

CRYPTOCURRENCY: DYNAMICS, STRUCTURES AND MARKETING

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Abstract: Until 2017 cryptocurrency meant Bitcoin, There Were although others besides it. What brought the year 2017 was that the Bitcoin, though it had incredible growths, has narrowed its share, dropping to less than half of the market. The gains to bitcoin investors were recorded in the other cryptocurrency, and the yield rates were much higher, as the other cryptocurrency started from lower price levels. Although the market has increased, cryptocurrency users continue to be a minority. But there is a market for cryptocurrency there are users, businesses with distinct activity profiles, with prices and taxes, with costs and revenues. There are also locations where cryptocurrency can be made cheaper than in others. Factors that determine the efficiency of cryptocurrency production are computer power, electricity prices and internet access costs. Start-ups are also turning to the new cryptocurrency market, using the "initial currency offer" tool, as market gains are more than beneficial for money-making firms here, because the cash is higher.

Keywords: cryptocurrency, bitcoin, litecoin, ripple, ethereum.

JEL Classification: G12.

1. Introduction

The year 2017 was the year of so-called cryptocurrency. The cryptocurrency number increased and the volume of transactions with cryptocurrency exploded beyond all prediction. Cryptocurrency is nothing new on the market, they already have almost 10 years of existence, the first of them, the Bitcoin was launched in 2009, but their precursors appeared in the mid 90's as E-gold (1996) in the USA, today extinct, or Webmoney (1998) in Russia and former Soviet countries, who currently functions as a system of online payments.

Table no. 1. Market dynamics of cryptoassets

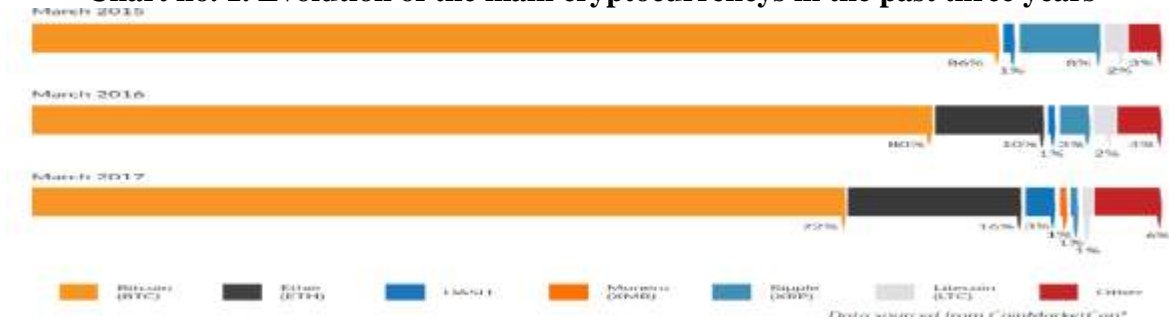
date	total		altcoins			date	total		altcoins		
	Nr. Curren cys	Capitaliz ation (million USD)	Nr. Curren cys	Capitaliz ation (million USD)	(mil.)% capital- lysing		Nr. Curren cys	Capitalizat ion (million USD)	Nr. Curren cys	Capitalizat ion (million USD)	% in capitali zation
28.04.13	7	1.596,0	6	92,0	6	26.6.17	871	109.199,0	870	66.270,1	61
30.6.13	26	1.148,0	25	63,0	5	24.9.17	1.055	129.694,2	1.054	67.907,3	52
29.9.13	36	1.802,0	35	177,0	10	29.10.17	1.183	170.394,3	1.182	74.153,7	44
30.12.13	66	10.059,0	65	1.235,0	12	26.11.17	1.249	283.363,4	1.248	133.972,1	47
30.3.14	207	6.753,0	206	706,0	10	3.12.17	1.273	334.051,1	1.272	147.199,3	44
29.6.14	336	8.378,0	335	601,0	7	10.12.17	1.274	383.158,4	1.273	150.310,4	39
28.9.14	464	5.890,0	463	575,6	10	17.12.17	1.325	590.282,8	1.324	263.240,5	45
29.12.14	506	5.514,0	505	1.198,6	22	24.12.17	1.334	538.191,1	1.333	302.595,3	56
29.3.15	523	3.996,0	522	527,5	13	31.12.17	1.335	572.873,1	1.334	351.969,2	61
28.6.15	544	4.285,0	543	704,6	16	7.1.18	1.355	823.705,0	1.354	536.122,7	65
27.9.15	586	3.993,0	585	562,0	14	14.1.18	1.391	725.075,1	1.390	488.396,0	67
27.12.15	562	6.840,0	561	588,0	9	21.1.18	1.444	597.126,9	1.443	389.840,4	65
27.3.16	532	8.114,0	531	1.688,3	21	28.1.18	1.474	578.685,5	1.473	380.976,0	66
26.6.16	564	12.532,9	563	2.232,8	18	11.2.18	1.486	396.549,5	1.485	258.894,7	65
25.9.16	637	12.083,0	636	2.505,0	21	25.2.18	1.491	431.865,7	1.490	266.554,3	62
25.12.16	644	16.106,7	643	1.991,0	12	3.3.18	1.522	456.564,7	1.521	265.944,2	58
26.3.17	726	23.338,1	725	7.637,8	33	10.3.18					

