

An Overview of Crypto Currency with Special Reference To Bitcoin A Case Study

S. Indhumathy

Assistant Professor MBA, Department of Management Studies
Bharath Institute of law,
Bharath Institute of Higher Education and Research,
Selaiyur, Chennai, Tamil Nadu 600 073

ABSTRACT

A crypto currency is a digital or virtual currency that uses cryptography for security. A crypto currency is difficult to counterfeit because of this security feature. A defining feature of a crypto currency, and arguably its most endearing allure, is its organic nature; it is not issued by any central authority, rendering it theoretically immune to government interference or manipulation. In this paper I have assessed the age of crypto currency and explained bit coins birth and early development and also described the advantages and disadvantages of using bitcoin. The list of merchants that accept Bitcoin is steadily lengthening. We can now buy plane tickets (Expedia), furniture and web publishing services (WordPress) with Bitcoin. However, before we rush out and cash in your dollars for Bitcoin, remember that Bitcoin has a long way to go before it's a legitimate currency on par with the U.S. dollar, euro, or pound. And despite the seductiveness of crypto currency as a means of exchange, there's no guarantee that Bitcoin – or any other decentralized, virtual currency not controlled by a national bank – will ever be a viable alternative to fiat currencies. Some experts believe that, in the coming decades, national governments will rework their currencies with state-sanctioned means of exchange that have some crypto currency features, like built-in scarcity and virtually impenetrable counterfeiting protections. Others believe that fiat currency and crypto currency will continue to exist in parallel, but that crypto currencies will fail to expand beyond the niche currently occupied by gold and other precious metals – that of an alternative investment whose primary purpose is to hedge against inflation.

KEY WORDS: Bitcoin, Dollars, Currencies.

INTRODUCTION OF CRYPTO CURRENCY

A crypto currency is a digital or virtual currency that uses cryptography for security. A crypto currency is difficult to counterfeit because of this security feature. A defining feature of a crypto currency, and arguably its most endearing allure, is its organic nature; it is not issued by any central authority, rendering it theoretically immune to government interference or manipulation.

THE AGE OF CRYPTO CURRENCY

Crypto currencies poised to take over the financial and social aspects of our world. It imposes the promise of financial transactions in the absence of a middleman, a system that is owned by the people and is safe from the crash that was witnessed in 2008. Bit coin, the biggest of them, has many serious implications, but one of them is the clearest change.

OBJECTIVES OF THE STUDY

- To study the age of crypto currency and bit coin's birth and early development.
- To assess the advantages and disadvantages of using bit coin.
- To compare the bit coin with other crypto currencies.

BIT COIN

Bitcoin is the most widely known and used crypto currency in the world. The current market capitalization of just over **\$10 billion** (USD) (Crypto-Currency Market Capitalizations, 2016). Bit coin was originally developed by Satoshi Takemoto as a strictly peer-to-peer electronic payment system and a solution to the problem of double-spending (Takemoto, 2008). It is primarily designed to eliminate the need of financial institutions or 'trusted third-party' entities. Bit coin does this by eliminating the possibility of fraud, increasing efficiencies, and providing objective proof-of-work to guarantee validity and security in any transaction (Takemoto, 2008). The use of a public ledger as well as digital signatures allow for a secure and anonymous transaction without the need for trust, as the public network of nodes validates transactions through finding a consensus among a majority of nodes.

ORIGIN AND HISTORY OF BIT COIN

Bit coin's origins date back to the early 1980s, when the algorithms that support modern crypto currency were first developed. Its closest predecessor was Bit Gold, a proto-crypto currency developed in the late 1990s by Nick Szabo. Though Bit Gold never gained widespread traction, it shared many features in common with Bit coin, including ironclad protections against duplication, the block chain as the ultimate transaction ledger, public keys identifying individual users, and built-in scarcity. Note that Bit Gold isn't to be confused with Bit Gold an existing Canadian company that "helps people securely acquire, store, and spend gold with unprecedented simplicity."

BIT COIN'S BIRTH ANDEARLY DEVELOPMENT

The first public record of Bit coin dates to October 2008, when a pseudonymous person or organization dubbed Satoshi Takemoto published a white paper with the technical outlines for a new, decentralized crypt currency. Takemoto's identity remains unknown, though speculation centers on a handful of U.S.-based individuals (or various groupings thereof) who were active in the crypto currency movement of the 1990s and 2000s. Takemoto released Bit coin's open-source code in January 2009, marking the beginning of public mining and trading, and ceased public communication shortly thereafter.

