The Cryptocurrency Bubble, Blockchain and Beyond

M. Asım KARAÖMERLİOĞLU*

Araştırma Makalesi/Research Article
Başvuru/Received: 17.12.2022; Kabul/Accepted: 13.03.2023

ABSTRACT

This paper intends to shed light into the blockchain technology in general and the so-called cryptocurrency bubble in particular. After presenting the emergence of the blockchain technology in the context of the historical evolution of finance, the paper first discusses the general characteristics of blockchain as a foundational technology. The paper then focuses briefly on the bubbles in world history and discusses why speculations in cryptocurrency markets in general and bitcoin in particular are essentially different from traditional bubbles such as the "dot.com" bubble on the one hand and from ponzi schemes on the other while at the same time one can see similarities with previous bubbles.

Keywords: Blockchain, Cryptocurrency, Bitcoin

1. Introduction

The collapse of the existing world order established in 1945 with its social, political, and especially economic, financial and technological structures is underway. The telltale signs of this collapse are everywhere: the war in Ukraine, the decline of the globalist discourse, the aging of so many populations, the pandemic, the changing nature of the financial system, the pressing ecological problems, the speeding up of generational gaps, radical changes in workplace, communication and many others. As far as the financial structure is concerned, a new technology, the blockchain, emerged and raised questions about the fundamentals of finance just after the global meltdown of 2008. From banks to governments, from young entrepreneur enthusiasts to huge multinational corporations, from Nobel laureate economists to philosophers and politicians, the seemingly radical transformative power of the blockchain technology has been thoroughly discussed, closely monitored, and ambitiously encouraged all over the world. Despite the crisis in the world economy, in general, and in cryptocurrencies, in particular, especially the FTX scandal (The Economist, 2022) and the wipeout of the Terra "stablecoin," the interest in this technology, though remarkably diminished by recent scandals, continue to exist. And yet, if we do not see a quantum leap concerning the practical use of the

* Boğaziçi Üniversitesi, Atatürk İlkeleri ve İnkılap Tarihi Enstitüsü, mkaraome@boun.edu.tr, **ORCID:** 0000-0003-2771-0777.

blockchain in the near future, the blockchain revolution, as some have characterized it, might be in deep trouble.

So far, at the heart of the blockchain has certainly been the cryptocurrencies, which are the first and foremost important products of this novel technology. The rate of increase in the value of Etherium, for instance, has outperformed almost that of all bubbles in world history, such as the Dutch Tulip Bubble of the 17th century and the English South Sea Bubble of the 18th. In May 2022 came the ongoing sharp decreases in their values. Compared to the sharp fall of the NASDAQ technology shares in the early 2000s, Bitcoin's value fell even sharper and 15 times faster in 2018 and similarly in 2022. As of December 2022, bitcoin lost more than 75% of its all-time peak value. Obviously, many people have begun to talk about the burst of a cryptocurrency bubble (See Lashinsky, 2022; Harrison, 2022).

At first glance, such a bubble cannot in itself be seen as a problem. After all, the volume of the cryptocurrencies is not that much compared to many financial instruments of the world economy such as the speculative and risky derivatives. Despite the euphoria of 2020 and 2021, it is still a small market. The number of people who would be terribly affected is not worth mentioning compared to the impact of some of the historical bubbles such as the ones that happened in the recent great financial meltdown of 2008. Moreover, even those who approach such currencies with deep suspicion see merits in the blockchain technology which lies beneath cryptocurrencies. They wholeheartedly welcome this technology despite condemning these currencies. But is it really possible to decouple cryptocurrencies from blockchain?

Answering this question is one of the main concerns of this paper and the short answer to this question is "no." For two reasons: one conjunctural and the other structural, that is, it is against the nature of the blockchain technology to separate itself from cryptocurrencies.

First, the conjunctural: Until now, the biggest success of the blockchain technology seems to be the enduring valuation of the cryptocurrencies. It was with the success of Bitcoin that made this technology known by the general public in the first place (Yli-Huumo et al., 2016). Other than coins which are used for transactions and payments, not many successful examples of blockchain really exist as of today. Like it or not, the popularity of the blockchain technology apparently owes its fame to cryptocurrencies. Therefore, if they fail, as many prominent public authorities believe, this will inevitably have a direct impact on the enthusiasm created around the blockchain technology. In history, a similar case happened in the context of the development of genetics. Adolf Hitler's embracement of pseudo-scientific views related to genetics had a

deep cost of postponing the development of genetics at least 30 years or so. We could expect a similar negative impact with the blockchain technology if cryptocurrencies fail, and nowadays, this seems to be the case.

