



Thoughts on Bitcoin and Cryptocurrencies

John R. Gilbert, Senior Research Consultant

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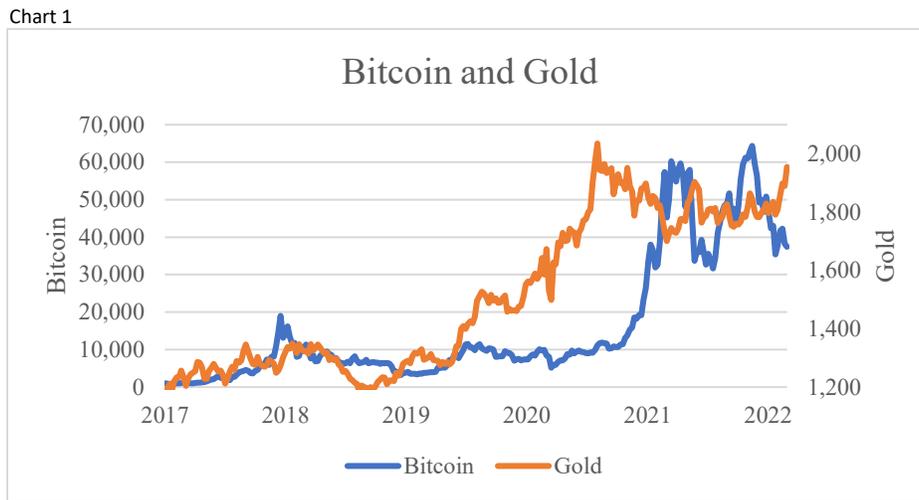
The waning weeks of 2021 and the early ones of 2022 were not kind to the asset classes that led financial markets coming out of the Covid collapse. Non-fungible tokens, Special Purpose Acquisition vehicles and other lightning rods for a roaring episode of risk-taking returned earthward to disappoint their previously ebullient fans. But the ones that received the most attention on the way up were, of course, cryptocurrencies, led by their center forward, Bitcoin. Our purpose here is to consider the merits of this asset and its prospects.

Bitcoin was created with the intent of disrupting incumbents in the financial system and eliminating their expensive cost structures. The most important incumbents are, of course, central banks. A noteworthy feature of Bitcoin is the limit on the quantity that can ever be created, which is understood to be 21 million. The track record of central banks in defending the purchasing power of their currencies in the modern era ranges from mediocre to atrocious. Since the abandonment of precious metals as backing, central bank “paper” money has been vulnerable to debasement and, thus, inflation to one degree or another. Bitcoin has its foibles, including the shadowy nature of its provenance (nobody knows if its putative inventor Satoshi Nakamoto actually exists), but a perpetual cap on its supply is a major differentiator from central bank money.

Criteria have been developed for what qualifies as money, however, and these are challenging for Bitcoin. To be accepted as money it must be a medium of exchange, a unit of account, and a store of value. An American dollar, for example, is the currency in circulation in the U.S., and thus the medium of exchange, and by implication the unit of account. It is held in quantities in the trillions in bank accounts and money funds, and thus qualifies as a store of value, whatever its vulnerability to inflation.

As a medium of exchange, Bitcoin appears to fail. Despite the efforts of some promoters, it gets essentially no use in everyday legal transactions. Its quoted prices are so volatile that it would make no sense to do so. Such volatility demands a long holding period to avoid disposing of it at the wrong time, which precludes its use as a medium of exchange. And, if it is impracticable as a medium of exchange, it will not qualify as a unit of account.

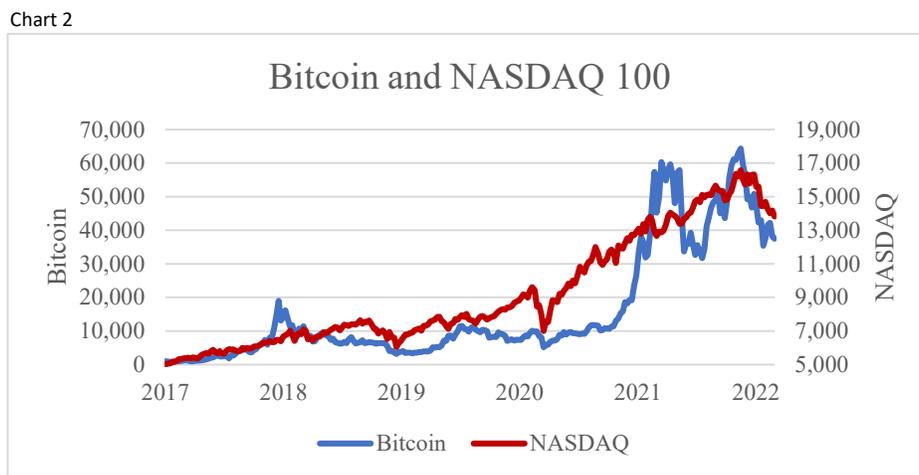
It is as a store of value, therefore, that Bitcoin must compete for demand. It has done so with spectacular apparent success starting from virtually zero, as the first chart shows:



