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BITCOIN: MONEY OR NOT?

– An analysis based on Austrian school of
economic thought



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BITCOIN: MONEY OR NOT?

An analysis based on Austrian school of economic thought

The thesis attempts to explore whether bitcoin can be considered to be money from the perspective of the Austrian economic principles. The research paper begins with a theoretical section which includes a brief historic projection of the emergence of bitcoin system as the author proceeds to explain its design system in detail. The analysis of bitcoin on the basis of Austrian economic principles is the crux of the research which includes the author's attempt at drawing a parallel between bitcoins and fiat currencies. The author further goes on to describe the functions of money on the basis of the framework laid out by the Austrian school.

A major portion of the criticism of bitcoin as a medium of exchange comes from the apparent violation of the regression theorem which Mises devised to explain the emergence of money. An attempt will be made to demonstrate how bitcoin may not necessarily violate the regression theorem and in fact may just be a form of money, if not an alternative to it.

In order to reach the goals of the research, online survey has been conducted and literatures have been reviewed. Various secondary data have been collected also. The target of the research was to investigate whether bitcoin, a digital token created in a completely digital age falls in line with the monetary definition mapped out by the ancient economic principles. The research highlights the status of bitcoin by gauging the extent of its function as a medium of exchange.

KEYWORDS:

Bitcoin, money, currency, the regression theorem, Austrian school of economic thought

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1 INTRODUCTION

In November 2008, Satoshi Nakamoto, an unknown individual/group published a white paper for Bitcoin and called it, “Bitcoin: A Peer-to-Peer Electronic Cash System” (Nakamoto, 2008). Nakamoto describes an electronic payment system called Bitcoin which achieves something many tried to create before but failed; a protocol for a peer-to-peer payment system with a solution to the infamous double spending problem. Bitcoin operate without the intermediation of central authorities but rely on cryptographic proof-of-work according to the white paper. This cryptographic proof-of-work makes the intermediation from central authorities impossible in practice.

At its inception, bitcoins were practically worthless because only a very small group of people knew about it, and were using them. With Wikileaks’ announcing their accepting of bitcoin donations (Greenberg, 2011), bitcoin experienced a surge in popularity. As more merchants accepted bitcoin as a form of payment, more users flocked to it. This trend received a lot of media attention and further expanded bitcoin’s popularity.

Bitcoin’s price has experienced many ups and downs since its inception. According to Higgins (2017) during the year 2017 alone, it saw unprecedented gains, starting the year at under \$1000 and breaking \$19000 at its peak. With its growing popularity, the rise and fall in the price has more and more people doubting its legitimacy. While in terms of economic metrics, scarcity and utility cause something to have value, Krugman (2018) warns that bitcoin fails to constitute money and since its value depends entirely on “self-fulfilling expectations”, the total collapse is a real possibility. Nevertheless, the adoption and attention bitcoin has received proves that bitcoin may in fact, be a worldwide currency or used as a preferred medium of exchange in the very least at some point.

In today’s age of technology, for the people who have outlived the technological advancement; getting a grasp of the technological wonder, i.e. bitcoin is troublesome. Those who succeed to realize the crux of bitcoin and the technology it operates under, they know the value bitcoin gives. Those who do not, in Alan Greenspan’s words, they have to “really stretch their imagination to infer what the intrinsic value of bitcoin is” (Bloomberg, 2017). The acceptance of bitcoin, in the current time, seems to be majorly divided into “young” versus “old” (Leinz, 2018). The millennial have absorbed the essence of bitcoin and have learnt the bitcoin way of life. Many carry out trades, store

their savings, pay bills, in the form of bitcoin. Still, the legal standing of bitcoin is on the negative side. The problem solving features that lie within the technology of bitcoin is mostly disregarded. This research is inspired by the author's yearning to understand the nature of bitcoin in monetary terms based on Austrian school of economic thought, because the author has high regards for the foundation the school of thought has laid out in terms of defining money.

1.1 Aim of the research

The purpose of this thesis is to investigate whether bitcoin fulfills the criteria, as laid out by the Austrian school of economic thought, to be referred as money. To achieve the aim, the paper discusses the principles of money and bitcoin, and project them onto the view of money as the Austrian economic theory has laid out. The Austrian school has gone through years of evolution, progressed and incorporated knowledge from outside sources, yet the core principles remain the same. It has given rise to valuable insights into numerous economic issues such as theory of money creation and the laws of supply and demand (Hall, 2018).

1.2 Research questions

Bitcoin has been a very trending topic as of last couple of years. Various questions concerning whether bitcoin should be adopted as an official payment system have swept the world. The early adopters of bitcoins saw a few dollars worth of investment multiply into millions of dollars. The wind of change felt in the presence of this revolutionary technology has signaled that we might be on the verge of entering an era where bitcoin is a dominant currency system. There is a considerable adoption taking place already to not keep the trend into consideration, yet there are not many regulations that favour bitcoins. Hence, following these developments in the current marketplace, the author has formulated the research questions central to this issue.

1. Is bitcoin money? What is the Austrian school's view on bitcoin?
2. What is bitcoin's legal stance? How common is its use?

2 WHAT IS BITCOIN

Bitcoin can be referred to: bitcoin-the-token, a snippet of code that represents ownership of a digital concept and bitcoin-the-protocol, a distributed network that maintains a ledger of balances of the bitcoin-the-token (Acheson, 2018). Since, the focus of the research is bitcoin-the-token, the author tried to stay away from getting too deep into bitcoin-the-protocol.

2.1 History

A mysterious individual/group using the pseudonym Satoshi Nakamoto released a document titled “Bitcoin: A Peer to Peer Electronic Cash System” which introduced to the world a protocol for a new kind of distributed money (Nakamoto, 2009). At its core, Bitcoin is decentralized “digital cash” designed to serve both as a payment network and a unit of account (Levine & Shepherd, 2013). The decentralized nature of bitcoin network allows bitcoin transactions to be made without the involvement of a third party essentially rendering them irreversible, fast and low-cost.

The transfer of bitcoins relies on an open and transparent global ledger called “blockchain” that keeps track of the creation and ownership of every bitcoin ever produced by storing a copy of this ledger in each participating computer which essentially makes the system very resistant to disruptions (Levine & Shepherd, 2013).

Developed in the wake of the 2008 financial crisis, the adoption of Bitcoin slowly started to gain momentum as the prices spiked from \$0.05 in July of 2010 to \$266 in the April of 2013 for the first time (Levine & Shepherd, 2013). However, there were a series of events after that when the rise and fall in bitcoin prices started to look like a new norm, majorly retaining a very positive outlook overall because of vendors’ and marketplaces’ acceptance of bitcoin as a legitimate form of electronic payment for goods and services despite facing threats such as deregulations in response to theft, illegal trade online, etc. Reaching the peak of \$19,783 by the end of December 2017, bitcoin truly demonstrated the potentiality to create major breakthroughs (Fiorillo, 2018).

2.2 Mining

Bitcoin is created by 'mining' digitally unlike gold, and its characteristic feature i.e. the capacity to mine only 21 million bitcoins ever gives it the prestige driven by scarcity, hence often leading to its comparison to gold in various contexts. When bitcoin was first introduced in 2009, a basic home PC could be employed to mine it. Contrarily, to make any profit off of doing the same thing as in 2009 in today's context, the barrier for entry makes it very hard, if not impossible.

Today, miners purchase powerful computing chips that are designed for running "specifically crafted" software day and night eventually forcing the system to complete complicated calculations which in the events of success earn miners some bitcoins (Martindale, 2018). Unlike traditional currencies such as dollar and pound which are handled in every aspect by banks and financial institutions, bitcoin operates on the basis of a public ledger system where a number of nodes, operated by miners around the world need to approve and confirm the transactions (Martindale, 2018). The intricate process of completing complex mathematical calculations falls in line with approving and confirming the transactions, which is the basis for incentivizing and rewarding miners for their work.

The miners can individually or by joining in the pool of other miners doing the same thing work to compile recent bitcoin transactions into blocks and prove their validity by calculating a "proof of work" and the first individual miner or pool to create the "proof of work" for a block are rewarded with certain amount of bitcoins. The chances of earning a reward by joining a pool is far higher than by individually attempting to generate the correct integer needed to confirm a block despite the reward getting shared with other miners in the pool (Martindale, 2018).

2.3 How do bitcoin transactions work?

Bitcoin transactions are fundamental to how the bitcoin blockchain is constructed. To understand the mechanism, it is of paramount importance that we know what constitutes bitcoin.

