

An Examination of Cryptocurrency from Inception to Future State

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ABSTRACT: Cryptocurrency, is it just a trend or is it the future of assets? It is a hot topic of conversation among individuals, as well as within companies. This paper will provide an overview of Cryptocurrency as well as discuss its inception, the current state, and the future outlook. As well, the paper will look at negative, neutral, and positive perceptions of Cryptocurrency from the perspective of individuals and organizations. The discussion will also look into Bitcoin, Ethereum, and Ripple, revealing how they differ from each other, even though all three are based on Blockchain Technology. Another section of the paper examines the comparison of Cryptocurrency to other assets. It will examine whether Cryptocurrency is similar to a monetary currency, such as the US Dollar, similar to common stock, such as shares in a public company or similar to money metals, such as Gold and Silver. These assets are all subject to market fluctuations, just like Cryptocurrency.

KEYWORDS: Cryptocurrency, Bitcoin, Ethereum, Ripple, Blockchain Technology, Satoshi Nakamoto

Introduction

The focus of this paper will be a discussion of Cryptocurrency. It will provide an overview, as well as introduce Cryptocurrency. Details from its inception, the current state, and the future outlook will be presented. The paper will look at negative, neutral, and positive perceptions of Cryptocurrency from the perspective of different individuals and organizations. This paper adds to the current literature by providing an analysis of these perceptions.

Cryptocurrency is an important subject matter because as of March 2019, there are over 2100 Cryptocurrencies and the total value was greater than 140 billion US dollars (Coinmarketcap.com). Currently, Bitcoin, Ethereum and Ripple have the highest market value of all Cryptocurrencies. The discussion that follows covers these three Cryptocurrencies and includes the differences between them although all of them use Blockchain Technology.

Another section of the paper will compare Cryptocurrency to other types of assets. It will be compared to monetary currency, such as the US Dollar, money metals, such as Gold and Silver and common stock, such as shares in a public company.

Literature Review

Cryptocurrency, what is it? Cryptocurrency is a medium of exchange, created and stored electronically in a Blockchain, using encryption techniques to control the creation of monetary units and to verify the transfer of funds. The Blockchain uses a decentralized ledger of all transactions across the peer-to-peer network. Using this technology, users can confirm transactions without the need for a central authority (Kramer 2019, 84). Cryptocurrency is a digital currency in which encryption techniques are used to regulate the generation of units of currency and to verify the transfer of funds, which operates independently of a central bank (Patrick Schueffel 2017, 14). Unlike financial institutions, Cryptocurrencies have no central monetary authority. No one controls Cryptocurrencies. The US Mint (controlled by the United States Government) prints US Dollars, and the Euro Mint (controlled by the European Central Bank) prints Euros.

How did Cryptocurrency start? In 2008, Satoshi Nakamoto proposed a combined digital asset and peer-to-peer payments system in a whitepaper (Satoshi Nakamoto 2008). On January 4, 2009, the first Bitcoin was mined. In May 2010, the purchase of two pizzas was made with 10,000 Bitcoins (Bitcoin 2010). The Blockchain Technology source code for mining Bitcoin was released on January 15, 2009. (Evans-Greenwood, Hillard, Harper, and Williams 2016, 3). Blockchain Technology is not Bitcoin; Bitcoin uses Blockchain Technology, as do other Cryptocurrencies. The current process for release of Cryptocurrency differs from the original release of Bitcoin in 2010. Currently, creators use

Initial Coin Offering (ICOs) to raise funds and to make individuals and organizations aware of their new Cryptocurrency. Cryptocurrency is big business. As of December 2017, the Initial Coin Offerings (ICOs) had surpassed a market value of close to a trillion US dollars (Liebau and Schueffel 2019, 3).

There were over 2100 Cryptocurrencies at the end of March 2019 (coinmarketcap.com). One has to ask why there is such a vast availability of Cryptocurrencies that have been created. What is the difference between them? This paper will examine the top three: Bitcoin, Ethereum, and Ripple. It will discuss their differences and the element that they have in common. Cryptocurrencies are similar to purchasing currency (comparable to converting US Dollars into another monetary currency); with Cryptocurrencies, a monetary currency is being exchanged for a Cryptocurrency.