Source: Authors' calculations after: CoinMarketCap, 2018. Top 100 Cryptocurrencies by Market Capitalization. [online] Available at: <<https://coinmarketcap.com/>> [Accessed 3 February 2018].

Unfortunately, statistics are incomplete or in most cases do not contain data about the early years after the genesis and, anyway, the environments in which these cryptocurrencies are traded are quite opaque, the degree of transparency having a certain dose of probability. The statistics we have analyzed (mainly <https://coinmarketcap.com>) begin the history of cryptocurrency in late April 2013, so about five years after the genesis. At that time, the market was made up of a number of seven currencies: bitcoin, litecoin, peercoin, namecoin, terracoin, novacoin, devcoin with a market capitalization of 1.6 bln. USD. Although all 7 live today, between each there is a significant difference. The first two form about half of the market (bitcoin, litecoin), the following four are the margin of 0.1% of the market, and the seventh (devcoin) has a even lower share that the statistics no longer take it into account (This is another proof that statistics on this phenomenon should be viewed with caution) (Table no. 1).

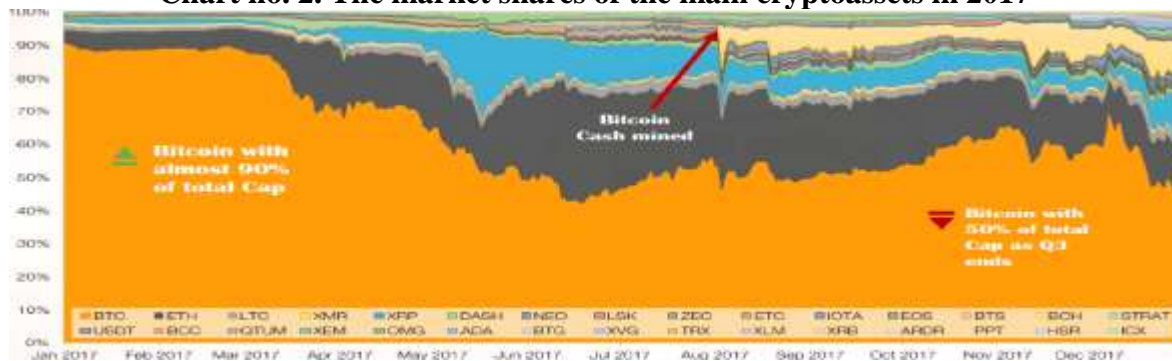
Currently (early March 2018), 1522 coins and tokens / chips are listed by statistics (895 cryptocurrency and 627 tokens / chips) and stock market capitalization was of 456 billion dollars (419 billion. USD for cryptocurrencies and 37 billion USD tokens / chips, noting that only for 499 of the latter statistics indicated a price in order to be able to calculate capitalization) (Table no. 1).

