



Martha Redding
Associate General Counsel
Assistant Secretary

May 7, 2019

VIA E-MAIL

Secretary
Securities and Exchange Commission
100 F Street, N.E.
Washington, DC 20549-1090

Re: Securities Exchange Act Rel. 34-85093 (SR-NYSEArca-2019-01)

Dear Mr. Fields:

NYSE Arca, Inc. filed the attached Amendment No. 1 to the above-referenced filing on May 7, 2019.

Sincerely,

A handwritten signature in blue ink, appearing to be the initials "MR" followed by a stylized flourish.

Encl. (Amendment No. 1 to SR-NYSEArca-2019-01)

Required fields are shown with yellow backgrounds and asterisks.

Filing by NYSE Arca, Inc.
Pursuant to Rule 19b-4 under the Securities Exchange Act of 1934

Initial *	Amendment *	Withdrawal	Section 19(b)(2) *	Section 19(b)(3)(A) *	Section 19(b)(3)(B) *
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Rule		
Pilot	Extension of Time Period for Commission Action *	Date Expires *	<input type="checkbox"/> 19b-4(f)(1)	<input type="checkbox"/> 19b-4(f)(4)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/> 19b-4(f)(2)	<input type="checkbox"/> 19b-4(f)(5)	
			<input type="checkbox"/> 19b-4(f)(3)	<input type="checkbox"/> 19b-4(f)(6)	

Notice of proposed change pursuant to the Payment, Clearing, and Settlement Act of 2010	Security-Based Swap Submission pursuant to the Securities Exchange Act of 1934
Section 806(e)(1) *	Section 806(e)(2) *
<input type="checkbox"/>	<input type="checkbox"/>
	Section 3C(b)(2) *
	<input type="checkbox"/>

Exhibit 2 Sent As Paper Document	Exhibit 3 Sent As Paper Document
<input type="checkbox"/>	<input type="checkbox"/>

Description

Provide a brief description of the action (limit 250 characters, required when Initial is checked *).

Proposal to list and trade shares of the Bitwise Bitcoin ETF Trust under NYSE Arca Rule 8.201-E

Contact Information

Provide the name, telephone number, and e-mail address of the person on the staff of the self-regulatory organization prepared to respond to questions and comments on the action.

First Name * David	Last Name * De Gregorio
Title * Senior Counsel, NYSE Group Inc.	
E-mail * [REDACTED]	
Telephone * [REDACTED]	Fax [REDACTED]

Signature

Pursuant to the requirements of the Securities Exchange Act of 1934,

has duly caused this filing to be signed on its behalf by the undersigned thereunto duly authorized.

(Title *)

Date 05/07/2019	Assistant Secretary
By Martha Redding	[REDACTED]
(Name *)	

Martha Redding,

NOTE: Clicking the button at right will digitally sign and lock this form. A digital signature is as legally binding as a physical signature, and once signed, this form cannot be changed.

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

For complete Form 19b-4 instructions please refer to the EFFS website.

Form 19b-4 Information *

Add Remove View

The self-regulatory organization must provide all required information, presented in a clear and comprehensible manner, to enable the public to provide meaningful comment on the proposal and for the Commission to determine whether the proposal is consistent with the Act and applicable rules and regulations under the Act.

Exhibit 1 - Notice of Proposed Rule Change *

Add Remove View

The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO]-xx-xx). A material failure to comply with these guidelines will result in the proposed rule change being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)

Exhibit 1A- Notice of Proposed Rule Change, Security-Based Swap Submission, or Advance Notice by Clearing Agencies *

Add Remove View

The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO]-xx-xx). A material failure to comply with these guidelines will result in the proposed rule change, security-based swap submission, or advance notice being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)

Exhibit 2 - Notices, Written Comments, Transcripts, Other Communications

Add Remove View

Exhibit Sent As Paper Document

Copies of notices, written comments, transcripts, other communications. If such documents cannot be filed electronically in accordance with Instruction F, they shall be filed in accordance with Instruction G.

Exhibit 3 - Form, Report, or Questionnaire

Add Remove View

Exhibit Sent As Paper Document

Copies of any form, report, or questionnaire that the self-regulatory organization proposes to use to help implement or operate the proposed rule change, or that is referred to by the proposed rule change.

Exhibit 4 - Marked Copies

Add Remove View

The full text shall be marked, in any convenient manner, to indicate additions to and deletions from the immediately preceding filing. The purpose of Exhibit 4 is to permit the staff to identify immediately the changes made from the text of the rule with which it has been working.

Exhibit 5 - Proposed Rule Text

Add Remove View

The self-regulatory organization may choose to attach as Exhibit 5 proposed changes to rule text in place of providing it in Item I and which may otherwise be more easily readable if provided separately from Form 19b-4. Exhibit 5 shall be considered part of the proposed rule change.

Partial Amendment

Add Remove View

If the self-regulatory organization is amending only part of the text of a lengthy proposed rule change, it may, with the Commission's permission, file only those portions of the text of the proposed rule change in which changes are being made if the filing (i.e. partial amendment) is clearly understandable on its face. Such partial amendment shall be clearly identified and marked to show deletions and additions.

1. Text of the Proposed Rule Change

- (a) Pursuant to the provisions of Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”),¹ and Rule 19b-4 thereunder,² NYSE Arca, Inc. (“NYSE Arca” or the “Exchange”), proposes to list and trade shares of the Bitwise Bitcoin ETF Trust under NYSE Arca Rule 8.201-E.

This Amendment No. 1 to SR-NYSEArca-2019-01 replaces SR-NYSEArca-2019-01 as originally filed and supersedes such filing in its entirety.

A notice of the proposed rule change for publication in the Federal Register is attached hereto as Exhibit 1.

- (b) The Exchange does not believe that the proposed rule change will have any direct effect, or any significant indirect effect, on any other Exchange rule in effect at the time of this filing.
- (c) Not applicable.

2. Procedures of the Self-Regulatory Organization

The proposed rule change is being submitted by Exchange staff to the Securities and Exchange Commission (“Commission”) pursuant to authority delegated by the Exchange’s Board of Directors and the NYSE Arca Board of Directors.

The persons on the Exchange staff prepared to respond to questions and comments on the proposed rule change are:

David De Gregorio
Senior Counsel
NYSE Group, Inc.
[REDACTED]

Michael Cavalier
Counsel
NYSE Group, Inc.
[REDACTED]

3. Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

- (a) Purpose

The Exchange proposes to list and trade shares (“Shares”) of the Bitwise Bitcoin

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

ETF Trust (the “Trust”), under NYSE Arca Rule 8.201-E.³

According to the Registration Statement, the Trust will not be registered as an investment company under the Investment Company Act of 1940, as amended,⁴ and is not required to register under such act. The Trust is not a commodity pool for purposes of the Commodity Exchange Act, as amended.⁵

The Trust is managed and controlled by Bitwise Investment Advisers, LLC (the “Sponsor”).

The Trust will offer Shares of the Trust for sale through the Trust’s Marketing Agent in “Creation Units,” as described below. The Marketing Agent will also assist the Sponsor and the Trust’s administrator with certain functions and duties relating to distribution and marketing.

The Exchange represents that the Shares satisfy the requirements of NYSE Arca Rule 8.201-E and thereby qualify for listing on the Exchange.⁶

Operation of the Trust⁷

According to the Registration Statement, the investment objective of the Trust is to provide exposure to bitcoin that is reflective of the actual bitcoin market where investors can purchase and sell bitcoin, less the expenses of the Trust’s operation. In seeking to achieve its investment objective, the Trust will hold bitcoin, and in seeking to ensure that the price of the Trust’s shares is reflective of the actual bitcoin market, the Trust will value its shares daily based on prices drawn from ten bitcoin exchanges that the Sponsor and its affiliate, Bitwise Index Services, LLC (“Bitwise Index Services”) believe, based on their research and analysis

³ The Trust is a Delaware statutory trust. On January 10, 2019, the Trust filed with the Commission an initial registration statement on Form S-1 under the Securities Act of 1933 (15 U.S.C. 77a) (the “Securities Act”) (File No. 333-229180). On April 6, 2019, the Trust filed with the Commission Pre-Effective Amendment No. 1 to the initial registration statement (the initial registration statement, as amended by Pre-Effective Amendment No. 1, the “Registration Statement”). The description of the operation of the Trust herein is based, in part, on the Registration Statement.

⁴ 15 U.S.C. 80a-1.

⁵ 17 U.S.C. 1.

⁶ With respect to the application of Rule 10A-3 (17 CFR 240.10A-3) under the Act, the Trust relies on the exemption contained in Rule 10A-3(c)(7).

⁷ The description of the operation of the Trust, the Shares and the bitcoin market contained herein are based, in part, on the Registration Statement. See note 3, supra.

(discussed below), represent substantially all of the economically significant spot trading volume on bitcoin exchanges around the world (the “Bitwise Daily Bitcoin Reference Price” or “Bitcoin Price”).⁸

The Trust will store its bitcoin in custody at a regulated third-party custodian, and will not use derivatives that may subject the Trust to counterparty and credit risks.

The Trust will process all creations and redemptions in-kind, and accrue all fees in bitcoin (rather than cash), as a way of ensuring that the Trust holds the desired amount of bitcoin-per-share under all scenarios. The Trust will not buy or sell bitcoin under any situation other than if the Trust is required to liquidate.

The Sponsor believes that the design of the Trust will enable certain investors to more effectively and efficiently implement strategic and tactical asset allocation strategies that use bitcoin by investing in the Trust’s Shares rather than purchasing, holding and trading bitcoin directly, while protecting the Trust from potential concerns around market manipulation and other factors, as explained below.

Bitcoin, Bitcoin Market, Bitcoin Exchanges and Regulation of Bitcoin

The following sections describe bitcoin, including the historical development of bitcoin and the bitcoin network, how a person holds bitcoin, how to use bitcoin in transactions, the “exchange” market where bitcoin can be bought, held and sold, and the bitcoin “over-the-counter” (“OTC”) market.

⁸ Bitwise Index Services conducts research upon and provides pricing and indexing data related to the bitcoin market for use by the Trust and other unaffiliated parties. Bitwise Index Services manages the process for collection and dissemination of the Bitcoin Price with input from its Bitwise Crypto Index Committee, which has ultimate responsibility and authority for developing, maintaining and adjusting the Bitcoin Price as well as other cryptoasset data products and indexes. The Committee is composed of three members of the Bitwise leadership team selected for seniority and expertise in indexing, cryptoassets and data engineering. The Committee is advised in this effort by the Bitwise Crypto Index Advisory Board (the “Advisory Board”), an independent group of leading experts in the fields of both traditional asset indexing and crypto assets with members both internal and external to Bitwise. Advisory Board suggestions are not binding to the Committee. Bitwise Index Services and the Sponsor are referred to herein as “Bitwise” throughout unless the explicit clarification of a particular role of either affiliate is required to describe the operations of the Trust. Both Bitwise Index Services and the Sponsor are affiliates of Bitwise Asset Management, Inc.

Bitcoin

According to the Registration Statement, bitcoin is a digital asset that can be transferred among parties via the Internet. Unlike other means of electronic payments such as credit card transactions, one of the advantages of bitcoin is that it can be transferred without the use of a central administrator or clearing agency. Because a central party is not necessary to administer bitcoin transactions or maintain the bitcoin ledger, the term decentralized is often used in descriptions of bitcoin.

Bitcoin Network

Bitcoin was first described in a white paper released in 2008 and published under the name “Satoshi Nakamoto.” The protocol underlying Bitcoin was subsequently released in 2009 as open source software and currently operates on a worldwide network of computers.

For persons that want to use bitcoins to pay for goods and services in actual transactions, the first step is to download specialized software referred to as a “bitcoin wallet.” A user’s bitcoin wallet can run on a computer or smartphone, and can be used both to send and to receive bitcoin. Within a bitcoin wallet, a user can generate one or more unique “bitcoin addresses,” which are conceptually similar to bank account numbers. After establishing a bitcoin address, a user can send or receive bitcoin from his or her bitcoin address to another user’s address. Sending bitcoin from one bitcoin address to another is similar in concept to sending a bank wire from one person’s bank account to another person’s bank account.

The amount of bitcoin associated with each bitcoin address is listed in a public ledger, referred to as the “blockchain.” Copies of the blockchain exist on thousands of computers on the Bitcoin network throughout the Internet. A user’s bitcoin wallet will either contain a copy of the blockchain or be able to connect with another computer that holds a copy of the blockchain.

When a bitcoin user wishes to transfer bitcoin to another user, the sender must first request a bitcoin address from the recipient. The sender then uses his or her bitcoin wallet software to create a proposed addition (often referred to as a “transaction”) to the blockchain. The proposal will reduce the sender’s address and increase the recipient’s address by the amount of bitcoin desired to be transferred. The proposal is completely digital in nature, similar to a file on a computer, and it can be sent to other computers participating in the Bitcoin network.

Bitcoin Transactions

A bitcoin transaction is similar in concept to an irreversible digital check. The

transaction contains the sender's bitcoin address, the recipient's bitcoin address, the amount of bitcoin to be sent, a transaction fee and the sender's digital signature. The sender's use of his or her digital signature enables participants on the Bitcoin network to verify the authenticity of the bitcoin transaction.

A user's digital signature is generated via usage of the user's so-called "private key," one of two numbers in a so-called cryptographic "key pair." A key pair consists of a "public key" and its corresponding private key, both of which are lengthy alphanumeric codes, derived together and possessing a unique relationship.

Public keys are bitcoin addresses that are publicly known and can accept a bitcoin transfer. Private keys are used to sign transactions that initiate the transfer of bitcoin from a sender's bitcoin address to a recipient's bitcoin address. Only the holder of the private key associated with a particular bitcoin address can digitally sign a transaction proposing a transfer of bitcoin from that particular bitcoin address.

A user's bitcoin address may be safely distributed, but a user's private key must be kept in accordance with appropriate controls and procedures to ensure it is used only for legitimate and intended transactions. Only by using a private key can a bitcoin user create a digital signature to transfer bitcoin to another user. In addition, if an unauthorized third person learns of a user's private key, that third person could forge the user's digital signature and send the user's bitcoin to any arbitrary bitcoin address, thereby stealing the user's bitcoin.

The usage of key pairs is a cornerstone of the Bitcoin network. This is because the use of a private key is the only mechanism by which a bitcoin transaction can be signed. If a private key is lost, the corresponding bitcoin is thereafter permanently non-transferable. Moreover, the theft of a private key enables the thief immediate and unfettered access to the corresponding bitcoin. For large quantities of bitcoin, holders often embrace sophisticated security measures. The Trust will use a regulated, third-party custodian with institutional design controls and redundancies in place to safeguard and hold in custody the bitcoin private keys.

The Bitcoin network incorporates a system to prevent double spending of a single bitcoin. To prevent the possibility of double-spending a single bitcoin, each validated transaction is recorded, time stamped and publicly displayed in a "block" in the Bitcoin Blockchain, which is publicly available. Thus, the Bitcoin network provides confirmation against double-spending by memorializing every transaction in the Bitcoin Blockchain, which is publicly accessible and downloaded in part or in whole by all users of the Bitcoin network software program.

The process by which bitcoin are created and bitcoin transactions are verified is called mining. To begin mining, a user, or “miner,” can download and run a mining “client,” which, like regular Bitcoin network software programs, turns the user’s computer into a “node” on the Bitcoin network, and in this case has the ability to validate transactions and add new blocks of transactions to the Blockchain.

Miners, through the use of the bitcoin software program, engage in a set of prescribed complex mathematical calculations in order to verify transactions and compete for the right to add a block of verified transactions to the Bitcoin Blockchain and thereby confirm bitcoin transactions included in that block’s data. The miner who successfully adds a block of transactions to the Blockchain is rewarded by a grant of bitcoin. The supply of bitcoin is programmatically limited to 21 million bitcoin.

Confirmed and validated bitcoin transactions are recorded in blocks added to the Bitcoin Blockchain. Each block contains the details of some or all of the most recent transactions that are not memorialized in prior blocks, as well as a record of the award of bitcoin to the miner who added the new block. Each unique block can only be solved and added to the Bitcoin Blockchain by one miner; therefore, all individual miners and mining pools on the Bitcoin network must engage in a competitive process of constantly increasing their computing power to improve their likelihood of solving for new blocks. As more miners join the Bitcoin network and its processing power increases, the Bitcoin network adjusts the complexity of a block-solving equation to maintain a predetermined pace of adding a new block to the Bitcoin Blockchain approximately every ten minutes.

Bitcoin Market and Bitcoin Exchanges

In addition to using bitcoin to engage in transactions, investors may purchase and sell bitcoin to speculate as to the value of bitcoin in the bitcoin market, or as a long-term investment to diversify their portfolio. The value of bitcoin within the market is determined, in part, by the supply of and demand for bitcoin in the bitcoin market, market expectations for the adoption of bitcoin by individuals, the number of merchants that accept bitcoin as a form of payment and the volume of private end-user-to-end-user transactions.

Research conducted by Bitwise Index Services indicates that the vast majority of spot trading volume of bitcoin takes place on ten exchanges, although a number of other smaller exchanges exist as well. Bitcoin exchanges operate websites designed to permit investors to open accounts with the exchange and then purchase and sell bitcoin.

As with conventional stock exchanges, an investor opening a trading account must deposit an accepted government-issued currency into their account with the exchange, or a previously acquired digital asset, before they can purchase or sell assets on the exchange. The process of establishing an account with a bitcoin

exchange and trading bitcoin is different from the process of users sending bitcoin from one bitcoin address to another bitcoin address to pay for goods and services. This latter process is an activity that occurs wholly within the confines of the Bitcoin network, while the former is an activity that occurs entirely on private websites.

According to the Registration Statement, Bitwise Index Services' research has led it to believe that the bitcoin market has matured significantly in recent years. In particular, Bitwise Index Services believes that arbitrage on bitcoin exchanges (discussed below) has improved significantly since the introduction of bitcoin futures in December 2017, which fundamentally transformed the bitcoin market by creating a two-sided market and easy hedging for the first time. In addition, subsequent to the introduction of bitcoin futures, in early 2018, a large number of sophisticated market makers entered the bitcoin market, applying large balance sheets and tech-enabled trading platforms that further improved the quality of the market. By summer 2018, most major market makers were either present in the bitcoin market or actively exploring the space. In addition, over the course of 2018, a significant and efficient short lending market in bitcoin developed, with volume growing over the course of the year.

Bitwise Index Services believes that the launch of futures, the arrival of major market makers, and the development of lending combined to dramatically improve the efficiency of the bitcoin market in 2018, creating a dynamic, institutional-quality, two-sided market for the first time. While further developments may be incrementally beneficial to the market, Bitwise Index Services believes that the spot bitcoin market today operates with an efficiency that matches or exceeds that of other major financial markets.

As discussed in more detail below, the Trust will not directly purchase or sell bitcoin. Instead, Authorized Participants will deliver bitcoin to the Trust in exchange for Shares of the Trust, and the Trust will deliver bitcoin to Authorized Participants when those Authorized Participants redeem Shares of the Trust. The Trust will use ten spot exchanges that the Sponsor and Bitwise Index Services believe represent substantially all of the economically significant bitcoin trading volume in the world (outside of capital-controlled countries) in order to derive the Bitwise Daily Bitcoin Reference Price, which it will then use to price its Net Asset Value ("NAV") at the end of every business day.

Authorized Participants will have the option of purchasing and selling bitcoin used in Creation Basket transactions with the Trust either on bitcoin exchanges or in the "over-the-counter" ("OTC") markets. Over-the-counter trading of bitcoin is generally accomplished via bilateral agreements on a principal-to-principal basis. All risks and issues related to creditworthiness are between the parties directly involved in the transaction.

