at 7. The Sponsor states that expansion of the bitcoin custody market in 2018 and 2019, and emergence of a strong market for insurance on custodied bitcoin assets, has also increased efficiency of the market and enabled a larger number of market makers to enter the market. See Bitwise Submission II, supra note 9, at 84; Bitwise Submission III, supra note 9, at 3. See also Bitwise Submission VI, supra note 9, at 8 (stating that bitcoin custody has become “fully institutional” and detailing the custodians for bitcoin that were regulated or had insurance in 2017, 2018, and 2019).

⁹⁷ See Bitwise Submission III, supra note 9, at 49 (describing reports of manipulation at the failed Mt. Gox platform in 2013).

platforms), because these apparent opportunities are usually driven by one of three factors.⁹⁸ First, the Sponsor represents that platforms that exaggerate and fake their volume utilize algorithms that generally display prices that mirror the “real” bitcoin spot market, but that these algorithms rely on trend-following software rather than effective arbitrage and thus deviate more from the consolidated price.⁹⁹ Second, the Sponsor asserts that bitcoin prices on platforms in capital-controlled markets may trade at significant sustained premiums or discounts to the integrated global market because capital controls make it difficult or impossible to conduct arbitrage.¹⁰⁰ Third, the Sponsor states that certain platforms conduct trading in so-called cryptographic “stablecoins,”¹⁰¹ rather than in the U.S. dollar.¹⁰² According to the Sponsor, while stablecoins have values that fluctuate, many popular data aggregators assume that these stablecoins maintain a stable price of \$1.00, and therefore do not incorporate the fluctuating nature of stablecoins when displaying bitcoin prices, unlike arbitrageurs that do take this into account.¹⁰³

⁹⁸ See Bitwise Submission II, supra note 9, at 66–68.

⁹⁹ See id. at 67.

¹⁰⁰ See id. See also Bitwise Submission III, supra note 9, at 31 (stating that capital controls prevent arbitrage or make it significantly more difficult, which is why the Bitwise Daily Bitcoin Reference Price methodology excludes platforms domiciled in capital-controlled countries).

¹⁰¹ The term “stablecoin” is a marketing term broadly used in the industry to refer to a digital asset that purports to minimize price volatility. However, the Commission notes that the use of the term to refer to a digital asset does not mean that the asset does in fact exhibit stability.

¹⁰² See Bitwise Submission II, supra note 9, at 67.

¹⁰³ See id. at 67–68. For example, the Sponsor states that the price of the stablecoin Tether (USDT) has fluctuated between \$0.91 and \$1.05 in the past year, but that coinmarketcap.com displays the price of bitcoin-USDT on the Binance platform as if Tether is worth \$1, which makes it appear as though bitcoin is trading at a premium on Binance. See id. See also Bitwise Submission I, supra note 6, at 72–74 (asserting that if you adjust for the price of Tether, prices for bitcoin-USD and bitcoin-USDT trading pairs line up “exactly”).

Several commenters assert that there is effective arbitrage in the bitcoin market.¹⁰⁴ One commenter represents that, in recent years, spreads in the bitcoin market have narrowed, arbitrage has improved, and the market has become increasingly efficient, due to the entry of large, established market makers; the launch and growth of a large, regulated bitcoin derivatives market; the development of a short lending market in bitcoin; and the emergence of algorithmically-driven trading tools.¹⁰⁵ Another commenter states that, through the use of high-frequency trading or automated trading “bots,” global arbitrage in the bitcoin market is very cost-effective and efficient.¹⁰⁶ A third commenter asserts that effective arbitrage exists among the platforms with “real” volume.¹⁰⁷ In addition, one commenter states that the global bitcoin market is deep and robust, divided among multiple spot platforms and futures exchanges, and supported by institutional market makers, and that it is unlikely that an attempt to manipulate the market could last long.¹⁰⁸

In contrast, one commenter asserts that the Sponsor’s claims regarding arbitrage and the expectation that bitcoin would trade at the same price across platforms are not true because bitcoin trades at different prices in different countries, such as what can be seen in South Korea or what was seen in India during the peak at the end of 2017.¹⁰⁹ This commenter adds that platforms that operate across regions may be able to conduct arbitrage and circumvent some capital controls, which creates the possibility that the existence of this “channel” adds noise to

¹⁰⁴ See Shenoy Letter III, supra note 69, at 9; Omniex Letter, supra note 9, at 4; Castle Island Ventures Letter, supra note 9, at 3.

¹⁰⁵ See Castle Island Ventures Letter, supra note 9, at 3.

¹⁰⁶ See Shenoy Letter III, supra note 69, at 9.

¹⁰⁷ See Omniex Letter, supra note 9, at 4.

¹⁰⁸ See Donostia Ventures Letter, supra note 9, at 4.

¹⁰⁹ See Fitzgerald Letter II, supra note 9.

the estimation of capital controls.¹¹⁰ This commenter also states that the bitcoin market is not orderly because the supply is inelastic and the demand drivers are opaque.¹¹¹

(B) The Sponsor’s Assertions Regarding Regulation of the Bitcoin Spot Market

The Sponsor asserts that the “real” bitcoin spot market is “substantially more regulated” than would be suggested by “conventional wisdom.”¹¹² Specifically, the Sponsor argues that the ten platforms in the “real” bitcoin market are more established, more likely to be located in developed markets, more regulated, and more likely to utilize sophisticated market surveillance tools than the broader set of platforms that report significant volume.¹¹³ The Sponsor represents that all ten of the “real” platforms are domiciled or based in what it describes as “developed” markets.¹¹⁴ The Sponsor further represents that nine of these ten platforms are regulated by the U.S. Department of Treasury’s Financial Crimes Enforcement Network (“FinCEN”) division as Money Services Businesses (“MSB”) and six are regulated by the New York State Department of Financial Services (“NYDFS”) under its BitLicense program.¹¹⁵ According to the Sponsor, the requirements for a BitLicense include having to implement measures designed to detect,

¹¹⁰ See id.

¹¹¹ See id.

¹¹² See Bitwise Submission II, supra note 9, at 48.

¹¹³ See Notice and OIP, supra note 7, 84 FR at 23130. See also Bitwise Submission II, supra note 9, at 85 (stating that the bitcoin market is supported by increasingly effective regulation on the spot platforms); Bitwise Submission III, supra note 9, at 171 (stating that many bitcoin spot platforms face significant regulation).

¹¹⁴ See Notice and OIP, supra note 7, 84 FR at 23130. The Sponsor states that approximately 30% of all “real” reported volume takes place on platforms domiciled in the United States, with the remainder domiciled in Malta, Hong Kong, the United Kingdom, and Japan. See Bitwise Submission I, supra note 6, at 64; Bitwise Submission II, supra note 9, at 47–48; Bitwise Submission III, supra note 9, at 9, 67.

¹¹⁵ See Notice and OIP, supra note 7, 84 FR at 23130; Bitwise Submission I, supra note 6, at 81; Bitwise Submission II, supra note 9, at 49; Bitwise Submission III, supra note 9, at 9. See also Tagomi Letter, supra note 9, at 2. The Sponsor states that the MSB license has associated obligations designed to ensure that FinCEN can protect against money laundering, and include having an AML policy, having customer identification and verification policies, and filing Suspicious Activity Reports for suspicious customer transactions. See Notice and OIP, supra note 7, 84 FR at 23130; Bitwise Submission I, supra note 6, at 77–78; Bitwise Submission II, supra note 9, at 50–51.

prevent, and respond to fraud, attempted fraud, and similar wrongdoing, including market manipulation, and to monitor, control, investigate, and report back to the NYSDFS regarding any wrongdoing.¹¹⁶ The Sponsor states that five of the ten “real” platforms have robust internal or third-party market surveillance tools to monitor, report, and correct for abusive trading behavior.¹¹⁷ According to the Sponsor, this trend toward adopting market surveillance tools has been, in part, a response to the MSB and BitLicense regulations.¹¹⁸

One commenter states that BitLicense regulation has driven advances in the bitcoin market and that, after the NYSDFS added guidelines in 2018 requiring surveillance and reporting of market manipulation, the platforms with BitLicenses have implemented sophisticated market surveillance tools that help foster a safer and more established market.¹¹⁹ Another commenter states that, to obtain a BitLicense, the platforms must demonstrate to the NYSDFS that they meet the requirements for a BitLicense and must commit to ongoing review by the NYSDFS, which, according to the commenter, means that these platforms “have embraced the need for policies, procedures, and surveillance.”¹²⁰ This commenter asserts that it believes that all of the platforms in which it participates, including those outside of New York, must have a robust surveillance program and that the listed platforms meet these standards and are continuing to develop these programs.¹²¹ This commenter further asserts that these platforms typically employ sophisticated

¹¹⁶ See Notice and OIP, supra note 7, 84 FR at 23130; Bitwise Submission II, supra note 9, at 51–52; Bitwise Submission III, supra note 9, at 73.

¹¹⁷ See Notice and OIP, supra note 7, 84 FR at 23130; Bitwise Submission I, supra note 6, at 82; Bitwise Submission II, supra note 9, at 53; Bitwise Submission III, supra note 9, at 73.

¹¹⁸ See Bitwise Submission II, supra note 9, at 52.

¹¹⁹ See Castle Island Ventures Letter, supra note 9, at 2–3.

¹²⁰ See Tagomi Letter, supra note 9, at 2 (representing that the BitLicense requirements mostly relate to the prevention of money laundering and to the security of the platforms’ systems).

¹²¹ See id.

third-party surveillance tools that use the qualities of bitcoin to scrutinize transaction histories and conduct surveillance.¹²²

The Sponsor acknowledges that the Trust's Registration Statement represents that the platforms on which bitcoin trades are "relatively new and, in some cases, largely unregulated, and, therefore may be more exposed to fraud and security breaches than established, regulated exchanges for other financial assets or instruments, which could have a negative impact on the performance of the Trust."¹²³ The Sponsor states that regulation of bitcoin platforms varies and is not equivalent to the regulation of national securities exchanges, but that many bitcoin spot platforms face significant regulation and are well-capitalized, and that the design of the Trust would mitigate the impact of the failure of any individual platform.¹²⁴ Further, the Sponsor states that the regulations surrounding MSB licenses and BitLicenses, while not as extensive as the obligations of and oversight for national securities exchanges and futures exchanges, provide business oversight and regulatory compliance requirements and thus convey certain critical protections.¹²⁵

The Sponsor states that, out of the ten identified "real" platforms, Binance is the only one not registered as an MSB and Kraken is the only significant U.S.-based platform that has not pursued a BitLicense, and that both platforms have expressed a strong preference for self-

¹²² See id.

¹²³ See Bitwise Submission III, supra note 9, at 171 (quoting Registration Statement, supra note 31, at 7).

¹²⁴ See id. (acknowledging that regulation of bitcoin trading platforms is "not pari passu with the regulation of national securities exchanges"); Registration Statement, supra note 31, at 15 ("The trading for spot bitcoin occurs on multiple trading venues" that are "not regulated in the same manner as traditional stock and bond exchanges"); Bitwise Submission I, supra note 6, at 76 ("We acknowledge that we're using the term 'regulated' loosely here. We are not implying that bitcoin spot exchanges are 'regulated markets' or that they are on an equal legal status with national securities exchanges or futures exchanges, but rather that the 10 bitcoin spot exchanges highlighted earlier interface with other forms of regulation."). For additional discussion about the Sponsor's arguments that the design of the Trust would make the proposed ETP uniquely resistant to manipulation, see infra Section III.B.1(d).

¹²⁵ See Notice and OIP, supra note 7, 84 FR at 23130; Bitwise Submission II, supra note 9, at 49.

regulation and voiced concerns about regulatory overreach.¹²⁶ The Sponsor asserts that Binance and Kraken have been aggressive in adopting internal tools to address AML, KYC, and other concerns through the use of technology.¹²⁷ Further, the Sponsor attributes the “conventional wisdom” that the bitcoin platforms are almost entirely unregulated to characterizations of the “fake” platforms that dominate the reported trading volume, rather than the ten platforms with “real” trading volume.¹²⁸

Several commenters assert that there is a lack of regulation in the bitcoin market.¹²⁹ One commenter states that while regulation of the bitcoin market is improving through the Commission’s efforts to root out bad actors, it still is not comparable to the traditional markets, and that bitcoin platforms lack real-time and historical surveillance capabilities to identify and stop suspicious trading activities.¹³⁰ Another commenter states that, while most platforms have AML and KYC requirements for transactions between fiat currencies and digital assets, many allow participants to open accounts to trade between digital assets and other digital assets with only a name and e-mail address, bypassing AML and KYC requirements.¹³¹

(ii) Analysis

The Commission concludes that the record does not demonstrate that the identified characteristics of the “real” spot market, such as the claimed effectiveness of arbitrage and the

¹²⁶ See Bitwise Submission II, supra note 9, at 53–54. The Sponsor states that Bittrex pursued a BitLicense, but was denied by the NYDFS. See id. at 54 n.140.

¹²⁷ See id. at 54.

¹²⁸ See id. at 48–49.

¹²⁹ See Kumar Letter, supra note 6 (calling it “common knowledge” that the bitcoin market is unregulated and manipulated); Page Letter, supra note 9 (referring to the bitcoin sector as unregulated); Shenoy Letter II, supra note 9, at 1 (suggesting that currently the bitcoin market does not have precise regulation or apparent external oversight).

¹³⁰ See Shenoy Letter III, supra note 69, at 1, 10.

¹³¹ See Fitzgerald Letter II, supra note 9.

presence of some degree of regulation, establish that the segment of the market that the Sponsor identifies—or that NAV and IIV pricing based on that segment—are uniquely resistant to manipulation sufficient to justify dispensing with the detection and deterrence of fraud and manipulation provided by surveillance-sharing agreements with significant, regulated markets. While the Sponsor asserts that the “real” bitcoin market is “more orderly and more regulated than commonly understood,”¹³² characteristics of the identified “real” segment of the bitcoin market that differ from the common understanding of the broader bitcoin market do not establish that the “real” bitcoin market is uniquely resistant to manipulation. Moreover, as discussed further below in Section III.B.1(c), the Sponsor asserts that 95% of the spot bitcoin market consists of fake and non-economic activity,¹³³ but has not established that the “real” bitcoin market is isolated from that fraudulent and manipulative activity.¹³⁴

(A) Arbitrage and Efficiency in the Bitcoin Spot Market

The record does not establish that the effectiveness of arbitrage in the “real” spot bitcoin market would, by itself, protect against the influence of fake and non-economic trading in the broader bitcoin market or provide unique resistance to manipulation sufficient to do away with the need for a surveillance-sharing agreement with a significant, regulated market. The Commission also notes that its reliance on surveillance-sharing agreements for derivative securities products has not been limited to ETPs based on commodities, but has also extended to

¹³² See supra note 64 and accompanying text.

¹³³ See supra note 52 and accompanying text.

¹³⁴ See infra Section III.B.1(c) for discussion about the Sponsor’s assertions that it has separated the “real” bitcoin spot market from the rest of the market that is dominated by fake and non-economic trading, and that fake volume does not impact price discovery on the “real” bitcoin spot market. The Commission emphasizes that, as discussed further below, if prices on the identified “real” spot market are affected by manipulative activity on other platforms, then it would fundamentally undercut any claims that the “real” market is uniquely resistant to manipulation.

equity options based on securities listed on national securities exchanges.¹³⁵ Accordingly, even efficient price arbitrage does not eliminate the need for surveillance-sharing agreements. There is no evidence in the record that arbitrage in the bitcoin market is of such unique effectiveness that it would essentially insulate the proposed ETP from attempts at manipulation in a way beyond that of existing derivative securities products that trade on highly regulated markets.

Further, even if the record showed that the quality of available arbitrage in the “real” bitcoin market makes manipulation more difficult, costly, and risky to carry out than it would be otherwise,¹³⁶ that would speak to providing some resistance to manipulation, rather than a unique resistance to manipulation that would justify dispensing with a surveillance-sharing agreement with a significant, regulated market. Similarly, the Commission concludes that claims by the Sponsor and a commenter that the “real” spot bitcoin market is organized, efficient, resilient, or robust, or has tight spreads,¹³⁷ do not suffice to distinguish the proposed ETP from other

¹³⁵ See Winklevoss Order, *supra* note 12, 84 FR at 37593 (citing Securities Exchange Act Release No. 33555 (Jan. 31, 1994), 59 FR 5619, 5621 (Feb. 7, 1994) (SR-Amex-93-28) (order approving listing of options on American Depositary Receipts)). The Commission has also required a surveillance-sharing agreement in the context of index options even when (i) all of the underlying index component stocks were either registered with the Commission or exempt from registration under the Exchange Act; (ii) all of the underlying index component stocks traded in the U.S. either directly or as ADRs on a national securities exchange; and (iii) effective international ADR arbitrage alleviated concerns over the relatively smaller ADR trading volume, helped to ensure that ADR prices reflected the pricing on the home market, and helped to ensure more reliable price determinations for settlement purposes, due to the unique composition of the index and reliance on ADR prices. See Securities Exchange Act Release No. 26653 (Mar. 21, 1989), 54 FR 12705, 12708 (Mar. 28, 1989) (SR-Amex-87-25) (stating that “surveillance-sharing agreements between the exchange on which the index option trades and the markets that trade the underlying securities are necessary” and that “[t]he exchange of surveillance data by the exchange trading a stock index option and the markets for the securities comprising the index is important to the detection and deterrence of intermarket manipulation.”). And the Commission has required a surveillance-sharing agreement even when approving options based on an index of stocks traded on a national securities exchange. See Securities Exchange Act Release No. 30830 (June 18, 1992), 57 FR 28221, 28224 (June 24, 1992) (SR-Amex-91-22) (stating that surveillance-sharing agreements “ensure the availability of information necessary to detect and deter potential manipulations and other trading abuses”). See also Registration Statement, *supra* note 31, at 2 (stating that the “real” bitcoin spot market “is now operating at a level of efficiency and scale similar in material respects to established global equity, fixed income and commodity markets”).

¹³⁶ See *supra* notes 66–67 and accompanying text.

¹³⁷ See *supra* notes 68, 74–77, and accompanying text.

derivative securities products, such as equity options, where the Commission required surveillance-sharing agreements with a significant, regulated market even though effective arbitrage exists among the relevant markets.

The Sponsor “does not discount the possibility” that the early bitcoin market may have been subject to market manipulation, particularly with respect to reports of manipulation regarding the failed Mt. Gox platform in 2013.¹³⁸ Rather, the Sponsor points to improvements in the strength of arbitrage and overall market quality in the bitcoin spot market since December 2017.¹³⁹ The Commission concludes that the Sponsor’s acknowledgement of past fraud and manipulation in the bitcoin spot market, combined with the Sponsor’s reliance on changes in the market within just the last two years, effectively concedes that bitcoin and the bitcoin spot market are not inherently resistant to manipulation.¹⁴⁰

The Commission also believes that arbitrage in the “real” bitcoin market would not prevent manipulation by, for example, an actor with a dominant ownership position in bitcoin. The existence of concentrated holdings in an asset presents a meaningful risk of manipulation. An actor or group of actors acting in concert who obtain or have a pre-existing dominant ownership position in actual bitcoin would not necessarily find it prohibitively expensive to engage in manipulation across the trading platforms the Sponsor identifies, despite efficient

¹³⁸ See Bitwise Submission III, supra note 9, at 49.

¹³⁹ See supra notes 91–97 and accompanying text.

¹⁴⁰ In the Winklevoss Order, the Commission concluded that there was an insufficient basis in the record before it to decide that the bitcoin spot market is inherently resistant to manipulation. See Winklevoss Order, supra note 12, 83 FR at 37585–86 (noting that possible sources of fraud and manipulation in the bitcoin spot market included (1) “wash” trading, (2) persons with a dominant position in bitcoin manipulating bitcoin pricing, (3) hacking of the Bitcoin network and trading platforms, (4) malicious control of the Bitcoin Network, (5) trading based on material, non-public information, including the dissemination of false or misleading information, (6) manipulative activity involving Tether, and (7) fraud and manipulation at Mt. Gox, a bitco in trading platform).

arbitrage on the identified “real” bitcoin market.¹⁴¹ Furthermore, there are other possible sources of fraud and manipulation in the purportedly “real” bitcoin market,¹⁴² including hacking of the trading platforms the Sponsor uses for its pricing mechanism,¹⁴³ malicious control of the Bitcoin Network,¹⁴⁴ and trading based on material non-public information.¹⁴⁵ Accordingly, the Commission cannot conclude that the “real” bitcoin market is uniquely resistant to manipulation.

Moreover, even to the extent that the spot market has evolved as the Sponsor asserts, NYSE Arca and the Sponsor have not demonstrated that these changes will endure and thus have not demonstrated that the relevant market is inherently resistant to manipulation. As the Trust’s Registration Statement acknowledges, bitcoin platforms are “relatively new ... and may be more

¹⁴¹ See id. at 37584, 37586–87, 37591. The Commission is unconvinced by the Sponsor’s assertions that no dominant market position can be exploited to manipulate bitcoin prices. See Bitwise Submission III, supra note 9, at 31 (discussing “The Not-So-Killer Whales of Bitcoin,” Chainalysis, Oct. 10, 2018, available at <https://blog.chainalysis.com/reports/bitcoin-whales-oct>). Indeed, the analysis that the Sponsor cites concludes that bitcoin “trading whales certainly have the capability of executing transactions large enough to move the market.” “The Not-So-Killer Whales of Bitcoin,” Chainalysis, Oct. 10, 2018. The cited analysis also concludes that a group of only 15 early bitcoin adopters hold over 33% of all outstanding bitcoin (id.), and the Sponsor has not demonstrated that these early adopters are unable to manipulate prices if they so choose. The cited analysis also concedes that 12.5% of the outstanding bitcoin is owned by what it characterizes as “criminal whales” (id.), and the Sponsor has not demonstrated that these “criminals” are unable to manipulate prices. This analysis fails to consider that persons who would together own a dominant market share can collude to manipulate bitcoin prices. See Winklevoss Order, supra note 12, 83 FR at 37586–87. And this analysis fails to consider that “pseudonymous bitcoin account holding means, among other things, that the number of accounts or number of trades would not reveal whether a person or group has a dominant ownership position in bitcoin, or is using or attempting to use a dominant ownership position to manipulate bitcoin pricing.” Id. at 37591.

¹⁴² See Winklevoss Order, supra note 12, 83 FR at 37585–86. See also notes 69–73 and accompanying text (summarizing comments asserting that Ponzi schemes, spoofing, layering, front running, market domination, and suspicious trading patterns or price movements occur in bitcoin markets).

¹⁴³ See Winklevoss Order, supra note 12, 83 FR at 37585. The Sponsor recognizes that the risk that a profit-motivated hacker can manipulate bitcoin prices up or down by hacking some trading venues while trading on other trading venues is “still a concern today.” Bitwise Submission III, supra note 9, at 45. See also Registration Statement, supra note 31, at 7 (“The nature of the assets held at bitcoin exchanges makes them appealing targets for hackers” and “[n]o bitcoin exchange is immune from these risks.”).

¹⁴⁴ See Winklevoss Order, supra note 12, 83 FR at 37585–86. The Sponsor recognizes that “[t]here is a theoretical risk that a malicious actor could attempt to exert control over the Bitcoin Network by conducting a so-called 51% attack, which would involve becoming the dominant source of mining power on the network,” and that “51% attacks can theoretically allow you to double spend bitcoin you already own or censor transactions of others.” Bitwise Submission III, supra note 9, at 45.

¹⁴⁵ See Winklevoss Order, supra note 12, 83 FR at 37585–86. The Sponsor “agree[s] with the Commission’s argument that the potential for material nonpublic information about bitcoin exists.” Bitwise Submission III, supra note 9, at 43.

exposed to fraud and security breaches than established, regulated exchanges for other financial assets or instruments.”¹⁴⁶ The Sponsor also argues that “many bitcoin spot exchanges face significant regulation and are well-capitalized” and that the Trust is designed in a way that would mitigate the impact that a failure of an individual platform would have on the Trust or its NAV or holdings.¹⁴⁷ This argument, however, focuses on the presence of some regulation and design features of the Trust, and does not demonstrate that the nature of the spot platforms makes them inherently resistant to manipulation.