Bitcoin is registered as a transaction, comprised of a transaction input, a transaction output and an amount. The transaction input is the bitcoin address from which the

money was sent, the transaction output is the bitcoin address to which the money was sent, and the amount is the amount of bitcoin that was sent. The bitcoins that you send to someone were sent to you from someone else. When they sent them to you, the address that they sent from was registered on the bitcoin blockchain as the transaction input and your address – the address they sent it to – was registered on the bitcoin network as the transaction output. When you send that bitcoin on to someone else, your wallet creates a transaction output which is the address of the person to whom you're sending the coin. That transaction will then be registered on the bitcoin network with your bitcoin address as the transaction input. When that person then sends those bitcoins to someone else, their address will, in turn, become the transaction input, and that other person's bitcoin address will be the transaction output. Using this system, people can trace bitcoin transactions all the way through to when the bitcoin was first created, understanding who sent it to whom, at any point in time. This creates a completely transparent system in which all transactions can be checked at any time. (Bradbury, 2018)

2.4 Is bitcoin generally accepted as a medium of exchange?

The correct way to define money is by the functions it performs. Jevons (1875) was one of the pioneers to discuss the functions of money as a medium of exchange, unit of account, standard of deferred payment and a store of value. However, the Austrian school of economic thought focuses on one main function, i.e. medium of exchange as we discussed in the literature section, and that the remaining functions of money arise from this function.

In theory, bitcoin can be called a medium of exchange as Satoshi Nakamoto designed bitcoin as an electronic payment system, allowing it to function as a medium of exchange. Bitcoin is also expanding as it encompasses an increasing amount of retailers and stores accepting bitcoin in exchange for goods and services as seen in figure number 1.

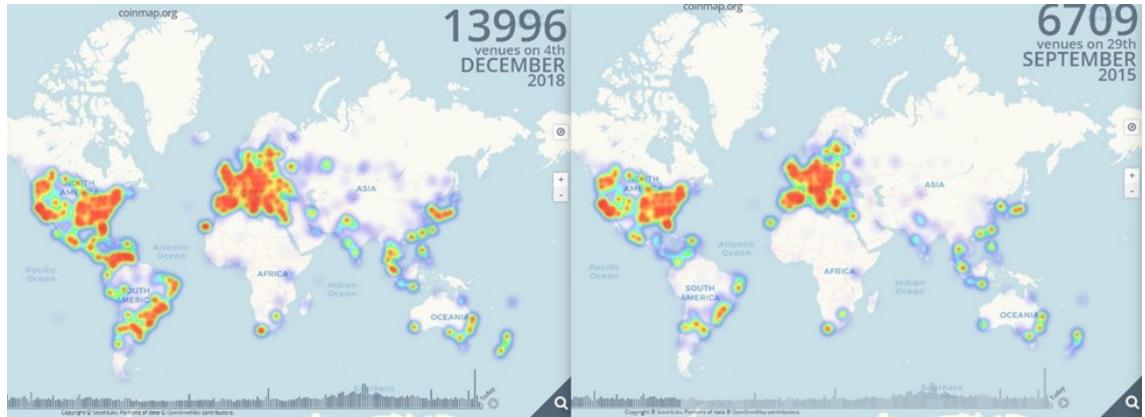


Figure 1 Map of bitcoin accepting venues <https://coinmap.org/#/world/37.71859033/-53.08593750/2>

In a span of 3 years, the merchants accepting bitcoin has doubled, which is a clear indication that bitcoin is a growing ecosystem and merchants accepting bitcoin has risen, a clear indication that investors believe in the potential growth of Bitcoin. Therefore, it can be argued that bitcoin is theoretically a medium of exchange and by analyzing the growth of merchants, it also serves as a medium of exchange in practice. The following figure shows a steady rise of bitcoin ATMs in various parts of the world.

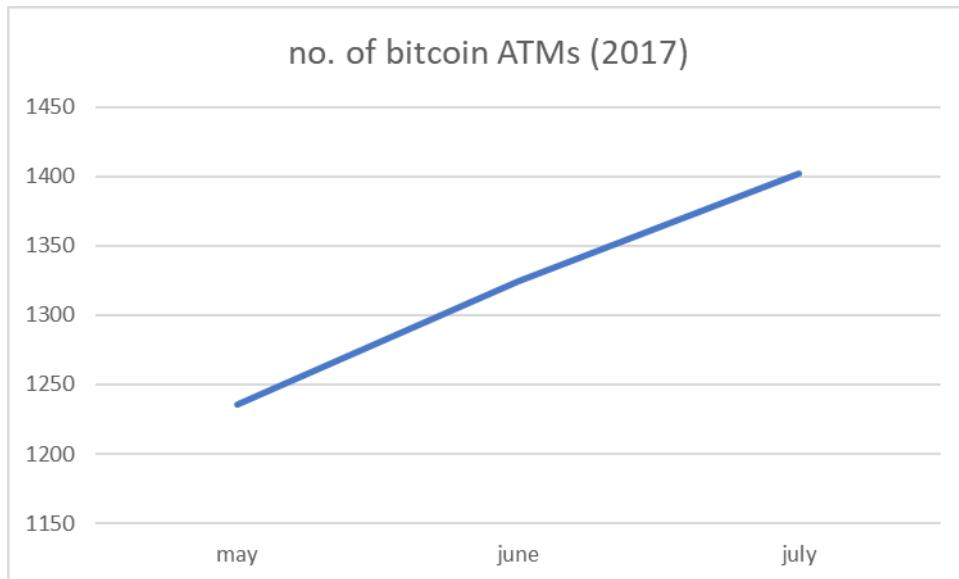


Figure 2 Bitcoin ATM Industry Trends 2018 (CoinATMRadar, 2018)

In 2017, bitcoin ATM industry grew rapidly. According to CoinATMRadar (2018), they did a forecast in 2014 on bitcoin ATM growth, based on bank ATM installations back in 1970s. The prediction that there would be 2900 bitcoin ATMs worldwide after 7 years

got surpassed by more than 3000 ATMs being installed in 4.5 years. The speed of installation has only been accelerating and this in my view, is a sign that bitcoin adoption is only growing. With growing number of installations, diversity of the market also grows. This is reflected in new manufacturers entering the market, new operators installing machines, and installing machines in countries where there were no bitcoin ATMs previously (CoinATMRadar, 2018).

In May 2018, according to CoinATMRadar (2018), 31 various manufacturers produced more than 3000 bitcoin ATM and installed in 67 countries; and there are more than 400 operators running bitcoin ATMs. Larger operators are outgrowing amateurs in terms of geographical coverage within and beyond national borders.

The growing price of bitcoin during 2017 brought a lot of new users in cryptocurrency sphere and the ATM installations made buying bitcoins for cash more efficient.

In Menger's view, money should be "generally accepted" as a medium of exchange. The figure that nearly 14000 merchants are accepting bitcoins and 3000 ATM have been installed as of 2018, when viewed against the grand scheme of things is a meagre figure as far as general acceptance. In most cases, the venues accepting bitcoins still denominate prices in a fiat currency and the conversion to bitcoins is required to pay up for goods. Anyone buying with bitcoin will have to make conversions themselves as the good is priced in terms of dollar or other fiat currencies. Right now there is also a psychological barrier separating the individuals's valuation of the good in terms of fiat currency and bitcoin because the individual constantly needs to convert the bitcoin price in dollar terms to make sense of the value of the good in question (Coinbrief, 2018). Such practice is a sign that bitcoin is far from being a full-fledged payment system or a medium of exchange. The chart below shows the trend in growth of businesses accepting bitcoins as the price of bitcoin increases.

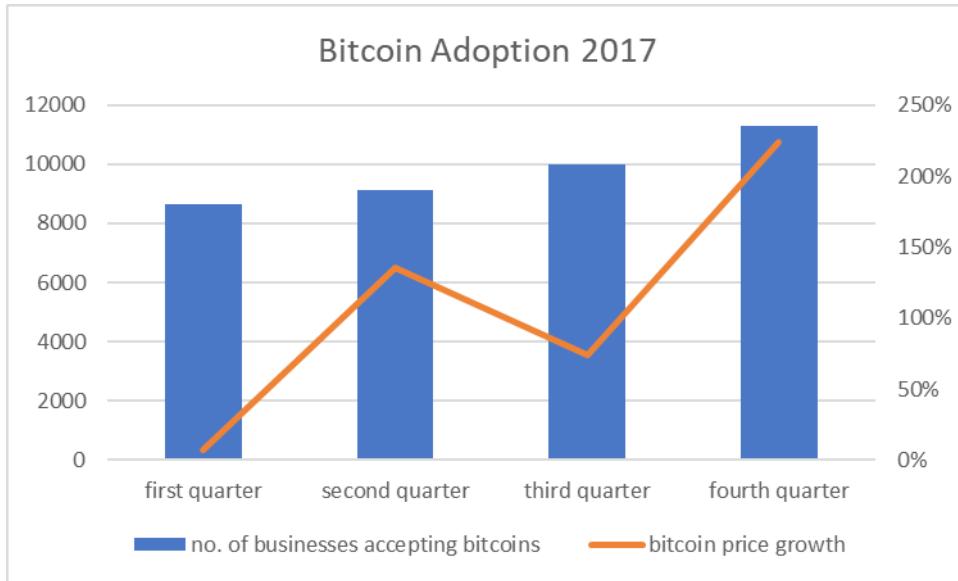


Figure 3 Bitcoin Adoption by Businesses in 2017 (Thompson, 2018)

Despite the rate of increase in bitcoin usage over time, it does not seem suitable to talk about its general acceptance in the same way as we do the US dollar or any other fiat currency. Additionally, it is not a legal tender in any country as of now, and the bitcoin pervasion as a medium of exchange in the market is relatively small. The bitcoin community has no boundary in terms of geography making the users virtually anyone. When 30 million bitcoin users are spread across a vast geographical format, bitcoin's general acceptance seems even more small. If such a small group of people spreading across and beyond national borders accepting bitcoin as a payment medium justifies the term general acceptance and hence money, virtually anything accepted as a value of exchange regardless of the size of population or users should make it money.

