

CRYPTOCURRENCIES BETWEEN UTOPIA AND REALITY

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Abstract

The typology of cryptocurrencies is a vast one and the existence of approximately 1400 cryptocurrencies, besides tokens or crypto securities and applications of blockchain technology make the studying of this area of expertise even more difficult. This article intends to broadly understand the cryptocurrencies universe, to present a brief history of cryptocurrencies and their current development stage, while including quantitative data about the top 10 cryptocurrencies and their market capitalization. Other points presented in the article are the lack of regulation of virtual currencies, the influence that virtual coins have on real money, and the behavior of the central banks in regards to cryptocurrencies. Conclusions present an insecure, volatile and uncertainty future of cryptocurrencies.

Keywords: Cryptocurrencies, Unregulated domain, Bitcoin, Capitalisation of the cryptocurrency market

JEL Classification: G10, E41, K22

1. Introduction and research methodology

Many varieties of money were used by humans for millennia in their pursuit of obtaining a commodity, and the role of money as a means of exchange is well known throughout the centuries. Modern forms of digital currency represent an advancement that appeared during the last decade and their popularity and expansion can be attributed to the fact that people choose to believe in this form of alternative currency, electronic money. The vast majority of people consider virtual currency to be a near vague technological invention, without being able to offer detailed information about such coins. Although, there exists an ever increasing segment of the population, familiarised with the knowledge necessary to handle using virtual currencies. For such people, cryptocurrencies offer accessible solutions to specific modern trading necessities.

With a history of a little over 10 years, virtual currencies have become an increasingly more present part of our contemporary economic life and they have led to unforeseen financial and monetary innovations. Due to their existence, numerous concepts emerged and were put under question, such as the role of the state in the emission of a currency, the government's monopoly of the issue of money or denationalization of money. Even the technical aspects of producing and utilizing electronic coins fall under the innovations of the contemporary financial conduct. Furthermore, the digitalization of the banking environment, which was successfully carried out offers us the possibility to conduct banking operations from anywhere, without necessitating the physical presence and direct interaction with the employees of the bank. [1]

What are cryptocurrencies? Under the generic term cryptocurrencies / virtual currencies / digital currencies we find numerous coins that can be named „alternative fiat money”, even if national authorities did not initially recognise them as such. Although, the specific traits of such digital currencies, such as being able to be exchanged for traditional money and being traded for goods and commodities, led to the establishment by the general population of a link between electronic coins and traditional currencies.

This phenomenon has sparked numerous debates on the characteristics and the purpose of these cryptocurrencies, in their quality as private money, private currency issue (not central banks), riscuri și beneficii, law in the domain, and many others questions regarding the value of digital currencies, opportunity for fraud and tools for criminal activities (due to the anonymity of

transactions). An important gap in the information regarding these virtual coins can be observed, most importantly due to their immaturity – the short period of time since their creation, led to a series of concerns, such as high volatility, technical trading characteristics that are not accessible to the general public, the reliance on the Internet and IT industry in the production of cryptocurrencies and in the possibilities of storage and trading. Important research problems stem from the fact that the query of the available data is represented by cryptocurrencies scheme owners, without the existence of an official source for data.

This paper intends to explain how cryptocurrencies have evolved in the last decade from the idea stage, when they could have been considered a utopic dream of the modern world, to the current development stage, when the transaction of cryptocurrencies in alternative systems implies an ever-increasing volume of funds. The research methodology implies the studying of the literature in the area from international databases, electronic publishers of economic journals and the analysis of the main global sites specialized in cryptocurrency evolution, such as www.coinmarketcap.com, www.btc.org, www.ethereum.org etc.

The article is organized as follows: in the first part, the research is limited to the examination of the way in which monetary and fiscal authorities, on a national and international level handle digital currency. Secondly, the focus on the paper is placed on the types of cryptocurrencies and the analysis of the top 10 coins that are used currently, from the point of view of capitalization, with emphasis on the most popular such digital currency – bitcoin. The conclusions suggest that it is almost impossible to accurately formulate an opinion in relation to the future of virtual coins, thus the world of cryptocurrencies remains one marked by insecurity, volatility and uncertainty.