The structural reasons for the almost impossibility of separating the fate of blockchain from that of cryptocurrencies are deeper and deserve a thorough understanding of the nature of this technology in the first place. Despite its popularity, there seems to be a muddle of opinions as to what blockchain indeed is and unfortunately many who invest in cryptocurrencies such as Bitcoin do have little understanding of the inner nature and logic of this technology. In this respect, it is crucial to take a look at the basic characteristics of the nature of this technology.

2. Blockchain as a Foundational Technology

As often is the case in the history of science and technology, one of the remarkable indications of a powerful idea, concept or theory is its strong capacity to change some of the most basic assumptions with respect to the basic concepts of life. Freud's inquiry on *instincts*, Marx's on *value*, Darwin's on the *origins* of species and Einstein's on *time* all have started with the most basics. Thanks to blockchain in general and cryptocurrencies in particular, we have been able to discuss some of the very basic but fundamental phenomena and concepts that we have taken for granted for so long. What is *money* after all? What is *value*? What is *trust* and do we need third party authorities such as banks and states for trust? Is it possible to keep transaction records in different ways? The number of such basic questions can be increased, but suffice it to say that a reevaluation and a rethinking of many basic things and concepts have become possible thanks to these recent developments related to blockchain and cryptocurrencies. Is it not interesting that after 14 years of its history, states all around the world have still not reached a consensus as to whether Bitcoin should be classified as money, or as token or as some form of asset? Many mainstream concepts and assumptions are being shaken even by the very existence of this new cryptocurrency phenomenon which is indeed only a part of the blockchain story.

The blockchain technology is said to be "foundational" in the sense that it has the potential to change some of the major aspects of our lives, including the way we use the internet and the structure of global finance (Iansiti and Lakhani, 2017). Many enthusiasts believe that blockchain can offer the decentralization, which was the original agenda of the early days of the Internet (Siegele, 2018: 3). Even these claims themselves should compel everybody for the necessity of a close examination of the nature of this technology. If this is really a "foundational" technology, it means that a new technological architectural structure is about to

emerge just as the TCP/IP protocol which enabled the Internet and which, by so doing, dramatically changed the way information was handled and thereby radically transformed all spheres of human activity imaginable. Yet, it may also mean that years, at least decades, are necessary to lay the basis for such a restructuring of this new social and economic architectural novelty.

While the internet has enabled us to transfer and store information in a cheaper way and in an incredibly unimaginable speed, the blockchain makes it possible to transfer values such as money, tokens, assets, diplomas, testaments, health records and title deeds. This novelty of value transfer in itself signifies revolutionary insights. But more importantly, the blockchain does these in the most trustworthy way possible. Using a distributed public ledger, each transaction is verified, time-stamped, and put into blocks by people at the computer nodes located within a network of computers. These blocks are recorded securely by a cryptographic system and later chained (so the name blockchain) and become available to see by anyone on the network. It is almost impossible to make changes in the transactions and that's why it is often called "immutable." There were times in the history of capitalism when rugged individualism, self-interest and greed were praised; now, however, it looks as if trust itself will be one of the most important "assets" driving modern capitalism. The concept of trust may sound like a concept of morality irrelevant to economics. Morality, however, which should be understood as the most basic social contract, indeed can never be separated from the realm of social life including economics, as Adam Smith and many economists were so much preoccupied with the role of morality in socioeconomic life.

Such a trust mechanism with the help of the verifiers distributed along the nodes of the distributed system makes it possible to transfer values without the necessity of an intermediary authority such as banks, notaries, post offices and international money transfer agencies such as Western Union. It is no longer the approval of a third party that makes trust possible, but an algorithm just like the TCP/IP protocol of the internet. The Bitcoin experience of the last 14 years vindicates, without the slightest doubt, that such a trust protocol, or say a consensus algorithm ("The God Protocol" as coined by Nick Szabo) without the approval of a third party authority is possible, successful and even preferable. In May 2018, HSBC announced that they successfully achieved the first commercial transaction by using blockchain (Bloomberg HT, 2018). At stake is no less than a 9 trillion-dollar market, the *Financial Times* noted at the time. After all, the "trust sector," as we may call, such as notaries, banks and many governmental

institutions, is one of the largest economic sectors in the world and will directly face a disruptive effect as a consequence of the blockchain technology.