The Sponsor has made sweeping claims that up to 95% of the volume reported by bitcoin platforms is wash trading or simply fabricated, while asking the Commission to approve the listing of a bitcoin ETP based upon a small segment of the market that it asserts is uniquely resistant to the influence of this activity.¹⁴⁸ These claims, when combined with statements regarding the relatively new state of the bitcoin market and, as discussed further below, the proposed ETP’s pricing mechanism,¹⁴⁹ suggest that further development of the market is needed to establish that the Sponsor’s representations remain sound.

¹⁴⁶ See supra note 123 and accompanying text. Furthermore, the nature of trading in bitcoin markets could change over time as market participants gain more experience. For example, institutional market-makers and short-term lenders could decide to pull back from the bitcoin market, or bitcoin futures contract volume could decrease and make hedging more difficult and expensive, affecting the spot market. Moreover, the use or adoption of bitcoin could contract, leading to a lower demand for bitcoin in the spot market and a subsequent impact on volumes and volatility.

¹⁴⁷ See supra notes 124–125 and accompanying text.

¹⁴⁸ See infra Section III.B.1(c).

¹⁴⁹ See infra note 369 and accompanying text (quoting statements in the Registration Statement that the Bitwise Daily Bitcoin Reference Price “is based on a new and untested calculation methodology”). In addition, see discussion infra note 465 and accompanying text regarding statements in the Registration Statement regarding the bitcoin futures market.

Further, the record does not demonstrate that arbitrage in the “real” spot market is as effective as the Sponsor claims.¹⁵⁰ While the Sponsor describes its analysis on arbitrage in the “real” spot market,¹⁵¹ it provides a selective and incomplete analysis. For example, the Sponsor presents the average deviation from the consolidated price over an approximately five-month period as a single data point for each platform,¹⁵² which may obscure transient events. The Sponsor’s analysis of the duration of 1% price deviations from the consolidated price also lumps together all deviations over 1%, regardless of size,¹⁵³ and thus obscures whether some deviations were quite large and how long a large deviation persists.¹⁵⁴

Moreover, in a separate context where the Sponsor attempts to explain why a particular market participant does not track prices for two of its identified “real” platforms, the Sponsor refers to one of these “real” platforms (Poloniex) as “too small and illiquid to support meaningful arbitrage trading” and states that another (Bitfinex) has a 3% fee on withdrawals that “rais[es] certain challenges for institutional arbitrage activity.”¹⁵⁵ In addition, statements by commenters

¹⁵⁰ Because the Sponsor does not include any markets in capital-controlled countries within its identified set of “real” platforms, based on difficulties in conducting arbitrage with platforms in such countries, the Commission does not consider the quality of arbitrage between the “real” platforms and such markets. See supra notes 100, 109–110, and accompanying text.

¹⁵¹ See supra notes 78–90, 93, and accompanying text. The Sponsor also describes its earlier analysis utilizing similar metrics over slightly different time periods. See supra notes 81–82, 87, and 93, and accompanying text.

¹⁵² See supra note 82 and accompanying text.

¹⁵³ See supra notes 85–88 and accompanying text.

¹⁵⁴ In addition, the Sponsor ignores that on the platform-level histograms, the scaling of the “y” axis that displays the deviation count varies considerably, reflecting the finding that on some of the platforms (e.g., bitFlyer) the 1% price deviations are more than ten times more frequent than on other platforms (e.g., Bitfinex). The Sponsor’s histograms compare deviation counts on the “y” axis of up to 120 for Binance and 700 for bitFlyer to deviation counts on the “y” axis of 20 for Bitfinex. See Bitwise Submission II, supra note 9, at 63–64. In addition, the Sponsor has generated a line graph showing the price of bitcoin on the ten “real” platforms for an approximately seventeen-month period and concludes that it is “difficult to see meaningful gaps” between each line. See supra note 81 and accompanying text. Yet, given the scaling used, in which grid lines represent an increase in the price of bitcoin by 2,000 USD, a deviation would need to be very large to produce perceptible gaps.

¹⁵⁵ See supra note 77.

that assert that arbitrage on the spot platforms is effective are conclusory and not supported with data.¹⁵⁶

(B) Regulation of the Spot Market

Even if the Commission assumes that the arbitrage among these “real” platforms is effective, the record does not demonstrate that the level of regulation present in the “real” bitcoin spot market provides a unique ability to deter and detect fraud and manipulation.¹⁵⁷ The Sponsor has not demonstrated that its selected platforms with “real” volumes are “regulated markets” comparable to a national securities exchange or futures exchange, although they may be registered with FinCEN or NYSDFS.¹⁵⁸

The Commission concludes, and the Sponsor itself expressly acknowledges, that the level of regulation on bitcoin spot platforms “varies” and is not equivalent to the obligations and oversight of national securities exchanges or futures exchanges.¹⁵⁹ The Sponsor does not argue that state or other federal regulation of the bitcoin spot platforms is a substitute for federal securities law standards, including the requirements of the Exchange Act. Indeed, the Sponsor agrees with the Commission that, irrespective of other applicable regulations, the Exchange Act here requires a comprehensive surveillance-sharing agreement with a regulated market of significant size relating to the underlying or reference assets.¹⁶⁰

¹⁵⁶ See supra notes 104–108 and accompanying text. But see supra notes 109–111 (questioning the effectiveness of arbitrage on the bitcoin spot markets).

¹⁵⁷ With respect to the assertion that all of the “real” platforms are domiciled or based in what the Sponsor terms “developed” markets (see supra note 114 and accompanying text), nothing in the record explains how this characteristic would make the platforms resistant to fraud and manipulative activity.

¹⁵⁸ See supra note 115–116 and accompanying text. See also supra notes 119–122 and accompanying text.

¹⁵⁹ See supra notes 123–125.

¹⁶⁰ The Sponsor “believe[s] that the Commission has correctly identified the need for, value of, and definition of surveilled derivatives market of significant size,” but argues that the CME futures market is “significant in size” compared to the “real” spot market it identifies. Bitwise Submission III, supra note 9, at 151. See also id. at 97 (stating that the Sponsor “agree[s] with the Commission and recognize[s] the importance of comprehensive
(footnote continued...)

Furthermore, there are substantial differences between the NYSDFS and FinCEN regulation versus the Commission’s regulation of the national securities exchanges. While there may be overlap between the Commission’s regulation and the NYSDFS’s and FinCEN’s regulation of digital assets,¹⁶¹ national securities exchanges are also, among other things, required to have rules that are “designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest.”¹⁶² Moreover, national securities exchanges must file proposed rules with the Commission regarding certain material aspects of their operations,¹⁶³ and the Commission has the authority to disapprove any such rule that is not consistent with the requirements of the Exchange Act.¹⁶⁴ Thus, national securities exchanges are subject to

(...footnote continued)

surveillance-sharing agreements to detect and deter fraudulent and manipulative activity,” and asserting that the CME bitcoin futures market is “significant” based on the Sponsor’s “understanding of the true size of the bitcoin spot market”). The argument that the CME bitcoin futures market is “significant” is addressed in Section III.B.3 below.

¹⁶¹ See *CFTC v. McDonnell*, 287 F. Supp. 3d 213, 220-23, 228 (E.D.N.Y.), adhered to on denial of reconsideration, 321 F. Supp. 3d 366 (E.D.N.Y. 2018).

¹⁶² 15 U.S.C. 78f(b)(5).

¹⁶³ 17 CFR 240.19b-4(a)(6)(i).

¹⁶⁴ Section 6 of the Exchange Act, 15 U.S.C. 78f, requires national securities exchanges to register with the Commission and requires an exchange’s registration to be approved by the Commission, and Section 19(b) of the Exchange Act, 15 U.S.C. 78s(b), requires national securities exchanges to file proposed rule changes with the Commission and provides the Commission with the authority to disapprove proposed rule changes that are not consistent with the Exchange Act. Designated Contract Markets (commonly called “futures markets”) registered with and regulated by the CFTC must comply with, among other things, a similarly comprehensive range of regulatory principles and must file rule changes with the CFTC. See, e.g., Designated Contract Markets (DCMs), CFTC, available at <http://www.cftc.gov/IndustryOversight/TradingOrganizations/DCMs/index.htm>.

Commission oversight of, among other things, their governance, membership qualifications, trading rules, disciplinary procedures, recordkeeping, and fees.¹⁶⁵

In any event, the Commission also finds persuasive several commenters that describe the deficiencies of regulation of the purportedly “real” spot market the Sponsor utilizes.¹⁶⁶

Significantly, Binance, based in Malta and the single largest bitcoin trading platform among the platforms the Sponsor identifies as “real”—representing 39% of the purportedly “real” bitcoin volume¹⁶⁷—has not registered with either FinCEN or the NYSDFS; four of the ten platforms the Sponsor utilizes—representing 69% of the purportedly “real” bitcoin volume¹⁶⁸—do not have a

¹⁶⁵ See Winklevoss Order, *supra* note 12, 83 FR at 37597. The Commission notes that the NYSDFS has issued “guidance” to supervised virtual currency business entities, stating that these entities must “implement measures designed to effectively detect, prevent, and respond to fraud, attempted fraud, and similar wrongdoing.” See Maria T. Vullo, Superintendent of Financial Services, NYSDFS, Guidance on Prevention of Market Manipulation and Other Wrongful Activity (Feb. 7, 2018), available at <https://www.dfs.ny.gov/docs/legal/industry/il180207.pdf>. The NYSDFS recognizes that its “guidance is not intended to limit the scope or applicability of any law or regulation” (*id.*), which would include the Exchange Act. One commenter asserts that, since the NYSDFS issued this guidance, “BitLicense exchanges have implemented sophisticated market surveillance tools from reputable firms like NICE Actimize, Irisium and NASDAQ, helping to foster a safer and more established crypto asset market.” Castle Island Ventures Letter, *supra* note 9, at 3. However, the commenter provides no additional information in support of these assertions, and the Commission cannot fully evaluate the NYSDFS guidance because, among other things, there is nothing further in the record before the Commission regarding how the NYSDFS guidance has been implemented either by the NYSDFS or by the purportedly “real” bitcoin trading platforms that hold BitLicenses. FinCEN’s guidance regarding the application of its regulations to digital assets notes that its guidance does not “affect the obligations of any of the participants described herein under other regulatory frameworks,” for example, obligations under “federal securities law.” FinCEN Guidance No. FIN-2019-G001: Application of FinCEN’s Regulation to Certain Business Models Involving Convertible Virtual Currencies, at 24 n.75 (May 9, 2019), available at <https://www.fincen.gov/sites/default/files/2019-05/FinCEN%20Guidance%20CVC%20FINAL%20508.pdf>. See also FinCEN Guidance No. FIN-2013-G001: Application of FinCEN’s Regulations to Persons Administering, Exchanging, or Using Virtual Currencies, at 1 n.1 (Mar. 18, 2013), available at <https://www.fincen.gov/sites/default/files/shared/FIN-2013-G001.pdf> (noting that FinCEN’s guidance “should not be interpreted as a statement by FinCEN about the extent to which [certain] activities comport with other federal or state statutes, rules, regulations, or orders.”).

¹⁶⁶ See *supra* notes 129–131 and accompanying text.

¹⁶⁷ See Bitwise Submission II, *supra* note 9, 35 (based on April 2019 volume).

¹⁶⁸ See Bitwise Submission III, *supra* note 9, at 125.

BitLicense from the NYSDFS; and half of the bitcoin platforms the Sponsor utilizes lack internal or third-party market surveillance tools.¹⁶⁹

The Commission also notes that NYSE Arca has not stated that it has entered or will enter into surveillance-sharing agreements with those “real” spot platforms that utilize surveillance tools. Moreover, even if NYSE Arca did enter into such agreements, it is not clear what ability NYSE Arca would have to compel the sharing of surveillance data. Unlike national securities exchanges, the bitcoin spot platforms are not self-regulatory organizations, and therefore do not have legal power to impose discipline upon their participants.

Therefore, the Commission concludes that the record does not demonstrate that the identified “real” market is uniquely resistant to manipulation, such that a surveillance-sharing agreement with a significant, regulated market would not be needed to adequately deter and detect fraud and manipulation.

(c) *The Sponsor’s Methodology for Distinguishing the “Real” Volume on the Bitcoin Spot Market from Fake or Non-Economic Trading Volume*

In the previous section, the Commission examines the Sponsor’s identified “real” spot market for bitcoin and asserted characteristics of that market, such as the presence of arbitrage and regulation, and considers whether the record establishes that this segment of the market is uniquely resistant to manipulation.¹⁷⁰ And, as discussed further in the next section, the Sponsor generally proposes to use prices and volumes from its identified “real” platforms to calculate the

¹⁶⁹ See supra notes 115, 117–122, and accompanying text. The Sponsor’s discussion about what protections the platforms Binance and Kraken have in place in the absence of FinCEN or BitLicense registration, see supra notes 126–128 and accompanying text, arguably infers the presence of some of the protections that might otherwise be provided by these specific registrations, rather than show a unique level of protection. In addition, the Sponsor notes that one platform (Bittrex) pursued a BitLicense but was denied by the NYSDFS, see supra note 126, but does not explain how the mere fact that this platform applied for a BitLicense is relevant to the consideration of whether that platform is regulated.

¹⁷⁰ See supra Section III.B.1(b).

Bitwise Bitcoin Daily Reference Price, which the Trust will use for NAV and IIV pricing.¹⁷¹ Yet, for the Commission to determine that effective arbitrage and regulation make this “real” segment of the market uniquely resistant to manipulation, the Commission would have to conclude that the Sponsor’s analysis correctly identifies the segment of the market that represents “real” volume and establishes that this segment is not affected by trading in other segments of the market that the Sponsor concedes is fake or non-economic. Therefore, the Commission examines below the Sponsor’s analysis of the bitcoin market to identify “real” versus fake or non-economic trading and the reliability of the Sponsor’s claims that its ten identified platforms represent the “real” volume on the spot bitcoin market. Further, the Commission examines whether the Sponsor has shown that prices on the broader bitcoin market do not influence price discovery on the identified “real” platforms.

(i) Representations Made and Comments Received

The Sponsor argues that through its research, it has identified certain platforms that represent substantially all of the “real” global spot market for bitcoin, as distinguished from the approximately 95% of the bitcoin spot market that the Sponsor identifies as rife with trading that is fake or non-economic in nature.¹⁷² In this context, the Sponsor considers as “fake volume” any reported trading volume that does not reflect legitimate price discovery, including wash trading and reports of trades that did not occur.¹⁷³ The Sponsor states that it has analyzed 83 platforms using three tests, described further below, and claims that, based on its analysis, the following

¹⁷¹ See infra Section III.B.1(d).

¹⁷² See Notice and OIP, supra note 7, 84 FR at 23129–30; Bitwise Submission I, supra note 6, at 60; Bitwise Submission II, supra note 9, at 34–35. The Sponsor states that the goal of its research was to identify those platforms with a significant prevalence of fake volume in a repeatable, data-driven manner. See Bitwise Submission II, supra note 9, at 19.

¹⁷³ See Bitwise Submission II, supra note 9, at 19; Registration Statement, supra note 31, at 3, 23–24. The Sponsor describes transactions that are reported by a platform without corresponding trading taking place as “fraudulent prints.” See Bitwise Submission II, supra note 9, at 19.

ten platforms have “real” volume—Binance, Bitfinex, Coinbase Pro, Kraken, Bitstamp, bitFlyer, Gemini, itBit, Bittrex, and Poloniex.¹⁷⁴ The Sponsor states that the average daily volume on these platforms for April 2019 was \$554,488,345.¹⁷⁵ According to the Sponsor, these results suggest that \$10.5 billion of the \$11 billion in reported average daily spot bitcoin volume, or roughly 95% of all reported volume, is fake volume or wash trading.¹⁷⁶

The Sponsor represents that platforms inflate or exaggerate trade volume in several ways, including by fraudulently printing trades, engaging directly in wash trading on their own platforms, and paying market makers to engage in wash trading.¹⁷⁷ The Sponsor further asserts that platforms have two powerful motives for exaggerating volume—attracting trader attention by appearing higher on data aggregators’ league tables (i.e., rankings for trading platforms) and attracting listings and attendant listing fees from initial coin offerings.¹⁷⁸ In addition to the Sponsor’s efforts to distinguish platforms with predominantly fake or non-economic trading from platforms with “real” volume,¹⁷⁹ the Sponsor provides other evidence of fake or non-economic trading in the bitcoin market.¹⁸⁰

¹⁷⁴ See Bitwise Submission II, supra note 9, at 34–35.

¹⁷⁵ See id. at 35.

¹⁷⁶ See id.

¹⁷⁷ See id. at 36–37. The Sponsor also represents that platforms economically incentivize trading activity by paying traders to trade and offer lower fee tiers or preferential trading to traders that attain high volumes of trade. See id. at 37. One commenter states that proprietary trading is standard on most platforms and makes up 20% of trading on some platforms. See Shenoy Letter III, supra note 69, at 1.

¹⁷⁸ See Bitwise Submission II, supra note 9, at 37.

¹⁷⁹ See infra Section III.B.1(c).

¹⁸⁰ See Notice and OIP, supra note 7, 84 FR at 23129 (describing that, in connection with the Sponsor’s initial analysis, the Sponsor has identified several widespread, superficial indicators of fake or non-economic trading volume, including perfectly consistent, alternating buy and sell orders of roughly equal size, relatively large reported spreads on platforms that report large volumes, relatively small real-world footprints for platforms with large reported volumes, multiple hours and days with zero volume not correlated with factors such as business hours or volatility, and roughly identical volume every hour of every day); Bitwise Submission I, supra note 6, at 24–39 (comparing Coinbase Pro, as a platform with a BitLicense that is generally well-known, with platforms CoinBene, RightBTC, and CHAOEX, and describing trading characteristics of the “suspicious” platform);

(footnote continued...)

The Sponsor claims that the results of its analysis are consistent with the findings from a previous similar study by the Sponsor using data from an earlier time period that identified the same ten platforms as having “actual volume.”¹⁸¹ The Sponsor asserts that after the findings from its earlier study became public, it received extensive media coverage and support from social media and thought leaders.¹⁸² According to the Sponsor, the results were also widely embraced by leading data providers in the digital asset market, with several displaying volume statistics based on the ten identified “real” platforms or admitting that concerns about reported data are “valid” and subsequently working to improve data transparency.¹⁸³ The Sponsor represents that nine of the platforms identified as having fake or non-economic volume reported a drop in volume of over 90% after the Sponsor’s analysis became public.¹⁸⁴ In addition, the Sponsor asserts that data patterns on certain platforms rapidly shifted to match the real-world patterns

(...footnote continued)

Bitwise Submission II, supra note 9, at 6–12 (asserting that the current reported data on bitcoin trading volume is surprising and describing the history of concerns around data reliability in the bitcoin market).

¹⁸¹ See Bitwise Submission I, supra note 6, at 60; Bitwise Submission II, supra note 9, at 35. The earlier study focused on data from March 4, 2019, through March 9, 2019, and the later study focused on data from April 28, 2019, through May 5, 2019. See Bitwise Submission II, supra note 9, at 19, 35. The Sponsor states that the earlier study showed that the “real” average daily spot bitcoin volume was \$273 million, as compared to \$6 billion in reported volume, indicating that roughly 95% of the volume was fake. See id. at 35. See also Notice and OIP, supra note 7, 84 FR at 23129–30; Bitwise Submission I, supra note 6, at 61. The Sponsor further represents that, in the earlier study, it excluded South Korean platforms from its analysis because they are an isolated market due to capital controls and that one additional platform passed all tests but was too small, with less than \$1 million average daily volume, to include as an identified “real” platform. See Bitwise Submission I, supra note 6, at 60.

¹⁸² See Bitwise Submission II, supra note 9, at 35–36. See also Bitwise Submission VI, supra note 9, at 13.

¹⁸³ See Bitwise Submission II, supra note 9, at 103–104; Bitwise Submission III, supra note 9, at 131. See also Bitwise Submission VI, supra note 9, at 14 (asserting that coinmarketcap.com confirmed that concerns raised in the report were “valid” and launched an initiative to improve its metrics, two digital asset data providers adopted the ten identified “real” platforms as representing the market, and one digital asset data provider launched transparency ratings that require verified data feeds for platforms with volume claims).

¹⁸⁴ See Bitwise Submission VI, supra note 9, at 15 (comparing average daily volume from March 2019 and August 2019). The Sponsor also represents that only three of the 73 platforms that it named as having fake or non-economic volume responded to the Sponsor’s research. See id. at 16.

identified by the Sponsor.¹⁸⁵ Further, the Sponsor asserts that its findings are consistent with the “common institutional understanding” of the actual market.¹⁸⁶

Several commenters question the Sponsor’s findings, which were made public after its initial study.¹⁸⁷ One commenter argues that the Sponsor’s analysis raises more questions than it answers and that, with manipulation a prime issue, if 95% of the platforms are reporting fake volume, then it is unwise to base an ETP on the remaining 5%.¹⁸⁸ Another commenter asserts that articles about the Sponsor’s initial study on online media were not a coincidence because online media has a financial interest in priming, or manipulating, the public to enhance its image, to poach customers, or to drive sales through fear of missing out on an investment.¹⁸⁹ One commenter states that issues about manipulation on the platforms, as discussed in articles about the Sponsor’s initial study, have not been satisfactorily resolved.¹⁹⁰

The Sponsor describes that, to gather data for its analysis, it has built its own data collection system using the live trading information available on the bitcoin spot platforms’ websites about the current order book and recent trades.¹⁹¹ The Sponsor represents that its data

¹⁸⁵ See id. at 18–21.

¹⁸⁶ Bitwise Submission I, supra note 6, at 70. The Sponsor asserts that (1) every regulated digital asset product that has launched has drawn prices entirely, or almost entirely, from a subset of the ten “real” platforms; (2) the ten “real” platforms dominated the list of thirteen platforms that the New York Attorney General contacted as part of its Virtual Markets Integrity Initiative; (3) the Blockchain Transparency Institute identified 56 platforms suspected of having fake volume, none of which are among the ten “real” platforms; and (4) other media-level investigations have reached similar conclusions. See id. at 70–71.

¹⁸⁷ See Arssov Letter, supra note 6 (stating that he disputes and disagrees with most of the statements and findings in the Sponsor’s initial analysis and that the Sponsor does not know what market manipulation in digital assets looks like); Denscombe Letter, supra note 6 (stating that the report is inaccurate, misleading, and unfair).

¹⁸⁸ See C. Ross Letter, supra note 6. See also Buckley Letter, supra note 6 (suggesting that the Sponsor is asking the Commission to grant approval based on its word that, while 95% of the bitcoin volume is manipulated, the other 5% is not).

¹⁸⁹ See Denscombe Letter, supra note 6.

¹⁹⁰ See Fitzgerald Letter I, supra note 6.

¹⁹¹ See Bitwise Submission II, supra note 9, at 14. The Sponsor states that the inability to gather granular market data from a comprehensive set of bitcoin platforms has made proving the existence of fake volume on platforms (footnote continued...)

collection process scrapes data from these websites four times a second, collecting price, trade size, and on-screen timestamp for ongoing trades, and bid/ask price, order amount, and timestamp of recording the data for order book entries.¹⁹² The Sponsor states that it was common for the data collection process to break down, and that it monitored its data collection process to stop problems with the data scrapers and prepared fixes, but there were gaps in the data that it has accounted for in the analytical phase.¹⁹³ In addition, the Sponsor states that it has acquired historical bitcoin trade data from third parties for parts of the analysis that require a continuous historical data set.¹⁹⁴

Several commenters raise concerns about the Sponsor's data collection methods. One commenter claims that accessing data through trading platforms' websites is more appropriate for illustration than research because these websites are not updated in real time, or even within a quarter of a second, and therefore this collection method can access only a fraction of the trades.¹⁹⁵ Another commenter asserts that it is plausible that a group of bad actors have used trading bots to manipulate the data on the other platforms to secure approval of an ETP.¹⁹⁶ This commenter also states that it has concerns about the data presented, because a single organization conducted the study, the methodology and data source are unclear, and the traffic data are only

(...footnote continued)

difficult. See id. The Sponsor asserts that it created and now maintains a website that captures the "real" spot bitcoin trading volume on an ongoing basis. See Bitwise Submission III, supra note 9, at 131.