The Structure and Operation of the Trust Was Designed To Protect Investors and Satisfy Commission Requirements for Bitcoin-Based Exchange Traded Products

The Registration Statement and the Sponsor's submission to the Commission in connection with this filing,⁹ seek to explain how the structure and operation of the Trust is designed to protect investors and to respond to the concerns the Commission has raised and the requirements that must be satisfied by any bitcoin-based exchange-traded product set forth in the "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" (the "Winklevoss Order")¹⁰ and the "Staff Letter: Engaging on Fund Innovation and Cryptocurrency-related Holdings" (the "Staff Letter").¹¹

The Commission has outlined two ways that a Rule 19b-4 filing relating to a bitcoin exchange-traded product can satisfy the concerns outlined in the Winklevoss Order and in particular the concerns regarding potential market manipulation of the underlying market. Bitwise believes these Commission concerns are addressed by demonstrating that:

- 1) Unique Resistance: The bitcoin market is uniquely resistant to market manipulation and fraudulent activity; and
- 2) Surveillance Sharing: The listing exchange has entered into a surveillance sharing agreement with a regulated market of significant size in bitcoin or derivatives on bitcoin.

Historically, the existence of a surveilled market has been the primary consideration regarding addressing potential market manipulation, as the

⁹ See Bitwise Asset Management, Presentation to the U.S. Securities and Exchange Commission, dated March 19, 2019, attached to Memorandum from the Division of Trading and Markets regarding a March 19, 2019 meeting with representatives of Bitwise Asset Management, Inc., NYSE Arca, Inc., and Vedder Price P.C., available at <https://www.sec.gov/comments/sr-nysearca-2019-01/srnysearca201901-5164833-183434.pdf>. This document is referred to in this filing as the "Bitwise Study."

¹⁰ See Securities Exchange Act Release No. 83723 (July 26, 2018), 83 FR 37579 (August 1, 2018) (SR-BatsBZX-2016-30) (Order Setting Aside Action by Delegated Authority and Disapproving a Proposed Rule Change to List and Trade Shares of the Winklevoss Bitcoin Trust).

¹¹ See letter dated January 18, 2018 from Dalia Blass, Director, Division of Investment Management, Commission, to Paul Schott Stevens, President & CEO Investment Company Institute and Timothy W. Cameron, Asset Management Group – Head, Securities Industry and Financial Markets Association.

Commission stated when discussing its past approval of gold bullion exchange-traded products (“ETPs”) in the Winklevoss Order.¹²

The Sponsor believes that the gold market is substantially similar to the bitcoin market in all respects that are critically important from the perspective of the federal securities laws. That is, the bitcoin market (and the Trust specifically) is uniquely resistant to manipulation, and there is a significant, regulated and surveilled market for bitcoin futures.

The “Real” Market For Bitcoin

The Sponsor represents that bitcoin is a globally fungible commodity with low transaction costs, near-zero transportation costs that allows nearly instantaneous transportation to any location around the world, and low-to-zero storage costs, as follows:

- Globally Fungible Commodity: A bitcoin is the same anywhere around the world. Unlike wheat, oil or gold, there are no varieties, purities, or geographically specific delivery locations for bitcoin.
- Low Transaction Costs: The median spread for bitcoin traded on Coinbase Pro, a leading bitcoin exchange, in the month of March 2019 was \$0.01, with each bitcoin valued at approximately \$5,000. This makes bitcoin one of the most tightly quoted financial instruments in the world.
- Near-Zero Transportation Costs: Unlike physical commodities, there is virtually no cost to transport bitcoin anywhere in the world, and that transportation can occur nearly instantly.
- Low-To-Zero Storage Costs: Bitcoin can safely be stored with established, regulated third-party custodians at a cost that ranges from 0% to 1.5% a year.

These four factors would, in isolation, suggest that the bitcoin market should be uniquely orderly and efficient, with tight spreads and nearly perfect arbitrage between prices on different exchanges. Unfortunately, in practice, many perceive that the market for bitcoin as disorderly and inefficient, with many unregulated operators running crypto “exchanges” from unknown domiciles.

Bitwise believes that this perception derives from the fact that leading data aggregators, including those cited by national media organizations like The New York Times, The Wall Street Journal and Barron’s, have reported volume, price and trading data for bitcoin that includes an overwhelming percentage of volume that is fake and/or non-economic in nature. As discussed further below, Bitwise’s

¹²

See Winklevoss Order at note 216 and accompanying text.

research concludes that when fake and/or non-economic data is removed, the remaining or “real” market for bitcoin is significantly smaller, more orderly and more regulated than commonly understood, and that, with that understanding, this filing should squarely address the concerns laid out by the Commission in the Winklevoss Order.

Bitwise’s Analysis of the Reported Market for Bitcoin Trading

Bitwise conducted a thorough, data-driven analysis of the spot market for bitcoin from March 4, 2019 through March 8, 2019.¹³ Bitwise analyzed all exchanges reporting more than \$1 million in average daily trading volume for bitcoin-fiat and bitcoin-stablecoin pairs to the popular data aggregator CoinMarketCap.com, which yielded 81 exchanges with approximately \$6 billion in average daily volume. Bitwise deliberately utilized a short time period to both showcase that fake volume is a current problem impacting the bitcoin market and because, in its experience, exchanges change the algorithms driving how they fake volume over time, which obscures the results of certain data-driven analyses over longer periods.

The Bitwise Study analyzed all purportedly significant bitcoin exchanges and initially found several widespread, superficial indicators of fake or non-economic trading volume. These indicators include the following.

- Perfectly paired buy and sell orders. Bitwise does not believe that actual trading on exchanges generally result in perfectly-consistent alternating buy and sell orders of roughly equal size, but nonetheless exchanges exhibited this pattern in their data.
- Spread sizes. Bitwise does not believe that there ought to be relatively large reported spreads between bid and ask prices exhibited on exchanges that report a large volume of trades in comparison to other bitcoin exchanges with lower reported volume, absent clear economic explanations (tick size, fees, etc.), but exchanges with large amounts of claimed volume showed spreads that were 100X, 1000X or more the size of spreads on certain exchanges with much lower levels of volume.
- Real-World Footprint. Bitwise does not believe that exchanges with large reported amounts of volume would typically exhibit relatively small real-world footprints, including low web traffic, few known employees, minimal social media presence and limited or no fundraising or capitalization information, but it found many exchanges that exhibited these characteristics.
- Unexplained periods of no trading. Bitwise found that certain

¹³

See note 9, supra.

exchanges with large reported volume nonetheless exhibited multiple hours and days with zero volume that are not correlated with business hours, volatility, up time, or other factors.

- Monotonic trading volume. Bitwise found that some exchanges reported relatively large amounts of volume in which a roughly identical volume is reported every hour of every day, regardless of price movements, news, waking hours, weekends, or other real-world factors.

Given these indications, Bitwise created a computer program for collecting or “scraping” data across different bitcoin exchanges, which collected and stored both the order book and recent trades for all exchanges reporting significant volume, four times each second. Bitwise analyzed data from these 81 different bitcoin exchanges and concluded, for reasons outlined below, that 95% of heretofore reported volume is either fake or non-economic trading. Bitwise estimates that the real total average daily bitcoin volume is approximately \$273 million, and that this volume is more regulated, more U.S.-focused and more orderly than perceived.

In separating exchanges that have real vs. non-economic transactions, Bitwise considered the following data characteristics:

- Trade Size Histograms. Bitwise’s computer program can produce trade size “histograms” that show the percentage of volume that occur at particular trade sizes over a specified period. Trade size histograms for the exchanges that pass all of its data tests show consistent patterns that reflect trading that Bitwise believes naturally occurs. Such patterns include volume declining as trade size increases and a greater-than-random distribution of volume at whole bitcoin sizes. These patterns are roughly consistent in size and shape across all ten exchanges that pass all of Bitwise’s data tests. Trade size histograms from other exchanges, on the other hand, reflect patterns that were idiosyncratic and often had patterns that were transparently programmatic, such as bell curve-like distributions with no apparent reason for such a clustering of trade sizes, and increasing volume for larger trade sizes rather than the decaying trend mentioned above. Most of these exchanges showed no peaks at whole bitcoin sizes.

Volume Spike Analysis. Bitwise’s computer program can produce charts that show volume “spikes,” or periods of significantly increased transaction volume, across any exchange. Because the bitcoin market is a globally integrated market for a fungible good, Bitwise believed a priori that, with some limitations for time zones and holidays, volume on different exchanges would rise and fall

concurrently in response to the same events or changes in market conditions.

This pattern played out as expected among the ten exchanges that passed all data tests and that Bitwise believes constitutes substantially all of the real global spot trading volume for bitcoin, but was noticeably absent among other exchanges, which either had no discernible volume spikes or had patterns that were wholly idiosyncratic and did not repeat on other exchanges.

- Spread Patterning Analysis. The spread on an exchange with real volume will have two key features that Bitwise believes it can identify through a data driven analysis.

First, Bitwise believes there should be a generally rational relationship between the volume on the exchange and the size of the spread (subject to limitations put in place at the exchange level, including the tick size and any exchange-level fees). In other words, exchanges with high volume should generally have smaller spreads than exchanges with low volume, and in a globally integrated market for a fungible good, those spreads should be competitive with other exchanges. Investors may tolerate a marginally higher spread on a particular exchange due to levels of comfort, design, user experience, regulatory status or other factors, but they are unlikely to trade significantly on exchanges with spreads that are many multiples larger than other available exchanges. In analyzing the data, Bitwise found many exchanges reporting very high levels of volume that nonetheless reported average spreads that were 1,000%-35,000% higher than the spreads reported on other well-established, regulated and well-capitalized exchanges that passed all of Bitwise's data tests.

Second, as with volume, spreads change over time in reaction to market developments. Bitwise found that many exchanges exhibited spread patterns over time that revealed artificial, programmatic drivers, including spreads that unnaturally anchor on arbitrary high dollar levels (i.e., Bitwise found examples of exchanges with spreads that would consistently base at a random dollar value (for example, \$10), and sometimes would change that resting mode spread in a step function (for example, going from a \$10 mode spread over multiple days to a \$7.50 mode spread over multiple days without a rational explanation owing to fees or other factors).

As a result of its research, Bitwise believes that, as of March 8, 2019, as stated earlier, the real daily spot volume of the bitcoin market is approximately \$273 million, and not the \$6 billion that is commonly reported. It further believes that

this volume is spread across ten exchanges that are located or domiciled in developed markets.

Bitwise believes that this finding is significant and that it leads to the following key conclusions:

- The smaller trade volume is more aligned with *a priori* expectations for bitcoin turnover, and is still sufficiently robust to support liquidity in the Trust, as discussed below.
- The real market for bitcoin appears to be orderly and efficient, with effective arbitrage in place and robust price discovery shared across multiple exchanges, as discussed below.
- The regulated and surveilled bitcoin futures market is much larger in comparison to the spot bitcoin market than is commonly understood, with significant implications, as discussed below.

The Real Market For Bitcoin Is Extremely Efficient, Well-Arbitraged and More Regulated Than Commonly Understood

As described above, Bitwise found that just ten exchanges passed all of its data tests. It believes that these ten exchanges represent substantially all of the real global spot market for bitcoin, and notes that these exchanges are more established, more likely to be located in developed markets, more regulated, and more likely to have sophisticated market surveillance tools in place than the broader set of exchanges reporting significant volume.

Whereas most of the broader set of analyzed exchanges have no known domicile, all ten of the exchanges that passed Bitwise's data tests are domiciled or based in developed markets, including the U.S., the UK, Malta and Japan. Nine of the ten exchanges are regulated by the U.S. Department of Treasury's FinCEN division as Money Services Businesses, and six have a BitLicense from the New York State Department of Financial Services.¹⁴ Finally, five of the ten exchanges have either robust internal (one) or robust third-party (four) market surveillance tools in place to monitor, report and correct for abusive trading behavior.¹⁵

¹⁴ See Exhibit 3, Item 1. As of April 26, 2019, Bitfinex was removed by the Bitwise Crypto Index Committee from the exchanges contributing prices to deriving the Bitwise Daily Bitcoin Reference Price pursuant to the New York Attorney General's claims towards iFinex Inc., operator of Bitfinex. As a result, the exchanges contributing to the Reference Price was reduced from ten to nine.

¹⁵ See Exhibit 3, Item 2.

Bitwise acknowledges that the regulatory status of these exchange platforms is not co-extensive to the obligations of and oversight for national securities exchanges or futures exchanges, but notes that these platforms are required to comply with particular obligations and types of regulatory compliance that provide business oversight and regulatory compliance requirements.

For instance, the nine exchanges that are regulated by the U.S Department of Treasury's FinCEN division as Money Services Businesses are charged with various responsibilities including:¹⁶

- Identifying people with ownership stakes or controlling roles in the MSB;
- Establishing a formal Anti-Money Laundering (AML) policy in place with documentation, training, independent review, and a named compliance officer;
- Having strict customer identification and verification policies and procedures;
- Filing Suspicious Activity Reports (SARs) for suspicious customer transactions;
- Filing Currency Transaction Reports (CTRs) for cash-in or cash-out transactions greater than \$10,000; and
- Maintaining a five-year record of currency exchanges greater than \$1,000 and money transfers greater than \$3,000.

The six exchanges that are regulated by the New York State Department of Financial Services ("NYDFS") under the BitLicense program have additional obligations, including the following:¹⁷

- Submission of audited financial statements including income statements, statement of assets/liabilities, insurance, and banking.
- Capitalization requirements set at NYDFS's discretion.
- Full reserves of custodian assets selling/encumbering prohibited.

¹⁶ See BSA Requirements for MSBs, FinCEN web site: <https://www.fincen.gov/bsa-requirements-msbs>.

¹⁷ See "New York's Final "BitLicense" Rule: Overview and Changes from July 2014 Proposal," June 5, 2015, Davis Polk, available at https://www.davispolk.com/files/new_yorks_final_bitlicense_rule_overview_changes_july_2014_proposal.pdf.

- Fingerprints and photographs of employees with access to customer funds.
- Qualified Chief Information Security Officer and annual penetration testing/audits.
- Documented business continuity and disaster recovery plan, independently tested annually.
- Independent exam by NYDFS.
- Implementing measures designed to effectively detect, prevent, and respond to fraud, attempted fraud, and similar wrongdoing, including market manipulation, and to monitor, control, investigate and report back to the New York State Department of Financial Services any wrongdoing.¹⁸

An Efficient, Well-Arbitrated Market

The Sponsor believes that, while the bitcoin market is commonly perceived to be disorderly and inefficient, when focused only on the ten exchanges referenced above, which it believes represent substantially all of the real spot trading volume in bitcoin, the bitcoin market is shown to be extraordinarily efficient, well-arbitrated, resilient and robust.

Bitwise notes that, from January 1, 2018, through March 17, 2019, the price of bitcoin on each of the ten exchanges has traded almost perfectly in-line.¹⁹

The Bitwise Study further showed that the average deviation from the aggregate price from the ten exchanges ranged from 0.13% to 0.25% over this time period. It noted that this average deviation is well within the expected arbitrage band between these exchanges; many of these exchanges charge fees of up to 0.30% for trading, and one cannot expect average deviations below these exchanges to be arbitrated away.²⁰

In addition, the Bitwise Study showed that the existence of sustained deviations – defined as differences in price greater than 1% that lasted for more than 100 seconds – were extremely rare over the time period studied. In the histogram attached as Exhibit 3, each sustained deviation is marked as a thin white line.²¹

¹⁸ See “DFS Takes Action to Deter Fraud and Manipulation in Virtual Currency Markets,” available at <https://www.dfs.ny.gov/about/press/pr1802071.htm>.

¹⁹ See Exhibit 3, Item 3.

²⁰ See Exhibit 3, Item 4.

²¹ See Exhibit 3, Item 5.

In sum, Bitwise believes that the Bitwise Study shows that the real market for bitcoin is extremely efficient and that arbitrage exists between and among the ten exchanges with real volume.

Bitwise further believes, as discussed above, that the efficiency of the market has improved dramatically over the past eighteen months. Bitwise further believes that the market is approaching the practical limit of these improvements, in that prices among different exchanges are nearly perfectly arbitrated, spreads are incredibly tight, and the market is liquid on a twenty four hour/ seven day a week basis.

Protections Against Market Manipulation Specific to the Trust's Design

Bitwise believes that the specific design of the Trust's NAV calculation process, as described below, its exclusive use of in-kind creation/redemptions, and its decision to accrue all fees in bitcoin support its efforts to meet the concerns set forth in the Winklevoss Order.

Net Asset Value

According to the Registration Statement, the Trust's per Share NAV will be calculated by dividing the value of the net assets of the Trust (i.e., the value of its total assets less total liabilities) by the total number of Shares outstanding. The Trust's NAV will be calculated on each trading day on the Exchange. The Trust will compute its NAV as of 4:00 p.m. E.T. The Trust's NAV will be calculated only once each trading day. The Trust's daily NAV may be found at the Trust's web site.

In calculating the NAV, the Trust relies on the Bitwise Daily Bitcoin Reference Price, which is produced once per day at 4:00 p.m. E.T. using the methodology outlined below.

First, Bitwise tracks a universe of over 200 on-line cryptocurrency exchanges that purport to offer trading on bitcoin and other cryptocurrencies. Bitwise eliminates a significant portion of the exchanges based on a number of factors. Those factors include, but are not limited to:

- Eliminating exchanges that are domiciled in emerging market countries;
- Eliminating exchanges domiciled in countries that have capital controls;
- Eliminating exchanges that lack functioning and stable Application Programming Interfaces ("API") for the transmission of price and volume data;

- Eliminating exchanges which, in the judgment of Bitwise, have issues with significant downtime, problems with customers withdrawal abilities, or known security issues;
- Eliminating exchanges which, in the judgement of Bitwise, are or may be subject to extraordinary legal or regulatory activity; and
- Eliminating exchanges that do not have at least \$1 million in average daily trading volume for bitcoin-fiat or bitcoin-stablecoin trading pairs over the past calendar quarter.²²

In addition, on no less than a quarterly basis, the Bitwise Crypto Index Committee (the “Committee”) reviews the actual published trading data of all exchanges that pass the above-mentioned screens. This further analysis includes bid/ask spreads, actual claimed executed trades with price and volume, and any other factors the Committee deems relevant. Exchanges that show persistent signs of artificial or inflated volume may be removed from the list of exchanges contributing prices to the Bitwise Daily Bitcoin Reference Price and the Bitwise Real-Time Bitcoin Price (the Bitwise Daily Bitcoin Reference Price, or “Bitcoin Price,” is published once daily based on the procedures described herein and used for NAV calculation purposes, while the “Bitwise Real-Time Bitcoin Price” is published continuously for indicative purposes).

As a result of this screening process, Bitwise’s list of exchanges currently used to price the Bitwise Daily Bitcoin Reference Price narrows from over 200 considered exchanges down to ten.²³ Bitwise believes that these exchanges currently account for substantially all of the real, spot global volume of bitcoin traded on exchanges with economic intent, excluding capital-controlled countries, although both the number of exchanges and the percentage of global volume they represent is subject to change over time.

The Bitwise Daily Bitcoin Reference Price relies on the prices and volume reported on these ten exchanges. To calculate the price, Bitwise examines six five-minute periods leading up to 4:00 p.m. E.T. It then calculates an equal-weighted average of the volume-weighted median price of these six five-minute periods.²⁴

The Sponsor believes these procedures are designed to protect the Bitwise Daily Bitcoin Reference Price and therefore the Trust’s NAV from potential attempts at

²² The volume requirement described in the last bullet in the list above may be waived by Bitwise Index Services for otherwise qualified exchanges if they are in fact being currently used to price publicly-listed cryptocurrency investment products such as futures contracts, non-U.S. exchange-traded funds and non-U.S. exchange-traded notes.

²³ See note 14, *supra*.