Hence, from the point of view of general acceptance, it is not yet suitable to call bitcoin money while it has the tendency to behave like money.

The discussion that bitcoin is not generally accepted at this stage does not rule out the future possibility of its widespread acceptance. As seen in figure 1 and 2, the trend of growth is on the positive side. Even Mises has strategically pointed out the most important metric being the merchant adoption. The incoming signals from big companies such as Overstock, Expedia, Microsoft, etc. may just be another hint that the market is positively reacting to this new medium of exchange (Sloan, 2018).

Although it is impossible to estimate exactly how many people use bitcoins as a result of all these developments, there are a few data points that provide some clue to the

user growth. According to Rotblut (n.d.), greater levels of liquidity attracts a large number of buyers and sellers in the market ecosystem, and hence a few data points have been compiled below to take a closer look at the health/liquidity of bitcoin system:

2.4.1 Bitcoin wallets

According to blockchain.com (2018), there are just over 30 million bitcoin wallets. However, most bitcoin users have several bitcoin wallets and use multiple wallet addresses to increase their financial privacy when transacting in bitcoin (Lielacher, 2018). This makes the likely bitcoin users always a lot lesser than depicted in the chart. The most popular bitcoin wallet and exchange provider, Coinbase has over 13 million users (Jones, 2017), meaning there are anywhere from 13 million to 30 million bitcoin users.

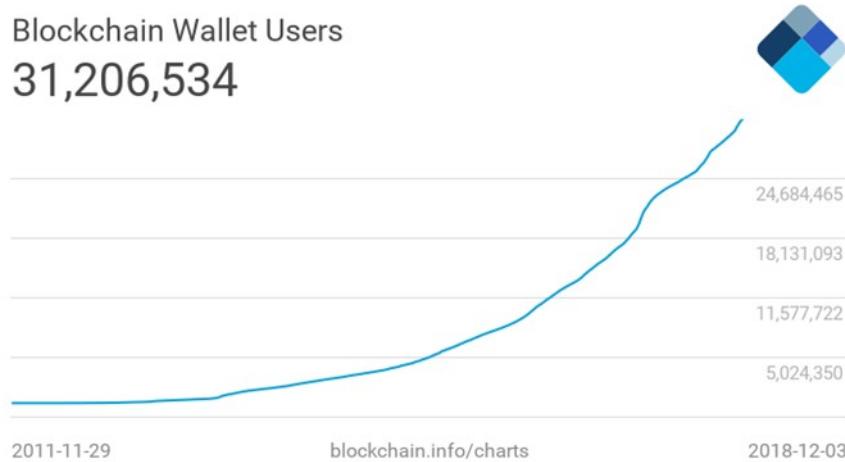


Figure 4 Blockchain wallet users (Blockchain, 2018)

2.4.2 Active bitcoin users

In addition to calculating the number of wallets, we can also look into the number of daily active addresses. The median value of active addresses by year has been plotted onto the scale to provide a cleaner look to the chart. The highest amount of active addresses seen in a day was a little over one million, which should approximately be the daily active users on the bitcoin network. It is important to note that the active users

are different from the holders of bitcoins. This gives us insight into how many bitcoin owners are actual users versus buy-and-hold investors.

The number of active users for bitcoin shows the nascent nature of potential future medium of exchange, especially considering the upward of 4 billion internet users (McDonald, 2018).

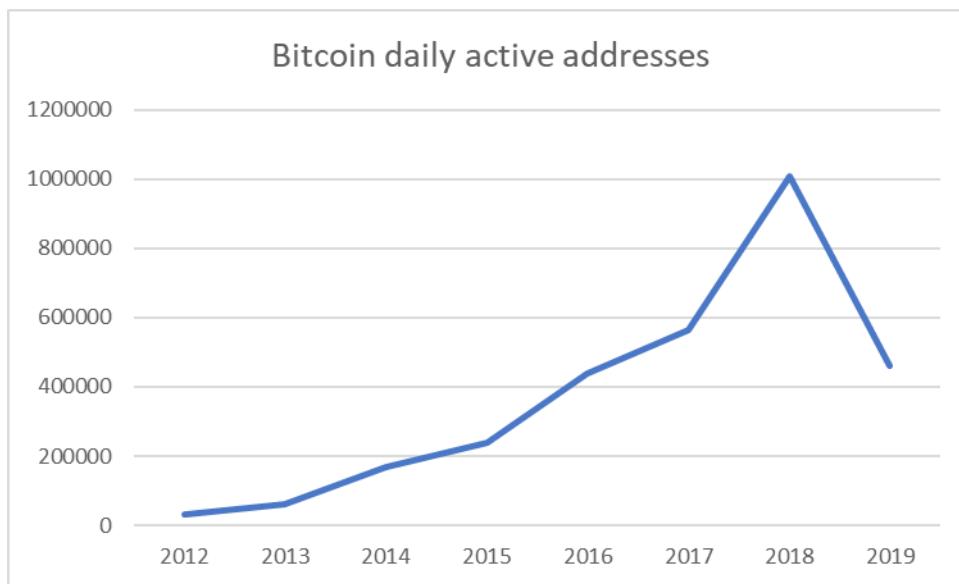


Figure 5 Bitcoin Active Addresses historical chart (BitInfoCharts, 2018)

2.4.3 Transaction volume

Rotblut (n.d.) agrees the transaction volume is a measure of how often an asset exchanges hands. Greater numbers of active buyers and sellers increase liquidity by making it easier to buy and sell an asset. Higher transaction volume also improves pricing by providing more competitive orders. Lower transaction volumes can push away the potential investors because of the difficulty associated with it. While bitcoin's daily transaction volume is not ordinary, it is not impressive either. But, the chart shows the momentum bitcoin has gained over the years until recent bear markets. This indicates that the use of bitcoin has clearly increased, which may be seen as a hint to the increase in users number

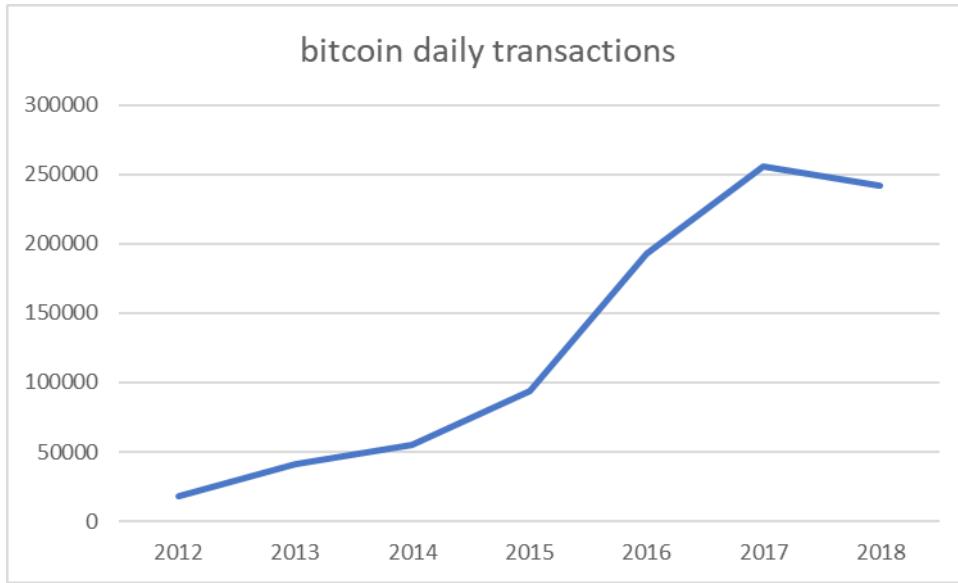


Figure 6 Bitcoin Transactions historical chart (BitInfoCharts, 2018)

2.4.4 Price transparency and volatility

According to Rotblut (n.d.), price transparency refers to the availability of data on previous transaction and allows investors of an asset to determine the current market value. The lack of transparency in prices drive away the would-be investors over the long term. Although he said these in terms of investment assets, same can be applied for bitcoin as well, especially considering its multiple uses. The chart shows a massively fluctuating prices of bitcoin over the last two years. Such volatility kills people's confidence in bitcoin's potential as a full-fledged medium of exchange.