¹⁹² See Bitwise Submission II, supra note 9, at 16. See also Notice and OIP, supra note 7, 84 FR at 23129 (describing a similar data collection process in connection with the Sponsor's earlier analysis); Bitwise Submission I, supra note 6, at 41.

¹⁹³ See Bitwise Submission II, supra note 9, at 18. According to the Sponsor, the data collection process would break if the html structure of the web page being scraped changed in any meaningful way, which was a common occurrence. See id.

¹⁹⁴ See id.

¹⁹⁵ See Arssov Letter, supra note 6.

¹⁹⁶ See Denscombe Letter, supra note 6.

collected from a single source.¹⁹⁷ A third commenter questions whether the data used to identify the platforms reporting fake volume are reliable.¹⁹⁸

The Sponsor states that it has selected the platforms to analyze by creating a list of 83 platforms that represent the top bitcoin trading pairs on coinmarketcap.com as of December 5, 2018.¹⁹⁹ The Sponsor adds that it has considered all trading pairs where bitcoin is the base currency, or where the quote currency is either a fiat currency or a stablecoin.²⁰⁰ Further, the Sponsor argues that, while new platforms with astronomical volumes have appeared every week on coinmarketcap.com, leading the list of platforms representing the top bitcoin trading pairs to become stale quickly, that list is sufficiently consistent that the core analysis remains relevant.²⁰¹

With respect to the bitcoin over-the-counter (“OTC”) market, the Sponsor claims that its “[c]onversations with leading market makers” suggest that very little bitcoin OTC volume is crossed internally and that most volume is settled on the spot platforms.²⁰² The Sponsor asserts that any incremental volume in the OTC or dark pool market is not a significant fraction of the global spot market for bitcoin, and that counting these trades separately would mostly lead to double counting.²⁰³

¹⁹⁷ See id.

¹⁹⁸ See C. Ross Letter, supra note 6.

¹⁹⁹ See Bitwise Submission II, supra note 9, at 15. With respect to the Sponsor’s earlier analysis, the Sponsor represents that it has generated a list of 81 platforms to analyze at that time by looking at all platforms reporting more than \$1 million in average daily volume for bitcoin-fiat and bitcoin-stablecoin pairs to coinmarketcap.com on December 5, 2018. See Notice and OIP, supra note 7, 84 FR at 23129; Bitwise Submission I, supra note 6, at 41.

²⁰⁰ See Bitwise Submission II, supra note 9, at 15.

²⁰¹ See id. at 18.

²⁰² See Bitwise Submission III, supra note 9, at 133.

²⁰³ See id. In this context, the term “dark pool” is used as described in the registration statement for the Winklevoss Bitcoin Trust, which described “dark pools” as bitcoin trading platforms that do not publicly report limit order book data. See Winklevoss Bitcoin Trust, Form S-1/A (File No. 333-189752), at 62.

Several commenters question the Sponsor’s selection of certain bitcoin platforms for its analysis, to the exclusion of other platforms and the OTC market. One commenter argues that the Sponsor selectively analyzed data, excluding many factors.²⁰⁴ This commenter states that the Sponsor excluded platforms from South Korea on the basis of capital controls, but included platforms from China and Hong Kong, where capital controls are also in place.²⁰⁵ This commenter also claims that the Sponsor’s selection of trading pairs is unusual because the market is not based solely on the chosen trading pairs and there are arbitrage opportunities in trading digital assets against other digital assets.²⁰⁶ Another commenter argues that, while the Sponsor suggests that virtually all trading occurs on non-Asian platforms, it is unlikely that Asian investors would use United States or European Union-based platforms and be subject to their capital controls, and that the Sponsor ignores trading on both the Hong Kong-based platform Bitmex and OTC trading.²⁰⁷ This commenter states that a previous ETP filer claimed that OTC volume among United States-based brokers is \$500 million a day, and that, even if this figure is overstated, it suggests that global average daily volume in bitcoin is significantly higher than \$273 million.²⁰⁸ Another commenter argues that, even if capital-controlled markets present difficulties for arbitrage, it does not mean that market participants in these capital-controlled

²⁰⁴ See Fitzgerald Letter II, supra note 9. See also C. Ross Letter, supra note 6 (asserting that the ten identified platforms seem “rather convenient” for the Sponsor to build its case upon).

²⁰⁵ See Fitzgerald Letter II, supra note 9.

²⁰⁶ See id.

²⁰⁷ See Blake Letter I, supra note 6. See also Arsoy Letter, supra note 6 (stating that two-thirds or more of digital asset trading occurs outside of the United States, but most of the ten identified platforms on the list are based in the United States and reflect only a fraction of the total trades).

²⁰⁸ See Blake Letter I, supra note 6. See also Shenoy Letter III, supra note 69, at 6, 9 (claiming that OTC bitcoin volume typically is 2-3 times larger than volumes on platforms and that an estimated 1 to 1.5 billion bitcoins are traded on the OTC market daily).

markets cannot participate in, influence, or manipulate the bitcoin market.²⁰⁹ This commenter asserts that market participants in Venezuela, Zimbabwe, and other significant capital-controlled countries participate in the bitcoin market and that getting around capital controls to participate in and manipulate the market is not difficult.²¹⁰

The Sponsor states that it used a single week time period—April 28, 2019, through May 5, 2019—for its visualized data to balance concerns that too short a period may not give natural market patterns enough time to develop, and that too long a period may make anomalous patterns less distinct, because platforms attempting to fake volume may periodically change their algorithms.²¹¹ According to the Sponsor, it has based its analysis on data from the last week before it finalized the research, to be as current as possible, but the Sponsor asserts that any single week sample would lead to a similar conclusion.²¹²

The Sponsor states that one tool that it has used for its analysis is a trade size histogram, which is a data visualization technique that allows one to see the percentage of trading volume on a platform that occurs at particular trade sizes over a specified period.²¹³ The Sponsor asserts that it has cut off the histograms after 10 bitcoins because the vast majority of trade volume occurs in the 0-10 bitcoins range, and the Sponsor finds it “visually helpful” to focus on this range.²¹⁴ The Sponsor has used the six platforms with BitLicenses as a baseline for what a group

²⁰⁹ See Robert Letter, supra note 9.

²¹⁰ See id.

²¹¹ See Bitwise Submission II, supra note 9, at 19. See also Notice and OIP, supra note 7, 84 FR at 23129 (stating that when selecting March 4, 2019, through March 8, 2019, as the time period for its earlier analysis, the Sponsor deliberately utilized a short time period to show that fake volume is a current problem in the bitcoin market and because platforms change algorithms used to fake volume over time, which obscures the results of data-driven analyses that consider longer time periods).

²¹² See Bitwise Submission II, supra note 9, at 19.

²¹³ See id.

²¹⁴ See id. at 20–21.

of legitimate trade size histograms look like, because, according to the Sponsor, the BitLicense establishes a conservative set of platforms that are not likely to have pervasive fake volume or wash trading.²¹⁵ The Sponsor states that it finds two patterns among the platforms with BitLicenses—trade volume percentages generally trend downward as trade size increases and there are behavioral preferences around round numbers—and that these patterns are consistent with documented trading behavior in traditional markets.²¹⁶ The Sponsor argues that, in contrast, six platforms outside the set of platforms with BitLicenses follow unnatural patterns and that the only realistic explanation is that these platforms are reporting artificial volume.²¹⁷

The Sponsor states that the second tool it has used for its analysis is an examination of the alignment of volume spikes, asserting that, while the bitcoin spot market is fractured across multiple platforms, all of these platforms should respond to the same developments in the market.²¹⁸ The Sponsor claims that the hourly trade volume for one platform with a BitLicense, Coinbase Pro, shows varying volume throughout the day, a pattern of volume that does not repeat across days, and several large volume spikes.²¹⁹ The Sponsor further claims that the six platforms with BitLicenses all exhibit similar patterns, with an obvious alignment of volume spikes, particularly around May 3, 2019, and argues that this demonstrates a connected

²¹⁵ See id. at 21.

²¹⁶ See id. at 22–23. See also Bitwise Submission I, supra note 6, at 26 (stating that the “real” platform Coinbase Pro has varying trade sizes, with a greater-than-random number of round trade sizes).

²¹⁷ See Bitwise Submission II, supra note 9, at 23–24. The Sponsor also argues that the discrepancy in trading patterns cannot be attributed to low volume, because the six platforms outside the reference set all report volumes that are greater than that of the largest platform with a BitLicense. See id. at 24. The Sponsor states that in its earlier analysis, it finds that the trade size histograms for the platforms that have passed all of its data tests show consistent, intuitive patterns, while those from other platforms reflect patterns that are idiosyncratic and often transparently programmatic (e.g., bell curve-like distributions or increasing volume for larger trade sizes). See Notice and OIP, supra note 7, 84 FR at 23129; Bitwise Submission I, supra note 6, at 42–50. See also Bitwise Submission I, supra note 6, at 32, 55–57.

²¹⁸ See Bitwise Submission II, supra note 9, at 24.

²¹⁹ See id. at 25.

market.²²⁰ In contrast, the Sponsor points to the volume patterns of six platforms outside of the reference set of platforms with BitLicenses and asserts that they exhibit idiosyncratic and highly unusual volume patterns and lack volume spikes that align with platforms in the “real” bitcoin market, strongly suggesting that these platforms are posting fake volume.²²¹

The third tool that the Sponsor says it has used for its analysis is a spread patterning analysis based on the spread between the highest price at which someone is willing to buy bitcoin and lowest price at which someone is willing to sell bitcoin, denominated in dollars.²²² The Sponsor asserts that the spread on Coinbase Pro shows price oscillation and is generally quite low and anchored near zero.²²³ The Sponsor further claims that the spreads on the six platforms with BitLicenses generally have low spreads, that the spikes in spreads are short-lived, and that the spreads exhibit a consistently spiky form, suggesting that they are responding to current events.²²⁴ The Sponsor asserts that the differences between the spreads on the platforms with BitLicenses are driven by differences in fee structures, such as the use of a maker-taker fee model by some platforms.²²⁵ In contrast, the Sponsor claims that the spread analysis for six platforms outside the reference set shows spreads that are anchored on high dollar amounts and

²²⁰ See Bitwise Submission II, supra note 9, at 26–27. See also Bitwise Submission I, supra note 6, at 25, 27 (stating the “real” platform Coinbase Pro has a trade volume that varies, with a mix between buys and sells that is unequal and streaky).

²²¹ See Bitwise Submission II, supra note 9, at 27–29. The Sponsor claims that none of the six platforms outside the reference set have volume spikes that align with the May 3, 2019, spike that was present in all platforms within the reference set. See id. at 29. The Sponsor states that in its earlier analysis, it finds that volume spikes rise and fall concurrently across the platforms that have passed all data tests, but other platforms have no discernable volume spikes or patterns that are disconnected or wholly idiosyncratic and do not repeat on other platforms. See Notice and OIP, supra note 7, 84 FR at 23129; Bitwise Submission I, supra note 6, at 51–52. See also Bitwise Submission I, supra note 6, at 29–31, 35–36, 38–39, 55–57 (also noting that essentially all of the trades on one “suspicious” platformprint inside the prevailing bid and ask).

²²² See Bitwise Submission II, supra note 9, at 29.

²²³ See id. at 29–30. See also Bitwise Submission I, supra note 6, at 28 (stating that the spread of bitcoin on the “real” platform Coinbase Pro was \$0.01, or 0.0003% of bitcoin’s current trading price).

²²⁴ See Bitwise Submission II, supra note 9, at 31–32.

²²⁵ See id. at 32.

oscillate in artificial patterns.²²⁶ According to the Sponsor, there is no economic reason for these spread patterns if there is true liquidity on the platforms and these patterns indicate the presence of automated bots that perform wash trading.²²⁷

In conclusion, the Sponsor finds that only ten of the 83 platforms it analyzed have “real” volume because they passed all three tests, whereas 73 platforms failed one or more of its tests.²²⁸ As discussed further below, the Sponsor subsequently removed one platform, Bitfinex, from its selection of platforms used for the Trust’s NAV and IIV pricing, due to a court order obtained by the New York Attorney General (“NYAG”) against Bitfinex’s operator,²²⁹ but the Sponsor maintains that Bitfinex’s volume is “real.”²³⁰

Two commenters raise specific concerns about the Sponsor’s methods of analysis.²³¹ One commenter states that the Sponsor has not provided a longitudinal picture of all of the platforms

²²⁶ See id. at 33–34.

²²⁷ See id. at 34. The Sponsor states that, in its earlier analysis, it finds that well-known platforms show a consistent pattern of spreads, anchoring on zero, with random variability and periodic spikes, while many platforms with very high levels of volume report average spreads that are 1,000% to 35,000% higher than spreads on platforms that have passed all of the Sponsor’s tests and exhibit spread patterns that reveal artificial, programmatic drivers, including spreads that unnaturally anchor on arbitrarily high dollar values or stay fixed for extended periods. See Notice and OIP, supra note 7, 84 FR at 23130; Bitwise Submission I, supra note 6, at 53–54. See also Bitwise Submission I, supra note 6, at 33, 37, 55–56.

²²⁸ See Bitwise Submission II, supra note 9, at 34–35. For the trade histograms, volume graphs, and spread graphs of all 83 platforms that the Sponsor has analyzed, see id. at 86–102. The Sponsor states that it is excluding those platforms based in South Korea, because their volumes are isolated from the global bitcoin market due to capital controls. See id. at 34. However, the Sponsor also states that 73 of the 83 platforms failed one or more of the three tests (see id.), and the Commission notes that this figure includes the South Korean platforms.

²²⁹ See infra notes 325, 331–338, and accompanying text.

²³⁰ See Bitwise Submission V, supra note 9, at 5. The Sponsor argues that having real volume and being ineligible to contribute prices to the Trust’s pricing mechanism are not mutually exclusive, and that Bitfinex has passed all of the Sponsor’s tests for having real volume. See id. The Sponsor asserts that the Bitwise Crypto Index Committee reviewed the NYAG’s court order against iFinex (the operator of Bitfinex) and subsequent legal documents, and found no evidence contradicting the Sponsor’s finding that the Bitfinex volume is real. See id. at 5–6 (arguing that, as further evidence that trading on Bitfinex is real, the court documents confirm that investors deposited billions of dollars with the platform).

²³¹ See Denscombe Letter, supra note 6; Fitzgerald Letter II, supra note 9.

and that the time period used for the visualized data is a very short snapshot.²³² This commenter asserts that the narrative of the Sponsor’s report could look very different if trades larger than 10.0 bitcoins were included and that the report is not complete due to this exclusion.²³³ This commenter also notes that the Sponsor focuses most of its analysis on the six platforms with a BitLicense, rather than all ten of the platforms that the Sponsor identifies as “real.”²³⁴ Another commenter disagrees with the Sponsor’s assertion that market participants are more likely to trade small amounts of bitcoin than large amounts, and more likely to trade whole bitcoin than fractions of bitcoin, and claims that the order books on the ten “real” platforms show people trading more in fractions of bitcoin than whole amounts of bitcoin.²³⁵ This commenter argues that before being used as a basis for granting an ETP, the Sponsor’s analysis should be scrutinized regarding the methodology and where data was acquired, independent verification of the claims, and multiple sources for data collection.²³⁶

Several commenters raise questions about specific platforms that the Sponsor identifies as “real.”²³⁷ One commenter asserts that Bitfinex has long had questions raised about its operations, and that while the Sponsor has sound reasoning for dropping Bitfinex from its consolidated bitcoin price, the deletion raises questions about why the Sponsor ever included Bitfinex in its consolidated price, along with Binance, another non-United States domiciled

²³² See Fitzgerald Letter II, supra note 9.

²³³ See id.

²³⁴ See id.

²³⁵ See Denscombe Letter, supra note 6 (stating that the platforms show orders of 15 to 33 bitcoins).

²³⁶ See id. (asserting that, to be fair to all of the organizations studied, there would need to be at least five years’ worth of longitudinal data from the ten “real” platforms for independent analysis for any abnormalities and irregularities).

²³⁷ See Blake Letter I, supra note 6; Blake Letter II, supra note 9; Denscombe Letter, supra note 6; Fitzgerald Letter II, supra note 9.

platform with a “colorful past.”²³⁸ Another commenter asserts that it is “essential” to further analyze Binance and Kraken because Binance has not registered as an MSB and Kraken has not pursued a BitLicense, and both platforms have had recent negative press.²³⁹ A third commenter represents that, in April 2018, Kraken refused to answer the NYAG’s inquiry into the bitcoin market, which heightens the need to independently analyze longitudinal data from the “real” platforms.²⁴⁰

One commenter asserts that it seems unlikely that there are zero platforms that have a mixture of some real and some fake volume, and that the more likely scenario is that some platforms are faking some of their volume and therefore the “true” volume in the “real” bitcoin market is certainly higher than the Sponsor’s calculation.²⁴¹ In response to this commenter, the Sponsor acknowledges that there is likely a gray area between platforms with 100% real volume and 100% fake volume.²⁴² According to the Sponsor, the 73 platforms that it has not identified as “real” platforms include an occasional example that “doesn’t seem outright fake.”²⁴³ The Sponsor cites as an example its analysis of the Gate.io platform, and the Sponsor acknowledges that there is room to reasonably argue whether Gate.io’s volume is fake or whether some percentage of its volume should be included in the total “real” volume.²⁴⁴ However, the Sponsor

²³⁸ See Blake Letter II, supra note 9 (stating that Tether and Bitfinex’s connections to Tether “are just too painful to even write about at this time”). See also Blake Letter I, supra note 6 (questioning the Sponsor’s claim that Binance is a European Union-based Maltese company).

²³⁹ See Fitzgerald Letter II, supra note 9 (representing that the Kraken CEO stated that, among other things, bitcoin traders want minimal documentation for onboarding and do not care about many of the things that concern regulators, including regulatory approval and protection from risky investments and market manipulation).

²⁴⁰ See Denscombe Letter, supra note 6.

²⁴¹ See Blake Letter I, supra note 6.

²⁴² See Bitwise Submission II, supra note 9, at 38.

²⁴³ See id.

²⁴⁴ See id. (stating that the trade size histogram for Gate.io does not show the expected spikes around 1.0 or 2.0 bitcoins, that the volume spike analysis shows hourly volume that seems more patterned than the reference set (footnote continued...))

asserts that Gate.io does not have enough volume to meaningfully alter the Sponsor’s conclusions, which would not change even if the Sponsor counted all of Gate.io’s volume as “real.”²⁴⁵

The Sponsor argues that to address whether the total “real” volume should be higher, it should focus, among the platforms it has identified as “fake,” on those platforms with more significant reported volume.²⁴⁶ The Sponsor asserts that, when it shared its initial analysis on Twitter, the public closely examined its work and raised questions about certain platforms that were not included in the list of “real” platforms but that the public believed had real-world footprints; but only three of these platforms had “meaningful” volume—HitBTC, Huobi, and OKEEx.²⁴⁷ The Sponsor claims that its analysis for OKEEx shows that the vast majority of OKEEx’s bitcoin volume is entirely fake, based on the volume spike analysis for April 28, 2019, through May 5, 2019, showing a nearly constant hourly volume with an extremely muted spike on May 3, 2019, along with a trade size histogram that shows no round-number spikes, an atypical rise in volume between 1 and 6 bitcoins, and an unusually long tail volume above 6 bitcoins.²⁴⁸ In addition, the Sponsor states that it believes that HitBTC’s volume is predominantly wash trading because the trade size histogram shows almost no volume after 0.5 bitcoin, with no spikes at round numbers, and the hourly volumes are completely detached from the reference set

(...footnote continued)

with a muted volume peak on May 3, 2019, and that the spread patterning analysis shows a high median spread around \$4).

²⁴⁵ See id. (comparing Gate.io’s reported \$12 million average daily volume in April 2019 to the \$554 million total daily volume of the ten “real” platforms).

²⁴⁶ See id.

²⁴⁷ See id. at 38–39 (stating that the April 2019 average daily volume on HitBTC, Huobi, and OKEEx was \$127,010,643, \$128,043,683, and \$228,879,610, respectively).

²⁴⁸ See id. at 39.

of platforms, with most volume happening on April 29 and 30, 2019.²⁴⁹ The Sponsor further claims that while Huobi appeared to fare well on the Sponsor’s tests, weekly trade size histograms for Huobi from the weeks before and after the Sponsor’s initial analysis became public indicate that those engaging in wash trading at Huobi changed their trade size signatures to be more in line with, and thereby evade, the Sponsor’s detection methods for fake volume.²⁵⁰

The Sponsor also points to three independent, third-party researchers that estimated the amount of real volume at HitBTC, Huobi, and OKEx, and “seem to agree” that OKEx’s volume is nearly entirely fake and that the vast majority of volume on HitBTC and Huobi is fake.²⁵¹ The Sponsor states that, if it incorporates the simple weighted average of these estimates (as applied to the reported volume statistics for the three platforms for April 2019) to the Sponsor’s calculations of “real” trading volume, it would increase the “real” average daily spot bitcoin trading volume in April 2019 to \$622 million, or 12% higher than the Sponsor’s original figure.²⁵² The Sponsor argues that while this adjustment is non-negligible, it would not materially change the Sponsor’s conclusions.²⁵³

The commenter that raised the likely mix of real and fake volume asserts in response to the Sponsor’s argument that it “seems a bit too pat an answer” for the Sponsor to essentially

²⁴⁹ See id.

²⁵⁰ See id. at 40–42 (stating that trade size histograms from the period March 3, 2019, through April 14, 2019, show an anomalous pattern with a resurgence of trade volume between 5-11 bitcoins before the Sponsor’s initial analysis became public on March 21, 2019, followed by the complete disappearance of this pattern in the subsequent three weeks). The Sponsor asserts that while Huobi might have taken action to clean up wash trading after the Sponsor’s initial analysis became public, that “view is challenged” because Huobi’s reported trade volume did not meaningfully drop during that time period. See id. at 42–43. See also Bitwise Submission VI, supra note 9, at 18–21 (asserting that the trade size histograms for the platforms Coinsuper, CHAOEX, and IDAX similarly exhibited a change within the three weeks after the Sponsor’s further analysis became public).

²⁵¹ See Bitwise Submission II, supra note 9, at 43.

²⁵² See id. at 43–44. See also Bitwise Submission VI, supra note 9, at 17.

²⁵³ See Bitwise Submission II, supra note 9, at 44.

focus on three large platforms that have mostly fake volume and conclude that any real portion of the volume that the Sponsor identified as fake is too small to matter.²⁵⁴ This commenter argues that the Sponsor's position ignores the hundreds of smaller platforms that might have real volume and that might, in the aggregate, make up a notable amount of total volume.²⁵⁵ This commenter represents that three small platforms that were not part of the Sponsor's analysis lost over \$200 million in investor funds and argues that, if the vast majority of platforms have entirely fake volume or too little volume to matter, it could not be the case that these three platforms obtained over \$200 million in client funds to lose or steal.²⁵⁶

Finally, the Sponsor asserts that the fake or non-economic trading volume does not influence price discovery in the "real" bitcoin spot market represented by the ten identified platforms.²⁵⁷ According to the Sponsor, the only ways that prices on platforms with fake volume could influence prices on platforms with real volume are: (1) if arbitrage exists between platforms with fake volume and the "real" spot market, thus spreading the impact of the "fake" platforms' prices; or (2) if market participants take prices on platforms with fake volume as a legitimate market signal and adjust their view of the market as a result.²⁵⁸ The Sponsor argues that arbitrage cannot exist between two platforms if one platform does not have real and meaningful liquidity.²⁵⁹ Therefore, according to the Sponsor, platforms with a preponderance of

²⁵⁴ See Blake Letter II, supra note 9.