2. The conduct of fiscal and monetary authorities in regard to cryptocurrencies

Studies have shown that digital currencies facilitate payments in the online sector without the need for a central regulatory authority (bank). The authors consider that besides the vast amounts of money invested in trading cryptocurrency, problems due to the unregulated domain arise. The combination could be fatal – that between the lack of regulation and the technical complexity associated with digital coins, thus mainly attracting scammers, whose sole purpose would be to seek out the misinformed. [2]

Research conducted in the manner in which national monetary authorities handle the virtual currency issue revealed that the National Bank of Romania allocates only a diminished degree of importance to the crypto problem. Only three items are able to be found on the official site of the institution, under the “Financial stability” section, only in Romanian. These items refer to the policies adopted by the European states towards virtual currencies, the schemes in handling electronic coins (11th of March 2015) and the official National Bank of Romania view on virtual coins (6th of February 2018).

The policies carried out by the European states, as described on the site of the National Bank of Romania, handle the situation present in 2014 and show a significant variance in dealing with Bitcoin or other such electronic coins. For example, states such as Belgium and Croatia do not consider them as legal tender, neither as virtual currency nor as foreign currency, Germany does not consider them a legal tender, but acknowledges them as a financial instrument, and Estonia, where they are classified as an alternative paying method. When analysing the way in which virtual currencies are handled by most states, it is clear that the vast majority of countries have not implemented a proper public programme to supervise cryptocurrencies. On the other hand, Sweden made it mandatory for all transactions involving cryptocurrency to be reported to the National Monetary Supervision Authority. [3]

Even if initially in a monetary approach, cryptocurrencies are not attributed the status of legal tender, in a fiscal approach, up until 2019; the Romanian legislation did not even tackle this subject. In Law no. 30/2019, regarding budgetary-fiscal measures, some clarifications, about

revenue made starting with 2019 from trading virtual currencies, were added. There is no national definition of cryptocurrency in the entire legislature. A few mentions concerning the taxation of revenues from cryptocurrency are made; the earnings resulted from a net positive difference between the selling and buying prices of a cryptocurrency (including the direct costs of transaction). If the revenue is less than 200 lei per transaction, while not going past 600 lei per fiscal year, the earnings are exempt of taxation.

On an European level, the European Central Bank showed an increased concern since 2012 in the domain of Virtual Currency Schemes and published a document with the same name. [4]

Thus, one can identify recognition of virtual coins and the introduction of an associated definition by the European Central Monetary Authority, which reads as follows: “A virtual currency can be defined as a type of unregulated, digital money, which is issued and usually controlled by its developers, and used and accepted among the members of a specific virtual community. Depending on their interaction with traditional, “real” money and the real economy, virtual currency schemes can be classified into three types: Type 1, which is used to refer to closed virtual currency schemes, basically used in an online game; Type 2 virtual currency schemes have a unidirectional flow (usually an inflow), i.e. there is a conversion rate for purchasing the virtual currency, which can subsequently be used to buy virtual goods and services, but exceptionally also to buy real goods and services; and Type 3 virtual currency schemes have bidirectional flows, i.e. the virtual currency in this respect acts like any other convertible currency, with two exchange rates (buy and sell), which can subsequently be used to buy virtual goods and services, but also to purchase real goods and services”. The interest of central banks for type 2 and 3 virtual currency schemes is increasing, due to the fact that the trading of digital currencies could lead to speculator or fraudulent behaviors.

Regarding the European legislature, no normative acts / legislation has been issued in order to clearly determine the statute of digital currency. There exists a European Directive 2009/110/EC, which refers to the Electronic Money Directive, in which one can find a definition of electronic money: “Electronic money means electronically, including magnetically, stored monetary value as represented by a claim on the issuer which is issued on receipt of funds for the purpose of making payment transactions as defined in point 5 of Article 4 of Directive 2007/64/EC, and which is accepted by a natural or legal person other than the electronic money issuer”. Not all characteristics stipulated in the definition of electronic money can be found in cryptocurrencies, as these are obtained through “mining” type procedures or through private transaction schemes, not regulated ones. These schemes, through numerous channels and accounts allow users to convert cryptocurrencies into real currencies or real currencies into cryptocurrencies.

