

Dear Sir/Madam,

RE: File Number SR-CboeBZX-2018-040

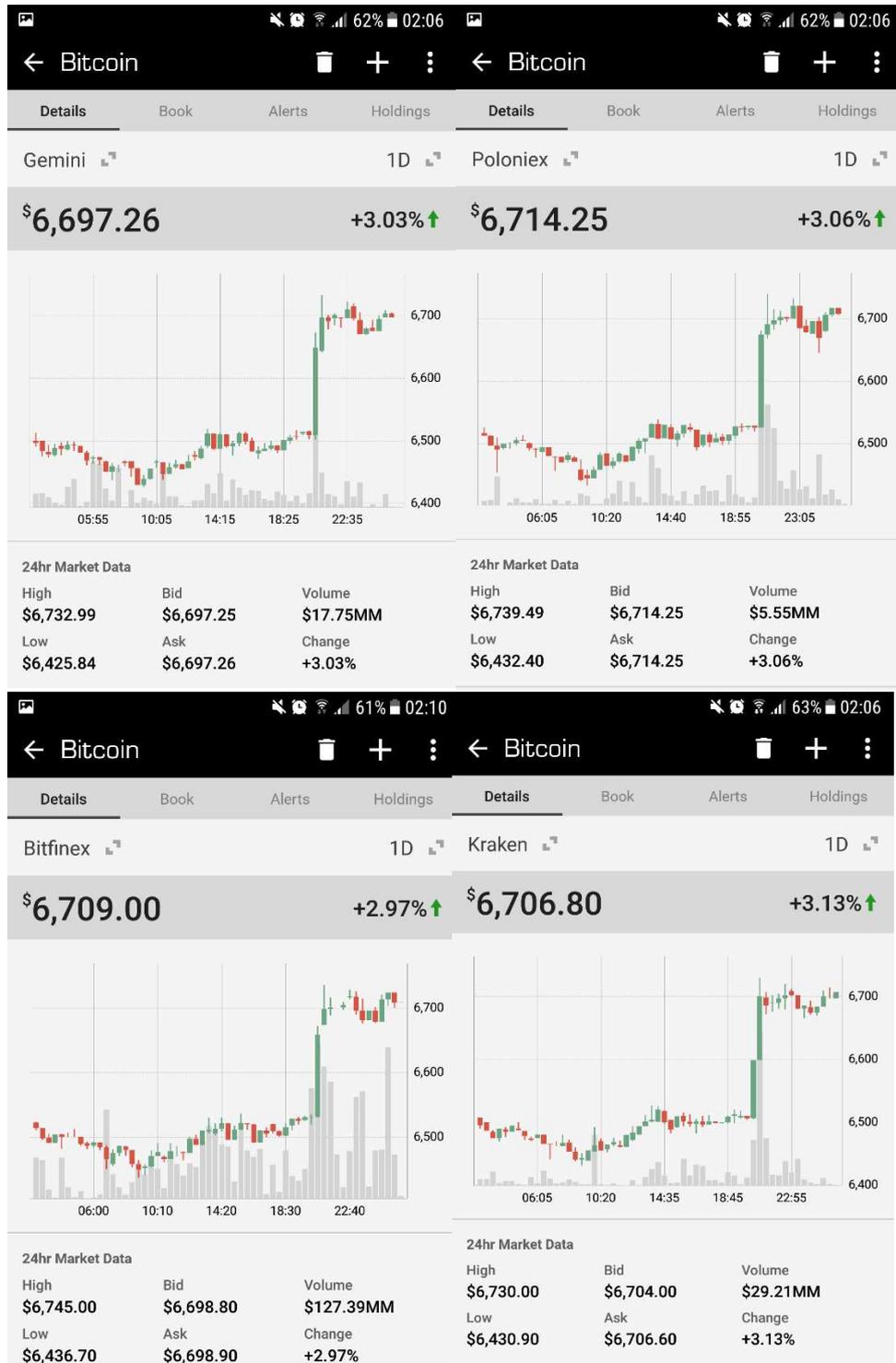
I want to take this opportunity to try and answer the questions outlined in the above file number.

The questions have been answered in sequence with evidence where appropriate. Referencing has been provided, and all references are located at the end of this document.

