

# RESEARCH INSIGHTS



Aloysius Lee  
[djalee001@mymail.sim.edu.sg](mailto:djalee001@mymail.sim.edu.sg)

In recent years cryptocurrencies have been popularized by mainstream media with, with various stories of individuals striking it rich with the price surge of Bitcoin. In this article we aim to delve into the topic of crypto and explore the possibilities of it replacing fiat currency.

## What are cryptocurrencies?

Cryptocurrencies are digital assets that are designed to work as a medium of exchange, where each individual coin ownership record is stored digitally in a ledger. This ledger exists in the form of a computerized database that is secured by strong cryptography methods to preserve transaction records and to maintain their integrity. This digitized ledger can also be used to verify ownership of coins and to control the creation of additional coins. Unlike traditional and fiat currency, cryptocurrencies do not exist in paper form and are considered decentralized - not issued by any governing body or authority. They use distributed ledger technology, (eg. blockchain) which serves as a financial transaction database.

Arguably the most famous cryptocurrency ever conceived is Bitcoin, whose creator, Satoshi Nakamoto (this name has been regarded by many as a pseudonym) is shrouded in mystery. Bitcoin, created in the year 2009 as the first decentralized currency, is currently the most valuable cryptocurrency on the market today. Other coins have been created since Bitcoin's release, namely Ethereum and Litecoin, to name a few. These coins, called 'altcoins' for short, are known as alternative cryptocurrencies. Alternative cryptocurrencies vary in price, and none of them have ever reached the value of Bitcoin, and their market cap is also decisively smaller.

## Bitcoin (BTC)

Created in 2009 by Satoshi Nakamoto, Bitcoin is a cryptocurrency that is well known to many and also the most valuable when converted in monetary terms. Its market cap has reached about 350 billion as of December 2020, according to Business Insider. It was first released as open-source software and has evolved into a cryptocurrency that has seen many uses. Its creator wanted to create a peer to peer payment system that allows money to be sent without going through a financial intermediary, and Bitcoin was the first cryptocurrency to solve the problem of double spending which is the risk that digital currency that can be spent twice. Bitcoin has seen many uses, with a few merchants and even a whole website selling a range of goods accepting Bitcoin in place of cash, and some people used its transactional convenience to send money globally.

## Cryptocurrencies *An Alternative to Fiat Money?*

### Cryptocurrency bubble of 2018

In the year 2017, many retail investors began to buy into various cryptocurrencies, and interest drove the prices to many heights. As the world began to become more aware of cryptocurrencies, many governments had started scrutinizing their effects on the market. Bitcoin's value started to drop as a result of many external factors. Toward the end of the year of 2017, its value has already started dropping, with prices dropping to below \$11000, a fall of 45% below its peak. Couple weeks later during January 18 2018, there were rumors in the market that South Korea was going to ban cryptocurrency trading. Bitcoin's value again dropped by 12%. This was the start of most cryptocurrencies' price plummet and came to be known as the cryptocurrency crash. Most cryptocurrency remains as highly volatile instruments, and it is not unusual to see prices crashing down in a matter of hours, before increasing greatly over the next few days.

Over the history of cryptocurrencies, there had been several events that caused the price drop, mostly related to regulatory fears, high profile hacking cases (Coincheck, Japan's largest cryptocurrency exchange) that resulted to some high-profile cryptocurrency exchanges falling victim to and the banning of ICOs and token sales by Facebook, Google and Twitter. These were a few factors that caused digital assets, including Bitcoin to depreciate and contribute to the volatility and eventual bursting of the Bitcoin/Cryptocurrency bubble.

On January 26, Coincheck which was at that time Japan's largest over the counter cryptocurrency market was hacked by unknown individuals. The total loss was about USD 530 million, making it one of the biggest heists in history. A security lapse in the company's system allowed the hackers to extract the coins through a wallet that was connected to external networks. Coincheck had to suspend trading indefinitely and the hackers were never found, however as cryptocurrency transactions are public, there were 11 addresses found by Coincheck where all 523 million coins had ended up. However, the identities of these hackers are still unknown, and they are all at large.

By November 15, 2018, bitcoin's market capitalization fell below \$100 billion whereas the price of Bitcoin also fell to \$5,500. The cryptocurrency bubble is considered worse than the dotcom bubble, as prices had fallen from 80% of their peak as of September 2018.