A study put forward under the guidance of the European Parliament in 2018, titled „Cryptocurrencies and blockchain” brings in the forefront a very delicate part of this domain: „Regulators are looking at whether – and how – to regulate cryptocurrencies. Up till now there is no univocal view on how to do that. In any event, there are compelling reasons why cryptocurrencies should be under more scrutiny by regulators and supervisors. The threat of price volatility, speculative trading, hack attacks, money laundering and terrorist financing all call for stricter regulation”. [5]

3. The typology of cryptocurrency and quantitative information about the top 10 coins

The research regarding the creation and evolution of cryptocurrencies has led to numerous national and international specialty studies. The interest of the scientific community in regards to this subject is perfectly justified, taking into account the innovative nature of virtual coins, the debates that were sparked in society, the risks or benefits of parallel trading systems and other hot topics in this research field.

On the national stage, the majority of studies tackle the cryptocurrency known as Bitcoin, the most popular one, to which the saying „Bitcoin is a case of how life knocks books!” could be attributed. [6] The authors presented rational fears in regards to the ability of bitcoin to last through the ages and about the possibility of the coexistence of both fiat and electronic currencies. In addition, the authors of the upformentioned study cite an article in which Europeans affected by the 2008 economic crisis try to configure their own currencies. Thus, from the study one can find out that starting in 2013, in France, a number of 20 towns, such as Villeneuve sur Lot introduced in January 2010 the so called “bees”. In the beginning a bee had the same value as a Euro. Every 6 months from then on, it would lose 2% of its value. In Toulouse, besides Euro, one can find the currency “sol”, while in Vaucluse – “the wheel”. In Romans-sur-Isere the “degree” was used, in Angers – “the muse” and Bretania introduced the “Heol”. Less than 7 kilometers away from Paris, the over 100.000 citizens of Montreuil were preparing to fill their pockets with “pears”. The currency was being promoted as a way for the French to make sure that “the trades do not get lost in the banking system” and to “promote local commerce”. Even some regions from Spain or Greece displayed a similar conduct (the Greek “Sano” and the Spanish “time bank”). [7]

Numerous such examples could be identified all throughout the globe, but they are nothing more than a local / regional / national limited attempts to create alternative coins, either printed, virtual, or bypassing the national monetary system. In time, certain electronic currencies emerged, which were able to enter in the international stage, without being confined to the constrains of a single state border, offering in the meantime various monetary lessons.

It is difficult to put accurately measure the number of existing virtual currencies. One can find a number of sites that study the number of such currencies that are in circulation at any given time. In August of 2014 one could identify a number of 440 cryptocurrencies, which grew to 825 in 2015. [8]

In February of 2018, the number was of over 1500 cryptocurrencies and the market capitalization of all cryptocurrencies have achieved a 250% return in 2016 and 3170% return in 2017. [9]

In August of 2020, the site <https://coin.market/cryptos/15> numbered around 1467 different cryptocurrencies on the global market. Usually, the value of each cryptocurrency decreases as new ones are created, although the value can increase if the users realize that they can use one certain coin to speculate while trading or to invest. [10]

On the one hand, it is possible that in the near future humanity will assist to oversaturation phenomena of the cryptocurrency market, which will lead to a higher risk while trading and that could affect the financial stability. On the other hand, people are witnessing record volume of cryptocurrencies being traded on special stock markets. The following graph depicts the state of capitalization of the top 10 digital coins, at the 24th of October 2020.

Some authors are of the opinion that “he cryptocurrency market is unique on many levels: very volatile, frequently changing market structure, emerging and vanishing of cryptocurrencies on a daily level”. This is one of the reasons why specialty studies have developed an index for cryptocurrencies – CRIX, which is indicative of a classic approach towards the subject of modern currencies. [11]

Nonetheless, online markets in which cryptocurrencies are being traded are under intense study, even for their stochastic properties. For example, between 2013 and 2017 a study was carried out on the four main cryptocurrencies (Bitcoin, Litecoin, Ripple, Dash) the market persistence – a positive correlation between its past and future values. The results suggest that the cryptocurrency market is still inefficient, but is becoming less so. [12]

The most popular cryptocurrency is, without a doubt, Bitcoin. A short incursion in the history of digital coins, published by www.forbes.com shows that there is a study that pre dates the creation of Bitcoin, from 1998 to 2009, when several online currencies with ledgers secured by

encryption (such as B-money and Bit Gold) were created. These were only theoretically programmed, never fully developing into a virtual currency. [13]

