OFFICE OF SCIENCE AND TECHNOLOGY POLICY

Request for Information; Cislunar Science and Technology Subcommittee

AGENCY: Office of Science and Technology Policy (OSTP).

ACTION: Notice of request for information.

SUMMARY: The White House Office of Science and Technology Policy (OSTP)—on behalf of the Cislunar Science and Technology Subcommittee of the National Science and Technology Council (NSTC)—requests input to help inform development of a national science and technology strategy on U.S. activities in cislunar space. For the purposes of this RFI, cislunar space is defined as the entire region beyond Earth's geostationary orbit still subject to the Earth's and/or Moon's gravity, including orbits around the Moon and the lunar surface. The strategy will include key U.S. government research and development (R&D) priorities and proposed technical standards to enable a robust, cooperative, and sustainable ecosystem in cislunar space.

DATES: Responses must be received by July 20, 2022 to be considered.

ADDRESSES: You may submit comments by any of the following methods:

- *Email: cislunar@ostp.eop.gov,* include *Cislunar RFI* in the subject line of the message.
- *Mail:* Attn: NSTC Cislunar Science & Technology Subcommittee, Office of Science and Technology Policy, Eisenhower Executive Office Building, 1650 Pennsylvania Ave. NW, Washington, DC 20504.

Instructions: Response to this RFI is voluntary. Respondents need not reply to all questions listed. Each individual or institution is requested to submit only one response. Electronic responses must be provided as attachments to an email. It is recommended that attachments with file sizes exceeding 25MB be compressed (*i.e.* zipped) to ensure message delivery. Please identify your answers by responding to a specific question or topic if possible. Respondents may answer as many or as few questions as they wish. Comments of seven pages or fewer (3,500 words) are requested; longer responses will not be considered.

Any information obtained from this RFI is intended to be used by the Government on a non-attribution basis for planning and strategy development. OSTP will not respond to individual submissions. A response to this RFI will not be viewed as a binding commitment to develop or pursue the project or ideas discussed. This RFI is not accepting applications for financial assistance or financial incentives. Responses to this RFI may be posted without change online. OSTP therefore requests that no proprietary information, copyrighted information, or personally identifiable information be submitted in response to this RFI. Please note that the United States Government will not pay for response preparation, or for the use of any information contained in a response.

FOR FURTHER INFORMATION CONTACT: *cislunar@ostp.eop.gov* or Matt Daniels at 202–456–4444.

SUPPLEMENTARY INFORMATION: Pursuant to 42 U.S.C. 6617, OSTP is soliciting public input through an RFI to obtain feedback from a wide variety of stakeholders, including individuals, industry, academia, research laboratories, nonprofits, and think tanks. OSTP is specifically interested in public input to inform a national science and technology strategy for U.S. activities in cislunar space, referring to the entire region beyond Earth's geostationary orbit still subject to the Earth's and/or Moon's gravity, including orbits around the Moon and the lunar surface. OSTP seeks response to either or both of the following questions:

1. What research and development should the U.S. government prioritize to help advance a robust, cooperative, and sustainable ecosystem in cislunar space in the next 10 years? And over the next 50 years?

2. What key technical standards are most useful to develop in support of activities in cislunar space, and how could these standards enable and support a vibrant and sustainable cislunar ecosystem?

Dated: June 29, 2022.

Stacy Murphy,

Operations Manager.

[FR Doc. 2022–14316 Filed 7–5–22; 8:45 am]

BILLING CODE 3270–F2–P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–95179; File No. SR–NYSEArca–2021–89]

Self-Regulatory Organizations; NYSE Arca, Inc.; Order Disapproving a Proposed Rule Change To List and Trade Shares of the Bitwise Bitcoin ETP Trust Under NYSE Arca Rule 8.201–E (Commodity-Based Trust Shares)

June 29, 2022.

I. Introduction

On October 14, 2021, NYSE Arca, Inc. (''NYSE Arca'' or ''Exchange'') 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 ETP 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 November 3, 2021.[3]

On December 15, 2021, 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] On February 1, 2022, the Commission instituted proceedings under Section 19(b)(2)(B) of the Exchange Act [6] to determine whether to approve or disapprove the proposed rule change.[7] On April 22, 2022, the Commission designated a longer period for Commission action on the proposed rule change.[8]

This order disapproves the proposed rule change. The Commission concludes that 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), which

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

[3] *See* Securities Exchange Act Release No. 93445 (Oct. 28, 2021), 86 FR 60695 (''Notice''). Comments on the proposed rule change are available at: *https://www.sec.gov/comments/sr-nysearca-2021-89/srnysearca202189.htm.*

[4] 15 U.S.C. 78s(b)(2).

[5] *See* Securities Exchange Act Release No. 93790, 86 FR 72300 (Dec. 21, 2021).

[6] 15 U.S.C. 78s(b)(2)(B).

[7] *See* Securities Exchange Act Release No. 94126, 87 FR 6903 (Feb. 7, 2022).

[8] *See* Securities Exchange Act Release No. 94781, 87 FR 25327 (Apr. 28, 2022).

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.'' [9]

When considering whether NYSE Arca's proposal to list and trade the Shares is designed to prevent fraudulent and manipulative acts and practices, the Commission applies the same analytical framework used in its orders considering previous proposals to list bitcoin [10]-based commodity trusts and bitcoin-based trust issued receipts to assess whether a listing exchange of an exchange-traded product (''ETP'') can meet its obligations under Exchange Act Section 6(b)(5).[11] As the Commission has explained, an exchange that lists bitcoin-based ETPs can meet its obligations under Exchange Act Section 6(b)(5) by demonstrating that the exchange has a comprehensive surveillance-sharing agreement with a regulated market of significant size related to the underlying or reference bitcoin assets.[12]

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.[13] 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.'' [14]

Although surveillance-sharing agreements are not the exclusive means by which a listing exchange of a commodity-trust ETP can meet its obligations under Exchange Act Section 6(b)(5), such agreements have previously provided the basis for the exchanges that list commodity-trust ETPs to meet those obligations, and the Commission has historically recognized their importance. And where, as here, a listing exchange does not establish that other means to prevent fraudulent and manipulative acts and practices will be sufficient,[15] the listing exchange must enter into a surveillance-sharing agreement with a regulated market of significant size because such agreements detect and deter fraudulent and manipulative activity.[16]

In previous orders,[17] the Commission has identified possible sources of fraud and manipulation in the spot bitcoin market, including (1) ''wash'' trading,[18] (2) persons with a dominant position in bitcoin manipulating bitcoin pricing, (3) hacking of the bitcoin network and

[9] 15 U.S.C. 78f(b)(5).

[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. *See, e.g.,* Notice, 86 FR at 60696.

[11] *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) (''Winklevoss Order''); Order Disapproving a Proposed Rule Change, as Modified by Amendment No. 1, To Amend NYSE Arca Rule 8.201–E (Commodity-Based Trust Shares) and To List and Trade Shares of the United States Bitcoin and Treasury Investment Trust Under NYSE Arca Rule 8.201–E, Securities Exchange Act Release No. 88284 (Feb. 26, 2020), 85 FR 12595 (Mar. 3, 2020) (SR–NYSEArca–2019–39) (''USBT Order''); Order Disapproving a Proposed Rule Change To List and Trade Shares of the WisdomTree Bitcoin Trust Under BZX Rule 14.11(e)(4), Commodity-Based Trust Shares, Securities Exchange Act Release No. 93700 (Dec. 1, 2021), 86 FR 69322 (Dec. 7, 2021) (SR–CboeBZX–2021–024) (''WisdomTree Order''); Order Disapproving a Proposed Rule Change To List and Trade Shares of the Valkyrie Bitcoin Fund Under NYSE Arca Rule 8.201–E (Commodity-Based Trust Shares), Securities Exchange Act Release No. 93859 (Dec. 22, 2021), 86 FR 74156 (Dec. 29, 2021) (SR–NYSEArca–2021–31) (''Valkyrie Order''); Order Disapproving a Proposed Rule Change To List and Trade Shares of the Kryptoin Bitcoin ETF Trust Under BZX Rule 14.11(e)(4), Commodity-Based Trust Shares, Securities Exchange Act Release No. 93860 (Dec. 22, 2021), 86 FR 74166 (Dec. 29, 2021) (SR–CboeBZX–2021–029) (''Kryptoin Order''); Order Disapproving a Proposed Rule Change To List and Trade Shares of the First Trust SkyBridge Bitcoin ETF Trust Under NYSE Arca Rule 8.201–E, Securities Exchange Act Release No. 94006 (Jan. 20, 2022), 87 FR 3869 (Jan. 25, 2022) (SR–NYSEArca–2021–37) (''SkyBridge Order''); Order Disapproving a Proposed Rule Change To List and Trade Shares of the Wise Origin Bitcoin Trust Under BZX Rule 14.11(e)(4), Commodity-Based Trust Shares, Securities Exchange Act Release No. 94080 (Jan. 27, 2022), 87 FR 5527 (Feb. 1, 2022) (SR–CboeBZX–2021–039) (''Wise Origin Order''); Order Disapproving a Proposed Rule Change To List and Trade Shares of the NYDIG Bitcoin ETF Under NYSE Arca Rule 8.201–E (Commodity-Based Trust Shares), Securities Exchange Act Release No. 94395 (Mar. 10, 2022), 87 FR 14932 (Mar. 16, 2022) (SR–NYSEArca–2021–57) (''NYDIG Order''); Order Disapproving a Proposed Rule Change To List and Trade Shares of the Global X Bitcoin Trust Under BZX Rule 14.11(e)(4), Commodity-Based Trust Shares, Securities Exchange Act Release No. 94396 (Mar. 10, 2022), 87 FR 14912 (Mar. 16, 2022) (SR–CboeBZX–2021–052) (''Global X Order''); Order Disapproving a Proposed Rule Change, as Modified by Amendment No. 1, To List and Trade Shares of the ARK 21Shares Bitcoin ETF Under BZX Rule 14.11(e)(4), Commodity-Based Trust Shares, Securities Exchange Act Release No. 94571 (Mar. 31, 2022), 87 FR 20014 (Apr. 6, 2022) (SR–CboeBZX–2021–051) (''ARK 21Shares Order''); Order Disapproving a Proposed Rule Change To List and Trade Shares of the One River Carbon Neutral Bitcoin Trust Under NYSE Arca Rule 8.201–E (Commodity-Based Trust Shares), Securities Exchange Act Release No. 94999 (May 27, 2022), 87 FR 33548 (June 2, 2022) (SR–NYSEArca–2021–67) (''One River Order''). In addition, orders were issued by delegated authority on the following matters: Order Disapproving a Proposed Rule Change, as Modified by Amendment No. 1, Relating to the Listing and Trading of Shares of the SolidX Bitcoin Trust Under NYSE Arca Equities Rule 8.201, Securities Exchange Act Release No. 80319 (Mar. 28, 2017), 82 FR 16247 (Apr. 3, 2017) (SR–NYSEArca–2016–101) (''SolidX Order''); 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) (SR–NYSEArca–2017–139) (''ProShares Order''); 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''); Order Disapproving a Proposed Rule Change To List and Trade Shares of the VanEck Bitcoin Trust Under BZX Rule 14.11(e)(4), Commodity-Based Trust Shares, Securities Exchange Act Release No. 93559 (Nov. 12, 2021), 86 FR 64539 (Nov. 18, 2021) (SR–CboeBZX–2021–019) (''VanEck Order''); Order Granting Approval of a Proposed Rule Change, as Modified by Amendment No. 2, To List and Trade Shares of the Teucrium Bitcoin Futures Fund Under NYSE Arca Rule 8.200–E, Commentary .02 (Trust Issued Receipts), Securities Exchange Act Release No. 94620 (Apr. 6, 2022), 87 FR 21676 (Apr. 12, 2022) (SR–NYSEArca–2021–53) (''Teucrium Order''); Order Granting Approval of a Proposed Rule Change, as Modified by Amendment Nos. 1 and 2, To List and Trade Shares of the Valkyrie XBTO Bitcoin Futures Fund Under Nasdaq Rule 5711(g), Securities Exchange Act Release No. 94853 (May 5, 2022), 87 FR 28848 (May 11, 2022) (SR–NASDAQ–2021–066) (''Valkyrie XBTO Order'').