The ability to predict the values of Bitcoin, Ethereum, Ripple or any other Cryptocurrency is like predicting the price of common stock on the stock market, or the value of Gold. Some predictions for Bitcoin have varied the value from a mere fifty dollars up to a whopping \$1,000,000 for each coin. (Falkvinge 2013) In five years, it will be intriguing to see how many Cryptocurrencies still exist. As well, it will be interesting to see the value of each coin and the total market value for all Cryptocurrencies. Some individuals believe Ethereum will overtake Bitcoin in market value.

It appears as though a market correction took place in January and February of 2018, based on the total market value of Cryptocurrencies. The total market value has been volatile. Cryptocurrencies total value as of November 27, 2017, was \$302,583,501,646. The total market value as of January 7, 2018, showed that it has increased to \$816,659,116,897 and on February 6, 2018, it fell to \$279,420,000,000. In March 2019, the total market value was worth more than 140 billion US dollars (coinmarketcap.com). This price volatility has heightened the discussion about the stability and obstacles of decentralized currencies. Believers claim that intelligent software to manage Cryptocurrencies will resolve these problems and that it is only a matter of time until stable, decentralized currency surfaces (Aizenman 2019).

Square Inc., a mobile payment processing organization, has fully embraced Cryptocurrency. Will other payment processing companies, such as PayPal, get involved with this current opportunity? Overstock.com is currently an e-commerce company that accepts Cryptocurrency as a method of payment for the products they sell. The CEO and Chairman of Overstock.com, Patrick Byrne, believes so strongly in Blockchain Technology that he is transforming the existing e-commerce company into a Blockchain Technology company. In January 2019, Overstock's tZERO officially launched a new security token trading platform (Nikhilesh De, 2019). This platform is geared to raise capital based funding on Blockchain Technology.

There are some advantages to Cryptocurrencies being utilized as a method of payment. It provides an opportunity for people and businesses in isolated regions to be able to conduct business internationally with ease. The use of Cryptocurrency to purchase items allows for better safety and consumer protection. As well, it assures that a payment can be made anonymously. Cash is currently the only other method of payment that provides this option.

Perceptions of Cryptocurrency

Individuals and organizations are often skeptical of anything new. They look at the perceptions of leaders to determine their initial reaction. This is clearly the case with Cryptocurrency. In order to determine if Cryptocurrency is a trend or the future of assets, individuals and organizations are seeking the guidance of leaders by studying and analyzing their perceptions. This section will look some negative, neutral and positive perceptions of Cryptocurrency from different organizations and influential individuals.

Negative perceptions from two key leaders were shared in 2014. Warren Buffett, who is the Chairman and CEO of Berkshire Hathaway, showed his negativity when he commented, "Stay away from Bitcoin since it is a mirage" (Crippen, 2014). Warren Buffett did say he hopes Bitcoin will be a better way to transfer money; however, the process can be duplicated. He continued to say, "The idea that it has some huge intrinsic value is just a joke in my view" (Crippen, 2014). In January 2018, he had another interview with CNBC, and commented again about Cryptocurrencies and stated with confidence that they would come to a sour ending (Lovelace 2018).