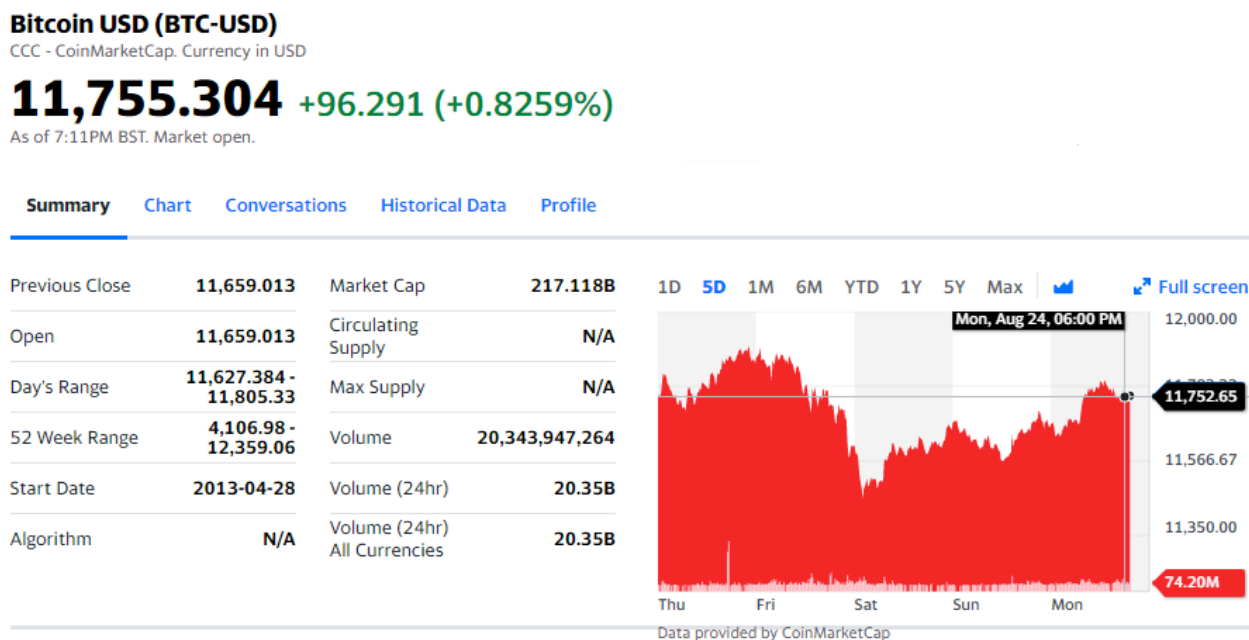
Digital coins appeared as a side product of another invention from the technological branch. The start of the digital currency era took place in 2009, with the publishing on a cryptography site, by an anonymous poster, under the pseudonym Satoshi Nakamoto of a paper titled called Bitcoin – A Peer to Peer Electronic Cash System. [14] The author justified his technological innovation of producing Bitcoin from the expansion of online commerce and he defined his creation as “an electronic coin as a chain of digital signatures”. Since 2009, when the software for producing Bitcoin was made public, the world was witness to an unprecedented effort to create and store the virtual currency. Bitcoin remains the uncontested leader of the cryptocurrency market, both in capital values, as in the volume and value of transactions. The evolution of Bitcoin was not a linear one throughout its 10 yearlong existence.

The production methods and technology are blockchain ones, based on anonymity, a peer-to-peer electronic currency system, in which the user is identified only by public-keys. [15]

The table presented below shows the situation of the market capitalization in the case of the first 10 virtual coins, on 24.08.2020. The first place is held by Bitcoin, which, despite the high level of competition, remains the most important and the most traded cryptocurrency on the market.

The following graph, found on <https://finance.yahoo.com/quote/BTC-USD/> shows the price of a Bitcoin on the 24th of August 2020, which read 11755.304 Dollars, while also providing data in regards to the price from the past 5 days. In analyzing the price variation in the time frame between the 20th and the 24th of August one can see a considerable variation in the trading price of a bitcoin. The site provides data that shows the ranges between which the stock price varied in the last 52 days, registering an important difference between the minimum – 4106,98 and the maximum – 12359,06 USD. The noteworthy variation is an indication towards the high degree of volatility associated with the trading of Bitcoins and cryptocurrencies in general.