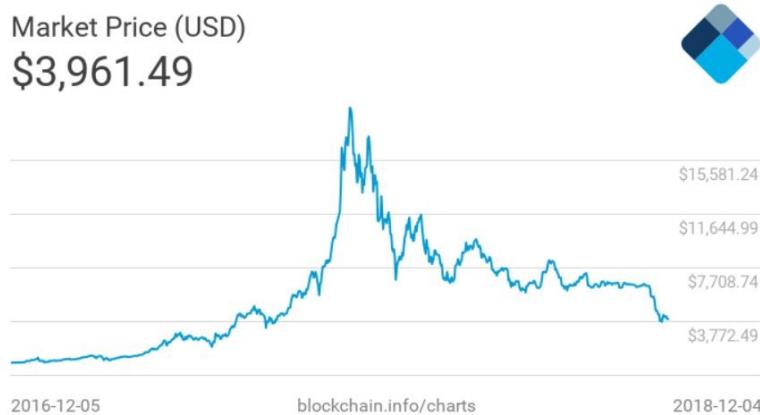


Figure 7 Market price (USD) (Blockchain, 2018)

3 WHAT IS CURRENCY?

Currency is a generally accepted form of money, including coins and paper notes, which is issued by a government and circulated within an economy (Investopedia, 2018).

Currency can be either fiat or tied to an underlying asset. Fiat money does not have any intrinsic value and therefore is not worth very much in terms of its value as a raw material. It is backed by the full faith and credit of the issuing government. Most paper money is fiat money and its value comes from what it represents rather than what it is. Currency serves as a medium of exchange, a store of value and a standard of value essentially allowing buyers and sellers to arrive at comparative prices quickly. Fiat money is only as good as the organization that issues it. Asset-backed currencies are those currencies whose value is tied to gold, silver or other valuable commodities and are rare in present day markets. (Merriam-Webster, 2018)

Hereunder, bitcoin has been compared with the most common form of money regarded as fiat currency based on their similarities and dissimilarities.

3.1 Similarities

Bitcoin's similarity to a currency can be discussed in terms of their lack of intrinsic value, limited supply and lack of intermediary body. Bitcoin exists as data and the cash such as a US dollar exists as a blend of 75% cotton and 25% linen, both lacking any inherent value (Smith, 2018). According to Smith (2018), the Federal Reserve Board of Governors estimate there to be approximately \$1.63 trillion in circulation. The Fed (in the US) controls the supply of dollars to promote stable prices and maximum employment. According to Smith (2018), scarcity is one of money's core characteristics which helps in keeping its value firm. To compare, there will only ever be a total of 21 million bitcoins when they are fully mined. Likewise, the use of cash to process a transaction requires no middleman similar to bitcoin transaction.

3.2 Dissimilarities

The dissimilarities in bitcoin and a fiat currency such as the US dollar has been presented as follows:

3.2.1 Transaction method and fee

When cash is used as a transaction medium, there is no transaction fee involved. However, it is next to impossible to carry out cash-based transactions between two people located in two different places far apart from each other. Due to such impracticality involved in transacting across a vast distance using cash, the internet plays a crucial role in facilitating the process. The fiat money deposited in banks can be transferred in the form of digital currency via the internet. However, in this context, there is an intermediary involved and will charge fees for transactions. Credit card transactions for example involve an extremely complex process comprising data routing, verifications and authorizations, involving multiple players, including card networks, banks and credit card processing companies costing some fee along the way (Fairbanks, 2018). When you transact using credit cards, various kinds of rates and fees may apply. Rates are the costs that you pay for each transaction whereas fees are the costs that you pay the processor to maintain your account (Fairbanks, 2018). The average credit card processing cost for a retail business where cards are swiped is roughly 1.95% – 2% for Visa and Mastercard transactions whereas the average cost for card-not-present businesses, such as online shops, is roughly 2.30% – 2.50% (Dwyer, 2018). Additionally, research done on 11 different national banks found that the average fee associated with each type of transfer was \$13.88 for an incoming domestic wire, \$28.13 for an outgoing domestic, \$17.50 for an incoming international and \$49.66 for an outgoing international (ValuePenguin, 2018).

Bitcoin payments are similar to a cash transaction or wire transfer. However, there is no involvement of an intermediary body, and the customers send payments directly to the bitcoin network. The transactions are validated by nodes spread around the world and then recorded on the public blockchain (Annie, 2018). As opposed to the fees incurred credit card transactions or wire transfers, according to www.bitinfocharts.com the average transaction fee incurred in bitcoin payments is almost always less than a

dollar, exclusive of the December-January highs of 2017-2018. This makes Bitcoin transactions significantly less expensive than online transactions with fiat currencies.

3.2.2 Anonymity

Bitcoin is often said to be anonymous because of the possibility to use it to send and receive between transactions without giving any personal information. The transactions are recorded and made public, but they are only linked with an electronic address making it impossible for anyone to be specifically traced (Emerging Technology from the arXiv, 2017). This electronic address is a user's pseudonym which is basically their public key, i.e. a long string of numbers which acts as the bitcoin address where payments are received.

Since a bitcoin possession and transaction is not tied to a real name, an email or a physical address, it provides a greater degree of anonymity as opposed to electronic payment systems controlled by third-parties; but unlike cash transactions, all of the transactions are publicly available to the entire bitcoin network slashing the degree of anonymity (Ludwin, 2015). So, if a pseudonym is linked to a real person, each and every transaction that person ever made with that pseudonym will be public.

3.2.3 Regulation

According to Lilita Infante, DEA special agent, once the total transaction volume of bitcoin associated with illegal uses surged to 90%, as seen in an analysis of blockchain data, has now shrunk to mere 10%. Despite the significant shift in its criminal use case, Bitcoin is still quite prominent in sophisticated criminal activities. (Maurya, 2018)

Criminal organizations like drug cartels, were increasingly using digital currencies across their operations, from money laundering to cross-border transfers as doing so was cheaper, faster and perceived to be more secure than fiats, Infante said. (Maurya, 2018) While bitcoin may have been used for illegal purposes as such, fiat money has also been used excessively to facilitate criminal activity for a long time, which does not give a justification as to a total ban on bitcoin. Also, the peer-to-peer pseudonymous nature of bitcoin may not be that easy to be slashed down with anti-bitcoin regulatory measures. Currently, the US does not have a uniform approach to the regulation of

Bitcoin at a Federal or State level, the EU already had a framework to govern the use of electronic money before the invention of Bitcoin and has classified Bitcoin as a "convertible decentralized virtual currency" and China has expressed that Bitcoin exchanges operating in China needed strict supervision and a form of licensing after being more strict on its view towards bitcoin in 2017 noting the dangers of cryptocurrency as a tool for criminal activites (Norry, 2018).

3.2.4 Taxation

Although the US Internal Revenue Service (IRS) began issuing guidance on taxation of Bitcoin in March 2014, in the year 2015, only 802 Americans told the IRS about their Bitcoin-related capital gains or losses, according to Fortune (Althauser, 2017). The pseuonymous nature of Bitcoin transaction has led many people to believe that the IRS cannot find out about their taxable gains. However, Bitcoin's blockchain by its very nature is completely transparent and every transaction is listed in the decentralized ledger and each transaction can be traced along through the Blockchain using sophisticated software. The only sense of privacy comes from the fact that bitcoin transactions use random addresses which are not associated with a user's real-world identity. Additionally, there are also a number of companies that look over the Blockchain attempting to link Bitcoin accounts to their actual owners. The IRS has also been found to have been partnering with Chainalysis, an anti-money laundering software for Bitcoin, to monitor Bitcoin traders engaging in high frequency and volume trading (Althauser, 2017).

So, to try and evade taxes not really knowing the mechanism involved in bitcoin transactions and not following through tax-related regulations is a big mistake. While governments want full transparency, bitcoin users want fully privacy and the conflict lying between these two realms of interests has been an issue that needs a quick fixing at the moment. In comparison, cash-based or electronic fiat money has a much clearer mechanism to enforce a sound taxation system.

3.2.5 Quantity in supply

According to Redman (2018), 16,800,000 bitcoins have been mined as of January 13 of 2018, which constitue 80 percent of the total bitcoin supply that will ever exist. The

supply is set to never increase. Although the miners securing the network have successfully managed to secure the rule expressed in creator Nakamoto's plan, skeptics believe there could a manipulative tactic such as a "51 percent" or "Sybil attack" to increase the supply (Redman, 2018). A Sybil attack is an attempt to control a peer netowrk by creating multiple fake identities giving the impression of unique users to the outside observers (Garner, 2018). To take control of the Bitcoin network in this way, the attackers have to gain 51% of the support. However, 10 years into its existence, no one has become able to alter the rule of 21 million supply cap. Majority of bitcoin users believe this scarcity of supply will make bitcoin more valuable over time.