Chart no. 1. Evolution of the main cryptocurrencies in the past three years



Source: Hileman, G. and Rauchs, M., 2017. *Global Cryptocurrency Benchmarking Study*. Cambridge: University of Cambridge, Judge Business School, The Cambridge Centre for Alternative Finance.

Chart no. 2. The market shares of the main cryptoassets in 2017



Source: CoinGecko, 2017. *Year 2017, Cryptocurrency Report. Year in Review*. [online] Available at: <<https://www.coingecko.com/en>> [Accessed 3 February 2018].

The interest, purely speculative, in Bitcoin and alternatives more and more numerous made it so its market share to continuously decline (Chart no. 1). But 2017 has increased the deterioration of bitcoin's position and has brought significant structural changes in the cryptocurrency market. Firstly bitcoin is not the equivalent of the cryptocurrency market, which dropped below 50% of the market share, secondly, along with the bitcoin there are

some other significant crypto: ethereum, litecoin and ripple and finally, there is the crowd of cryptocurrency, by the thousands, as market niches (Chart no. 2). Thus, the bitcoin continually loses market share, but continues to dominate. By the decrease in market share of bitcoin takes advantage, firstly ethereum (which is an alternative to Bitcoin, not through technology but because it comes with added services, through this cryptocurrency - and inherently on the platform that this cryptocurrency is traded - being able to invest in many tokens / chips which were another event of 2017), then ripple and altcoin.

Deterioration of bitcoin's position was determined by the bifurcation of the chain of blocks of the original Bitcoin. The most important took place in July 2017 (the first block created on August 1, 2017), when the original block chain, came off starting with the block 478558, a new cryptocurrency, called later bitcoin cash. The cause of the bifurcation was the disagreement on increasing the block to 8 MB, traditionalists wanting to stay in the original size of the block's 1 MB, but alternatively also meant that traditionalists wanted bitcoin to remain at the profile of traded currency, while separatists wanted the currency to rather be an investment asset, a larger block size allowing inclusion in the block of more transaction and a smaller period of time for transaction validation (at bitcoin cash the time for hash - creating a block - is still of 10 minutes, but the block is 8 times larger), lower transaction fees (it seems that the ratio is 1 to 5 for bitcoin cash). Thus, the new currency managed to break about 30% of the market share of the original bitcoin (at the end of the period the market share of cash bitcoin was down to 15%). The success of the "fork" of bitcoin cash was contagious, by the end of 2017 can be counted another 15 junctions, causes, but also differences, being of informational and cryptographic nature (Chart no. 3).

Chart no. 3. Bifurcation of Bitcoin in 2017



Source: CoinGecko, 2017. Year 2017, Cryptocurrency Report. Year in Review. [online] Available at: <<https://www.coingecko.com/en>> [Accessed 3 February 2018].