Figure no. 1 Price of a Bitcoin (24.08.2020)



Source: <https://finance.yahoo.com/quote/BTC-USD/> [16]

The following graph depicts the daily evolution of Bitcoin trading prices, according to <https://www.marketwatch.com/investing/cryptocurrency/btcusd>. Showing a difference of 223 USD per bitcoin on the 24th of August, within the span of 24 hours, thus emphasizing the considerable

degree of volatility and the necessity of possessing a deep understanding of the virtual currency market while trading Bitcoins.

Figure no. 2 Daily evolution of Bitcoin trading prices (24.08.2020)



Source: <https://www.marketwatch.com/investing/cryptocurrency/btcusd> [17]

Noteworthy points to take into consideration are the volume of daily cryptocurrencies that are being traded, but also their volatility. A large number of cases characterized by financial losses of investors, directly from virtual wallets have been made public.

Table no. 1 Capitalisation of the cryptocurrency market (24.08.2020)

No.	Cryptocurrencies	Market Capitalisation	Price	Volume (24 h)	Circulating Supply	Change (24h)
1	Bitcoin	\$ 217.043.453.650	\$ 11.755,92	\$20,417,070,22 2	18,469,818 BTC	0,82%
2	Ethereum	\$ 45.314.359.698	\$ 403,35	\$9,699,556,107	112,315,094 ETH	3,08%
3	XRP*	\$ 12,949,815,747	\$ 0,288161	\$1,369,029,992	44,942,589,751 XRP	1,53%
4	Bitcoin Cash	\$ 5,393,218,058	\$ 292,45	\$1,206,102,854	18,498,694 BCH	2,78%
5	Litecoin	\$ 4,080,500,598	\$ 62,51	\$2,481,373,377	65,307,112 LTC	3,56%
6	Bitcoin SV	\$ 3,770,950,749	\$ 203,76	\$743,032,054	18,497,315 BSV	4,53%
7	Binance Coin*	\$ 3,244,811,983	\$ 22,50	\$190,442,158	144,406,560 BNB	2,84%
8	Cardano	\$ 3,235,425,732	\$ 0,124927	\$270,448,374	25,927,070,538 ADA	2,07%
9	EOS*	\$ 3.153.671.607	\$ 3,37	\$1,963,498,550	935,468,358 EOS	0,90%
10	Tezos*	\$ 2.760.986.911	\$ 3,72	\$237,488,951	740,884,788 XTZ	7,04%

* Not mineable

The future of virtual currencies is determined by the technical difficulty in producing new coins. For example, in the next graph, one can see the variation of the mining difficulty in the case of Bitcoin, from its creation, until 24.08.2020. Mining refers to the process of creating new Bitcoins, through the use of computational power provided by computers, based on the complexity and the difficulty of mining. In the beginning, Bitcoins could have been created by using popular, consumer available hardware, as Bitcoin increased in popularity, the difficulty in mining showed a steep increase, from 1 in 2013 to 17557993035137 in 2020, thus necessitating a significant increase in computational power, making mining less profitable. Due to the decrease in profitability through mining, the majority of revenue created through Bitcoin results from trading, and speculation on the stock market.

Figure no. 3 Mining difficulty in the case of Bitcoin

Source: <https://btc.com/stats/diff> [19]

4. Conclusions

This paper has attempted to provide a general look into the universe of cryptocurrencies and in the way virtual currencies have serious repercussions in the real world, influencing the social, political, monetary and financial landscape. Because of this ever-increasing influence, what once started as an unlikely idea, akin to a utopia, became an integrated part of our contemporary life, catching the attention of some official institutions, which try, with different degrees of success to regulate the virtual currency scene and market.

A brief historical evolution of the digital currencies offers a prime example of the saying – “life beats theory”. What started once as a “far out there” dream, with sufficient backing and

through the evolution of technology became an area with a trading volume totaling over 20 billion USD. When taking a look at the history of crypto currencies it is almost impossible to accurately formulate an opinion in relation to the future of virtual coins, thus the world of cryptocurrencies remains one marked by insecurity, volatility and uncertainty.

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