Source: Bloomberg, BFS

Bitcoin has left its closest competitor in the dust. Gold has not approached its performance over this time period. That, of course, is the primary shortcoming of that observation. Precious metals have been stores of value for millennia—an observation period that will satisfy as statistically significant by any measure. Bitcoin in relative terms is a precocious infant. It is also the case that gold is held as a reserve asset by many central banks, which is arguably an ultimate test of what is a store of value.

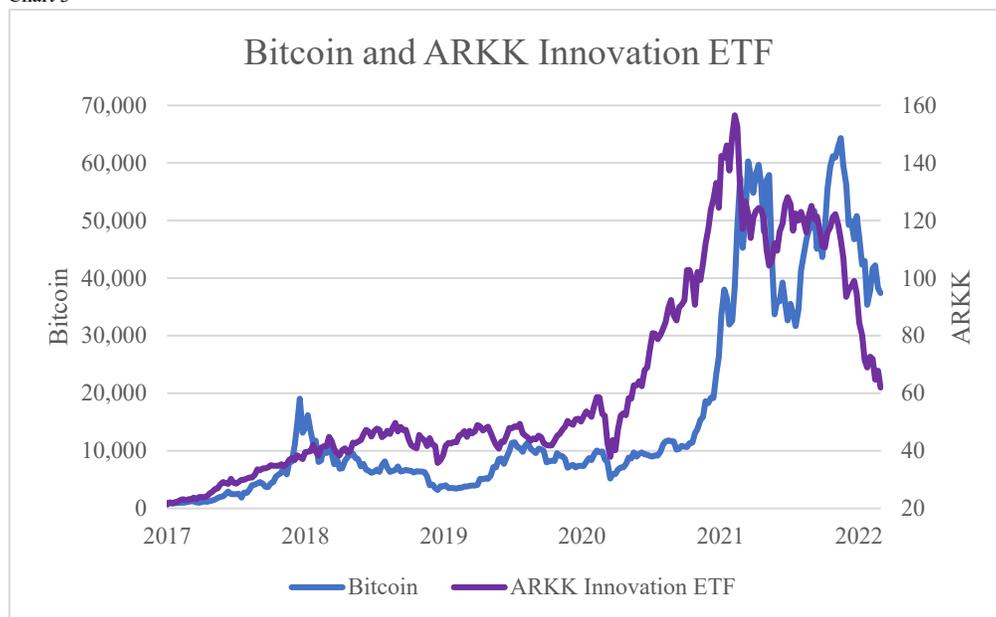
Not only is the observation period inadequate, but Bitcoin has had mixed company on the way up. Its ascent coincided with that of certain other assets during the recent period of financial speculation. Leaders of that pack have included technology stocks. In Chart 2 we show the performance of Bitcoin and the NASDAQ 100 index:



Source: Bloomberg, BFS

The NASDAQ leadership includes very high-quality companies with, at least for now, apparently insuperable competitive advantages, including Microsoft, Alphabet (Google) and Amazon. Bitcoin's coincident performance is even closer to the ARKK Innovation ETF, an exchange-traded fund that includes many of the more speculative companies trading at more elevated valuations:

Chart 3



Source: Bloomberg, BFS

We have excluded from comparison many of the most doubtful objects of speculation during this period such as non-fungible tokens and Special Purpose Acquisition Companies, since Bitcoin's claim to intrinsic value is, at a minimum, superior to the more debatable investment merits of many of those.

The question that remains is how to think about Bitcoin as a store of value beyond the recent speculative episode. The central question is whether a currency that is not issued by a government can have prima facie durable value. Government-issued currencies do because they are backed by the authorities' taxing power. But privately issued currencies have no such backing, which calls into question the sustainability of their market values, or even their continued existence.

History is not encouraging in this regard. In the United States, private issuance of currencies was tried in the 19th century during what is known as the Free Banking Era from 1837 to 1863. It began with the failure to renew the charter of the Second Bank of the United States in 1837 —the country's second attempt at a central bank. During the Free Banking Era, banks issued their own currencies in the form of banknotes based upon their deposits of gold and silver. The states applied targets for reserves and capital, but bank failures were frequent. The federal National Bank Act was passed in 1863 to bring some order, but the U.S. would remain without a central bank as such until 1913.