1) Manipulation

- It is a widely known fact that the Bitcoin (and the Cryptocurrency) market is a manipulated one. There are players in the marketplace who hold enormous amounts of Bitcoin and miners who have an interest in seeing the price of this 'asset' rise so that their efforts are profitable (some who also have a large concentration of power and also have large positions in BTC) ¹. Moreover, when we consider the fact that markets such as the LIBOR, FX, US Treasuries, Gold and Silver have been manipulated, a small market such as Bitcoin is not such a hard one to manipulate ^{1,2,3,4,5}.
- It is also a fact that the exchanges lack real-time and historical surveillance capabilities, unlike the traditionally regulated markets to help identify and stop suspicious trading activities ⁶. This fact includes monitoring the use of trading Bots which have been known to artificially inflate the price of Cryptocurrencies by up to 300% ^{6,7}.
- Proprietary Trading is standard on most exchanges with some exchanges making up to 20% of its trades in this manner ^{6,8}.
- Pump and Dump schemes organised through messaging apps such as Telegram are ubiquitous and make the global manipulation of cryptocurrencies using both the coordinated use of Bots and the speed at which news spreads on social media possible ^{9,10}.
- With regards to the question of whether one actor could gain a dominant market share, yes this a genuine possibility. For example research from Economists Neil Gandal, JT Hamrick, Tyler Moore, and Tali Oberman indicate it is likely Bitcoin's price was manipulated by just one or two major players in past events ¹¹.
- Users within the cryptocurrency community have noticed a pattern they are calling 'Bart', named after the character in the Simpsons. The primary reason given for this pattern to occur in recent months which in traditional markets is called a '**Diamond Reversal**' is manipulation of the market. To quote an article about this in the online blog host 'Medium': *"This price movement is unnatural, as it is unlikely that this rise in demand occurs independent of bullish news events and moving day averages, thereby raising questions as to whether high frequency traders are utilizing momentum ignition algorithms"* ¹². This pattern is quite frequently said to occur around '**Bitcoin Futures**' expiry dates. An example of this kind of price action is in today's article of CCN where both price appreciation is shown, and the following comment is made: *"Several traders have noted on social media that tomorrow, Sept. 28, is the date that quarterly futures expire on OKEx, BitMEX, and CME, events that*

tend to be accompanied by increased price volatility in the spot markets”¹³. This pattern has been observed on all platforms including Gemini:



Images Sourced from Blockfolio Cryptocurrency Portfolio Manager (09/28/2018).

- One significant concern to manipulation is that apart from a couple of exchanges (see image below) most exchanges do not Block Masked VPN IP addresses⁶. This fact raises questions about the ability of the other trading platforms to restrict access to authorised users only. For example, an article published today says that

“that cryptocurrency traders in China can easily convert their fiat currency to tether in direct, peer-to-peer transactions, which can then be used to buy digital currencies while using VPNs to cover their tracks”¹⁴. This is a concern as manipulation from high net-worth individuals from the ‘BRIC Countries’ is a possibility. Also, the exchange **Gemini** is one that is listed as not Blocking Masked VPN IP addresses:

MEASURES FOR LIMITING UNAUTHORIZED ACCESS TO THE PLATFORM

Trading Platforms	Tracking Computer IP Addresses	Blocking Masked VPN IP Addresses
BITFINEX	YES	NO
bitFlyer	YES	NO
Bitstamp	YES	YES
BITTREX	YES	NO
coinbase	YES	NO
GEMINI	YES	NO
HBUS	YES	NO
itBit	YES	NO
POLONIEX	YES	YES
TIDEX	YES	NO



Image Source: VIRTUAL MARKETS INTEGRITY INITIATIVE REPORT⁶

- Finally, it is all too common to see examples such as reactions to news such as the one that was released about Goldman Sachs on 09/05/2018 having backed down from its earlier statement of creating a crypto trading desk, which immediately plunged the price of Bitcoin from \$7,500 to around \$6,200 in a few hours (most of which under 30 minutes)¹⁵:

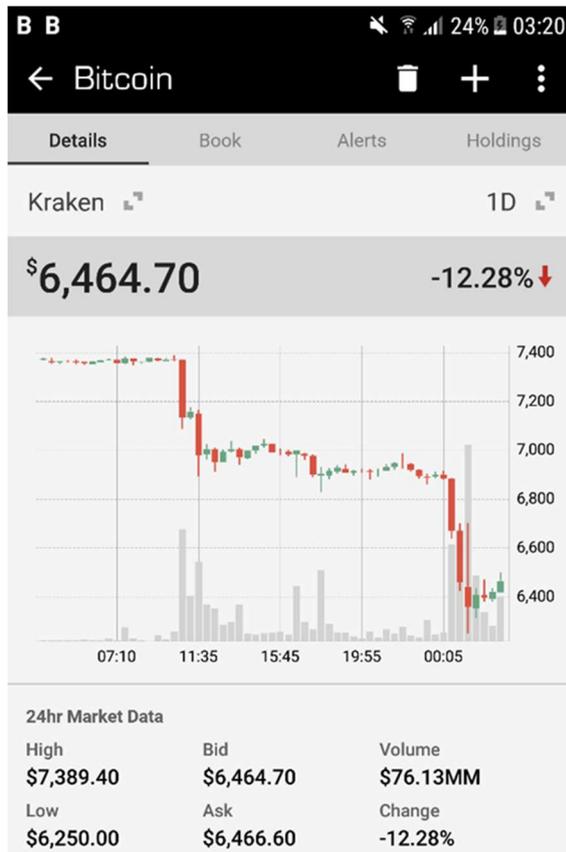


Image Source: Blockfolio Cryptocurrency Portfolio Manager (09/06/2018).