²⁴ See Exhibit 3, Item 6.

manipulation. Specifically, the Sponsor believes that using six consecutive five-minute segments over a thirty-minute period means malicious actors would need to sustain efforts to manipulate the market over an extended period of time, or would need to replicate efforts multiple times, potentially triggering review by exchange trading platforms, market participants, and regulators.

In addition, the use of a median price eliminates the ability of outlier prices to impact the NAV, as it systematically excludes those prices from the NAV calculation.²⁵

The use of a volume-weighted median (as opposed to a traditional median) protects against attempts to manipulate the NAV by executing a large number of low-dollar trades, because, any manipulation attempt would have to involve a majority of global spot bitcoin volume in a five-minute window to have any influence on the NAV.²⁶

The use of ten exchanges²⁷ representing substantially all of the real global spot volume for bitcoin also mitigates against idiosyncratic exchange risk, as the failure of any individual exchange will not materially impact pricing for the Trust. It also allows the Administrator to calculate the NAV in a manner that significantly deters manipulation. The fact that there are multiple exchanges contributing prices to the NAV also makes manipulation more difficult in a well-arbitrated and fractured market, as a malicious actor would need to manipulate multiple exchanges simultaneously or dramatically skew the historical distribution of volume between the various exchanges in order to impact the NAV. Capturing substantially all of the spot trading in bitcoin further increases the difficulty, since significantly more capital would be required in any attempt to influence the NAV and attempts to profit from that manipulation would be difficult.

Bitwise notes that the methodology for the Bitwise Daily Bitcoin Reference Price is similar in many respects to the CME CF Bitcoin Reference Rate, which is the rate at which the CME bitcoin futures settle.²⁸

Indicative Fund Value

In order to provide updated information relating to the Trust for use by investors,

²⁵ See Exhibit 3, Item 7.

²⁶ See Exhibit 3, Item 8.

²⁷ See note 14, supra.

²⁸ Bitwise notes that a detailed analysis on how a volume-weighted median pricing approach both theoretically and empirically protects against potential manipulation is available in the paper “Analysis of the CME CF Bitcoin Reference Rate and CME CF Bitcoin Real Time Index” by Andrew Paine and William J. Knottenbelt of the Imperial College Centre for Cryptocurrency Research and Engineering, November 14, 2016.

market professionals and other market data vendors, the Exchange will calculate an updated “Intraday Indicative Value” (“IIV”). The IIV will be calculated by using the prior day’s closing net assets of the Trust as a base and updated throughout the Exchange’s Core Trading Session of 9:30 a.m. E.T. to 4:00 p.m. E.T. to reflect changes in the most recently reported price level of the Bitwise Real-Time Bitcoin Price, as reported by Bloomberg, L.P. or another reporting service.

As stated, the Bitwise Real-Time Bitcoin Price is calculated from the same exchanges as the Bitwise Daily Bitcoin Reference Rate, and also uses a volume-weighted median price methodology. Instead of equally weighting prices captured over six five-minute periods, however, the Bitwise Real-Time Bitcoin Price uses only the last trade on each exchange, and uses the trailing 30-minute volume on those exchanges as the weighting factor.

The IIV will be disseminated on a per Share basis every 15 seconds during the Exchange’s Core Trading Session and will be widely disseminated by one or more major market data vendors during the NYSE Arca Core Trading Session.

Creation and Redemption of Shares

According to the Registration Statement, the Trust intends to create and redeem Shares in one or more Creation Baskets. A Creation Basket is a block of 25,000 Shares of the Trust. Except when aggregated in Creation Units, the Shares are not redeemable securities.

Only Authorized Participants may purchase and redeem Creation Baskets. Authorized Participants must be (1) registered broker-dealers or other securities market participants, such as banks and other financial institutions, that are not required to register as broker-dealers to engage in securities transactions described below, and (2) the Depository Trust Company (“DTC”) Participants. An Authorized Participant is an entity that has entered into an Authorized Participant Agreement with the Trust and the Sponsor.

Creation Procedures

On any business day, an Authorized Participant may place an order with the Marketing Agent to create one or more Creation Baskets. For purposes of processing both purchase and redemption orders, a “business day” means any day other than a day when the Exchange or the New York Stock Exchange is closed for regular trading.

All creation baskets are processed in-kind. By placing a purchase order, an Authorized Participant agrees to deposit bitcoin with the Trust. Prior to the delivery of baskets for a purchase order, the Authorized Participant must also have wired to the custodian the nonrefundable transaction fee due for the purchase order. Authorized Participants may not withdraw a creation request. If an Authorized Participant fails to consummate the foregoing, the order shall be cancelled.

Redemption Procedures

According to the Registration Statement, the procedures by which an Authorized Participant can redeem one or more baskets mirror the procedures for the creation of creation baskets. On any business day, an Authorized Participant may place an order with the Marketing Agent to redeem one or more baskets. A redemption order so received will be effective on the date it is received in satisfactory form by the Marketing Agent (“Redemption Order Date”). The redemption procedures allow Authorized Participants to redeem baskets and do not entitle an individual shareholder to redeem any shares in an amount less than a Creation Basket, or to redeem baskets other than through an Authorized Participant.

By placing a redemption order, an Authorized Participant agrees to deliver the baskets to be redeemed through DTC’s book-entry system to the Trust not later than noon E.T. on the second business day following the effective date of the redemption order. Prior to the delivery of the redemption distribution for a redemption order, the Authorized Participant must also have wired to the Sponsor’s account at the custodian the non-refundable transaction fee due for the redemption order. An Authorized Participant may not withdraw a redemption order.

All redemption orders are processed in-kind. By placing a redemption order, an Authorized Participant agrees to receive bitcoin.

The manner by which redemptions are made is dictated by the terms of the Authorized Participant Agreement. If an Authorized Participant fails to consummate the foregoing, the order shall be cancelled.

Determination of Redemption Distribution

The redemption distribution from the Trust will consist of a transfer to the redeeming Authorized Participant of an amount of bitcoin that is in the same proportion to the total assets of the Trust (net of estimated accrued but unpaid fees, expenses and other liabilities) on the date the order to redeem is properly received as the number of shares to be redeemed under the redemption order is in proportion to the total number of shares outstanding on the date the order is received. The Sponsor, directly or in consultation with the Administrator, determines the requirements for bitcoin that may be included in distributions to redeem baskets. The Marketing Agent will publish an estimate of the redemption distribution per basket as of the beginning of each business day.

Fee Accrual

The Sponsor proposes to accrue all fees in bitcoin.

The Impact of the Exclusive Use of In-Kind Creations, Redemptions and Fee Accruals

Bitwise believes that the exclusive use of in-kind creations, redemptions and fee

accruals, in all situations except when the Trust is required to liquidate, provides long-term investors in the Trust with significant, redundant and strong protection against attempts to manipulate the price of bitcoin in such a way as to impact the Bitwise Daily Bitcoin Reference Rate and therefore the NAV of the Trust.

That is because, while Bitwise believes that the NAV will accurately reflect the globally integrated price for bitcoin, and that that price is uniquely resistant to market manipulation, and acknowledges that this is important, it gains additional comfort that long-term investors in the Trust are protected from short-term attempts to manipulate that NAV by the Trust's exclusive use of in-kind creations, redemptions and fee accruals, because denominating those transactions exclusively in bitcoin ensures that the Trust maintains the appropriate amount of bitcoin-per-Share in all scenarios, even if the NAV or the Bitwise Daily Bitcoin Reference Price were somehow to be manipulated.

How The Trust Meets Standards in the Winklevoss Order

The preceding information, both about the real nature of the bitcoin market and the structure of the Trust, informs the means by which Bitwise believes that the Trust meets the concerns and conditions set forth in the Winklevoss Order.

Regarding the first condition – namely, showing that the bitcoin market is uniquely resistant to manipulation -- Bitwise believes that the digital nature of bitcoin makes it unique compared to other commodities in three important ways, which combine to provide unique protections against attempts to manipulate the market:

1. Fungibility: As mentioned, unlike other commodities (like oil, wheat or even gold), as mentioned, there are no varieties, purities or geographical delivery locations for a bitcoin.
2. Transportability: Bitcoin has no physical manifestation. As a result, it can be instantly transported from one location to another, anywhere in the world, at a cost approaching zero.
3. Exchange Tradability: Most commodities trade over-the-counter or rely on representative, derivative futures contracts because they lack the characteristics listed above. Bitcoin is unique in that the commodity itself trades directly on exchange, allowing for open price discovery.

These unique features allow the bitcoin market to be uniquely resistant to market manipulation in critical ways.

For example, Bitwise believes that the fact that bitcoin's price is set on the open market makes it uniquely resistant to manipulation compared to other commodities whose price is set by coordinated fix pricing. The Bitwise Study notes that many of the largest recent market manipulation scandals have been

driven by coordinated fix pricing, including those related to London Interbank Offered Rate (LIBOR) (2012), Global Forex (2013), Gold Fix (2014), and the Australian Bank Bill Swap Rate (ASIC) (2016), among others. Bitwise believes that the fact that the bitcoin market engages in price discovery in an open, transparent and online setting introduces certain risks that must be considered and controlled through the careful design of the Trust, but notes that these risks can be weighed against the benefits that accrue to the public, transparent and open nature of that price discovery.

The Bitwise Study and related research also show that the fact that bitcoin uniquely has no physical delivery location renders it immune to another common form of attempted and successful commodity market manipulation. For instance, in May 2011, the U.S. Commodity Futures Trading Commission filed suit against three American and international trading firms for attempting to manipulate the price of oil by cornering or partially cornering the market for oil storage in Cushing, Oklahoma.²⁹ Cushing is the delivery point for the popular NYMEX WTI Crude Oil futures contract, the most liquid crude oil futures contract in the world, which is widely seen as the benchmark price for WTI crude oil in the U.S. While the price of the WTI contract is used as a proxy for the price of all WTI crude, just 5%-10% of U.S. crude oil storage is available in Cushing. This disconnect between the size of the storage market for the reference price contract and the much larger real market for WTI crude oil creates an opportunity for individuals and firms to attempt to profit from artificially manipulating the relatively small market for crude oil storage while holding broader positions in the underlying physical commodity. Because bitcoin itself trades on exchanges and does so at a globally integrated price, these types of attempts at market manipulation are not possible, because there is no narrowly constructed representative price with a physical storage limitation that can be manipulated.

Other factors further contribute to the unique resistance to market manipulation that exists in the bitcoin market. For instance, as described above, the fact that bitcoin is fungible and transportable means that bitcoin trades at a single price on real exchanges around the world, and that extremely effective arbitrage is in place between those exchanges. Because there is a single global price for bitcoin, any attempt to manipulate the market must involve a non-trivial amount of the total global liquidity, which makes it more difficult to achieve and significantly more risky to attempt.

In addition, the fact that bitcoin itself (and not some derivative of it) is traded on exchanges means profiting from any such market manipulation would be difficult. The Trust's NAV captures substantially all of the spot bitcoin trading volume in the world, and the Trust's NAV is designed in a volume-weighted way, meaning

²⁹

See "U.S. Suit Sees Manipulation of Oil Trades" by Graham Bowley, May 24, 2011, *The New York Times*, available at <https://www.nytimes.com/2011/05/25/business/global/25oil.html?ref=todayspaper>

attempts to manipulate must involve a majority of trading volume over a significant period of time.

Further, Bitwise believes that the fact that bitcoin is fungible and transportable has allowed a distributed market to emerge, which provides unique resistance to market manipulation given the factors identified above. Bitwise's research notes that no single exchange represents the majority of real trading volume on the bitcoin market, and that volume is spread amongst ten different exchanges. This contributes to bitcoin's unique resistance to market manipulation, as any attempt to manipulate the market must either be coordinated synchronously across multiple exchanges or must involve a significant spike of volume on a single exchange (an action that would trigger review in the Trust's NAV process). Bitwise notes that there is a carefully designed lag between the strike time of the NAV (4:00 p.m. E.T.) and the time that the NAV is distributed (approximately 5:30 p.m. E.T.), which allows time for Bitwise Index Services to review contributed prices in both an algorithmic and manual way to ensure that no anomalous behavior exists.

Bitwise further believes that the unique design of the Bitwise Daily Bitcoin Reference Rate, and, therefore, the NAV -- as well as the Trust's exclusive use of in-kind creations and redemptions, and its decision to accrue all fees in bitcoin -- provide additional unique resistance to any short-term attempts at market manipulation for the reasons described above.

A Significant, Regulated and Surveilled Market Exists and Is Closely Connected with Spot Market for Bitcoin

In the Winklevoss Order, the Commission laid out both the need for and the definition of a surveilled market of significant size. Specifically, the Commission explained that:

[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—whether gold, silver, platinum, palladium, or copper — and the ETP listing exchange has entered into surveillance-sharing agreements with, or held Intermarket Surveillance Group membership in common with, that market.³⁰

Further, the Commission stated that the Commission interprets terms “significant market” and “market of significant size” to 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 the ETP listing market in

³⁰

Winklevoss Order at note 209 and accompanying text.

detecting and deterring misconduct, and (b) it is unlikely that trading in the ETP would be the predominant influence on prices in that market.³¹

Bitwise believes that, in light of a better understanding of the true size of the spot bitcoin market, the combined CME/CFE futures market represents a large, surveilled and regulated market, as required above. Over the time period covered in the Bitcoin Study, the average daily volume of the bitcoin futures market was \$91 million. While this appears tiny in relation to the reported volume of \$6 billion, it is meaningful in relation to the actual volume of \$273 million.³²

In addition, the CME futures market is larger than all but one spot bitcoin exchange and nearly as large as the largest bitcoin exchange.³³

The Bitwise Study found that the prices on the CME and CFE futures markets are closely aligned with the Bitwise Daily Bitcoin Reference Price on a once-a-day basis, and with the Bitwise Real-Time Bitcoin Price on an intraday basis. This follows logically, given that the CME futures settlement price is based on prices pulled from four of the ten exchanges that contribute to the Bitwise Daily Bitcoin Reference Price and the Bitwise Real-Time Bitcoin Rate, and the CFE futures settlement price is based on prices pulled from one of the ten exchanges that contribute to the Bitwise Daily Bitcoin Reference Price and the Bitwise Real-Time Bitcoin Rate. The tightness-of-fit between the two prices is limited by the term structure of the futures contract and the asymmetric cost of hedging a futures position – it is less expensive to hedge a short position in bitcoin futures than it is to hedge a long position in bitcoin futures. Nonetheless, the connection between the two prices is strong and arbitrage exists between the two prices.

Given the significant size of the CME and CFE futures markets (or the CME futures market in isolation), and the close relationship in prices between the derivatives market and the spot market, there is a reasonable likelihood that a person attempting to manipulate the ETP would also have to trade on that market to successfully manipulate the ETP, since arbitrage between the derivative and spot markets would tend to counter an attempt to manipulate the spot market alone. As a result, the Exchange's ability to obtain information regarding trading in the Shares and futures from markets and other entities that are members of the Intermarket Trading Group ("ISG"), which includes the CME and CFE, would assist the ETP listing market in detecting and deterring misconduct.

Impact on the Spot Market For Bitcoin

In the Winklevoss Order, the Commission noted that it wanted to see a market where "it is unlikely that trading in the ETP would be the predominant influence

³¹ Winklevoss Order, 83 FR at 37594.

³² See Exhibit 3, Item 9.

³³ See Exhibit 3, Item 10.

on prices in that market”.³⁴ While future inflows to the proposed Trust cannot be predicted, to provide comparable data, Bitwise examined total net inflows in the first year of existence for two types of ETPs: Commodity ETPs that were first to market in the U.S. and blockchain ETFs. Bitwise found that one year net inflows ranged from \$2 million to approximately \$3 billion for the ETPs meeting that definition.³⁵

Given the size of these inflows versus the size of the real bitcoin market (\$273 million in average daily volume), Bitwise believes that it is unlikely that trading in the ETP would become the predominant influence on prices in that market

Conclusion Regarding Standards in the Winklevoss Order

In summary, the Commission articulated two ways that a proposed bitcoin ETP could meet the standards set forth in the Winklevoss Order. The Commission explained that the proposed ETP must show either that the underlying market for bitcoin is uniquely resistant to market manipulation, and/or that a surveilled derivatives market of significant size existed alongside that market. Bitwise believes that the information presented above attempts to address those concerns, showing both the ways in which the bitcoin market (as the first digital commodity) is uniquely resistant to market manipulation, and that the CME and CFE are large, surveilled and regulated markets that fulfill the requirements for surveillance sharing. Bitwise further believes that the careful construction of the Bitwise Daily Bitcoin Reference Price (and the Bitwise Real-Time Bitcoin Price), and thereby the NAV (and IIV), the decision to process all creations and redemptions in-kind, and the decision to accrue all fees in-kind, provide additional protections against attempts to manipulate the spot market for bitcoin.

Availability of Information Regarding Bitcoin

The NAV for the Trust’s Shares will be disseminated daily to all market participants at the same time.

Quotation and last-sale information regarding the Shares will be disseminated through the facilities of the CTA. The IIV will be available through online information services.

In addition, the Trust’s website will display the applicable end of day closing NAV. The daily holdings of the Trust will be available on the Trust’s website before 9:30 a.m. E.T. The Trust’s total portfolio composition will be disclosed each business day that NYSE Arca is open for trading, on the Trust’s website. The Trust’s website will also include a form of the prospectus for the Trust that may be downloaded. The website will include the Shares’ ticker and CUSIP information, along with additional quantitative information updated on a daily

³⁴ See Winklevoss Order, 83 FR at 37594.

³⁵ See Exhibit 3, Item 11.

basis for the Trust. The Trust's website will include (1) the prior business day's trading volume, the prior business day's reported NAV and closing price, and a calculation of the premium and discount of the closing price or mid-point of the bid/ask spread at the time of NAV calculation ("Bid/Ask Price") against the NAV; and (2) data in chart format displaying the frequency distribution of discounts and premiums of the daily closing price or Bid/Ask Price against the NAV, within appropriate ranges, for at least each of the four previous calendar quarters. The Trust's website will be publicly available prior to the public offering of Shares and accessible at no charge.

The spot price of bitcoin as reflected in the Bitwise Daily Bitcoin Reference Price will also be available on a 24-hour basis from the Trust's website.

Trading Halts

With respect to trading halts, the Exchange may consider all relevant factors in exercising its discretion to halt or suspend trading in the Shares of the Trust.³⁶ Trading in Shares of the Trust will be halted if the circuit breaker parameters in NYSE Arca Rule 7.12-E have been reached. Trading also may be halted because of market conditions or for reasons that, in the view of the Exchange, make trading in the Shares inadvisable.

The Exchange may halt trading during the day in which an interruption to the dissemination of the IIV occurs.³⁷ If the interruption to the dissemination of the IIV or the value of the Index persists past the trading day in which it occurred, the Exchange will halt trading no later than the beginning of the trading day following the interruption. In addition, if the Exchange becomes aware that the NAV with respect to the Shares is not disseminated to all market participants at the same time, it will halt trading in the Shares until such time as the NAV is available to all market participants.

Trading Rules

The Exchange deems the Shares to be equity securities, thus rendering trading in the Shares subject to the Exchange's existing rules governing the trading of equity securities. Shares will trade on the NYSE Arca Marketplace from 4 a.m. to 8 p.m. E.T. in accordance with NYSE Arca Rule 7.34-E (Early, Core, and Late Trading Sessions). The Exchange has appropriate rules to facilitate transactions in the Shares during all trading sessions. As provided in NYSE Arca Rule 7.6-E, the minimum price variation ("MPV") for quoting and entry of orders in equity securities traded on the NYSE Arca Marketplace is \$0.01, with the exception of securities that are priced less than \$1.00 for which the MPV for order entry is \$0.0001.

³⁶ See NYSE Arca Rule 7.12-E.

