

Bitcoin: A Global Impact

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Technological developments have always been one of the primary initiatives of the globalization progress via providing wide communication opportunities and improved feasibilities thus resulting in a more integrated global economy. Day by day, more and more developments supersede the old methods that belong to the eras of non-globalized world. A new idea called “crypto currency” has been a popular argument topic in the last few years. Bitcoin is the first virtual currency that is backed with the crypto currency idea and technology. While its cons and pros are continuously debated, its expanding impact all around the globe cannot be overlooked. Bitcoin, the controversial virtual currency, has significant effects on the global economy and hence globalization due to propounding an alternative decentralized economic model with a global open source money transfer system provided, and forming its own economic sectors.

Before heading to its effects, it is needed to explain the question in everybody’s mind: what is Bitcoin? It has been determined to explain it with technical details in this paper as many people have misunderstood it. In physical currencies, the money in circulation represents a value that is backed by the financial assets (gold, real estate etc.) of the governments’ treasury. Bitcoin is a virtual currency that is backed with the cryptography. The idea is propounded by a person, whose identity is unknown, called Satoshi Nakamoto by a research paper including the structure and proof of work in 2008. The paper suggested an alternative for the current system which is based on trust for the third parties. Bitcoin is then started as an open source project and was released in 2009. The alternative solution instead of the trusting third parties (such as banks) and central authorities was to make the whole ledger

of transactions public and create a network system that every node can agree the same history of transactions (Nakamoto, 2008). In the system, every coin is a digital signature chain and owners make transactions to others by digitally signing the 'hash' of the earlier transaction and the 'private key' of the owner that the transfer is made to. The term 'hash' in here stands for using cryptographic hash function which maps digital data of arbitrary size to digital data of fixed size within certain properties which make it very useful; computing the hash value (encrypted value) of a message is effortless but it is practically impossible to obtain the message from its hash value, to change the message without also changing encrypted value or to obtain different messages with same hash which means the hash value is unique for every unique message. Also 'private key' stands for a certain digital data that refers to one of the keys generated for public key cryptography algorithm and is used for digital signs. Digital signatures provide validation of received data/message that they are sent by a certain sender.

Every transaction that is made is recorded on a place called block. In each block, there are new transactions as well as the hash of the previous block and this chain structure forms the *block chain*, the public ledger of all transactions ever made. Of course, to maintain such work, processing power (CPU power) and a network are needed. Both the creation of new Bitcoins and provision of the needed processing power come from the term called 'mining'. The network encourages and awards the participant nodes (which were just the common laptops in the beginning but now more complex processing units) with Bitcoins for every new block addition to the block chain and with transfer fees. A node can be described as the computing unit with bitcoin core program with a complete block chain. So the necessary network and process power are obtained and the necessary dynamics for the new coin creation is set. The system is peer-to-peer (p2p), which means that there is no structure as a central server and central-connected nodes. Every node (every computer), on the network is an individual and the public block chain agreement is made individually. Not every node has to

agree with the new transactions, only the majority of the nodes are enough to get into the block.

The personal usage of the Bitcoin is via digital wallets. Any individual can create a Bitcoin wallet and transfer money. But since every transaction in Bitcoin is irreversible, the wallet owner should be extremely careful to keep their wallet passwords safe.

As the necessary technical description is made and the work flow is told, the effects of Bitcoin on globalization can be argued. Bitcoin pioneers an alternative decentralized economic model to the current neoliberal economy due to its not regulable nature, its augmented popularity with providing an open source money transfer system, and being a possible solution for banking services where they lack.

In the current neoliberal system, the economy is regulable by certain authorities and its control is mostly hold by institutions and governments. But this is not the case in Bitcoin due to its not regulable nature and hence it propounds an alternative model. Since there is no such a center or central server, it is not within a possibility of any authority to control or regulate its actions. For example, in The Central Bank of the Republic of Turkey had increased its interest rate in January, 2014 due to the dramatic decrease in the value of Turkish Lira (Eğilmez, 2014). Such an action is not possible to do for Bitcoin. An important milestone about Bitcoin was the USA Financial Crimes Enforcement issuing a regulatory guidance signifies that bitcoin is not illegal (FINCEN, 2013). This was very important and it can be seen that the actors of neoliberal economy had to recognize virtual currencies.

