ELLWOOD CELEBRATING 40 YEARS

March 2018

Investment Insights

Bitcoin: The Basics of the Cryptocurrency Everyone is Talking About

Andrew Schwark, CFA
Senior Consultant

Andrew Geiger, CFA
Senior Research Analyst

One of the most discussed topics in the investment world these days is bitcoin. Bitcoin, a type of cryptocurrency, took the world by storm when multiple cryptos appreciated by 1,000 percent or more in 2017. Though it's often discussed, there is still confusion about what bitcoin is and what role it will play in the future. In this commentary, we will explain what cryptocurrencies are, their potential for disrupting the existing financial exchange system, and their viability for use in a diversified, institutional portfolio of assets.

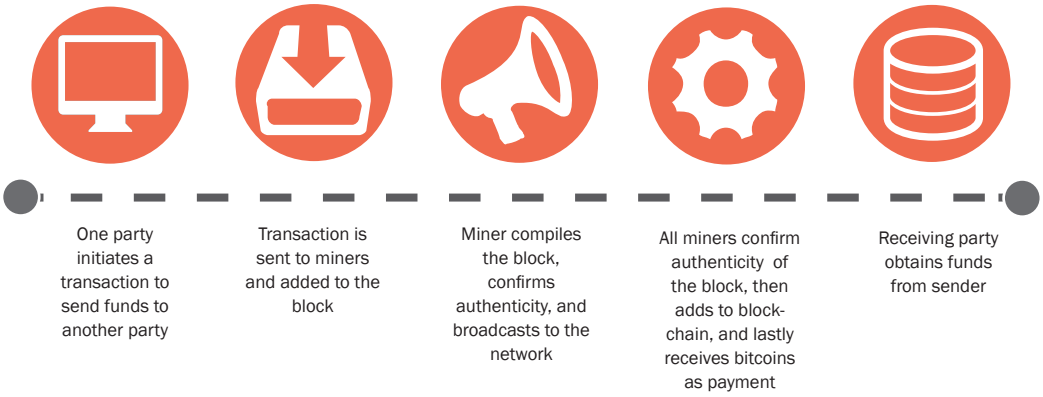
What are Cryptocurrencies? What is the blockchain?

A cryptocurrency is a form of digital money that uses a distributed ledger system called blockchain to provide security, privacy, and transparency to transactions. This is different than our existing exchange system that relies on intermediaries like banks that utilize private centralized ledger systems. In other words, banks control the flow of financial transactions and keep records on their private servers. The goal of cryptocurrencies is to create a decentralized way to trade, buy, sell, and transact anything of value.

The first, most well-known, and largest cryptocurrency is bitcoin, which was established by an anonymous inventor in 2009 under the pseudonym Satoshi Nakamoto. Since then a number of different cryptocurrencies have come to market, each trying to address a perceived deficiency in the cryptocurrency marketplace.

The true innovation in bitcoin lies in the development of the blockchain technology. Blockchain is an open source, decentralized ledger system that exists and is updated simultaneously for all users on the network. In other words, it keeps records everywhere at once for all to see.

The process, as illustrated below, begins when one party anonymously announces to the network the desire to complete a transaction with another party. Individuals on the network, called miners, use sophisticated computers with high processing power to collect transaction details and add them to a series of transactions called a block. Then, blocks are sequentially chained together using secure cryptography and distributed to the entire network. Once a block is added to the chain it cannot be



altered, leaving behind a completely traceable and secure record of transactions. Miners are paid in newly minted bitcoins for their service.

The implications of this technology are far reaching. From medical records to supply chains to voting, blockchain promises to increase the speed, security, and accuracy of the flow of information. Of course, the most practical use of blockchain is conducting financial transactions. The ability to disrupt the current system of financial transactions controlled by banks and other financial institutions is arguably blockchain's most promising feature. In the future, blockchain technology has the potential to reduce both the cost and the time in conducting financial transactions, while increasing security and transparency of the exchange system.

