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Brent J. Fields, Secretary
Securities and Exchange Commission
100 F St, N.E.
Washington, DC 20549-1090

Re: File No. SR-NYSEArca-2019-01: Proposal to List and Trade Shares of the Bitwise Bitcoin ETF Trust Under NYSE Arca Rule 8.201-E - Bitfinex Question

Dear Mr. Fields,

On April 25, 2019, the Bitwise Crypto Index Committee (the “Committee”) removed Bitfinex from the list of trading venues that contribute prices to the Bitwise Crypto Indexes. This is the same list of exchanges that contribute prices to the Bitwise Daily Bitcoin Reference Price.

The Committee took this step because the New York Attorney General had, earlier that day, retained a court order against iFinex Inc., operator of Bitfinex, based on allegations of fraudulent behavior. The decision to remove Bitfinex as a pricing source was documented in the [Committee’s minutes](#) from April 25, 2019.¹

The determination of which exchanges contribute prices to the Bitwise Crypto Indexes is made by the Committee based on its interpretation of the rules set out in the [Bitwise Crypto Index Methodology](#). The relevant section regarding the Bitfinex decision is Rule III.a.i.c, which requires that exchanges contributing prices be “in compliance with local regulations and not subject to extraordinary regulatory or legal action.” The methodology document includes an “Explainer” for this rule, designed to help outsiders interpret the rule, which states: “[t]his requirement exists to limit exchanges to those that are positive actors in the community, and to limit the potential for interruptions in service or unusual pricing due to government or regulatory enforcement actions.”

¹ “Bitwise Crypto Index Committee Meeting—April 25, 2019,” Matt Hougan, Posted April 26, 2019. <https://www.bitwiseinvestments.com/resources/index-committee-meetings/bitwise-crypto-index-committee-meeting-april-25-2019>

In the U.S. Securities and Exchange Commission's (SEC's) Order Instituting Proceedings for File SR-NYSEArca-2019-01, the SEC asked the following questions regarding the decision to remove Bitfinex as a pricing source:

[A]s of April 26, 2019, the Bitwise Crypto Index Committee removed Bitfinex from the list of trading venues that contribute prices to derive the Bitwise Daily Bitcoin Reference Price. The Exchange states that this action was taken “pursuant to the New York Attorney General’s claims towards iFinex Inc., operator of Bitfinex.” What are commenters’ views on whether the removal of Bitfinex—which the Sponsor asserts is a “real” trading venue—from the calculation of the Bitwise Daily Bitcoin Reference Price might affect the reliability or accuracy of that price? Does the removal of the Bitfinex venue from the calculation of this reference price because of regulatory or legal activity affect commenters’ views of the Sponsor’s screening process for bitcoin trading venues or its general distinction between “real” and “fake” bitcoin trading volume? Does the removal of the Bitfinex venue from the calculation of this reference price affect commenters’ views of whether it is appropriate to use the Bitwise Daily Bitcoin Reference Price to calculate the net asset value of the Shares?

As the Chairman of the Bitwise Crypto Index Committee, I wanted to shed some light on the reason the rule exists, explore the pros and cons of the decision to remove Bitfinex, and directly answer questions regarding its impact on our proposed filing.

1. Why do the Bitwise Crypto Indexes have a rule that removes exchanges that are subject to extraordinary legal or regulatory action?

The Bitwise Crypto Index methodology has multiple rules that govern the selection of exchanges that contribute prices to the Bitwise Crypto Indexes. They are listed in Section III.A.i of the Bitwise Crypto Index Methodology. These rules are identical to the screening criteria laid out in the Amended S-1 for the proposed Bitwise Bitcoin ETF Trust.²

Bitwise's rules aim to capture the largest possible set of exchanges that have real price discovery in the globally integrated bitcoin market. Capturing a large number of exchanges has a number of advantages, including providing certain protections against market manipulation, but the primary one is that it protects Bitwise's pricing mechanism from idiosyncratic risk.

While Bitwise has demonstrated in its filings that bitcoin trades at a globally unified price on all real spot bitcoin exchanges, individual exchanges can experience idiosyncratic issues (hacks, withdrawal issues, regulatory actions, legal actions, etc.) that can cause

² <https://www.sec.gov/Archives/edgar/data/1763415/000149315219005505/forms-1a.htm>

prices to temporarily detach from the globally integrated price. This detaching occurs when these idiosyncratic issues break or weaken the arbitrage mechanism that ties a particular exchange into the globally integrated bitcoin market.

For instance, imagine that Exchange A halts withdrawals of bitcoin. Cut off from the global market, the price of bitcoin on Exchange A will reflect only internal buy and sell demand from customers on Exchange A. As a result, bitcoin may trade to a premium or a discount when compared with the globally integrated price of bitcoin on Exchanges B, C, D, and so on.