The unusual thing was this plunge happened before the news was released which indicates manipulation. Subsequently, an article was published which demonstrated this manipulation of Bitcoin using Artificial Intelligence quite clearly with data to back it up¹⁶. A quote from this article says *“Data scientists strongly believe this was either market manipulation or insider trading, but are reluctant to give a definitive answer for obvious reasons”*¹⁶. The data can be seen in the images below:

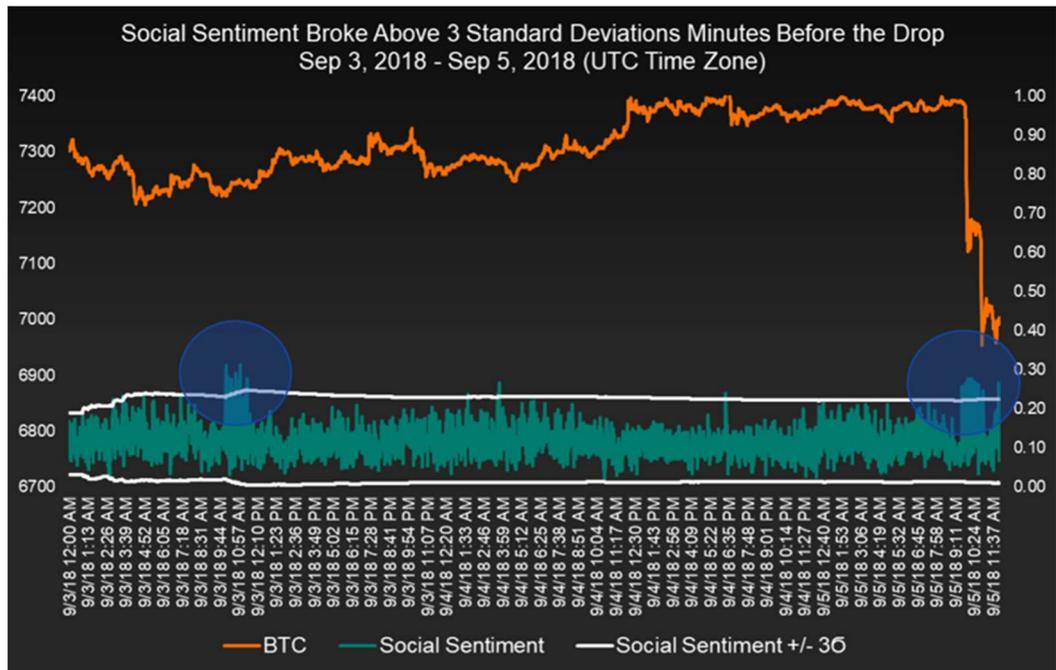


Image Source: CCN.com ¹⁶

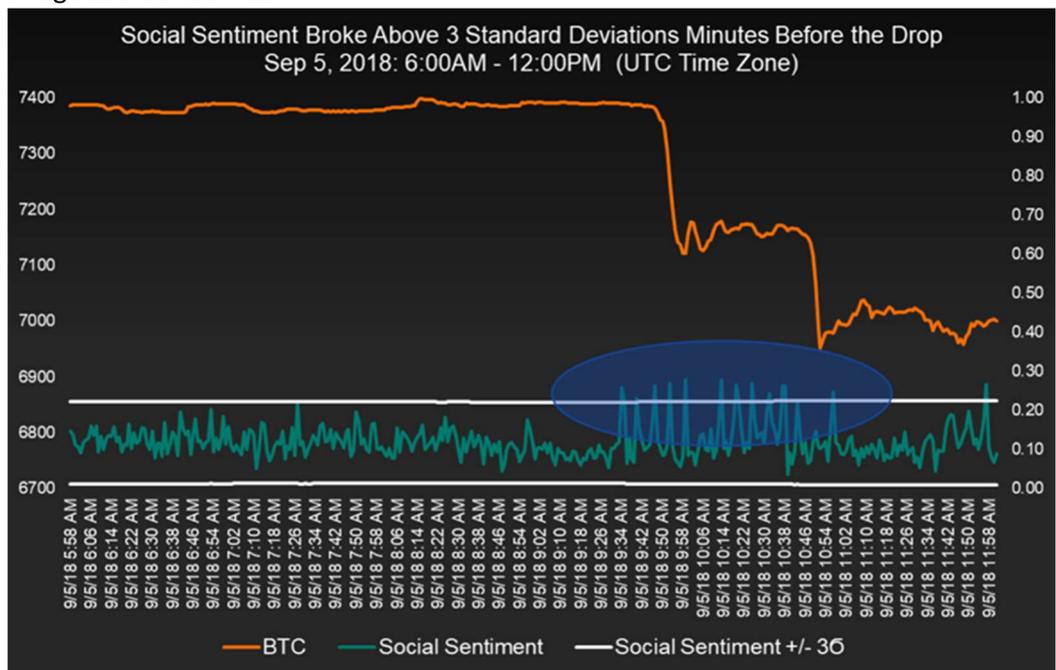


Image Source: CCN.com ¹⁶

2) OTC Market

- Traditionally with regards to price discovery, it is always preferable to trade on an exchange than OTC. This is because OTC is less formal, although often well-organised, networks of trading relationships centred around one or more dealers. Dealers act as market makers by quoting prices at which they will sell (ask or offer) or buy (bid) to other dealers and their clients or customers. That does not mean they quote the same prices to other dealers as they post to customers, and they do not necessarily quote the same rates to all customers.
- Moreover, dealers in an OTC security can withdraw from market making at any time, which can cause liquidity to dry up, disrupting the ability of market participants to

buy or sell. Exchanges are far more liquid because all buy and sell orders, as well as execution prices, are exposed to one another. Also, some exchanges designate certain participants as dedicated market makers and require them to maintain bid and ask quotes throughout the trading day. In short, OTC markets are less transparent and operate with fewer rules than do exchanges. All of the securities and derivatives involved in the financial turmoil that began with a 2007 breakdown in the U.S. mortgage market were traded in OTC markets ¹⁷.

- The lack of fundamentals coupled with high-frequency trading, fast information flow and dissemination makes price discovery for Bitcoin a difficult one.
- The current typical volumes of OTC Bitcoin transaction volumes exceed that of exchanges by 2-3 times ¹⁸. An estimated 1 to 1.5 Billion BTC are traded daily OTC. It is also suggested that the *“cryptocurrency exchange market is unpredictable and the market often demonstrates an extreme rate of volatility”* and *“If the bitcoin exchange market only accounts for 25 percent of the actual volume of the dominant cryptocurrency, it is that much more difficult to find the cause of the movements of BTC and other cryptocurrencies”*.¹⁸

Therefore the question of price discovery in this context is a little bit more complicated due to the nature of Cryptocurrencies, the market size of the exchanges in relation to OTC and the volatility of the marketplace.