²⁵⁵ See id.

²⁵⁶ See id.

²⁵⁷ See Bitwise Submission II, supra note 9, at 2.

²⁵⁸ See id. at 69.

²⁵⁹ See id.

fake volume cannot and do not participate in the coordinated central liquidity pool or “automatically influence” the consolidated price just by having a different price.²⁶⁰

With respect to whether market participants view platforms with fake volume as providing legitimate market signals, the Sponsor asserts that a “preponderance of the evidence” suggests that investors do not view prices or volumes on platforms with fake volume as legitimate market signals.²⁶¹ Instead, according to the Sponsor, “real investors simply ignore these fake exchanges.”²⁶² In support of its argument, the Sponsor represents that all regulated financial products, including regulated bitcoin futures in the United States and listed bitcoin ETPs in Europe, draw prices almost exclusively from a subset of the bitcoin platforms that the Sponsor identifies as having real volume.²⁶³ The Sponsor states that Coinbase Pro has the highest volume amongst platforms used for pricing regulated bitcoin products, but was ranked as the 37th largest platform by average daily volume on coinmarketcap.com in April 2019.²⁶⁴ According to the Sponsor, the absence of any of the platforms with larger reported volumes from the pricing mechanisms for regulated financial products suggests that the institutional investor marketplace understands that real price discovery does not take place on these platforms and chooses to ignore them.²⁶⁵

In further support of its argument, the Sponsor asserts that leading digital asset arbitrage and execution-focused firms track only those platforms that the Sponsor identifies as having real

²⁶⁰ See id.

²⁶¹ See id. at 69, 71.

²⁶² Id. at 71.

²⁶³ See id. at 69.

²⁶⁴ See id.

²⁶⁵ See id. The Sponsor identifies the current pricing sources for CME bitcoin futures, CFE bitcoin futures, XBT Bitcoin Tracker One, and Amun Bitcoin ETF, and represents that these are all a subset of the platforms that the Sponsor identifies as “real.” See id. at 69–70.

volume.²⁶⁶ The Sponsor represents that, for example, a digital asset dealer and trading platform, SFOX, tracks prices on only eight platforms, all of which are among the ten platforms that the Sponsor identifies as having real volume.²⁶⁷ The Sponsor asserts that, as a leading digital asset dealer, SFOX has every incentive to identify as many arbitrage opportunities as possible, so its focus on these platforms “is telling.”²⁶⁸ Finally, the Sponsor argues that data aggregator league tables are extremely volatile and that the volatility of the league tables “stretches the boundaries of credulity.”²⁶⁹ According to the Sponsor, volatility in reported volume rank has “historically strengthened” the market’s understanding that these platforms are fake and “can safely be ignored.”²⁷⁰

One commenter states that, in a global digital asset market, if prices move on platforms with allegedly fake volume, the platforms with “good” volume must follow or experience losses.²⁷¹ Another commenter states that the bitcoin market is global and interconnected, and that if 95% of platforms are reporting fake volume, then it is unwise for the proposed ETP to be based on the remaining 5%.²⁷²

(ii) Analysis

The Sponsor asserts that 95% of reported bitcoin spot volume represents fake or non-economic trading, yet bases the proposed ETP on a set of platforms that the Sponsor has

²⁶⁶ See id. at 70.

²⁶⁷ See id.

²⁶⁸ See id. With respect to the two platforms that the Sponsor identifies as “real” platforms but SFOX does not include, Poloniex and Bitfinex, the Sponsor states that it “guesses” that SFOX excludes these because of difficulties conducting arbitrage. See id. at 70 n.182.

²⁶⁹ See id. at 71. The Sponsor represents that the spot bitcoin platform Fcoin had \$12 million, \$802 million, and \$1.7 billion reported average daily volume in February, March, and April 2019, respectively. See id. The Sponsor argues that it is “hard to believe” this rise in volume. See id.

²⁷⁰ See id.

²⁷¹ See Arssov Letter, supra note 6.

²⁷² See C. Ross Letter, supra note 6.

identified as representing real volume, will use these platforms for NAV and IIV pricing, and argues that this “real” portion of the bitcoin market is uniquely resistant to manipulation and not affected by the other 95%.²⁷³ The Sponsor and commenters recognize that a significant amount of fraudulent, manipulative, fake, or otherwise non-economic trading activity has occurred in the bitcoin market.²⁷⁴ Because Section 6(b)(5) of the Exchange Act requires that the proposal must be designed “to prevent fraudulent and manipulative acts and practices,” NYSE Arca and the Sponsor must show in this case that this fraudulent, manipulative, fake, or otherwise non-economic trading activity in the broader bitcoin market does not affect the smaller “real” portion of the bitcoin market on which the proposed ETP is based. Therefore, as a threshold matter, before discussing the Sponsor’s methods of analysis or its conclusions regarding which platforms represent “real” trading volume, the Commission considers whether the record supports the Sponsor’s assertion that “fake volume does not influence price discovery in the real bitcoin spot market.”²⁷⁵ In the absence of this showing, NYSE Arca and the Sponsor will not be able to establish that the identified “real” bitcoin market is uniquely resistant to fraud and manipulation, because prices based on fraudulent and manipulative activity on platforms with fake or non-economic volume could be used to affect prices on the identified “real” platforms.

²⁷³ See supra notes 172, 257, and accompanying text.

²⁷⁴ See supra notes 69–73, 176–186 and accompanying text. The Commission notes that while the Sponsor provides a response to a discussion in the Winklevoss Order about certain commenters and the concerns they raised about specific instances of manipulation (see Bitwise Submission III, supra note 9, at 41, 45, 49), those comments are not part of the record of the current proposed rule change under consideration.

²⁷⁵ See Bitwise Submission II, supra note 9, at 2.

(A) Influence of Prices on Platforms with Fake or Non-Economic Volume on Prices on Platforms with “Real” Volume

NYSE Arca and the Sponsor have failed to support the Sponsor’s assertions that the prices on platforms with fake volume do not influence prices on the “real” platforms. In particular, the record contains no data on where in the bitcoin market price formation occurs and whether or not price movements on the “real” spot platforms evidence correlation with price movements on the platforms with “fake” or non-economic volume, with one set of platforms moving at a later time than the other (i.e., a “lead-lag relationship”). Without data to show the lead-lag relationship between prices on the two sets of platforms or any evidence about the directionality of the lead-lag relationship—which might indicate that changes in prices on platforms with fake volume are or are not leading to changes in prices on the “real” platforms—the Commission has no basis on which to conclude that prices on the “real” platforms are insulated from prices in the rest of the market. Thus the Commission cannot conclude that it would be appropriate to consider the nature of these platforms alone in an analysis of whether the bitcoin market is uniquely resistant to manipulation.

The Sponsor makes many unsupported, conclusory statements to support its contention that “everyone knows where the real market is.”²⁷⁶ The Sponsor argues that arbitrage “cannot exist” between platforms with real volume and platforms with a preponderance of fake volume,²⁷⁷ without presenting any data or real-world examples that might indicate the presence or absence of arbitrage between such platforms. Moreover, the Sponsor’s contention that such arbitrage cannot exist rests on an assumption that platforms with a “preponderance of fake

²⁷⁶ See *id.* at 71. See also *supra* notes 257–270 and accompanying text.

²⁷⁷ See *supra* notes 259–260 and accompanying text.

volume” do not have any “real and meaningful liquidity” that could support arbitrage,²⁷⁸ without support for that assumption. As discussed further below, the Sponsor acknowledges that there is a gray area between platforms with entirely real volume and platforms with entirely fake volume.²⁷⁹ Yet the Sponsor does not address whether the presence of real volume on platforms with a significant amount of fake volume would significantly affect pricing.

In addition, the Sponsor concludes that the evidence that it cites “suggests” that investors do not look to platforms with fake volume for legitimate market signals, but does not persuasively address alternative explanations for the cited evidence that would lead to a different conclusion.²⁸⁰ The Sponsor looks at which platforms other providers of financial products select for their pricing mechanisms,²⁸¹ but other providers’ reliance on certain bitcoin trading platforms does not demonstrate that prices on platforms with purportedly fake volume do not influence prices on the purportedly “real” platforms. The Sponsor also fails to address alternative reasons for these products’ reliance on certain platforms, including the presence of a degree of regulation on these platforms. Moreover, the platforms used for these pricing mechanisms do not line up exactly with the Sponsor’s ten identified “real” platforms,²⁸² indicating that at least some institutional market participants do not agree that all of the Sponsor’s identified “real” platforms provide the most reliable prices. Further, while the Sponsor points to the platforms tracked by digital asset dealer and trading platform SFOX, the overlap with the Sponsor’s “real” platforms is anecdotal evidence at best, and any incentives SFOX may have to identify arbitrage

²⁷⁸ See supra notes 259–260 and accompanying text.

²⁷⁹ See supra note 242 and accompanying text. See infra notes 305–314 and accompanying text for discussion of whether the Sponsor has identified all “real” volume on the bitcoin spot platforms included in its analysis and whether “real” volume on other portions of the bitcoin spot market might undercut its assertions.

²⁸⁰ See supra notes 261–270 and accompanying text.

²⁸¹ See supra notes 263–265 and accompanying text.

²⁸² See supra note 265.

opportunities is not a substitute for an analysis of whether prices on certain platforms have an influence on general market pricing.²⁸³ And while the volatility of data aggregator league tables raises questions about reported trading volume that may be relevant to probe,²⁸⁴ mere belief that the reported trading volume is questionable is no substitute for data-driven analysis of how other market participants would adjust their pricing in response to prices on other platforms, even if they agree that those platforms have predominantly—but not entirely—fake volume. Further, the Sponsor’s arguments rely on a description of how institutional market participants behave, but the Sponsor does not provide information regarding what portion of the market is made up of institutional versus retail participants. The Commission also notes that while the Sponsor asserts that coinmarketcap.com is the most widely cited source for bitcoin volume,²⁸⁵ as of October 6, 2019, coinmarketcap.com does not separate “real” versus “fake” platforms and prices.²⁸⁶ This shows that the focus on the Sponsor’s identified “real” platforms or a subset thereof, to the exclusion of the vast majority of platforms with reported volume on data aggregators such as coinmarketcap.com, is not necessarily shared by other participants in the bitcoin market.

For the reasons above, the Commission does not believe that NYSE Arca and the Sponsor have demonstrated that prices on platforms with fake or non-economic volume do not influence prices on platforms with real volume. Given the Sponsor’s claims about the prevalence of fake or non-economic trading activity within the overall bitcoin market, the Commission

²⁸³ See supra notes 266–268 and accompanying text.

²⁸⁴ See supra notes 269–270 and accompanying text.

²⁸⁵ See Bitwise Submission I, supra note 6, at 23.

²⁸⁶ As of October 6, 2019, coinmarketcap.com lists the top 100 digital asset platforms by reported volume and by “adjusted volume,” the latter of which it represents as “[v]olume from spot markets excluding markets with no fees and transaction mining.” See Top 100 Currency Exchanges by Trade Volume, CoinMarketCap, available at <https://coinmarketcap.com/rankings/exchanges> (last visited Oct. 6, 2019). Although the “adjusted volume list indicates some adjustment for certain types of trading activity, the identification of at least 100 platforms with “adjusted volume” differs considerably from the Sponsor’s identification of only ten “real” platforms.

considers this lack of proof to fundamentally undercut the Sponsor’s contention that the “real” bitcoin market is uniquely resistant to fraudulent and manipulative activity.²⁸⁷

(B) The Sponsor’s Identification of Platforms with Predominantly “Real” Volume

NYSE Arca and the Sponsor have not provided sufficient data to substantiate the Sponsor’s claims that it has identified the ten platforms that have “real” volume, as distinguished from those platforms dominated by fake or non-economic trading²⁸⁸ and the Sponsor’s data analysis is incomplete or inconsistent and limits the Commission’s ability to evaluate the Sponsor’s claims.²⁸⁹ For example, the Sponsor asserts that its data analysis of trade size distribution only includes trade sizes of 0 to 10 bitcoins because the vast majority of trade volume occurs in the lower range and because the Sponsor finds the histogram presentation of this range “visually helpful.”²⁹⁰ As two commenters recognize, however, this data presentation cuts off larger orders that occur in the bitcoin market, and the inclusion of larger orders could make the Sponsor’s analysis look materially different.²⁹¹

Further, the Sponsor admits that the inability to gather comprehensive market data “has made proving the existence of fake volume on exchanges in a comprehensive manner difficult.”²⁹² The Sponsor acknowledges that its data scraping methodology broke down frequently, resulting in gaps in the data that it accounted for in the analytical phase,²⁹³ but does

²⁸⁷ If the platforms with fake or non-economic volume cannot be disambiguated from the platforms with “real” volume, this also undercuts the Sponsor’s assertions about whether NYSE Arca has a surveillance-sharing agreement with a significant, regulated market. For further discussion, see infra Section III.B.3.

²⁸⁸ See supra notes 172–176, 191–194, 199–203, 211–228, and accompanying text.

²⁸⁹ See supra notes 151–156 and accompanying text.

²⁹⁰ See supra note 214 and accompanying text.

²⁹¹ See supra notes 233, 235, and accompanying text.

²⁹² See supra note 191.

²⁹³ See supra note 193 and accompanying text.

not address what steps it took to ensure that these data gaps did not affect its analysis. The use here of a single one-week period of data may reflect selection bias and is insufficient to reveal the full picture regarding platforms over time or during different periods.²⁹⁴ While the Sponsor asserts that any single week sample would “exhibit the same characteristics and lead to a similar conclusion,”²⁹⁵ the Sponsor has not provided any support for this assertion or any explanation why the selected one-week period is or is not representative of the properties of the bitcoin spot market in other periods. Several commenters also raise questions and concerns about the Sponsor’s methodology for selecting what data to collect and analyze, collecting the data, and analyzing the data.²⁹⁶ For many parts of the analysis, the Sponsor first looks to the trade sizes, volume spikes, and spread patterns for its reference set of platforms with BitLicenses, and then compares these to other platforms.²⁹⁷ The Sponsor makes observations about how trade sizes, volume spikes, or spread patterns differ for platforms outside of its reference set of platforms with BitLicenses, and assumes that these differences are indications of fake or non-economic volume. The Sponsor does not appear to acknowledge that there could be other reasons for observed differences in trading patterns among the platforms, such as artefacts of algorithmic trading. In addition, the Commission notes that anecdotal recitations of support for the Sponsor’s initial analysis in the news or social media are no substitute for full, independent analysis or replication of the results.²⁹⁸

²⁹⁴ See supra notes 211–212 and accompanying text. See also supra note 232 and accompanying text (asserting that the time period used is a “very short snapshot” and a longitudinal picture is lacking).

²⁹⁵ Bitwise Submission II, supra note 9, at 19.

²⁹⁶ See supra notes 195–198, 204–210, 231–236, and accompanying text.

²⁹⁷ See supra notes 215–217, 219–221, 223–227, and accompanying text.

²⁹⁸ See supra notes 182–183 and accompanying text. But see supra notes 187–190 and accompanying text (questioning the Sponsor’s findings in its initial analysis).

The Commission notes that the Sponsor relies heavily on conclusory statements that are insufficient to support its findings. For example, the Sponsor’s assertions that the findings in its initial analysis are consistent with the “common institutional understanding of the true nature of the actual market” are conclusory and unsupported.²⁹⁹ The Commission notes that several commenters raise questions about specific platforms that the Sponsor identifies as having “real” volume, casting doubt on the contention that there is common understanding of the “real” market.³⁰⁰ With respect to the Sponsor’s initial selection of platforms to analyze, the Sponsor states that its list of platforms became stale quickly, but asserts that its “core analysis” remains relevant.³⁰¹ This representation simply assumes without any support that significant volume on new platforms would be fake or non-economic volume, and it provides the Commission with no basis to conclude that this would be the case. Similarly, the Sponsor’s statement that any incremental volume in the OTC dark pool market is not a significant fraction of the spot market and would mostly lead to double-counting is conclusory, relies solely on anecdotal evidence,³⁰² and is inconsistent with a commenter’s estimate of the size of the OTC bitcoin market.³⁰³ Moreover, with respect to the Sponsor’s argument that the NYAG’s inquiry concerning Bitfinex’s operator does not alter the Sponsor’s conclusion that Bitfinex has real volume, the Sponsor makes the conclusory and insufficient assertion that it found no evidence in legal

²⁹⁹ See supra note 186 and accompanying text.

³⁰⁰ See supra notes 237–240 and accompanying text.

³⁰¹ See supra note 201 and accompanying text.

³⁰² See supra notes 202–203 and accompanying text.

³⁰³ See supra note 208 and accompanying text (asserting that U.S.-based OTC volume in bitcoin may be as high as \$500 million a day; the Commission notes that this volume is comparable to the \$554 million in total daily volume for the same period across all ten of the “real” platforms). See also Registration Statement, supra note 31, at 20 (“OTC trading tends to be in large blocks of bitcoin.”).

documents contradicting this finding, without describing the types of evidence it found and why such evidence would not change the Sponsor’s analysis.³⁰⁴

Further, the Sponsor has not shown that it has identified all “real” volume on the bitcoin spot platforms included in its analysis. In response to a commenter, the Sponsor acknowledges that there is a “gray area” between platforms with all real volume and all fake volume, and that some of the 73 platforms that failed one or more of its tests may include some amount of real volume.³⁰⁵ The Sponsor cites one example, the Gate.io platform, and asserts that Gate.io does not have enough volume to meaningfully alter the Sponsor’s conclusion, even if it was made up of entirely real volume, because Gate.io’s reported average daily volume in April 2019 of \$12 million is significantly lower than the \$554 million in total daily volume for the same period across all ten of the “real” platforms.³⁰⁶ However, the Sponsor does not acknowledge that the average daily volume per platform within its set of ten selected platforms was \$55.4 million in April 2019, or that \$12 million is higher than the average daily volume for two of the ten platforms and almost as much average daily volume as a third.³⁰⁷ This shows that the inclusion of an additional \$12 million in real volume is not immaterial to the Sponsor’s claims. Further, the Sponsor does not consider the possibility that any other platform with volume comparable to that found on Gate.io would also have a material amount of “real” trading.

³⁰⁴ See supra note 230 and accompanying text; infra notes 331–338 and accompanying text (discussing, among other things, the NYA Gallegations). See also supra note 238 and accompanying text (asserting that the recent actions regarding Bitfinex raises questions about why it was ever included in the Sponsor’s list of “real” platforms).

³⁰⁵ See supra notes 241–243 and accompanying text.

³⁰⁶ See supra notes 244–245 and accompanying text.

³⁰⁷ See Bitwise Submission II, supra note 9, at 35 (providing a table with the average daily volume on each of the ten “real” platforms for April 2019).

The Sponsor then discusses the HitBTC, Huobi, and OKEx platforms, because, according to the Sponsor, these were the only platforms that were cited by “the public” as having “real-world footprints” that have “meaningful” volume but that were excluded from the Sponsor’s list of “real” platforms.³⁰⁸ Reliance on the set of platforms that “the public” raised to set the scope for further analysis presents an incomplete picture. The Sponsor does not describe any means by which it might know what motivations other individuals had to identify particular platforms as having a real-world footprint or how extensive those individuals’ efforts were to identify other platforms for consideration. Moreover, the Sponsor does not define what it considers to be “meaningful” volume. The Commission notes that the April 2019 average daily volume for each of HitBTC, Huobi, and OKEx is significantly higher than the April 2019 average daily volume for all but one of the identified “real” platforms.³⁰⁹

The Sponsor’s analysis of HitBTC and OKEx relies on circular reasoning and uses evidence that suggests the presence of fake or non-economic trading to conclude that the trading volume on these platforms is “almost entirely fake,” without discussing how the presence of some real volume affects the results.³¹⁰ The Sponsor further dismisses volume on Huobi as fake based on trade size histograms over time, suggesting that changes in the trade size histograms after the Sponsor’s initial analysis became public indicate that wash traders adjusted their trade size signatures to avoid the Sponsor’s detection methods.³¹¹ The Sponsor’s assertion is conclusory and does not address the possible presence of real volume on Huobi. Moreover, the Commission notes that, if market participants changed their trading behavior to avoid detection

³⁰⁸ See supra notes 246–247 and accompanying text.

³⁰⁹ See supra notes 247, 307.

³¹⁰ See supra notes 248–249 and accompanying text.

³¹¹ See supra note 250 and accompanying text.

of fake or non-economic trading after the Sponsor's first analysis became public, the Sponsor's methodology may have been tainted when it conducted its later analysis, and these efforts to disguise fake or non-economic volume may prevent the Sponsor or market participants from distinguishing "real" volume from "fake" volume in the future.

The Sponsor then considers estimates from third-party researchers about the amount of real volume on these three platforms and acknowledges that the estimated amounts might increase the Sponsor's calculated real volume in the spot market by a non-negligible amount, but asserts that this volume would not "materially" change the Sponsor's conclusions.³¹² The Sponsor's assertion is unsupported and does not address that the researchers' estimated real volume, at between approximately \$16 million and \$25 million per platform, is similar to the average daily volume reported for the individual "real" platforms. The presence of this volume indicates that there may be more non-negligible real volume on other platforms, but the Sponsor does not explain whether or how more real volume from other platforms would change its analysis.³¹³ Instead, the Sponsor merely asserts in conclusory fashion that the additional real volume, as estimated by the third-party researchers, would not "materially" impact its analysis and does not address how real volume on a platform dominated by fake or non-economic volume would interact with the market.

Finally, NYSE Arca and the Sponsor do not address the potential effect on the ten identified platforms of real volume on other portions of the bitcoin spot market not included in the set of 83 platforms that the Sponsor analyzed. For example, the Sponsor does not consider

³¹² See supra notes 251–253 and accompanying text.

³¹³ The Commission notes that a commenter questions the Sponsor's focus on three large platforms and argues that the Sponsor has ignored smaller platforms that might, in the aggregate, contain a notable amount of real volume. See supra notes 254–256 and accompanying text.

real volume on newer platforms or the OTC market and how such volume would affect its analysis. Moreover, while the Sponsor excludes South Korean platforms on the basis that trading volumes on those platforms are isolated from the globally connected market due to capital controls, this does not mean that the trading volume is not real.³¹⁴ The Sponsor also does not indicate whether trading on those portions of the market represents “real” trading or fake or non-economic trading, or address whether pricing on those segments of the market would affect prices on the “real” platforms.

For these reasons, the Commission determines that the record does not support a conclusion that the Sponsor has identified a segment of the bitcoin spot market, representing real volume and forming the basis of the Trust’s NAV and IIV pricing, that is uniquely resistant to manipulation.³¹⁵

(d) *Features of the Bitwise Bitcoin ETF Trust*

(i) Representations Made and Comments Received

NYSE Arca represents that the Sponsor believes that several additional features of the structure of the Trust would provide unique resistance to fraudulent and manipulative practices.³¹⁶ The Sponsor asserts that, because the Trust’s NAV is based on substantially all

³¹⁴ See supra note 228 and accompanying text. The Commission notes that the Sponsor does not clearly explain how it handled the South Korean platforms in its analysis. While the Sponsor states that it has excluded these platforms, it still includes the trade size histograms, volume graphs, and spread graphs for the South Korean platforms, and its statement that 73 platforms have failed one or more of its tests includes the South Korean platforms among the 73. In contrast, when describing its first analysis, the Sponsor indicates that it has excluded the South Korean platforms at the outset. See supra note 181.

³¹⁵ For discussion about how the Sponsor’s analysis impacts arguments about whether the bitcoin futures market is a market of significant size, see infra Section III.B.3.

³¹⁶ See Notice and OIP, supra note 7, 84 FR at 23133. See also Bitwise Submission III, supra note 9, at 13 (arguing that the Trust’s pricing methodology makes market manipulation of the NAV more difficult, because a bad actor must manipulate the majority of trading volume to impact the price, and easier to identify, because the manipulative activity must be repeated to have a significant effect). See supra Section III.B.1(b) for additional discussion about how the “exchange-tradability” of bitcoin and the nature of the bitcoin market impact the proposed ETP’s resistance to manipulation.

