

BITCOIN- THE ADVENT OF CROWDMINTING

Carlos Piteira, 2014

Bitcoin: Friend or Foe?

The world media is awash with stories about Bitcoin. It has transcended the realm of technical and financial curiosity and it has well and truly moved into the mainstream. It has been called the story of the century and it may very well have that sort of impact. Given this flood of information it is not the scope of this paper to bring something new to the debate but rather to provide some context for our position on this matter. Therefore it can and should be seen as an opinion paper. Most of what is written here about Bitcoin is equally applicable to every other crypto currency and we refer to Bitcoin in general because it is by far the best known and most used.

Regardless of what one thinks about the need for an alternative “money”, the mathematical, computer and economic science behind Bitcoin is extremely well thought through. It wouldn't have survived and prospered globally if it wasn't, notwithstanding continuous attacks from hackers, fraudsters, banks and governments

Given the multidisciplinary nature of Bitcoin, the suggestion that it was started by one individual is likely misplaced. The anonymity of its origins is deliberate and one of its strengths; later in this paper we will elaborate on what else Bitcoin is doing well.

While the public at large may be intrigued about this new kind of money some people have very strong, even passionate views about digital currencies in general and Bitcoin in particular. Their strong positions, equally for or against, seem to be defined along political lines. In that forum this is essentially an ideological debate. In broad terms and with very few exceptions, people who favour small government, low regulation and low taxes are strong supporters of these currencies, which at present are created and developed entirely outside any government involvement and control. All those who think that governments are

the only source of wisdom, that the public at large can't be trusted and who favour big welfare societies, are serious detractors and opponents of Bitcoin.

In summary, those who don't trust government and trust the public love it and those who don't trust the public and trust the government loathe it.

The possible exception to this broad rule are the governments themselves, who see these currencies as a threat to national sovereignty and their ability to deploy monetary policy, regardless of what end of the political spectrum they are affiliated with. The other broadly opposing group are the banks because they stand to lose trillions of dollars in fees if these currencies succeed.

Before elaborating further on the various lines of the debate about Bitcoin, it may be helpful to review what "money" actually is.

What is Money?

There are of course the philosophical, political and emotional descriptions of money, such as the root of all evil for the Christians, the shackles of labour for the communists and the sinews of war for the generals, amongst many others.

However, these are not practical definitions and don't really explain much. In a more practical sense money is just a unit of measure used to bring practicality to the exchange of goods and services, a simplification on bartering. There is no intrinsic value in money. The value is in the goods and services which are traded. A conventional unit of measure is necessary because it is not possible to barter in goods and services in a modern society as it was in earlier civilizations. A very high specialization of labour, endless fragmentation of the market for products and services and the need to trade over long distances and extended periods of time are just some of the factors bringing about the need for a conventional unit of measure, or money.

This unit of measure has over time been represented in many forms, from clay tablets to silver or gold coins, pieces of paper, plastic cards and numbers on a screen. There are a few implications following from this.

The first implication is that the form money takes, or what is called a currency, is a convention. Quentin Hardy, writing for the New York Times about Bitcoin, provides a good definition: Money is a collective fiction!

Any currency is only a valid token for exchanging goods and services to the extent that a significant number of people decided to accept it for that purpose. This acceptance is usually made possible because the currency is issued and pronounced "legal" by the state. That is how we end up with each nation having its own currency. In this instance the acceptance of the currency is forced on the population by the state.

That was not always the case. There were times when sea shells, obsidian, grain, silver or gold for example were used as currencies. These were not issued or declared legal or forced upon people by any central bank. They came to be used as currencies for two main reasons, limited supply and at least somebody deciding to accept them as currency. Some had a practical use but not all.

This takes us to the second implication, which is that a currency must be of limited or at least controlled supply, in other words, hard to get. If anybody, even in limited numbers (and governments included) can produce or get access to unlimited supplies of the currency it rapidly loses its value and usefulness as a unit of account and a token for trade. This has been a regular occurrence throughout history, the Spanish did it with silver during the 16th and 17th centuries and in more recent times Brazil, Argentina and Zimbabwe did it with their currencies.

It may be argued that money has an intrinsic value if it is backed up by a gold reserve for instance, as the dollar was until 1971. However, the value of gold is in itself a convention

and dictated by a perceived limited supply, well beyond its usefulness to make jewellery and some electronic components. Most of the gold ever mined sits in vaults serving no practical purpose whatsoever.