[12] *See* USBT Order, 85 FR at 12596. *See also* Winklevoss Order, 83 FR at 37592 n.202 and accompanying text (discussing previous Commission approvals of commodity-trust ETPs); GraniteShares Order, 83 FR at 43925–27 nn.35–39 and accompanying text (discussing previous Commission approvals of commodity-futures ETPs).

[13] *See* Winklevoss Order, 83 FR at 37594. *See also* USBT Order, 85 FR at 12596–97; WisdomTree Order, 86 FR at 69322.

[14] *See* USBT Order, 85 FR at 12597.

[15] Listing exchanges have also attempted to demonstrate that other means besides surveillance-sharing agreements will be sufficient to prevent fraudulent and manipulative acts and practices, including that the bitcoin market as a whole or the relevant underlying bitcoin market is ''uniquely'' and ''inherently'' resistant to fraud and manipulation. *See* USBT Order, 85 FR at 12597. The Exchange, however, does not make any such arguments with respect to this proposal.

[16] *See* 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) (''NDSP Adopting Release''). *See also* Winklevoss Order, 83 FR at 37593–94; ProShares Order, 83 FR at 43936; GraniteShares Order, 83 FR at 43924; USBT Order, 85 FR at 12596.

[17] *See, e.g.,* One River Order, 87 FR at 33554.

[18] *See also CFTC* v. *Gemini Trust Co., LLC,* No. 22–cv–4563 (S.D.N.Y. filed June 2, 2022) (alleging, among other things, failure by Gemini personnel to disclose to the CFTC that Gemini customers could and did engage in collusive or wash trading).

trading platforms, (4) malicious control of the bitcoin network, (5) trading based on material, non-public information, including the dissemination of false and misleading information, (6) manipulative activity involving purported ''stablecoins,'' including Tether (USDT), and (7) fraud and manipulation at bitcoin trading platforms. The Exchange does not refute the presence of these possible sources of fraud and manipulation.[19]

The Commission has long recognized that surveillance-sharing 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'' and thus ''enable the Commission to continue to effectively protect investors and promote the public interest.'' [20] As the Commission has emphasized, it is essential for an exchange listing a derivative securities product to have the ability that surveillance-sharing agreements provide to obtain information necessary to detect, investigate, and deter fraud and market manipulation, as well as violations of exchange rules and applicable federal securities laws and rules.[21] 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.[22]

The Commission has explained that the ability of a national securities exchange to enter into surveillance-sharing agreements ''furthers the protection of investors and the public interest because it will enable the [e]xchange to conduct prompt investigations into possible trading violations and other regulatory improprieties.'' [23] The Commission has also long taken the position that surveillance-sharing agreements are important in the context of exchange listing of derivative security products, such as equity options, because a surveillance-sharing agreement ''permits the sharing of information'' that is ''necessary to detect'' manipulation and ''provide[s] an important deterrent to manipulation because [it] facilitate[s] the availability of information needed to fully investigate a potential manipulation if it were to occur.'' [24] With respect to ETPs, when approving the listing and trading of one of the first commodity-linked ETPs—a commodity-linked exchange-traded note—on a national securities exchange, the Commission continued to emphasize the importance of surveillance-sharing agreements, stating that the listing exchange had entered into surveillance-sharing agreements with each of the futures markets on which pricing of the ETP would be based and stating that ''[t]hese agreements should help to ensure the availability of information necessary to detect and deter potential manipulations and other trading abuses, thereby making [the commodity-linked notes] less readily susceptible to manipulation.'' [25]

Consistent with these statements, 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 (''ISG'') membership in common with, that market.[26] Moreover, the surveillance-sharing agreements have been consistently present whenever the Commission has approved the listing and trading of derivative securities, even where the underlying securities were also listed on national securities exchanges—such as options based on an index of stocks traded on a national securities exchange—and were thus subject to the

[19] The Trust's Registration Statement also acknowledges that ''[o]ver the past several years, a number of digital asset trading platforms have been closed or faced issues due to fraud, failure, security breaches or governmental regulations''; that ''[t]he platforms on which users trade bitcoin 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''; that ''[t]he nature of the assets held at digital asset trading platforms makes them appealing targets for hackers and a number of digital asset trading platforms have been victims of cybercrimes''; that bitcoin networks are susceptible to a ''51% attack,'' in which ''[i]f a malicious actor or botnet obtains control of more than 50% of the processing power on the [b]itcoin network, or otherwise obtains control over the [b]itcoin network through its influence over core developers or otherwise, such actor or botnet could manipulate how data is recorded [on] the [bitcoin blockchain]''; that ''it is believed that certain mining pools may have exceeded the 50% threshold on the [b]itcoin network on a temporary basis''; that the inputs to the CME US Reference Rate ''may be subject to technological error, manipulative activity, or fraudulent reporting from their initial source''; and that ''in the past, flaws in the source code for digital assets have been exposed and exploited.'' *See* Registration Statement on Form S–1, filed by the Trust on October 14, 2021, at 11–12, 17–18. *See also Are Blockchains Decentralized? Unintended Centralities in Distributed Ledgers,* prepared by Trail of Bits based upon work supported by the Defense Advanced Research Projects Agency, June 2022, available at: *https://assets-global.website-files.com/5fd11235b3950c2c1a3b6df4/62af6c641a672b3329b9a480_Unintended_Centralities_in_Distributed_Ledgers.pdf.*

[20] *See* NDSP Adopting Release, 63 FR at 70954, 70959. *See also id.* at 70959 (''It is essential that the SRO [self-regulatory organization] have the ability to obtain the information necessary to detect and deter market manipulation, illegal trading and other abuses involving the new derivative securities product. Specifically, there should be a comprehensive ISA [information-sharing agreement] that covers trading in the new derivative securities product and its underlying securities in place between the SRO listing or trading a derivative product and the markets trading the securities underlying the new derivative securities product.'').

[21] *See* NDSP Adopting Release, 63 FR at 70959.

[22] *See* Winklevoss Order, 83 FR at 37592–93 (discussing Letter from Brandon Becker, Director, Division of Market Regulation, Commission, to Gerard D. O'Connell, Chairman, Intermarket Surveillance Group (June 3, 1994), available at *https://www.sec.gov/divisions/marketreg/mr-noaction/isg060394.htm*).

[23] Securities Exchange Act Release No. 27877 (Apr. 4, 1990), 55 FR 13344 (Apr. 10, 1990) (SR–NYSE–90–14).

[24] 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 (''ADR'')) (''ADR Option Order''). The Commission further stated that it ''generally believes that having a comprehensive surveillance sharing agreement in place, between the exchange where the ADR option trades and the exchange where the foreign security underlying the ADR primarily trades, will ensure the integrity of the marketplace. The Commission further believes that the ability to obtain relevant surveillance information, including, among other things, the identity of the ultimate purchasers and sellers of securities, is an essential and necessary component of a comprehensive surveillance sharing agreement.'' *Id.*

[25] Securities Exchange Act Release No. 35518 (Mar. 21, 1995), 60 FR 15804, 15807 (Mar. 27, 1995) (SR–Amex–94–30). *See also* Winklevoss Order, 83 FR at 37593 n.206.

[26] *See* Winklevoss Order, 83 FR at 37594. Furthermore, the Commission notes that those cases dealt with a futures market that had been trading for a long period of time before an exchange proposed a commodity-trust ETP based on the asset underlying those futures. For example, silver futures and gold futures began trading in 1933 and 1974, respectively, *see https://www.cmegroup.com/media-room/historical-first-trade-dates.html,* and the first ETPs based on spot silver and gold were approved for listing and trading in 2006 and 2004. *See* Securities Exchange Act Release No. 53521 (Mar. 20, 2006), 71 FR 14967 (Mar. 24, 2006) (SR–Amex–2005–072) (order approving iShares Silver Trust); Securities Exchange Act Release No. 50603 (Oct. 28, 2004), 69 FR 64614 (Nov. 5, 2004) (SR–NYSE–2004–22) (order approving streetTRACKS Gold Shares). Platinum futures and palladium futures began trading in 1956 and 1968, respectively, *see https://www.cmegroup.com/media-room/historical-first-trade-dates.html,* and the first ETPs based on spot platinum and palladium were approved for listing and trading in 2009. *See* Securities Exchange Act Release No. 61220 (Dec. 22, 2009), 74 FR 68895 (Dec. 29, 2009) (SR–NYSEArca–2009–94) (order approving ETFS Palladium Trust); Securities Exchange Act Release No. 61219 (Dec. 22, 2009), 74 FR 68886 (Dec. 29, 2009) (SR–NYSEArca–2009–95) (order approving ETFS Platinum Trust).

Commission's direct regulatory authority.[27]

Here, NYSE Arca contends that approval of the proposal is consistent with Section 6(b)(5) of the Exchange Act, and, in particular, Section 6(b)(5)'s requirement 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.[28] As discussed in more detail below, NYSE Arca asserts that the proposal is consistent with Section 6(b)(5) of the Exchange Act because the Exchange has a comprehensive surveillance-sharing agreement with the Chicago Mercantile Exchange (''CME''), which the Exchange argues is a regulated market of significant size in the context of the proposed spot bitcoin ETP.[29]

Based on its analysis, as discussed below in Section III.B, the Commission concludes that NYSE Arca has not established that it has a comprehensive surveillance-sharing agreement with a regulated market of significant size related to spot bitcoin, the underlying bitcoin assets that would be held by the Trust. In addition, the Commission examines in Section III.C other arguments raised by NYSE Arca and commenters, and concludes that NYSE Arca has not demonstrated that the proposed rule change is consistent with the statutory requirements of Exchange Act Section 6(b)(5).

The Commission emphasizes that its disapproval of this proposed rule change does not rest on an evaluation of the relative investment quality of a product holding spot bitcoin versus a product holding CME bitcoin futures, or an assessment of whether bitcoin, 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 to demonstrate that its proposal is consistent with the requirements of Exchange Act Section 6(b)(5).

II. Description of the Proposed Rule Change

As described in more detail in the Notice,[30] the Exchange proposes to list and trade the Shares of the Trust under NYSE Arca Rule 8.201–E, which governs the listing and trading of Commodity-Based Trust Shares on the Exchange.