³⁷ A limit up/limit down condition in the futures market would not be considered an interruption requiring the Trust to be halted.

Further, NYSE Arca Rule 8.201-E sets forth certain restrictions on Equity Trading Permit Holders acting as registered Market Makers in the Shares to facilitate surveillance. Under NYSE Arca Rule 8.201-E(g), an Equity Trading Permit Holder acting as a registered Market Maker in the Shares is required to provide the Exchange with information relating to its trading in the underlying commodity, related futures or options on futures, or any other related derivatives. Commentary .04 of NYSE Arca Rule 11.3-E requires an Equity Trading Permit Holder acting as a registered Market Maker, and its affiliates, in the Shares to establish, maintain and enforce written policies and procedures reasonably designed to prevent the misuse of any material nonpublic information with respect to such products, any components of the related products, any physical asset or commodity underlying the product, applicable currencies, underlying indexes, related futures or options on futures, and any related derivative instruments (including the Shares).

As a general matter, the Exchange has regulatory jurisdiction over its Equity Trading Permit Holders and their associated persons, which include any person or entity controlling an Equity Trading Permit Holder. A subsidiary or affiliate of an Equity Trading Permit Holder that does business only in commodities or futures contracts would not be subject to Exchange jurisdiction, but the Exchange could obtain information regarding the activities of such subsidiary or affiliate through surveillance sharing agreements with regulatory organizations of which such subsidiary or affiliate is a member.

Surveillance

The Exchange represents that trading in the Shares of the Trust will be subject to the existing trading surveillances administered by the Exchange, as well as cross-market surveillances administered by FINRA on behalf of the Exchange, which are designed to detect violations of Exchange rules and applicable federal securities laws.³⁸ The Exchange represents that these procedures are adequate to properly monitor Exchange trading of the Shares in all trading sessions and to deter and detect violations of Exchange rules and federal securities laws applicable to trading on the Exchange.

The surveillances referred to above generally focus on detecting securities trading outside their normal patterns, which could be indicative of manipulative or other violative activity. When such situations are detected, surveillance analysis follows and investigations are opened, where appropriate, to review the behavior of all relevant parties for all relevant trading violations.

³⁸

FINRA conducts cross-market surveillances on behalf of the Exchange pursuant to a regulatory services agreement. The Exchange is responsible for FINRA's performance under this regulatory services agreement.

The Exchange or FINRA, on behalf of the Exchange, or both, will communicate as needed regarding trading in the Shares and bitcoin futures with other markets and other entities that are members of the ISG, and the Exchange or FINRA, on behalf of the Exchange, or both, may obtain trading information regarding trading in the Shares and bitcoin futures from such markets and other entities. In addition, the Exchange may obtain information regarding trading in the Shares from markets and other entities that are members of ISG (including the CME and CFE) or with which the Exchange has in place a comprehensive surveillance sharing agreement (“CSSA”).³⁹

Also, pursuant to NYSE Arca Rule 8.201-E(g), the Exchange is able to obtain information regarding trading in the Shares and the underlying bitcoin through ETP Holders acting as registered “Market Makers”, in connection with such ETP Holders’ proprietary or customer trades through ETP Holders which they effect on any relevant market.

In addition, the Exchange also has a general policy prohibiting the distribution of material, non-public information by its employees.

All statements and representations made in this filing regarding (a) the description of the portfolios of the Trust or the Bitwise Daily Bitcoin Reference Price, (b) limitations on portfolio holdings, reference assets or the Bitwise Daily Bitcoin Reference Price, or (c) the applicability of Exchange listing rules specified in this rule filing shall constitute continued listing requirements for listing the Shares on the Exchange.

The issuer has represented to the Exchange that it will advise the Exchange of any failure by the Trust to comply with the continued listing requirements, and, pursuant to its obligations under Section 19(g)(1) of the Act, the Exchange will monitor for compliance with the continued listing requirements. If the Trust is not in compliance with the applicable listing requirements, the Exchange will commence delisting procedures under NYSE Arca Rule 5.5-E(m).

Information Bulletin

Prior to the commencement of trading, the Exchange will inform its ETP Holders in an Information Bulletin of the special characteristics and risks associated with trading the Shares. Specifically, the Information Bulletin will discuss the following: (1) the risks involved in trading the Shares during the Early and Late Trading Sessions when an updated IIV will not be calculated or publicly disseminated; (2) the procedures for purchases and redemptions of Shares in Creation Units (and that Shares are not individually redeemable); (3) NYSE Arca Rule 9.2-E(a), which imposes a duty of due diligence on its ETP Holders to learn

³⁹

For a list of the current members of ISG, see www.isgportal.org. The Exchange notes that not all components of the Trust may trade on markets that are members of ISG or with which the Exchange has in place a CSSA.

the essential facts relating to every customer prior to trading the Shares; (4) how information regarding the IIV is disseminated; (5) how information regarding portfolio holdings is disseminated; (6) the requirement that ETP Holders deliver a prospectus to investors purchasing newly issued Shares prior to or concurrently with the confirmation of a transaction; (7) trading information; and (8) NYSE Arca suitability rules.

The Information Bulletin will also discuss any exemptive, no-action, and interpretive relief granted by the Commission from any rules under the Act. In addition, the Information Bulletin will reference that the Trust is subject to various fees and expenses described in the Registration Statement.

The Information Bulletin will also disclose the trading hours of the Shares that the NAV for the Shares will be calculated after 4:00 p.m. E.T. each trading day. The Information Bulletin will disclose that information about the Shares will be publicly available on the Trust's website.

(b) Statutory Basis

The basis under the Act for this proposed rule change is the requirement under Section 6(b)(5)⁴⁰ that an exchange have rules that are designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to remove impediments to, and perfect the mechanism of a free and open market and, in general, to protect investors and the public interest.

The Exchange believes that the proposed rule change is designed to prevent fraudulent and manipulative acts and practices and to protect investors and the public interest in that the Shares will be listed and traded on the Exchange pursuant to the initial and continued listing criteria in NYSE Arca Rule 8.201-E. As discussed above, bitcoin trades in a well-arbitrated and distributed market that is significantly smaller, more orderly, and more regulated than commonly reported. As a result, as discussed above, any attempts at manipulation must involve a large share of global bitcoin volume, which would be substantially difficult to achieve. Accordingly, the notional size of the regulated, surveilled CME and CFE bitcoin futures markets (or even the CME market in isolation) is larger than all but one of the ten spot bitcoin exchanges, and is nearly as big as the largest exchange. In addition, prices on the CME and CFE futures markets are closely related to prices on the bitcoin spot market, and arbitrage between those prices is well-established. Given the significant size of the CME and CFE futures market, and the close relationship in prices between the derivatives market and the spot market, there is a reasonable likelihood that a person attempting to manipulate the ETP would also have to trade on that market to successfully manipulate the ETP, since arbitrage between the derivative and spot markets would tend to counter an attempt to manipulate the spot market alone. As a

⁴⁰

15 U.S.C. 78f(b)(5).

result, the fact that the CME and CFE are ISG members would assist the Exchange in detecting and deterring misconduct.⁴¹

The Exchange has in place surveillance procedures that are adequate to properly monitor trading in the Shares in all trading sessions and to deter and detect violations of Exchange rules and applicable federal securities laws. The Exchange or FINRA, on behalf of the Exchange, or both, will communicate as needed regarding trading in the Shares and bitcoin futures with other markets and other entities that are members of the ISG, and the Exchange or FINRA, on behalf of the Exchange, or both, may obtain trading information regarding trading in the Shares from such markets and other entities. In addition, the Exchange may obtain information regarding trading in the Shares from markets and other entities that are members of ISG or with which the Exchange has in place a CSSA. The Exchange is also able to obtain information regarding trading in the Shares and bitcoin futures or the underlying bitcoin through ETP Holders, in connection with such ETP Holders' proprietary or customer trades which they effect through ETP Holders on any relevant market.

Quotation and last-sale information regarding the Shares will be disseminated through the facilities of the CTA. The Trust's website will also include a form of the prospectus for the Trust that may be downloaded. The website will include the Shares' ticker and CUSIP information, along with additional quantitative information updated on a daily basis for the Trust. The Trust's website will include (1) daily trading volume, the prior business day's reported NAV and closing price, and a calculation of the premium and discount of the closing price or mid-point of the Bid/Ask Price against the NAV; and (2) data in chart format displaying the frequency distribution of discounts and premiums of the daily closing price or Bid/Ask Price against the NAV, within appropriate ranges, for at least each of the four previous calendar quarters. The Trust's website will be publicly available prior to the public offering of Shares and accessible at no charge.

Moreover, prior to the commencement of trading, the Exchange will inform its ETP Holders in an Information Bulletin of the special characteristics and risks associated with trading the Shares. The Information Bulletin will also discuss any exemptive, no-action, and interpretive relief granted by the Commission from any rules under the Act. In addition, the Information Bulletin will reference that the Trust is subject to various fees and expenses described in the Registration Statement. The Information Bulletin will also disclose the trading hours of the Shares and that the NAV for the Shares will be calculated after 4:00 p.m. E.T. each trading day. The Information Bulletin will disclose that information about the Shares will be publicly available on the Trust's website.

⁴¹

See note 9, supra.

Trading in Shares of the Trust will be halted if the circuit breaker parameters in NYSE Arca Rule 7.12-E have been reached or because of market conditions or for reasons that, in the view of the Exchange, make trading in the Shares inadvisable.

The proposed rule change is designed to perfect the mechanism of a free and open market and, in general, to protect investors and the public interest in that it will facilitate the listing and trading of a new type of exchange-traded product based on the price of bitcoin that will enhance competition among market participants, to the benefit of investors and the marketplace. As noted above, the Exchange has in place surveillance procedures that are adequate to properly monitor trading in the Shares in all trading sessions and to deter and detect violations of Exchange rules and applicable federal securities laws.

4. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purpose of the Act. The Exchange notes that the proposed rule change will facilitate the listing and trading of a new type of Commodity-Based Trust Share based on the price of bitcoin that will enhance competition among market participants, to the benefit of investors and the marketplace.

5. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received from Members, Participants or Others

The Exchange has neither solicited nor received written comments on the proposed rule change.

6. Extension of Time Period for Commission Action

The Exchange does not consent at this time to an extension of any time period for Commission action.

7. Basis for Accelerated Effectiveness Pursuant to Section 19(b)(2)

Not applicable.

8. Proposed Rule Change Based on Rules of Another Self-Regulatory Organization or of the Commission

The proposed rule change is not based on the rules of another self-regulatory organization or of the Commission.

9. Security-Based Swap Submissions Filed Pursuant to Section 3C of the Act

Not applicable.

10. Advance Notices Filed Pursuant to Section 806(e) of the Payment, Clearing and Settlement Supervision Act

Not applicable.

11. Exhibits

Exhibit 1 - Form of Notice of Proposed Rule Change for Federal Register

SECURITIES AND EXCHANGE COMMISSION

(Release No. 34- ; File No. SR-NYSEARCA-2019-01, Amendment No. 1)

[Date]

Self-Regulatory Organizations; NYSE Arca, Inc.; Notice of Filing of Proposed Rule Change Relating to the Listing and Trading of shares of the Bitwise Bitcoin ETF Trust under NYSE Arca Rule 8.201-E.

Pursuant to Section 19(b)(1)¹ of the Securities Exchange Act of 1934 (the “Act”)² and Rule 19b-4 thereunder,³ notice is hereby given that, on May 7, 2019, NYSE Arca, Inc. (the “Exchange” or “NYSE Arca”) filed with the Securities and Exchange Commission (the “Commission”) the proposed rule change as described in Items I, II, and III below, which Items have been prepared by the self-regulatory organization. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization’s Statement of the Terms of Substance of the Proposed Rule Change

The Exchange proposes to list and trade shares of the Bitwise Bitcoin ETF Trust under NYSE Arca Rule 8.201-E. This Amendment No. 1 to SR-NYSEArca-2019-01 replaces SR-NYSEArca-2019-01 as originally filed and supersedes such filing in its entirety. The proposed change is available on the Exchange’s website at www.nyse.com, at the principal office of the Exchange, and at the Commission’s Public Reference Room.

¹ 15 U.S.C.78s(b)(1).

² 15 U.S.C. 78a.

³ 17 CFR 240.19b-4.

II. Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the self-regulatory organization included statements concerning the purpose of, and basis for, the proposed rule change and discussed any comments it received on the proposed rule change. The text of those statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant parts of such statements.

A. Self-Regulatory Organization’s Statement of the Purpose of, and the Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to list and trade shares (“Shares”) of the Bitwise Bitcoin ETF Trust (the “Trust”), under NYSE Arca Rule 8.201-E.⁴

According to the Registration Statement, the Trust will not be registered as an investment company under the Investment Company Act of 1940, as amended,⁵ and is not required to register under such act. The Trust is not a commodity pool for purposes of the Commodity Exchange Act, as amended.⁶

⁴ The Trust is a Delaware statutory trust. On January 10, 2019, the Trust filed with the Commission an initial registration statement on Form S-1 under the Securities Act of 1933 (15 U.S.C. 77a) (the “Securities Act”) (File No. 333-229180). On April 6, 2019, the Trust filed with the Commission Pre-Effective Amendment No. 1 to the initial registration statement (the initial registration statement, as amended by Pre-Effective Amendment No. 1, the “Registration Statement”). The description of the operation of the Trust herein is based, in part, on the Registration Statement.

⁵ 15 U.S.C. 80a-1.

⁶ 17 U.S.C. 1.

The Trust is managed and controlled by Bitwise Investment Advisers, LLC (the “Sponsor”).

The Trust will offer Shares of the Trust for sale through the Trust’s Marketing Agent in “Creation Units,” as described below. The Marketing Agent will also assist the Sponsor and the Trust’s administrator with certain functions and duties relating to distribution and marketing.

The Exchange represents that the Shares satisfy the requirements of NYSE Arca Rule 8.201-E and thereby qualify for listing on the Exchange.⁷

Operation of the Trust⁸

According to the Registration Statement, the investment objective of the Trust is to provide exposure to bitcoin that is reflective of the actual bitcoin market where investors can purchase and sell bitcoin, less the expenses of the Trust’s operation. In seeking to achieve its investment objective, the Trust will hold bitcoin, and in seeking to ensure that the price of the Trust’s shares is reflective of the actual bitcoin market, the Trust will value its shares daily based on prices drawn from ten bitcoin exchanges that the Sponsor and its affiliate, Bitwise Index Services, LLC (“Bitwise Index Services”) believe, based on their research and analysis (discussed below), represent substantially all of the economically significant spot trading volume on bitcoin exchanges around the world (the “Bitwise Daily Bitcoin Reference Price” or “Bitcoin Price”).⁹

⁷ With respect to the application of Rule 10A-3 (17 CFR 240.10A-3) under the Act, the Trust relies on the exemption contained in Rule 10A-3(c)(7).

⁸ The description of the operation of the Trust, the Shares and the bitcoin market contained herein are based, in part, on the Registration Statement. See note 4, supra.

⁹ Bitwise Index Services conducts research upon and provides pricing and indexing data related to the bitcoin market for use by the Trust and other unaffiliated

The Trust will store its bitcoin in custody at a regulated third-party custodian, and will not use derivatives that may subject the Trust to counterparty and credit risks.

The Trust will process all creations and redemptions in-kind, and accrue all fees in bitcoin (rather than cash), as a way of ensuring that the Trust holds the desired amount of bitcoin-per-share under all scenarios. The Trust will not buy or sell bitcoin under any situation other than if the Trust is required to liquidate.

The Sponsor believes that the design of the Trust will enable certain investors to more effectively and efficiently implement strategic and tactical asset allocation strategies that use bitcoin by investing in the Trust's Shares rather than purchasing, holding and trading bitcoin directly, while protecting the Trust from potential concerns around market manipulation and other factors, as explained below.

Bitcoin, Bitcoin Market, Bitcoin Exchanges and Regulation of Bitcoin

The following sections describe bitcoin, including the historical development of bitcoin and the bitcoin network, how a person holds bitcoin, how to use bitcoin in transactions, the "exchange" market where bitcoin can be bought, held and sold, and the

parties. Bitwise Index Services manages the process for collection and dissemination of the Bitcoin Price with input from its Bitwise Crypto Index Committee, which has ultimate responsibility and authority for developing, maintaining and adjusting the Bitcoin Price as well as other cryptoasset data products and indexes. The Committee is composed of three members of the Bitwise leadership team selected for seniority and expertise in indexing, cryptoassets and data engineering. The Committee is advised in this effort by the Bitwise Crypto Index Advisory Board (the "Advisory Board"), an independent group of leading experts in the fields of both traditional asset indexing and crypto assets with members both internal and external to Bitwise. Advisory Board suggestions are not binding to the Committee. Bitwise Index Services and the Sponsor are referred to herein as "Bitwise" throughout unless the explicit clarification of a particular role of either affiliate is required to describe the operations of the Trust. Both Bitwise Index Services and the Sponsor are affiliates of Bitwise Asset Management, Inc.

bitcoin “over-the-counter” (“OTC”) market.

Bitcoin

According to the Registration Statement, bitcoin is a digital asset that can be transferred among parties via the Internet. Unlike other means of electronic payments such as credit card transactions, one of the advantages of bitcoin is that it can be transferred without the use of a central administrator or clearing agency. Because a central party is not necessary to administer bitcoin transactions or maintain the bitcoin ledger, the term decentralized is often used in descriptions of bitcoin.

Bitcoin Network

Bitcoin was first described in a white paper released in 2008 and published under the name “Satoshi Nakamoto.” The protocol underlying Bitcoin was subsequently released in 2009 as open source software and currently operates on a worldwide network of computers.

For persons that want to use bitcoins to pay for goods and services in actual transactions, the first step is to download specialized software referred to as a “bitcoin wallet.” A user’s bitcoin wallet can run on a computer or smartphone, and can be used both to send and to receive bitcoin. Within a bitcoin wallet, a user can generate one or more unique “bitcoin addresses,” which are conceptually similar to bank account numbers. After establishing a bitcoin address, a user can send or receive bitcoin from his or her bitcoin address to another user’s address. Sending bitcoin from one bitcoin address to another is similar in concept to sending a bank wire from one person’s bank account to another person’s bank account.

The amount of bitcoin associated with each bitcoin address is listed in a public

ledger, referred to as the “blockchain.” Copies of the blockchain exist on thousands of computers on the Bitcoin network throughout the Internet. A user’s bitcoin wallet will either contain a copy of the blockchain or be able to connect with another computer that holds a copy of the blockchain.

When a bitcoin user wishes to transfer bitcoin to another user, the sender must first request a bitcoin address from the recipient. The sender then uses his or her bitcoin wallet software to create a proposed addition (often referred to as a “transaction”) to the blockchain. The proposal will reduce the sender’s address and increase the recipient’s address by the amount of bitcoin desired to be transferred. The proposal is completely digital in nature, similar to a file on a computer, and it can be sent to other computers participating in the Bitcoin network.

Bitcoin Transactions

A bitcoin transaction is similar in concept to an irreversible digital check. The transaction contains the sender’s bitcoin address, the recipient’s bitcoin address, the amount of bitcoin to be sent, a transaction fee and the sender’s digital signature. The sender’s use of his or her digital signature enables participants on the Bitcoin network to verify the authenticity of the bitcoin transaction.

A user’s digital signature is generated via usage of the user’s so-called “private key,” one of two numbers in a so-called cryptographic “key pair.” A key pair consists of a “public key” and its corresponding private key, both of which are lengthy alphanumeric codes, derived together and possessing a unique relationship.

Public keys are bitcoin addresses that are publicly known and can accept a bitcoin transfer. Private keys are used to sign transactions that initiate the transfer of bitcoin

from a sender's bitcoin address to a recipient's bitcoin address. Only the holder of the private key associated with a particular bitcoin address can digitally sign a transaction proposing a transfer of bitcoin from that particular bitcoin address.