Like Warren Buffett, Jamie Dimon, the Chairman, and CEO of JPMorgan Chase stated his negative comments on Bitcoin. Jamie Dimon mentioned, "Bitcoin is a terrible store of value." He continued his negative comments in November 2015, "Bitcoin will not survive." He did not stop there with his adverse remarks. In January 2016, he declared, "Bitcoin is going nowhere." In September 2017, he called Bitcoin a "fraud" and said Bitcoin would not end well. Although he is not a supporter of Bitcoin, it appears as though he is a fan of the technology behind it. In October 2018, Jamie Dimon mentioned that JPMorgan Chase would be launching a blockchain-based system due to the potential of Blockchain Technology. However, he stated that if individuals are foolish enough to buy Bitcoin, then they will reap what they sow (Cheng 2017). Jamie Dimon still has not endorsed Bitcoin, but he later stated that he regrets saying that Bitcoin was a fraud. He must have been aware that JPMorgan Chase was creating their unique Cryptocurrency called JPM Coin. Like Bitcoin, the JPM Coin is based on Blockchain Technology. This coin is only available for purchase by JPMorgan Chase clients. JPMorgan Chase clients will transfer dollars at the bank for these coins; after using the coins for payment on the blockchain, the bank disposes of the coins and gives clients back an equivalent number of dollars (Son 2019). One JPM Coin can be exchanged for one US Dollar, so its price should not rise or fall.

Not everyone feels as strongly about Cryptocurrency; some individuals and organizations have a more neutral perspective. The United States Federal Reserve Fed Chair, Janet Yellen, commented on Bitcoin stating that the US Federal Reserve has no intention nor the authority to regulate the currency. Bitcoin is not a US currency; it is a global currency. She pointed out how important it is to recognize that this is a payment innovation that is occurring outside of the banking industry (Janet Yellen, 2014). Janet Yellen's comments show that neither the US government nor any other government can regulate Bitcoin even though the price dropped dramatically in a short period. In 2014, Bitcoin fell from a high of \$1,151 to a low of \$418.78.

The Internal Revenue Service issued guidance on Cryptocurrency by publishing a notice (Notice 2014-21) that they are aware of virtual currencies and that they can be used to pay for goods and services, or held for investments. The Notice also states that it acts as a real currency and can be bought and exchanged for monetary currencies. The Notice explains that any sale or exchange of the virtual currency, to pay for goods or services, in a real-world economy transaction has tax consequences (I.R.S. 2014). The Notice further states that it does not have a legal tender status in any jurisdiction.

Christine Lagarde (2018, 7), the International Monetary Fund Managing Director, discussed digital currency at the Singapore Fintech Festival. In her statement she noted that digital currency is not yet accepted universally; however, it should be examined further. She felt it should be examined thoughtfully, carefully, and creatively. Christine Lagarde (2018, 7) continued to say that people need to embrace and be open to the changes in technology and adoption is needed.

Mark Cuban, owner of the Dallas Mavericks and "shark investor" on the series Shark Tank, has shifted his views from negative to positive about Bitcoin. In June 2017, he criticized Bitcoin and called it "a bubble"; however, he changed his mind in October 2018 by stating that Cryptocurrencies and Blockchain are the future (Partz 2018). In October 2018, Cuban also included a tip to invest up to 10% of individuals savings in Bitcoin or Ethereum in his video "Guide to Getting Rich," calling them "high-risk" assets (YouTube Video, 2018).

One of the strongest advocates of Cryptocurrency is Steve Wozniak, the co-founder of Apple Computers. On October 22, 2017, Steve Wozniak spoke at the Money20/20 conference. He shared his thoughts on Cryptocurrencies and Blockchain Technology. He asserted that Bitcoin is better than Gold and the US Dollar. His reasoning was the government could print more money, "There is a certain finite amount of Bitcoin that can ever exist." He also stated that Gold does not necessarily have a fixed supply; new ways can be found to mine it. Steve Wozniak also said, "Maybe there's a finite amount of gold in the world, but Bitcoin is even more mathematical and regulated, and nobody can change mathematics." He liked the introduction of smart contract platforms, like Ethereum. He also thought that this would be a similar scenario to when computers came out and would allow for

many new opportunities. He ended with "There is a lot more to this Cryptocurrency than just the Bitcoin" (Castor 2017).

Jack Dorsey is a computer programmer and Internet entrepreneur. He is also the co-founder and CEO of Twitter and Square. After reading Satoshi Nakamoto's whitepaper, he commented on it and shared that he thought it was beautiful and was one of the most original works in the past 20 years (Chang 2019). Jack Dorsey wants to be the leader of the crypto-payments revolution. He integrated Bitcoin with Square's Cash App. He believes that Cryptocurrency and artificial intelligence will have the most significant impact on Square (Chang 2019).