Bit coin was built on the theoretical and technical foundations of Bit Gold and b-money, a contemporaneous crypto currency model that was never developed. Aside from being the first crypto currency to gain widespread traction outside the relatively ultra-libertarian movement, its biggest claim to fame is as the first crypt currency marked by totally decentralized control – in other words, no user is more influential than any other.

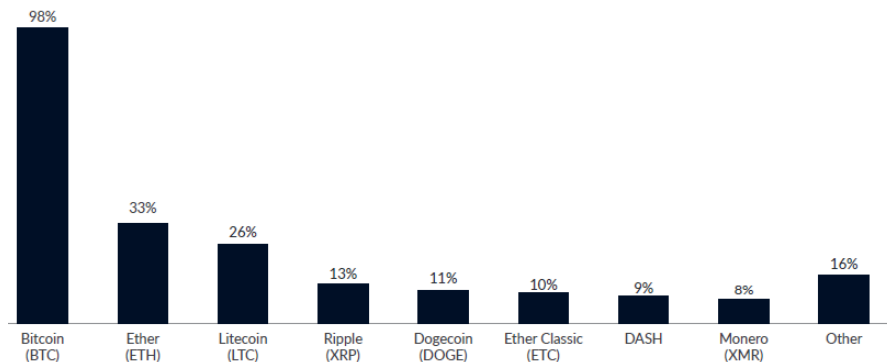
Bit coin experienced some growing pains in its first few years of life. In 2010, a coding flaw resulted in the creation of huge numbers of un-mined Bit coin, temporarily crashing the currency’s value. A subsequent fix repaired the block chain and erased the unauthorized Bit coin. Something similar occurred in 2013, though the effects were less drastic. Bit coin’s open source code has been modified to make such systemic flaws less likely in the future.

COMPARISON BETWEEN CRYPTO CURRENCIES

TABLE 1: AVERAGE DAILY NUMBER OF TRANSACTIONS FOR LARGEST CRYPTO CURRENCIES

	BIT COIN	ETHEREUM	DASH	RIPPLE	MONERO	LITECOIN
Mar 2016	201,595	20,242	1,582	N/A	579	4,453
June 2016	221,018	40,895	1,184	N/A	435	5,520
Sep 2016	219,624	45,109	1,549	N/A	1,045	3,432
Dec 2016	261,710	42,908	1,238	N/A	1,598	3,455
Mar 2017	286,419	47,792	1,800	N/A	2,611	3,244

Figure 1: Bit coin is the most widely supported crypto currency among participating exchanges, wallets and payment companies



INTERPRETATION

When comparing the average number of daily transactions performed on each crypto currency’s payment network, Bit coins by far the most widely used, followed by considerably distant second-place Ethereum (Table 1). All other crypto currencies have rather low transaction volumes in comparison. However, a general trend towards rising transaction volumes can be observed for all analyzed crypto currencies since Q4 2016(except lite coin, whose volumes are stagnant). Monero and DASH transaction volumes are growing the fastest. If significant price movements and on-chain transaction volumes reflect the popularity of a crypt currency system,

it can be established that DASH, Monero and Ethereum have seen the greatest increase in popularity in recent months.

ADVANTAGES OF USING BIT COIN

GREATER LIQUIDITY RELATIVE TO OTHER CRYPTO CURRENCIES

As the most popular crypt currency by a significant margin, Bit coin has far greater liquidity than its peers. This allows users to retain most of its inherent value when converting to fiat currencies, such as the U.S. dollar and euro. By contrast, most other crypt currencies either can't be exchanged directly for fiat currencies or lose substantial value during such exchanges. In this regard, Bit coin is more like fiat currencies than most other crypt currencies – though it's not yet possible to buy and sell Bit coin in virtually any quantity at any time, as is the case with the U.S. dollar and other major world currencies.

INCREASINGLY WIDE ACCEPTANCE AS A PAYMENT METHOD

Hundreds of merchants accept Bit coin payments. Thanks to heavyweights like jumping on board, it's possible to buy virtually any physical item using Bit coin units. If you're serious about reducing your exposure to fiat currencies, Bit coin's growing mainstream acceptance is likely to be a big help.