Fiat money supply is a completely different scenario when viewed against bitcoin. The money supply in this case represents the entire stock of currency and other liquid instruments circulating in a country's economy (Investopedia, 2018). It could include cash, coins and balances held in checking and saving accounts. By controlling interest rates and increasing or decreasing the amount of money flowing in the economy, economists develop policies to keep the stable flow of money. According to Trading Economics (2018), the money supply of US dollar alone is \$3 738.4 billion as of October 2018.

4 WHAT IS MONEY?

Money can be anything that can be used to settle payments. Precious metals, shells, beads, stones, etc. have all been treated as money at one point or another in the history. Money has evolved with the market system. Barter is known today as the oldest form of economic exchange leading to the formation of money that was meant to solve the problem of finding “suitable mutual exchange” (Mellor, 2010, p. 8). Conventional economics sees money as having functions such as “a unit of account”, “a medium of exchange” and “a store of value” (Mellor, 2010, p. 8). The nature and role of money has been explained in many ways throughout history by different schools of economics but the views all come down to either metallism or chartalism.

(i) Metallism

Metallists believe society settled on precious metals as a medium of exchange in order to eliminate the barter system of economy. Consequently, money would be valued in terms of its precious metal content or backing. The problem with this theory is that it has led to a false idea that money can only be based on a scarce and valuable resource despite the value of coin rarely ever being the same as the metal of which it is made. Moreover, when paper with no precious metal came into use, metallists explained the transition on the basis of backing from precious metals. However, any real backing of currencies by gold would be impossible in modern economy thanks to its scarcity and the continued usage of intrinsically worthless paper after the elimination of precious metal backing them, the theory fell apart. (Mellor, 2010, pp. 8-13)

(ii) Chartalism

The alternative to the ‘metallist’ theory of money is a theory that sees money as resting on a social and political base, a combination of social conventions, banking systems and state authority. Money’s value according to chartalist view is not determined by its metallic content or backing, nor does it emerge naturally from market relations. It is a socially constructed notion which “depends for its existence and circulation in society on a generalised level of trust in its abstract properties”. For money to function

effectively, whoever circulates money tokens in society must honour them by accepting them in payment, or guarantee them as a means of access to goods and services. The society had accepted paper form of money as the basis for many commercial transactions even where gold and silver were still abundant and valuable. One of the most important shifts in history came from the commercial paper being transferable rather than an object of agreement between two people who knew and trusted each other. The transferability allowed any bearer of the paper money to use it for any purpose. A stable social structure of authority such as well-established governments and banks could help solidify the achievement of such high level of trust between two different parties. (Mellor, 2010)

4.1 Types of money

Traditionally, money has been classified as commodity money, representative money, fiat money. Not very long ago, electronic money has made its presence felt too.

(i) Commodity money

Commodity money is a type of money which has an intrinsic value lying within itself meaning its value stems from a commodity of which it is made (Spaulding, 2018). Gold and silver are the most common forms of commodity money whereas according to Spaulding (2018), salt in the Mediterranean region and silk in China are also seen as commodity money.

(ii) Representative money

Representative money was paper currency that could be exchanged for a fixed amount of a valuable commodity such as gold or silver in the 18th and 19th century. The light weight offered by paper currency was much easier to carry and make large payments. However, its acceptance depended on the reputation of the issuer. People in early America accepted banknotes, because the bank stood ready to redeem their note in gold or silver coins. (Spaulding, 2018).

(iii) Fiat money

Fiat money does not have an intrinsic value and cannot be redeemed for gold or silver. The best example of fiat money is paper currency whose value originates from government decree or fiat. People use fiat money only if they believe that it can be used for economic transactions in the future without having it lose its value. The government usually encourages the use of fiat money through the force of law and controls the production by using printing methods and materials. (Spaulding, 2018).

(iv) Electronic money

Money in most countries today exists only in electronic format, as records in the databases of financial institutions (Spaulding, 2018). According to Spaulding (2018), organized crime and terrorist networks use cash whereas law abiding citizens use checks or electronic transfers for large payments. This essentially makes the elimination of large denomination bills a better measure against organized crimes. Lipovsky (2017) cites “growing acceptance”, “convenience” and “lower costs, more security” as the three main reasons behind the popularity of electronic money in the eye of businesses and consumers.

4.2 Functions of money

According to Mises (1953), when two different transacting individuals or groups can exchange one another's commodity for self-consumption, it is a case of direct exchange. But when they acquire a commodity to exchange it for a second commodity, then this is a case of indirect exchange. According to Mises (1953), in the present stage of economic development, the occasions when direct exchange is both possible and actually effected have already become very exceptional, therefore, creating a demand for goods for not only direct consumption but also to dispose of by further exchange. However, all goods are not equally marketable; some have limited and occasional demand while others more general and constant. Thus, the most marketable good became common media of exchange as per the requirements of the market and in the process, it created an inevitable tendency for the less marketable goods used as a media of exchange to be rejected one by one, until at last only a single commodity remained to be universally employed as a medium of exchange, i.e. money. (Mises, 1953)

4.2.1 Medium of exchange

The most important function carried out by money is as a medium of exchange to facilitate transactions. The double coincidence of wants between two transacting parties as encountered in barter system is essentially eliminated by money's function as a medium of exchange that is accepted in all transactions irrespective of whether they desire each others' goods and services. For money to be used in this way, it must possess few crucial properties such as divisibility, portability, durability and unable to be duplicated (University of Minnesota, 2016).

According to Mises (1953), the simple statement that money is a commodity whose economic function is to facilitate the interchange of goods and services is not representative of the interest in the accumulation of material. Mises (1953) also considers many investigators' view that insufficient attention is devoted to the remarkable part played by money in economic life if it is merely credited with the function of being a medium of exchange. He also doubles down on further discussion of the connection between the secondary functions of money and its basic function as being unnecessary after Menger's review, but agrees certain tendencies in recent literature on money make it appear advisable to examine briefly these secondary functions (Mises, 1953).

4.2.2 Standard of deferred payments

According to Mises (1953), frequent reference is made in English and American writings to a function of money as a standard of deferred payments and has led many writers to deal with the problems connected with the general consequences of changes in the value of money, especially from the point of view of modifications in existing debt relations.

Deferred payment options defer payment until a later date requiring the investor receiving payments to plan for greater illiquidity than standard investments (Investopedia, 2018). Money as a standard of deferred payments has simplified the borrowing and lending operations and led to the creation of financial institutions. This is not however, as widely mentioned functions of money today.

4.2.3 Store of value

Mises (1953) explains that the functions of money as a transmitter of value through time and space may also be directly traced back to its function as medium of exchange. In doing so, he reiterates Menger's point that the special suitability of goods for hoarding, and their consequent widespread employment for this purpose, has been one of the most important causes of their increased marketability and therefore of their qualification as media of exchange (Mises, 1953). As the practice of employing a certain economic good as a medium of exchange becomes general, people begin to store up this good in preference to others. The most important point Mises (1953) has made about "store of value" function is that hoarding as a form of investment plays no great part in our present stage of economic development as its place has been taken by the purchase of interest-bearing property.

However, according to University of Minnesota (2016), money serves as a store of value because people are confident that money keeps its value over time and feel safe to save it for future exchanges.

4.2.4 Measure of value

Mises (1953) implies that the subjective value is not measured but graded, and in regard to objective value, the unit of account/measure of value function's objective is to reduce two or more species of commodity to a common objective denominator. The objective exchange value of a given commodity unit may be expressed in units of every other kind commodity. In today's context, every commodity's price is expressed in terms of money units, therefore, the exchange value of every commodity can be expressed in terms of money. This possibility enabled money to become a medium that allowed for the expression of values, when the growing elaboration of the scale of values resulting from the development of exchange, required the technique of valuation to be revised.

Opportunities for exchanging induce the individual to rearrange his scales of values. The position of commodities in the value scales of individuals is no longer determined solely by their own subjective use-value, but also by the subjective use-value of the commodities that can be obtained in exchange for them, whenever the latter stand higher than the former in the estimation of the individual. Therefore, if he is to obtain

the maximum utility from his resources, the individual must familiarize himself with all the prices in the market. For this, however, he needs some help in finding his way among the confusing multiplicity of the exchange ratios. Money, the common medium of exchange, which can be exchanged for every commodity and with which every commodity can be procured, is particularly suitable for this. It would be impossible for the individual in Mises' terms, even if he were a complete expert in commercial matters, to follow every change of market conditions and make the corresponding alterations in his scale of use-values and exchange values, unless he chose some common denominator to which he could reduce each exchange ratio. Because the market enables any commodity to be turned into money and money into any commodity, objective exchange value is expressed in terms of money. Thus, money becomes a price index, in Menger's phrase. (Mises, 1953)

Money simplifies exchanges because we state the price of a good or service in monetary units so that potential exchange partners know exactly how much value we want in return for it. This practice is more precise than barter agreements. (University of Minnesota, 2016)

4.3 How does money emerge?

Fiat monies such as US dollar, Japanese Yen, Euro, etc. are the most common forms of money that are in use today. Little care is given as to why these paper currencies have any value in today's context. They are simply accepted as a form of money because everybody clearly accepts it and there is a confidence they can be stored without having to worry if they will go into use the other day. According to Varian (2004), the dollar bill has any value because the government in power says it has value and people are willing to accept it as payment. An authority figure is basically forcing its people to accept this manufactured currency. Every country in the world uses fiat money as issued by its own government. According to Mises (1953), the state can, by means of its official stamp, regulate the issue of these monies but it is beyond the power of the state to ensure that they actually should become money; those involved in commercial transactions ensure their existence as a medium of exchange.