- It is made more difficult due to the lack of regulation in the OTC market where it is said that anyone can become a bitcoin broker, with LinkedIn a popular venue for these operations ¹⁹. Usually, the minimum deal size is 500 BTC but the real prize being deals of 10,000 BTC or more.

3) NAV, Collusion and Manipulation

- As discussed in the question (1) there is already considerable concern surrounding the pattern of ‘Diamond Reversal’ or Bart as the Cryptocurrency community like to call it around the time of **Futures expiration** ¹². Unless monitored closely, the market makers can buy or sell large quantities of bitcoin units in the spot market around the expiry, which takes place during low liquidity hours and affect the price.
- It is also important to note that ETF’s or ETP’s don’t always behave how they are meant to even though they are classed as dependable investment vehicles. For example, this article in the FT Alpha discusses some interesting cases of ETF NAV deviations ²⁰.
- On page (25) of a document titled “Release No. 34-83520; File No. SR-CboeBZX-2018-04” its states *“the market price of the Shares may be different from the NAV per Share for a number of reasons, including price volatility, trading volume, and closing of bitcoin trading platforms due to fraud, failure, security breaches or otherwise.”* ²¹.
- To also answer the question of arbitrage: Redemptions are made based on NAV so an inaccurate NAV will break the arbitrage mechanism. Most ETF NAVs are calculated once per day. However, since the Bitcoin market is so volatile, intra-day NAV measures are required. In this instance, this ETP plans to use the MVIS Bitcoin Index which is updated every 15 seconds. Still, determining NAV can be difficult since prices can be different across multiple exchanges. The market for trading ETP’s can be closed while cryptocurrency exchanges are open. Prices may fall significantly in the meantime and investors will not be able to mitigate losses in a closed market.

Non-concurrent trading hours also may increase the gap between the ETP price and NAV. Also, most traders will tell you; there's more to liquidity than just constant trading. The quality of the liquidity is essential. How fragile is it? Moreover, to what degree does it depend on arbitrage opportunity? Is it, actually the sort to vaporise as soon as one or two of the key players in the market get spooked?

- A paper on the SEC website titled "**Do ETFs Increase Volatility?**" concludes "*...that the stocks in ETFs' baskets display higher volatility than otherwise similar securities*", "*The presence of ETFs also causes the underlying securities' prices to diverge from random walks, both intraday and daily. These effects are significantly related to proxies for the intensity of arbitrage activity between the ETFs and their baskets*" and finally "*our results suggest that the recent rise in institutional stock ownership is not by itself a guarantee that stock prices are more efficient. Noise traders can still cause mispricing through their allocations to institutional portfolios.*"²².

