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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

Dear Mr. Fields,

The purpose of this letter is to respond to the request for written comments by the Securities and Exchange Commission (the "Commission" or the "SEC"), as communicated in Release No. 34-858541; File No. SR-NYSEArca-2019-01, dated May 14, 2019, with respect to a proposed rule change to list and trade shares of the Bitwise Bitcoin ETF Trust ("Bitwise ETF") under NYSE Arca Rule 8.201-E (the "Rule Change"). I support the Proposal and appreciate the opportunity to add my perspective.

In particular, I appreciate the opportunity to comment on questions or concerns the Commission may have about the value of bitcoin.

I am a General Partner at Blockchain Capital, a San Francisco based venture capital firm that has invested exclusively in crypto and blockchain companies since 2013. Investments include: BitGo, Bitwise, Coinbase, Circle, Coinlist, Harbor, itBit, Kraken, Radar, Ripple, and Xapo. Prior to Blockchain Capital, I was a Vice President of Equity Research at Needham & Company, where I authored the Wall Street's first industry report on blockchain technology and regularly authored research on bitcoin as an asset.

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The Value of Bitcoin

Bitcoin is often described as digital money. However, given that reasonable people may disagree as to whether or not bitcoin meets the criteria of money and that money is simply a subset of property, it is sufficient to categorize bitcoin as property¹.

¹ IRS Notice 2014-21, Section 4 <https://www.irs.gov/pub/irs-drop/n-14-21.pdf>

As digital property that does not generate cash-flows, it may be tempting to conclude that bitcoin does not have value. However, such a conclusion is evidently short-sighted: Empirically, millions of people from every region of the world *have* ascribed value to bitcoin as an asset. This letter will examine why this phenomenon has occurred by analyzing bitcoin's underlying attributes in relation to other, more familiar store-of-value assets with similar properties.

Prior to doing so, quantifying the market for store-of-value assets may be helpful context to better understand the magnitude of wealth that seeks assets with similar attributes.

Quantifying the Store-of-Value Market

While “store-of-value” is a term that is unfamiliar to most, these types of assets are pervasive across the global economy and well-recognized in all but name.

There are several types of assets that are used as a store of value—that is, these are assets that are not acquired for the purpose of cash flows but, instead, are acquired in order to preserve wealth over time. For brevity, this evaluation will focus on three of the largest store-of-value markets:

- **Gold:** The total value of above-ground gold is roughly US \$9 trillion. For a conservative estimate, we can restrict this quantification to the total amount of gold held for private investments and by the official sector which, in total, account for roughly 38% of all above ground gold, or roughly US \$3.5 trillion at current market prices (as of June 2019).² Granted, this is an overly conservative estimate as it does not include any of the gold used for jewelry which exceeds US \$4 trillion in value—and some portion of which is undoubtedly used as a store of value (as opposed to purely for its cosmetic appeal).
- **Art and Collectibles:** Deloitte estimates that ultra-high net worth individuals alone store a total of US \$1.6 trillion in art and collectibles.³ Given that these individuals do not comprise the entirety of the art and collectibles market, we can very conservatively use US \$1.6 trillion as a low-end estimate of the overall art and collectibles store-of-value market. Further supporting this figure as a conservative estimate, Baird Asset Management estimated the total value of the collectibles market at US \$4.3 trillion.⁴ Later in this comment letter, I will address how high-end collectibles and art are primarily used as store-of-value assets.
- **Real Estate:** As of 2017, HSBC estimates that the total value of residential property amounts to roughly US \$168 trillion.⁵ While a significant portion of the total residential real estate market is attributable to purposes that are not exclusively for storing value—

² World Gold Council, as of 2017. <https://www.gold.org/about-gold/gold-supply/gold-mining/how-much-gold>

³ Deloitte and ArtTactic, Art and Finance Report 2017 z <https://www2.deloitte.com/lu/en/pages/art-finance/articles/art-finance-report.html>

⁴ Baird Asset Management, “Picasso, St. Gaudens or Lafite: Does Passion Have a Place in Wealth Management?”, 2009, <https://content.rwbaird.com/RWB/Content/PDF/Insights/Whitepapers/does-passion-have-a-place-in-wealth-management.pdf>

⁵ HSBC, Global Real Estate: Trends in the world's largest asset class, 2017 https://internationalservices.hsbc.com/content/dam/hsbcis/pdf/HSBC_Global_Real_Estate_Report_July2017.pdf

such as its consumptive value (e.g. people living in their homes) and cash-flows from rental opportunities—these purposes are not mutually exclusive with real estate’s utility as a store of value. Real estate’s utility as a store of value is particularly evident upon examination of the micro-structure of many metropolitan real estate markets where a significant portion of the market is driven by overseas purchasers that do not reside in the purchased homes or collect rental income—such purchases are strictly attributable to real estate’s utility as a store of value. As such, even a very conservative view of this market attributes 5%, or US \$9 trillion to real-estate’s utility as a store of value.