## Will cryptocurrencies ever replace fiat money?

Unless cryptocurrency has wide scale adoption by the general public as a payment option it will be hard for it to rival fiat currency. As of now, although there is more institutional interest and investment by banks, as well as major players like Paypal adopting it as a payment option on their site, the general adoption for cryptocurrency as a payment option is still low and not as trusted as traditional fiat currency.

For it to reach a level to rival traditional currency, it would take much more time and would have to achieve a level of trustworthiness as a payment system that it currently does not have. If anything, Bitcoin is held as a tradable asset by investors looking for profit and still not used as a payment system by most people. Critics disagree on whether or not cryptocurrency is able to replace fiat currency, and several regulatory authorities have released statements cautioning investments in cryptocurrency due to its volatile nature, while some see cryptocurrency as a hedge against inflation, and have compared the digital asset to gold.

However recent price history has shown that if anything cryptocurrencies are more susceptible to price fluctuations when compared to the latter. The price of gold is much more stable and not subject to wild changes, unlike Bitcoin where it is not surprising to see large price changes.

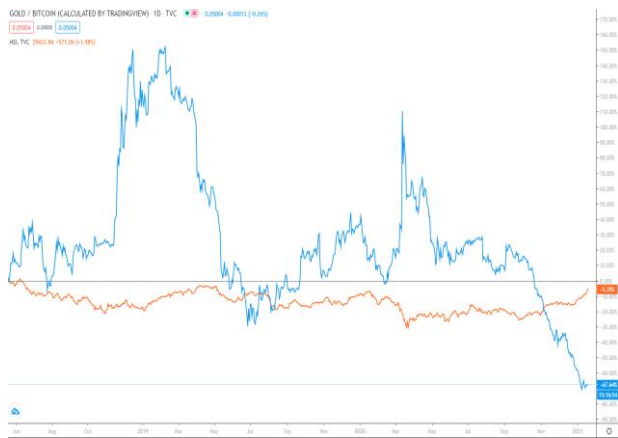
The world is starting to take notice of cryptocurrency, and more banks and financial intermediaries are starting exchanges that allow their consumers to trade cryptocurrency. For example, local bank DBS has launched an exchange that allows one to trade selected currencies for four types of cryptocurrencies, namely Bitcoin, XRP, Bitcoin Cash and Ether. This exchange is currently open to a select few professional investors, and not retail customers.

Increasingly there seems to be a trend by retail investors who are finding unconventional ways to try and profit from crypto; a bar owner based in NYC was reportedly looking for potential buyers of his bar but wanted to be paid in Bitcoin or Ethereum. NFL athlete Russell Okung from Carolina Panthers opted to receive half of his 13 million pay in Bitcoin through a startup called Zap, which converts traditional paychecks to Bitcoin. Other unnamed athletes have also opted to do the same.

Since fiat money is generally accepted due to it being backed by the issuing country, cryptocurrencies have to reach a point whereby it is guaranteed by a governing body for the general populace to perceive it as a reliable store of value. Without wide scale adoption and acceptance, cryptocurrencies will be unable to rival fiat currencies for now due to general mistrust of the system as a payment system.

Till date, although governments of several countries have considered banning trading of cryptocurrencies only a few have done so. China has banned cryptocurrency trading on an institutional level - China based financial institutions are forbidden to dabble in trading of any kind when crypto is involved. It has also notably banned ICOs (initial coin offerings). However countries like the US and Canada have taken a more crypto friendly approach, with neither country outright banning trading activities, although in recent years the FBI have taken measures to curtail the potential for cryptocurrencies used by criminals to fund their illegal activities and seized funds.

There is also speculation that in the near future regulatory laws might be introduced, as the cryptocurrency market is generally new and unregulated, some lawmakers might feel the need to monitor the market due to the increasing demand for Bitcoin and other more significant cryptocurrencies, and their growing market cap.



Note: Gold and Bitcoin's price history over a five-year period. Gold prices have remained relatively stable as compared to Bitcoin.



Note: NFL player Russell Okung of the Carolina Panthers who chose to receive part of his remuneration in Bitcoin

## Controversies surrounding digital assets

Cryptocurrencies are not immune to criticism, however, with many remaining skeptical about their real value and potential to aid criminal activities such as money laundering and black markets selling contraband. Silk Road, which once was a high-profile black market listing controlled substances such as heroin and ecstasy had all its transactions made in Bitcoin, which at that time provided the dealers a high degree of anonymity. The site was eventually shut down and all the Bitcoins involved in the transactions seized by the FBI.