Why all the interest in cryptocurrencies?

Cryptocurrency enthusiasts often point to the decentralized nature of digital currencies as their most defining feature. Money, as we think of it today, consists of traditional flat currencies issued and controlled by governments or central banking authorities. Cryptocurrencies eliminate these centralized authorities and create a unit of currency whose price can only be altered by the supply and demand of the market. The cryptocurrency networks are void of political influence, so the value cannot be manipulated by government policies. The supply of bitcoins, for instance, is determined by the currency's algorithm and capped at 21 million bitcoins, keeping it free from manipulation.

While decentralization may be less beneficial to individuals in developed markets with credible monetary authorities, many in developing nations view cryptocurrencies as a better store of value than their home currency. These digital currencies also have benefits for people who need to move money for nefarious reasons. Because transactions are conducted anonymously on cryptocurrency networks, they are a popular choice among individuals looking to circumvent capital controls, avoid taxation, or launder money.

What are the potential pitfalls of Cryptocurrencies?

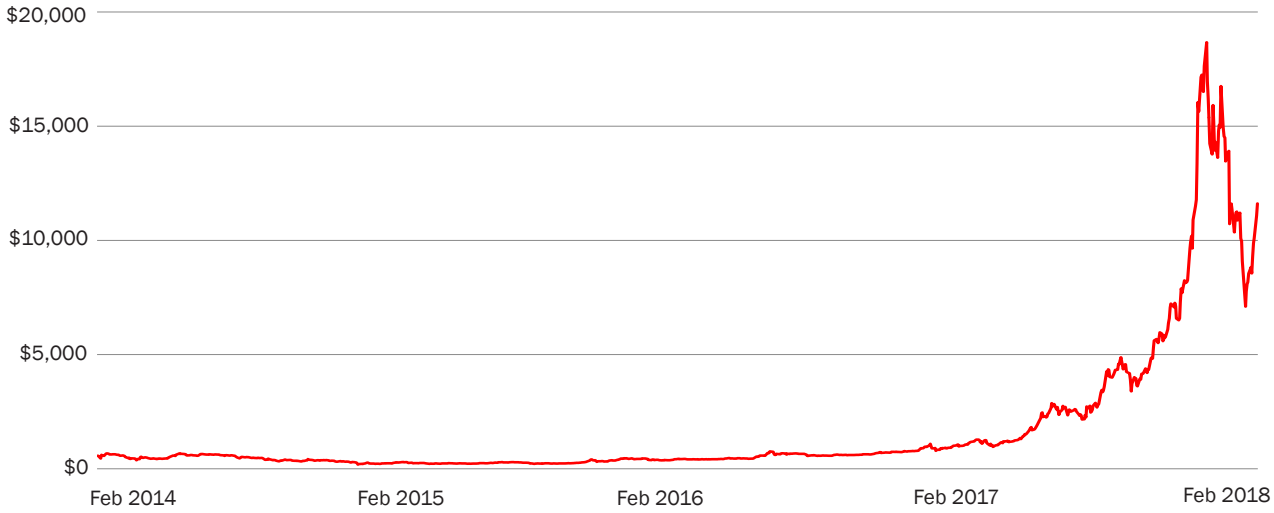
Fraud and scams have stifled the growth of cryptocurrencies since their inception. While transactions are secure, holders of bitcoin need to keep their assets in digital wallets which require private keys to access. If a holder loses their private key or has it stolen by a hacker, they have lost their bitcoins permanently. Infamously, the bitcoin exchange Mt. Gox announced in 2014 that it had 'lost' 850,000 of investors' bitcoins – worth approximately $450 million at the time -- claiming the bitcoins were hacked and stolen. Mt. Gox later recovered and returned around 200,000 bitcoins that had been "misplaced".

Unlike today's financial intermediaries, there are no refunds once a transaction is confirmed on the blockchain. If a holder accidentally sends bitcoin to an unintended recipient, there is no formal recourse for the holder to reacquire their bitcoin other than a new transaction that reverses the first.