As a respected technology entrepreneur and investor, the CEO, and founder of SpaceX and Tesla, Elon Musk stated In February 2019 that Bitcoin's structure is brilliant and bypasses currency controls. He also noted that paper money is going away. As well, he thinks Cryptocurrency is a better system to transfer money than paper (Bambrough 2019). It is interesting to note that he is also the co-founder of PayPal.

The above perceptions of Cryptocurrency are from well-known individuals and organizations. Perceptions vary from person to person and organization to organization. The number of Cryptocurrencies has surpassed 2100 due to different preferences. Each Cryptocurrency has its specific area of specialization.

As of March 2019, Bitcoin is the largest Cryptocurrency based on market value. The second largest Cryptocurrency, in terms of market value, is Ethereum (also known as ether.) Ethereum is also built using Blockchain Technology. "Ethereum is a decentralized platform that runs smart contracts: applications that run exactly as programmed without any possibility of downtime, censorship, fraud or third-party interference" (Ethereum.org 2019). These smart contracts are similar to writing financial contracts with other users inside the system (Dannen 2017, 2) .

Another Cryptocurrency that has gained notoriety is Ripple. It is the third largest Cryptocurrency based on market value. Ripple uses an open-source technology, built on the principles of Blockchain with a growing set of validators. Ripple has no mining whatsoever. Instead, transactions are powered through a "centralized" Blockchain to make it more reliable and faster. (Ripple.com 2019) Ripple creates credit graphs that automate access to the issuance of cash and credit across participating network nodes (Swan, 2018, 24).

Bitcoin, Ethereum, and Ripple are competing to assist the world in ceasing to use cash as a method of payment. The desired outcome for Cryptocurrencies is to have more stability of value, as well as faster and less costly settlement fees. For these reasons, Cryptocurrency is gaining popularity as a method of payment. One can see that there are similarities between Cryptocurrency and monetary currency.

Cryptocurrency is similar to monetary currency because it is a medium of exchange for goods or services. Individuals and corporations such as Overstock.com accept Cryptocurrencies as a method of payment. In 2014, users started placing orders on Overstock.com's website and paying for their purchases with Bitcoin. (Chowdhry 2013).

Cryptocurrency also compares to a monetary currency because transactions are allowed 24 hours a day. Users of Bitcoins obtain a program called a Bitcoin wallet and one or more Bitcoin addresses. Bitcoins are stored in a Bitcoin wallet. Bitcoin wallets are needed for receiving and paying for goods and services using Bitcoins. The advocates of Bitcoin "Claim that it is the first truly global currency which does not discriminate its users based on citizenship or location, it is always running with no holidays, it is easy to secure with very low usage fees, it has no chargebacks, etc. On the other hand, its detractors claim that it is widely misused to buy illegal items and to launder large sums of money and that it is too easy to steal bitcoins from wallets via cyber attacks" (Ron & Shamir 2013, 8).

Monetary currency and Cryptocurrency both trade 24 hours a day, seven days a week. The difference with monetary currency trading is that the Forex trading hours are based on different regions and their time zones. For example, the Forex exchange in New York opens at 8:00 am and closes at 5:00 pm Eastern Time (forexmarkethours.com 2018). Cryptocurrency markets trade 24 hours a day, and neither the region nor the time zone matter. The majority of monetary currencies do not fluctuate as much as or as often as Cryptocurrencies.

Another payment method used in the past was Gold. Gold used to be the conventional currency. Listed below are a few similarities between money metals and Cryptocurrency. Bitcoin is similar to money metals in that there is a limited supply. Bitcoin is mined by using mathematics and has a maximum supply of 21 million coins. "The network is programmed to increase the money supply in a slowly increasing geometric series until the total number of bitcoins reaches an upper limit of about 21 million BTC's. Bitcoins are awarded to Bitcoin 'miners' for solving increasingly difficult proof-of-work problems which confirm transactions and prevent double spending" (Ron and Shamir 2013, 8). Like money metals, it has a cost to produce, including mining and labor. Cryptocurrencies, like money metals and monetary currencies, do not have a traditional corporate entity with financial statements while common stocks have entities that include these items.