Secondly, the law of supply and demand in the marketplace is attributed to the emergence of money. Menger (1892) described a brilliant conjectural history of how money might have formed as the result of individual choices by individuals seeking to

economize transaction in an evolving economic environment. He stated that goods are valuable because they provide various uses and satisfy people's wants while the both sides gain from exchange. People will exchange something they value less for something they value more and since there are two entities carrying out such transactions, both of them gain (Menger, 1892). As opposed to barter, Menger also realized that the hassle is much less when they trade what they have for some widely accepted good, making future transactions with the same possible. This widely accepted good eventually leads to the emergence of money (Menger, 1892). In modern economy, this is referred to as the elimination of double coincidence of wants. While cattle, salt and stones were initially used as this widely accepted medium of exchange, with state regulation and recognition, gold and silver took over as they perfected the function of money (Menger, 1892).

4.4 The legal concept of money

The state usually has no intention to intervene a successfully completed exchange process where both parties have fulfilled their obligations. But when the exchange is carried out in terms of present goods against future goods, one party may fail to fulfill his obligations invoking the judiciary. If the case is one of purchase on credit, the court has to decide how a debt contracted in terms of money can be liquidated (Mises, 1953). Mises (1953) states in these cases, the court's task is to determine what 'money' refers to in commercial transactions respecting the intent of the contracting parties. Therefore, money is not the common medium of exchange, but of payment or debt settlement from a legal perspective. However, money can only be utilized to settle debts or make payments by virtue of being a medium of exchange (Mises, 1953). When the law regards money as a means of canceling outstanding obligations, the legal definition of money goes to be "legal medium of payment" and not the common medium of exchange. However, Mises (1952) makes clear that goods can become common media of exchange only through the practice of those who take part in commercial transactions. The commerce may reject what the state has ascribed the power of payment if it prefers so.

4.5 The regression theorem

Before "The Theory of Money and Credit" was published in 1912, no one had been able to employ the lesson learnt during the marginal revolution, concerning subjective value and marginal utility theory and apply it to money (Davidson & Block, 2018). Basically, utility is the idea that people get a certain level of satisfaction from consuming goods and services and marginal utility is the benefit of consuming an extra unit (Pettinger, 2016). Goods whose demand and supply schedules could be explained in terms of money had marginal utility, but it was thought money itself could not have marginal utility. The economists of the time argued if marginal utility were applicable to money, its demand schedule could only be explained by analyzing it in terms of all the other goods on the market; but if all these goods are valued in terms of money, and yet money is valued in terms of them, then clearly this is a circular argument (Davidson & Block, 2018).

Mises's accomplishment was to show that the demand schedule for money can be explained using marginal utility theory without introducing a circular argument. He demonstrated the demand for money is to hold for future exchanges. Mises successfully avoided the circularity problem by introducing a time element into the argument. He stated the subjective exchange value of money today takes place using the objective exchange values of yesterday (Davidson & Block, 2018). Menger had created the foundation for establishing the technical features of money, but did not explain how money derived its value.

According to Davidson & Block (2018), Mises ably disposed of all the previous mistaken notions concerning the value of money. Prior to the theorem, economists explained the valuation of non-fiat money through its marginal utility. This marginal utility creates circularity where the value of non-fiat money is explained by its marginal utility, derived from its own purchasing power. Mises solved this circularity by developing, what we now know as the regression theorem. He applied the subjective theory of value to the objective exchange value of money i.e. the purchasing power of money. The subjective theory of value was created priorly by Jevons, Walras and Menger of the Austrian school of economic thought which values goods by their use value or consumer value. Hence, the subjective theory of value could not be applied on money. Mises solved this problem by tracing the value of money back to the point where it emerged as money from a barter good. At that point, the purchasing power of

this money can be explained in the same way as the exchange value of a commodity. To put it simply, non-fiat money should have had use-value before it succeeded as money, i.e. a successful form of a medium of exchange. (Davidson & Block, 2018)

4.6 Does bitcoin violate the regression theorem?

Bitcoin brings out a major objection regarding its role as money, that says, bitcoin does not satisfy the regression theorem. From a praxeological perspective, Davidson & Block (2018) argue that there are two separate circumstances in which a new medium of exchange can start to function as a means of calculation and unit of account: (1) the new medium emerges from a pure barter economy and should have had a prior direct-use value or (2) it emerges when there is an existing money-price structure in place or a memory of one. In this case, the new medium, whether tangible or intangible does not violate the theorem as long as prices exist in terms of old money.

Bitcoin emerged in the presence of an existing monetary regime. Therefore, as far as regression theorem is concerned, asking whether or not bitcoin had any value before becoming a medium of exchange is irrelevant. According to Davidson & Block (2018), since an existing price structure was in place when bitcoin emerged, the regression theorem does not have anything to say on the matter.

5 RESEARCH METHODOLOGY

The research was carried out to get a better idea of the state of bitcoin, as to whether it can be defined as money in Austrian economic terms. The main objective of the research was to analyze the trends and development in the sector of bitcoin and study them in light of Austrian economic theory.

The theoretical part is presented and analyzed in order to achieve the objective of the thesis as it gives an insight on Bitcoin and Austrian view on money. The technical issue of bitcoin is not included as it is outside the scope of the thesis.

Based on the objective of the thesis, whose focus is on analyzing bitcoin's status as a medium of exchange, and hence the term "money", the research is focused on collecting various quantitative and qualitative data in relation to bitcoin. The historical data for bitcoin were collected from articles on websites and cryptocurrency-related platforms, and other data resources. The data for historical charts have been compiled from bitcoin trading platforms, and similar web resources. Additionally, the literature on money and monetary functions have been developed from reading "The Theory of Money and Credit" and "On the Origins of Money" as well as appropriate internet articles. The author employs deductive reasoning that uses existing theory as a foundation for formulating ideas.

The author has used Austrian view to determine bitcoin's relevance as money because Austrian school of economics has almost "single-handedly upheld, defended and refined" the basic disagreements arising in the context of explaining money (Hülsmann, 2015) and the author is most in line with this view of money.

5.1 Quantitative method

The quantitative method of research is an approach to research that emphasizes objective measurements and focuses on gathering numerical data and generalizing it across groups of people or to explain a particular phenomenon (University of Southern California, 2018). Quantitative research are either descriptive or experimental and deals in number, logic and an objective stance (University of Southern California, 2018). The author has used a descriptive research design for the research.

The quantitative research has been done by conducting an online survey constituting 4 open-ended questions and sub-questions thereof. The survey was conducted among a group of forumers on a bitcoin discussion board, i.e. "bitcointalk.org". There were a total of 63 respondents who responded anything to the questions put out. Due to various reasons such as clarity of the answers and relevance, only 49 answers were used in the research for analysis. The 49 respondents belong to the age group of 23 to 38 years old and had been using bitcoins for diverse purposes for at least 6 months. The questions are related to the motivation behind investing in bitcoins, the scope of bitcoins in terms of regular usage habits, the respondents' opinions on the future of bitcoins and the concerns they have about bitcoins. These questions are aimed to gain a comprehensive insight into the development of bitcoins as they are gaining grounds in marketplace.

This thesis also utilises the collection of secondary data which are the information gathered and provided by other sources. The applicability of bitcoins as a medium of exchange in the technologically advanced world requires an extensive academic research. The specifics of bitcoins are analysed and the major issues are addressed to answer the research questions. These topics facilitated the development of a comprehensive base of literature research with the help of books and online articles pertaining to the research interest.

5.2 Research limitations

The Austrian economic principles may have supported various economic and monetary theories over a century, but the macroeconomic conditions that had led to the formation of such theories could perhaps not be directly applicable to the digital age. The nature of bitcoins and Austrian principles are relatable to a certain degree, but the conservative proponents have scrutinized bitcoins. The intangibility and the dubious nature of their origin drive away the proponents of gold. With such regard, the approach of the Austrian school may have been applied with some limitations inherent in the author's analytical skill. The bitcoin forecast may be unclear at the moment due to the pace of technological development in the digital sector as well as uncertain legislative approach that could flick suddenly or in response to other inevitable external factors. Moreover, there tends to be an inherent bias in the bitcoin proponents and therefore in their responses.