Now that we have moved on from any form of gold or silver backing, the strength of each currency is supposed to be a reflection of the goods and services produced by their respective nation. Money is now simply printed paper and this concept effectively removes any technical constraint on governments and central banks for how much money they can print. The only watchdog is the international money market and what it does to the value of currency when the printing presses go into overdrive. Excessive enthusiasm in the printing room and we are in the Argentina – Zimbabwe scenario. In most countries the central banks are usually more restrained but even in the United States 80 billion new dollars have been coming out of the printing room every month. This has not had any dramatic effects so far because the US has a very large economy. As a consequence of this self regulated but unlimited supply all currencies have inflationary characteristics and many features of the global financial systems are based upon this fact. This also applies to the US dollar. On April 2, 1792 the US Dollar was defined by the Congress as a unit of pure silver weighing 0.8485 oz. Currently silver trades at approximately US\$20/oz, representing a 2,000% devaluation of the dollar, almost all of which happened since the 1970s. The depreciation of the US dollar against gold since 1933 is approximately 6,500%. (See table 1 below). The picture for the other currencies is usually much worse.

This is the reason why gold is seen by so many as a great means to store value, another requirement for something to be accepted as a currency, or money. It becomes immediately apparent that paper currencies are not a very good storage of value.

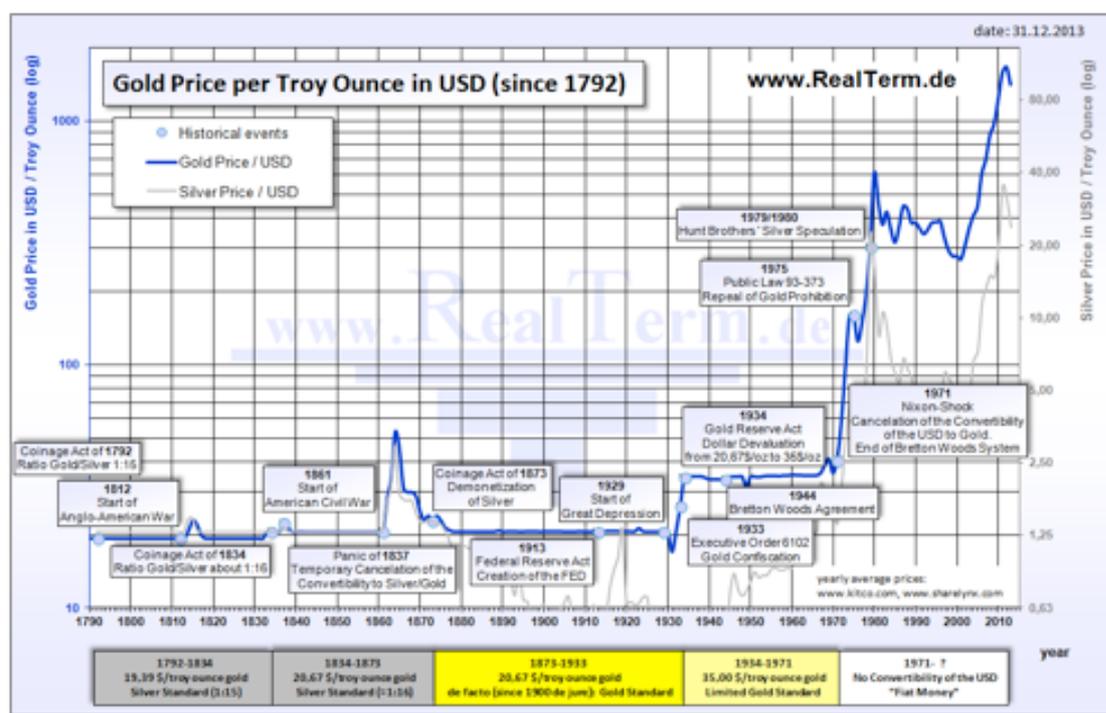


Table 1. Gold and Silver Price in USD

What has historically made something work as money can be summarized as:

- It must be a unit of account
- It must be a unit of exchange, implying that it is widely used and has a degree of portability
- It must be a good store of value, implying limited supply

To these we add something else, which is that at the present time and in many jurisdictions there is one overriding criterion, which is that it can be taxed.

How does Bitcoin stack up against these criteria and the other forms of money?

Is Bitcoin Money?