The investment objective of the Trust is to seek to provide exposure to the value of bitcoin held by the Trust, less the expenses of the Trust's operations.[31] The Shares would represent units of undivided beneficial ownership of the Trust.[32] Under normal circumstances, the Trust's only asset would be bitcoin, and, under limited circumstances, cash.[33] The Trust would not use derivatives that may subject the Trust to counterparty and credit risks.[34]

The Trust's net asset value (''NAV'') and NAV per Share would be determined by the Administrator once each Exchange trading day as of 4:00 p.m. E.T., or as soon thereafter as practicable, by reference to the CF Bitcoin-Dollar US Settlement Price (''CME US Reference Rate'').[35] The Administrator would calculate the NAV by multiplying the number of bitcoins held by the Trust by the CME US Reference Rate for such day, and subtracting the accrued but unpaid expenses and liabilities of the Trust.[36] The CME US Reference Rate is a daily reference rate of the U.S. dollar price of one bitcoin, calculated at 4:00 p.m. E.T.[37]

The CME US Reference Rate aggregates during a calculation window the trade flow of several spot bitcoin trading platforms into the U.S. dollar price of one bitcoin as of its calculation time. The current constituent bitcoin platforms of the CME US Reference Rate are Bitstamp, Coinbase, Gemini, itBit, and Kraken (''Constituent Platforms'').[38] In calculating the CME US Reference Rate, the methodology creates a joint list of certain trade prices and sizes from the Constituent Platforms. The methodology then divides this list into a number of equally sized time intervals, and it calculates the volume-weighted median trade price for each of those intervals. The CME US Reference Rate is the equally weighted average of the volume-weighted medians of all intervals.[39]

The Trust would provide website disclosure of its holdings daily.[40] In addition, each trading day, the Exchange would calculate and disseminate an intraday trust value (''ITV'') every 15 seconds during the NYSE Arca Core Trading Session.[41] The ITV would be calculated throughout the

[27] *See* USBT Order, 85 FR at 12597; ADR Option Order, 59 FR at 5621. The Commission has also recognized that surveillance-sharing agreements provide a necessary deterrent to fraud and manipulation 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 were 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 explained that surveillance-sharing agreements ''ensure the availability of information necessary to detect and deter potential manipulations and other trading abuses'' 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).

[28] *See* Notice, 86 FR at 60700–15.

[29] *See id.*

[30] *See* Notice, *supra* note 3.

[31] *See id.* at 60696. Bitwise Investment Advisers, LLC (''Sponsor'') is the sponsor of the Trust, and Delaware Trust Company is the trustee. The Trust would engage a third party custodian to maintain custody of the Trust's bitcoin assets. The Trust also would engage a third party service provider to serve as the administrator (''Administrator'') and transfer agent of the Trust. *See id.*

[32] *See id.*

[33] *See id.* The Trust may sell bitcoin and temporarily hold cash as part of a liquidation of the Trust or to pay certain extraordinary expenses not assumed by the Sponsor. According to the Exchange, the Trust also may, from time to time, passively receive, by virtue of holding bitcoin, certain additional digital assets or rights to receive such digital assets through a fork of the bitcoin blockchain or an airdrop of assets. *See id.* at 60696 n.12.

[34] *See id.* at 60696.

[35] *See id.* at 60696, 60699.

[36] *See id.* at 60699.

[37] The Exchange states that the CME US Reference Rate utilizes the same methodology as the CME CF Bitcoin Reference Rate, which is calculated at 4:00 p.m., London time, and is used to settle bitcoin futures on the CME. *See id.* at 60696 n.11, 60698–99.

[38] *See id.* at 60699. None of these platforms are ''regulated'' as a national securities exchange. National securities exchanges are 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.'' 15 U.S.C. 78f(b)(5). Moreover, national securities exchanges must file proposed rules with the Commission regarding certain material aspects of their operations (17 CFR 240.19b–4(a)(6)(i)), and the Commission has the authority to disapprove any such rule that is not consistent with the requirements of the Exchange Act (15 U.S.C. 78s(b)). Thus, national securities exchanges are subject to Commission oversight of, among other things, their governance, membership qualifications, trading rules, disciplinary procedures, recordkeeping, and fees. *See* Winklevoss Order, 83 FR at 37597. The Constituent Platforms have none of these requirements (none are registered as a national securities exchange).

[39] *See* Notice, 86 FR at 60699.

[40] *See id.* at 60715.

[41] *See id.* at 60699. The ITV would also be widely disseminated by one or more major market data vendors during the NYSE Arca Core Trading Session. *See id.*

trading day by using the prior day's holdings at close of business and the most recently reported price level of the CME Bitcoin Real Time Price [42] as reported by Bloomberg, L.P., or another reporting service, or another price of bitcoin derived from updated bids and offers indicative of the spot price of bitcoin.[43]

The Trust would create and redeem Shares from time to time, but only in one or more Creation Units. A Creation Unit would initially consist of at least 25,000 Shares, but may be subject to change.[44] The Trust would process all creations and redemptions in-kind, and accrue all ordinary fees in bitcoin (rather than cash), as a way of seeking to ensure that the Trust holds the desired amount of bitcoin-per-share. The Trust would not purchase or sell bitcoins, other than if the Trust liquidates or must pay expenses not contractually assumed by the Sponsor. Instead, financial institutions authorized to create and redeem Shares (''Authorized Participants'') would deliver, or cause to be delivered, bitcoins to the Trust in exchange for Shares of the Trust, and the Trust would deliver bitcoins to Authorized Participants when those Authorized Participants redeem Shares of the Trust.[45]

III. Discussion

A. The Applicable Standard for Review

The Commission must consider whether NYSE Arca's proposal is consistent with the Exchange Act. Section 6(b)(5) of the Exchange Act 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.'' [46] Under the Commission's Rules of Practice, the ''burden to demonstrate that a proposed rule change is consistent with the Exchange Act and the rules and regulations issued thereunder . . . is on the self-regulatory organization ['SRO'] that proposed the rule change.'' [47]

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,[48] 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.[49] 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.[50]

B. Whether NYSE Arca Has Met Its Burden To Demonstrate That the Proposal Is Designed To Prevent Fraudulent and Manipulative Acts and Practices

As stated above, an exchange can meet its obligations under Exchange Act Section 6(b)(5) by demonstrating that the exchange has a comprehensive surveillance-sharing agreement with a regulated market of significant size related to the underlying bitcoin assets. In this context, the term ''market of significant size'' includes a market (or group of markets) as to which (i) 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 (ii) it is unlikely that trading in the ETP would be the predominant influence on prices in that market.[51]

As the Commission has explained, it considers two markets that are members of the ISG to have a comprehensive surveillance-sharing agreement with one another, even if they do not have a separate bilateral surveillance-sharing agreement.[52] Accordingly, based on the common membership of NYSE Arca and the CME in the ISG,[53] NYSE Arca has the equivalent of a comprehensive surveillance-sharing agreement with the CME. However, while the Commission recognizes that the CFTC regulates the CME futures market,[54] including the CME bitcoin futures market, and thus such market is ''regulated,'' in the context of the proposed ETP, the record does not, as explained further below, establish that the CME bitcoin futures market is a ''market of significant size'' related to spot bitcoin, the underlying bitcoin assets that would be held by the Trust.

(1) Whether There is a Reasonable Likelihood That a Person Attempting to Manipulate the ETP Would Also Have to Trade on the CME Bitcoin Futures Market to Successfully Manipulate the ETP

The first prong in establishing whether the CME bitcoin futures market constitutes a ''market of significant size'' related to spot bitcoin is the determination that there is a reasonable likelihood that a person attempting to manipulate the ETP would have to trade on the CME bitcoin futures market to successfully manipulate the ETP.

In previous Commission orders, the Commission explained that the lead-lag relationship between the bitcoin futures market and the spot market is ''central to understanding'' the first prong.[55] In

[42] The CME Bitcoin Real Time Price is a continuous real-time bitcoin price index published by the CME Group and Crypto Facilities Ltd. using data from the Constituent Platforms. *See id.*

[43] *See id.*

[44] *See id.*

[45] *See id.* at 60696.

[46] 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).

[47] Rule 700(b)(3), Commission Rules of Practice, 17 CFR 201.700(b)(3).

[48] *See id.*

[49] *See id.*

[50] *Susquehanna Int'l Group, LLP* v. *Securities and Exchange Commission,* 866 F.3d 442, 447 (D.C. Cir. 2017).

[51] *See* Winklevoss Order, 83 FR at 37594. *See also supra* note 13.

[52] *See* Winklevoss Order, 83 FR at 37580 n.19.

[53] *See* Notice, 86 FR at 60703.

[54] While the Commission recognizes that the CFTC regulates the CME, the CFTC is not responsible for direct, comprehensive regulation of the underlying spot bitcoin market. *See* Winklevoss Order, 83 FR at 37587, 37599. *See also* WisdomTree Order, 86 FR at 69330 n.118; Kryptoin Order, 86 FR at 74174 n.119; SkyBridge Order, 87 FR at 3874 n.80; Wise Origin Order, 87 FR at 5534 n.93.

[55] *See, e.g.,* USBT Order, 85 FR at 12612 (''[E]stablishing a lead-lag relationship between the bitcoin futures market and the spot market 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.''). When considering past proposals for spot bitcoin ETPs, the Commission has discussed whether there is a lead-lag relationship between the regulated market (*e.g.,* the CME) and the market on which the assets held by the ETP would have traded (*i.e.,* spot bitcoin platforms), as part of an analysis of whether a would-be manipulator of the spot bitcoin ETP would need to trade on the regulated market to

response, the Exchange's Notice and Exhibit 3A thereto [56] describe the methodology and results of statistical analysis undertaken by Bitwise Asset Management, Inc. (''Bitwise''), the parent of the Sponsor, which, according to the Exchange, shows that prices on the CME bitcoin futures market ''consistently lead prices on the bitcoin spot market and the unregulated bitcoin futures market.'' [57] As explained in more detail in the Notice and Exhibit 3A, Bitwise used data from Coin Metrics, CoinAPI, CoinGecko, and the CME for its analysis of the relationship between CME bitcoin futures prices and prices on 10 unregulated spot bitcoin platforms [58] and seven unregulated bitcoin futures platforms.[59] For each of these 17 unregulated platforms, Bitwise performed three types of analysis: (1) information share (''IS'') price discovery analysis, which Bitwise describes as measuring ''who moves first'' to incorporate new information into a common ''efficient'' price for an asset being traded on multiple platforms; [60] (2) component share (''CS'') price discovery analysis, which Bitwise describes as measuring the ''component weight'' or contribution to the common ''efficient'' price; [61] and (3) time-shift lead-lag (''TSLL'') analysis, which Bitwise describes as off-setting (or ''shifting'') two time series against each other to find the direction and length of the lead-lag relationship between the two series that maximizes the predictive strength of one series against the other.[62]

As described in more detail in the Notice and Exhibit 3A, Bitwise removed trades that occurred during non-CME trading hours and made certain other adjustments to the data. Bitwise then performed each type of analysis (IS, CS, and TSLL) on each of the 17 unregulated platforms for each day in its sample period. For each type of analysis (IS, CS, and TSLL) and each platform, Bitwise then averaged the daily results both by month (to evaluate the potential for time variation in price discovery leadership) and across the full sample period. Bitwise ran statistical significance tests with a 95% confidence interval on the resulting monthly and full-sample averages.[63]