“real” spot bitcoin trading volume and is volume-weighted, any attempt to manipulate the NAV must involve a majority of spot bitcoin trading volume over a significant period of time.³¹⁷ The Sponsor also asserts that the unique design of the Bitwise Daily Bitcoin Reference Price, and thus the Trust’s NAV, the exclusive use of in-kind creations and redemptions, and the decision to accrue fees in bitcoin, provide unique resistance to short term attempts at manipulation.³¹⁸

The Sponsor represents that the Trust will value its shares daily based on the Bitwise Daily Bitcoin Reference Price, which is based on prices drawn from selected platforms that represent substantially all of the economically significant spot trading volume on global bitcoin platforms, excluding those in countries that impose capital controls.³¹⁹ The Sponsor describes the calculation of the Bitwise Daily Bitcoin Reference Price separately from its description of how it has identified the “real” market for bitcoin, as discussed above.³²⁰ The Sponsor states that to calculate the Bitwise Daily Bitcoin Reference Price, it relies on a methodology that begins with the Sponsor’s tracking of over 200 on-line digital-asset trading platforms and eliminating a significant portion of those platforms, based on a number of factors.³²¹ According to the Sponsor, these factors serve to eliminate platforms that, for example, are domiciled in emerging market countries or countries that have capital controls; lack a functioning and stable Application Programming Interface³²² for the transmission of price and volume data; have issues with

³¹⁷ See Notice and OIP, supra note 7, 84 FR at 23133.

³¹⁸ See id.

³¹⁹ See id. at 23126, 23128.

³²⁰ See supra notes 172–176 and accompanying text.

³²¹ See Notice and OIP, supra note 7, 84 FR at 23131.

³²² An “Application Programming Interface,” or “API,” is “a set of clearly defined methods of communication between various software components which can make it easier to develop a computer program by providing all the building blocks, which are then put together by programmers.” Securities Exchange Act Release No. 82873 (Mar. 14, 2018), 83 FR 13008, 13028 n.158 (Mar. 26, 2018) (Transaction Fee Pilot for NMS Stocks Proposing Release) (File No. S7–05–18).

significant downtime, problems with customer withdrawals, or known security issues; are or may be subject to extraordinary legal or regulatory activity; or do not have at least \$1 million average daily volume for bitcoin-fiat or bitcoin-stablecoin trading pairs over the past calendar quarter.³²³ The Sponsor represents that, at least quarterly, the Bitwise Crypto Index Committee reviews published trading data from all platforms that pass this screening process and removes platforms that show persistent signs of artificial or inflated volume.³²⁴ The Sponsor further represents that, through this process, it has identified ten platforms to use for the Bitwise Daily Bitcoin Reference Price, and has more recently eliminated one platform, Bitfinex, due to the recent NYAG inquiry of its operator.³²⁵

As noted above, the Sponsor argues that the ten platforms it selected for the Bitwise Daily Bitcoin Reference Price's pricing mechanism currently account for substantially all of the "real" spot global volume of bitcoin, excluding capital-controlled countries, although the number of platforms and percentage of global volume represented is subject to change.³²⁶ The Sponsor asserts that this composition mitigates against idiosyncratic platform risk because the failure of any individual platform will not materially affect pricing for the Trust.³²⁷ Moreover, the Sponsor asserts that using a larger number of platforms to calculate the NAV supports liquidity of the

³²³ See Notice and OIP, supra note 7, 84 FR at 23131.

³²⁴ See id. The Sponsor states that this analysis includes a review of bid/ask spreads, actual claimed executed trades with price and volume, and any other factors that the Committee deems relevant. See id.

³²⁵ See id. at 23130 n.20, 23131.

³²⁶ See id. at 23131.

³²⁷ See id. at 23131–32; Bitwise Submission I, supra note 6, at 92. See also Bitwise Submission III, supra note 9, at 171 (asserting that the Trust's procedures to incorporate prices from a large number of spot bitcoin platforms, and allow the Bitwise Crypto Index Committee to remove a platform from contributing to prices when it faces a disruption, ensures that the Trust's NAV always draws prices from platforms trading at a globally integrated price). The Sponsor represents that, while in the past trading has been disrupted at individual bitcoin platforms, there is no history of systemic disruptions across all platforms in the "modern evolution" of the bitcoin market. See Bitwise Submission III, supra note 9, at 171.

Trust and mitigates idiosyncratic risks that can exist at an individual platform over short periods of time.³²⁸ The Sponsor also asserts that the use of a large number of platforms contributing prices to the NAV, in a well-arbitrated and fractured market, makes market manipulation more difficult because the malicious actor would need to manipulate multiple platforms simultaneously or dramatically skew the historical distribution of volume to impact the NAV.³²⁹ The Sponsor further asserts that the reliance on substantially all of spot trading volume in bitcoin for pricing the Trust increases this difficulty, because significantly more capital would be required to attempt to influence NAV and it would be difficult to profit from that manipulation.³³⁰

The Sponsor states that on April 25, 2019, the Bitwise Crypto Index Committee voted to immediately remove Bitfinex from the list of platforms that contribute prices to the Bitwise Daily Bitcoin Reference Price, along with other Bitwise Crypto Indexes, because the NYAG had obtained a court order against iFinex Inc., operator of Bitfinex, based on allegations of fraudulent conduct.³³¹ The Sponsor asserts that the removal of Bitfinex was in keeping with the committee's

³²⁸ See Bitwise Submission III, supra note 9, at 127. See also Bitwise Submission V, supra note 9, at 2–3 (representing that individual platforms may experience idiosyncratic issues, including hacking, withdrawal issues, regulatory actions, and legal actions, that cause their prices to temporarily detach from the globally integrated price when the idiosyncratic issues break or weaken the arbitrage mechanism). One commenter asserts that it agrees with the Sponsor that a benefit of a multi-platform approach is that it minimizes the potential adverse impact of any single platform going off-line due to technical problems or other concerns, and mutes the impact of potentially manipulated prices or volume stemming from a single platform. See Omnix Letter, supra note 9, at 3.

³²⁹ See Notice and OIP, supra note 7, 84 FR at 23132; Bitwise Submission I, supra note 6, at 96.

³³⁰ See Notice and OIP, supra note 7, 84 FR at 23132; Bitwise Submission I, supra note 6, at 93, 97.

³³¹ See Bitwise Submission III, supra note 9, at 47; Bitwise Submission V, supra note 9, at 1. See also Notice and OIP, supra note 7, 84 FR at 23130 n.20. The NYAG, which began its investigation in November 2018, alleges “that the operators of the ‘Bitfinex’ trading platform, who also control the ‘tether’ virtual currency, engaged in a cover-up to hide the apparent loss of \$850 million of co-mingled client and corporate funds.” Press Release, New York State Office of the Attorney General, Attorney General James Announces Court Order Against “Crypto” Currency Company under Investigation for Fraud (Apr. 25, 2019), available at <https://ag.ny.gov/press-release/2019/attorney-general-james-announces-court-order-against-crypto-currency-company>. The NYAG further alleges, “The filings explain how Bitfinex no longer has access to over \$850 million dollars of co-

(footnote continued...)

rule to exclude platforms subject to extraordinary regulatory action, which requirement exists to limit platforms included in the pricing mechanism to those that are positive actors in the market and limit the potential for interruptions in service or unusual pricing due to government or regulatory enforcement actions.³³² According to the Sponsor, extraordinary legal or regulatory action increases the risk that a platform will exhibit idiosyncratic pricing issues or have to halt withdrawals, shut down, or face other challenges.³³³ The Sponsor asserts that the removal of Bitfinex from the pricing mechanism on the same day that the extraordinary legal threat emerged suggests that the screening rules and ongoing monitoring process are useful, proactive, and constructive, and protect the Bitwise Daily Bitcoin Reference Price from the “slightest possibility” of anomalous pricing arising from the developments.³³⁴ The Sponsor further asserts

(...footnote continued)

mingled client and corporate funds that it handed over, without any written contract or assurance, to a Panamanian entity ... a loss Bitfinex never disclosed to investors. In order to fill the gap, executives of Bitfinex and Tether engaged in a series of conflicted corporate transactions whereby Bitfinex gave itself access to up to \$900 million of Tether’s cash reserves, which Tether for years repeatedly told investors fully backed the tether virtual currency ‘1-to-1.’”). Id. The NYAG explained, however, that it “does not seek to enjoin or interfere with the orderly operations of Bitfinex or Tether’s legitimate businesses, if any, including orders by legitimate traders on the Bitfinex platform, or legitimate tether holders, to redeem their tethers for dollars. Indeed, protecting legitimate traders using the Bitfinex platform, and legitimate holders of tether, primarily those residing in New York, is why a preliminary injunction is necessary now to preserve the status quo pending the completion of OAG’s investigation.” Affirmation of Brian M. Whitehurst in Support of OAG’s Ex Parte Application for an Order Pursuant to General Business Law § 354, James v. iFinex, Inc., et al., No. 450545/2019, 2019 WL 2176835 (N.Y. Sup. Ct. Apr. 25, 2019), Doc. No. 1, at para. 96. The court subsequently denied a motion to dismiss brought by iFinex Inc. and its related entities. James v. iFinex Inc., et al., No. 450545/2019, 2019 WL 3891172 (N.Y. Sup. Ct. Aug. 19, 2019). iFinex Inc. and its related entities have appealed the court’s denial of their motion to dismiss. Notice of Appeal, James v. iFinex Inc., et al., No. 450545/2019 (N.Y. Sup. Ct. Aug. 19, 2019), Doc. No. 117.

³³² See Bitwise Submission V, supra note 9, at 1.

³³³ See id. at 3.

³³⁴ See id. at 5–6. See also id. at 3 (asserting that the benefit of proactively removing Bitfinex as a pricing source is that it protects against potential short-term downstream impacts if a negative idiosyncratic event occurs in the future). One commenter states that the Sponsor’s reasons for removing Bitfinex are sound and follow the outlined index procedures, but raise a flag. See Blake Letter II, supra note 9.

that heightened scrutiny of stablecoins after this incident makes it extremely unlikely that the fraudulent printing of a stablecoin asset could easily happen in the future.³³⁵

With respect to the removal of Bitfinex, which represented 14.1% of all “real” spot bitcoin volume in April 2019, the Sponsor argues that “the loss of any single exchange does not impact the Bitwise Daily Bitcoin Reference Price in a meaningful way.”³³⁶ The Sponsor asserts that, with prices tightly aligned, removing one or two platforms would not meaningfully impact the calculated price.³³⁷ In addition, the Sponsor states that, while having more platforms to calculate the price is better, there are diminishing returns for each additional platform and at some point it is enough to calculate a good price and not be exposed to idiosyncratic risk, especially with a pricing methodology that mitigates against the impact of outlier prices.³³⁸

The Sponsor asserts that the procedures by which it relies on the prices and volumes from the selected platforms to calculate the Bitwise Daily Bitcoin Reference Price are designed to protect the price, and thereby the Trust’s NAV, from potential manipulation.³³⁹ The Sponsor argues that the use of six consecutive five-minute segments over a thirty-minute period means that malicious actors would need to sustain efforts to manipulate the market over an extended period of time or replicate efforts multiple times, which could trigger review by platforms, market participants, and regulators.³⁴⁰ The Sponsor asserts that the use of a median price

³³⁵ See Bitwise Submission III, supra note 9, at 47.

³³⁶ See Bitwise Submission V, supra note 9, at 4.

³³⁷ See id. (representing that the average deviation in price as compared to the consolidated price in 2019 was 0.11% for Bitfinex, which falls in the middle of the 0.05% to 0.20% range seen across the ten “real” platforms).

³³⁸ See id. at 4–5.

³³⁹ See Notice and OIP, supra note 7, 84 FR at 23131.

³⁴⁰ See id.; Bitwise Submission I, supra note 6, at 98 (asserting that the extended thirty-minute period supports Authorized Participant activity by capturing volume over a longer time period, rather than forcing Authorized Participants to mark an individual close or auction). See also Omniex Letter, supra note 9, at 4 (asserting that
(footnote continued...)

eliminates the ability of outlier prices to impact the NAV, because the methodology systematically excludes outliers from the NAV calculation.³⁴¹ The Sponsor also asserts that the use of a volume-weighted median, instead of a traditional median, protects against attempts to manipulate the NAV by executing multiple low-dollar trades, because any manipulation attempt would have to involve a majority of global spot bitcoin volume in a five-minute window to impact the pricing mechanism.³⁴² According to the Sponsor, the methodology it uses for the Bitwise Daily Bitcoin Reference Price is similar to the settlement pricing methodology for the CME CF Bitcoin Reference Rate used for CME futures, which the Sponsor represents has documented protection against the impact of pricing variance.³⁴³ Finally, the Sponsor asserts that the “carefully designed lag” between the strike time of the NAV at 4:00 p.m. E.T. and the time the NAV is distributed allows time for the Sponsor to algorithmically and manually review contributed prices for any anomalous behavior and correct unusual pricing if it occurs.³⁴⁴

(...footnote continued)

the Trust’s NAV process is uniquely resistant to manipulation because a bad actor would need to manipulate multiple platforms over an extended period of time to impact the NAV).

³⁴¹ See Notice and OIP, supra note 7, 84 FR at 23131; Bitwise Submission I, supra note 6, at 99. See also Bitwise Submission III, supra note 9, at 127 (asserting that the Sponsor’s pricing methodology is designed to systematically exclude aberrant prices as an extra protection against idiosyncratic platform risks at individual platforms).

³⁴² See Notice and OIP, supra note 7, 84 FR at 23131; Bitwise Submission I, supra note 6, at 99.

³⁴³ See Notice and OIP, supra note 7, 84 FR at 23131; Bitwise Submission I, supra note 6, at 99; Bitwise Submission III, supra note 9, at 15. The Sponsor argues that a cited study shows the protective qualities of using volume-weighted median pricing, and that while the Sponsor’s approach differs in drawing from a larger number of platforms and using a shorter time window, the shorter time window maintains the protective qualities of the approach while improving the timeliness of the NAV price. See Bitwise Submission I, supra note 6, at 99 (citing Andrew Paine and William J. Knottenbelt, Imperial College Centre for Cryptocurrency Research and Engineering, “Analysis of the CME CF Bitcoin Reference Rate and CME CF Bitcoin Real Time Index” (Nov. 14, 2016)).

³⁴⁴ See Notice and OIP, supra note 7, 84 FR at 23133; Bitwise Submission I, supra note 6, at 100. The Sponsor notes that the NAV would generally be distributed by 5:30 p.m. E.T. See Notice and OIP, supra note 7, 84 FR at 23133; Bitwise Submission I, supra note 6, at 100.

The Sponsor asserts that the Trust’s method of calculating the NAV differs from that proposed for use by the Winklevoss Bitcoin Trust, and that these differences help make the NAV calculation and the Trust itself uniquely resistant to manipulation.³⁴⁵ One commenter asserts that the current proposal is better than that discussed in the Winklevoss Order because the Trust proposes to use many bitcoin platforms that account for a majority of total global volume of bitcoin, as compared to using a small related platform that represents perhaps 1% of global bitcoin trading.³⁴⁶

Other commenters also support the Sponsor’s proposed method of calculating the Trust’s NAV.³⁴⁷ One commenter argues that to the extent that the NAV becomes aberrant, stale, or incorrect, the real price discovery would occur in the proposed ETP.³⁴⁸ This commenter cites as an example ETPs with foreign-listed equities that have NAVs that are out-of-sync with the trading day in the United States.³⁴⁹ However, another commenter points to risks disclosed in a prior version of the Trust’s registration statement that states that the NAV may not always correspond to market price and investors may be adversely affected.³⁵⁰

³⁴⁵ See Bitwise Submission III, supra note 9, at 81. The Commission notes that the Sponsor discusses several points of comparison between the specifics of its proposal and the Winklevoss Trust, see supra note 9, at 75, 77, 79, and 81, but these particular comparisons are not relevant to the question of whether the proposal is consistent with the standards of the Exchange Act.

³⁴⁶ See Anonymous Letter I, supra note 6. This commenter favorably compares the proposal to United States bitcoin futures, which also use a “tiny” number of platforms for their pricing methodology, and the now-withdrawn proposal from Cboe BZX Exchange, Inc., for another bitcoin ETP (the VanEck SolidX Bitcoin Trust) that would have used prices from a few OTC desks, when there is no reason to use OTC pricing due to lack of an alternative. See id. See also Securities Exchange Act Release No. 85119 (Feb. 13, 2019), 84 FR 5140 (Feb. 20, 2019) (Notice of Filing of Proposed Rule Change to List and Trade Shares of SolidX Bitcoin Shares Issued by the VanEck SolidX Bitcoin Trust, Under BZX Rule 14.11(e)(4), Commodity-Based Trust Shares) (SR-CboeBZX-2019-004).

³⁴⁷ See Omniex Letter, supra note 9, at 3–4; Donostia Ventures Letter, supra note 9, at 3–4.

³⁴⁸ See Donostia Ventures Letter, supra note 9, at 3–4.

³⁴⁹ See id.

³⁵⁰ See C. Ross Letter, supra note 6.

The Sponsor asserts that its methodology for calculating the Bitwise Real-Time Bitcoin Price, which will be the basis for the Trust’s IIV, is similar to the approach used for the NAV, but brought into real time.³⁵¹ The Sponsor argues that the use of ten platforms to calculate the Bitwise Real-Time Bitcoin Price mitigates against idiosyncratic platform risk and against pricing disruptions at an individual platform due to a halt, hacking, or data error.³⁵² The Sponsor also argues that the use of contributory weights based on the trailing thirty-minute volume, rather than the last trade size or volume over a short time period, protects against attempts to manipulate the IIV by capturing more volume, while using the price of the most recent trade on each platform ensures the timeliness of the IIV.³⁵³ The Sponsor asserts that the use of a median price eliminates the influence of outlier prices and the use of a volume-weighted median protects against attempts to manipulate the price by executing multiple low-dollar trades.³⁵⁴ According to the Sponsor, it expects the IIV will closely track the globally integrated bitcoin price on the selected platforms, but that the IIV may differ from the NAV due to the IIV’s use of real-time prices.³⁵⁵ The Sponsor asserts that this will not create confusion in the marketplace, because Authorized Participants are the only investors that interact with the NAV and the Sponsor will communicate clearly its NAV calculation method.³⁵⁶

³⁵¹ See Bitwise Submission I, *supra* note 6, at 174–181. The Commission notes that the Sponsor uses the terminology “Indicative Index Value” in Bitwise Submission I, but the terminology “Bitwise Real-Time Bitcoin Price” in other places. For consistency, in this Order the Commission will refer to this price as the “Bitwise Real-Time Bitcoin Price.”

³⁵² See *id.* at 176.

³⁵³ See *id.* at 177–178.

³⁵⁴ See *id.* at 179.

³⁵⁵ See *id.* at 180–181.

³⁵⁶ See *id.* at 181. The Sponsor represents that there are many instances in the ETP market where the IIV and NAV differ due to the calculation methodology, market hours overlap, or other factors, and the Sponsor does not observe negative impacts on trading, liquidity, or otherwise for these ETFs. See *id.* The Sponsor further represents that the CME bitcoin futures market similarly relies on and distributes a Reference Rate (comparable
(footnote continued...))

One commenter states that an inaccurate NAV will break the arbitrage mechanism because redemptions are made based on NAV.³⁵⁷ According to this commenter, while most ETPs have NAVs that are calculated once per day, the bitcoin market is so volatile that intra-day NAV measures are required for an ETP with bitcoin as the underlying asset.³⁵⁸ This commenter also represents that non-concurrent trading hours between digital asset platforms and the ETP market may increase the gap between the ETP price and the NAV.³⁵⁹

The Sponsor argues that the exclusive use of in-kind creations, redemptions, and fee accruals (except in the case of liquidation) provides long-term investors in the Trust with significant, redundant, and strong protection against attempts to manipulate the Bitwise Daily Bitcoin Reference Price and thus the NAV.³⁶⁰ According to the Sponsor, denominating those transactions exclusively in bitcoin ensures that the Trust would maintain the appropriate amount of bitcoin-per-Share, even if the NAV or the Bitwise Daily Bitcoin Reference Price were manipulated.³⁶¹ The Sponsor also asserts that exclusive use of in-kind creations and redemptions externalizes the cost and risk of transacting in the underlying spot market for bitcoin.³⁶²

(...footnote continued)

to the NAV) and a Real-Time Rate (similar to the IIV), and the market is able to understand and evaluate the differences between these two rates. See id.

³⁵⁷ See Shenoy Letter III, supra note 69, at 6.

³⁵⁸ See id.

³⁵⁹ See id. at 6–7.

³⁶⁰ See Notice and OIP, supra note 7, 84 FR at 23132-33; Bitwise Submission I, supra note 6, at 103–104 (citing letter from Jeffrey Yass, Managing Director, Susquehanna International Group, LLP (May 15, 2017), regarding SR-BatsBZX-2016-30 (“Susquehanna Letter”), available at <https://www.sec.gov/comments/sr-batsbzx-2016-30/batsbzx201630-1761310-152159.pdf>, for additional explanation of the protective benefits of in-kind creations and redemptions). A commenter on a previous bitcoin ETP proposal asserts that in-kind creation and redemption allows market participants to source primary market liquidity freely and at the most efficiently priced levels across multiple platforms and OTC counterparties, thus largely insulating investors from manipulative activity on any single platform. See Susquehanna Letter, id. at 6.

³⁶¹ See Notice and OIP, supra note 7, 84 FR at 23133; Bitwise Submission III, supra note 9, at 13.

³⁶² See Bitwise Submission III, supra note 9, at 13.

One commenter supports the Sponsor’s assertions and argues that processing all creations and redemptions in-kind and requiring payment of the Trust’s expenses exclusively in bitcoin would “cause[] the fund to exist in a ‘bitcoin-denominated world,’ where even grotesque manipulation of the Trust’s NAV would not harm holders of the fund.”³⁶³ This commenter represents that the current proposal is unique in promising to accrue all fees in bitcoin, in addition to exclusively using in-kind creations and redemptions, meaning that the Trust’s entire economic life would be denominated in bitcoin and the Trust would insulate investors from the potential negative long-term impact of NAV manipulation.³⁶⁴ In addition, this commenter asserts that investors on the secondary market would ignore an incorrect NAV and instead focus price discovery efforts on the proposed ETP itself.³⁶⁵

The Sponsor asserts that it does not anticipate a situation in which it would need to fair-value bitcoin, because the loss of one, two, or even many platforms would still leave the Sponsor with sufficient pricing feeds to adequately price bitcoin according to its rules.³⁶⁶ According to the Sponsor, in the extraordinarily unlikely event that all, or all but one, of the platforms stopped providing prices, the Sponsor’s pricing procedures allow for fair valuing the asset based on all available pricing inputs, which would likely include prices on the remaining platform (if one

³⁶³ Donostia Ventures Letter, supra note 9, at 2. See also Castle Island Ventures Letter, supra note 9, at 3 (asserting that the exclusive use of in-kind creations and redemptions, and accrual of all fees in-kind, provides significant protections to investors against an attempt to manipulate the NAV, and citing the Donostia Ventures Letter for further articulation of the reasons).

³⁶⁴ See Donostia Ventures Letter, supra note 9, at 3.

³⁶⁵ See id. at 3–4. Another commenter questions this assertion, asks how an investor would know the actual price of bitcoin, and disputes that market participants are always rational. See Robert Letter, supra note 9. This commenter also questions whether traders on the CME bitcoin futures market who own bitcoin on the spot market could be actively involved in price manipulation through mechanisms available on CME and simultaneous trading across global platforms. See Robert Letter, supra note 9.