Is it a unit of account? It is clearly a unit of account. Nobody seems to be disputing this and there are millions of transactions being processed using Bitcoins as the unit of measure. At the time of writing this is between \$200M and \$400M a day. Does Bitcoin have any advantage or disadvantage over any other currency in this regard? Not apparently and this is not a controversial issue.

Is it a unit of exchange? This brings up the questions of portability and widespread acceptance. Bitcoins are more portable than any other form of money in existence now or that has ever existed. The national currencies are all subject to movement and cross border transfer restrictions and substantial fees. Bitcoins are instantly transferable between anybody anywhere in the world with no restriction, no limitations, no taxes and insignificant fees. It's not possible to do this with any other currency and this is one of Bitcoins' major advantages and its best use at the present moment.

Some gold bugs claim that gold is also a highly portable currency. Gold may have many virtues but portability is not one of them. That is why we don't see too many people walking around with gold bars to go shopping. By any criteria, portability is a comprehensive win for Bitcoin.

Widespread acceptance is the other measure of success of any currency. It's a fact that nobody anywhere can use Bitcoins as their only currency because Bitcoins' market penetration is still very small. However, the progress it has made on a global basis and in a short five years is remarkable. The tipping point for Bitcoin and crypto currencies in general may not be far away.

Is it a store of value? This is the area where Bitcoin has received the most criticism due to price volatility. Comparisons with gold are often raised and these extend to the process of obtaining Bitcoins which is also called mining. It may be helpful to explore the similarities further.

Just like Bitcoin, gold is a decentralized currency in that it is not issued by central banks. Any person anywhere in the world can hold gold bullion and it is broadly the same, maybe with minor differences in grade, wherever it sits. It is widely accepted and its value is relatively stable.

Anybody can walk into the woods and try to find gold, either by digging it up or panning by the riverside. This practice is not common these days and gold exploration is mainly done by large mining companies. This is a cosy arrangement between the large miners and governments because it gives the miners an oligopoly and gives the governments the taxes. Naturally this arrangement is justified in the name of regulation and consumer protection. There is another important feature about gold mining: the more you mine in each particular place the harder it gets to get more gold, until it eventually runs out.

Bitcoin is at the stage where gold mining was up until the beginning of the 20th century. Anybody can mine for some Bitcoins, this time not in the woods with a shovel or a pan but in one's own home with a computer. It's just a sign of the times but the principle is the same. Another important similarity is that the more Bitcoins you mine, the harder they are to get, just like in the gold mines. The Bitcoin mathematical model allows for only 21 million Bitcoins to be mined altogether and this will happen by 2040. Since approximately 12 million have been mined in the first five years, the last 9 million will take the next 26 years to get. These are identical features to those that make gold a good store of value. The current volatility in the Bitcoin price is a sign of its infancy and a growing pain; it was the same during the many gold rushes in the past. As the market expands and acceptance widens this problem will be gradually reduced.

This feature also makes Bitcoin a deflationary currency and in fact a lot more so than gold. This is in marked contrast with all paper money which is highly inflationary. This finite availability has been mentioned as one of Bitcoin's shortcomings, ignoring the simple fact that it can be subdivided in smaller fractions as its value rises.

There is one final comparison to be noted between gold and Bitcoins. Gold mining is done in isolation and secrecy by a small number of people. Bitcoin mining is done globally by anybody who wants to do it and in open cooperation. This is a proxy for the difference between the old way of closed societies and the new way of an interconnected world.

What are the main threats faced by crypto currencies?

There are government calls to regulate the Bitcoin market so that its mining can be presumably reserved to the large IT companies and / or banks which will then start paying taxes on it. These claims miss the point entirely and Janet Yellen, the new Fed Reserve chairwoman has recently brought some sanity to that debate when she admitted that the US has neither the authority nor the means to regulate this market. That is a welcome admission. Lack of government regulation is one of the main sources of innovation and the quintessential feature of this fascinating socio economic experiment.

If governments can't regulate it, and they can't, they may try to make it illegal. Russia and Vietnam, not exactly paragons of democracy and respect for human rights, have done just that. If this spreads to other, more open and relevant economies it will drive these currencies underground for a while but will not kill them. The technology is widely available and it will continue to pop up in other forms everywhere.

Banks, which stand to lose \$1 trillion a year in transaction fees and the power that comes with it, will canvas all their resources to shoot down Bitcoin and all other digital currencies. They have the governments as allies because governments want the taxes and don't want to lose control of monetary policy.