According to Bitwise, with respect to its IS/CS analysis, the full-sample average results demonstrate that the CME bitcoin futures market leads all evaluated bitcoin spot and futures trading platforms and that the results are statistically significant for all platforms from an IS perspective, and for 16 of the 17 platforms from a CS perspective.[64] According to Bitwise, on a month-by-month basis, each trading platform generates a slightly different profile and has slightly different results; but on average, the CME led the 10 spot trading platforms from an IS perspective in 89% of evaluated months, and from a CS perspective in 80% of evaluated months.[65]

According to Bitwise, with respect to its TSLL analysis, the full-sample average results indicate that CME leads, and all such results are statistically significant.[66] According to Bitwise, on a month-by-month basis, each trading platform generates a slightly different profile and has slightly different results; but the CME led consistently throughout the study period in a statistically significant manner.[67] Bitwise also states that, with respect to the 10 unregulated spot platforms, the monthly TSLL results display a ''general trend'' where the CME's ''lead'' starts out long, with wide confidence bands, and then ''tightens'' over time ''and becomes more consistent.'' [68]

In addition, Bitwise performed a review of academic and industry literature pertaining to the relationship between the CME bitcoin futures market and unregulated bitcoin markets.[69] Bitwise states that a majority (7 of 10) of the papers that it reviewed that use IS and/or CS support the view that the CME bitcoin futures market leads price discovery as compared with the spot bitcoin market; [70] and that one paper that uses a similar TSLL approach as Bitwise arrives at nearly identical conclusions: that the CME bitcoin futures market leads all other markets

effect such manipulation. *See, e.g.,* USBT Order, 85 FR at 12612. *See also* VanEck Order, 86 FR at 64547; WisdomTree Order, 86 FR at 69330–31; Kryptoin Order, 86 FR at 74176 n.144; SkyBridge Order, 87 FR at 3876 n.101; Wise Origin Order, 87 FR at 5535 n.107; ARK 21Shares Order, 87 FR at 20024 n.138.

[56] Exhibit 3A is available at: *https://www.sec.gov/rules/sro/nysearca/2021/34-93445-ex3a.pdf.*

[57] *See* Notice, 86 FR at 60703–04.

[58] The 10 unregulated spot bitcoin platforms are Bitstamp, Coinbase, Gemini, itBit, and Kraken, which the Exchange states are the trading platforms represented in the CME US Reference Rate (*see id.* at 60707); as well as Binance, Bitfinex, Huobi, LBank, and OKEx. The Exchange states that these trading platforms include both the largest USD–BTC pair trading platform by reported volume (Coinbase) and the largest tether-BTC pair trading platform by reported volume (Binance). *See id.*

[59] The seven unregulated bitcoin futures platforms are Binance, BitMEX, Bybit, Deribit, FTX, Huobi, and OKEx. *See id.* at 60709.

[60] *See* Exhibit 3A, *supra* note 56, at 143–44.

[61] *See id.*

[62] *See id.* at 143, 157.

[63] *See id.* at 152, 159.

[64] *See id.* at 152, 168.

[65] *See id.* at 154–156. Exhibit 3A does not provide corresponding averages with respect to the seven unregulated futures platforms. The month-by-month results for each unregulated futures platform indicate that the CME has led IS/CS price discovery in a majority of months for each such platform. *See id.* at 170.

[66] *See id.* at 160, 170–171.

[67] *See id.* at 161, 173.

[68] *See id.* at 161.

[69] Bitwise considered the following papers in Exhibit 3A (*see id.* at 145–151): S. Corbet, B. Lucey, M. Peat & S. Vigne, *Bitcoin Futures—What use are they?,* 172 Econ. Letters 23 (2018); D. Baur & T. Dimpfl, *Price discovery in bitcoin spot or futures?,* 39 J. Futures Mkts. 803 (2019); B. Kapar & J. Olmo, *An analysis of price discovery between Bitcoin futures and spot markets,* 174 Econ. Letters 62 (2019) (''Kapar & Olmo); C. Alexander & D. Heck, *Price Discovery, High-Frequency Trading and Jumps in Bitcoin Markets* (2019), working paper available at: *https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3383147* (''Alexander & Heck 2019''); Y. Hu, Y. Hou & L. Oxley, *What role do futures markets play in Bitcoin pricing? Causality, cointegration and price discovery from a time-varying perspective,* 72 Int'l Rev. of Fin. Analysis 101569 (2020) (''Hu, Hou & Oxley''); E. Akyildirim, S. Corbet, P. Katsiampa, N. Kellard & A. Sensoy, *The development of Bitcoin futures: Exploring the interactions between cryptocurrency derivatives,* 34 Fin. Res. Letters 101234 (2020); A. Fassas, S. Papadamou, & A. Koulis, *Price discovery in bitcoin futures,* 52 Res. Int'l Bus. Fin. 101116 (2020); O. Entrop, B. Frijns & M. Seruset, *The determinants of price discovery on bitcoin markets,* 40 J. Futures Mkts. 816 (2020); S. Aleti & B. Mizrach, *Bitcoin spot and futures market microstructure,* 41 J. Futures Mkts. 194 (2021); A. Chang, W. Herrmann & W. Cai, *Efficient Price Discovery in the Bitcoin Markets,* Wilshire Phoenix, Oct. 14, 2020, working paper available at: *https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3733924.* Bitwise also submitted a comment letter that discusses K. Robertson & J. Zhang, *Suitable Price Discovery Measurement of Bitcoin Spot and Futures Markets,* Fidelity Investments Inc., Jan. 12, 2022, working paper available at: *https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4012165* (''Fidelity Paper''). *See* letter from Katherine Dowling, Matt Hougan, and Paul Fusaro, Bitwise, dated Feb. 25, 2022 (''Bitwise Letter 1'').

[70] *See* Exhibit 3A, *supra* note 56, at 151. Bitwise states that an eighth paper has aggregate results in favor of the CME leading; and that of the two remaining papers that conclude that the spot market leads, one was an early paper that potentially studied a very limited time period, and the other has an important methodological flaw. *See id.* Bitwise also references C. Alexander & D. Heck, *Price discovery in Bitcoin: The impact of unregulated markets,* 50 J. Financial Stability 100776 (2020) (''Alexander & Heck 2020''). *See id.* at 148. This published paper is a later version of the working paper Alexander & Heck 2019, and finds, employing a multidimensional approach to price discovery, including the main price leaders within futures, perpetuals, and spot markets, that CME bitcoin futures have a very minor effect on price discovery; and that faster speed of adjustment and information absorption occurs on the unregulated spot and derivatives platforms than on the CME bitcoin futures market. *See also infra* notes 91–94 and accompanying text. With respect to the Commission's citation of the ''mixed'' literature in its prior disapproval orders for spot bitcoin ETPs, the Exchange asserts that ''[o]f course, the existence of variable results in IS/CS analysis, either within one study or a group of studies, is not in isolation sufficient to determine that a commodity futures market does not satisfy the concerns of the [Exchange] Act,'' and that there have been multiple commodity markets where the Commission has approved ETPs where ''select IS/CS studies find that the related derivatives market is not the main source of price discovery.'' *See* Notice, 86 FR at 60706 n.52.

considered in the paper's pairwise TSLL analysis, and that the CME's lead has tightened over time.[71]

The Exchange concludes from Bitwise's consideration of the literature and Bitwise's own IS, CS, and TSLL analysis that ''the Sponsor has demonstrated that the CME [bitcoin futures market] leads the bitcoin spot market and the unregulated bitcoin futures market, such that it is reasonably likely that a person attempting to manipulate the ETP would also have to trade on the CME [bitcoin futures market].'' [72]

The Commission disagrees. The evidence in the record for the proposal is inadequate to conclude that an interrelationship exists between the CME bitcoin futures market and the spot bitcoin market such that it is reasonably likely that a person attempting to manipulate the proposed spot bitcoin ETP would have to trade on the CME bitcoin futures market to successfully manipulate the proposed ETP.[73]

The Commission raises particular disagreements with the Sponsor's assertions regarding its analysis below, but even accepting at face value the results of Bitwise's statistical analysis of the relationship between the CME bitcoin futures market and the spot market, such results are only part of the ''mixed'' record on the topic of bitcoin price discovery.[74] Bitwise's literature review considered 10 papers that undertook IS/CS analysis, each using different methodologies, time periods, data, and data aggregation techniques.[75] Bitwise states that 7 of these 10 studies find that the CME bitcoin futures market leads price discovery.[76] Bitwise does not, however, address issues that the Commission has raised with respect to two of these papers purportedly supporting the CME bitcoin futures market's lead in past disapproval orders.[77] Nor does Bitwise discuss these 10 IS/CS studies in light of Bitwise's acknowledgment that ''classic'' price discovery metrics like IS/CS could be misspecified, with potentially biased results, when price data have a high level of sparsity.[78] Further, beyond the 10 studies considered by Bitwise, subsequent bitcoin price discovery literature likewise includes some studies finding that the spot bitcoin market dominates price discovery [79] and other studies finding that the CME bitcoin futures market dominates.[80] As in previous disapprovals, because the evidence regarding whether the CME bitcoin futures market leads the spot market remains inconclusive,[81] the Commission is unable to find that an interrelationship exists between the CME bitcoin futures market and the spot bitcoin market such that it is reasonably likely that a person attempting to manipulate the proposed ETP would have to trade on the CME bitcoin futures market to successfully manipulate the proposed ETP. Accordingly, the Commission concludes that the Sponsor has not demonstrated that the CME bitcoin futures market constitutes a market of significant size related to spot bitcoin.

Beyond the Commission's overarching concern about the divergent conclusions of the econometric evidence about the lead-lag relationship between the CME bitcoin futures market and spot market, the Commission also has particular disagreements with the Sponsor's assertions regarding its analysis. Those disagreements support the Commission's determination that NYSE Arca has not provided a sufficient basis to conclude that it is reasonably likely that a would-be manipulator of the proposed ETP would have to trade on the CME bitcoin futures market to successfully manipulate the proposed ETP.

First, Bitwise's first comment letter casts doubt on its own IS/CS results. Bitwise's first comment letter acknowledges that ''classic'' price discovery metrics like IS and CS ''face difficulties based on the model assumptions of VECM [the Vector Error Correction Model] when the prices under consideration are asynchronous and/or infrequent,'' [82] citing an academic study by Buccheri et al.[83] that investigates the difficulties to identifying price discovery with VECM models due to the high sparsity of data in markets that record trades at the sub-millisecond level. Bitwise also acknowledges that, ''when prices have a high level of sparsity, the VECM is clearly misspecified and the estimates are potentially biased.'' [84] However, while Bitwise claims that ''[t]he limitations of classic IS and CS analysis informed Bitwise's specific methodological approach to IS and CS analysis,'' [85] Bitwise neither explains how its IS/CS approach was ''informed'' by such limitations, nor provides any information on whether the price data that Bitwise used in its IS/CS analysis have a high level of sparsity. Moreover, Bitwise's acknowledgement of the Fidelity Paper's finding that ''there is a high level of sparsity in bitcoin data'' [86] suggests that, by its own admission, Bitwise's IS/CS approach is misspecified and its estimates potentially biased.