A user's bitcoin address may be safely distributed, but a user's private key must be kept in accordance with appropriate controls and procedures to ensure it is used only for legitimate and intended transactions. Only by using a private key can a bitcoin user create a digital signature to transfer bitcoin to another user. In addition, if an unauthorized third person learns of a user's private key, that third person could forge the user's digital signature and send the user's bitcoin to any arbitrary bitcoin address, thereby stealing the user's bitcoin.

The usage of key pairs is a cornerstone of the Bitcoin network. This is because the use of a private key is the only mechanism by which a bitcoin transaction can be signed. If a private key is lost, the corresponding bitcoin is thereafter permanently non-transferable. Moreover, the theft of a private key enables the thief immediate and unfettered access to the corresponding bitcoin. For large quantities of bitcoin, holders often embrace sophisticated security measures. The Trust will use a regulated, third-party custodian with institutional design controls and redundancies in place to safeguard and hold in custody the bitcoin private keys.

The Bitcoin network incorporates a system to prevent double spending of a single bitcoin. To prevent the possibility of double-spending a single bitcoin, each validated transaction is recorded, time stamped and publicly displayed in a "block" in the Bitcoin Blockchain, which is publicly available. Thus, the Bitcoin network provides confirmation against double-spending by memorializing every transaction in the Bitcoin

Blockchain, which is publicly accessible and downloaded in part or in whole by all users of the Bitcoin network software program.

The process by which bitcoin are created and bitcoin transactions are verified is called mining. To begin mining, a user, or “miner,” can download and run a mining “client,” which, like regular Bitcoin network software programs, turns the user’s computer into a “node” on the Bitcoin network, and in this case has the ability to validate transactions and add new blocks of transactions to the Blockchain.

Miners, through the use of the bitcoin software program, engage in a set of prescribed complex mathematical calculations in order to verify transactions and compete for the right to add a block of verified transactions to the Bitcoin Blockchain and thereby confirm bitcoin transactions included in that block’s data. The miner who successfully adds a block of transactions to the Blockchain is rewarded by a grant of bitcoin. The supply of bitcoin is programmatically limited to 21 million bitcoin.

Confirmed and validated bitcoin transactions are recorded in blocks added to the Bitcoin Blockchain. Each block contains the details of some or all of the most recent transactions that are not memorialized in prior blocks, as well as a record of the award of bitcoin to the miner who added the new block. Each unique block can only be solved and added to the Bitcoin Blockchain by one miner; therefore, all individual miners and mining pools on the Bitcoin network must engage in a competitive process of constantly increasing their computing power to improve their likelihood of solving for new blocks. As more miners join the Bitcoin network and its processing power increases, the Bitcoin network adjusts the complexity of a block-solving equation to maintain a predetermined pace of adding a new block to the Bitcoin Blockchain approximately every ten minutes.

Bitcoin Market and Bitcoin Exchanges

In addition to using bitcoin to engage in transactions, investors may purchase and sell bitcoin to speculate as to the value of bitcoin in the bitcoin market, or as a long-term investment to diversify their portfolio. The value of bitcoin within the market is determined, in part, by the supply of and demand for bitcoin in the bitcoin market, market expectations for the adoption of bitcoin by individuals, the number of merchants that accept bitcoin as a form of payment and the volume of private end-user-to-end-user transactions.

Research conducted by Bitwise Index Services indicates that the vast majority of spot trading volume of bitcoin takes place on ten exchanges, although a number of other smaller exchanges exist as well. Bitcoin exchanges operate websites designed to permit investors to open accounts with the exchange and then purchase and sell bitcoin.

As with conventional stock exchanges, an investor opening a trading account must deposit an accepted government-issued currency into their account with the exchange, or a previously acquired digital asset, before they can purchase or sell assets on the exchange. The process of establishing an account with a bitcoin exchange and trading bitcoin is different from the process of users sending bitcoin from one bitcoin address to another bitcoin address to pay for goods and services. This latter process is an activity that occurs wholly within the confines of the Bitcoin network, while the former is an activity that occurs entirely on private websites.

According to the Registration Statement, Bitwise Index Services' research has led it to believe that the bitcoin market has matured significantly in recent years. In particular, Bitwise Index Services believes that arbitrage on bitcoin exchanges (discussed

below) has improved significantly since the introduction of bitcoin futures in December 2017, which fundamentally transformed the bitcoin market by creating a two-sided market and easy hedging for the first time. In addition, subsequent to the introduction of bitcoin futures, in early 2018, a large number of sophisticated market makers entered the bitcoin market, applying large balance sheets and tech-enabled trading platforms that further improved the quality of the market. By summer 2018, most major market makers were either present in the bitcoin market or actively exploring the space. In addition, over the course of 2018, a significant and efficient short lending market in bitcoin developed, with volume growing over the course of the year.

Bitwise Index Services believes that the launch of futures, the arrival of major market makers, and the development of lending combined to dramatically improve the efficiency of the bitcoin market in 2018, creating a dynamic, institutional-quality, two-sided market for the first time. While further developments may be incrementally beneficial to the market, Bitwise Index Services believes that the spot bitcoin market today operates with an efficiency that matches or exceeds that of other major financial markets.

As discussed in more detail below, the Trust will not directly purchase or sell bitcoin. Instead, Authorized Participants will deliver bitcoin to the Trust in exchange for Shares of the Trust, and the Trust will deliver bitcoin to Authorized Participants when those Authorized Participants redeem Shares of the Trust. The Trust will use ten spot exchanges that the Sponsor and Bitwise Index Services believe represent substantially all of the economically significant bitcoin trading volume in the world (outside of capital-

controlled countries) in order to derive the Bitwise Daily Bitcoin Reference Price, which it will then use to price its Net Asset Value (“NAV”) at the end of every business day.

Authorized Participants will have the option of purchasing and selling bitcoin used in Creation Basket transactions with the Trust either on bitcoin exchanges or in the “over-the-counter” (“OTC”) markets. Over-the-counter trading of bitcoin is generally accomplished via bilateral agreements on a principal-to-principal basis. All risks and issues related to creditworthiness are between the parties directly involved in the transaction.

The Structure and Operation of the Trust Was Designed To Protect Investors and Satisfy Commission Requirements for Bitcoin-Based Exchange Traded Products

The Registration Statement and the Sponsor’s submission to the Commission in connection with this filing,¹⁰ seek to explain how the structure and operation of the Trust is designed to protect investors and to respond to the concerns the Commission has raised and the requirements that must be satisfied by any bitcoin-based exchange-traded product set forth in the “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” (the “Winklevoss Order”)¹¹ and the “Staff

¹⁰ See Bitwise Asset Management, Presentation to the U.S. Securities and Exchange Commission, dated March 19, 2019, attached to Memorandum from the Division of Trading and Markets regarding a March 19, 2019 meeting with representatives of Bitwise Asset Management, Inc., NYSE Arca, Inc., and Vedder Price P.C., available at <https://www.sec.gov/comments/sr-nysearca-2019-01/srnysearca201901-5164833-183434.pdf>. This document is referred to in this filing as the “Bitwise Study.”

¹¹ See Securities Exchange Act Release No. 83723 (July 26, 2018), 83 FR 37579 (August 1, 2018) (SR-BatsBZX-2016-30) (Order Setting Aside Action by Delegated Authority and Disapproving a Proposed Rule Change to List and Trade Shares of the Winklevoss Bitcoin Trust).

Letter: Engaging on Fund Innovation and Cryptocurrency-related Holdings” (the “Staff Letter”).¹²

The Commission has outlined two ways that a Rule 19b-4 filing relating to a bitcoin exchange-traded product can satisfy the concerns outlined in the Winklevoss Order and in particular the concerns regarding potential market manipulation of the underlying market. Bitwise believes these Commission concerns are addressed by demonstrating that:

- 1) Unique Resistance: The bitcoin market is uniquely resistant to market manipulation and fraudulent activity; and
- 2) Surveillance Sharing: The listing exchange has entered into a surveillance sharing agreement with a regulated market of significant size in bitcoin or derivatives on bitcoin.

Historically, the existence of a surveilled market has been the primary consideration regarding addressing potential market manipulation, as the Commission stated when discussing its past approval of gold bullion exchange-traded products (“ETPs”) in the Winklevoss Order.¹³

The Sponsor believes that the gold market is substantially similar to the bitcoin market in all respects that are critically important from the perspective of the federal securities laws. That is, the bitcoin market (and the Trust specifically) is uniquely

¹² See letter dated January 18, 2018 from Dalia Blass, Director, Division of Investment Management, Commission, to Paul Schott Stevens, President & CEO Investment Company Institute and Timothy W. Cameron, Asset Management Group – Head, Securities Industry and Financial Markets Association.

¹³ See Winklevoss Order at note 216 and accompanying text.

resistant to manipulation, and there is a significant, regulated and surveilled market for bitcoin futures.

The “Real” Market For Bitcoin

The Sponsor represents that bitcoin is a globally fungible commodity with low transaction costs, near-zero transportation costs that allows nearly instantaneous transportation to any location around the world, and low-to-zero storage costs, as follows:

- Globally Fungible Commodity: A bitcoin is the same anywhere around the world. Unlike wheat, oil or gold, there are no varieties, purities, or geographically specific delivery locations for bitcoin.
- Low Transaction Costs: The median spread for bitcoin traded on Coinbase Pro, a leading bitcoin exchange, in the month of March 2019 was \$0.01, with each bitcoin valued at approximately \$5,000. This makes bitcoin one of the most tightly quoted financial instruments in the world.
- Near-Zero Transportation Costs: Unlike physical commodities, there is virtually no cost to transport bitcoin anywhere in the world, and that transportation can occur nearly instantly.
- Low-To-Zero Storage Costs: Bitcoin can safely be stored with established, regulated third-party custodians at a cost that ranges from 0% to 1.5% a year.

These four factors would, in isolation, suggest that the bitcoin market should be uniquely orderly and efficient, with tight spreads and nearly perfect arbitrage between prices on different exchanges. Unfortunately, in practice, many perceive that the market

for bitcoin as disorderly and inefficient, with many unregulated operators running crypto “exchanges” from unknown domiciles.

Bitwise believes that this perception derives from the fact that leading data aggregators, including those cited by national media organizations like The New York Times, The Wall Street Journal and Barron’s, have reported volume, price and trading data for bitcoin that includes an overwhelming percentage of volume that is fake and/or non-economic in nature. As discussed further below, Bitwise’s research concludes that when fake and/or non-economic data is removed, the remaining or “real” market for bitcoin is significantly smaller, more orderly and more regulated than commonly understood, and that, with that understanding, this filing should squarely address the concerns laid out by the Commission in the Winklevoss Order.

Bitwise’s Analysis of the Reported Market for Bitcoin Trading

Bitwise conducted a thorough, data-driven analysis of the spot market for bitcoin from March 4, 2019 through March 8, 2019.¹⁴ Bitwise analyzed all exchanges reporting more than \$1 million in average daily trading volume for bitcoin-fiat and bitcoin-stablecoin pairs to the popular data aggregator CoinMarketCap.com, which yielded 81 exchanges with approximately \$6 billion in average daily volume. Bitwise deliberately utilized a short time period to both showcase that fake volume is a current problem impacting the bitcoin market and because, in its experience, exchanges change the algorithms driving how they fake volume over time, which obscures the results of certain data-driven analyses over longer periods.

The Bitwise Study analyzed all purportedly significant bitcoin exchanges and

¹⁴ See note 10, supra.

initially found several widespread, superficial indicators of fake or non-economic trading volume. These indicators include the following.

- Perfectly paired buy and sell orders. Bitwise does not believe that actual trading on exchanges generally result in perfectly-consistent alternating buy and sell orders of roughly equal size, but nonetheless exchanges exhibited this pattern in their data.
- Spread sizes. Bitwise does not believe that there ought to be relatively large reported spreads between bid and ask prices exhibited on exchanges that report a large volume of trades in comparison to other bitcoin exchanges with lower reported volume, absent clear economic explanations (tick size, fees, etc.), but exchanges with large amounts of claimed volume showed spreads that were 100X, 1000X or more the size of spreads on certain exchanges with much lower levels of volume.
- Real-World Footprint. Bitwise does not believe that exchanges with large reported amounts of volume would typically exhibit relatively small real-world footprints, including low web traffic, few known employees, minimal social media presence and limited or no fundraising or capitalization information, but it found many exchanges that exhibited these characteristics.
- Unexplained periods of no trading. Bitwise found that certain exchanges with large reported volume nonetheless exhibited multiple hours and days with zero volume that are not correlated

with business hours, volatility, up time, or other factors.

- Monotonic trading volume. Bitwise found that some exchanges reported relatively large amounts of volume in which a roughly identical volume is reported every hour of every day, regardless of price movements, news, waking hours, weekends, or other real-world factors.

Given these indications, Bitwise created a computer program for collecting or “scraping” data across different bitcoin exchanges, which collected and stored both the order book and recent trades for all exchanges reporting significant volume, four times each second. Bitwise analyzed data from these 81 different bitcoin exchanges and concluded, for reasons outlined below, that 95% of heretofore reported volume is either fake or non-economic trading. Bitwise estimates that the real total average daily bitcoin volume is approximately \$273 million, and that this volume is more regulated, more U.S.-focused and more orderly than perceived.

In separating exchanges that have real vs. non-economic transactions, Bitwise considered the following data characteristics:

- Trade Size Histograms. Bitwise’s computer program can produce trade size “histograms” that show the percentage of volume that occur at particular trade sizes over a specified period. Trade size histograms for the exchanges that pass all of its data tests show consistent patterns that reflect trading that Bitwise believes naturally occurs. Such patterns include volume declining as trade size increases and a greater-than-random distribution of volume at

whole bitcoin sizes. These patterns are roughly consistent in size and shape across all ten exchanges that pass all of Bitwise's data tests. Trade size histograms from other exchanges, on the other hand, reflect patterns that were idiosyncratic and often had patterns that were transparently programmatic, such as bell curve-like distributions with no apparent reason for such a clustering of trade sizes, and increasing volume for larger trade sizes rather than the decaying trend mentioned above. Most of these exchanges showed no peaks at whole bitcoin sizes.

- Volume Spike Analysis. Bitwise's computer program can produce charts that show volume "spikes," or periods of significantly increased transaction volume, across any exchange. Because the bitcoin market is a globally integrated market for a fungible good, Bitwise believed a priori that, with some limitations for time zones and holidays, volume on different exchanges would rise and fall concurrently in response to the same events or changes in market conditions.
- This pattern played out as expected among the ten exchanges that passed all data tests and that Bitwise believes constitutes substantially all of the real global spot trading volume for bitcoin, but was noticeably absent among other exchanges, which either had no discernible volume spikes or had patterns that were wholly idiosyncratic and did not repeat on other exchanges.

- Spread Patterning Analysis. The spread on an exchange with real volume will have two key features that Bitwise believes it can identify through a data driven analysis.
- First, Bitwise believes there should be a generally rational relationship between the volume on the exchange and the size of the spread (subject to limitations put in place at the exchange level, including the tick size and any exchange-level fees). In other words, exchanges with high volume should generally have smaller spreads than exchanges with low volume, and in a globally integrated market for a fungible good, those spreads should be competitive with other exchanges. Investors may tolerate a marginally higher spread on a particular exchange due to levels of comfort, design, user experience, regulatory status or other factors, but they are unlikely to trade significantly on exchanges with spreads that are many multiples larger than other available exchanges. In analyzing the data, Bitwise found many exchanges reporting very high levels of volume that nonetheless reported average spreads that were 1,000%-35,000% higher than the spreads reported on other well-established, regulated and well-capitalized exchanges that passed all of Bitwise's data tests.
- Second, as with volume, spreads change over time in reaction to market developments. Bitwise found that many exchanges exhibited spread patterns over time that revealed artificial,

programmatic drivers, including spreads that unnaturally anchor on arbitrary high dollar levels (i.e., Bitwise found examples of exchanges with spreads that would consistently base at a random dollar value (for example, \$10), and sometimes would change that resting mode spread in a step function (for example, going from a \$10 mode spread over multiple days to a \$7.50 mode spread over multiple days without a rational explanation owing to fees or other factors).

As a result of its research, Bitwise believes that, as of March 8, 2019, as stated earlier, the real daily spot volume of the bitcoin market is approximately \$273 million, and not the \$6 billion that is commonly reported. It further believes that this volume is spread across ten exchanges that are located or domiciled in developed markets.

Bitwise believes that this finding is significant and that it leads to the following key conclusions:

- The smaller trade volume is more aligned with *a priori* expectations for bitcoin turnover, and is still sufficiently robust to support liquidity in the Trust, as discussed below.
- The real market for bitcoin appears to be orderly and efficient, with effective arbitrage in place and robust price discovery shared across multiple exchanges, as discussed below.
- The regulated and surveilled bitcoin futures market is much larger in comparison to the spot bitcoin market than is commonly understood, with significant implications, as discussed below.

The Real Market For Bitcoin Is Extremely Efficient, Well-Arbitrated and More Regulated Than Commonly Understood

As described above, Bitwise found that just ten exchanges passed all of its data tests. It believes that these ten exchanges represent substantially all of the real global spot market for bitcoin, and notes that these exchanges are more established, more likely to be located in developed markets, more regulated, and more likely to have sophisticated market surveillance tools in place than the broader set of exchanges reporting significant volume.

Whereas most of the broader set of analyzed exchanges have no known domicile, all ten of the exchanges that passed Bitwise's data tests are domiciled or based in developed markets, including the U.S., the UK, Malta and Japan. Nine of the ten exchanges are regulated by the U.S. Department of Treasury's FinCEN division as Money Services Businesses, and six have a BitLicense from the New York State Department of Financial Services.¹⁵ Finally, five of the ten exchanges have either robust internal (one) or robust third-party (four) market surveillance tools in place to monitor, report and correct for abusive trading behavior.¹⁶

Bitwise acknowledges that the regulatory status of these exchange platforms is not co-extensive to the obligations of and oversight for national securities exchanges or futures exchanges, but notes that these platforms are required to comply with particular

¹⁵ See Exhibit 3, Item 1. As of April 26, 2019, Bitfinex was removed by the Bitwise Crypto Index Committee from the exchanges contributing prices to deriving the Bitwise Daily Bitcoin Reference Price pursuant to the New York Attorney General's claims towards iFinex Inc., operator of Bitfinex. As a result, the exchanges contributing to the Reference Price was reduced from ten to nine.

¹⁶ See Exhibit 3, Item 2.

obligations and types of regulatory compliance that provide business oversight and regulatory compliance requirements.

For instance, the nine exchanges that are regulated by the U.S Department of Treasury's FinCEN division as Money Services Businesses are charged with various responsibilities including:¹⁷

- Identifying people with ownership stakes or controlling roles in the MSB;
- Establishing a formal Anti-Money Laundering (AML) policy in place with documentation, training, independent review, and a named compliance officer;
- Having strict customer identification and verification policies and procedures;
- Filing Suspicious Activity Reports (SARs) for suspicious customer transactions;
- Filing Currency Transaction Reports (CTRs) for cash-in or cash-out transactions greater than \$10,000; and
- Maintaining a five-year record of currency exchanges greater than \$1,000 and money transfers greater than \$3,000.