European Central Bank's President Christine Lagarde had called for global regulation of Bitcoin, citing the potential for illegal activity as mentioned above. Due to cryptocurrencies decentralized nature it does have the potential to aid illegal activity. There are even privacy centric cryptocurrencies, which allow their user to transact anonymously. Monero is one such example, and every transaction that its users go through are not displayed on the public blockchain, using cryptography to hide user addresses and their transaction amount. These transactions are confidential and untraceable which might make it easier for criminals to send and receive money easily.

Since most cryptocurrencies can be converted, (from one coin to another, etc Bitcoin to Etheruem through an exchange) this makes it ideal for illegal activity as transactions are untraceable, giving the authorities a harder time deciphering their real-world identity.

Bitcoin miners have also been criticized largely due to their large usage of electricity. Critics consider it a waste of electricity which in turn damages the environment and increase the carbon footprint and also carbon dioxide emission rates. However, some have argued as mining equipment becomes more developed and advanced, mining operations will become eco-friendlier and sustainable.

Miners usually operate in countries that have cheaper power rates so as to increase their profit, and countries such as China, where 70% of global mining operations take place.



Note: A Bitcoin mining factory based in China

### Price fluctuations : Why is cryptocurrency so volatile?

Various factors contribute to the high volatility more popular cryptocurrencies such as Bitcoin and Etheruem, with Bitcoin being the more volatile of the two. Since Bitcoin is a rather new digital asset, many has debated over its perceived value, with some investors thinking that it can be a store of value while others regard it as a having no intrinsic value. Negative news can also greatly influence pricings of cryptocurrencies. For example, with regulatory authorities and governments reportedly considering introducing regulation to this new market, or negative news such as a large-scale hacking of crypto exchanges, investors may choose to sell of any digital assets that they are currently holding due to fear of increasing losses. Security breaches also tend to be more publicized by the media due to the ongoing debate of Bitcoin’s value, and this is one of the contributing factors of its volatility .These high-profile hacking incidents tend to create fear among the general public, which does not bode well for investors that prefer a more stable pricing. It has been shown that rumours and unverified news will also move the market, regardless of their credibility. As Bitcoin and other digital assets have a very uncertain future due to it being unregulated and a newer technology, they are likely to remain in the class of assets with higher volatility. For prices to become stable, it will require mass adoption of Bitcoin or altcoins as a reliable payment method, and more recognition by both governments and the general public.

### Writer’s Opinions

Although cryptocurrencies can be considered a viable alternative to traditional currency, it will also depend on the general public’s willingness to accept it as a reliable payment method. While there may be many advantages to accepting cryptocurrencies as an alternative payment method such as lowered transaction cost and much faster receipt of funds. However, as there are many different types of coins that can mask user identity and transacted amounts, there is also the growing concern that it may be easier to conduct illegal activity as long as one has the required knowledge and expertise. Hacking has is also one of the major issues that are generally more prevalent in the cryptocurrency community with several unsolved cases such as the Coincheck hacking incident that was elaborated on above.

Mistrust of cryptocurrency as a payment system may stem from such incidents, where security is lax and are exploited, causing losses to investors or the exchanges and companies that deal largely with cryptocurrencies. There may be more perceived credibility in payment systems that are based in cryptocurrencies when more significant organizations start to adopt them, and thus increasing the likelihood that one day cryptocurrencies will be able to rival fiat money.

While Bitcoin is considered a more stable and safer cryptocurrency, there are still possibilities of wallets getting compromised causing your funds to be channeled to a hacker’s own wallet. Regardless, there is still potential for most crypto related tech to grow as they are relatively new, with many different coins suited for different purposes. On one hand, regulation by the proper authorities is required to some degree, although some cryptocurrency critics might want to ensure that they are still decentralized as one of the key features of coins like Bitcoin are that they are of a decentralized nature.

There may still be many altcoins that have not realized their potential and increase in value in the near future if their functions are seen as useful. Considering the fact that Bitcoin took almost a decade to increase to its current price there may be other altcoins that have yet to reach their peak and may offer more useful functions that can complement payment systems that are already in place.

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