Banks have found support in some sectors of the media which have been waging a hysteric campaign to discredit Bitcoin, for example suggesting that Bitcoins are primarily used for drug trafficking and other illegal transactions. Question: How was that done up to now? Answer: With paper money and bank accounts. This is exactly how for the overwhelming majority of these transactions it still is and will continue to be done.

Another threat to Bitcoins is the perception that they are not safe and can be stolen. This has been exacerbated by the recent collapse of Mt.Gox, one of Bitcoin's main exchanges, and the reputed loss of over \$700 million in their own and clients' money. Depositors in the American banks in 1929 lost all their money and in 2013 the same thing happened with the bank customers in Cyprus. When banks were robbed in the past nobody attributed that to the existence of paper money, but rightly so to the failure of the banks to provide proper security. This is the same with Mt.Gox, the company had an appalling lack of governance and management systems and its failure can only be blamed on Bitcoin as much as bank robberies can be blamed on the existence of paper money.

The existence of a global open ledger for Bitcoin transactions, which is part of the validation process for all transactions, arguably makes Bitcoins safer than bank deposits.

Ten most common arguments against Bitcoin and respective counter arguments

It is fictitious money.	Yes it is, but all money is a collective fiction.
It is used for illicit and criminal transactions.	Criminals have been doing just fine without Bitcoins and will continue doing so, using cash and bank accounts.
It is used for money laundering.	HSBC was caught red handed laundering half a trillion dollars from the drug cartels. Nobody was sent to jail or even lost their job and nobody is asking for any Banks to be shut down.
Its value is volatile.	This is a valid point and a growing pain that will sort itself out over time and with wider acceptance.
It is not safe.	It's safer than banks and your wallet can also be stolen. Bank customers in Cyprus had their money stolen by the banks themselves just last year.
There is a finite supply making its widespread use unlikely.	It can be subdivided indefinitely as the value rises and the limited supply makes it a deflationary currency.
The world doesn't need another currency.	Yes it does. The world of global e-commerce needs a global currency that can be transferred instantaneously across borders and without rip off fees. Bitcoin could be it.
It can't be taxed.	Most people will love that.
It has limited acceptance and may never become widely used.	This is the major problem at the moment. Governments can make these currencies illegal driving them underground and seriously limiting their general use, at least in the short term.
Bitcoin mining is a waste of computer resources.	Gold also sits in vaults for no practical purpose and nobody complains. However this is a valid criticism and can easily be addressed in future iterations. New crypto currencies can be designed to solve global problems that require significant computing power, such as simulating weather patterns, decoding genomes and identifying which genes are responsible for what genetic diseases and many more. Yet another option is linking the issue of currency to the production of some useful commodity. An example of this is SolarCoins, which are awarded as solar energy is supplied to the grid.

What is Bitcoin doing well and why it is likely to succeed?

- It doesn't have a known founder, an owner or a head office. This is important because without a known founder there is nobody to arrest or discredit with a media campaign. Without an owner there is nobody to accuse of illicit profiteering and also throw in jail. Without a head office you can't close it down.
- There is a piece of the action for everybody. The creators of Bitcoin were not too greedy, they told the world how to go about mining some Bitcoins and let everybody make some money while building the ecosystem and improving the technology. This was a decisive difference from previous attempts to develop non-state sponsored currencies.
- Transactions are anonymous. Notwithstanding the fact that some of us volunteer lots of personal information on social networks and other public forums, others still value privacy, in particular when it comes to financial affairs. Bitcoin provides a level of anonymity that is only matched by cash transactions, in stark contrast with bank based transactions.
- Transactions are irreversible. This is an important safety consideration for the payee and also to some extent for the payer. This is another feature equal to cash transactions and another area where Bitcoins are superior to bank based transactions, which can be reversed.
- Bitcoins have most of the advantages of cash based transactions, but while cash is normally only used face to face, Bitcoins can be used across the world, virtually instantaneously and almost free of any charges.
- It's an open source ecosystem and we don't have to elaborate on the virtues and advantages of such a system. Bitcoin is supported by and "lives" in the computers of many thousands of people all around the world. These thousands of people contribute to improve the system all the time.
- The internet has spawned a number of these crowd- based models, such as crowdfunding (another threat to the banks), crowdsourcing and many more. This is an irreversible process. Nobody can shut down the internet and reverse all these new trends. You can't shut down every computer in every office and every house everywhere in the world. This is the anti Orwellian world. Governments can make one crypto currency after another illegal but they can't wipe out the underlying technology and make it go away. It will come up again and again.
- Bitcoin ticks many boxes in terms of economic fundamentals, namely the increasingly limited supply. It can bring a new level of integrity, discipline and efficiency to world trade. The research department of Bank of America Merrill Lynch predicted in a report

in December 2013 that Bitcoin could “become a major means of payment for e-commerce and may emerge as a serious competitor to traditional money transfer providers”. A report released by Goldman Sachs on 11 March 2013 admitted that acceptance of Bitcoin is growing and widespread acceptance could save e-commerce \$200 million a year in transaction fees, in the US alone.