We may never know whether the mysterious Satoshi Nakamoto's timing of the path breaking paper "Bitcoin: A Peer-to-Peer Electronic Cash System" of October 2008, which opened the Pandora's Box, was somehow related to the economic crisis triggered by the collapse of the Lehman Brothers just one month before this publication. Whatever the truth, in many ways the timing was so meaningful: In a financial world where the rating agencies, banks and governments all lied, an emphasis on trust and transparency was what the global social system desperately needed. In a financial literature where the term "crony capitalism" is a matter of widespread concern, the claim of almost absolute transparency in itself becomes a value. The protocol behind the blockchain has been constituted in such a way that everybody can easily see all the details of all the transactions except for the identities of those people who make the transactions. The hiding of identities may well be solved by sound government regulations, but at least the transactions made by those who would not need to hide their identities can now be done in an absolutely transparent way.

If blockchain is anything, it is a novel and revolutionary record keeping system based on trust within a distributed ledger. Some compare this system with the double-entry bookkeeping system allegedly created in the 15th century by a priest called Luca Pacioli. This system was based on entering at one end the debit, and the credit on the other. According to Werner Sombart, a famous German economic historian, the double-entry bookkeeping as a modest revolution accounted for the formation of the contemporary capitalist system since concrete transactions now embedded in abstract numbers paved the way for the emerging concepts of accumulation and capital (Chiapello, 2007: 366). Although economic historians still debate the extent to which double-entry bookkeeping indeed was responsible for this transformation, record keeping or list making, so to speak, is one of the most important elementary bases of human civilizations. The mainstream record keeping systems in the age of "internet of everything" actually have been so primitive that not only have they been too costly, prone to error, but also incredibly time-consuming. Just remember how slow and troublesome it is to buy a real estate in many countries today! "Maersk, the world's biggest container-shipping line, found that a shipment of avocados from Mombasa to Rotterdam in 2014 entailed more than 200 communications involving 30 parties." Likewise, according to the UN, "full digitalization of trade paperwork... could raise Asia-Pacific countries' exports by $257 billion a year."(The Economist, 2018a: 77). Dubai has almost completed the digitalization of government records

and put them on the blockchain while the American state of Delaware, famous for being the center of easy and cheap company registrations, has announced that it has been seriously aiming to use the blockchain technology for keeping its records.

One of the most outstanding characteristics of blockchain is the formation of a community that has gotten together and mobilized around a common goal. Never before any corporation or economic sector has ever had a community as such. At the heart of the blockchain is a network of computers whose mutual interest drives the network. It is a system whose dynamism depends on cooperation of millions of individuals verifying the transactions and recording the blocks. As they all support the trust protocol, they also benefit from it for these so-called miners are rewarded with cryptocurrencies once they find new blocks according to a mathematical algorithm. By so doing, a community is formed each member of which has a vested mutual interest in expanding the value of the network. The larger the network, the better the partners! Reminding what Einstein said in a different context: simple and beautiful!

The blockchain technology can also be very useful in terms of the ways in which we own and use our personal identities. Today, multinational corporations such as Facebook, Amazon and Google are able to use and abuse our identities as they wish and every now and then scandals erupt as witnessed in the case of Cambridge Analytica affair which has been an infamous example of abusing our personal identities for the sake of politics and profits. The blockchain's transparency potential makes it possible for each and every one of us to use our identities as we wish. For the first time, we can own our identities, use them whenever and wherever we wish. Huge companies such as Uber and Airbnb in fact are not platforms to share the value of our identities, but in practice they are platforms of aggregation for making handsome profits. Moreover, the blockchain can also be used for registering identities since tens of millions of people in the developing world as well as millions of migrants have difficulty in proving their identities. A record keeping of identities on the blockchain may ease so many processes for millions of those who desperately need it.