Augmented popularity of the Bitcoin usage among the individuals and companies play an important role for it being an important alternative. As it can be seen in the documentary 'The Rise and Rise of Bitcoin', with its radical model, Bitcoin attracts the people who are not pleased with the current system (2014). Many people who are enthusiastic about new technologies especially on currency are also attracted and most of the miners (individuals who

participate in the network as nodes with their computational processing power) are these kinds of people. One of the major reasons behind its being wide spread is its almost free of use money transfer. Every bank cuts back for money transaction services as well as to open and run accounts. This situation is originated as banks are profit-oriented financial intermediaries and besides the profit they make, they need money in order to employ their staff, build their infrastructure (ATM's, IT and internet banking services etc.), maintenance and security. But Bitcoin system is not in need such money to pursue its services. Its protocol keeps it safe and cannot be changed unless all of the bitcoin nodes in the network agreed and applied on the same change which is practically infeasible. It constructs its transfer system infrastructure and needed processing power based on Bitcoin mining, the process that creates new coins into the circulation. This method is very impressive since its ability to convert two problems to each other's solutions hence resulting in a win-win situation. Also since it is a self-working open source system, there is no profit gained by the system. Most transactions are processed without any fees within 10 minutes (it is the time for system to add the transaction to a new block and then to the block chain) but merely a person who wants to acquire a rapid confirmation can give a small amount of money which will then be given to the participated miners. This system is superior to the banking system on a perspective as comparing the cuts of credit card companies/banks and Bitcoin system. A clear example can be given from the same documentary 'The Rise and Rise of Bitcoin': an owner a Korean supermarket is attracted by the possible cuts in the Bitcoin system comparing it with the credit card transaction cuts of 2-3% and starts to accept Bitcoin payments in his market. He is not the only one around. According to coinmap.org, an open source map that shows the places accept Bitcoin payments, there are more than two thousand places, by December 2014, that agreed to work with Bitcoins including restaurants, car/computers repairs, IT service companies and even saunas. The numbers are about the same for Europe, 172 for Australia and 457 for South

and Central America. In Turkey, 22 places have indicated themselves as accepting Bitcoin payments by December, 2014 including a pharmacy in Bilecik, a freelancer medical physician in Bursa and a law consultation company in Ankara. In addition, there is a Bitcoin ATM in Istanbul Ataturk Airport. By the time this paper was written, the estimated transaction volume was \$28,871,984.34, the market trade volume was \$1,515,690.82 for the previous 24 hours period and the market price for one Bitcoin was \$354 (blockchain.info, 2014). These statistics can roughly show the Bitcoin economy which is still expanding and getting popular. Within these circumstances, it is unfortunately inevitable of Bitcoin usage in illegal markets such as buying or selling drugs. There occurred online black markets in the Deep Web such as the well-known 'Silk Road' that people can sell and buy any kind of drugs using Bitcoins. Due to this usage, many people and authorities became prejudiced for Bitcoins arguing that it is a way to do illegal businesses. Even though this is not completely wrong, there is neat declaration for illegal purposes in bitcoin.org, the website managed by the developers of Bitcoin core, starting with "Bitcoin is money, and money has always been used both for legal and illegal purposes" (bitcoin.org). Also it is true that the Bitcoin system does not identify the bitcoin owners, transaction matching is possible due to the block chain is public. It is stated that Bitcoin transaction might not be more anonymous than credit cards (Bar-El, 2014).

