Subject: File No. SR-NYSEArca-2019-01
From: SAM AHN

This is my 11th comment on bitcoin. All my writings about bitcoin, including this, are about intrinsic value. Interested readers can trace back my previous comments from the 10th at the link below:

Link 1: https://www.sec.gov/comments/sr-cboebzx-2019-004/srcboebzx2019004-5318047-183890.pdf

The main purpose of this one is to report my travel to so-called bitcoin protocols, appearing in Page 6 of Release No. 34-85854, as quoted below:

> (Quote 1) 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.

I thought the protocol was a part of the white paper while reading the same explanation in SR-Cboebzx-2019-004. Out of this confusion, I ended my travel at bitcoin white paper and reported on the white paper only in my 8th comment linked below:

Link 2: https://www.sec.gov/comments/sr-cboebzx-2019-004/srcboebzx2019004-4934624-178449.pdf

Now that I understand the protocol is not the white paper, I feel obligated to go further into the protocols and report to my readers. I am not a computer professional, so it won't be difficult for anyone to read this one.

First, I found this protocol:

Link 3 (Protocol) https://en.bitcoin.it/wiki/Protocol_documentation#Hashes

This protocol was all about transfer of ownership, which has nothing to do with intrinsic value. Therefore, I got to the mining protocol as indicated in Link 3 above.

Link 4 (Current mining protocol) https://en.bitcoin.it/wiki/Getblocktemplate

At the beginning of Link 4 above, it is written that this mining protocol is a successor to the previous one that has been outdated since 2012. As I could not find what I was looking for in Link 4 above, I went to said previous one, linked below:

Link 5 (Outdated mining protocol) https://en.bitcoin.it/wiki/Getwork

There, I found the useful word "difficulty," which means the number of zeros, at the beginning of the 64-digit string hashed out of STA-256, required for recognition as a success in mining.

I wanted to find, in a protocol or in a document related thereto, if this "difficulty" is somehow related to what is asserted in Page 8 of this proposal, as quoted below:

(Quote 2) 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 underlined part in Quote 2 above, as also written in SR-Cboebzx-2019-004, was the main question I raised in my 8th comment at Link 2 above. As the applicants of this proposal seems to have ignored my question while they make an amendment contained in Release No. 34-85854, they may have thought that the protocol in Quote 1 above had been the answer made prior to my question. That is, I may have asked a question that had already been answered. That's why, perhaps out of shame, I had to travel through Links 3, 4 and 5 above.

Finally, I got to this link below:

Link 6 (Difficulty) https://en.bitcoin.it/wiki/Difficulty

And found out what I was looking for, as quoted below:

(Quote 3) The numbers game is how many attempts your hardware can make per second.

"Attempt" in Quote 3 is not math but means input of random information into a STA-256 hashing program. No part of the program language displayed in the white paper, protocols or related documents has anything to do with "complex mathematical calculation" for a success in mining. The program language works to scare us away from the core information expressed in the short line of Quote 3 above. The truth is that mining success depends upon the miner's computer, not something like successful calculation of complex math problems. Therefore, the protocol in Quote 1 above cannot give us an answer to my question on the nature of "complex mathematical calculation," which was raised in Link 2 above.

By the way, the concept of intrinsic value has not been totally ignored by the SEC for a long time, as may be proved by this link below:

Link 7: https://www.sec.gov/news/speech/speech-piwowar-2017-09-08

(Quote 4) Arbitrage trading ensures that the prices at which ETPs trade reflect the intrinsic value of the product's underlying assets or the benchmark it tracks. If the price of the ETP deviates too much from the price of the underlying basket of securities, this creates an arbitrage opportunity. For example, large broker-dealers could buy the cheap ETP and short sell the underlying basket. The broker-dealer would then deliver the ETP shares to the fund in exchange for the underlying basket, which would then be used to close out the short sale. This process helps ensure that ETPs trade near their intrinsic value — a benefit to all investors.

Quote 4 is about arbitrage trading, said just 20 months ago by a then commissioner of the SEC. This tells us that the issue of intrinsic value has not been totally ignored by the Commission for a long time. There are mentioned "arbitrage" many times in Release No. 34-85854, but I wonder what those arbitrages can mean where intrinsic value is missing.

As bitcoin does not represent something valuable and is not a debt instrument, the only way we can draw its intrinsic value from is its market prices. However, as it is not tangible either, its price is destined to collapse when the time arrives, like the blue-sky stocks did at the beginning of the Great Depression. If this thought of mine is deemed wrong, either the applicants or the SEC should explain how an intangible which does not represent something and is not a debt instrument can have intrinsic value.

Recently, bitcoin price sky-rocketed from around $5k to around $8k, in response to some investment institutions' expression of their willingness to trade bitcoins. It was a bonanza for bitcoin holders but a disaster to short position holders. (I have not taken any position, long or short, on bitcoin-related products. I have been writing for public interest.) Out of this experience, we can easily guess that bitcoin price would explode if the SEC approves a bitcoin ETF.

We can learn from Quote 4 above that intrinsic value functions like an anchor to the price of something. Bitcoin's wild up and down swings we have observed so far were due to absence of intrinsic value.

Written under "Statutory Basis" on Page 42 is this quote:

> (Quote 5) The basis under the Act for this proposed rule change is the requirement under Section 6(b)(5)46 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.

If you are careless with intrinsic value, you cannot protect public interest.