The final point as to the nature of blockchain is that this technology not only revolutionizes the overall financial system of the world as outlined above, but also is able to diversify the realm of finance itself. Today, there are no less than two billion people who do not have a bank account. In a country such as Turkey, almost 40% of the adult population is said to be outside the banking system. Blockchain can easily incorporate this population everywhere into the financial system. Banks such as Barclays consider blockchain as a means to increase efficiency

in the financial affairs of the developing countries. Ripple has already made agreements with many banks including Turkey's *Akbank* to use its cryptocurrency in cross-border transactions. The incredible volume of money transferred from one place to another at the global level is tremendous while the bureaucratic formalities that this task requires is huge, tedious and time-consuming. Just an example of Pakistani migrants whose remittances to their home country is annually 20 billion dollars which is "not much less than all the country's merchandise exports" vindicates the need for simplification, inexpensiveness and efficiency for transferring this huge amount of money (The Economist, 2018b: 7-8).

Now that we have seen the basic characteristics of the blockchain technology, we can now return to the structural part of the question put forward above: is it possible to support blockchain while refusing cryptocurrencies? Not really: the blockchain requires a network and the contributors to the network must be materially rewarded. This novel way of record keeping uses partners who benefit in return for their contributions to the supporting of the trust protocol as well as verifying transactions. In this sense, cryptocurrencies are an integral and indispensable part of the overall working of the system. In other words, conjuncturally and structurally the blockchain needs cryptocurrencies. In this way, the fate of the blockchain is inextricably linked with cryptocurrencies.

3. The Controversies About the Cryptocurrency Bubble

If such an inextricable link is valid, then the question of whether cryptocurrencies, especially Bitcoin, the leading flag, are infected with a financial bubble turns out to be more crucial. If there is a bubble going on, this can have a major disruptive impact on the future of blockchain. Thus, it is essential to scrutinize the nature of the debate relating to the alleged bubble attributed to Bitcoin and other major cryptocurrencies. To understand that, we need to take a brief look at the concept and history of bubbles in world history to make historical analogies as to whether Bitcoin is undergoing towards a similar fate.

But there is a caveat: Though historical analogies constitute one of the major reference points with which to understand a current phenomenon, they may often mislead us in times of extraordinary rapid social and economic changes. Compared to previous epochs, historical analogies may be irrelevant if technological as well as social factors change in a radical way. Indeed, the ruptures taking place in all aspects of life in the early 21st century have so vastly differed that we should be cautious when making historical analogies. *It looks as if we are at*

the dawn of a new era where social, economic, political, and technological realms and references created by the French and Industrial revolutions simply cease to exist.

Just take the example of Bitcoin. Regulators and governments all around the world still have no consensus as to how Bitcoin should be defined and classified. Is it money for daily transactions or just an instrument for transferring money? Or is it an instrument for storing value? *In my opinion, it is a new value system unlike anything that we have known so far. It is more appropriate to characterize it as a token, as an asset class very similar to gold* (Johnson, 2018). Not for nothing, many terms that the Bitcoin designers used such as "mining" seem to be in parallel with the gold analogy. It seems to me that Satoshi Nakamoto, who apparently synthesized law with cryptography, mathematics, and economic history, seems to have gold in mind while designing Bitcoin (Szabo, 2008).

Basing themselves to traditional interpretations, some people believe that the Bitcoin phenomenon is simply a Ponzi scheme. Again, what they do is to resort to a historical experience of the past that is absolutely irrelevant to Bitcoin and even to the majority of the altcoins. A Ponzi scheme, as infamously used recently by Bernard Madoff before 2008, is a scam using the money of the late comers to pay for the early comers and bound to fail as the number of late comers to the system diminishes. In Ponzi schemes, there is no product or service. This is not to say that many ICOs (Initial Coin Offerings) may not be a scam, indeed they are. But ICO scams are rather fundamentally and essentially different from a Ponzi scheme.

These caveats notwithstanding, it is important to look at the Bitcoin phenomenon in the light of historical bubbles, especially focusing on the recent "Dot.Com" Bubble, which took place in the shares of the NASDAQ technology companies from the mid-1990s to the 2000s. The history of bubbles and financial manias are as old as finance itself. Bubbles occur when prices of some assets exceed the so-called intrinsic value embedded in the assets such as the Tulip Mania of the early 17th century where a bulb of a tulip was traded for incredibly high prices. Similar ones centered on the real estate prices in Japan in the 1980s, in the US in the 2000s and the share prices of the NASDAQ companies in the late 1990s. In economic history, bubbles have been generally related to situations where economic indicators escape the fundamentals of economic realities whatsoever.