³⁶⁶ See Bitwise Submission I, supra note 6, at 212.

exists), futures prices, exchange-traded swap prices, or other sources.³⁶⁷ The Sponsor asserts that it could also temporarily halt creations and redemptions in such circumstances.³⁶⁸

(ii) Analysis

The Commission concludes that NYSE Arca has not demonstrated that additional features of the Trust, including its NAV and IIV pricing and its use of in-kind creations, redemptions, and accrual of fees, would make the proposed ETP uniquely resistant to manipulation. Specifically, NYSE Arca has not demonstrated that the design of the Bitwise Daily Bitcoin Reference Price, and the Trust's NAV, would make the proposed ETP uniquely resistant to manipulation. The Trust's Registration Statement acknowledges risks associated with the Bitwise Daily Bitcoin Reference Price—specifically, that the Bitwise Daily Bitcoin Reference Price “was recently developed,” “has a limited history,” and “is based on a new and untested calculation methodology.”³⁶⁹ NYSE Arca and the Sponsor do not address these representations in the Registration Statement or why a new and untested pricing methodology could be counted upon to provide unique resistance to manipulation. As discussed elsewhere, the Trust's Registration Statement also acknowledges that bitcoin spot platforms are “relatively new, and in some cases, largely unregulated,” and that the bitcoin futures market has “limited trading history and operational experience.”³⁷⁰ The Sponsor has made sweeping claims that up to 95% of the volume reported by bitcoin platforms is wash trading or simply fabricated, while asking the

³⁶⁷ See id.

³⁶⁸ See id. The Sponsor represents that, in the past, other ETPs have halted creation and redemption activity due to fundamental disruptions of their underlying markets, such as was the case for the Van Eck Vectors Egypt Index ETF during the spring of 2014, when the Egyptian stock market closed for multiple days. See id.

³⁶⁹ See Registration Statement, supra note 31, at 6, 9–10 (stating that the Sponsor “does not guarantee the validity of any of these [pricing] inputs, which may be subject to technological error, manipulative activity, or fraudulent reporting from their initial source”). The Trust's Registration Statement contains similar stated risks for the Bitwise Real-Time Bitcoin Price, which the Trust would use to calculate the IIV. See id. at 10.

³⁷⁰ See supra note 123 and accompanying text; infra note 465 and accompanying text.

Commission to approve a bitcoin ETP based upon a small segment of the market that it asserts is uniquely resistant to the influence of this activity.³⁷¹ These untested claims, when combined with statements regarding the relatively new state of the bitcoin market and the proposed ETP's pricing mechanism, show that further development of the market is needed to establish the Sponsor's representations.

In addition, the Sponsor's use of the Bitwise Crypto Index Committee to remove platforms facing a disruption from the Trust's pricing mechanism, such as what occurred with the removal of Bitfinex,³⁷² is an ad hoc, ex post adjustment and cannot be counted upon to provide unique resistance to manipulation. Moreover, the Sponsor's assertion that—after the court order against Bitfinex's operator—fraudulent printing of a stablecoin asset in the future is extremely unlikely, is unpersuasive.³⁷³ The Commission does not believe that the deterrent value, if any, of past accusations of fraud involving stablecoins on future stablecoin schemes is sufficient to show resistance, let alone unique resistance, to manipulation. Additionally, even assuming that the designed lag time between the strike time of the NAV and the time of NAV distribution may allow a limited period of time for the Sponsor to review for and correct some anomalous behavior before the NAV is distributed, this ad hoc process cannot be relied upon as a sufficient antidote to fraud and manipulation on the underlying platforms, especially sustained manipulation, and is no substitute for a comprehensive surveillance-sharing agreement.³⁷⁴

³⁷¹ See supra Section III.B.1(c).

³⁷² See supra notes 331–334 and accompanying text.

³⁷³ See supra note 335 and accompanying text.

³⁷⁴ See supra note 344 and accompanying text. The Sponsor also describes that in certain circumstances it could fair-value bitcoin or temporarily halt creations and redemptions, see supra notes 366–368 and accompanying text, but does not assert that these characteristics would make the Trust uniquely resistant to manipulation.

Further, the record does not demonstrate that the Sponsor's proposed methodology for calculating the Bitwise Daily Bitcoin Reference Price, and thus the Trust's NAV, using prices and volumes from the selected platforms would make the proposed ETP uniquely resistant to manipulation. As discussed above, NYSE Arca and the Sponsor have not shown that fake or non-economic volume in the spot market would not affect prices on the selected platforms used to calculate the Bitwise Daily Bitcoin Reference Price, including prolonged effects.³⁷⁵ Moreover, NYSE Arca and the Sponsor have not shown that other parts of the spot market, including OTC trading, and trading in capital-controlled countries, would not affect the prices on the selected platforms.³⁷⁶ To the extent that trading on platforms not used to calculate the Bitwise Daily Bitcoin Reference Price affects prices on the selected platforms, the characteristics of those other platforms affect whether the Trust is uniquely resistant to manipulation. While the proposed procedures for calculating the Trust's NAV using prices from the selected platforms might provide some protections against attempts at manipulation,³⁷⁷ these procedures would not sufficiently reduce the risk of fraudulent or manipulative trading activity or the need to monitor this risk through a surveillance-sharing agreement with a regulated market of significant size. In particular, the Sponsor has not shown that its proposed use of six consecutive five-minute segments over a thirty-minute period to calculate the Trust's NAV would effectively be able to eliminate fraudulent or manipulative activity that is not transient.³⁷⁸ The Sponsor does not connect the five or thirty minute windows to the duration of the effects of the wash and fictitious trading that the Sponsor concedes exists in the bitcoin spot market. Indeed, the Sponsor

³⁷⁵ See supra notes 276–287 and accompanying text.

³⁷⁶ See supra Section III.B.1(c).

³⁷⁷ See supra notes 339–343 and accompanying text.

³⁷⁸ See supra note 340 and accompanying text.

recognizes that many bitcoin trading platforms in what it calls the “fake and non-economic” bitcoin market engage in sustained manipulation every hour of every day, and often for the entire week the Sponsor examined.³⁷⁹ Because the Sponsor concedes that bitcoin trading platforms with “fake and non-economic” trading manipulate their prices every hour of every day, and the Commission has concluded that the Sponsor has failed to isolate the pricing on these “fake” platforms that the Sponsor eschews and the “real” platforms that the Sponsor employs, the Commission concludes that the Sponsor has not demonstrated that its NAV pricing—including its use of five and thirty minute windows—make the proposed ETP uniquely resistant to manipulation.

Moreover, the Sponsor’s identification of differences between the NAV process for another proposed bitcoin ETP and the NAV process for the current proposal does not establish that the Sponsor’s proposed NAV process would make the Trust uniquely resistant to

³⁷⁹ See Bitwise Submission I, supra note 6, at 43–50, 52, 54–57; Bitwise Submission II, supra note 9, at 28–29, 33–34. While the Sponsor’s own analysis of wash trading sufficiently demonstrates that fraud or manipulation of bitcoin spot pricing could exceed thirty minutes, evidence of other types of fraud and manipulation provide additional support. See supra notes 69–73, 138, 140–145, 331. See also Winklevoss Order, supra note 12, 83 FR at 37585 (discussing an academic paper concluding that hacking and manipulation of the Mt. Gox bitcoin trading platform affected the global price of bitcoin between April 2011 and November 2013), 37586–87 (stating that a person or persons with a dominant position in bitcoin would be able to hold that position for longer than thirty minutes and that “early bitcoin adopters” have held such a position for a much longer period), 37585–86 (noting an academic paper, the “Griffin-Shams Paper,” suggesting that the price of bitcoin was manipulated with Tether from March 1, 2017, to March 31, 2018); Affirmation of Brian M. Whitehurst in Support of OAG’s Ex Parte Application for an Order Pursuant to General Business Law § 354, James v. iFinex Inc., et al., No. 450545/2019, 2019 WL 2176835 (N.Y. Sup. Ct. Apr. 25, 2019), Doc. No. 1, at paras. 48–93 (describing allegedly improper conduct over the course of many months involving Bitfinex). Regarding the academic findings that the price of bitcoin was manipulated with Tether, the Sponsor contends that these “findings unwind if you assume that all (or even most) of the growth in issuance of Tether . . . reflects organic demand,” but the Sponsor does not offer any support for such an assumption. Bitwise Submission III, supra note 9, at 47. Instead, the Sponsor claims that allegations in the NYAG investigation, see supra note 331, do not in and of themselves “suggest that the Tether issuance was fraudulent or reflected anything other than organic investor demand,” and therefore, “while worrisome, do not support the accusations in the Griffin-Shams paper at this time,” but nothing in the NYAG action casts any doubt on the conclusion that the price of bitcoin is susceptible to manipulation through activity on bitcoin trading venues. See Winklevoss Order, supra note 12, 83 FR at 37585–86.

manipulation.³⁸⁰ In addition, these concerns about the Sponsor’s process for calculating the NAV would apply to the IIV, which would be calculated using a similar process, and the Commission notes that publishing the IIV every fifteen seconds would not ameliorate the risk of manipulation if the underlying pricing mechanism is not demonstrably resistant to manipulation.³⁸¹

Because, as discussed above, the Sponsor has not established that its research identified those platforms in the spot market with “real” trading volume,³⁸² NYSE Arca and the Sponsor have also failed to demonstrate that the Bitwise Daily Bitcoin Reference Price would draw prices from selected platforms that represent “substantially all” of the economically significant spot trading volume, outside of capital-controlled countries.³⁸³ The Sponsor acknowledges that there is some additional real volume to be found on other platforms, but simply asserts that any adjustments to account for such additional real volume would not materially change the Sponsor’s conclusions.³⁸⁴ In addition, in response to a law enforcement action by the NYAG, the Sponsor removed the second largest “real” bitcoin platform from the calculation of the Bitwise Daily Bitcoin Reference Price—Bitfinex, at purportedly 14.1% of the “real” market in April 2019—but provides only a cursory and insufficient analysis to support its assertion that this removal does not meaningfully impact the Bitwise Daily Bitcoin Reference Price.³⁸⁵ The

³⁸⁰ See supra note 345 and accompanying text. The Commission notes that, in the Winklevoss Order, the Commission raised concerns based on the relative size of the volume of the auction that would serve as the basis for the pricing mechanism as compared to the size of the creation or redemption basket. See Winklevoss Order, supra note 12, 83 FR at 37589–90. While the Sponsor and a commenter provide comparative information about the liquidity of the Trust’s proposed pricing mechanism (see supra notes 345–346 and accompanying text), the Commission concludes that this is not a relevant comparison because the Commission does not use the liquidity of the platforms selected for the Trust’s pricing mechanism as a basis for its current decision.

³⁸¹ See supra notes 351–356 and accompanying text.

³⁸² See supra Section III.B.1(c).

³⁸³ See supra notes 319–338 and accompanying text.

³⁸⁴ See supra notes 242–253 and accompanying text.

³⁸⁵ See supra notes 331–338 and accompanying text. The Commission notes that Amendment No. 1 states throughout that the Trust’s pricing mechanism will be based on ten platforms and that these ten platforms

(footnote continued...)

Sponsor asserts that Bitfinex’s average deviation from the consolidated price falls “comfortably in the middle” of the average deviation from the consolidated price for each of the ten identified “real” platforms,³⁸⁶ but does not, for example, provide any data about how this might translate to any price difference in the Bitwise Daily Bitcoin Reference Price if calculated with and without Bitfinex. The Sponsor asserts that there are diminishing returns to the value of each additional platform in protecting against idiosyncratic platform risk.³⁸⁷ But the Sponsor does not adequately address the effect of the reliance on less of the “real” volume in the spot market to support the Trust’s pricing mechanism, including the impact of removal of this segment of “real” volume from the Trust’s pricing mechanism on the Sponsor’s assertion that any attempt to manipulate the NAV must involve a majority of spot bitcoin trading volume.³⁸⁸

In addition, while the Sponsor describes at length the analysis that it conducted to identify spot platforms with real volume, NYSE Arca and the Sponsor have not established that the Bitwise Daily Bitcoin Reference Price would continue to rely on those platforms that the Sponsor identifies (or might in the future identify) as representing substantially all of the “real” spot trading volume. The Sponsor acknowledges that the number of platforms used to construct

(...footnote continued)

represent substantially all of the “real” spot market for bitcoin, and contains only one reference in a footnote to the removal of Bitfinex and reduction in the number of platforms contributing to the Bitwise Daily Bitcoin Reference Price from ten to nine. See Notice and OIP, supra note 7, 84 FR at 23130 n.20. In addition, the Sponsor’s submission detailing its analysis of the bitcoin spot market does not mention the removal of Bitfinex from the Trust’s pricing mechanism. See Bitwise Submission II, supra note 9. The Commission does not believe that the Sponsor has fully explained the impact of removing Bitfinex on many of its representations and assertions.

³⁸⁶ See supra note 337 and accompanying text.

³⁸⁷ See supra note 338 and accompanying text.

³⁸⁸ See supra note 317 and accompanying text.

the Bitwise Daily Bitcoin Reference Price and the percentage of global volume that they represent is subject to change.³⁸⁹

Moreover, the methodology the Sponsor uses to select the platforms from which it draws the Bitwise Daily Bitcoin Reference Price differs from the methodology it uses for the analysis that purports to identify those spot platforms with real volume.³⁹⁰ For example, one factor for eliminating platforms from the Trust’s pricing mechanism is whether the platform is domiciled in an emerging market country,³⁹¹ but the Sponsor does not articulate this factor as a basis for considering a platform’s volume not to be “real.” While the Sponsor has currently identified the same ten platforms for inclusion in the Bitwise Daily Bitcoin Reference Price as it designated as “real” during the course of its described analysis—before removing one platform due to a state law enforcement action—the current overlap does not demonstrate that the methodologies would generate the same results. And the Sponsor has not explained how—if the differing methodologies identify different sets of bitcoin platforms in the future—such divergences would affect its representations that the Bitwise Daily Bitcoin Reference Price is based on platforms that represent substantially all of the “real” spot trading volume.

Finally, the record does not demonstrate that in-kind creations and redemptions, or the decision to accrue the Trust’s fees exclusively in bitcoin, would provide unique resistance to manipulation.³⁹² In-kind creations and redemptions are a common feature of ETPs, and the Commission has not excused exchanges that list ETPs that rely on this mechanism from the need to enter into surveillance-sharing agreements with regulated markets related to the portfolios

³⁸⁹ See supra note 326 and accompanying text.

³⁹⁰ Compare supra notes 321–325 and accompanying text with supra notes 199–200, 211–228 and accompanying text.

³⁹¹ See supra note 323 and accompanying text.

³⁹² See supra notes 360–362 and accompanying text. See also supra notes 363–365 and accompanying text.

assets.³⁹³ Further, the accrual of the Trust’s fees in bitcoin does not protect buyers and sellers of the Shares in the secondary market, because these secondary market participants will not trade at NAV but at market-based prices.³⁹⁴ Moreover, the Trust’s Registration Statement recognizes the risk that disruptions at bitcoin trading platforms “could adversely affect the availability of bitcoin and the ability of Authorized Participants to purchase or sell bitcoin and therefore their ability to create and redeem shares of the Trust.”³⁹⁵

Therefore the Commission concludes that the record does not establish that features of the Trust would make the Trust’s NAV or the proposed ETP uniquely resistant to manipulation.

2. Assertions That Other Means Are Available to Detect and Deter Fraud and Manipulation

(a) *Comment Received*

One commenter asserts that NYSE Arca’s rules are designed to prevent fraudulent and manipulative acts and practices, because trading in the Shares would be subject to rules governing equity securities that are aimed at preventing fraud and manipulation.³⁹⁶ This commenter represents that such rules include regulations addressing initial and continued listing standards, restrictions on market maker accounts, trading halt procedures, and trading surveillance.³⁹⁷ With respect to surveillance, the commenter states that trading in the Shares will be subject to trading surveillances by NYSE Arca, and the Financial Industry Regulatory

³⁹³ See, e.g., iShares COMEX Gold Trust, Securities Exchange Act Release No. 51058 (Jan. 19, 2005), 70 FR 3749, 3751–55 (Jan. 26, 2005) (SR-Amex-2004-38); iShares Silver Trust, Securities Exchange Act Release No. 53521 (Mar. 20, 2006), 71 FR 14969, 14974 (Mar. 24, 2006) (SR-Amex-2005-072).

³⁹⁴ The Sponsor emphasizes that, at most, only “shareholders [of the Trust] would be protected” by in-kind creations and redemptions. Bitwise Submission III, supra note 9, at 13. See also Registration Statement, supra note 31, at 28 (in-kind creation and redemptions protect “shareholders of the Trust”).

³⁹⁵ Registration Statement, supra note 31, at 6.

³⁹⁶ See Omniex Letter, supra note 9, at 3.

³⁹⁷ See id.

Authority (“FINRA”) on NYSE Arca’s behalf, and that NYSE Arca and FINRA can communicate with Intermarket Surveillance Group members and obtain information regarding trading in the Shares and underlying bitcoin from NYSE Arca members registered as market makers.³⁹⁸ This commenter further asserts that NYSE Arca can obtain trading surveillance from a regulated bitcoin futures market of significant size.³⁹⁹

(b) *Analysis*

The Commission finds that, although one commenter raises aspects of NYSE Arca’s existing rules that it asserts might provide other means to prevent fraud and manipulation,⁴⁰⁰ these alternative procedures would not, without a surveillance-sharing agreement with a regulated market of significant size, be sufficient to satisfy the requirement of Exchange Act Section 6(b)(5) that an exchange’s rules be designed to prevent fraudulent and manipulative acts and practices.⁴⁰¹ In the Winklevoss Order, the Commission considered an assertion by the listing exchange that its surveillance procedures, which included pre-existing procedures, information available from the Bitcoin blockchain, and a surveillance-sharing agreement with a spot bitcoin platform, would provide “traditional means” of preventing fraud and manipulation, sufficient to prevent fraudulent and manipulative acts and practices.⁴⁰² The Commission found that the listing exchange had not demonstrated that the alternative surveillance procedures would be, by themselves, sufficient to satisfy Exchange Act Section 6(b)(5).⁴⁰³

³⁹⁸ See *id.* See also Notice and OIP, *supra* note 7, 84 FR at 23135.

³⁹⁹ See Omniex Letter, *supra* note 9, at 3–4.

⁴⁰⁰ See *supra* notes 396–399 and accompanying text.

⁴⁰¹ See 15 U.S.C. 78f(b)(5). See *infra* Section III.B.3 for further discussion about whether NYSE Arca’s surveillance-sharing agreement with the bitcoin futures market is with a regulated market of significant size.

⁴⁰² See Winklevoss Order, *supra* note 12, 83 FR at 37590–91.

⁴⁰³ See *id.* at 37591.

Here, as in the Winklevoss Order, while NYSE Arca would, pursuant to its listing rules, be able to obtain certain information regarding trading in the Shares and in the underlying bitcoin or any bitcoin derivative through registered market makers,⁴⁰⁴ this trade information would be limited to the activities of members who were registered with NYSE Arca as market makers in the Shares and would not encompass all NYSE Arca market participants.⁴⁰⁵ Furthermore, as in the Winklevoss Order, neither NYSE Arca's ability to surveil trading in the Shares nor its ability to share information with other securities exchanges trading the Shares would give NYSE Arca insight into the activity and identity of market participants trading in the underlying bitcoin in the OTC market or on other bitcoin trading platforms.⁴⁰⁶ Additionally, while the commenter asserts that NYSE Arca rules addressing initial and continued listing standards and trading halt procedures also are aimed at preventing fraud and manipulation,⁴⁰⁷ these aspects of NYSE Arca's rules, on their own, would not be sufficient to detect, investigate, or prevent fraudulent and manipulative acts and practices. The Commission finds that the argument raised by the commenter that NYSE Arca's rules would prevent fraud and manipulation are essentially the same as those arguments made by the listing exchange in the Winklevoss Order, and therefore the Commission must reach the same conclusion that the alternative surveillance procedures raised by the commenter are not sufficient, by themselves, to satisfy Exchange Act Section 6(b)(5).⁴⁰⁸

⁴⁰⁴ See supra note 398 and accompanying text.

⁴⁰⁵ See Winklevoss Order, supra note 12, 83 FR at 37591.

⁴⁰⁶ See supra note 398 and accompanying text. See also Winklevoss Order, supra note 12, 83 FR at 37591.

⁴⁰⁷ See supra note 396–397 and accompanying text.

⁴⁰⁸ See Winklevoss Order, supra note 12, 83 FR at 37591.

3. Assertions That NYSE Arca Has Entered Into a Surveillance-Sharing Agreement with a Regulated Market of Significant Size Related to Bitcoin

(a) *Representations Made and Comments Received*

The Sponsor asserts that, in light of its understanding of the small size of the “real” bitcoin spot market, the bitcoin futures market represents a large, surveilled, and regulated market, as the Commission has defined that requirement.⁴⁰⁹ The Sponsor further asserts that, given the significant size of the bitcoin futures market, and the close relationship in prices between the derivatives market and the spot market, there is a reasonable likelihood that a person attempting to manipulate the proposed ETP would have to trade on that market to successfully manipulate the proposed ETP, because arbitrage between the derivative and spot markets would tend to counter an attempt to manipulate the spot market alone.⁴¹⁰ According to the Sponsor, NYSE Arca’s ability to obtain information regarding trading in the Shares and futures from markets and other entities that are members of the Intermarket Surveillance Group, which includes CME (and CFE), would assist NYSE Arca in detecting and deterring misconduct.⁴¹¹

The Sponsor asserts that its assessment that the CME bitcoin futures market is significant is based on its understanding of the true size of the bitcoin spot market, which, according to the Sponsor, is significantly smaller than commonly understood, as well as on the recent and

⁴⁰⁹ See Notice and OIP, supra note 7, 84 FR at 23134. In this context, the Sponsor refers to the bitcoin futures market as consisting of the market for cash-settled bitcoin futures contracts on CFE and CME. See Bitwise Submission II, supra note 9, at 56. As noted above, CFE ceased offering new bitcoin futures contracts as of March 2019, see supra note 38, and therefore the Commission considers here whether CME bitcoin futures market is a regulated market of significant size. See infra note 457.

⁴¹⁰ See Notice and OIP, supra note 7, 84 FR at 23134.

⁴¹¹ See id. See also Omniex Letter, supra note 9, at 5 (asserting that NYSE Arca would have the ability itself to obtain information regarding trading in the Shares and could obtain information regarding futures trading from CME as a member of Intermarket Surveillance Group); Collaborative Funds Letter, supra note 9, at 2 (asserting that NYSE Arca’s surveillance agreement with CME and CFE satisfies the concerns in the Winklevoss Order regarding mitigation of market manipulation). But see Ahn Letter II, supra note 9 (questioning the presumption that the bitcoin futures market is regulated because, according to the commenter, the bitcoin futures market does not contain all the regulatory features that the Commission requires in the context of a surveillance-sharing agreement).

significant growth in trading volume on the CME bitcoin futures exchange.⁴¹² The Sponsor argues that, while the bitcoin futures market volume appears to be small in comparison to the reported spot bitcoin volume, it looks “much more important” in comparison to the “real” bitcoin spot market.⁴¹³ In particular, the Sponsor represents that the combined average daily volume for the CME and CFE futures markets in April 2019 was \$268 million, which is 2.4% of April’s reported spot market volume (approximately \$11 billion), but 48.4% of the Sponsor’s calculated “real” spot market volume (approximately \$554 million).⁴¹⁴ The Sponsor asserts that in April 2019, the average daily volume on the CME of \$258 million was larger than that of any of the ten identified “real” spot bitcoin platforms, ahead of Binance and more than twice as large as Bitfinex.⁴¹⁵ The Sponsor also asserts that the bitcoin futures market compares similarly to the “real” bitcoin spot market in surrounding months.⁴¹⁶ According to the Sponsor, while the bitcoin

⁴¹² See Bitwise Submission III, supra note 9, at 97.

⁴¹³ See Bitwise Submission II, supra note 9, at 57; Bitwise Submission III, supra note 9, at 11.

⁴¹⁴ See Bitwise Submission II, supra note 9, at 57; Bitwise Submission III, supra note 9, at 11. The Sponsor also asserts that in April 2019, the CME futures contract traded an average daily volume of over 67,000 bitcoin (on a notional basis), while coinmarketcap.com reported an average daily volume of over 2.2 million bitcoin, but the “real” average daily spot volume was roughly 108,000 bitcoin. See Bitwise Submission III, supra note 9, at 155.