Second, Bitwise performed its IS, CS, and TSLL analysis for each of the 17 unregulated platforms *per day* and then averaged the daily results both by month and across the full sample period.[87] However, neither the Exchange nor Bitwise explains why Bitwise chose a *daily* basis to compute its IS, CS, and TSLL estimates; provides any information about how variable the daily estimates are, before the monthly and/or full-sample averaging was applied; or provides any information on the robustness of the estimates—that is, whether these daily estimates or the statistical significance of the monthly

[71] *See* Bitwise Letter 1 at 4.

[72] *See* Notice, 86 FR at 60711.

[73] *See* USBT Order, 85 FR at 12611.

[74] *See* Bitwise Letter 1 at 3.

[75] *See supra* note 69.

[76] *See* Exhibit 3A, *supra* note 56, at 151.

[77] *See, e.g.,* USBT Order, 85 FR at 12613 n.244 (discussing that the use of daily price data, as opposed to intraday prices, by Kapar & Olmo and Hu, Hou & Oxley (in an unpublished version of the paper) may not be able to distinguish which market incorporates new information faster; and discussing that the (unpublished version of the) Hu, Hou & Oxley paper found inconclusive evidence that futures prices lead spot bitcoin prices—in particular, that the months at the end of the paper's sample period showed, using Granger causality methodology, that the spot market was the leading market—and that the record did not include evidence to explain why this would not indicate a shift towards prices in the spot market leading the futures market that would be expected to persist into the future).

[78] *See* Bitwise Letter 1 at 3.

[79] *See, e.g.,* J. Hung, H. Liu & J. Yang, *Trading activity and price discovery in Bitcoin futures markets,* 62 J. Empirical Finance 107 (2021).

[80] *See, e.g.,* J. Wu, K. Xu, X. Zheng & J. Chen, *Fractional cointegration in bitcoin spot and futures markets,* 41 J. Futures Mkts. 1478 (2021). In addition, the Exchange claims that, based on its review of past commodity-trust ETP approvals and ''select'' IS/CS studies, a mixed result ''is not in isolation sufficient to determine that a commodity futures market does *not* satisfy the concerns of the [Exchange] Act.'' Notice, 86 FR at 60706 n.52 (emphasis added). However, the applicable standard of review is whether a listing exchange has provided sufficient evidence to demonstrate that its proposal *is* consistent with the Exchange Act. *See supra* notes 46–50 and accompanying text. For each proposal, the Commission considers the totality of the evidence provided by the listing exchange and on its own merits.

[81] As the academic literature and listing exchanges' analyses pertaining to the pricing relationship between the CME bitcoin futures market and spot bitcoin market have developed, the Commission has critically reviewed those materials. *See* ARK 21Shares Order, 87 FR at 20024; Global X Order, 87 FR at 14920; Wise Origin Order, 87 FR at 5535–36, 5539–40; Kryptoin Order, 86 FR at 74176; WisdomTree Order, 86 FR at 69330–32; VanEck Order, 86 FR at 64547–48; USBT Order, 85 FR at 12613.

[82] Bitwise Letter 1 at 3, quoting Fidelity Paper at 12–13.

[83] G. Buccheri, G. Bormetti, F. Corsi & F. Lillo, *Comment on: Price discovery in high resolution,* 19 J. Financial Econometrics 439 (2021).

[84] Bitwise Letter 1 at 3, quoting Fidelity Paper at 13.

[85] Bitwise Letter 1 at 3.

[86] *Id.*

[87] *See* Exhibit 3A, *supra* note 56, at 152, 159.

and/or full-sample averages of such daily estimates are sensitive to different choices that Bitwise could have made for the analysis (*e.g.,* to compute intraday estimates).

Third, the pairwise IS/CS full-sample average results for CME compared to each of the 10 spot platforms ranged between 52.97% (the CS result versus itBit) to 68.03% (the CS result versus Bitstamp).[88] Even accepting these results and their statistical significance at face value, these results suggest that spot bitcoin markets still account for approximately 32%–47% of price discovery. Yet neither Bitwise nor the Exchange has explained why, notwithstanding this amount of price discovery occurring on spot platforms, it is reasonably likely that a would-be manipulator would nonetheless have to trade on the CME bitcoin futures market to successfully manipulate the proposed ETP.

Fourth, taking Bitwise's TSLL results at face value, as Bitwise acknowledges, the extent to which the CME bitcoin futures market ''leads'' the 10 unregulated spot platforms has decreased since 2019 to the end of Bitwise's sample period in September 2020.[89] This general trend is also observed in the Fidelity Paper's TSLL analysis, which uses a longer sample period (to Q1 2021) and finds that the CME's average ''lead'' time has ''steadily decreased'' among all evaluated markets to about one second in Q4 2020 and Q1 2021.[90] The record, however, does not explain the implication of the CME's decreasing lead over the identified spot platforms, nor why the CME's ''lead'' time against spot platforms would not be expected to continue to decrease throughout 2021 and 2022 until it ''lags'' spot platforms. Moreover, neither Bitwise nor the Exchange has explained why, notwithstanding such decreasing ''lead'' times against spot platforms, it is nonetheless reasonably likely that a would-be manipulator would have to trade on the CME to successfully manipulate the proposed ETP.

Fifth, all of Bitwise's statistical results—IS, CS, and TSLL—are based on pairwise, two-dimensional analysis (*e.g.,* CME compared to Coinbase; CME compared to Gemini; etc.). At least one multidimensional approach to price discovery (Alexander & Heck 2020) finds that CME bitcoin futures ''have a very minor effect on price discovery,'' and that ''a faster speed of adjustment and information absorption [occurs] on the unregulated spot and derivatives [platforms] than on CME bitcoin futures.''[91] Specifically, Alexander & Heck's multidimensional analysis—which simultaneously includes unregulated futures, regulated futures, perpetual futures, and spot markets—finds that CME bitcoin futures have never accounted for more than 9% of price discovery (and unregulated markets collectively account for more than 91% of price discovery), and have always contributed the least to price discovery among all venues considered, except during July 2019.[92] While Bitwise acknowledges the Alexander & Heck 2020 paper, Bitwise merely states that the paper ''involves a complex, multidimensional approach to price discovery analysis conducted across eight different markets and four different exposure types (unregulated futures, regulated futures, perpetual futures, and spot markets), each with different levels of microstructure friction and data integrity,'' and that ''these complications make it difficult to draw a direct comparison'' to the 10 IS/CS papers that Bitwise considered.[93] Bitwise neither critiques the multidimensional Alexander & Heck 2020 approach; nor attempts to apply the approach to Bitwise's own data; nor discusses the robustness of Bitwise's two-dimensional methodology in response to the critique in Alexander & Heck 2020 that: ''omitting substantial information flows from other markets can produce misleading results. . . . [I]n a two-dimensional model one or other of the instruments must necessarily be identified as price leader.''[94] In other words, a two-dimensional model might erroneously attribute information share or component share of omitted platforms to one of the two platforms included in the pairwise estimate, because the two shares must necessarily sum up to 100%. As such, the Exchange has not adequately addressed whether Bitwise's conclusion that the CME bitcoin futures market ''leads'' price discovery continues to hold up when the entirety of the bitcoin-related market (spot and futures) is simultaneously considered.

The Commission thus concludes that the information that NYSE Arca provides is not a sufficient basis to support a determination that it is reasonably likely that a would-be manipulator of the proposed ETP would have to trade on the CME bitcoin futures market to successfully manipulate the proposed ETP.[95] Therefore, the information in the record also does not establish that the CME bitcoin futures market is a ''market of significant size'' related to spot bitcoin.

(2) Whether It is Unlikely that Trading in the Proposed ETP Would Be the Predominant Influence on Prices in the CME Bitcoin Futures Market

[88] *See id.* at 153.

[89] *See id.* at 161.

[90] *See* Fidelity Paper at 17.

[91] *See* Alexander & Heck 2020 at 1–2.

[92] *See id.* at 13. Alexander & Heck attribute these findings to: (i) the trading volume of each individual unregulated derivatives in their data set being much larger than that of CME bitcoin futures; (ii) many smaller players in bitcoin markets (such as miners or crypto-specialized hedge funds), who have easy access to unregulated platforms and ultra-high-frequency trading platforms, may be considered as more informed bitcoin investors than the CME's clients; and (iii) investors who want to manipulate the price of bitcoin ''may do so much more easily on an unregulated [platform] rather than on the CME, which is heavily regulated by the CFTC.'' *See id.*

[93] *See* Exhibit 3A, *supra* note 56, at 148.

[94] Alexander & Heck 2020 at 2.

[95] In the Teucrium Order and Valkyrie XBTO Order, the Commission determined that it is unnecessary for the listing exchanges to establish a reasonable likelihood that a would-be manipulator would have to trade on the CME itself to manipulate a proposed ETP whose only non-cash holdings would be CME bitcoin futures contracts. As the Commission explains in those Orders, in each such case, the proposed ''significant'' regulated market (*i.e.,* the CME) with which the listing exchange has a surveillance-sharing agreement would be the *same* market on which the underlying bitcoin assets (*i.e.,* CME bitcoin futures contracts) trade. Consequently, in the circumstances under consideration in the Teucrium Order and Valkyrie XBTO Order, the CME's surveillance can reasonably be relied upon to capture the effects on the CME bitcoin futures market caused by a person attempting to manipulate a CME bitcoin futures-based ETP by manipulating the price of CME bitcoin futures contracts, whether that attempt is made by directly trading on the CME bitcoin futures market or indirectly by trading outside of the CME bitcoin futures market. *See* Teucrium Order, 87 FR at 21679; Valkyrie XBTO Order, 87 FR at 28851. However, as the Commission also states in those Orders, this reasoning does not extend to spot bitcoin ETPs. Spot bitcoin markets are not currently ''regulated.'' *See* Teucrium Order, 87 FR at 21679 n.46 (citing USBT Order, 85 FR at 12604; NYDIG Order, 87 FR at 14936 nn.65–67). *See also* Valkyrie XBTO Order, 87 FR at 28851 n.42. Thus if an exchange seeking to list a spot bitcoin ETP relies on the CME as the regulated market with which it has a comprehensive surveillance-sharing agreement, the assets held by the spot bitcoin ETP would not be traded on the CME; and because of this important difference, with respect to a spot bitcoin ETP, there would be reason to question whether a surveillance-sharing agreement with the CME would, in fact, assist in detecting and deterring fraudulent and manipulative misconduct affecting the price of the spot bitcoin held by that ETP. If, however, an exchange proposing to list and trade a spot bitcoin ETP identifies the CME as the regulated market with which it has a comprehensive surveillance-sharing agreement, the exchange could overcome the Commission's concern by demonstrating that there is a reasonable likelihood that a person attempting to manipulate the spot bitcoin ETP would have to trade *on the CME* in order to manipulate the ETP, because such demonstration would help establish that the exchange's surveillance-sharing agreement with the CME would have the intended effect of aiding in the detection and deterrence of fraudulent and manipulative misconduct related to the spot bitcoin held by the ETP. *See* Teucrium Order, 87 FR at 21679 n.46; Valkyrie XBTO Order, 87 FR at 28851 n.42.