4) ETP susceptibility to manipulation

- At this moment in time, one cannot separate the OTC market pricing from the exchange prices on which they are based. This fact coupled with the points discussed for questions (1), (2) and (3) make the ETP susceptible to manipulation.

5) Bitcoin Futures Manipulation

- As discussed in the very first point in question (1) when we consider the fact that markets such as the LIBOR, FX, US Treasuries, Gold and Silver have been manipulated, a small market such as Bitcoin is not such a hard one to manipulate^{1, 2, 3, 4, 5}.
- A further real-life example has been provided in question (1) point number 6 in the CCN article titled "Bitcoin Price Pops to \$6,745 ahead of Quarterly Futures Expiration"¹³.

6) Trust's proposal to value its bitcoin holdings based on an index—the MVBTCO

- The use of a non-public proprietary index to value holdings based on OTC activity as an appropriate means to calculate the NAV of an ETP **is inappropriate** not least as it primarily aggregates price from several, yet to be named, OTC markets (p. 60-61)²³.
- There is some significant concerns as the trust also states:
"Trust Parties, their employees and their affiliates (collectively, "Affiliated Parties") may engage in long or short transactions in bitcoin in their personal accounts (subject to certain internal employee trading policies and procedures), and in doing so may take positions opposite to those held by the Trust or may compete with the Trust for positions in the marketplace."
And *"MVIS may from time-to-time act in multiple capacities with regard to the MVBTCO or bitcoin. Potential conflicts of interest may exist between MVIS and any users of the MVBTCO and/or parties exposed to bitcoin or the Shares."*
And *"The Trust Parties, MVIS and the Exchange and/or their respective affiliates may acquire non-public information with respect to bitcoin, and none of them undertakes to disclose any such information to any user of the MVBTCO. In addition,*

one or more of such parties may publish research reports with respect to bitcoin. Such activities could present conflicts of interest and may affect the MVBTCO market price and thus the value of the Trust.” on pages (77-78) of the proposal by VanEck SolidX Bitcoin Trust ²³.

- Determining NAV based on the index value at 4:00 p.m. E.T. can most definitely create an opportunity for manipulation of the NAV or of the Shares similarly to the one discussed in the first point in question (3). This coupled with high-frequency trading and activities such as spoofing, layering and front-running which are known to be prevalent in the Cryptocurrency Universe leaves no doubt that this is a definite risk ^{24, 25}.

7) MVBTCO

- At this moment in time, one cannot separate the OTC market pricing from the exchange prices on which they are based. MVBTCO relies on OTC data which is influenced by exchange price. The views expressed in the statement are mostly incorrect.
- However, it is a concern to read on page (78) in the document related to this proposal by VanEck SolidX Bitcoin Trust ²³: *“Obtaining of Non-Public Information with Respect to the MVBTCO The Trust Parties, MVIS and the Exchange and/or their respective affiliates may acquire non-public information with respect to bitcoin, and none of them undertakes to disclose any such information to any user of the MVBTCO. In addition, one or more of such parties may publish research reports with respect to bitcoin. Such activities could present conflicts of interest and may affect the MVBTCO market price and thus the value of the Trust.”*

8) Valuation of holdings if the Sponsor determines that the MVBTCO, or, another alternate pricing mechanism, has failed or is unavailable

- From the options provided on pages 21- 22 of the document “Release No. 34-83520; File No. SR-CboeBZX-2018-04” ²¹ in the above event, options (iii) and especially (iv) are not considered acceptable enough for a dynamic, manipulated and volatile market such as Bitcoin.
- There are number of concerns as the trust also states *“Trust Parties, their employees and their affiliates (collectively, “Affiliated Parties”) may engage in long or short transactions in bitcoin in their personal accounts (subject to certain internal employee trading policies and procedures), and in doing so may take positions opposite to those held by the Trust or may compete with the Trust for positions in the marketplace.”*

And “MVIS may from time-to-time act in multiple capacities with regard to the MVBTCO or bitcoin. Potential conflicts of interest may exist between MVIS and any users of the MVBTCO and/or parties exposed to bitcoin or the Shares.”

And “The Trust Parties, MVIS and the Exchange and/or their respective affiliates may acquire non-public information with respect to bitcoin, and none of them undertakes to disclose any such information to any user of the MVBTCO. In addition, one or more of such parties may publish research reports with respect to bitcoin. Such activities could present conflicts of interest and may affect the MVBTCO market

price and thus the value of the Trust.” on pages (77-78) of the proposal by VanEck SolidX Bitcoin Trust ²³.

- The above point highlights severe conflicts of interest

9) OTC market, Propriety database and arbitrage

- It is felt that this lack of transparency will negatively impact the ability of market makers to engage in arbitrage.
- Furthermore, the lack of transparency does not engender confidence in the calculation of NAV and genuine Price Discovery of Bitcoin.