Economic historians such as Charles Kindleberger, Robert Schiller, and Hyman Minsky have contributed greatly to the understanding of bubbles and manias. According to Kindleberger and Hyman, bubbles consist of five stages. The first stage is a displacement when huge historical

shifts take place such as the end of a prolonged war, a radical political transformation, a new regulation, a change in monetary policy and an innovation in technology or finance. In the 1920s, for instance, people were obsessed with car and radio, whereas in the 1990s, the internet kicked off the new era. The stage of displacement is followed by a boom where people and institutions are optimistic and the volume of credit increases, eventually paving the way for risky credit markets. More often, it is the banks which lend money, however not always necessarily so. In the boom stage, a sort of runaway competition starts which kicks off the stage of euphoria characterized by an "irrational exuberance." At this stage, insiders in industry and finance notice the bubble, whereas ordinary people continue to invest in order not to be outside the party where the stories of other people making handsome profits circulate among the wider population. As Kindleberger points out, "[t]here is nothing as disturbing to one's well-being and judgement as to see a friend get rich" (Kindleberger and Aliber, 2005: 25). The stage of euphoria is followed by distress when the belief in such investments declines, the prices first stagnate and then drop, and funds shift to other sectors and countries. Despite the fear related to the state of the economy, in this stage many still believe that markets will recover soon. Finally, the stage of panic arrives, institutional investors leave the board fast and the imminence of collapse begins to affect other sectors of the economy such as insurance.

Those who believe that there is a huge bubble in cryptocurrencies often compare it with the so-called "Dot.Com" bubble of the 1990s. What triggered the process was apparently the increasing use of the internet, which made the transfer and storage of information extremely cheaper. The cost of computing dramatically decreased according to the Moore Law which emphasizes the doubling of the computing power in every eighteen months. The introduction of the World Wide Web, the explosion of venture capital investments in NASDAQ companies together with a euphoria of IPOs (initial public offerings) where the value of internet company shares tripled or quadrupled sometimes in the first day of IPO. NASDAQ rose from 1300 to 5400 in just three years after 1996. When the stage of panic arrived, the stock market dropped 40% while NASDAQ witnessed more than 80% decline. As different from many bubbles such as the one witnessed in the mortgage crisis of 2008 in which many banks collapsed, banks remained almost intact since they were not the ones which funded these enterprises in the "Dot.Com" bubble. Despite the collapse of the bubble, some companies such as Cisco, Qualcomm, Amazon, and Ebay have survived the era and consolidated themselves into the present day.

In light of our knowledge of "Dot.Com" and other bubbles, a good starting point can be to focus on the similarities with the Bitcoin case. In the first place, both have started with a new vision and a new idea: in the "Dot.Com" case people were talking about the information society whereas in the latter, concepts such as trust, transparency and distributed systems have created a belief and an excitement in the promising innovation of blockchain. In both, money follows ideas and vision. While in the former, the euphoria came with the rise of the internet, now it is the blockchain and more importantly the value of Bitcoin which saw an all-time record of $68,000 in November 2021 after which it dramatically went below $20,000.

Another similarity is the patterns of the cycles which indeed resemble each other. As far as similarities are concerned, one can also look at the irrationality, exuberance and ignorance widely witnessed in the so-called ICOs (Initial Coin Offering). There are certainly similarities between the ICO and IPO crazes despite their inherent structural differences. Many people invested huge amounts of money on the ICOs of hundreds of obscure white papers which promised high returns and profits. In the 2017 euphoria, the amount of ICOs accumulated for blockchain-oriented companies was 3.5 times more than that of the venture capital investments. Many people, who did not really understand those complicated, fancy seeming yet obscure projects, spent billions of dollars and faced the sad reality that almost half of them soon failed. In addition to many freaky altcoins such as Jesuscoin, there were bizarre coins such as Dogecoin, which started as a joke, yet which were able to attract millions of dollars. Dogecoin had a market capitalization of $2 billion in January 2018, $82 billion in September 2021 and $11 billion as of December 2022. The ICO craze seems to have diminished considerably as countries such as China and South Korea banned all the ICOs while many countries increasingly put regulatory mechanisms to save individual investors.

Another similarity is the so-called "herd mentality" that prevails in almost every bubble. But there is nothing unique and interesting about its existence. During the heyday of the "Dot.Com" bubble, many investors naively believed that their investment would be as good as Microsoft, Intel, or Sisco. After all, the famous physicist Isaac Newton who first made a handsome profit during the bull days of the South Sea Bubble later continued to invest again and suffered huge losses. He is widely quoted as saying in the Spring of 1720: "I can calculate the motions of the heavenly bodies, but not the madness of people."