⁴¹⁵ See Bitwise Submission II, supra note 9, at 58; Bitwise Submission III, supra note 9, at 11.

⁴¹⁶ The Sponsor asserts that at the time of its first analysis, in March 2019, the average daily volume of the bitcoin futures market was \$91 million, as compared to reported daily volume in the spot market of approximately \$6 billion and “real” daily volume in the spot market of around \$273 million. See Notice and OIP, supra note 7, 84 FR at 23134; Bitwise Submission I, supra note 6, at 121. The Sponsor further asserts that bitcoin futures market average daily volume in March 2019 was nearly as large as the average daily volume for the largest “real” spot platform, Binance, and larger than the rest. See Notice and OIP, supra note 7, 84 FR at 23134; Bitwise Submission I, supra note 6, at 65, 123. The Sponsor has graphed futures volume as expressed as a percentage of “real” spot volume from December 2017 through February 2019 and asserts that this chart shows an increase to approximately 35% in February 2019. See Bitwise Submission I, supra note 6, at 122. The Sponsor asserts that, while in earlier periods bitcoin futures volume was consistently less than 10% the size of “real” spot volume, since February 2019, bitcoin futures volume has consistently averaged more than 25% as a percentage of “real” spot volume, and was more than 50% of “real” spot volume in May 2019. See Bitwise Submission III, supra note 9, at 157, 159. The Sponsor also asserts that in May 2019, the CME bitcoin futures market had a higher average daily trading volume than any of the ten “real” bitcoin spot platforms and set new average daily trading volume records. See Bitwise Submission IV, supra note 9, at 5. In addition, the Sponsor asserts that in August 2019, the average daily volume of the bitcoin futures market was \$234 million, as compared to reported daily volume in the spot market of approximately \$17 billion and “real” daily volume in the spot market of around \$1 billion. See Bitwise Submission VI, supra note 9, at 29. See also id., at 25 (showing aggregate average daily

(footnote continued...)

futures market “would clearly not satisfy” the requirement that someone attempting to manipulate the spot market would be reasonably likely to have to trade in the derivatives market if the bitcoin spot market were trading \$11 billion per day, the Sponsor’s “new understanding of the true size of the bitcoin spot market reshapes this discussion considerably.”⁴¹⁷

In addition, the Sponsor asserts that, since the CME and CFE contracts launched in December 2017, the volume and significance of bitcoin futures contracts has grown substantially, with the vast majority of the volume linked to CME’s contract.⁴¹⁸ The Sponsor represents that, from December 2017 to April 2019, the combined average daily notional volume of CME and CFE bitcoin futures grew from 9,286 bitcoin to 69,177 bitcoin, showing a growth of 645%.⁴¹⁹ The Sponsor asserts that, while CME’s bitcoin futures notional volume in dollars has shown some variability, and declined along with a decline in prices in late 2018, volumes have strongly picked up in 2019.⁴²⁰ The Sponsor also asserts that CME’s bitcoin futures notional

(...footnote continued)

volume of the ten “real” spot bitcoin platforms from December 2017 through August 2019 and asserting that, since March 2019, volume has increased substantially).

⁴¹⁷ Bitwise Submission II, supra note 9, at 59.

⁴¹⁸ See id. at 56, 58–59; Bitwise Submission III, supra note 9, at 11.

⁴¹⁹ See Bitwise Submission II, supra note 9, at 56. See also Bitwise Submission III, supra note 9, at 155 (asserting that in April 2019, the CME futures contract traded an average daily volume of more than 67,000 bitcoin on a notional basis, representing a roughly 630% increase over the median daily notional trading volume on CME since inception). The Sponsor also has graphed the average number of futures contracts traded daily and regulated bitcoin futures volume as a percentage of “real” bitcoin spot volume from December 2017 through May 2019. See Bitwise Submission II, supra note 9, at 56, 59.

⁴²⁰ See Bitwise Submission II, supra note 9, at 74–75. The Sponsor represents that in the first 20 days of May 2019, the average daily volume for CME futures contracts was \$517 million, the highest level ever for a month, and dollar volume hit an all-time high on May 13, 2019, with \$1.3 billion in notional volume traded and a record of 33,677 bitcoin contracts traded. See id. at 74; Bitwise Submission III, supra note 9, at 11. The Sponsor has graphed CME average daily volume in USD to provide more detail on this trend. See Bitwise Submission II, supra note 9, at 75; Bitwise Submission VI, supra note 9, at 26. In addition, the Sponsor represents that the average daily volume for CME futures contracts in August 2019 was \$234,385,300 and that the volume “increased substantially” since March 2019. See Bitwise Submission VI, supra note 9, at 9, 26.

volume in bitcoin shows strong and steady growth, with a “remarkable” expansion in 2019.⁴²¹ The Sponsor further asserts that CME bitcoin futures notional volume as a percentage of “real” bitcoin spot volume has been strong and steadily growing, with further acceleration in April and May 2019.⁴²²

With respect to CFE’s decision in March 2019 to stop further issuance of its bitcoin futures, the Sponsor asserts that the consensus is that the limited volume on CFE will migrate to the already dominant CME contract.⁴²³ The Sponsor argues that CFE’s decision to stop offering new bitcoin futures contracts suggests that CFE lost a competitive battle with CME to attract investors and traders to its contract, and does not suggest anything about the long-term health of the bitcoin futures market, noting that, after CFE’s announcement, CME bitcoin futures volume set new monthly records in April and May 2019.⁴²⁴ The Sponsor also represents that it is

⁴²¹ See Bitwise Submission II, supra note 9, at 75–76. The Sponsor has graphed CME average daily volume in bitcoin. See id. at 76.

⁴²² See id. at 76–77. The Sponsor represents that in April and May 2019, volumes on the CME bitcoin futures market often exceeded those on the largest “real” spot platform, and sometimes significantly. See id. at 77. According to the Sponsor, on May 13, 2019, CME volumes, at \$1.3 billion, were two times as large as the largest spot bitcoin platform, Binance, at approximately \$650 million. See id.; Bitwise Submission III, supra note 9, at 11. The Sponsor has graphed CME bitcoin futures volume as a percentage of “real” bitcoin spot volume. See Bitwise Submission II, supra note 9, at 77; Bitwise Submission VI, supra note 9, at 9, 28.

⁴²³ See Bitwise Submission I, supra note 6, at 123; Bitwise Submission II, supra note 9, at 74; Bitwise Submission IV, supra note 9, at 4. The Sponsor asserts that the CME futures contract has dominated the market and that, on May 13, 2019, the CME futures contract traded at \$1.2 billion in notional value, while the CFE contract traded at \$62 million in notional value. See Bitwise Submission II, supra note 9, at 73–74. See also id. at 56 (representing that from December 2017 to April 2019, the CME futures contract grew from 57% to 98% of the total regulated bitcoin futures market); Bitwise Submission IV, supra note 9, at 3–4 (showing the average daily trading volume in most active monthly contract for CME and CFE, and discussing reasons why the CME contract became dominant). In addition, the Sponsor asserts, based on a graph it has prepared showing the average daily volume for CME and CFE bitcoin futures from December 2017 through August 2019, that CFE’s decision to stop issuing its bitcoin futures has not diminished the trend of increased bitcoin futures volume. See Bitwise Submission VI, supra note 9, at 27.

⁴²⁴ See Bitwise Submission IV, supra note 9, at 4.

common for futures volumes to concentrate on a single contract and a single exchange because there is an advantage to aggregating liquidity.⁴²⁵

The Sponsor argues that prices on the bitcoin futures market are closely aligned with the Bitwise Daily Bitcoin Reference Price and the Bitwise Real-Time Bitcoin Price, and that strong arbitrage exists between these prices.⁴²⁶ The Sponsor asserts that there is a logical connection between the prices, because the CME futures settlement price is based on prices pulled from four of the platforms that contribute to the Bitwise Daily Bitcoin Reference Price and Bitwise Real-Time Bitcoin Price, and the CFE futures settlement price is based on prices pulled from one such platform.⁴²⁷ The Sponsor further asserts that its analysis demonstrates that all “real” bitcoin spot markets trade effectively at a single price, suggesting that the CME bitcoin futures market must trade at a price tightly linked to the consolidated spot price.⁴²⁸ The Sponsor acknowledges that the correlation between the prices is limited by the term structure of the futures contract and the asymmetric cost of hedging a futures position, because it is less expensive to hedge a short position in bitcoin futures than a long position in bitcoin futures.⁴²⁹

The Sponsor asserts that there are low levels of average deviation between the CME futures contract price and the consolidated spot price.⁴³⁰ According to the Sponsor, a line graph comparing the CME bitcoin futures contract price with the consolidated spot price from January 2018 through May 2019 shows some “minor discrepancies” in January to March 2018, but the

⁴²⁵ See id.

⁴²⁶ See Notice and OIP, supra note 7, 84 FR at 23134; Bitwise Submission II, supra note 9, at 77–82.

⁴²⁷ See Notice and OIP, supra note 7, 84 FR at 23134; Bitwise Submission I, supra note 6, at 124; Bitwise Submission II, supra note 9, at 77.

⁴²⁸ See Bitwise Submission II, supra note 9, at 77.

⁴²⁹ See Notice and OIP, supra note 7, 84 FR at 23134.

⁴³⁰ See Bitwise Submission II, supra note 9, at 78–81.

Sponsor asserts that, following that period, “the two lines are virtually identical.”⁴³¹ The Sponsor has also examined the average deviation of the price of the CME contract and consolidated spot price on a second-by-second basis from December 2017 through April 2019.⁴³² The Sponsor asserts that in December 2017, average deviations were nearly 2%, but then came down substantially, largely hovering below 0.25%.⁴³³ According to the Sponsor, these average deviations are similar to the 0.05% to 0.20% average deviation for individual spot platforms over the same time frame, with slightly wider deviations in the futures market that are to be expected because of futures markets’ term structure.⁴³⁴

The Sponsor represents that all futures markets exhibit contango, when futures contracts trade at a higher price than the spot market, and backwardation, when futures contracts trade at a lower price than the spot market.⁴³⁵ According to the Sponsor, bitcoin futures have traded essentially in-line with the spot market, without significant contango or backwardation, but backwardation and contango have appeared occasionally, with backwardation appearing much more frequently than contango.⁴³⁶ The Sponsor asserts that the most significant periods of backwardation in the bitcoin futures market occurred during pronounced pullbacks in the bitcoin spot market.⁴³⁷ The Sponsor further asserts that the level of backwardation in the bitcoin futures

⁴³¹ See id. at 78. See also Bitwise Submission I, supra note 6, at 125 (providing a line graph of a global spot price as compared to the CME futures price from 2018 through early March 2019 that, according to the Sponsor, shows that arbitrage between the CME futures price and global spot price is “firmly established”).

⁴³² See Bitwise Submission II, supra note 9, at 78–79.

⁴³³ See id. at 79.

⁴³⁴ See id.

⁴³⁵ See id.

⁴³⁶ See id.

⁴³⁷ See id. The Sponsor represents that on November 14, 2018, the bitcoin spot market fell from \$6,200 to \$5,500 over concerns about a bitcoin cash fork and that this downward move and concerns about bitcoin’s outlook drove the futures market into backwardation, which generally persisted through January 2019, when the bitcoin market stabilized. See id. at 79–80. According to the Sponsor, the average backwardation during this period was (footnote continued...)

market is strictly constrained by arbitrage, but that backwardation can emerge and persist because the cost of borrowing bitcoin to short in the spot market is relatively high.⁴³⁸ The Sponsor argues that the “extremely low” average deviation between prices in normal months and rationally constrained deviations during stress periods, such as November 2018, suggests that institutional-quality arbitrageurs are enforcing strong arbitrage between the CME futures market and the spot market at all times.⁴³⁹

The Sponsor asserts that the speed at which price discrepancies are arbitrated away also demonstrates the quality of arbitrage between the CME bitcoin futures price and bitcoin spot price.⁴⁴⁰ The Sponsor has created a histogram displaying the speed at which pricing discrepancies above 1% between the CME bitcoin futures price and consolidated bitcoin spot price were arbitrated away.⁴⁴¹ The Sponsor represents that these data show that more than 50% of all pricing discrepancies greater than 1% were arbitrated away within 1 second, and that more than 90% of all pricing discrepancies greater than 1% were arbitrated away within 49 seconds.⁴⁴² According to the Sponsor, the results demonstrate that the CME bitcoin futures price and the consolidated spot price trade closely together and their disparities are rapidly arbitrated

(...footnote continued)

0.74%, which explains the higher average deviation between the CME futures price and spot bitcoin price from November 2018 through January 2019, but the average deviation settled back to below 0.25% as the term structure of the futures market normalized. See id. at 80.

⁴³⁸ See id. at 80 (representing that the cost of borrowing bitcoin to short historically ranges from 5% to 10% per year, or 0.4% to 0.8% per month, and that this monthly cost is directly in-line with levels of observed backwardation in November 2018 through January 2019).

⁴³⁹ See id. at 80–81.

⁴⁴⁰ See id. at 81.

⁴⁴¹ See id.

⁴⁴² See id. (asserting that these data echo the data comparing individual spot bitcoin platforms against one another).

away, meeting the Commission’s criteria for demonstrating effective arbitrage between markets.⁴⁴³

Several commenters assert that the CME bitcoin futures market constitutes a significant market.⁴⁴⁴ One commenter represents that the bitcoin futures market is larger than those associated with other ETPs that the Commission has previously approved, such as the palladium futures market associated with the Aberdeen Standard Physical Palladium Shares ETF, formerly known as ETFS Palladium Trust, and the freight futures market associated with the Breakwave Dry Bulk Shipping ETF.⁴⁴⁵ Another commenter states that the bitcoin futures market is now large and robust, regularly trading over \$100 million in daily notional trading volume, and represents a material proportion of the overall bitcoin market.⁴⁴⁶ A third commenter states that the bitcoin futures market had low volumes until recently, although there has been an increase in volume since April 2019, and that the size of the bitcoin futures market pales in comparison to others futures markets.⁴⁴⁷ This commenter asserts that the futures market has not even completed one calendar year and so cannot be considered mature.⁴⁴⁸

Finally, the Sponsor asserts that it examined the net inflows in the first year of existence for two types of ETPs—commodity ETPs that were first to market in the United States and

⁴⁴³ See id.

⁴⁴⁴ See Castle Island Ventures Letter, supra note 9, at 2; Collaborative Fund Letter, supra note 9, at 1–2 (asserting that the Sponsor’s study identifying the ten platforms with “real and verifiable volume” means that the CME futures market is of significant size “by nearly any definition”); Omniex Letter, supra note 9, at 4–5 (asserting that the Sponsor’s analysis shows CME’s bitcoin futures market is a large, surveilled, and regulated market, when compared with the “real” bitcoin market, and that there is a close relationship in pricing between the bitcoin futures market and the spot market).

⁴⁴⁵ See Collaborative Fund Letter, supra note 9, at 2.

⁴⁴⁶ See Castle Island Ventures Letter, supra note 9, at 2.

⁴⁴⁷ See Shenoy Letter III, supra note 69, at 10.

⁴⁴⁸ See id.; see also id., at 13 (recommending a longitudinal observation over a period of at least another cycle of the futures market to observe the stability of the market and allow for the emergence of genuine price discovery and reduction of opaqueness).

blockchain-technology-related ETPs—and that, given the size of these inflows as compared to the size of the “real” bitcoin market, it is unlikely that trading in the proposed ETP would become the predominant influence on prices in that market.⁴⁴⁹ The Sponsor represents that the net inflows of these comparable ETPs in their first year on the market ranged from approximately \$2 million to approximately \$3 billion, with a median on the lower end of that range.⁴⁵⁰ The Sponsor asserts that, over the course of a year, a spot market that is trading \$273 million per day could easily absorb \$3 billion in total inflows.⁴⁵¹ The Sponsor also asserts that the CoinShares Bitcoin Tracker One ETN and CoinShares Tracker Euro ETN, both listed on Nasdaq Stockholm, each attracted approximately \$50 million in assets in the first year.⁴⁵² The Sponsor further asserts that the GLD ETP, which attracted \$469 million in its first day on the market and more than \$1 billion over its first three days, was an outlier that was more than two times larger than any other ETP and orders of magnitude larger than the average result.⁴⁵³ According to the Sponsor, a similar outcome is extremely unlikely for the proposed ETP because the gold market is significantly larger and more established than the bitcoin market, and conditions have changed in the ETP market such that brokerage and advisory platforms now have detailed due diligence and approval processes that smooth out asset growth.⁴⁵⁴

(b) Analysis

The Commission concludes that NYSE Arca has not entered into a surveillance-sharing agreement with a regulated bitcoin futures market of significant size. The Sponsor acknowledges

⁴⁴⁹ See Notice and OIP, *supra* note 7, 84 FR at 23134.

⁴⁵⁰ See *id.*; Bitwise Submission I, *supra* note 6, at 128, 130.

⁴⁵¹ See Bitwise Submission I, *supra* note 6, at 130.

⁴⁵² See *id.* at 129.

⁴⁵³ See *id.* at 131.

⁴⁵⁴ See *id.*

that the “Commission has correctly identified the need for, value of, and definition of a surveilled derivatives market of significant size,” and contends that the CME futures market is “significant in size” compared to the “real” spot market that the Sponsor identifies.⁴⁵⁵ The Sponsor argues that, given the relative size of the bitcoin futures markets and the close relationship in prices between the derivatives market and the “real” spot market, there is a reasonable likelihood that a person attempting to manipulate the proposed ETP would also have to trade on the derivatives market to successfully manipulate the ETP.⁴⁵⁶ While the Commission recognizes that the CFTC regulates the CME and CFE futures markets, the evidence that the Sponsor presents regarding the relative size of the bitcoin futures market and the relationship in prices between the spot and futures markets does not, as explained further below, establish the interrelationship between the futures market and the proposed ETP, or directionality of that interrelationship, that would make the bitcoin futures market a “market of significant size” in the context of the proposed ETP.⁴⁵⁷

⁴⁵⁵ Bitwise Submission III, supra note 9, at 151. See also supra note 124.

⁴⁵⁶ See supra note 410 and accompanying text. The Commission notes that, based on the common membership of NYSE Arca, CME, and CFE in the Intermarket Surveillance Group, see supra note 411 and accompanying text, NYSE Arca has the equivalent of a comprehensive surveillance-sharing agreement with CME and CFE. See supra note 15. In addition, although one commenter questions whether the bitcoin futures market is regulated, see supra note 411, the Commission recognizes that the CFTC comprehensively regulates CME and CFE. However, the CFTC is not responsible for direct, comprehensive regulation of the underlying bitcoin spot market. See Winklevoss Order, supra note 12, 83 FR at 37587, 37599.

⁴⁵⁷ While the Sponsor’s assertions about the bitcoin futures market address trading on the both the CME and the CFE, as noted above, the CFE ceased offering new bitcoin futures contracts as of March 2019, see supra note 38. Therefore any surveillance sharing between NYSE Arca and the CFE would not cover an actively traded bitcoin futures market. While the Commission considers evidence in the record concerning the CFE bitcoin futures market in the context of the overall bitcoin futures market, the Commission does not take a position on whether the CFE bitcoin futures market would constitute a significant, regulated market if it were still offering new bitcoin futures contracts. The Commission notes that the ICE Futures U.S. exchange began offering bitcoin futures contracts as of September 2019. See BAKKT Bitcoin (USD) Monthly And Daily Futures Contracts Trading to Begin on Monday, September 23, 2019, ICE Futures U.S. (Aug. 16, 2019), available at https://www.theice.com/publicdocs/futures_us/exchange_notices/ICE_Futures_US_BTC_Launch2019_20190816.pdf (last visited Oct. 7, 2019). However, the record contains no information about the volume of ICE Futures

(footnote continued...)

The Sponsor’s assertions about the size of the bitcoin futures market, either in an absolute sense or in comparison to the size of what the Sponsor identifies as the “real” spot market, do not establish that the bitcoin futures market is significant.⁴⁵⁸ As described in the Winklevoss Order and Commission orders considering bitcoin-related trust issued receipts, the Commission’s interpretation of the term “market of significant size” depends on the interrelationship between the market with which the listing exchange has a surveillance-sharing agreement and the proposed ETP.⁴⁵⁹ This interrelationship must be such that there is a reasonable likelihood that a person attempting to manipulate the proposed ETP would also have to trade on that market to successfully manipulate the ETP.⁴⁶⁰ The Sponsor’s assertions about the size of the bitcoin futures market, including in comparison to the “real” bitcoin spot market that serves as the basis for the proposed ETP’s pricing mechanism, are not sufficient to establish an interrelationship between the bitcoin futures market and the proposed ETP.

As discussed above, the Sponsor has not shown that it has identified all of the “real” volume in the bitcoin spot market, and it has failed to support its assertion that the presence of more “real” volume in the market would not materially change its conclusions, which would include its conclusions about whether the bitcoin futures market is “significant.”⁴⁶¹ Therefore, the approximately \$554 million in average daily volume in the spot market that the Sponsor cites may be significantly understated—and the relative size of the bitcoin futures market may be

(...footnote continued)

U.S.’s bitcoin futures product or whether the Sponsor has a relevant surveillance-sharing agreement with ICE Futures U.S.

⁴⁵⁸ See supra notes 412–422 and accompanying text. Several commenters similarly make arguments that rely on the absolute or relative size of the bitcoin futures market. See supra notes 444–448 and accompanying text.

⁴⁵⁹ See Winklevoss Order, supra note 12, 83 FR at 37594; ProShares Order, supra note 12, 83 FR at 43936; GraniteShares Order, supra note 12, 83 FR at 43925; Direxion Order, supra note 12, 83 FR at 43914.

⁴⁶⁰ See supra note 16 and accompanying text.

⁴⁶¹ See supra Section III.B.1(c).

respectively overstated.⁴⁶² In any event, without accurate information about the size of the “real” bitcoin spot market, the Sponsor cannot substantiate its arguments about the relative sizes of the futures and spot markets for bitcoin, and thus has not met its burden to demonstrate that the proposed rule change is consistent with the Exchange Act. In addition, while the Sponsor cites growth in the bitcoin futures market, particularly during April and May 2019,⁴⁶³ this growth will not necessarily continue without a slowdown or even reversal.⁴⁶⁴ The Trust’s Registration Statement acknowledges that the bitcoin futures market “has limited trading history and operational experience and may be less liquid, more volatile and more vulnerable to economic, market and industry changes than more established futures markets.”⁴⁶⁵ NYSE Arca and the Sponsor do not address this statement or whether future volatility in bitcoin futures market volumes would affect whether this market is significant.⁴⁶⁶

In addition, the record does not establish that there is a close alignment between the “real” bitcoin spot market, which serves as the basis for the Trust’s NAV and IIV pricing, and the bitcoin futures market.⁴⁶⁷ The Sponsor presents an analysis of the level of average deviation between the CME futures contract price and the consolidated spot price, and of the speed at which pricing discrepancies of over 1% between the CME bitcoin futures price and the

⁴⁶² See supra note 414 and accompanying text.

⁴⁶³ See supra notes 418–422 and accompanying text.

⁴⁶⁴ While the Sponsor asserts that a graph of the average daily volume for CME and CFE bitcoin futures from December 2017 through August 2019 shows a continuing trend of increased bitcoin futures volume since the CFE stopped issuing new bitcoin futures, this graph shows lower volume in July and August 2019, as compared to April and May 2019. See supra note 423.

⁴⁶⁵ Registration Statement, supra note 31, at 11.

⁴⁶⁶ The Sponsor’s assertions that the volume on the CFE futures market in recent months will likely migrate to the CME contract now that the CFE has stopped further issuance of its bitcoin futures is speculative. See supra notes 423–425 and accompanying text. However, particularly given the limited size of the CFE bitcoin futures market in recent months, the Commission’s analysis does not depend on whether or not this volume migrates to the CME bitcoin futures market.