In a normal situation, if bitcoin traded (for example) to a discount on Exchange A, arbitrageurs would acquire it, transfer it to Exchange B (or C or D) where it is trading at a higher price, and sell it to pocket the difference. This would cause the price of bitcoin on Exchange A to rise, bringing it back in line with the globally integrated price.³

If Exchange A has halted withdrawals, however, there is no way for an arbitrageur to execute this trade. He or she can acquire discounted bitcoin on Exchange A, but cannot withdraw this bitcoin, move it to Exchange B and sell it to profit.

(Mispricing can persist in the opposite direction if bitcoin trades to a premium on Exchange A but the exchange does not allow deposits of bitcoin acquired elsewhere.)

The reason the Bitwise Crypto Indexes have a rule that removes exchanges that are subject to extraordinary legal or regulatory action is because these actions increase the risk an exchange will exhibit idiosyncratic pricing issues in the future. Exchanges facing extraordinary legal or regulatory actions have a higher likelihood of halting withdrawals, shutting down (or being shut down), or facing other challenges than exchanges that are in good standing and not under legal/regulatory threat.⁴

The benefit of proactively removing Bitfinex as a pricing source for the Bitwise Crypto Indexes (and therefore the Bitwise Daily Bitcoin Reference Price) is that it protects against potential short-term downstream impacts should a negative idiosyncratic event occur in the future.

³ Bitwise demonstrated that this arbitrage exists and is robust in “Economic and Non-Economic Trading in Bitcoin: Exploring the Real Spot Market for the World’s First Digital Commodity,” a white paper submitted to the SEC on May 24, 2019 (the “Bitwise White Paper”).

⁴ For instance, the New York Attorney General’s court order raised concerns about liquidity at Bitfinex’s corporate parent, iFinex. If iFinex experienced a liquidity crunch, shut down and was placed into receivership—a process that could be accelerated by its legal risk—it could cause bitcoin prices on the exchange to materially detach from the globally integrated price of bitcoin, as customer assets would be (at best) locked up in the legal process involved in unwinding the exchange. Even the rising threat of a liquidity crunch could impact price discovery, as arbitrageurs would be less willing to keep assets stored on an exchange facing this threat.

2. But is there a downside to removing one exchange?

The short answer is “no,” there is no significant downside to removing Bitfinex as a pricing source for the Bitwise Daily Bitcoin Reference Price.

While Bitfinex is a real exchange—the Bitwise White Paper found it had 14.1% of all spot bitcoin volume in April 2019—the loss of any single exchange does not impact the Bitwise Daily Bitcoin Reference Price in a meaningful way.

As mentioned earlier, all real spot bitcoin exchanges trade at a globally unified price. The Bitwise White Paper, for instance, showed that the average deviation in price between each of the ten real spot exchanges and the globally integrated price of bitcoin ranged from 0.05% to 0.20% in 2019, with Bitfinex comfortably in the middle of that range with an average deviation of just 0.11%.

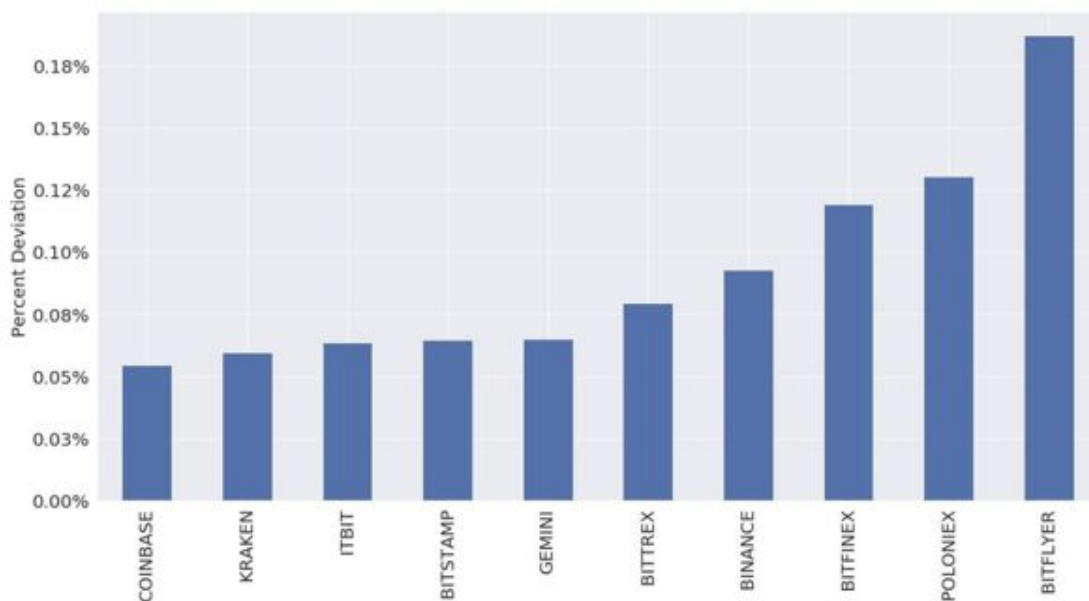


Figure 26: Average bitcoin price deviation from consolidated price by exchange¹⁶²

With prices so tightly aligned, removing any one exchange (or even a couple of exchanges) would not have a meaningful impact on the calculated price. While more exchanges is generally better than fewer, there is a law of diminishing returns to each additional exchange: At some point, you have “enough” to be confident you can calculate a good price and not be exposed to idiosyncratic risk. This is especially true if

you have a pricing methodology that mitigates against the impact of outlier prices, as the Bitwise Daily Bitcoin Reference Price methodology does.⁵

3. What does the removal of Bitfinex from the calculation of the Bitwise Daily Bitcoin Reference Price because of regulatory or legal activity say about Bitwise’s screening process for bitcoin trading venues or its general distinction between “real” and “fake” bitcoin trading volume?