Nor is the present particularly encouraging. Facebook attempted to issue its own currency, Diem (formerly known as Libra). Despite its size, profitability, and customer base, the company's project was abandoned in no small part because of a discouraging response from the authorities.

It may be that Bitcoin's future should not be confused with that of underlying blockchain technology. That has the potential to improve the efficiency of financial systems using distributed ledgers, as it is described. The financial system is built upon any number of anachronisms and will benefit from more efficient technology. Trades in financial markets are allowed two days to settle, for example, even though communications can occur essentially instantaneously. So, blockchain will likely be part of the architecture of the financial system.

The success of digital currencies is another question. We shall focus on Bitcoin since it is, so far, the most successful. Many others have been developed and have already disappeared. In his book *The Future of Money*, Eswar Prasad explores this distinction at some length:

For all the excitement about Bitcoin, its underlying technology—which is truly ingenious and innovative... — is likely to have more staying power than the cryptocurrency itself.

And, returning to the store of value question, Prasad rejects the proposition:

Proponents of Bitcoin and other cryptocurrencies of its ilk seem to view its limited supply as the key to its long-term value. This is a thin reed to hang valuation on—especially for a virtual object that has no intrinsic use. Remarkably, and in sharp contrast, money issued by the world's major central banks seems to have value precisely because its supply is infinitely elastic. More simply, this means that a central bank such as the Fed can print as much of its money as it feels is required to prop up the economy and financial system. Rather than destroying its value, such elasticity in its supply seems to anchor that value. The central bank's ability to provide such money easily and in massive quantities when the chips are down makes businesses and financial institutions more eager to transact in that money even in normal times, knowing that their counterparts will accept it as well. This is another reason that private currencies, which rely on limited supplies to retain confidence, are unlikely to seriously rival fiat currencies.

The question of the roles of governments in cryptocurrencies is, in fact, in its very early days. They include regulation, of course, in response to the use of digital currencies in illicit activities. But the most important is the prospect of government-issued Central Bank Digital Currencies, or CBDCs. Developed market central banks have been slow to respond, but responses are coming. In January 2022 the Federal Reserve issued a discussion paper on the subject with a request for comments in the following months (Note 1). Other central banks have made similar suggestions. Few central banks have actually issued money in digital form, with an exception in the Bahamas, where the

central bank issued the delightfully named Sand Dollar. Ecuador accepted Bitcoin as legal tender in 2021, but that country has used the U.S. dollar instead of its own currency for some time.

After reviewing the positive and negative aspects of CBDCs, Prasad concludes:

In the long arc of history, these changes will imply a return from the dominance of official currencies to renewed competition between private and fiat currencies. As recently as a century ago, private currencies competed with each other and with government-issued currencies. The inception of central banks decisively shifted the balance in favor of fiat currency. Now the pendulum is swinging back, but only partially. Cryptocurrencies and the technological advances they represent will make payment systems more efficient, but decentralized unbacked cryptocurrencies are unlikely to serve as viable long-term stores of value.

Given the rapt attention it receives in the press, however, we are still left with the question of whether Bitcoin has a place in portfolios. The risks are considerable. First, the observation period for which we have data for cryptocurrencies is too short to make confident judgments. Second, the likelihood that CBDCs will play a greater role as time passes raises a question about the reliability of even the limited data set that we have for Bitcoin. The best case may be that over time it might play a role something like gold or, with its greater volatility, silver.

Harry Markowitz's seminal work in finance showed that an asset deserved some allocation if it reduced a portfolio's volatility, even if its contribution to return was limited. *The Economist* magazine tested Bitcoin's role in portfolio simulations, finding that weightings of 1 to 5% produced optimal results (Note 2). That appears reasonable, although whether it is worth the executory costs that firms such as Coinbase charge is questionable.

In conclusion, this author does not share the messianic zeal that some have for Bitcoin. The future has had surprises in store for missionaries. But an Economist-sized portion is an interesting option.

Notes:

1. Board of Governors of the Federal Reserve System, *Money and Payments: The U.S Dollar in the Age of Digital Transformation*, January 2022.
2. *The Economist*, September 25, 2021.

Reference

Prasad, Eswar, *The Future of Money: How the Digital Revolution is Transforming Currencies and Finance*. Cambridge, Mass.: Belknap Press of Harvard University.



John R. Gilbert, CFA, CPA, was formerly Director of Research for Bradley, Foster & Sargent, Inc. He continues to serve as a member of the Bradley, Foster & Sargent Investment Committee. Previously, he was Chief Investment Officer at New England Asset Management, Inc. and a portfolio manager and analyst at CIGNA Investment Management. John is a graduate of Brown University and Harvard Business School. He has 45 years of investment experience.