10) OTC Bitcoin Market

- The OTC market and the more extensive Global Bitcoin Market’s relationship is dyadic, and they can be and are accessed at a click of a button!
- At this moment in time, the OTC market prices generally do trade at a premium over the exchanges. Saying this, globally, especially in the emerging markets where there is a demand, Bitcoin has been known to trade at a significant premium compared to Developed Markets. For example this during the period of Demonetisation in India, Bitcoin traded at 25% premium due to high demand ²⁶.
- However, global prices for BTC through a reduction in information asymmetry and mechanisms of supply and demand are more or less in sync at this moment in time.

11) Global Arbitrage, liquidity and transparency of the bitcoin market, the bitcoin markets’ susceptibility to manipulation, and thus the suitability of bitcoin as an underlying asset for an ETP

- Through the use of high-frequency trading or bots, Global Arbitrage is very cost effective and efficient.
- At this moment in time, the Bitcoin market is opaque at best.
- The market can be considered liquid enough to support an ETP.
- The Bitcoin market is highly susceptible to manipulation through various means, some of which (nb: not exhaustive) have already been discussed and examples provided in answering the question (1).

12) BTC/USD Trading Volume

- In answering the question (2), the current article in point 4 suggests that the Bitcoin traded OTC can be up to 2-3 times that are traded on exchanges. This article also indicates that *“the bitcoin exchange market only accounts for 25 percent of the actual volume of the dominant cryptocurrency”* ¹⁸.
- Bitcoin/USD trades may not be a meaningful measure, for example, a large proportion of trades are also conducted in BTC/YEN as shown in the image below:

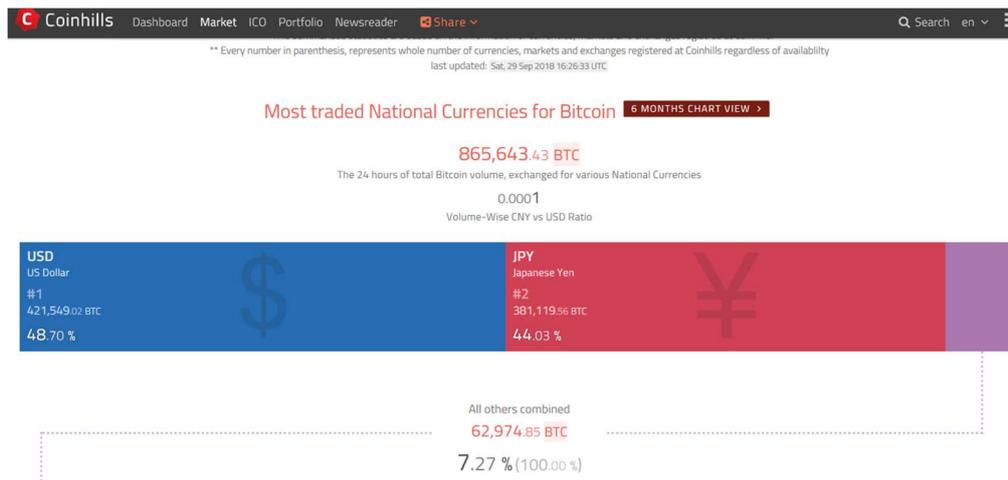


Image Source: www.coinhills.com ²⁷ (accessed on 09/29/2018)

- To put things into further perspective over the last six months BTC/USD at the highest volume of trade on 08/08/2018 accounted for 43.5% of volume and at the lowest volume during this period on 06/09/2018 accounted for 13.6% of global volume:

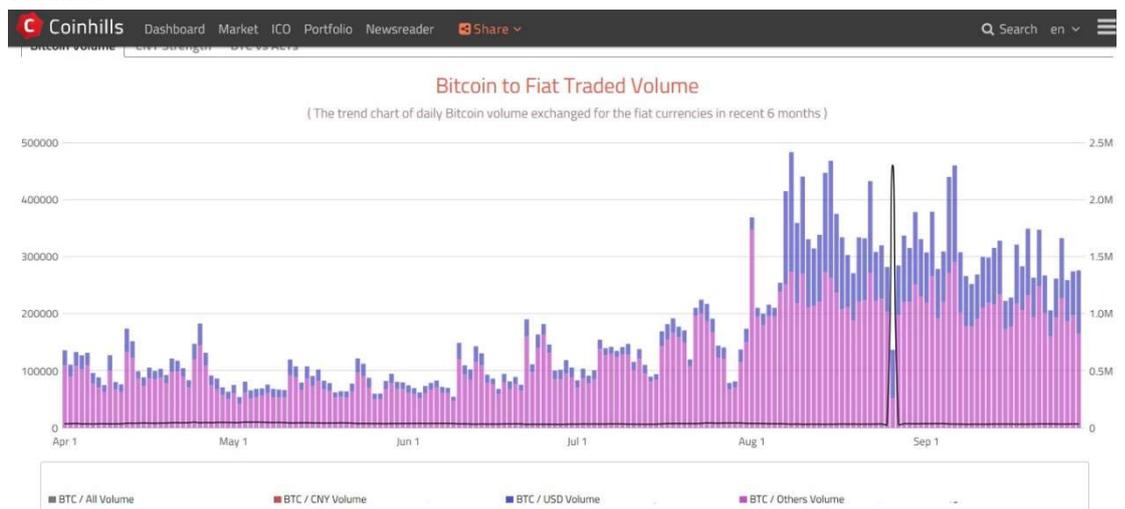


Image Source: www.coinhills.com ²⁸ (accessed on 09/29/2018)