So far, I have emphasized the similarities. Yet, there are also some striking differences that we should tackle here. The first one is the so-called problem of intrinsic value. It has been asserted

that Bitcoin has no intrinsic value. But what about gold? Is the price of gold today a simple reflection of its 'use value' coming from its use in electronics and jewelry? Not really. Indeed, it is the consensus of people about the gold's reliability that makes its value so strong. If a huge network of people believes in something, a network value is formed. The bigger the network, the more value we attribute to it. Just like an idea proposed by a prophet 2022 or 1400 years ago and endorsed by millions of believers could eventually change the course of world history, let alone economics and politics. Bitcoin has a huge network, believers so to speak, and it works. This network value should also be considered as part of the intrinsic value in and of itself.

The believers of a Bitcoin bubble argue that the high volatility of the coin should be taken as an indication of the bubble. It is true that Bitcoin has a high volatility, but it has always been high. An average of daily 4.80% as opposed to NASDAQ's 0.89% and S&P: 0.76%. In other words, Bitcoin's volatility should be considered and compared on the basis of its own "normality." Interestingly, as early as November 2013, the prestigious *Economist* perceived the valuation of Bitcoin as a clear example of a classical bubble. By then as well, Bitcoin experienced "huge" ups and downs with reference to its value at the time, but that "huge" now seems to be so modest. This should warn us to consider the value fluctuations with respect to the issue of scalability.

When the so-called Bitcoin bubble is contrasted with the others in world history, one should also notice that many of those bubbles were directly related to the increasing liquidity and thereby to the expansion of cheap credit opportunities. For this reason, central banks had been preoccupied with rising interest rates to restraint bubbles. As Kindleberger and others point out, conversely, investors and especially banks were so much imprudently and irresponsibly preoccupied with increasing their credits in an "irrational exuberant" way. After all, they all along usually knew that "they were too big to fail" and would eventually be rescued by states. This would reassert and accelerate the bubbles even more and collapse would have a deeper impact. In the Bitcoin case, an analogy to the expansion of credit and liquidity is simply irrelevant since, and in contrast to historical bubbles, it is impossible to increase the number of Bitcoins circulating around the world. The Bitcoin algorithm does not allow voluntary expansion of liquidity. On the contrary, its final circulation value is set to be limited to 21 million by its algorithm.

Likewise, in many historical bubbles such as the one witnessed in the case of the real estate bubble of 2008, cross border transactions played significant roles. This was partly because the

world economy until recently was an international entity, rather than a transnational one. In this respect as well, the Bitcoin phenomenon is so irrelevant that there is no such thing as "cross border transactions" for Bitcoin. It is simply a transnational entity par excellence.

Last, but not least: most of the bubbles we know so far, -1929, 1987, the "Dot.Com," and the financial meltdown of 2008, for instance-, all were to be known, analyzed, and characterized in retrospect. During the period the bubbles were underway, not very many people realized the existence of the bubbles, and although there were only a few people who warned the imminence of a crash, much of the business and academic community across the globe kept their optimistic viewpoints about the future of the markets. In the Bitcoin case, the situation is completely the opposite: many senior, Nobel Laureate, distinguished economists and leading financial bureaucrats of many countries and international institutions, as well as eminent figures of so many banks have joined the chorus condemning Bitcoin as a typical bubble. Mr. Nourini, who foresaw the real estate collapse of 2008, characterized Bitcoin as the "mother of all bubbles" (Monaghan, 2018). One really wonders how he could easily label as such given the vastness, costliness, and depth of 1929, 1987 and 2008 crashes which had direct impact on the lives of hundreds of millions of peoples across the globe. Likewise, Mr. Greenspan, the former chairman of the US Federal Reserve from 1987 to 2006, warned the world community about the imminent Bitcoin bubble. He is the same person who, before the US Senate, admitted his role in the crash of 2008, arguing that he was so much influenced by "his ideology" of free market. A bubble as we know it would have been already burst given so many warnings. Add to all these, so many exogenous factors such as China's ban and controversial regulatory attempts by so many countries and institutions. All these factors should be taken as an indication of the resilience of Bitcoin. Moreover, compared to many previous bubbles, even if Bitcoin collapses, its impact will not be as huge as the former ones since the cryptocurrency market is still not big enough to create a spillover effect into other sectors.