The second prong in establishing whether the CME bitcoin futures market constitutes a ''market of significant size'' related to spot bitcoin is whether it is unlikely that trading in the proposed ETP would be the predominant influence on prices in the CME bitcoin futures market.[96]

As described in more detail in the Notice and Exhibit 3B thereto,[97] the Exchange asserts that trading in the Trust is unlikely to become the predominant influence on prices in the CME bitcoin futures market based on Bitwise's estimates for the maximum likely first-year flows into, and average daily trading volume of, the Trust, and Bitwise's analysis of whether such flows and trading volume would be likely to impact CME bitcoin futures prices.[98]

To estimate the likely first-year flows into the proposed ETP, Bitwise first examined first-year flows into all ETPs currently listed on the market. Bitwise concluded that it is unlikely that a bitcoin ETP will attract more first-year flow than the ETP with the highest first-year flows in history (Invesco QQQ Trust, $5.35 billion), particularly given the relative size of the bitcoin market compared to the markets captured by the most successful ETPs in the past, which target parts or all of the equity, bond, real estate, and gold markets.[99] Bitwise also examined first-year flows into first-to-market single-commodity ETPs, which Bitwise considers to provide additional context on the likely ''upper bound'' of potential flows into a bitcoin ETP.[100] Finally, Bitwise examined the Grayscale Bitcoin Trust (''GBTC''), which Bitwise describes as a publicly traded grantor trust that holds bitcoin directly with a third-party custodian and that has been accessible to U.S. investors since 2015.[101] Bitwise states that, according to Grayscale Investments, GBTC attracted a record $4.7 billion in inflows in 2020.[102]

Extrapolating from this historical information, Bitwise uses $4.7 billion as its estimate for first-year flows into a new bitcoin ETP. Bitwise asserts that its $4.7 billion estimate is ''aggressive'' because it assumes that a bitcoin ETP would ''[b]e the third-fastest-growing ETP in history,'' would ''[s]ignificantly surpass (by more than 50%) the first-year flows into GLD,'' and would ''[m]atch the highest annual flow in GBTC's history, achieved during a strong bull market, all while the new ETP is forced to compete for market share with GBTC itself.'' [103]

As described in more detail in Exhibit 3B, to evaluate the potential impact of ETP inflows on prices in the CME bitcoin futures market, Bitwise conducted a correlation analysis examining the relationship of daily and weekly flows into GBTC in 2020 and changes in a *spot* bitcoin-based reference price.[104] According to Bitwise, the data show there is no meaningful relationship between daily and weekly flows into GBTC and changes in that spot bitcoin price, despite the aggregate yearly flows being $4.7 billion.[105] According to Bitwise, its analysis of outlier days and weeks with large flows also supports this conclusion.[106] Bitwise thus concludes that it is unlikely that $4.7 billion in flows into a bitcoin ETP in a single year will cause it to become the predominant influence on prices in the CME bitcoin futures market.[107]

Bitwise also considered whether secondary market trading in the Shares would be likely to become the predominant influence on prices in the CME bitcoin futures market. To do so, as described in more detail in Exhibit 3B, Bitwise applied the 2020 ratio of average daily volume (''ADV'') to assets under management (''AUM'') (''ADV/AUM'') for both GBTC and GLD to the $4.7 billion estimate of first-year flows into a new bitcoin ETP.[108] In so doing, for the Shares, Bitwise calculated an estimated $72 million ADV and $143 million ADV, corresponding to the ADV/AUM ratio of GBTC and GLD, respectively.[109] And for the purposes of its analysis, Bitwise uses the higher figure—$143 million—as its estimate for a new bitcoin ETP's average daily trading volume after a year on the market. Bitwise asserts that this estimate is ''aggressive'' because it assumes that a bitcoin ETP would ''[b]e the third-fastest-growing ETP in history'' and would ''[h]ave an ADV/AUM ratio two times higher than that of GBTC, which competes in the same market.'' [110]

Bitwise ''believe[s] it is unlikely that trading in the ETP will become the predominant influence on prices in the CME [bitcoin futures market] if such trading activity is substantially smaller than the trading activity on the CME bitcoin futures market,'' which Bitwise states it has demonstrated to be the leading source of price discovery in the bitcoin market.[111] As described in Exhibit 3B, Bitwise estimated CME bitcoin futures' average daily trading volume in 2020 to be $392 million, which Bitwise states is 174% higher than its $143 million estimate of a new bitcoin ETP's likely average daily trading volume. Bitwise thus concludes that it is unlikely that trading in a new bitcoin ETP will cause it to become the predominant influence on prices in the CME bitcoin futures market.[112]

Bitwise makes three additional arguments in support of its conclusion. First, Bitwise argues that a new bitcoin ETP is unlikely to experience a GLD-like rapid start.[113] Bitwise states that, ''[w]hile there is interest in a bitcoin ETP,'' it is unlikely to match the level of demand experienced by GLD after its 2004 launch because (1) bitcoin is a substantially smaller market (approximately 74% smaller) than gold was at its launch; (2) unlike GLD, U.S. retail investors already have ''multiple easy ways'' to directly purchase bitcoin; and (3) unlike GLD, a bitcoin ETP will ''face stiff competition from GBTC, a $20 billion product with high levels of liquidity that can be easily accessed through a brokerage setting.'' [114]

Second, Bitwise considered internationally listed spot bitcoin ETPs, specifically the German ETC Group Physical Bitcoin ETP (''BTCE'') and the Canadian Purpose Bitcoin ETF (''BTCC''). Using the same correlation assessment as it used for GBTC inflows, Bitwise finds that there is no meaningful relationship between daily or weekly flows into BTCE (over the period June 2020 to March 2021) or BTCC (over a six-week period in February–March 2021) and daily or

[96] *See* Winklevoss Order, 83 FR at 37594; USBT Order, 85 FR at 12596–97.

[97] Exhibit 3B is available at: *https://www.sec.gov/rules/sro/nysearca/2021/34-93445-ex3b.pdf.*

[98] *See* Notice, 86 FR at 60711–15.

[99] *See* Exhibit 3B, *supra* note 97, at 249–50.

[100] *See id.* at 250–51. Bitwise states that first-year flows range from $3.01 billion for the SPDR Gold Shares (''GLD'') to negative $1 million for the iPath Bloomberg Lead Subindex Total Return ETN. *See id.* at 250.

[101] *See id.* at 251–252.

[102] *See id.* at 252.

[103] *See id.*

[104] Daily or weekly percentage price changes of bitcoin were calculated using the 4 p.m. E.T. bitcoin reference rate from Coin Metrics. *See id.* at 253.

[105] *See id.* at 254.

[106] *See id.* at 254–55.

[107] *See id.* at 255.

[108] Bitwise asserts that, although the absolute size of the ADV for GBTC ranges widely across 2020, the monthly ADV/AUM ratio stays fairly consistent, ranging from 1.10% to 2.21%. *See id.* at 256. Bitwise does not, however, indicate whether a consistent ADV/AUM ratio is common among commodity-based products, or why a consistent ratio would otherwise be expected to persist into future months/years. In addition, ultimately, Bitwise uses GLD's average 2020 ADV/AUM ratio for its estimate, not the GBTC ratio. The 2020 monthly ADV/AUM for GLD varies more widely, ranging from 1.65% to 5.93%. *See id.* at 257.

[109] *See id.* at 256–58.

[110] *See id.* at 258.

[111] *See id.* at 259.

[112] *See id.* at 259–60.

[113] According to Bitwise, GLD gained approximately $1.26 billion in flows in its first week. *See id.* at 262.

[114] *See id.* at 262–64.

weekly changes in the *spot* bitcoin price.[115]

Third, Bitwise argues that evidence from the 2021 launch of CME bitcoin futures-based exchange traded funds (''ETFs'')—ProShares Bitcoin Strategy ETF (''BITO''), Valkyrie Bitcoin Strategy ETF (''BTF''), and VanEck Bitcoin Strategy ETF (''XBTF'')—strengthens its arguments. Bitwise states that the fact that these ETFs took in $1.55 billion in their first month on the market, and have taken in just $216 million since, strengthens its belief that the estimate of $4.7 billion in first-year flows into a spot bitcoin ETP is an aggressive estimate. Bitwise also asserts that the bitcoin market is ''incredibly and increasingly crowded'' with options for investors, and a spot bitcoin ETP would ''face steep competition.'' [116]

Based on Bitwise's analysis, the Exchange concludes that trading in the Trust is unlikely to become the predominant influence on prices in the CME bitcoin futures market.[117]

The Commission disagrees. The evidence in the record for the proposal does not support the conclusion that it is unlikely that trading in the proposed ETP would be the predominant influence on prices in the CME bitcoin futures market.

First, Bitwise's conflicting claims with respect to the demand for a spot bitcoin ETP undermine Bitwise's expectations for the likely size of such an ETP and the rapidity of inflows into it. On the one hand, Bitwise downplays potential investor demand, stating that ''[w]hile there is interest in a bitcoin ETP,'' [118] the bitcoin market is ''incredibly and increasingly crowded'' with options for investors, noting that investors today can buy bitcoin on crypto trading apps, finance apps, through over-the-counter trusts, via bitcoin futures ETFs, and ''in many other ways.'' [119] Bitwise states that a spot bitcoin ETP ''would now be the fourth bitcoin-linked ETP to come to market,'' and ''would face steep competition from the already liquid and highly correlated bitcoin futures-based competitors.'' [120] Bitwise describes GBTC in particular as competition for a new bitcoin ETP, asserting that GBTC has ''high levels of liquidity'' and can be ''easily accessed through a brokerage setting,'' and thus that ''a good portion of the brokerage-access demand that would otherwise be waiting for an ETP is already being met by GBTC.'' [121] On the other hand, when asserting public interest and investor protection arguments in favor of its proposal (*see also* Section III.C, below), Bitwise highlights that ''a great many (and an ever-increasing number of) investors already'' directly invest in bitcoin.[122] Bitwise also highlights that, unlike GBTC, the proposed ETP would allow for daily creations and redemptions; can be expected to ''closely track the value of [b]itcoin, and not periodically trade at substantial premiums to and discounts from the value of [b]itcoin''; and would be ''professionally managed, SEC-regulated, highly-liquid, fully transparent, and listed on the NYSE Arca''; and that ''at least some segment'' of retail and other investors would benefit from such characteristics and would be ''affirmatively disadvantaged'' by not having access to it.[123] Bitwise also states that the proposed ETP ''would add material protections for the millions of U.S. investors who currently use other less protected and transparent avenues to access the bitcoin market, as well as for any future investors who may choose to do so.'' [124] If, as Bitwise claims, U.S. investors have been and are ever-increasingly investing in bitcoin, and the proposed ETP ''would add material protections'' that are not currently available through GBTC or otherwise for some segment of investors, and would, unlike GBTC, be available to trade immediately on a national securities exchange with daily creations and redemptions,[125] it is not clear that Bitwise's use of the GBTC historical record of $4.7 billion in inflows is a likely, let alone ''aggressive,'' estimate for first-year inflows into a new spot bitcoin ETP.