In total, this very conservative estimate for total store-of-value assets amounts to over US \$14 trillion. Regardless of whether the total market size is US \$14 trillion or well-above US \$100 trillion, it is clear that an extraordinary amount of the world’s wealth resides in assets with store-of-value properties. As is evident in the history of gold and other assets (e.g. other precious metals, real estate), this has been true for hundreds of years and I have found no reason to believe that it will cease.

Volatility and Store-of-Value Assets

Before examining bitcoin’s valued attributes and how they compare to other store-of-value assets, it may also be helpful to first address a common misperception that “store-of-value” implies that the value of such assets is perpetually stable. Looking at the other store-of-value assets listed above, this is clearly not the case.

For example, gold lost more than 50% of its value from 2011 to 2015; San Francisco real estate prices fell by more than 50% from 2006 to 2009 (according to S&P/Case-Shiller price index); and while the art and collectibles market is more difficult to measure and index, even the most favorable indices highlight significant volatility.⁶

Indeed, short-term volatility appears to be a hallmark of store-of-value assets rather than a black mark against them. This is largely caused by their above referenced characteristics. With very scarce items, relatively static supply coupled with fluctuating demand can lead to significant price volatility. Gold’s dramatic appreciation in the throes of the 2008 financial crisis is a great example of the effects of an inelastic supply.

This effect is uniquely amplified in bitcoin as a result of its unprecedented scarcity. As mentioned above, other assets are scarce, but even the scarcest assets, such as gold, still increase in supply every year—particularly when price increases and gold that was formerly unprofitable to mine becomes profitably accessible. In comparison, bitcoin exhibits absolute scarcity: supply is truly finite with a mathematical limit of 21 million coins ever being created. With an even more inelastic supply, bitcoin naturally sees larger volatility in its price.

Lastly, volatility is to be expected with market growth. As more investors gain exposure to this new asset class, liquidity increases, and larger amounts of money are required to move the market. In the early stages, relatively small investments could cause large swings in price.

⁶ See Artnet’s price indices. <https://www.artnet.com/price-database/>

However, as the market has matured over the past 10 years, volatility has gradually decreased as the markets deepen. Today, large orders are absorbed without significant slippage.

This is important to appreciate otherwise we risk prematurely dismissing bitcoin as a useful store-of-value asset due to its intermittent periods of heightened volatility as adoption grows.

Examining Bitcoin’s Valued Attributes

To better understand bitcoin’s value as a vehicle for storing wealth, we can individually examine some of its valued attributes including its scarcity, divisibility, portability, fungibility, liquidity, programmability, ease of authentication, and the strong assurances it offers its users.

It’s helpful to explore each of these valued attributes in greater depth and relative to other store-of-value assets in order to further explain why tens of millions of people have ascribed value to bitcoin.

Scarcity

As stated above, the total supply of bitcoin is strictly limited to 21 million units that are released on a perfectly predictable and transparent supply schedule. Examining this attribute alone, bitcoin has value for the same reason that gold and high-end collectibles such as Picasso paintings and vintage vehicles have value: their absolute scarcity provides a useful conduit for capital preservation. With scarcity, holders of these items can rest assured that new supply will not dilute their accumulated wealth. This capability delivers real utility to hundreds of millions of people.

To a similar, albeit lesser extent, real estate also derives a significant portion of its value from scarcity and supply constraints. Indeed, the value of real estate as a byproduct of its scarcity—as opposed to consumptive value— is made readily apparent by examining the micro-structure of many metropolitan real-estate markets.

For example, over the past decade, the Vancouver residential real estate market has, to a significant extent, been driven by overseas purchasers that don’t reside in the purchased homes or collect rental income⁷—clearly these purchases are not for consumptive or cash-flow value, they’re a store of value in an asset with limited supply. The impact became so severe that Vancouver implemented an “empty-house” tax to discourage the use of local real estate as a store of value for foreign capital.⁸ Regardless, the demand for these scarce assets is readily apparent.