4. Conclusion

My attempt here for arguing about the uniqueness of the Bitcoin phenomenon and its differences from the previous bubbles should never be taken as an absolute advocacy of cryptocurrencies. Indeed, nobody can predict the value of cryptocurrencies in the coming weeks and months. Anything goes. Almost certainly, the majority of today's cryptocurrencies will soon disappear. Rather, my intention here is to emphasize that we cannot understand the blockchain and Bitcoin with the analytical tools of the 19th and 20th centuries. Furthermore,

blockchain in general, and cryptocurrencies in particular, have deep problems to solve in the coming years, such as scalability, security, volatility, arbitrage and environmental costs of mining. It seems unlikely that these cryptocurrencies one day replace money and annihilate governments and banks. Moreover, the fact that most of the existing coins have been owned by a small number of people contradicts some of the egalitarian and libertarian aspects initially promised by the philosophy of blockchain. But we can, almost with certainty, argue that the blockchain technology and cryptocurrencies will stay with us and may appear at the center stage and offer so many novel opportunities especially when a global financial crash takes place as it always does because of the cyclic nature of things.

Bibliography

Bloomberg HT (2018). "HSBC Blockchain Teknolojisi ile İlk Ticari İşlemi Gerçekleştirdi," *Bloomberg HT*, 14 May. http://www.bloomberght.com/kripto/haber/2120379-hsbc-blockchain-teknolojisi-ile-ilk-ticari-islemi-gerceklestirdi (Accessed 1 February 2023).

Chiapello, Eve (2007). "Accounting And the Birth of the Notion of Capitalism," *Critical Perspectives on Accounting* 18 (3): 263-296.

Iansiti, Marco and Karim R. Lakhani (2017). "The Truth About Blockchain," *Harvard Business Review*, January-February: 3-11.

Johnson, Steve (2018). "Beyond the Bitcoin Bubble," *The New York Times*, 16 January 16. https://www.nytimes.com/2018/01/16/magazine/beyond-the-bitcoin-bubble.html (Accessed 5 June, 2018).

Lashinsky, Adam (2022). "Why the Crypto Bubble Has Finally Imploded," *Washington Post*, November 11. https://www.washingtonpost.com/opinions/2022/11/11/crypto-bubble-implode-ftx-bitcoin-ethereum/ (Accessed 8 March 2023).

Harrison, Edward (2022). "The Easy Money Era is Over and the Crypto Bubble with It," *Bloomberg*, November 15. https://www.bloomberg.com/news/newsletters/2022-11-15/the-easy-money-era-is-over-and-the-crypto-bubble-with-it (Accessed 8 March 2023).

Kindleberger, Charles P. and Robert Z. Aliber (2005). *Manias, Panics and Crashes: A History of Financial Crises*. New York: Palgrave.

Monaghan, Angela (2018). "Bitcoin Biggest Bubble in History, Says Economist Who Predicted 2008 Crash", *The Guardian*, 2 February. https://www.theguardian.com/technology/2018/feb/02/bitcoin-biggest-bubble-in-history-says-economist-who-predicted-2008-crash (Accessed 8 March, 2023).

Siegele, Ludwig (2018). "The Ins and Outs: How to Fix What Has Gone Wrong With the Internet," *The Economist*, 427 (9098): 3.

Szabo, Nick (2008). His blog at http://unenumerated.blogspot.com/2008/ (Accessed 8 March 2023).

The Economist (2022). "Is This The End of Crypto?" *The Economist*, 17 November. https://www.economist.com/leaders/2022/11/17/is-this-the-end-of-crypto (Accessed March 8, 2023).

The Economist (2018a). "Pulp Friction," *The Economist*, 426 (9084): p.77.

The Economist (2018b). "Not to the Swift," *The Economist*, 427 (9090): pp.7-8.

The Economist (2013). "The Bitcoin bubble; Digital money," *The Economist* 409 (8864), 30 November. https://0-search-proquest-com.seyhan.library.boun.edu.tr/docview/1462837436/F790DF94BCD04DDDPQ/1?accountid=9645

Yli-Huumo, Jesse, Ko, Deokyoon, Choi, Sujin, Park, Sooyong, Smolander, Kari (2016). "Where Is Current Research on Blockchain Technology?—A Systematic Review." *PLoS One*, 11 (10). https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0163477 (Accessed 8 March 2023).