- The current international financial system created a \$1 trillion a year industry based on fees charged to cross border transactions and government-to-business and government-to-consumer transactions. In addition, this process is highly inefficient because it takes days for the funds to be transferred. Susan Athey, a professor of economics at Stanford Business School wrote: “Once you look at it you say, how is it that we are still using these archaic financial rails?” Bitcoin makes this industry and the problems it causes to global commerce disappear altogether. It’s an idea whose time has come. It is an inevitable product of the connected world in which we live.
- Fiat currency is an imposition; its adoption is forced by the state. Bitcoin is not imposed on anybody; its adoption is entirely voluntary. It is an interesting fantasy, to imagine a level playing field where state currencies are voluntary and compete against the global crypto currencies. It’s a fantasy that may become an unstoppable reality.

Conclusion

The process of “mining” Bitcoins or any other crypto currency is the internet, open source, crowd equivalent of minting coins. This is the process of crowdminting! (And you heard that word here first!). Whether it’s Bitcoin or a follow up, crowd minted currencies are set to form the basis for a new financial system that reflects the technological and social realities of the early 21st century.

Many governments around the world are stuck in a vicious escalating cycle of new regulations, the implementation and policing of which requires more taxes, these new taxes in turn requiring more people to collect and police them, which in turn requires more taxes to pay for these people and on and on, all the way to the bottom. Bitcoin provides a window and a model to escape this self destructing trap. It was born and thrives without any form of state intervention and no tax payers’ money being spent on regulators and tax collectors to fund that regulation. It is a prime example of how the wisdom of crowds can deliver better outcomes than central decision making systems and how they undermine and render obsolete the “big brother state” doctrine.

Bitcoin was waiting to happen and it had to happen. This is brought about by something new that didn’t exist in the days of the gold rushes, the ability for any citizen, from his own home, to communicate instantaneously with any other person anywhere else on the planet. We don’t know if Bitcoin itself will rule the world of financial transactions or if new iterations of crypto currencies will prevail, but we know that crowd minted currencies will change the world forever.

"Give me control over a nation's money supply, and I care not who makes its laws." Baron Rothschild

A Final Piece of Trivia

The first reported purchase of a physical product with Bitcoins was on 21 May 2010, when Laszlo Hanyecz bought a \$25 pizza from Papa John’s for 10,000 Bitcoins. Three and a half years later, on 29 November 2013, the price of Bitcoins picked at \$1,242.00. At this point the 10,000 Bitcoins paid for the pizza were worth \$12,420,000.00. That was a very expensive pizza, likely to be the most expensive meal of all times. On 5 December 2013, a Lamborghini dealer in Newport Beach, California, sold a \$103,000 car for \$91.4 Bitcoins. That pizza from just three years back would now have bought 109 Lamborghinis and leave a spare \$40,000, enough to buy 1,600 pizzas.

In 2013 Bitcoins had the largest annual asset price appreciation in history: 56 times.

Additional Reading

For a presentation on financial data and the technical aspects of Bitcoin we recommend

[http://www.slideshare.net/QuasarVentures/bitcoin-understanding-and-assessing-potential-opportunities-30865982?
utm_source=slideshow02&utm_medium=ssemail&utm_campaign=share_slideshow](http://www.slideshare.net/QuasarVentures/bitcoin-understanding-and-assessing-potential-opportunities-30865982?utm_source=slideshow02&utm_medium=ssemail&utm_campaign=share_slideshow)

Also checkout QuayPay's 2014 payment industry report: <http://industry.quaypay.com>



About QuayPay

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- Embedded payments for fast and easy, in-content one-click payments
- Integration with consumer social media accounts
- Real time sales and payments data available through the merchant's portal
- Built in gamification module allowing the merchant to set up its own virtual currency and loyalty programs

QuayPay is working with some of Australia's major retailers to change the face of retail and create a new shopping and payment experience.

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