The six exchanges that are regulated by the New York State Department of Financial Services ("NYDFS") under the BitLicense program have additional obligations,

¹⁷ See BSA Requirements for MSBs, FinCEN web site: <https://www.fincen.gov/bsa-requirements-msbs>.

including the following:¹⁸

- Submission of audited financial statements including income statements, statement of assets/liabilities, insurance, and banking.
- Capitalization requirements set at NYDFS's discretion.
- Full reserves of custodian assets selling/encumbering prohibited.
- Fingerprints and photographs of employees with access to customer funds.
- Qualified Chief Information Security Officer and annual penetration testing/audits.
- Documented business continuity and disaster recovery plan, independently tested annually.
- Independent exam by NYDFS.
- Implementing measures designed to effectively detect, prevent, and respond to fraud, attempted fraud, and similar wrongdoing, including market manipulation, and to monitor, control, investigate and report back to the New York State Department of Financial Services any wrongdoing.¹⁹

An Efficient, Well-Arbitrated Market

The Sponsor believes that, while the bitcoin market is commonly perceived to be disorderly and inefficient, when focused only on the ten exchanges referenced above,

¹⁸ See "New York's Final "BitLicense" Rule: Overview and Changes from July 2014 Proposal," June 5, 2015, Davis Polk, available at https://www.davispolk.com/files/new_yorks_final_bitlicense_rule_overview_changes_july_2014_proposal.pdf.

¹⁹ See "DFS Takes Action to Deter Fraud and Manipulation in Virtual Currency Markets," available at <https://www.dfs.ny.gov/about/press/pr1802071.htm>.

which it believes represent substantially all of the real spot trading volume in bitcoin, the bitcoin market is shown to be extraordinarily efficient, well-arbitrated, resilient and robust.

Bitwise notes that, from January 1, 2018, through March 17, 2019, the price of bitcoin on each of the ten exchanges has traded almost perfectly in-line.²⁰

The Bitwise Study further showed that the average deviation from the aggregate price from the ten exchanges ranged from 0.13% to 0.25% over this time period. It noted that this average deviation is well within the expected arbitrage band between these exchanges; many of these exchanges charge fees of up to 0.30% for trading, and one cannot expect average deviations below these exchanges to be arbitrated away.²¹

In addition, the Bitwise Study showed that the existence of sustained deviations – defined as differences in price greater than 1% that lasted for more than 100 seconds – were extremely rare over the time period studied. In the histogram attached as Exhibit 3, each sustained deviation is marked as a thin white line.²²

In sum, Bitwise believes that the Bitwise Study shows that the real market for bitcoin is extremely efficient and that arbitrage exists between and among the ten exchanges with real volume.

Bitwise further believes, as discussed above, that the efficiency of the market has improved dramatically over the past eighteen months. Bitwise further believes that the market is approaching the practical limit of these improvements, in that prices among different exchanges are nearly perfectly arbitrated, spreads are incredibly tight, and the

²⁰ See Exhibit 3, Item 3.

²¹ See Exhibit 3, Item 4.

²² See Exhibit 3, Item 5.

market is liquid on a twenty four hour/ seven day a week basis.

Protections Against Market Manipulation Specific to the Trust's Design

Bitwise believes that the specific design of the Trust's NAV calculation process, as described below, its exclusive use of in-kind creation/redemptions, and its decision to accrue all fees in bitcoin support its efforts to meet the concerns set forth in the Winklevoss Order.

Net Asset Value

According to the Registration Statement, the Trust's per Share NAV will be calculated by dividing the value of the net assets of the Trust (i.e., the value of its total assets less total liabilities) by the total number of Shares outstanding. The Trust's NAV will be calculated on each trading day on the Exchange. The Trust will compute its NAV as of 4:00 p.m. E.T. The Trust's NAV will be calculated only once each trading day. The Trust's daily NAV may be found at the Trust's web site.

In calculating the NAV, the Trust relies on the Bitwise Daily Bitcoin Reference Price, which is produced once per day at 4:00 p.m. E.T. using the methodology outlined below.

First, Bitwise tracks a universe of over 200 on-line cryptocurrency exchanges that purport to offer trading on bitcoin and other cryptocurrencies. Bitwise eliminates a significant portion of the exchanges based on a number of factors. Those factors include, but are not limited to:

- Eliminating exchanges that are domiciled in emerging market countries;
- Eliminating exchanges domiciled in countries that have capital

controls;

- Eliminating exchanges that lack functioning and stable Application Programming Interfaces (“API”) for the transmission of price and volume data;
- Eliminating exchanges which, in the judgment of Bitwise, have issues with significant downtime, problems with customers withdrawal abilities, or known security issues;
- Eliminating exchanges which, in the judgement of Bitwise, are or may be subject to extraordinary legal or regulatory activity; and
- Eliminating exchanges that do not have at least \$1 million in average daily trading volume for bitcoin-fiat or bitcoin-stablecoin trading pairs over the past calendar quarter.²³

In addition, on no less than a quarterly basis, the Bitwise Crypto Index Committee (the “Committee”) reviews the actual published trading data of all exchanges that pass the above-mentioned screens. This further analysis includes bid/ask spreads, actual claimed executed trades with price and volume, and any other factors the Committee deems relevant. Exchanges that show persistent signs of artificial or inflated volume may be removed from the list of exchanges contributing prices to the Bitwise Daily Bitcoin Reference Price and the Bitwise Real-Time Bitcoin Price (the Bitwise Daily Bitcoin Reference Price, or “Bitcoin Price,” is published once daily based on the procedures

²³ The volume requirement described in the last bullet in the list above may be waived by Bitwise Index Services for otherwise qualified exchanges if they are in fact being currently used to price publicly-listed cryptocurrency investment products such as futures contracts, non-U.S. exchange-traded funds and non-U.S. exchange-traded notes.

described herein and used for NAV calculation purposes, while the “Bitwise Real-Time Bitcoin Price” is published continuously for indicative purposes).

As a result of this screening process, Bitwise’s list of exchanges currently used to price the Bitwise Daily Bitcoin Reference Price narrows from over 200 considered exchanges down to ten.²⁴ Bitwise believes that these exchanges currently account for substantially all of the real, spot global volume of bitcoin traded on exchanges with economic intent, excluding capital-controlled countries, although both the number of exchanges and the percentage of global volume they represent is subject to change over time.

The Bitwise Daily Bitcoin Reference Price relies on the prices and volume reported on these ten exchanges. To calculate the price, Bitwise examines six five-minute periods leading up to 4:00 p.m. E.T. It then calculates an equal-weighted average of the volume-weighted median price of these six five-minute periods.²⁵

The Sponsor believes these procedures are designed to protect the Bitwise Daily Bitcoin Reference Price and therefore the Trust’s NAV from potential attempts at manipulation. Specifically, the Sponsor believes that using six consecutive five-minute segments over a thirty-minute period means malicious actors would need to sustain efforts to manipulate the market over an extended period of time, or would need to replicate efforts multiple times, potentially triggering review by exchange trading platforms, market participants, and regulators.

In addition, the use of a median price eliminates the ability of outlier prices to

²⁴ See note 15, supra.

²⁵ See Exhibit 3, Item 6.

impact the NAV, as it systematically excludes those prices from the NAV calculation.²⁶

The use of a volume-weighted median (as opposed to a traditional median) protects against attempts to manipulate the NAV by executing a large number of low-dollar trades, because, any manipulation attempt would have to involve a majority of global spot bitcoin volume in a five-minute window to have any influence on the NAV.²⁷

The use of ten exchanges²⁸ representing substantially all of the real global spot volume for bitcoin also mitigates against idiosyncratic exchange risk, as the failure of any individual exchange will not materially impact pricing for the Trust. It also allows the Administrator to calculate the NAV in a manner that significantly deters manipulation. The fact that there are multiple exchanges contributing prices to the NAV also makes manipulation more difficult in a well-arbitrated and fractured market, as a malicious actor would need to manipulate multiple exchanges simultaneously or dramatically skew the historical distribution of volume between the various exchanges in order to impact the NAV. Capturing substantially all of the spot trading in bitcoin further increases the difficulty, since significantly more capital would be required in any attempt to influence the NAV and attempts to profit from that manipulation would be difficult.

Bitwise notes that the methodology for the Bitwise Daily Bitcoin Reference Price is similar in many respects to the CME CF Bitcoin Reference Rate, which is the rate at which the CME bitcoin futures settle.²⁹

²⁶ See Exhibit 3, Item 7.

²⁷ See Exhibit 3, Item 8.

²⁸ See note 15, supra.

²⁹ Bitwise notes that a detailed analysis on how a volume-weighted median pricing approach both theoretically and empirically protects against potential manipulation is available in the paper “Analysis of the CME CF Bitcoin

Indicative Fund Value

In order to provide updated information relating to the Trust for use by investors, market professionals and other market data vendors, the Exchange will calculate an updated “Intraday Indicative Value” (“IIV”). The IIV will be calculated by using the prior day’s closing net assets of the Trust as a base and updated throughout the Exchange’s Core Trading Session of 9:30 a.m. E.T. to 4:00 p.m. E.T. to reflect changes in the most recently reported price level of the Bitwise Real-Time Bitcoin Price, as reported by Bloomberg, L.P. or another reporting service.

As stated, the Bitwise Real-Time Bitcoin Price is calculated from the same exchanges as the Bitwise Daily Bitcoin Reference Rate, and also uses a volume-weighted median price methodology. Instead of equally weighting prices captured over six five-minute periods, however, the Bitwise Real-Time Bitcoin Price uses only the last trade on each exchange, and uses the trailing 30-minute volume on those exchanges as the weighting factor.

The IIV will be disseminated on a per Share basis every 15 seconds during the Exchange’s Core Trading Session and will be widely disseminated by one or more major market data vendors during the NYSE Arca Core Trading Session.

Creation and Redemption of Shares

According to the Registration Statement, the Trust intends to create and redeem Shares in one or more Creation Baskets. A Creation Basket is a block of 25,000 Shares of the Trust. Except when aggregated in Creation Units, the Shares are not redeemable

Reference Rate and CME CF Bitcoin Real Time Index” by Andrew Paine and William J. Knottenbelt of the Imperial College Centre for Cryptocurrency Research and Engineering, November 14, 2016.

securities.

Only Authorized Participants may purchase and redeem Creation Baskets.

Authorized Participants must be (1) registered broker-dealers or other securities market participants, such as banks and other financial institutions, that are not required to register as broker-dealers to engage in securities transactions described below, and (2) the Depository Trust Company (“DTC”) Participants. An Authorized Participant is an entity that has entered into an Authorized Participant Agreement with the Trust and the Sponsor.

Creation Procedures

On any business day, an Authorized Participant may place an order with the Marketing Agent to create one or more Creation Baskets. For purposes of processing both purchase and redemption orders, a “business day” means any day other than a day when the Exchange or the New York Stock Exchange is closed for regular trading.

All creation baskets are processed in-kind. By placing a purchase order, an Authorized Participant agrees to deposit bitcoin with the Trust. Prior to the delivery of baskets for a purchase order, the Authorized Participant must also have wired to the custodian the nonrefundable transaction fee due for the purchase order. Authorized Participants may not withdraw a creation request. If an Authorized Participant fails to consummate the foregoing, the order shall be cancelled.

Redemption Procedures

According to the Registration Statement, the procedures by which an Authorized Participant can redeem one or more baskets mirror the procedures for the creation of creation baskets. On any business day, an Authorized Participant may place an order

with the Marketing Agent to redeem one or more baskets. A redemption order so received will be effective on the date it is received in satisfactory form by the Marketing Agent (“Redemption Order Date”). The redemption procedures allow Authorized Participants to redeem baskets and do not entitle an individual shareholder to redeem any shares in an amount less than a Creation Basket, or to redeem baskets other than through an Authorized Participant.

By placing a redemption order, an Authorized Participant agrees to deliver the baskets to be redeemed through DTC’s book-entry system to the Trust not later than noon E.T. on the second business day following the effective date of the redemption order. Prior to the delivery of the redemption distribution for a redemption order, the Authorized Participant must also have wired to the Sponsor’s account at the custodian the non-refundable transaction fee due for the redemption order. An Authorized Participant may not withdraw a redemption order.

All redemption orders are processed in-kind. By placing a redemption order, an Authorized Participant agrees to receive bitcoin.

The manner by which redemptions are made is dictated by the terms of the Authorized Participant Agreement. If an Authorized Participant fails to consummate the foregoing, the order shall be cancelled.

Determination of Redemption Distribution

The redemption distribution from the Trust will consist of a transfer to the redeeming Authorized Participant of an amount of bitcoin that is in the same proportion to the total assets of the Trust (net of estimated accrued but unpaid fees, expenses and other liabilities) on the date the order to redeem is properly received as the number of

shares to be redeemed under the redemption order is in proportion to the total number of shares outstanding on the date the order is received. The Sponsor, directly or in consultation with the Administrator, determines the requirements for bitcoin that may be included in distributions to redeem baskets. The Marketing Agent will publish an estimate of the redemption distribution per basket as of the beginning of each business day.

Fee Accrual

The Sponsor proposes to accrue all fees in bitcoin.

The Impact of the Exclusive Use of In-Kind Creations, Redemptions and Fee Accruals

Bitwise believes that the exclusive use of in-kind creations, redemptions and fee accruals, in all situations except when the Trust is required to liquidate, provides long-term investors in the Trust with significant, redundant and strong protection against attempts to manipulate the price of bitcoin in such a way as to impact the Bitwise Daily Bitcoin Reference Rate and therefore the NAV of the Trust.

That is because, while Bitwise believes that the NAV will accurately reflect the globally integrated price for bitcoin, and that that price is uniquely resistant to market manipulation, and acknowledges that this is important, it gains additional comfort that long-term investors in the Trust are protected from short-term attempts to manipulate that NAV by the Trust's exclusive use of in-kind creations, redemptions and fee accruals, because denominating those transactions exclusively in bitcoin ensures that the Trust maintains the appropriate amount of bitcoin-per-Share in all scenarios, even if the NAV or the Bitwise Daily Bitcoin Reference Price were somehow to be manipulated.

How The Trust Meets Standards in the Winklevoss Order

The preceding information, both about the real nature of the bitcoin market and the structure of the Trust, informs the means by which Bitwise believes that the Trust meets the concerns and conditions set forth in the Winklevoss Order.

Regarding the first condition – namely, showing that the bitcoin market is uniquely resistant to manipulation -- Bitwise believes that the digital nature of bitcoin makes it unique compared to other commodities in three important ways, which combine to provide unique protections against attempts to manipulate the market:

1. Fungibility: As mentioned, unlike other commodities (like oil, wheat or even gold), as mentioned, there are no varieties, purities or geographical delivery locations for a bitcoin.
2. Transportability: Bitcoin has no physical manifestation. As a result, it can be instantly transported from one location to another, anywhere in the world, at a cost approaching zero.
3. Exchange Tradability: Most commodities trade over-the-counter or rely on representative, derivative futures contracts because they lack the characteristics listed above. Bitcoin is unique in that the commodity itself trades directly on exchange, allowing for open price discovery.

These unique features allow the bitcoin market to be uniquely resistant to market manipulation in critical ways.

For example, Bitwise believes that the fact that bitcoin's price is set on the open market makes it uniquely resistant to manipulation compared to other commodities

whose price is set by coordinated fix pricing. The Bitwise Study notes that many of the largest recent market manipulation scandals have been driven by coordinated fix pricing, including those related to London Interbank Offered Rate (LIBOR) (2012), Global Forex (2013), Gold Fix (2014), and the Australian Bank Bill Swap Rate (ASIC) (2016), among others. Bitwise believes that the fact that the bitcoin market engages in price discovery in an open, transparent and online setting introduces certain risks that must be considered and controlled through the careful design of the Trust, but notes that these risks can be weighed against the benefits that accrue to the public, transparent and open nature of that price discovery.

The Bitwise Study and related research also show that the fact that bitcoin uniquely has no physical delivery location renders it immune to another common form of attempted and successful commodity market manipulation. For instance, in May 2011, the U.S. Commodity Futures Trading Commission filed suit against three American and international trading firms for attempting to manipulate the price of oil by cornering or partially cornering the market for oil storage in Cushing, Oklahoma.³⁰ Cushing is the delivery point for the popular NYMEX WTI Crude Oil futures contract, the most liquid crude oil futures contract in the world, which is widely seen as the benchmark price for WTI crude oil in the U.S. While the price of the WTI contract is used as a proxy for the price of all WTI crude, just 5%-10% of U.S. crude oil storage is available in Cushing. This disconnect between the size of the storage market for the reference price contract and the much larger real market for WTI crude oil creates an opportunity for individuals

³⁰ See “U.S. Suit Sees Manipulation of Oil Trades” by Graham Bowley, May 24, 2011, *The New York Times*, available at <https://www.nytimes.com/2011/05/25/business/global/25oil.html?ref=todayspaper>

and firms to attempt to profit from artificially manipulating the relatively small market for crude oil storage while holding broader positions in the underlying physical commodity. Because bitcoin itself trades on exchanges and does so at a globally integrated price, these types of attempts at market manipulation are not possible, because there is no narrowly constructed representative price with a physical storage limitation that can be manipulated.

Other factors further contribute to the unique resistance to market manipulation that exists in the bitcoin market. For instance, as described above, the fact that bitcoin is fungible and transportable means that bitcoin trades at a single price on real exchanges around the world, and that extremely effective arbitrage is in place between those exchanges. Because there is a single global price for bitcoin, any attempt to manipulate the market must involve a non-trivial amount of the total global liquidity, which makes it more difficult to achieve and significantly more risky to attempt.

In addition, the fact that bitcoin itself (and not some derivative of it) is traded on exchanges means profiting from any such market manipulation would be difficult. The Trust's NAV captures substantially all of the spot bitcoin trading volume in the world, and the Trust's NAV is designed in a volume-weighted way, meaning attempts to manipulate must involve a majority of trading volume over a significant period of time.

Further, Bitwise believes that the fact that bitcoin is fungible and transportable has allowed a distributed market to emerge, which provides unique resistance to market manipulation given the factors identified above. Bitwise's research notes that no single exchange represents the majority of real trading volume on the bitcoin market, and that volume is spread amongst ten different exchanges. This contributes to bitcoin's unique

resistance to market manipulation, as any attempt to manipulate the market must either be coordinated synchronously across multiple exchanges or must involve a significant spike of volume on a single exchange (an action that would trigger review in the Trust's NAV process). Bitwise notes that there is a carefully designed lag between the strike time of the NAV (4:00 p.m. E.T.) and the time that the NAV is distributed (approximately 5:30 p.m. E.T.), which allows time for Bitwise Index Services to review contributed prices in both an algorithmic and manual way to ensure that no anomalous behavior exists.

Bitwise further believes that the unique design of the Bitwise Daily Bitcoin Reference Rate, and, therefore, the NAV -- as well as the Trust's exclusive use of in-kind creations and redemptions, and its decision to accrue all fees in bitcoin -- provide additional unique resistance to any short-term attempts at market manipulation for the reasons described above.

A Significant, Regulated and Surveilled Market Exists and Is Closely Connected with Spot Market for Bitcoin

In the Winklevoss Order, the Commission laid out both the need for and the definition of a surveilled market of significant size. Specifically, the Commission explained that:

[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—whether gold, silver, platinum, palladium, or copper — and the ETP listing exchange has entered into surveillance-sharing agreements with, or held Intermarket Surveillance Group membership in common with, that market.³¹

³¹ Winklevoss Order at note 209 and accompanying text.

Further, the Commission stated that the Commission interprets terms “significant market” and “market of significant size” to 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 the ETP listing market 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.³²

Bitwise believes that, in light of a better understanding of the true size of the spot bitcoin market, the combined CME/CFE futures market represents a large, surveilled and regulated market, as required above. Over the time period covered in the Bitcoin Study, the average daily volume of the bitcoin futures market was \$91 million. While this appears tiny in relation to the reported volume of \$6 billion, it is meaningful in relation to the actual volume of \$273 million.³³

In addition, the CME futures market is larger than all but one spot bitcoin exchange and nearly as large as the largest bitcoin exchange.³⁴

The Bitwise Study found that the prices on the CME and CFE futures markets are closely aligned with the Bitwise Daily Bitcoin Reference Price on a once-a-day basis, and with the Bitwise Real-Time Bitcoin Price on an intraday basis. This follows logically, given that the CME futures settlement price is based on prices pulled from four of the ten exchanges that contribute to the Bitwise Daily Bitcoin Reference Price and the Bitwise

³² Winklevoss Order, 83 FR at 37594.