The last reason why Bitcoin propound an alternative model is that it might be a possible solution for banking services where they lack. According to the International Fund for Agricultural Development, an agency of United Nations, over a billion people in the world cannot have the basic banking services (IFAD, 2004). According to a survey in 2012, approximately 10 million people don't have bank accounts in the USA and 33% of the survey participants say that they lack enough money to open and fund an account (Ellis, 2012). It can be seen that not everybody can reach a basic banking service. There are regions in the world that lack of such. Also being able to reach banking services is not always let you to use them.

There are specific requirements that may vary in between banks such as account opening fees, monthly or annually account usage fees, minimum balance requirements and so on. As the numbers point that, millions of people cannot open a bank account even if there are decent services. So, within these circumstances Bitcoin system is a perfect fit for the ones with no accessible banking services or cannot afford a bank account due to the current system. There is neither such requirement to own a wallet nor to fund it. The only need is internet access. Another important example for such a usage of Bitcoin is at Cyprus in 2013 bailout crisis. The government took money from citizens' bank accounts for the bailout and shut down the electronic money transfers which lead to people to find solution somewhere else like Bitcoin (Mross, 2014). Later Bitcoin ATM's are put in Cyprus. This example emphasizes the need and the reason for such a decentralized economic model.

Besides propounding an alternative system, Bitcoin effects global economy by forming its own sectors. Every demand needs a supply. Even though Bitcoin is a virtual currency, it still needs to be exchangeable with the other currencies. There occurred Bitcoin exchange companies all around the world such as the major international exchanges Bitstamp, Coinbase, BTC-e and Cryptsy. Mt. Gox was the biggest exchange company until it bankrupted due to a loss of about \$450 million in 2014 for unknown reasons. Also Bitcoin consultation companies have been founded since this new alignment became quite popular and was unclear or not understood efficiently by the possible investors. There are four Bitcoin exchange bureaus or consulting companies indicated in the coinmap.org in Turkey. But there are others which are online too. Bitcoin ATM manufacturing is another sector that popped up with Bitcoin of course. Currently, there are many Bitcoin ATM manufacturers such as BitAccess, Bitocean, and CoinOutlet. The most remarkable sector is unsurprisingly based on Bitcoin mining. In the earlier times, just an ordinary laptop was enough to get several Bitcoins maybe in a day but the value of the Bitcoin was too low or even worthless back then. It was

just an experiment in a community. After its spread began, the number of users and miners increased resulting in more processing power. But since the number of miners was increased, the given Bitcoins as awards were divided more. To earn more in this competitive environment, people first started to use the graphics processing units (GPU) since they are way more optimized than CPU's. But after a while even this was not enough. So there formed several companies which produce special cards designed only for using in Bitcoin mining. Butterfly Labs is one of the pioneers of this sector. They design, produce and sell special electronic cards for Bitcoin mining with using the application-specific integrated circuits (ASICs) which are customized for such a use. They were pricing their 700 gigahash per second bitcoin mining card more than \$1000 by December, 2014 (Butterfly Labs). As it might can be seen, Bitcoin is not just propounds an alternative economic model, it also comes with its economic sectors.

To summarize, Bitcoin became a very popular topic to argue on the last few year. With its capabilities, easy-to-reach open-source low cost and not regulable nature it propounds a very important decentralized economic model to our current centralized neoliberal economy. Also it is important to emphasize the settling of the sectors that are related to it. Together these affect the global economy and the globalization process and the otherwise could not be anticipated for such an improvement that is decentralized and that created a new currency. It is very normal to observe the reactions to this radical improvement since every similar technology/change had got almost the same level of reaction in the early stages of its adaptation and integration in the history. Even though many people see no future for Bitcoin while others are way more optimistic, so far Bitcoin has showed success. Its market price fluctuates within high rates as this improvement might be considered in its early stages and the mining is still continuing. But the term mining is not just a crude analogy, it will end someday just like the actual 'mine'. When the total of 21 million Bitcoins are mined and put

into circulation, there will be no more new Bitcoins and the creation will end. The real stabilized value of the Bitcoin will most likely to be reached afterwards. The world tends towards the open source projects and improvements. Bitcoin became a remarkable experiment, thus it is quite possible to see it for a while in circulation.

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