⁴⁶⁷ See supra notes 426–443 and accompanying text.

consolidated spot price are arbitrated away.⁴⁶⁸ However, the Sponsor’s comparison between the spot and futures markets suffers from the same flaws seen in its analysis of arbitrage among the “real” spot platforms.⁴⁶⁹

The Sponsor’s argument relies heavily on conclusory statements that are insufficient. For example, the Sponsor asserts that evidence “suggests” that institutional-quality arbitrageurs are enforcing strong arbitrage between the futures and spot markets at all times, but this is post hoc reasoning, rather than an analysis of the underlying reasons for any price correlation, and, further, the Sponsor simply assumes that its descriptions of the reasons for contango and backwardation in bitcoin futures trading explain the observed deviations between spot and futures prices.⁴⁷⁰ The Sponsor also points to overlap between certain “real” platforms used in the Trust’s pricing mechanism and the pricing mechanism for the CME bitcoin futures (and the CFE bitcoin futures that are no longer traded), and asserts that its analysis showing that all “real” bitcoin spot markets trade effectively at a single price suggests that the bitcoin futures market trades at a price tightly linked to the consolidated spot price calculated by the Sponsor.⁴⁷¹ However, as discussed above, the Sponsor has not provided sufficient evidence to support its assertions regarding the effectiveness of arbitrage in the “real” spot market.⁴⁷² In addition, the

⁴⁶⁸ See supra notes 430–443 and accompanying text. See supra Section III.B.1(b) for discussion about the Sponsor’s calculation of a “consolidated price” for the bitcoin spot market.

⁴⁶⁹ See supra notes 151–154 and accompanying text.

⁴⁷⁰ See supra note 439 and accompanying text. The Commission notes that the Sponsor’s discussion of backwardation and contango in the bitcoin futures market, see supra notes 435–439 and accompanying text, is generally not relevant because it does not bear directly on whether the bitcoin futures market is a market “of significant size.”

⁴⁷¹ See supra notes 427–428 and accompanying text.

⁴⁷² See supra notes 151–154 and accompanying text.

Sponsor has not demonstrated that its consolidated spot price is comparable to the price that would be generated by the Trust's pricing mechanism.⁴⁷³

The Commission also notes that the record contains no evidence about the lead-lag relationship between the bitcoin futures market and the spot market, which is central to understanding whether it is reasonably likely that a would-be manipulator of the ETP would need to trade on the bitcoin futures market to successfully manipulate prices on those spot platforms that feed into the proposed ETP's pricing mechanism. In particular, if the spot market leads the futures market, this would indicate that it would not be necessary to trade on the futures market to manipulate the proposed ETP, even if arbitrage worked efficiently, because the futures price would move to meet the spot price. Additionally, NYSE Arca and the Sponsor have not provided sufficient data to support the Sponsor's assertions that it is unlikely that trading in the proposed ETP would become the predominant influence on prices in the bitcoin market.⁴⁷⁴ The Sponsor's assertions about the likely inflows for the proposed ETP are speculative, and the Sponsor has not provided the data underlying its cited analysis.

Finally, the Commission notes that the charts and graphs that the Sponsor has prepared present a particular view of its analysis that vary based on choices made, including scaling. For example, the Sponsor provides a line graph of the CME bitcoin futures contract price versus the consolidated spot price from January 2018 through May 2019 and asserts that, "[w]hile some minor discrepancies exist in the January-March 2018 time frame, after that, the two lines are

⁴⁷³ While the Notice and OIP refers to alignment of the bitcoin futures market with the Bitwise Daily Bitcoin Reference Price and the Bitwise Real-Time Bitcoin Price, see supra note 426 and accompanying text, the Sponsor's analysis compares the futures market to its calculated consolidated spot price, which is not the same as the price that would be generated by the Trust's pricing mechanism. The Commission notes that an earlier analysis by the Sponsor compared the CME futures market to a global spot price, see supra note 431, which again is not the same as the Trust's pricing mechanism.

⁴⁷⁴ See supra notes 449–454 and accompanying text.

virtually identical.”⁴⁷⁵ Due to the scaling of the line graph—the graph covers over 16 months and the “y” axis ranges from 2,500 to 20,000 USD—it is very difficult to see differences between the lines representing the CME futures contract price and the consolidated spot price, even during the January through March 2018 period that had noted “minor discrepancies.”⁴⁷⁶ In contrast, as part of the Sponsor’s discussion of contango and backwardation, the Sponsor has prepared a line graph of the CME bitcoin futures contract price versus the consolidated spot price from November 13, 2018, through November 16, 2018—this time scaled to show a four-day period and with a “y” axis ranging from 5,200 to 6,200 USD—that shows visible differences between the lines.⁴⁷⁷ In addition, the Sponsor’s presentation of average deviation, without accompanying information about median, minimum, or maximum deviations, may obscure transient events. Further, the Sponsor’s choice to group together all deviations over 1%, regardless of size, obscures whether some deviations were quite large and how long a large deviation would persist.

Therefore the Commission cannot conclude, based on the current record, that the CME bitcoin futures market is a “market of significant size,” such that NYSE Arca would be able to rely on surveillance-sharing with the CME to provide sufficient protection against fraudulent and manipulative acts and practices.⁴⁷⁸ The Commission recognizes that, over time, bitcoin-related markets may continue to grow and develop. For example, existing or newly created bitcoin futures markets that are regulated may achieve significant size, and an ETP listing exchange may

⁴⁷⁵ Bitwise Submission II, supra note 9, at 78. See also supra note 431 and accompanying text.

⁴⁷⁶ The Commission notes that the Sponsor does not elaborate on the reasons for these discrepancies and why they do not affect its conclusions.

⁴⁷⁷ See Bitwise Submission II, supra note 9, at 80.

⁴⁷⁸ The Commission notes that a surveillance-sharing agreement with a bitcoin futures exchange is distinguishable from a surveillance-sharing agreement with a spot bitcoin platform, which would lack the ability of a self-regulatory organization to discipline its members to compel compliance with surveillance-sharing requirements. Further, unlike the record underlying the Winklevoss Order, the record here does not contain evidence that NYSE Arca would have a surveillance-sharing agreement with one or more of the underlying spot platforms.

be able to demonstrate in a proposed rule change that it will be able to address the risk of fraud and manipulation by sharing surveillance information with a regulated market of significant size related to bitcoin, as well as, where appropriate, with the relevant spot markets underlying such bitcoin derivatives. Should these circumstances develop, or conditions otherwise change in a manner that affects the Exchange Act analysis, the Commission would then have an opportunity to consider whether a bitcoin ETP would be consistent with the requirements of the Exchange Act.⁴⁷⁹

4. Assertions That Arguments are Mutually Reinforcing

The Sponsor asserts that, while each of its two main arguments that it has satisfied the standard set forth in the Commission's orders concerning bitcoin-based commodity trusts and trust issued receipts is convincing on its own—that the underlying bitcoin market and the Trust's NAV process are uniquely resistant to market manipulation and fraudulent activity, and that NYSE Arca has entered into a surveillance-sharing agreement with a regulated bitcoin futures market of significant size—the two arguments together are “mutually reinforcing and positive.”⁴⁸⁰ The Sponsor also states that while it does not intend to suggest that the bitcoin market is immune from all forms of potential manipulation, the risks of trading on a platform must be weighed against the benefits, and that, as with past Commission approvals of ETPs, the unique quality of the bitcoin market adds comfort to the presence of a surveillance-sharing agreement between the listing exchange and a regulated market of significant size.⁴⁸¹ The Sponsor draws a comparison to the Commission's approval of the streetTRACKS Gold Shares ETP, in which, according to the Sponsor, the Commission hinged its approval on the existence of

⁴⁷⁹ See Winklevoss Order, supra note 12, 83 FR at 37580.

⁴⁸⁰ See Bitwise Submission III, supra note 9, at 51, 107.

⁴⁸¹ See id. at 43.

a surveilled market for gold futures, but took “comfort” in the liquidity and diversity of the OTC market for gold.⁴⁸²

Despite the Sponsor’s assertions that its arguments are mutually reinforcing,⁴⁸³ NYSE Arca and the Sponsor do not articulate any basis for applying a lesser standard for either measure as set forth in the Commission’s orders concerning bitcoin-based commodity trusts and trust issued receipts.⁴⁸⁴ As the Commission has stated above, in the absence of a showing that the bitcoin market is uniquely resistant to manipulation, or that other alternative means are present to prevent fraud and manipulation, a surveillance-sharing agreement with a regulated market of significant size related to bitcoin is required to ensure that, in compliance with the Exchange Act, the proposal is designed to prevent fraudulent and manipulative acts and practices.⁴⁸⁵

The Sponsor asserts that, in the Gold Order, the Commission “found comfort” in the liquidity and diversity of the gold OTC market.⁴⁸⁶ Yet the Sponsor acknowledges that the Commission’s approval in the Gold Order “hinged” on the existence of a surveilled market for gold futures.⁴⁸⁷ The Gold Order both recognized these characteristics of the gold OTC market and reflected the Commission’s view that “[i]nformation sharing agreements with markets

⁴⁸² See id. (citing Securities Exchange Act Release No. 50603 (Oct. 28, 2004), 69 FR 64614, 64619 (Nov. 5, 2004) (SR-NYSE-2004-22) (“Gold Order”), which describes the importance of information sharing agreements with markets trading securities underlying a derivative, the presence of the information sharing agreement between the listing exchange and the gold futures market, and the nature of both the OTC and futures markets for gold). See also id. at 107; Notice and OIP, supra note 7, 84 FR at 23128; Bitwise Submission I, supra note 6, at 89.

⁴⁸³ See supra notes 480–482 and accompanying text.

⁴⁸⁴ Even if NYSE Arca could show that bitcoin or the bitcoin market had certain properties that provided some resistance to manipulation, it would not lessen the need for a surveillance-sharing agreement with a significant, regulated market related to bitcoin or bitcoin derivatives. Conversely, the Commission concludes that even if NYSE Arca could show that it had entered into a surveillance-sharing agreement with a regulated market of substantial, but not “significant,” size, it would not lessen the need to show that bitcoin or the bitcoin market is uniquely resistant to manipulation.

⁴⁸⁵ See supra note 15 and accompanying text.

⁴⁸⁶ See supra note 482 and accompanying text.

⁴⁸⁷ See supra note 482 and accompanying text.

trading securities underlying a derivative are an important part of a self-regulatory organization's ability to monitor for trading abuses in derivative products."⁴⁸⁸ Further, the Gold Order states that "the Commission believes that the unique liquidity and depth of the gold market, together with the MOU [Memorandum of Understanding] with NYMEX (of which COMEX is a Division) and NYSE Rules 1300(b) and 1301, create the basis for the [ETP listing exchange] to monitor for fraudulent and manipulative practices in the trading of the Shares."⁴⁸⁹ Moreover, for the commodity-trust ETPs approved to date for listing and trading, there has been in every case at least one significant, regulated market for trading futures on the underlying commodity and the ETP listing exchange has entered into surveillance-sharing agreements with, or held Intermarket Surveillance Group membership in common with, that market.⁴⁹⁰ Thus, even if the Commission accepted the representations by the Sponsor about the liquidity and depth of the spot market for bitcoin, the Commission's disapproval of NYSE Arca's proposal would nonetheless be consistent with the Gold Order and the Commission's other approvals of commodity-trust ETPs.

C. Whether NYSE Arca Has Met its Burden to Demonstrate that the Proposal is Consistent with the Protection of Investors and the Public Interest

NYSE Arca contends that, if approved, its ETP would protect investors and the public interest, but the Commission finds that NYSE Arca has not made such a showing on the current record. The Commission must consider any potential benefits in the broader context of whether the proposal meets each of the applicable requirements of the Exchange Act. And because NYSE

⁴⁸⁸ See Gold Order, supra note 482, 69 FR at 64619.

⁴⁸⁹ Id. (emphasis added). See also Winklevoss Order, supra note 12, 83 FR at 37594–95 (discussing Commission approvals of gold, platinum, palladium, and copper ETPs). The Sponsor acknowledges that the "availability of a surveillance-sharing agreement with a derivatives market of significant size" relating to the "gold market" provides protection against market manipulation. Bitwise Submission III, supra note 9, at 107.

⁴⁹⁰ See Winklevoss Order, supra note 12, 83 FR at 37594.

Arca has not demonstrated that its proposed rule change is designed to prevent fraudulent and manipulative acts and practices, the Commission must disapprove the proposal.

1. Representations Made and Comments Received

NYSE Arca asserts that the proposal will facilitate the listing and trading of a new type of ETP based on the price of bitcoin that will enhance competition among market participants, to the benefit of investors and the marketplace.⁴⁹¹ In addition, the Sponsor asserts that the proposed bitcoin ETP would provide many benefits to the bitcoin market and potential benefits to investors, and would be an incremental positive to the market by creating another regulated market for price discovery.⁴⁹² According to the Sponsor, the design of the Trust and the fundamental nature of the bitcoin market would help mitigate risk factors that come from pricing, valuation, market manipulation, and related concerns.⁴⁹³ The Sponsor represents that broker-dealers have expressed a desire for the ability to offer clients a bitcoin ETP as a way to allow their clients to have institutionally-managed exposure to bitcoin, rather than buying bitcoin individually from platforms.⁴⁹⁴

One commenter states that the proposed ETP would provide investors with a familiar, easily accessible, and secure financial product that would be subject to disclosure requirements and a more substantive regulatory regime than that imposed by the spot platforms.⁴⁹⁵ This commenter also states that the proposed ETP would reduce risks that investors face when directly transacting in bitcoin via spot platforms, including risks relating to cryptographic key

⁴⁹¹ See Notice and OIP, supra note 7, 84 FR at 23136.

⁴⁹² See Bitwise Submission I, supra note 6, at 202; Bitwise Submission III, supra note 9, at 167.

⁴⁹³ See Bitwise Submission I, supra note 6, at 202.

⁴⁹⁴ See id. at 204.

⁴⁹⁵ See Omniex Letter, supra note 9, at 2.

maintenance, hacking attacks, and computer errors.⁴⁹⁶ This commenter further asserts that the proposed ETP would enhance protections for all investors by encouraging disciplined and sophisticated institutional participants to join the market, and would reduce retail-specific risks because Shares would be purchased through brokerage accounts with associated client risk tolerance and suitability obligations.⁴⁹⁷ Another commenter states that the ETP structure has allowed investors easy, secure, and low-cost access to important markets, and that it would be a “win” for investors if this protection and the related opportunity was extended to bitcoin.⁴⁹⁸ In addition, one commenter states that the proposed Shares would provide certain investors with the opportunity to acquire investment exposure in bitcoin, without participating directly in the spot market and having to make arrangements to custody bitcoin.⁴⁹⁹

The Sponsor states that investors in the proposed ETP would need to consider and study the risk factors in the Trust’s Registration Statement, including the high historical volatility of bitcoin, uncertainty regarding its long-term prospects for adoption, new technological advances, and regulatory changes.⁵⁰⁰ The Sponsor asserts that the primary risks of the proposed ETP would be those inherent to the underlying asset’s returns, volatility, and functioning, rather than unique risks that pertain to custody, pricing, liquidity, arbitrage, or market manipulation.⁵⁰¹ The Sponsor also asserts that issues that might be relevant to investment advisors investing in digital-asset-related funds on behalf of retail investors are whether bitcoin can be valued as a non-cashflow-

⁴⁹⁶ See id. (stating that bitcoin spot platforms may be pressured to improve their services to compete with the proposed ETP).

⁴⁹⁷ See id.

⁴⁹⁸ See Donostia Ventures Letter, supra note 9, at 5.

⁴⁹⁹ See Tagomi Letter, supra note 9, at 1.

⁵⁰⁰ See Bitwise Submission I, supra note 6, at 202.

⁵⁰¹ See id. at 203.

generating asset, its high volatility, concerns over custody and locating bitcoin, and the ability of advisors or investors to understand bitcoin.⁵⁰²

One commenter asserts that the proposed ETP is not motivated by a legitimate desire to protect consumers or drive regulation, and that the primary intentions behind the proposal are to allow bitcoin to become part of the mainstream investor’s portfolio, increase the mass adoption of cryptocurrencies and thus drive up the price through mass speculation.⁵⁰³ This commenter also asserts that disreputable individuals are operating in the bitcoin market and it is important not to send the wrong signal by supporting an ETP without the proper legal and regulatory framework in place to protect the public.⁵⁰⁴ Another commenter states that the Sponsor’s presentation is “condescending” and assumes that the public needs protecting by an ETP, and that the public should keep control of its digital assets and accept the risks that come with self-ownership.⁵⁰⁵ A third commenter states that if the root causes of manipulation by the platforms are not identified and eliminated, an ETP based on bitcoin would not only fail to solve them, but would compound them before any meaningful and sustainable risk measures and fail-safes have been identified and implemented to guarantee investor protection.⁵⁰⁶

2. Analysis

As it has in disapproving previous proposals for bitcoin-related ETPs, the Commission acknowledges that, as compared to trading in unregulated bitcoin spot markets, trading a bitcoin-

⁵⁰² See id. at 205.

⁵⁰³ See Kumar Letter, supra note 6.

⁵⁰⁴ See id.

⁵⁰⁵ See Buckley Letter, supra note 6.

⁵⁰⁶ See Fitzgerald Letter I, supra note 6. See also Shenoy Letter III, supra note 69, at 11 (asserting that the proposed ETP would not reduce the opaqueness of the marketplace or provide meaningful price discovery because the underlying root-cause of issues such as regulation, manipulation, and transparency have not been addressed at a trading platform level).

based ETP on a national securities exchange may provide some additional protection to investors, but the Commission must consider this potential benefit in the broader context of whether the proposal meets each of the applicable requirements of the Exchange Act.⁵⁰⁷ Pursuant to Section 19(b)(2) of the Exchange Act, the Commission must disapprove a proposed rule change filed by a national securities exchange if it does not find that the proposed rule change is consistent with the applicable requirements of the Exchange Act—including the requirement under Section 6(b)(5) that the rules of a national securities exchange be designed to prevent fraudulent and manipulative acts and practices.⁵⁰⁸ Thus, even if a proposed rule change would provide certain benefits to investors and the markets, the proposed rule change may still fail to meet other requirements under the Exchange Act.

For the reasons discussed above, NYSE Arca has not met its burden of demonstrating that the proposal is consistent with Exchange Act Section 6(b)(5),⁵⁰⁹ and, accordingly, the Commission must disapprove the proposal.⁵¹⁰

⁵⁰⁷ See Winklevoss Order supra note 12, 83 FR at 37602; GraniteShares Order, supra note 12, 83 FR at 43931; ProShares Order, supra note 12, 83 FR at 43941; Direxion Order, supra note 12, 83 FR at 43919.

⁵⁰⁸ See 15 U.S.C. 78s(b)(2)(C). The Sponsor acknowledges that, “[n]otwithstanding all” the purported benefits that the “launch of a bitcoin ETP would provide” to the bitcoin market and investors, “it is critical and primary that any bitcoin ETP proposal meet each of the applicable requirements of the Exchange Act prior to approval.” Bitwise Submission III, supra note 9, at 167.

⁵⁰⁹ 15 U.S.C. 78f(b)(5).

⁵¹⁰ In disapproving the proposed rule change, as modified by Amendment No. 1, the Commission has considered its impact on efficiency, competition, and capital formation. See 15 U.S.C. 78c(f); see also supra notes 491–498 and accompanying text. According to NYSE Arca, the proposal will facilitate the listing and trading of a new type of ETP based on the price of bitcoin, which will enhance competition among market participants, to the benefit of investors and the marketplace. See Notice and OIP, supra note 7, 84 FR at 23136. Additionally, the Sponsor asserts that the proposed ETP would incrementally improve the market by creating another regulated market for price discovery. See Bitwise Submission I, supra note 6, at 202. The Sponsor also asserts that the launch of a bitcoin ETP would be supportive of the United States’ digital asset market, which may have important economic advantages for the United States from a competitiveness standpoint. See Bitwise Submission III, supra note 9, at 167 (stating that bitcoin ETPs have been approved on the Nasdaq Nordic exchange in Sweden and the Six Swiss Exchange in Switzerland). The Commission recognizes that NYSE Arca and the Sponsor assert the economic benefits discussed above, but, for the reasons discussed throughout, the Commission is disapproving the proposed rule change because it does not find that the proposed rule change is consistent with the Exchange Act.

D. Other Comments

Comment letters also addressed the general nature and uses of bitcoin;⁵¹¹ the state of development of bitcoin as a digital asset;⁵¹² the inherent value of, and risks of investing in, bitcoin;⁵¹³ the volatility of bitcoin prices;⁵¹⁴ the desire of investors to gain access to bitcoin through an ETP;⁵¹⁵ the legitimacy or enhanced regulatory protection that Commission approval of the proposed ETP might confer upon bitcoin as a digital asset;⁵¹⁶ the potential impact of Commission approval of the proposed ETP on the price of bitcoin and on the U.S. economy;⁵¹⁷ insurance and custody of fund holdings;⁵¹⁸ handling of fund holdings after a hard fork or “airdrop” (i.e., an unsolicited distribution of digital assets free of charge);⁵¹⁹ and the protection of individual freedom, privacy, and property rights.⁵²⁰ Ultimately, however, additional discussion of these topics is unnecessary, as they do not bear on the basis for the Commission’s decision to disapprove the proposal.

⁵¹¹ See Blockchain Capital Letter, supra note 9; Puddifoot Letter, supra note 6; Santos Letter, supra note 6.

⁵¹² See Blockchain Capital Letter, supra note 9; Page Letter, supra note 9; Puddifoot Letter, supra note 6; Santos Letter, supra note 6; Xia Letter, supra note 9.

⁵¹³ See Ahn Letter II, supra note 9; Ahn Letter III, supra note 9; Chris Letter, supra note 6; Mallya Letter, supra note 6; Neil Letter, supra note 6; Page Letter, supra note 9.

⁵¹⁴ See Bitwise Submission I, supra note 6, at 205; Bird Letter, supra note 9; Perrott Letter, supra note 6; Pinto Letter, supra note 6; Shenoy Letter III, supra note 69, at 6–7.

⁵¹⁵ See Blockchain Association Letter, supra note 9; Collaborative Fund Letter, supra note 9; Mallon Letter, supra note 9; Omniex Letter, supra note 9; Puddifoot Letter, supra note 6; J. Ross Letter, supra note 9; Shenoy Letter II, supra note 9.

⁵¹⁶ See Anonymous Letter I, supra note 6; Anonymous Letter II, supra note 9; Barnwell Letter, supra note 6; Blockchain Association Letter, supra note 9; Castle Island Ventures Letter, supra note 9; Collaborative Fund Letter, supra note 9; J. Ross Letter, supra note 9; Santos Letter, supra note 6; Shenoy Letter II, supra note 9.

⁵¹⁷ See Bitwise Submission III, supra note 9, at 167; Mallon Letter, supra note 9; Neal Letter, supra note 9.

⁵¹⁸ See Bitwise Submission I, supra note 6, at 133–167, 205–210; Castle Island Ventures Letter, supra note 9; Coinbase Custody Letter, supra note 9; Monterio Letter, supra note 6; Santos Letter, supra note 6.

⁵¹⁹ See Bitwise Submission I, supra note 6, at 182–188, 213–215.

⁵²⁰ See Ahn Letter III, supra note 9; Blockchain Association Letter, supra note 9; Omniex Letter, supra note 9; Rob Letter, supra note 6; Santos Letter, supra note 6.

IV. CONCLUSION

For the reasons set forth above, the Commission does not find, pursuant to Section 19(b)(2) of the Exchange Act, that the proposed rule change, as modified by Amendment No. 1, is consistent with the requirements of the Exchange Act and the rules and regulations thereunder applicable to a national securities exchange, and in particular, with Section 6(b)(5) of the Exchange Act.

IT IS THEREFORE ORDERED, pursuant to Section 19(b)(2) of the Exchange Act, that proposed rule change SR-NYSEArca-2019-01, as modified by Amendment No. 1, is disapproved.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.⁵²¹

Jill M. Peterson
Assistant Secretary

⁵²¹ 17 CFR 200.30-3(a)(12).