³³ See Exhibit 3, Item 9.

³⁴ See Exhibit 3, Item 10.

Real-Time Bitcoin Rate, and the CFE futures settlement price is based on prices pulled from one of the ten exchanges that contribute to the Bitwise Daily Bitcoin Reference Price and the Bitwise Real-Time Bitcoin Rate. The tightness-of-fit between the two prices is limited by the term structure of the futures contract and the asymmetric cost of hedging a futures position – it is less expensive to hedge a short position in bitcoin futures than it is to hedge a long position in bitcoin futures. Nonetheless, the connection between the two prices is strong and arbitrage exists between the two prices.

Given the significant size of the CME and CFE futures markets (or the CME futures market in isolation), and the close relationship in prices between the derivatives market and the spot market, there is a reasonable likelihood that a person attempting to manipulate the ETP would also have to trade on that market to successfully manipulate the ETP, since arbitrage between the derivative and spot markets would tend to counter an attempt to manipulate the spot market alone. As a result, the Exchange’s ability to obtain information regarding trading in the Shares and futures from markets and other entities that are members of the Intermarket Trading Group (“ISG”), which includes the CME and CFE, would assist the ETP listing market in detecting and deterring misconduct.

Impact on the Spot Market For Bitcoin

In the Winklevoss Order, the Commission noted that it wanted to see a market where “it is unlikely that trading in the ETP would be the predominant influence on prices in that market”.³⁵ While future inflows to the proposed Trust cannot be predicted, to provide comparable data, Bitwise examined total net inflows in the first year of

³⁵ See Winklevoss Order, 83 FR at 37594.

existence for two types of ETPs: Commodity ETPs that were first to market in the U.S. and blockchain ETFs. Bitwise found that one year net inflows ranged from \$2 million to approximately \$3 billion for the ETPs meeting that definition.³⁶

Given the size of these inflows versus the size of the real bitcoin market (\$273 million in average daily volume), Bitwise believes that it is unlikely that trading in the ETP would become the predominant influence on prices in that market

Conclusion Regarding Standards in the Winklevoss Order

In summary, the Commission articulated two ways that a proposed bitcoin ETP could meet the standards set forth in the Winklevoss Order. The Commission explained that the proposed ETP must show either that the underlying market for bitcoin is uniquely resistant to market manipulation, and/or that a surveilled derivatives market of significant size existed alongside that market. Bitwise believes that the information presented above attempts to address those concerns, showing both the ways in which the bitcoin market (as the first digital commodity) is uniquely resistant to market manipulation, and that the CME and CFE are large, surveilled and regulated markets that fulfill the requirements for surveillance sharing. Bitwise further believes that the careful construction of the Bitwise Daily Bitcoin Reference Price (and the Bitwise Real-Time Bitcoin Price), and thereby the NAV (and IIV), the decision to process all creations and redemptions in-kind, and the decision to accrue all fees in-kind, provide additional protections against attempts to manipulate the spot market for bitcoin.

Availability of Information Regarding Bitcoin

The NAV for the Trust's Shares will be disseminated daily to all market

³⁶ See Exhibit 3, Item 11.

participants at the same time.

Quotation and last-sale information regarding the Shares will be disseminated through the facilities of the CTA. The IIV will be available through online information services.

In addition, the Trust's website will display the applicable end of day closing NAV. The daily holdings of the Trust will be available on the Trust's website before 9:30 a.m. E.T. The Trust's total portfolio composition will be disclosed each business day that NYSE Arca is open for trading, on the Trust's website. The Trust's website will also include a form of the prospectus for the Trust that may be downloaded. The website will include the Shares' ticker and CUSIP information, along with additional quantitative information updated on a daily basis for the Trust. The Trust's website will include (1) the prior business day's trading volume, the prior business day's reported NAV and closing price, and a calculation of the premium and discount of the closing price or mid-point of the bid/ask spread at the time of NAV calculation ("Bid/Ask Price") against the NAV; and (2) data in chart format displaying the frequency distribution of discounts and premiums of the daily closing price or Bid/Ask Price against the NAV, within appropriate ranges, for at least each of the four previous calendar quarters. The Trust's website will be publicly available prior to the public offering of Shares and accessible at no charge.

The spot price of bitcoin as reflected in the Bitwise Daily Bitcoin Reference Price will also be available on a 24-hour basis from the Trust's website.

Trading Halts

With respect to trading halts, the Exchange may consider all relevant factors in

exercising its discretion to halt or suspend trading in the Shares of the Trust.³⁷ Trading in Shares of the Trust will be halted if the circuit breaker parameters in NYSE Arca Rule 7.12-E have been reached. Trading also may be halted because of market conditions or for reasons that, in the view of the Exchange, make trading in the Shares inadvisable.

The Exchange may halt trading during the day in which an interruption to the dissemination of the IIV occurs.³⁸ If the interruption to the dissemination of the IIV or the value of the Index persists past the trading day in which it occurred, the Exchange will halt trading no later than the beginning of the trading day following the interruption. In addition, if the Exchange becomes aware that the NAV with respect to the Shares is not disseminated to all market participants at the same time, it will halt trading in the Shares until such time as the NAV is available to all market participants.

Trading Rules

The Exchange deems the Shares to be equity securities, thus rendering trading in the Shares subject to the Exchange's existing rules governing the trading of equity securities. Shares will trade on the NYSE Arca Marketplace from 4 a.m. to 8 p.m. E.T. in accordance with NYSE Arca Rule 7.34-E (Early, Core, and Late Trading Sessions). The Exchange has appropriate rules to facilitate transactions in the Shares during all trading sessions. As provided in NYSE Arca Rule 7.6-E, the minimum price variation ("MPV") for quoting and entry of orders in equity securities traded on the NYSE Arca Marketplace is \$0.01, with the exception of securities that are priced less than \$1.00 for which the MPV for order entry is \$0.0001.

³⁷ See NYSE Arca Rule 7.12-E.

³⁸ A limit up/limit down condition in the futures market would not be considered an interruption requiring the Trust to be halted.

Further, NYSE Arca Rule 8.201-E sets forth certain restrictions on Equity Trading Permit Holders acting as registered Market Makers in the Shares to facilitate surveillance. Under NYSE Arca Rule 8.201-E(g), an Equity Trading Permit Holder acting as a registered Market Maker in the Shares is required to provide the Exchange with information relating to its trading in the underlying commodity, related futures or options on futures, or any other related derivatives. Commentary .04 of NYSE Arca Rule 11.3-E requires an Equity Trading Permit Holder acting as a registered Market Maker, and its affiliates, in the Shares to establish, maintain and enforce written policies and procedures reasonably designed to prevent the misuse of any material nonpublic information with respect to such products, any components of the related products, any physical asset or commodity underlying the product, applicable currencies, underlying indexes, related futures or options on futures, and any related derivative instruments (including the Shares).

As a general matter, the Exchange has regulatory jurisdiction over its Equity Trading Permit Holders and their associated persons, which include any person or entity controlling an Equity Trading Permit Holder. A subsidiary or affiliate of an Equity Trading Permit Holder that does business only in commodities or futures contracts would not be subject to Exchange jurisdiction, but the Exchange could obtain information regarding the activities of such subsidiary or affiliate through surveillance sharing agreements with regulatory organizations of which such subsidiary or affiliate is a member.

Surveillance

The Exchange represents that trading in the Shares of the Trust will be subject to

the existing trading surveillances administered by the Exchange, as well as cross-market surveillances administered by FINRA on behalf of the Exchange, which are designed to detect violations of Exchange rules and applicable federal securities laws.³⁹ The Exchange represents that these procedures are adequate to properly monitor Exchange trading of the Shares in all trading sessions and to deter and detect violations of Exchange rules and federal securities laws applicable to trading on the Exchange.

The surveillances referred to above generally focus on detecting securities trading outside their normal patterns, which could be indicative of manipulative or other violative activity. When such situations are detected, surveillance analysis follows and investigations are opened, where appropriate, to review the behavior of all relevant parties for all relevant trading violations.

The Exchange or FINRA, on behalf of the Exchange, or both, will communicate as needed regarding trading in the Shares and bitcoin futures with other markets and other entities that are members of the ISG, and the Exchange or FINRA, on behalf of the Exchange, or both, may obtain trading information regarding trading in the Shares and bitcoin futures from such markets and other entities. In addition, the Exchange may obtain information regarding trading in the Shares from markets and other entities that are members of ISG (including the CME and CFE) or with which the Exchange has in place a comprehensive surveillance sharing agreement (“CSSA”).⁴⁰

³⁹ FINRA conducts cross-market surveillances on behalf of the Exchange pursuant to a regulatory services agreement. The Exchange is responsible for FINRA’s performance under this regulatory services agreement.

⁴⁰ For a list of the current members of ISG, see www.isgportal.org. The Exchange notes that not all components of the Trust may trade on markets that are members of ISG or with which the Exchange has in place a CSSA.

Also, pursuant to NYSE Arca Rule 8.201-E(g), the Exchange is able to obtain information regarding trading in the Shares and the underlying bitcoin through ETP Holders acting as registered “Market Makers”, in connection with such ETP Holders’ proprietary or customer trades through ETP Holders which they effect on any relevant market.

In addition, the Exchange also has a general policy prohibiting the distribution of material, non-public information by its employees.

All statements and representations made in this filing regarding (a) the description of the portfolios of the Trust or the Bitwise Daily Bitcoin Reference Price, (b) limitations on portfolio holdings, reference assets or the Bitwise Daily Bitcoin Reference Price, or (c) the applicability of Exchange listing rules specified in this rule filing shall constitute continued listing requirements for listing the Shares on the Exchange.

The issuer has represented to the Exchange that it will advise the Exchange of any failure by the Trust to comply with the continued listing requirements, and, pursuant to its obligations under Section 19(g)(1) of the Act, the Exchange will monitor for compliance with the continued listing requirements. If the Trust is not in compliance with the applicable listing requirements, the Exchange will commence delisting procedures under NYSE Arca Rule 5.5-E(m).

Information Bulletin

Prior to the commencement of trading, the Exchange will inform its ETP Holders in an Information Bulletin of the special characteristics and risks associated with trading the Shares. Specifically, the Information Bulletin will discuss the following: (1) the risks involved in trading the Shares during the Early and Late Trading Sessions when an

updated IIV will not be calculated or publicly disseminated; (2) the procedures for purchases and redemptions of Shares in Creation Units (and that Shares are not individually redeemable); (3) NYSE Arca Rule 9.2-E(a), which imposes a duty of due diligence on its ETP Holders to learn the essential facts relating to every customer prior to trading the Shares; (4) how information regarding the IIV is disseminated; (5) how information regarding portfolio holdings is disseminated; (6) the requirement that ETP Holders deliver a prospectus to investors purchasing newly issued Shares prior to or concurrently with the confirmation of a transaction; (7) trading information; and (8) NYSE Arca suitability rules.

The Information Bulletin will also discuss any exemptive, no-action, and interpretive relief granted by the Commission from any rules under the Act. In addition, the Information Bulletin will reference that the Trust is subject to various fees and expenses described in the Registration Statement.

The Information Bulletin will also disclose the trading hours of the Shares that the NAV for the Shares will be calculated after 4:00 p.m. E.T. each trading day. The Information Bulletin will disclose that information about the Shares will be publicly available on the Trust's website.

2. Statutory Basis

The basis under the Act for this proposed rule change is the requirement under Section 6(b)(5)⁴¹ that an exchange have rules that are designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to remove impediments to, and perfect the mechanism of a free and open market and, in

⁴¹ 15 U.S.C. 78f(b)(5).

general, to protect investors and the public interest.

The Exchange believes that the proposed rule change is designed to prevent fraudulent and manipulative acts and practices and to protect investors and the public interest in that the Shares will be listed and traded on the Exchange pursuant to the initial and continued listing criteria in NYSE Arca Rule 8.201-E. As discussed above, bitcoin trades in a well-arbitrated and distributed market that is significantly smaller, more orderly, and more regulated than commonly reported. As a result, as discussed above, any attempts at manipulation must involve a large share of global bitcoin volume, which would be substantially difficult to achieve. Accordingly, the notional size of the regulated, surveilled CME and CFE bitcoin futures markets (or even the CME market in isolation) is larger than all but one of the ten spot bitcoin exchanges, and is nearly as big as the largest exchange. In addition, prices on the CME and CFE futures markets are closely related to prices on the bitcoin spot market, and arbitrage between those prices is well-established. Given the significant size of the CME and CFE futures market, and the close relationship in prices between the derivatives market and the spot market, there is a reasonable likelihood that a person attempting to manipulate the ETP would also have to trade on that market to successfully manipulate the ETP, since arbitrage between the derivative and spot markets would tend to counter an attempt to manipulate the spot market alone. As a result, the fact that the CME and CFE are ISG members would assist the Exchange in detecting and deterring misconduct.⁴²

The Exchange has in place surveillance procedures that are adequate to properly monitor trading in the Shares in all trading sessions and to deter and detect violations of

⁴² See note 10, *supra*.

Exchange rules and applicable federal securities laws. The Exchange or FINRA, on behalf of the Exchange, or both, will communicate as needed regarding trading in the Shares and bitcoin futures with other markets and other entities that are members of the ISG, and the Exchange or FINRA, on behalf of the Exchange, or both, may obtain trading information regarding trading in the Shares from such markets and other entities. In addition, the Exchange may obtain information regarding trading in the Shares from markets and other entities that are members of ISG or with which the Exchange has in place a CSSA. The Exchange is also able to obtain information regarding trading in the Shares and bitcoin futures or the underlying bitcoin through ETP Holders, in connection with such ETP Holders' proprietary or customer trades which they effect through ETP Holders on any relevant market.

Quotation and last-sale information regarding the Shares will be disseminated through the facilities of the CTA. The Trust's website will also include a form of the prospectus for the Trust that may be downloaded. The website will include the Shares' ticker and CUSIP information, along with additional quantitative information updated on a daily basis for the Trust. The Trust's website will include (1) daily trading volume, the prior business day's reported NAV and closing price, and a calculation of the premium and discount of the closing price or mid-point of the Bid/Ask Price against the NAV; and (2) data in chart format displaying the frequency distribution of discounts and premiums of the daily closing price or Bid/Ask Price against the NAV, within appropriate ranges, for at least each of the four previous calendar quarters. The Trust's website will be publicly available prior to the public offering of Shares and accessible at no charge.

Moreover, prior to the commencement of trading, the Exchange will inform its ETP Holders in an Information Bulletin of the special characteristics and risks associated with trading the Shares. The Information Bulletin will also discuss any exemptive, no-action, and interpretive relief granted by the Commission from any rules under the Act. In addition, the Information Bulletin will reference that the Trust is subject to various fees and expenses described in the Registration Statement. The Information Bulletin will also disclose the trading hours of the Shares and that the NAV for the Shares will be calculated after 4:00 p.m. E.T. each trading day. The Information Bulletin will disclose that information about the Shares will be publicly available on the Trust's website.

Trading in Shares of the Trust will be halted if the circuit breaker parameters in NYSE Arca Rule 7.12-E have been reached or because of market conditions or for reasons that, in the view of the Exchange, make trading in the Shares inadvisable.

The proposed rule change is designed to perfect the mechanism of a free and open market and, in general, to protect investors and the public interest in that it will facilitate the listing and trading of a new type of exchange-traded product based on the price of bitcoin that will enhance competition among market participants, to the benefit of investors and the marketplace. As noted above, the Exchange has in place surveillance procedures that are adequate to properly monitor trading in the Shares in all trading sessions and to deter and detect violations of Exchange rules and applicable federal securities laws.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purpose

of the Act. The Exchange notes that the proposed rule change will facilitate the listing and trading of a new type of Commodity-Based Trust Share based on the price of bitcoin that will enhance competition among market participants, to the benefit of investors and the marketplace.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received from Members, Participants, or Others

No written comments were solicited or received with respect to the proposed rule change.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Within 45 days of the date of publication of this notice in the Federal Register or up to 90 days (i) as the Commission may designate if it finds such longer period to be appropriate and publishes its reasons for so finding or (ii) as to which the self-regulatory organization consents, the Commission will:

- (A) by order approve or disapprove the proposed rule change, or
- (B) institute proceedings to determine whether the proposed rule change should be disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic comments:

- Use the Commission's Internet comment form (<http://www.sec.gov/rules/sro.shtml>); or

- Send an e-mail to rule-comments@sec.gov. Please include File Number SR-NYSEARCA-2019-01 on the subject line.

Paper comments:

- Send paper comments in triplicate to: Secretary, Securities and Exchange Commission, 100 F Street, NE, Washington, DC 20549-1090.

All submissions should refer to File Number SR-NYSEARCA-2019-01. This file number should be included on the subject line if e-mail is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet website (<http://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street, NE, Washington, DC 20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change. Persons submitting comments are cautioned that we do not redact or edit personal identifying information from comment submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR-NYSEARCA-2019-01 and should be submitted on or before [insert date 21 days from publication in the Federal Register].

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.⁴³

Eduardo A. Aleman
Deputy Secretary

⁴³ 17 CFR 200.30-3(a)(12).

Exchange	MSB	BitLicense
Binance		
Bitfinex	X	
bitFlyer	X	X
Bitstamp	X	X
Bittrex	X	
Coinbase Pro	X	X
Gemini	X	X
itBit	X	X
Kraken	X	
Poloniex	X	X

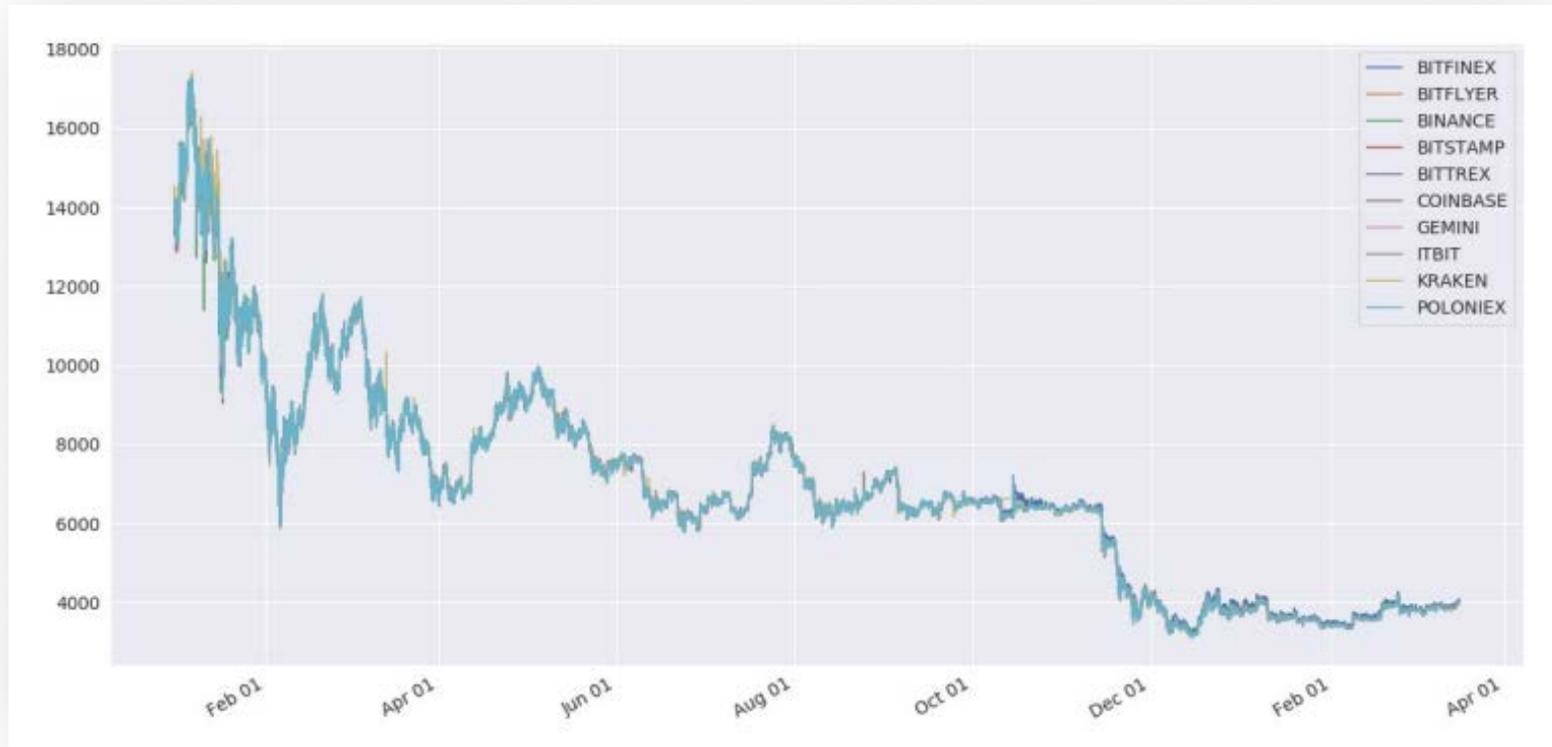
As of April 26, 2019, Bitfinex was removed by the Bitwise Crypto Index Committee from the exchanges contributing prices to deriving the Bitwise Daily Bitcoin Reference Price pursuant to the New York Attorney General's claims towards iFinex Inc., operator of Bitfinex.