Likewise, on the one hand, Bitwise claims that it is unlikely that a new bitcoin ETP would experience rapid one-week inflows similar to GLD, which had first-week inflows of approximately $1.26 billion.[126] On the other hand, Bitwise highlights that BTCC—the first bitcoin ETP launched in Canada—''experienced three days of very high inflows shortly after its launch''; [127] and that the three CME bitcoin futures-based ETFs took in $1.55 billion in their first month on the market, with just $216 million since.[128] BITO—the first such ETF to launch—took in $1.21 billion AUM within three days of its launch.[129]

Second, it is not clear from Bitwise's correlation analysis what would be the likely impact of inflows into a new bitcoin ETP on CME bitcoin futures prices. Bitwise assessed correlations of inflows (into GBTC in 2020; into BTCE in 2020–21; and into BTCC in 2021) using a *spot* bitcoin-based reference price.[130] Bitwise does not explain why it chose to use bitcoin *spot* prices instead of *CME bitcoin futures* prices themselves, despite the CME bitcoin futures market having been operating since 2017 and its price data being readily available to Bitwise. Bitwise's decision to run its correlations against spot prices is particularly puzzling, given its claims (discussed above) that CME bitcoin futures prices lead price discovery. Put in another way, given that Bitwise identifies the CME bitcoin futures market as the relevant regulated market of significant size, the use of a spot bitcoin price for its correlation analysis could render the analysis immaterial.

Moreover, Bitwise's correlation analysis does not control for any other factors that may have been affecting spot bitcoin prices during the daily or weekly aggregation periods. Thus, the results do not isolate the statistical relationship between spot bitcoin prices and the factor of interest (*i.e.,* flows into GBTC, BTCE, or BTCC).

Third, Bitwise's analysis regarding the potential effects of trading in the Shares on CME bitcoin futures prices is vague and conclusory. Bitwise states that it ''believes'' that it is unlikely that trading in a new bitcoin ETP will become the predominant influence on prices in the CME bitcoin futures market ''if such trading activity is substantially smaller than the trading activity on the CME bitcoin futures market.'' [131] Bitwise, however, does not provide any explanation or basis for its ''belief.'' With this ''belief'' in hand, Bitwise then calculates that CME bitcoin futures' average daily trading volume in 2020 ($392 million) is 174% higher than its estimate of a new bitcoin ETP's likely average daily trading volume ($143

[115] *See id.* at 265–69.

[116] *See* Bitwise Letter 1 at 5–6.

[117] *See* Notice, 86 FR at 60715.

[118] Exhibit 3B, *supra* note 97, at 264.

[119] Bitwise Letter 1 at 6.

[120] *Id.*

[121] Exhibit 3B, *supra* note 97, at 263–64.

[122] *See* letter from Robert H. Rosenblum, Wilson Sonsini Goodrich & Rosati, P.C., and Kathleen H. Moriarty, Chapman and Cutler LLP, on behalf of Bitwise, dated Mar. 7, 2022 (''Bitwise Letter 2''), at 4.

[123] *See id.* at 3–4.

[124] Bitwise Letter 1 at 6.

[125] *See* Exhibit 3B, *supra* note 97, at 251 (''GBTC is different from an ETP is certain ways, including that the structure does not allow for redemptions . . .'') and 253 (''While GBTC allows for daily creations, unlike an ETF, those shares are not immediately available to be sold in the secondary market. After purchasing shares, an investor must hold the shares for 6-months before they are permitted to be traded on the secondary market.'').

[126] *See* Exhibit 3B, *supra* note 97, at 262–64.

[127] *See id.* at 269.

[128] *See* Bitwise Letter 1 at 5.

[129] *See* Teucrium Order, 87 FR at 21681.

[130] *See* Exhibit 3B, *supra* note 97, at 253–55, 266–69.

[131] *Id.* at 259.

million), which then is the sole premise for Bitwise to conclude that trading in the Shares would not likely be the predominant influence on CME bitcoin futures prices.[132]

However, an alternative calculation using Bitwise's statistics is that a *single* bitcoin ETP's average daily trading volume could be approximately 36.5% ($143 million divided by $392 million)—more than one-third—of the size of CME bitcoin futures' average daily trading volume. On top of that, assuming, as Bitwise does, potentially $4.7 billion in first-year inflows, such a spot bitcoin ETP could have AUM that exceeds the value of all open interest in CME bitcoin futures contracts.[133] Bitwise has not directly addressed why, given this relative size of estimated daily trading in the Shares compared with daily trading in CME bitcoin futures contracts, and the relative size of the Trust's estimated AUM itself compared with all open interest in CME bitcoin futures contracts, it is nonetheless unlikely that trading in the proposed ETP would be the predominant influence on prices in the CME bitcoin futures market.

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.[134] For all of the reasons discussed above, NYSE Arca has not provided sufficient information to establish both prongs of the ''market of significant size'' determination, and thus the Commission cannot conclude that the CME bitcoin futures market is a ''market of significant size'' related to spot bitcoin such that NYSE Arca would be able to rely on a surveillance-sharing agreement with the CME to provide sufficient protection against fraudulent and manipulative acts and practices. Therefore, NYSE Arca has not met its burden of demonstrating that the proposal is consistent with Exchange Act Section 6(b)(5),[135] and, accordingly, the Commission must disapprove the proposal.[136]

C. Other Arguments and Comments

In a second comment letter,[137] Bitwise argues that the Commission, ''when analyzing the applicable legal standards for approving the [proposed ETP], should consider—and should interpret those standards in recognition of—the wide-spread use and adoption of [b]itcoin among retail investors, merchants, public and private companies, payment processors, and others in the U.S. business and investment community.'' [138] Bitwise argues that the fundamental question before the Commission should be ''whether, in light of the wide-spread retail holdings, investment in, and use of [b]itcoin, at least some segment of retail (and other) investors would benefit from having access to an investment product that provides exposure to [b]itcoin'' and that is traded on a regulated national securities exchange, that is reasonably expected to closely track the value of bitcoin without substantial premiums or discounts, and that would relieve investors from custodial and other transactional burdens of bitcoin.[139]

Bitwise asserts that ''the public interest is best served by giving retail (and other) investors access to a publicly-traded [b]itcoin ETP like the Trust, that at least some segment of the investing public would be affirmatively disadvantaged by not having access to the Trust, and that no part of the investing public would be harmed by having access to the Trust.'' [140] Bitwise concludes that, for these reasons, the proposal ''overwhelmingly'' meets Exchange Act Section 6(b)(5)'s requirement that a proposed rule change ''protect investors and the public interest.'' [141] Bitwise also asserts that Exchange Act Section 6(b)(5)'s requirement that the rules of a national securities exchange be designed to prevent fraudulent and manipulative acts and practices should be considered ''in light of the large and increasing number of U.S. investors who directly invest in and trade [b]itcoin'' and who ''may in fact be subject to increased risks of fraud and manipulation.'' [142]

In essence, Bitwise asserts that the risky nature of direct investment in bitcoin and the potential benefits of a spot bitcoin ETP compel approval of the proposed rule change. The Commission disagrees. Here, even if it were true that, compared to trading in unregulated spot bitcoin markets, trading a bitcoin-based ETP on a national securities exchange provides some additional protection to investors, 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.[143] Pursuant to Section 19(b)(2) of the Exchange Act, the Commission must approve a proposed rule change filed by a national securities exchange if it finds 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—and it must disapprove the filing if it does not make such a finding.[144] Thus, even if a proposed rule change purports to protect investors from a particular type of investment risk—such as the susceptibility of an asset to loss or theft, or premiums or discounts to underlying asset value—the proposed rule change may still fail to meet the requirements under the Exchange Act.[145] For the reasons discussed above, NYSE Arca has not met its burden of demonstrating

[132] *See id.*

[133] As of May 31, 2022, the value of open interest in the front two month CME BTC contracts was approximately $1.7 billion (source: CME Group).

[134] *See* 15 U.S.C. 78s(b)(2)(C).

[135] 15 U.S.C. 78f(b)(5).

[136] In disapproving the proposed rule change, the Commission has considered its impact on efficiency, competition, and capital formation. *See* 15 U.S.C. 78c(f).

[137] *See* Bitwise Letter 2.

[138] *See id.* at 2.

[139] *See id.* at 3–4. Similarly, one commenter also states that approval of a spot bitcoin ETP would protect investors by, among other things, imposing less transaction costs than CME bitcoin futures ETFs, reducing risks associated with custodying spot bitcoin, and ''[c]hanneling investor interest into a regulated space.'' *See* Letter from James J. Angel, Associate Professor of Finance, Georgetown University, dated April 17, 2022 (''Angel Letter''), at 7–9.

[140] *See* Bitwise Letter 2 at 4.

[141] 15 U.S.C. 78f(b)(5).

[142] *See* Bitwise Letter 2 at 4. Bitwise also argues that the Commission ''must be able to work with the digital asset community to find a way to approve more digital asset products for investors'' (*see id.* at 5) and states that it ''was willing to change the structure or operation of the Trust as needed to resolve good faith legal and regulatory concerns'' (*see id.* at 6). The Commission assesses each proposed rule change—as proposed—on its particular facts and on whether it is consistent with the requirements of the Exchange Act. Pursuant to the Commission's Rules of Practice, the SRO must provide all information elicited by Form 19b–4, and the description of the 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. *See* Rule 700(b)(3), Commission Rules of Practice, 17 CFR 201.700(b)(3).

[143] *See* Winklevoss Order, 83 FR at 37602. *See also* GraniteShares Order, 83 FR at 43931; ProShares Order, 83 FR at 43941; USBT Order, 85 FR at 12615.

[144] *See* Exchange Act Section 19(b)(2)(C), 15 U.S.C. 78s(b)(2)(C). *See also Affiliated Ute Citizens of Utah* v. *United States,* 406 U.S. 128, 151 (1972) (Congress enacted the Exchange Act largely ''for the purpose of avoiding frauds''); *Gabelli* v. *SEC,* 568 U.S. 442, 451 (2013) (The ''SEC's very purpose'' is to detect and mitigate fraud.).

[145] *See* SolidX Order, 82 FR at 16259; WisdomTree Order, 86 FR at 69334.

an adequate basis in the record for the Commission to find that the proposal is consistent with Exchange Act Section 6(b)(5),[146] and, accordingly, the Commission must disapprove the proposal.

In another commenter letter, a commenter questions why the Commission would disallow a spot bitcoin ETP when it has allowed a spot gold ETP.[147] The commenter states that ''[t]he argument that a spot [b]itcoin [ETP] should not be allowed because the SEC doesn't have the ability to regulate outside exchanges trading it doesn't hold water.'' The commenter states that ''[g]old trades around the world and around the clock in many areas unregulated by the SEC.''