Why did bitcoin appreciate so much in 2017?

Previously the domain of technophiles, 2017 may be remembered as the year cryptocurrencies went

Price of Bitcoin from February 20, 2014 - February 20, 2018



Source: Bloomberg Finance L.P.

mainstream. At the start of 2017, bitcoin was trading around $1,000 and by the end of the year it was trading close to $13,400. While it is impossible to know exactly what caused this meteoric rise, it is helpful to look at the basic laws of supply and demand.

One of the main reasons that the price of bitcoin increased so drastically was actually the price itself. When media outlets began running cryptocurrency news and analysis focusing on the potential financial windfalls, a wave of new buyers entered the market. It's estimated that the number of bitcoin users in 2017 grew by millions. Coinbase, a popular bitcoin exchange in the United States, added 100,000 new users on one day in February 2017.

However, during that same timeframe, only a limited number of new bitcoins were added to circulation. Since bitcoin is limited in supply, the laws of supply and demand required the price of the bitcoin to rise as demand was increasing so dramatically. Investors experienced "FOMO", or the Fear Of Missing Out, and wanted a piece of the action, pushing the price even higher.

What are the implications for institutional investors?

An asset that appreciates ten times in one year is hard to ignore. The natural question is: Do bitcoins or other cryptocurrencies belong in an institutional portfolio? The case for investing in bitcoin typically follows the same logic as investments in gold: to serve as a store of value and protection against a debasement of the investor's home currency. In this sense, cryptocurrencies suffer from the same shortfalls as gold. There are no future cash flows to discount to determine price, and the prospective value is entirely based on the belief others are willing to exchange it for goods, services, or other assets in the future. An argument can be made, however, that cryptocurrency demand is in its infancy and may expand much further if it continues to provide gains for current holders.

There are some practical issues to consider. Namely, the market for cryptocurrencies is nascent and its relationship to other asset classes is not well defined. Massive price volatility can contribute significant risk to a portfolio. The price of bitcoin has routinely swung by five percent or more in very short periods of time. In fact, from the start of 2018 to February 20, bitcoin's end-of-day price changed by at least five percent on 25 out of 52 days. Lastly, bitcoin pricing is prone to gaps and cryptocurrency exchanges subject to more frequent outages.

The introduction of bitcoin futures contracts on the Chicago Mercantile Exchange created buzz in the marketplace. There are two schools of thought when it comes to bitcoin futures. The first suggests this legitimizes bitcoin, allowing a broader set of investors to gain exposure to the cryptocurrency. The second group believes the introduction of futures will be the ultimate demise of bitcoin because it will allow investors to express a negative view through shorting of bitcoin futures.

The future for bitcoin and other cryptocurrencies is unknown and unpredictable. What we witnessed in 2017 may signal the start of a multi-year trend of price appreciation and general acceptance, or it may signal a bubble. From an asset allocation perspective, the inability to assign an expected return, expected risk, and correlation to other asset classes makes it difficult to place in a portfolio. At the current time, it is probably best to leave the cryptocurrencies to the speculators. E

33 W Monroe Street
Suite 1000
Chicago, IL 60603
(312) 782-5432

5299 DTC Boulevard
Suite 810
Greenwood Village, CO 80111
(303) 738-0300

ellwoodassociates.com

Advice. Aligned

About Ellwood
For four decades, Ellwood has customized investment programs that are practical, grounded in fundamental research, and focused on bottom-line performance. Our consulting practice is national in scope and is focused on serving seven primary practice areas: Healthcare Systems and Hospitals, Corporate Defined Benefit Plans, Corporate Defined Contribution Plans, Endowments and Foundations, Public Funds, High-Net-Worth Clients, and Wealth Management Advisory Services.

Ellwood was founded in 1977 and is a 100% employee-owned, independent investment consulting firm with no parent or affiliate organizations. Ellwood is based in Chicago, IL with a regional office in the Denver, CO area.