Similarly, if we examine the market for gold and high-end collectibles such as Picasso paintings and vintage vehicles it becomes clear that the vast majority, if not the entirety, of their value is derived from scarcity.

⁷ “The Role of Foreign Capital in Vancouver’s Housing Market”, Anjum Mutakabbir, Simon Fraser University School of Public Policy, 2014.

⁸ City of Vancouver, Bylaw 11674, <https://vancouver.ca/your-government/vacancy-tax-bylaw.aspx>

Gold's value in this respect is intuitive and well understood, so I will instead focus on the less familiar market of high-end collectibles. Paintings from the likes of Picasso and Van Gogh are undeniably beautiful and masterful, but purchasers do not acquire these assets to put them on their wall—indeed, the vast majority of these assets reside in vaults or museums. Surely, the purchasers of these assets did not acquire them for their inherent beauty—of which they have a limited capacity to consume—instead, these assets are acquired primarily because no new Picasso paintings or 1963 Ferrari GTOs will ever be made. Simply put, they are scarce, widely-recognized assets.

Bitcoin is valued for these exact same reasons; however, unlike gold or real estate which are inherently at risk to increases in supply (i.e. new supplies of gold being discovered, or sudden new development in real estate), bitcoin's supply is enforced algorithmically and hard coded into the network, making its scarcity superior to previous store-of-value assets.

Some have raised concerns about other blockchain-based digital assets diluting the total supply of bitcoin. However these fears are misguided: These other blockchain-based digital assets will not be validated or recognized by the Bitcoin network. In this sense, the notion that other blockchain-based digital assets dilute the supply of bitcoin is erroneous in the same way that suggesting that newly minted Thai Baht dilutes the supply of US Dollars.

Despite their utility as a scarce asset, at an average price per Picasso painting or vintage Ferrari in the tens of millions of dollars, and the average home price in Vancouver over US \$1 million, these assets are largely inaccessible to the vast majority of people—which leads to another of bitcoin's valued attributes: divisibility.

Divisibility

Whereas the required capital to access scarce assets such as metropolitan real estate, or high-end collectibles exceeds US \$1M, the fact that bitcoin is divisible to eight decimal places lowers the barrier to entry for exposure to less than US \$1. In part, this helps explain why bitcoin has been a democratizing “bottom-up” asset with the smaller end of the market driving a majority of volume to-date—in contrast to the other assets described which have largely been confined to the realm of high net-worth individuals. In this sense, bitcoin is the every man's Picasso.

Furthermore, while a majority of purchasers use these assets as a store of value, it is extremely challenging and cumbersome to sell a fraction of a Picasso painting, a fraction of a 1963 Ferrari GTO, or a fraction of a home in Vancouver. In comparison, users of bitcoin as a store of value can readily liquidate any fraction of their holdings with ease. This is real utility that is valued by many of its users.

Portability

As the native asset of a global network, bitcoin can quickly and easily be transferred to anywhere in the world. In comparison, most other store-of-value assets are impossible or extremely cumbersome to transfer: real estate is inherently immobile, vintage vehicles are challenging and

expensive to move and, given their fragility, classic paintings are similarly challenging to transport.

Relative to most other store-of-value assets, gold likely has the best portability but even gold is heavily constrained in this respect by its physical nature. For example, in 2013 the Bundesbank announced a decision to repatriate 20% of the country's total gold stock from foreign vaults in Paris and New York. However, repatriating even a minority percentage of Germany's total stock took roughly 5 years and cost over US \$9 million to complete⁹. In comparison, a similar value of bitcoin could be transferred in mere hours at less than a millionth of the cost.

Bitcoin's portability is clearly a valuable and unprecedented attribute.

Fungibility / Homogeneity

Among traditional store-of-value assets, only gold is fungible: That is, one ounce of gold is as valuable as any other ounce of gold. In comparison, each Picasso painting is priced differently; each vintage Ferrari is valued varyingly according to its current condition; and every piece of real estate is valued differently depending on a variety of factors (location, size, condition, etc).

In this sense, bitcoin resembles gold: Each bitcoin or fraction thereof is equally as valuable as other units of the same size. This is important because it reduces the overhead costs of evaluating the various qualities of each asset to arrive at a fair price.