Bitwise’s exchange screening process is designed first and foremost to identify those exchanges that have real bitcoin trading volume and are part of the globally integrated bitcoin spot market. Given the evolving nature of this market, however, the Bitwise Crypto Index Committee also built in screens designed to reduce the likelihood that an exchange experiencing a negative, idiosyncratic event would be able to contribute erroneous prices into the Bitwise system. The rule governing exchanges facing extraordinary legal and/or regulatory action is one such rule.

From this perspective, the fact that a previously eligible exchange lost eligibility on the same day that an extraordinary legal threat emerged—and before it exhibited any signs of its pricing detaching from the globally integrated market—suggests that the screening rules and ongoing monitoring processes are useful, proactive and conservative.

Separately, it is worth noting that having real volume and being ineligible to contribute prices to the Bitwise Daily Bitcoin Reference Rate are not mutually exclusive.

The Bitwise White Paper examined all exchanges reporting significant bitcoin trading volume to leading data aggregators like CoinMarketCap.com and found that 95% of all reported volume was fake. Bitfinex, however, passed all of Bitwise’s test for having real volume.

Additionally, the Bitwise Crypto Index Committee carefully reviewed the New York Attorney General’s court order against iFinex⁶, as well as subsequent legal documents⁷, and found no evidence contradicting our finding that the Bitfinex volume was real. In fact,

⁵ See “Bitwise Presentation to the U.S. Securities and Exchange Commission,” March 19, 2019. <https://www.sec.gov/comments/sr-nysearca-2019-01/srnysearca201901-5164833-183434.pdf>

⁶ “In The Matter of Inquiry by Letitia James, Attorney General of the State of New York, Petitioner, Pursuant to Article 23-A of the New York General Business Law in Regards to the Acts and Practices of iFINEX INC., BFXNA INC., BFXWW INC., TETHER HOLDINGS LIMITED, TETHER OPERATIONS LIMITED, TETHER INTERNATIONAL LIMITED,” April 24, 2019. https://ag.ny.gov/sites/default/files/2019.04.24_signed_order.pdf

⁷ “Memorandum of Law In Opposition to Respondents’ Motion to Vacate or Modify the April 24, 2019 Order Pursuant to General Business Law 354,” Letitia JAMES, Attorney General of the State of New York,” May 3, 2019.

<https://www.scribd.com/document/408653121/450545-2019-in-the-Matter-of-the-l-v-in-the-Matter-of-the-l-MEMORANDUM-of-LAW-I-56>

the court documents confirm that investors deposited billions of dollars with the exchange, adding further credence to the idea that trading on the exchange is real.

The removal of Bitfinex as a pricing source was a proactive, protective step taken to shield the Bitwise Daily Bitcoin Reference Price from even the slightest possibility of anomalous pricing arising from the developing and ongoing scenario surrounding BitFinex's legal and regulatory status.

4. Does the removal of the Bitfinex venue from the calculation of the Bitwise Daily Bitcoin Reference Price affect whether it is appropriate to use the Bitwise Daily Bitcoin Reference Price to calculate the net asset value of the Shares?

The goal of the Bitwise Daily Bitcoin Reference Price is to reflect the price at which institutional investors can buy or sell bitcoin on the globally integrated market. The inclusion or exclusion of Bitfinex does not have a material impact on the price, as discussed; with it now excluded, the Bitwise Daily Bitcoin Reference Price still draws prices from a large number of exchanges representing the vast majority of all real spot trading volume. It is therefore able to achieve its goal.

In reality, the Bitwise Crypto Index Committee did not have much discretion in its decision to remove Bitfinex. The New York Attorney General's court order clearly caused the exchange to fail Rule III.a.i.c of the Bitwise Crypto Index Methodology, which calls for exchanges to be removed if they face extraordinary legal or regulatory issues. I believe that this is a sound rule that mitigates against idiosyncratic exchange risk without sacrificing fidelity in terms of the quality of pricing achieved.

It's our hope that the proactive and timely decision to remove Bitfinex showcases the professionalism and active monitoring supplied by the Bitwise Crypto Index Committee, and can be seen as either a neutral or positive reflection on the use of the Bitwise Daily Bitcoin Reference Price in pricing bitcoin.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Matthew Hougan', with a long horizontal flourish extending to the right.

Matthew Hougan
Global Head of Research
Bitwise Asset Management