6 FINDINGS

This section of the thesis analyses the data that have been collected from the survey respondents. The analysis is aimed at tackling the macroeconomic issues surrounding bitcoin. The results drawn from the survey questions are compared to the theoretical framework presented in the preceding chapters. The findings hereafter are presented according to the questions in the order of their appearance in the survey questionnaire. The survey accumulated 63 respondents by the end of the research project of which only 49 responses were selected to be analysed. The remaining 14 responses were deemed invalid due to lack of clarity in the feedback. Virtually, all the respondents acquired were 23 to 32 years old. The respondents primarily hailed from North America, South America and Africa. In the survey conducted, there was no Asian or European participation seen.

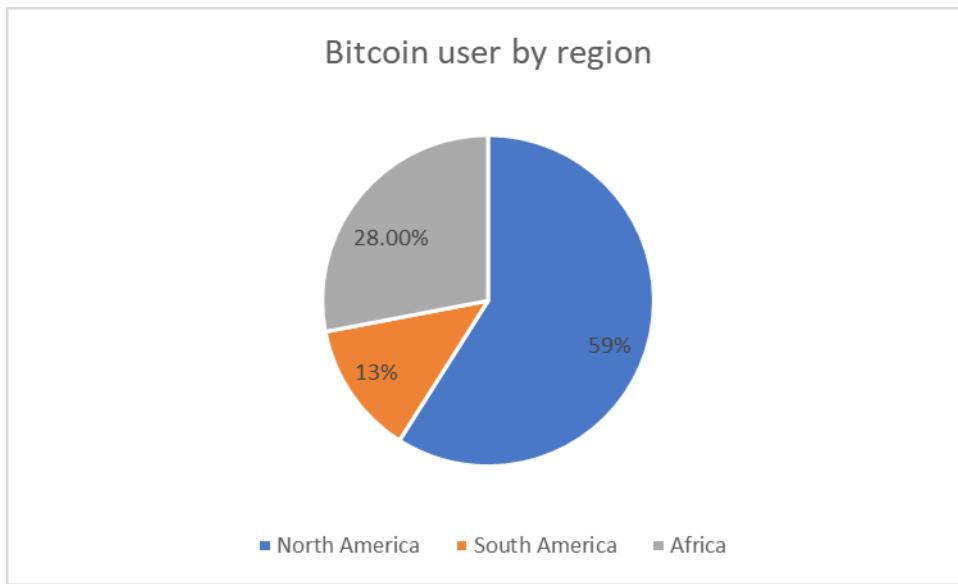


Fig 8 Bitcoin user by region

6.1 How long have you been using bitcoins?

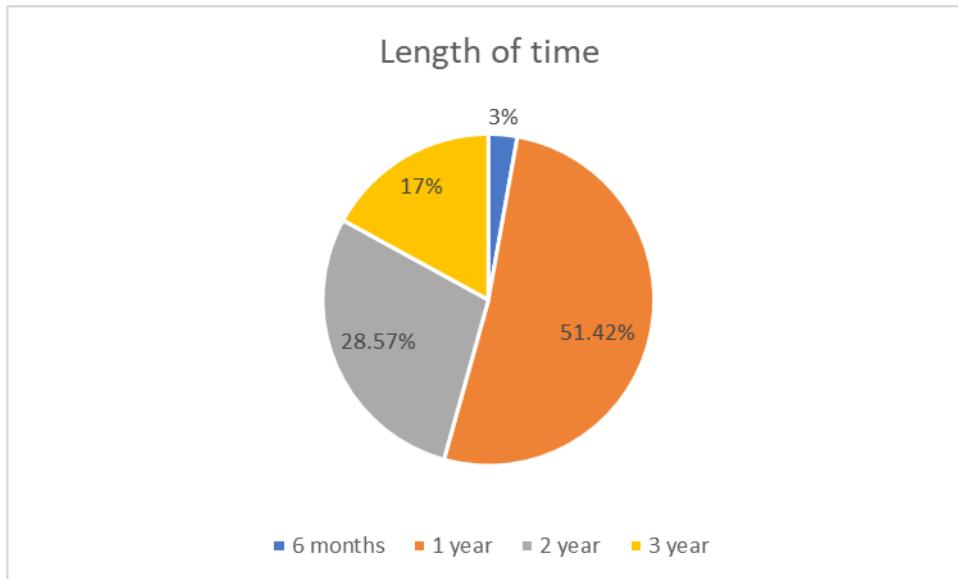


Fig 9 Total amount of time of being a bitcoin user

The figure shows the distribution of the survey respondents as per their use of bitcoins over a period of time. As we can see, 51.42% of the respondents had been using bitcoins for a period of 1 year. The second majority group consisting of 28.57% of the respondents had been using bitcoin for the last 2 years whereas 17% of them had been using bitcoins for a period of 3 years or more. In contrast, only 3% of respondents were using bitcoins for about 6 months. As noted earlier in the literature section, the prices of bitcoins have grown exponentially at the end of 2017 marking significant growth in bitcoin users as well. However, seeping into 2018, it can be seen that only 3% of new bitcoin users have been added in the last 6 months. Coincidentally, the prices of bitcoins have gone downhill since the December-January highs. The growth of bitcoin users appear to grow with the increase in bitcoin price as seen in the end of 2017 and early 2018. This suggests that people mostly flock towards bitcoin in times of price hikes because there is an arbitrage opportunity involved. Such price hikes seems to inspire people to engage more, so that the chance to make profit off of bitcoin's volatility is not missed. This trend suggests that bitcoin is seen more as a speculative investment than a medium of exchange.

6.2 What are the main reasons to invest in bitcoins?



Fig 10 Reasons to buy bitcoins

The figure shows the intentions behind why bitcoin users are buying bitcoins. 80% of respondents answered their main reasons for buying bitcoins as being taking advantage of that arbitrage opportunity. Such data reflect on the volatile nature of bitcoin that brings about the difference in buying and selling price of bitcoins. The interest that is hidden in benefitting from the arbitrage opportunity that arises from the volatility further reflects on the low adoption rate of bitcoin as a medium of exchange which has been described as the major characteristic feature of an established money system. A small portion of the respondents making up 14% of the total claimed to be more interested in the technology that is bitcoin and see investing in bitcoin as a learning opportunity, whereas a feeble 6% answered their reason behind owning bitcoins is that they get paid in bitcoins for the job they do. Adding up the numbers, it is clear that bitcoin investment is more of a gamble than it is a payment system. However, the minuscule representation of people getting paid in bitcoins also suggests that there may be an uptick in paying out wages in bitcoins when the regulations favour the system. As we have learnt from the Austrian economic principles, it only takes the expansion of user-base until a new economic commodity takes shape as a reliable medium of exchange, despite the jurisdiction not taming it as a legal tender.

6.3 What is the scope of bitcoins in terms of its usage behaviour?

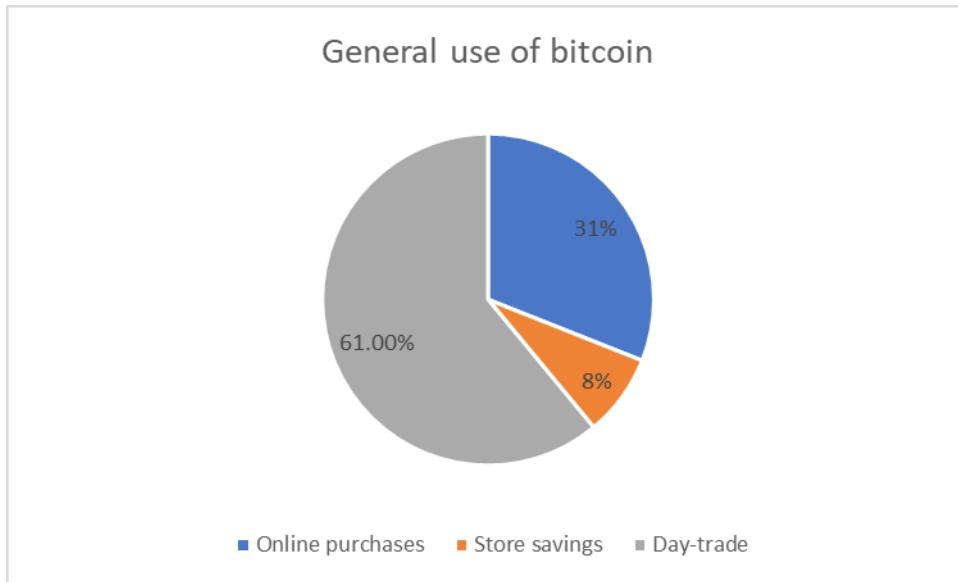


Fig 11 General use of bitcoin

As seen in figure 7, bitcoin had a promising 2017 after increasing in value by nearly 20 fold. Similarly, figure 5 and figure 6 show that there is a sharp spike in the daily active users as well as daily transaction volume. The growth of active users and daily transaction volume at the same time as price hike, infer bitcoin is generally seen more as an short-term investment vehicle rather than anything else. The survey results show that a whopping 61% of bitcoin users are involved in day-trade whereas only half as much are involved in online purchases. This goes to show that bitcoin is still seen less as a medium of exchange and more as an alternative means to earn some extra cash. Nevertheless, people seem to engage in online transactions using bitcoins out of interest in the technology or out of necessity such as in cases of impoverished African or South American nations where the financial system is weak and bank transactions are next to impossible. While the atmosphere for bitcoin transactions is not very favourable in developed nations, bitcoins seem to fulfil a purpose in places that are in dire need of a revamped financial system.