Exchange	Market Surveillance Tools	Since
Binance	N/A	N/A
Bitfinex	Irisium Market Surveillance	Mar 13, 2018
bitFlyer	N/A	N/A
Bitstamp	Irisium Market Surveillance	Nov 28, 2018
Bittrex	N/A	N/A
Coinbase Pro	Internal, "Coinbase Trade Surveillance Program" led by Peter Elkins, former head of market surveillance at NYSE	July 4, 2018
Gemini	Nasdaq SMARTS	April 25, 2018
itBit	N/A	N/A
Kraken	N/A	N/A
Poloniex	NICE Actimize	Feb 27, 2019

As of April 26, 2019, Bitfinex was removed by the Bitwise Crypto Index Committee from the exchanges contributing prices to deriving the Bitwise Daily Bitcoin Reference Price pursuant to the New York Attorney General's claims towards iFinex Inc., operator of Bitfinex.

Item 3 From Slide 67 Of The Bitwise Presentation To The SEC Staff

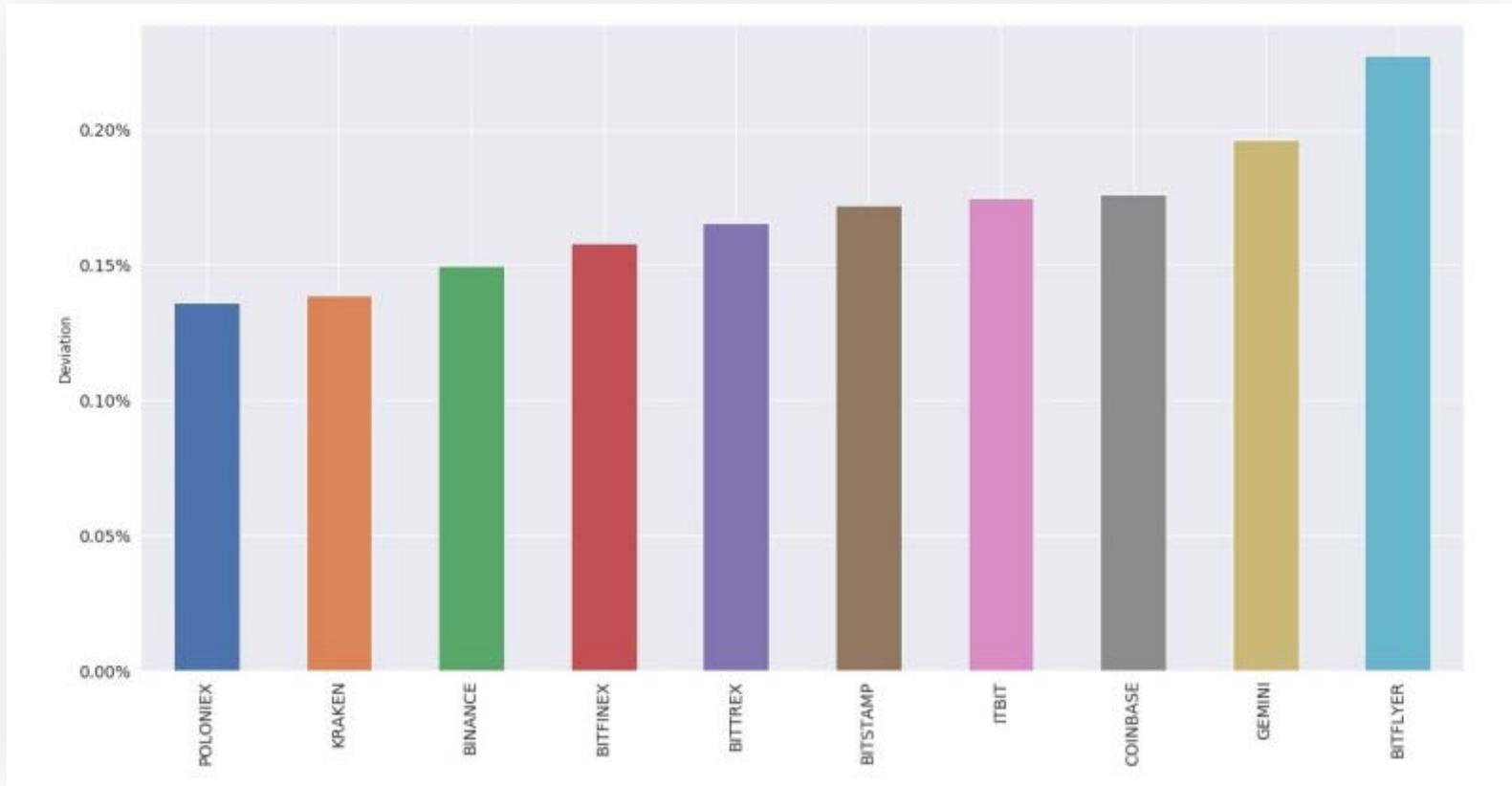
EXHIBIT 3



Price of Bitcoin on the 10 Exchanges. Source: Kaiko. Data from 1/1/18 – 3/17/19.

Item 4 From Slide 68 Of The Bitwise Presentation To The SEC Staff

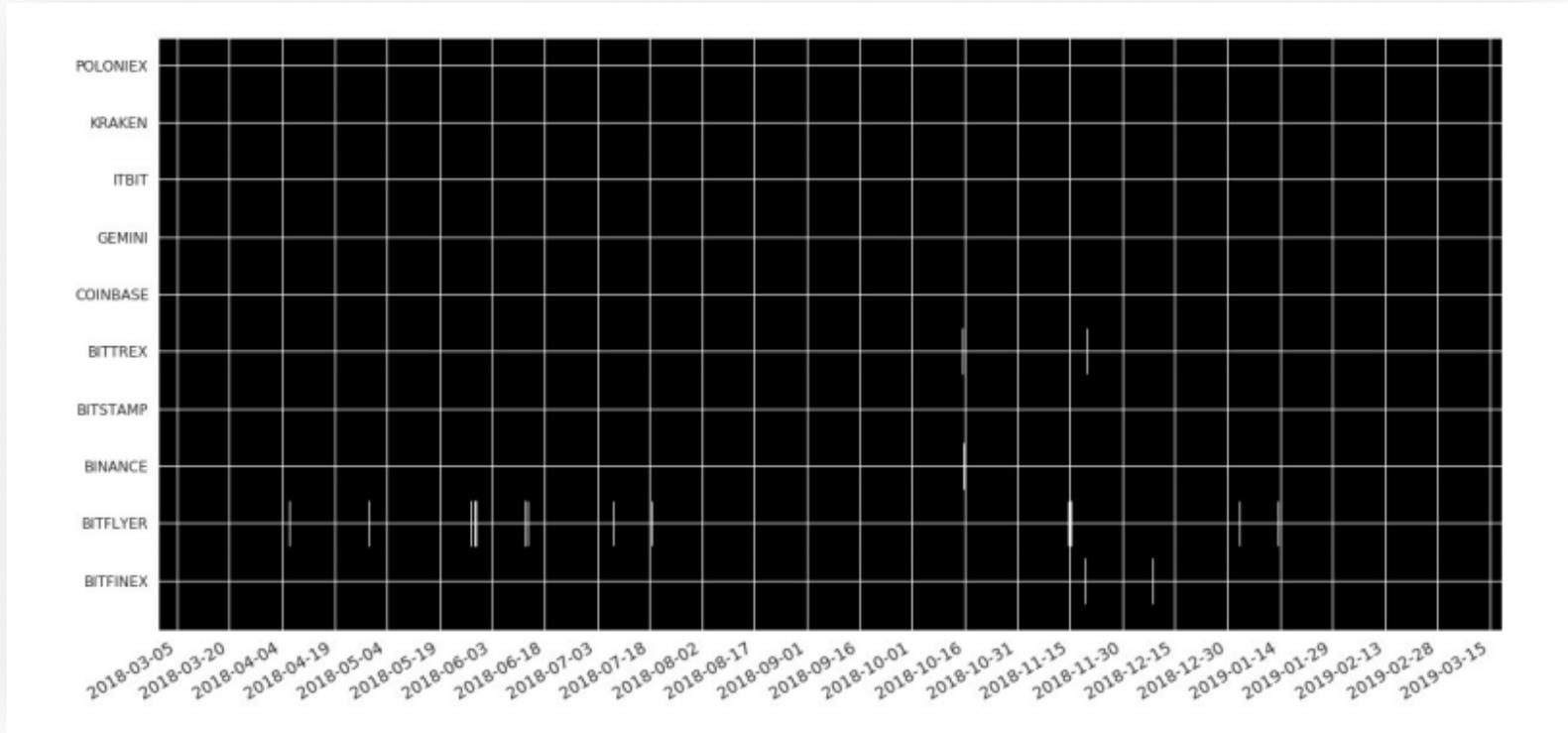
EXHIBIT 3



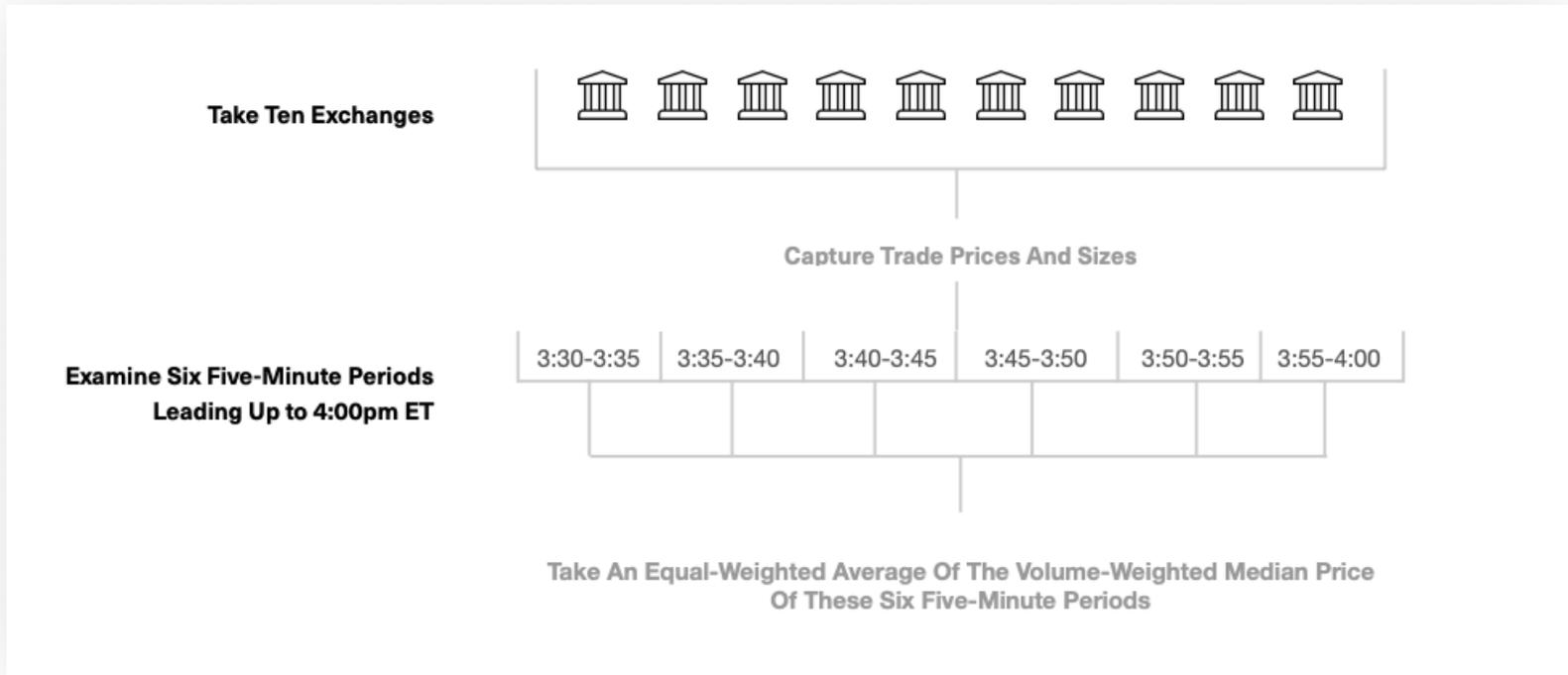
Average Deviation from the Aggregate Price Per Exchange. Source: Kaiko. Data from 1/1/18 – 3/17/19.

Item 5 From Slide 69 Of The Bitwise Presentation To The SEC Staff

EXHIBIT 3



Sustained Deviations from the Aggregate Price by Exchange. Source: Kaiko. Data from 1/1/18 – 3/17/19.



Detail: How Does Using A Volume-Weighted Median Price Protect Against Manipulation Of The NAV?

Scenario 1

Trade Number	Exchange	Trade Size	Trade Price
1	A	100	\$4,000
2	B	100	\$4,000
3	C	100	\$4,000
4	A	100	\$4,000
5	B	100	\$4,000
6	C	100	\$4,000
7	A	100	\$4,000
8	B	100	\$4,000
9	C	100	\$4,000
10	D	200	\$4,400

- Imagine that ten trades occur during one five-minute window, at the sizes and prices outlined on the left. Imagine also that the true global price of bitcoin at this time is \$4,000.
- Suppose that someone is able to manipulate the last trade for 200 bitcoin on Exchange D, driving the price up 10% to \$4,400.
- A traditional Volume-Weighted Average Price (VWAP) calculation would solve for the mean, meaning it would incorporate the manipulated trade. In fact, it would give it 2X the weight of other trades due to its larger size.
- As a result, the traditional VWAP price in this example would be \$4,072.73, 1.8% above the true global price of \$4,000.00
- The Volume-Weighted Median Price, however, ignores the outlier price entirely. It is simply \$4,000.00.
- The use of a Volume-Weighted Median Price means you cannot manipulate the price by contributing a single outlier trade; you must manipulate the majority of global spot bitcoin volume in a five-minute window to have any influence on the NAV.

Detail: How Does Using A Volume-Weighted Median Price Protect Against Manipulation Of The NAV?

Scenario 2

Trade Number	Exchange	Trade Size	Trade Price
1	A	100	\$4,000
2	B	100	\$4,000
3	C	100	\$4,000
4	D	100	\$4,000
5	E	100	\$4,000
6	F	10	\$4,400
7	G	10	\$4,400
8	H	10	\$4,400
9	I	10	\$4,400
10	J	10	\$4,400
11	J	10	\$4,400

- Imagine a new set of eleven trades, at the sizes and prices outlined on the left. Imagine again that the true global price of bitcoin at this time is \$4,000.
- Suppose that a high-frequency trader is able to manipulate the price higher on a handful of exchanges, and posts six small trades for 10 bitcoin each at an elevated price of \$4,400 on those exchanges.
- A traditional median price methodology would land on the elevated price of \$4,400, since there are six small trades at that size against five larger trades at the real price of \$4,000.
- The Volume-Weighted Median Price, however, still lands on \$4,000, since there are 500 bitcoin traded at that price versus just 60 bitcoin at the manipulated price.
- The use of a Volume-Weighted Median Price means you must manipulate the majority of global spot bitcoin volume in a five-minute window to have any influence on the NAV.

The Spot Market For Bitcoin Is Smaller Than People Think; The Futures Market Is Commensurately More Significant



Reported Spot Volume: ~\$6B

Futures Volume: \$91M*

Source: Coinmarketcap. Time period: March 4-8, 2019

Actual Spot Volume: \$273M

Futures Volume: \$91M*

Source: Kalko. Time period: March 4-8, 2019

Item 10, From Slide 123 Of The Bitwise Presentation To The SEC Staff

EXHIBIT 3

Global Spot Bitcoin Volume		
Exchange	Daily Volume	Location
Binance	\$110,503,361	Malta
CME	\$84,882,216	US
Bitfinex	\$38,062,554	Taiwan
Kraken	\$31,856,337	US
Bitstamp	\$31,624,942	Europe
Coinbase Pro	\$27,140,255	US
bitFlyer	\$13,539,802	Japan
Gemini	\$8,119,736	US
CBOE	\$6,124,826	US
itBit	\$5,586,520	US
Bittrex	\$5,145,777	US
Poloniex	\$1,461,753	US

Exchange ADV Source: Kaiko. March 4-8, 2019

* Note: CBOE has elected to stop offering new futures contracts in June 2019. We expect CBOE's volume to migrate to the CME contract.

Exchange ADV Source: Kaiko. March 4-8, 2019

*Note: CBOE has elected to stop offering new futures contracts in June 2019. We expect CBOE's volume to migrate to the CME contract.

As of April 26, 2019, Bitfinex was removed by the Bitwise Crypto Index Committee from the exchanges contributing prices to deriving the Bitwise Daily Bitcoin Reference Price pursuant to the New York Attorney General's claims towards iFinex Inc., operator of Bitfinex.

TOTAL NET FLOWS OF COMPARABLE ETFS IN THEIR FIRST YEAR ON THE MARKET

Fund	Ticker	Inception Date	Year 1 Flows (\$USm)	Comparison
SPDR Gold Shares	GLD	11/18/04		3,010 Commodity ETP
iShares Silver Trust	SLV	4/21/06		1,730 Commodity ETP
ETFS Physical Platinum Shares	PPLT	1/8/10		645 Commodity ETP
ETFS Physical Palladium Shares	PALL	1/8/10		603 Commodity ETP
United States Copper Index Fund	CPER	11/15/11		2 Commodity ETP
Amplify Transformational Data Sharing ETF	BLOK	1/16/18		143 Blockchain ETF
Reality Shares Nasdaq NexGen Economy ETF	BLCN	1/17/18		91 Blockchain ETF
First Trust Indxx Innovative Transaction & Process ETF	LEGR	1/24/18		40 Blockchain ETF
Innovation Shares NextGen Protocol ETF	KOIN	1/30/18		8 Blockchain ETF
REX BKCM ETF	BKC	5/16/18		5* Blockchain ETF
Average				628

*This ETF was liquidated in January 2019 due to a lack of interest.

Source: ETF.com. All data is for total net flows one year forward from the inception date.