13) Regulation of Bitcoin Markets

- The regulation of Bitcoin markets is improving through the concerted efforts of the SEC to root out bad actors, especially in the ICO 'game' but it still has a long way to go when compared to the traditional markets.
- The Bitcoin Futures markets until recently had low volumes. However, it has been reported that there has been an increase in volume since April ²⁹. However, compared to other futures markets the size of the BTC Futures market currently pales in comparison. This market has not even completed one Calander year to be considered mature and has developed into a significant size.
- With regards to surveillance sharing, Gemini exchange is listed on coinmarketcap.com ³⁰ at No 115 out 400 with a Volume of 0.14% about the market (on 09/29/2018). Binance (founded in China but currently based in Taiwan) which is the largest marketplace has a volume of 2.80% (on 09/29/2018).

- Gemini cannot be considered to be a market of significant size.

14) Gemini Exchange and Manipulation

- As mentioned in Question (13) Gemini exchange is listed on coinmarketcap.com 30 at No 115 out 400 with a Volume of 0.14% about the market (on 09/29/2018). Binance (founded in China but currently based in Taiwan) which is the largest marketplace has a volume of 2.80% (on 09/29/2018). Gemini cannot be considered to be a market of significant size.
- With Gemini's size and rank about the marketplace as a whole, there would be little need for a manipulator even to use Gemini to influence the price of BTC. It can comfortably exclude Gemini and use the others to manipulate the market quite comfortably.

15) Size of Shares offered

- It is true that the size of shares will make it prohibitive for smaller retail investors to participate in this ETP.
- It will indeed provide more liquidity through institutional investment.
- However, it is doubtful that this will reduce the opaqueness of the marketplace or even provide meaningful price discovery.
- This is in part because of the underlying root-cause of issues such as regulation, manipulation, transparency and so on have not been addressed at an exchange level.

16) Shares Outstanding

- It is doubtful that 100 shares outstanding will be enough to provide adequate liquidity and it would be interesting to see the reasoning behind this figure.

17) Trust would not comply with the minimum number of shares outstanding required by Exchange rules

- No comment at this moment in time

18) Excess crime, and excess vault risk insurance coverage underwritten by various insurance carriers that will cover the entirety of the Trust's bitcoin holding

- On page (20) the proposal states ²¹ *"In addition to its security system, the Trust will maintain comprehensive insurance coverage underwritten by various insurance carriers. The purpose of the insurance is to protect investors against loss or theft of the Trust's bitcoin. The insurance will cover loss of bitcoin by, among other things, theft, destruction, bitcoin in transit, computer fraud and other loss of the private keys that are necessary to access the bitcoin held by the Trust. The coverage is subject to certain terms, conditions and exclusions, as discussed in the Registration Statement."*

- While insurance sounds like an excellent idea, some of the ‘certain terms, conditions and exclusions’ (see pages 47-51) from the proposal by VanEck SolidX Bitcoin Trust ²³ are worrying. Some of these are:
 - I. *“Loss caused or contributed by theft or any other fraudulent, dishonest or criminal act committed by a partner, employee or director of the Insured, controlling more than 25% of the issued share capital of the Insured or any of its subsidiaries.”*
 - II. *“Loss caused solely by arithmetical, accounting or computing errors or omissions.”*
 - III. *“Prior known circumstances that would give rise to a loss.”*
 - IV. *“Loss resulting solely and directly from the network failure of the Bitcoin protocol.”*
 - V. *“Any loss resulting wholly or partially from any act or default of any director or officer of the Insured solely by reason of his serving in such capacity.”*
 - VI. *“Any and all losses caused by an employee who has access to the Property if an elected or appointed official of the Insured becomes aware of any act or acts of theft, fraud or dishonesty by such employee prior to the Insured’s discovery of a loss caused by such act or acts.”*
 - VII. *“Any and all loss resulting from the network failure of the Bitcoin protocol.”*
 - VIII. *“Loss or damage due to forged or fraudulently altered or counterfeit bitcoin.”*
- The highlighted points are especially worrying. The last two points (including **IV**) of exclusion especially are real concerns because reports were just released in the press of these very same scenarios which could have shut down the Bitcoin network and possibly created Fake Bitcoin ^{31, 32, 33, 34}.