As the Commission has clearly and consistently stated, an exchange that lists bitcoin-based ETPs can meet its obligation under Exchange Act Section 6(b)(5) that its rules be designed to prevent fraudulent and manipulative acts and practices by demonstrating that the exchange has a comprehensive surveillance-sharing agreement with a regulated market of significant size related to the underlying or reference bitcoin assets.[148] As discussed in detail in Section III.B, the Commission has considered the Exchange's arguments with respect to the CME bitcoin futures market, and the Commission concludes that the Exchange has failed to demonstrate that the CME bitcoin futures market is such a ''market of significant size'' related to spot bitcoin. As the Commission has also previously stated, comparisons to the markets for *other* asset classes (such as gold) are not persuasive, and do not help the Exchange to meet its burden with respect to a bitcoin-based ETP.[149]

Another commenter asserts that bitcoin futures-based ETFs ''derive their price from the spot [bitcoin] market,'' and questions why then a ''generally more efficient investment vehicle'' such as a spot bitcoin ETP ''that tracks the same spot [bitcoin] market'' would be disapproved.[150] The commenter, however, provides no information on how prices of bitcoin futures-based ETFs relate to spot bitcoin prices; how such an assertion would be compatible with the claims of the Exchange in this filing that CME bitcoin futures prices ''lead'' spot bitcoin prices; or why, even if such an assertion is true, it would necessitate the approval of this proposal.

An additional commenter argues that it is inconsistent for the Commission to approve the listing and trading of CME bitcoin futures-based ETFs but not spot-based ETPs.[151] Among other things, this commenter asserts that ''[t]he spot and futures markets are so interconnected that actions on one instantly affect the other'' and that ''[a]ny manipulations in the spot market instantly affect the futures prices and vice versa.''[152] This commenter states that CME bitcoin futures contracts' ''ultimate cash settlement'' is based on the ''BRR Bitcoin Reference Rate Index'' (''BRR''),[153] which is calculated by aggregating the trade flow of major bitcoin spot platforms, and that a spot bitcoin ETP would be less vulnerable to manipulation than a CME bitcoin futures-based ETF because CME bitcoin futures contracts can be manipulated on both the CME and through the spot bitcoin platforms that are included in the BRR.[154]

The Commission disagrees with this commenter's assertions. The proposed rule change does not relate to the same underlying holdings as either exchange-traded funds regulated under the Investment Company Act of 1940 (''1940 Act'') that provide exposure to bitcoin through CME bitcoin futures or CME bitcoin futures-based ETPs registered under the Securities Act of 1933 but not regulated under the 1940 Act. The Commission considers the proposed rule change on its own merits and under the standards applicable to it. Namely, with respect to this proposed rule change, the Commission must apply the standards as provided by Section 6(b)(5) of the Exchange Act, which it has applied in connection with its orders considering previous proposals to list bitcoin-based commodity trusts and bitcoin-based trust issued receipts.[155]

For this proposed rule change, the relevant analysis, as discussed above in Section III.B, is whether the Exchange has a comprehensive surveillance-sharing agreement with a regulated market of significant size related to spot bitcoin. As discussed above, the record in the current proposal does not support a determination that the CME bitcoin futures market is a regulated market of significant size related to spot bitcoin.[156]

Moreover, the commenter argues that, because CME bitcoin futures contracts' ''ultimate cash settlement'' is based on the BRR, CME bitcoin futures face risks from both manipulation of the CME market itself, and manipulation of the spot bitcoin markets whose prices feed into the BRR. What is relevant for the ''significant market'' analysis, however, is not the number of potential sources of manipulation, but rather, as discussed in the Teucrium Order and the Valkyrie XBTO Order, whether the CME's surveillance can be reasonably relied upon to capture the effects of a person attempting to manipulate the assets underlying the proposed ETP.[157]

As explained in the Teucrium Order and the Valkyrie XBTO Order, if an exchange seeking to list a spot bitcoin ETP relies on the CME as the regulated market with which it has a comprehensive surveillance-sharing agreement, the assets held by the spot bitcoin ETP would not be traded on the CME; and thus there would be reason to question whether a surveillance-sharing agreement with the CME would, in fact, assist in detecting and deterring fraudulent and manipulative misconduct affecting the price of the spot bitcoin held by that ETP.[158] While the commenter asserts that ''[t]he spot and futures markets are so interconnected that actions on one instantly affect the other,'' and that ''manipulations in the spot market instantly affect the futures prices and vice versa,''[159] the commenter provides no evidence in support of these assertions. Moreover, the commenter's observation that CME bitcoin futures contracts' ''ultimate cash settlement'' is based on the BRR is also insufficient to support these assertions. The BRR is used for a CME bitcoin futures contract's *final* cash settlement; it is not generally used for *daily* cash settlements (which, under normal procedures, are generally based on the volume-weighted average price of trading activity on CME Globex between 2:59 p.m. and 3:00 p.m., Central Time),[160] nor is the BRR

[146] 15 U.S.C. 78f(b)(5).

[147] *See* letter from Anonymous, dated Feb. 18, 2022.

[148] *See supra* note 12 and accompanying text. *See also* Wise Origin Order, 87 FR at 5539; ARK 21Shares Order, 87 FR at 20027.

[149] *See* USBT Order, 85 FR at 12613; Wise Origin Order, 87 FR at 5540; Teucrium Order, 87 FR at 21679–80.

[150] *See* letter from Brandon Gunderson, dated Feb. 4, 2022.

[151] *See* Angel Letter at 5.

[152] *See id.*

[153] The Commission understands the commenter's use of ''BRR Bitcoin Reference Rate'' to mean the CME CF Bitcoin Reference Rate.

[154] *See* Angel Letter at 6.

[155] *See supra* note 11.

[156] *See supra* Section III.B.1 and III.B.2.

[157] *See* Teucrium Order, 87 FR at 21679; Valkyrie XBTO Order, 87 FR at 28851.

[158] *See* Teucrium Order, 87 FR at 21679 n.46; Valkyrie XBTO Order, 87 FR at 28851 n.42. There is reason to question whether the CME's surveillance would capture manipulation of spot bitcoin that occurs off of the CME if, for example, off-CME manipulation of spot bitcoin does not also similarly impact CME bitcoin futures contracts.

[159] *See* Angel Letter at 5.

[160] A description of CME bitcoin futures daily settlement procedures is available at: *https://*

Continued

claimed to be used for any intra-day trading of the contract. And even if the BRR is a potential link between prices on certain spot bitcoin platforms and CME bitcoin futures prices, it does not—absent supporting data—necessarily follow that manipulation that impacts spot bitcoin also similarly impacts CME bitcoin futures contracts.[161]

Moreover, the Commission's determination in the Teucrium Order and the Valkyrie XBTO Order to approve the listing and trading of the relevant CME bitcoin futures ETPs was not based on the ETPs' use—or lack of use—of the BRR (or any other similar pricing mechanism) for the calculation of NAV, or on the fact that the BRR is used for the final cash settlement of CME bitcoin futures contracts. Rather, the Commission approved the listing and trading of such CME bitcoin futures ETPs, not because of the BRR, but because the Commission found that the listing exchanges satisfy the requirement pertaining to a surveillance-sharing agreement with a regulated market of significant size related to the underlying bitcoin assets—which for such ETPs, are CME bitcoin futures contracts, not spot bitcoin.

This commenter also addresses, among other things, the general nature and uses of bitcoin [162] and suggestions for improving regulation of bitcoin and other digital assets markets and related market participants.[163] 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.

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 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-2021–89 be, and hereby is, disapproved.

By the Commission.

Jill M. Peterson,

Assistant Secretary.

[FR Doc. 2022–14309 Filed 7–5–22; 8:45 am]

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www.cmegroup.com/confluence/display/EPICSANDBOX/Bitcoin.

[161] The commenter also has not explained how the assertions that ''[t]he spot and futures markets are so interconnected that actions on one instantly affect the other,'' and that ''manipulations in the spot market instantly affect the futures prices and vice versa,'' would be compatible with the claims of the Exchange in this filing that CME bitcoin futures prices lead spot bitcoin prices.

[162] *See* Angel Letter at 2–4.

[163] *See, e.g.,* Angel Letter at 9–40.

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–95175; File No. SR–CboeBZX–2021–086]

Self-Regulatory Organizations; Cboe BZX Exchange, Inc.; Notice of Designation of a Longer Period for Commission Action on Proceedings To Determine Whether To Approve or Disapprove a Proposed Rule Change, as Modified by Amendment No. 2, To Amend the Opening Auction Process Provided Under Rule 11.23(b)(2)(B)

June 29, 2022.

On December 21, 2021, Cboe BZX Exchange, Inc. (''BZX'' or ''Exchange'') filed with the Securities and Exchange Commission (''Commission''), pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (''Act'') [1] and Rule 19b–4 thereunder,[2] a proposed rule change to to amend the Opening Auction process under BZX Rule 11.23(b)(2)(B). The proposed rule change was published for comment in the **Federal Register** on January 5, 2022.[3] On February 14, 2022, pursuant to Section 19(b)(2) of the 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] On April 1, 2022, the Exchange filed Amendment No. 2 to the proposed rule change, which amended and superseded the proposed rule change as originally filed.[6] On April 4, 2022, the Commission noticed the filing of Amendment No. 2 and instituted proceedings under Section 19(b)(2)(B) of the Act [7] to determine whether to approve or disapprove the proposed rule change.[8]

Section 19(b)(2) of the Act [9] provides that, after initiating proceedings, the Commission shall issue an order approving or disapproving the proposed rule change not later than 180 days after the date of publication of notice of the filing of the proposed rule change. The Commission may extend the period for issuing an order approving or disapproving the proposed rule change, however, by not more than 60 days if the Commission determines that a longer period is appropriate and publishes the reasons for such determination. The proposed rule change was published for comment in the **Federal Register** on January 5, 2022.[10] The 180th day after publication of the proposed rule change is July 4, 2022. The Commission is extending the time period for approving or disapproving the proposal for an additional 60 days.

The Commission finds that it is appropriate to designate a longer period within which to issue an order approving or disapproving the proposed rule change so that it has sufficient time to consider the proposed rule change, as modified by Amendment No. 2. Accordingly, the Commission, pursuant to Section 19(b)(2) of the Act,[11] designates September 2, 2022, as the date by which the Commission should either approve or disapprove the proposed rule change (File No. SR–CboeBZX–2021–086), as modified by Amendment No. 2.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[12]

Jill M. Peterson,

Assistant Secretary.

[FR Doc. 2022–14288 Filed 7–5–22; 8:45 am]

BILLING CODE 8011–01–P

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

[3] *See* Securities Exchange Act Release No. 93888 (December 30, 2021), 87 FR 532.

[4] 15 U.S.C. 78s(b)(2).

[5] *See* Securities Exchange Act Release No. 94238, 87 FR 9399 (February 18, 2022). The Commission designated April 5, 2022, as the date by which the Commission shall approve or disapprove, or institute proceedings to determine whether to disapprove, the proposed rule change.

[6] On March 31, 2022, the Exchange submitted Amendment No. 1 to the proposed rule change, and on April 1, 2022, the Exchange withdrew Amendment No. 1 to the proposed rule change. Amendment No. 2 is available on the Commission's website at: *https://www.sec.gov/comments/sr-cboebzx-2021-086/srcboebzx2021086-20122189-278229.pdf.*

[7] 15 U.S.C. 78s(b)(2)(B).

[8] *See* Securities Exchange Act Release No. 94601, 87 FR 20895 (April 8, 2022).

[9] 15 U.S.C. 78s(b)(2).

[10] *See supra* note 3 and accompanying text.

[11] 15 U.S.C. 78s(b)(2).

[12] 17 CFR 200.30–3(a)(57).