In an interview conducted at the Future Investment Initiative in Riyadh, Saudi Arabia between Arjun Kharpal and Peter Thiel, who is the co-founder of PayPal, Thiel compared Bitcoin to Gold. He mentioned that people are "Underestimating Bitcoin and it has a great potential left" (Kharpal 2017). As the interview continued, Thiel stated that it is a reserve form of money like Gold and will store value. A similar opinion by Mark Cuban compares Gold and Cryptocurrencies and says both are the same thing by calling them "collectibles." Mark Cuban also addressed that both Gold and Bitcoin are based on supply and demand. However, he also stressed that Bitcoin is in a more favorable position due to its scarcity (Partz 2018).

This paper would not be complete if it failed to address the comparison between Cryptocurrency and common stock. There are several similarities between them, even though stocks have not, nor have they ever been, accepted as payment for purchasing goods or services.

Cryptocurrencies and common stocks are perceived to be similar because both can fluctuate in price. As with common stock, for public companies, each Cryptocurrency is different. The common stock is a security that represents ownership in a public company (known as owning shares). Common stocks can fluctuate on the various stock markets, such as the New York Stock Exchange (NYSE), NASDAQ or the Over the Counter Bulletin Boards (OTCBB). Cryptocurrencies trade on different exchanges such as Global Digital Asset Exchange (GDAX), and Gemini Trust Company, LLC (Gemini).

There are additional ways that Cryptocurrency can be compared to common stocks. Common stocks can split when the price per share increases dramatically. On August 1, 2017, Bitcoin split and that led to a Cryptocurrency called Bitcoin Cash. The Bitcoin split is also known as the Bitcoin Fork. (Smith, 2017). Another example of a fork occurs when a corporation spins out a portion of their company and creates another separate, independent company. They then give shareholders shares of this new company; this happened in September 1996 when AT&T spun out Lucent Technologies from its company and made it into a separate legal entity (Chavez 2000, 22).

Cryptocurrencies have initial coin offerings (ICOs) while common stocks have initial public offerings (IPOs). ICOs and IPOs are similar in that they each have an initial supply of common offerings. In December 2017, Chicago Mercantile Exchange (CME) Group and The Chicago Board Options Exchange (CBOE) have created a futures trading of Bitcoins. (Schulz, Riley, and Stoneman 2018, 7) As well, the NYSE has had different proposals to have Exchange-Traded Funds that follow Bitcoin (Brown 2019, 139-140).

Concluding Comments

The paper discussed an overview of Cryptocurrency. It introduced Cryptocurrency and shared details from its inception, provided information on its current state, and forecasted the future outlook. The paper looked at negative, neutral, and positive perceptions of Cryptocurrency from the perspective of different individuals and organizations. It looked at Bitcoin, Ethereum, and Ripple, the three largest Cryptocurrencies in early 2019. Subsequently, the paper examined how Cryptocurrency has similar characteristics to the following assets: monetary currency, money metals, and common stock. Cryptocurrency can be comparable to any or all of these three assets. The paper also reviewed the total market value of all Cryptocurrency from November 2017 to March 2019. There is the potential for market manipulation based on perceptions offered by influential leaders. The price valuations of Cryptocurrencies

have seen volatility. Monetary currencies, money metals, and common stocks have had comparable speculative attacks.

Five years from now, popular opinion shows Cryptocurrency will still be around, and new ones will be created. Some of the existing Cryptocurrencies will merge, and others will disappear. Just as the stock markets rise and fall, so too will Cryptocurrencies. As with any investment opportunity, there needs to be awareness of all the risks and rewards. Caution needs to be used in order to avoid putting all assets in one basket.

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