Liquidity

Partly as a byproduct of its divisibility, fungibility, and portability, bitcoin has a highly liquid secondary market that is conducive to an efficient market and price discovery. While classic paintings and vintage vehicles rarely trade in secondary markets and consequently, have poor price discovery, bitcoin regularly trades more than US \$250M of spot market volume—and often sees more than US \$1B of daily volume. Bitcoin's liquidity is valuable to users in that they can quickly acquire and dispose of the store-of-value asset with minimal transaction costs. Empirically, we know that liquidity is valuable in that liquid assets tend to sell at a premium relative to illiquid assets.

Furthermore, whereas real estate transactions take months to finalize and with costs typically totaling 8-20% of the property transacted, units of bitcoin can be transacted in seconds with <1% transaction costs. Bitcoin's reduced transaction fees and accelerated transaction timeframe are a boon to users of store-of-value assets and bring additional liquidity to the market by lowering barriers to entry.

Programmability

Among other store-of-value assets, bitcoin is particularly unique in its programmability. As a natively digital asset, bitcoin can be programmed to attain unique objectives and enhanced security.

⁹ Financial Times, Claire Jones, "How Germany got its gold back", November 2017

For example, bitcoin can be sent to a “multi-signature” address that effectively specifies that under no circumstances can the bitcoin move unless, say, 2-of-3 or 4-of-5 parties consent to the transaction—effectively reducing a function of a vault to a few lines of code. Similarly, bitcoin can be sent to a “time-lock” address that specifies that under no circumstances can the bitcoin move before a predetermined point in the future.

In this way, Bitcoin natively replicates many of the functions of a legal vehicle such as a Trust or contract. However, whereas it can be costly—in terms of nominal expense and time—to establish a Trust or have a contract drafted, the Bitcoin network democratizes access by performing these functions with minimal time and cost.

Currently, more than 18% of all bitcoin in existence (valued over US \$34 billion as of 6/22/19) is stored in multi-signature addresses—in this sense, bitcoin’s programmability delivers real utility to its users and programmability is another unprecedented and valued attribute.

Ease of Authentication

It is difficult to verify the authenticity of most traditional store-of-value assets. Even gold, one of the simplest assets to authenticate, requires dangerous nitric acid or expensive professional equipment.

At the more difficult end of the spectrum is the high-end collectibles market. For example, in the rare art market, forgeries are notorious and pervasive, and few people have the ability to discern high-quality frauds from authentic pieces—and even those that are qualified regularly disagree with one another regarding authenticity. Vintage vehicles are similarly (but less) challenging. Real estate similarly requires expensive and detailed inspections on the various aspects of the property.

In comparison, bitcoin can easily be authenticated on a standard computer using free and widely available software which makes it more accessible and valuable to a greater number of people.

Strong Assurances

Earlier we discussed the impact of foreign store-of-value purchasers on the Vancouver real estate market but this occurrence is not unique to Vancouver—indeed this occurs in many cities across Canada, the United States, the United Kingdom and others.

What these cities have in common is that they all reside in jurisdictions with relatively strong property rights. Given that people have an innate desire to protect their property, wealth gravitates to these jurisdictions (particularly from countries with weak or ill-defined property rights or where they are poorly or unequally enforced) in part to mitigate the risk of wealth seizure.

Bitcoin is very useful in this respect: Its underlying network is a rules-based, self-arbitrating court where valid transactions are clearly defined, objectively verifiable, and unerringly enforced

by network participants' software. As a result, bitcoin offers its users strong, geo-politically neutral assurances for objective property rights, impersonal rules and consistent enforcement.

Bitcoin's strong assurances are of great utility to the largest segment of the population: good, honest people that want to protect their property in a non-violent manner.

Conclusion

While, admittedly, digital assets and digital scarcity are relatively new frontiers for everyone, bitcoin has over 10 years of consistent operating history and the market is unequivocal in its demand for an asset with bitcoin's attributes—many of which are unprecedented.

At a low-end market estimate of roughly US \$14 trillion for store-of-value assets, the magnitude of the market reflects people's innate desire to preserve a portion of their wealth through scarce and well-recognized assets.

Lastly, given that demand for store-of-value assets has persisted for thousands of years and that bitcoin presents a unique—and in many ways superior—set of attributes as a store-of-value asset in the digital age of the 21st century, it seems reasonable to allow the American investing public easy, secure and regulated access to financial products that provide price exposure to this asset through existing, trusted channels and advisors.

Thank you for the opportunity to comment on this filing and the value of bitcoin.

Sincerely,

Spencer Bogart, CFA
General Partner, Blockchain Capital