INTERNATIONAL TRANSACTIONS EASIER THAN REGULAR CURRENCIES

Bit coin transactions that cross international borders are no different from Bit coin transactions that stay in-country. There aren't any international transaction fees or red tape to navigate, as is often the case with credit card payments, ATM cash withdrawals, and international money transfers. International credit card and ATM fees can range up to 3% of transaction value, and sometimes higher, while money transfer fees can be as high as 15%. While most other crypto currencies lack international red tape, cross-border Bit coin transactions are easier simply because Bit coin is more popular around the world.

GENERALLY LOWER TRANSACTION FEES

Compared to other digital payment methods, such as credit cards and PayPal, Bit coin comes with lower transaction fees. Though such fees are variable, it's rare for a Bit coin transaction to cost more than 1% of its value. Compare that to 2% to 3% for most other digital payments.

ANONYMITY AND PRIVACY RELATIVE TO TRADITIONAL CURRENCIES

Holding U.S. dollars or other fiat currencies in an online bank account, or executing online credit card and PayPal transactions, doesn't protect your privacy any more than physically handing cash or a credit card across the shop counter. Though your online accounts are hopefully protected from all but the most sophisticated hack attacks, they are clearly associated with you – meaning private merchants and public authorities can track how you spend and receive your electronic funds. By contrast, Bit coin's built-in privacy protections allow users to completely separate their

Bit coin accounts from their public personas, if they so choose. While it's possible to track Bit coin flows between users, it's very difficult to figure out who those users really are.

INDEPENDENCE FROM POLITICAL AGENTS AND CREATORS

Since Bit coin isn't created or controlled by any state entity, such as a central bank, it's not beholden to political influence. Since it exists outside any political system, it's also much harder for governments to freeze or seize Bit coin units, whether in the course of legitimate criminal investigations or as retribution for political acts, as is often the case in repressive states like Russia and China. Due to its completely decentralized nature, popularity, and liquidity, Bit coin is also beholden to its creators. Many less popular crypto currencies are characterized by concentrated holdings – the majority of existing units are held in a handful of accounts. This allows the currencies' creators to manipulate supply and, to an extent, value relative to other crypto currencies, negatively impacting other holders.

BUILT-IN SCARCITY

Bit coin's built-in scarcity feature – only 21 million will ever exist – is likely to support its long-term value against traditional currencies, as well as non-scarce crypto currencies (such as Doge coin, a popular Bit coin alternative). In a way, Bit coin's scarcity imbues the currency with intrinsic value – similar to gold and other precious metals. Most traditional (fiat) currencies controlled by national governments are non-scarce. Central banks can create new units of currency at will, and often do – for example, the U.S. Federal Reserve began a program of quantitative easing that created trillions of dollars in the aftermath of the late-2000s global financial crisis. Though the long-term effects of such policies are unclear, they make many economists uneasy.

DISADVANTAGES OF USING BIT COIN

EXPOSURE TO BIT COIN-SPECIFIC SCAMS AND FRAUD

As the world's most popular crypto currency, Bit coin has seen more than its fair share of medium-specific scams, fraud, and attacks. These range from small-time Ponzi schemes, such as Bit coin Savings & Trust, to massive hack attacks, such as the breaches that felled Sheep Marketplace and Mt. Gox. Other crypto currencies don't have the critical mass of users necessary to make such malfeasance profitable to criminals, and such activity is more likely to be prosecuted by law enforcement agencies when traditional currencies and payment platforms are involved.

BLACK MARKET ACTIVITY MAY DAMAGE REPUTATION AND USEFULNESS

Despite high-visibility prosecutions of the most egregious offenders, Bit coin remains attractive to criminals and gray market participants. Obviously, dark web marketplaces like Silk Road and Sheep expose rank-and-file users to fraud and the threat of criminal prosecution.

More disturbingly, the pursuit of nefarious activity by seemingly upstanding Bit coin users – such as Charlie Shrem – threaten to corrode Bit coin's reputation. And it's unclear that the international legal system is properly equipped to tackle the problem. If shady uses for Bit coin

outweigh legitimate ones over time, and the authorities can't effectively put a stop to the shenanigans, the entire system faces marginalization.