Further comments:

The question of innovation has been brought up as an argument for this Bitcoin ETP. However, Bitcoin itself is innovation. So what we are talking about is the creation of a new financial instrument without fundamentals and not having addressed the real underlying root-cause which has led to many of the issues detailed in this document.

We have to ask ourselves by the creation of this instrument what are we losing regarding potential innovation in this space? The creativity and energy that the developers put their time and energy into solving problems and developing both the cryptocurrency and blockchain ecosystems (which can be considered both mutually exclusive and collectively exhaustive) can be diminished by the takeover by large Institutional Investors.

In a sense we are going from innovation- a decentralised democratic system to a centralised one- it is a backward move without putting in the energy and resources to address the core issues first. Centralisation is the very antithesis of what Bitcoin and Blockchain were designed were.

Furthermore, there are concerns that too much power in the hands of a custodian such as a centralised institution could allow them to determine the direction of Bitcoin itself. For example, in

the instance of a 'fork' happening. This is recognised on the page (14) of the proposal by VanEck SolidX Bitcoin Trust ²³ where they state:

“Additionally, a fork could be introduced by an unintentional, unanticipated software flaw in the multiple versions of otherwise compatible software users run. Although chain forks could be addressed by community-led efforts to merge the two chains (and in fact, prior historical forks have been so merged), there have also been other forks where a substantial number of Bitcoin users and miners adopted an incompatible version of Bitcoin while resisting community-led efforts to merge the two chains. This is referred to as a permanent fork. Permanent forks have occurred already (such as the fork in August 2017, which resulted in the creation of “bitcoin cash”). If another permanent fork occurs, then the Trust would hold equal amounts of both the original bitcoin and the alternative new bitcoin. As a result, the Trust would need to decide whether to continue to hold the original bitcoin, the alternative new bitcoin or both, and what action to take with respect to the unselected bitcoin, such as the possible sale of the unselected bitcoin. The Trust’s decision to continue to hold either the original, the alternative new bitcoin or both would be based on factors such as the market value and liquidity of the original bitcoin versus the alternative new bitcoin, the computer processing power devoted by miners to the original network versus the alternative new network, technical stability of the alternative new network and the establishment of a technical and commercial ecosystem for the alternative new network.”

This is a significant amount of power in the hands of the Trust or a Fund in deciding the fate of Bitcoin for the users. Although the custodian will provide security by holding physical Bitcoin and give the users a traded share in BTC, they do not give the owners of this financial instrument any of the rights or responsibilities that a key holder of BTC has. A person who owns their keys can do things like vote, choose the exchanges the user wants to trade Bitcoin on and decide to take advantage of accessing and holding coins in other forks. Now the trust or fund that is holding the Bitcoin for the clients now has a very large voice, but the shareholders don't. They do not get to choose which fork the fund is going to follow in a BTC debate. Therefore this ETP will give the users access to Bitcoin, but at a cost- it won't provide them with access to the Consensus and Governance of Bitcoin. This is a tremendously negative thing. This can be considered another form of manipulation of Bitcoin and also very undemocratic thing to achieve.

I would kindly request that at this moment in time this ETP be declined.

I wish to respectfully submit the following recommendations:

- I. A regulatory directive should be given to the exchanges to standardise protocols and eliminate the issues highlighted in the document, e.g. manipulation.
- II. With regards to the proposed ETP (and other ETF's) a publication of a very clear strategy and guidelines with the removal of any scope for ambiguity. For example- which the insurers they intend to use, with full disclosure of what is and isn't included.
- III. A longitudinal observation over a period of at least another cycle of the Futures Market to see how stable the ecosystem remains, allow for the emergence of Genuine Price Discovery and reduction of opacity (especially in the OTC markets).

Sincerely,

Avinash Shenoy

References:

- 1 <https://www.forbes.com/sites/petertchir/2018/05/28/i-would-be-shocked-if-bitcoin-prices-werent-manipulated/#4846c6cb2be9>
- 2 <https://seekingalpha.com/article/4046545-manipulative-london-fixings-gold>
- 3 <https://seekingalpha.com/article/4046901-manipulative-london-fixings-libor>
- 4 <https://www.nytimes.com/1991/08/10/business/salomon-brothers-admits-violations-at-treasury-sales.html>
- 5 <https://priceconomics.com/how-the-hunt-brothers-cornered-the-silver-market>
- 6 <https://virtualmarkets.ag.ny.gov>
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- 9 <https://blockonomi.com/pump-and-dump>
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- 12 <https://medium.com/@noogin/illuminating-the-bart-pattern-in-bitcoin-the-momentum-ignition-algorithm-864e7a9949e9>
- 13 <https://www.ccn.com/newsflash-bitcoin-price-pops-to-6745-ahead-of-quarterly-futures-expiration>
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