6.4 What does the future of bitcoin look like?

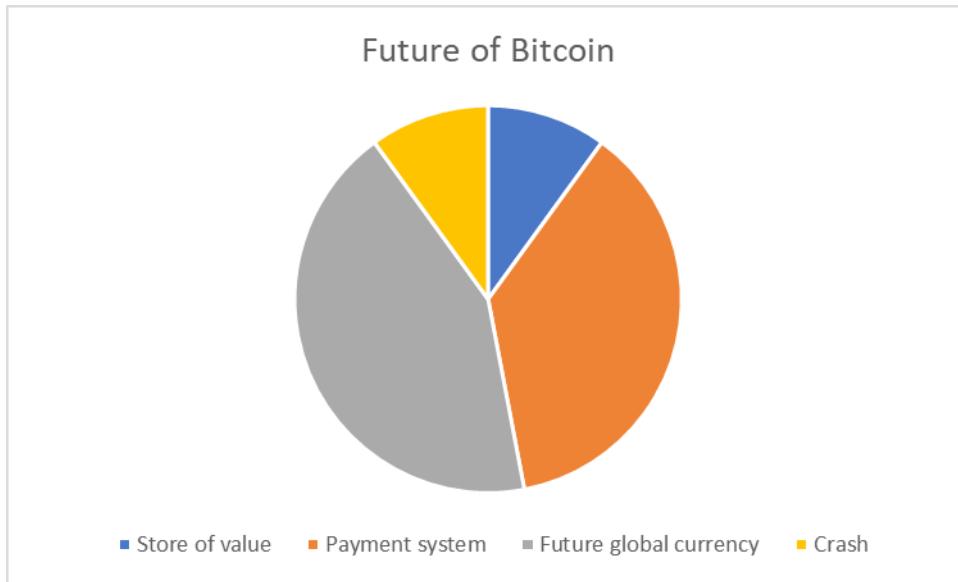


Fig 12 Future of bitcoin

So far we know that various factors such as limited supply, fluctuating demand, government regulations, technological innovations and so forth play a tremendous role in determining which path bitcoin is headed for. There have been predictions from both sides of the aisle as to what the future of bitcoin is like. Various economists, financial analysts and other authoritative figures as we have discussed in the theoretical section, are doubtful about the problems bitcoin can solve. The fact that bitcoin has continued to exist for a decade now and its inability to be used for its intended purpose still persisting, bitcoin usage is rather complicated; such are the reasons economists point out as to the reasons leading to dangerous speculations about bitcoin (The Economist, 2018). However, there are bitcoin hopefuls such as the respondents surveyed in the research, majority of whom either expect bitcoin to be a full-fledged payment system within a niche or a currency accepted all over the globe.

6.5 What are the major concerns surrounding bitcoins?

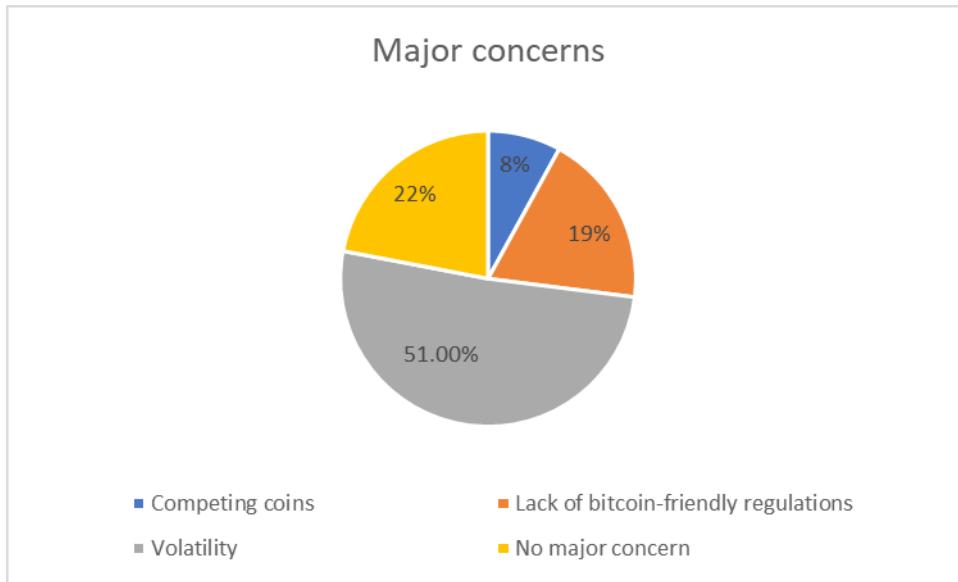


Fig 13 Major concerns for bitcoin users

The survey results show that the price volatility is still a main concern for majority of the bitcoin users. Although bitcoin is the most successful cryptocurrency, bitcoin has seen prices drop dramatically in majority of 2018. In addition to price volatility, the lack of support bitcoin tends to receive from the government, owing to various factors has the bitcoin owners concerned about the potentiality of bitcoin adapting into a form of a medium of exchange. The pseudonymous nature of bitcoin transactions make it easy for criminals to use bitcoins to make illegal transactions. Often times, governments cite such instances and decide that the risks of cryptocurrencies outweigh the potential advantages (Parker, 2018). These kinds of news are the major concerns for the respondents as they are also some factors what contribute to the volatile nature of bitcoins.

7 CONCLUSION

Money is primarily a medium of exchange which enables a person to trade what he possesses for what he desires. The ideal form of money has three primary characteristics: it acts as a medium of exchange, it retains its value and it is a means of economic calculation. In Austrian economic terms, the best approach is to let the people decide what they want to use as money. There is simply no need for a central bank, government control or other miscellaneous tender laws. History has shown that gold, silver and other metals tend to fulfil the role of money for being scarce and durable when the decisive power is vested on the people. When a commodity is capable of storing value and remains tradable, portable and has use-value, it gravitates to the role of money.

Bitcoin is a noble invention that was designed to address such market demand as a better medium of exchange. As we have discussed, bitcoin has its very own use-value. Its relative success with privacy, lower transaction cost, peer to peer payment functionality, scarcity, portability and decentralized nature make bitcoins a highly desired medium of exchange amongst those familiar with the system. The development of bitcoin is very complex. The way bitcoin's development is unfolding, various regulations towards it are bringing several social, economic and ideological questions. Despite the skepticism surrounding bitcoin, the very fact that it is quickly gaining grounds in the financial sector is crystal clear and that it will keep affecting the existing financial system is a no-brainer. It has been identified that the public is increasingly acknowledging the impact bitcoin has left on the modern economic history as seen on the rise in price, and increasing trend of adoption. However, this does not answer the question of whether bitcoin is money or not.

The analysis of money in Austrian economic terms was an integral part of the research, which facilitated the understanding of money as it originated from the study of human action and conduct. The regression theorem states that an economic good cannot function as money if it has not acquired an exchange-value based on some other cause than its monetary function. The price of bitcoin originated from the link between bitcoins and fiat currencies creating an exchange demand for bitcoin from a non-exchange demand by the functions of fiat monies previously established. Therefore, it can be drawn from the regression theorem that once a medium of exchange has

become sufficiently liquid to gain a certain traction, it can sustain itself by becoming an effective medium of exchange.

The Austrian economic principles consider a single commodity that is universally employed as a medium of exchange to be the ultimate determinant of what constitutes money. Bitcoin currently does not possess the liquidity required for that matter, hence can only be viewed as alternative to a universal medium of exchange with an inherent potential, however. Currently bitcoin, as a medium of exchange, may be fairly referred to as being situated between commodity money and fiat money.

One inherent problem with bitcoin is its inelastic supply. Austrian principles do favor the inelasticity of a money supply as it is impossible to manufacture bitcoin out of thin air, essentially keeping in check the uncontrolled expansion of money supply. However, such inelasticity could also create major shocks making the medium very volatile. Additionally, the lack of interest from policymakers in regulating bitcoins harbor the potential for fraudulent activity in the use of bitcoins.

To conclude, bitcoin is indeed, an alternate medium of exchange as has been seen in various scenarios, but Austrain economic principles do not regard it to be money. Also, the confidence in bitcoin users is not that high in terms of viewing it as a medium of exchange versus using it as a speculative investment. In practice, whether bitcoin is money or not also depends upon the the jurisdiction in question. For instance, with Japan passing the Virtual Currency Act in March 2017 (Nemazie, 2017), it has been given recognition as a legal tender or an approved medium of exchange whereas in the US and in most other countries, it is not recognized as a legal tender yet.

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