SUSCEPTIBLE TO HIGH PRICE VOLATILITY

Although bit coin is the most liquid and easily exchanged crypto currency, it remains susceptible to wild price swings over short periods of time. In the wake of the Mt. Gox collapse, Bit coin's value fell by more than 50%. Following the FBI's announcement that it would treat bit coin and other virtual currencies as "legitimate financial services," Bit coin's value spiked by a similar amount. While Bit coin's volatility sometimes offers short-term benefits for speculative traders, it renders the currency unsuitable for longer-term investors. And since Bit coin's purchasing power varies so widely from week to week, it's difficult for consumers to use as a legitimate means of exchange.

NO CHARGE BACKS OR REFUNDS

One of Bit coin's biggest drawbacks is a lack of standardized policy for charge backs or refunds, as all credit card companies and traditional online payment processors have. Users affected by transaction fraud – for instance, they purchase goods that the seller never delivers – can't request a refund through bit coin. In fact, Bit coin's decentralized structure makes it impossible for any single party to arbitrate disputes between users. While miners take responsibility for recording transactions, they're not qualified to assess their legitimacy. Some newer crypto currencies, such as Ripple, have rudimentary chargeback and refund functions, but this feature has yet to be built into bit coin.

POTENTIAL TO BE REPLACED BY SUPERIOR CRYPTO CURRENCY

Bit coin spawned a host of successor crypto currencies. Though many are structurally quite similar to bit coin, others make notable improvements. Some newer crypto currencies make it even harder to track money flows or identify users. Others use "smart contract" systems that hold service providers accountable for their promises. Some even have in-house exchanges that let users exchange crypto currency units directly for fiat currency units, eliminating third-party exchanges and reducing associated fraud risks. Over time, one or more of these alternatives could usurp bit coin as the world's dominant crypto currency. That could negatively impact Bit coin's value, leaving committed, long-term users holding the bag.

FINDINGS AND SUGGESTION

Bit coin remains the clear leader both in terms of market capitalization and usage despite the rising interest another crypto currency. Bitcoin is also the crypto currency that is supported and used by the overwhelming majority of wallets, exchanges and payment service providers that participated in this study (Figure 1). As a result, the report will be mainly focused on bit coin although we attempt to consider other crypto currencies whenever it is relevant to do so and sufficient data exists.

CONCLUSION

The list of merchants that accept Bitcoin is steadily lengthening. You can now buy plane tickets (Expedia), furniture and web publishing services (WordPress) with Bitcoin. However,

before you rush out and cash in your dollars for Bitcoin, remember that Bitcoin has a long way to go before it's a legitimate currency on par with the U.S. dollar, euro, or pound. And despite the seductiveness of crypt currency as a means of exchange, there's no guarantee that Bitcoin – or any other decentralized, virtual currency not controlled by a national bank – will ever be a viable alternative to fiat currencies. Some experts believe that, in the coming decades, national governments will rework their currencies with state-sanctioned means of exchange that have some crypt currency features, like built-in scarcity and virtually impenetrable counterfeiting protections. Others believe that fiat currency and crypt currency will continue to exist in parallel, but that crypt currencies will fail to expand beyond the niche currently occupied by gold and other precious metals – that of an alternative investment whose primary purpose is to hedge against inflation.

REFERENCES

- i. Natenberg, Sheldon. 2007. *Option Volatility Trading Strategies*. Hoboken: John Wiley & Sons.
- ii. Parlapiano, Fabio, Vitali Alexeev, and Mardi Dungey. 2017. Exchange rate risk exposure and the value of European firms. *European Journal of Finance* 23: 111–29.
- iii. Podobnik, Boris, Davor Horvatic, Alexander M. Petersen, and H. Eugene Stanley. 2009. Quantitative relations between risk, return and firm size. *EPL* 85: 50003.
- iv. R Development Core Team. 2017. *R: A Language and Environment for Statistical Computing*. Vienna: R Foundation for Statistical Computing. Ripple. 2017. Welcome to Ripple. Available online: <https://ripple.com/> (accessed on 2 February 2017).
- v. Svetlana Sapuric, and Angelika Kokkinaki. 2014. Bitcoin is volatile! Isn't that right? In *Business Information Systems Workshops, Lecture Notes in Business Information Processing*. Berlin: Springer, pp. 255–65.
- vi. Schroeder, Marcel. 2017. The equilibrium real exchange rate and macroeconomic performance in developing countries. *Applied Economics Letters* 24: 506–9.
- vii. Schwarz, Gideon. 1978. Estimating the dimension of a model. *Annals of Statistics* 6: 461–64.