Table no. 2. Bitcoin dynamics

Date	Capitalization (mil. USD)	Price (\$ USD)	Units in circulation (mil.)	Date	Capitalization (mil. USD)	Price (\$ USD)	Units in circulation (mn.)
28.04.2013	1.504,0	135,6	11,1	26.06.2017	42.928,9	2.616,0	16,4
30.06.2013	1.085,0	95,6	11,4	24.09.2017	61.786,9	3.725,6	16,6
29.09.2013	1.625,0	138,1	11,8	29.10.2017	96.240,6	5.779,5	16,7
30.12.2013	8.824,0	724,1	12,2	26.11.2017	149.391,3	8.944,6	16,7
30.03.2014	6.047,0	480,7	12,6	03.12.2017	186.851,8	11.177,8	16,7
29.06.2014	7.777,0	600,0	13,0	10.12.2017	232.848,0	13.916,8	16,70
28.09.2014	5.314,4	398,9	13,3	17.12.2017	327.042,3	19.528,9	16,7
29.12.2014	4.315,4	316,0	13,7	24.12.2017	235.595,8	14.057,2	16,8
29.03.2015	3.468,5	247,9	14,0	31.12.2017	220.903,9	13.170,2	16,8
28.06.2015	3.580,4	250,0	14,3	07.01.2018	287.582,3	17.131,3	16,8
27.09.2015	3.431,0	234,0	14,7	14.01.2018	236.679,1	14.086,6	16,8
27.12.2015	6.252,0	416,5	15,0	21.01.2018	207.286,5	12.326,6	16,8
27.03.2016	6.425,7	418,3	15,4	28.01.2018	197.709,5	11.747,0	16,8
26.06.2016	10.300,1	656,1	15,7	11.02.2018	137.654,8	8.165,7	16,9
25.09.2016	9.578,0	602,9	15,9	25.02.2018	165.311,4	9.790,5	16,9
25.12.2016	14.115,7	878,8	16,1	03.03.2018	190.620,5	11.280,0	16,9
26.03.2017	15.700,3	966,9	16,4	10.03.2018			

Source: Authors' calculations after: CoinMarketCap, 2018. *Top 100 Cryptocurrencies by Market Capitalization*. [online] Available at: <<https://coinmarketcap.com/>> [Accessed 3 February 2018].

Table no. 2 presents the Bitcoin evolution, from prices around 100 USD per unit in April 2014, to the threshold of almost 20.000 USD in December 2017 and then approximately in two months halving of the unit value. Capitalization has evolved in much the same proportions from about 1.5 billion USD to 330 bn. USD at the time of the boom to reach 137 billion USD at the time of landing. The process has not been supported by the quantity of units in circulation, because the mining process produces increasingly less bitcoin, in the same period being produced only 50% more units (at the time of the genesis there was determined the maximum amount of bitcoin that will be in circulation, of 21 million units, but the rate of creation decreases geometrically every 210,000 blocks).

Table no. 3. Dynamics of bitcoin, ripple, ethereum

Date	bitcoin				ripple				ethereum			
	Capitalization		Price-\$	Monetary unit. (10 ⁶)	Capitalization		Price-\$	Monetary unit. (10 ⁶)	Capitalization		Price-\$	Monetary unit. (10 ⁶)
	10 ⁶ \$	%			10 ⁶ \$	%			10 ⁶ \$	%		
28.04.13	74,4	4,7	4,3	17,2	0,0	0,0	0,000	0,0	0,0	0,0	0,0	0,0
30.06.13	53,6	4,7	2,8	19,0	0,0	0,0	0,000	0,0	0,0	0,0	0,0	0,0
29.09.13	50,5	2,8	2,3	21,7	110,0	6,1	0,014	7.818,0	0,0	0,0	0,0	0,0
30.12.13	549,6	5,5	22,6	24,4	212,7	2,1	0,027	7.818,0	0,0	0,0	0,0	0,0
30.03.14	358,5	5,3	13,3	27,1	78,8	1,2	0,010	7.818,0	0,0	0,0	0,0	0,0
29.06.14	272,4	3,3	9,2	29,7	31,4	0,4	0,004	7.818,0	0,0	0,0	0,0	0,0
28.09.14	143,6	2,4	4,4	32,4	137,1	2,3	0,005	28.989,0	0,0	0,0	0,0	0,0
29.12.14	96,2	1,7	2,7	35,1	737,1	13,4	0,023	30.978,0	0,0	0,0	0,0	0,0
29.03.15	63,2	1,6	1,7	37,7	280,4	7,0	0,009	31.909,0	0,0	0,0	0,0	0,0
28.06.15	124,0	2,9	3,1	40,3	362,3	8,5	0,010	31.909,0	0,0	0,0	0,0	0,0
27.09.15	122,6	3,1	2,9	42,5	210,5	5,3	0,006	32.488,0	55,9	1,4	0,8	73,5
27.12.15	150,3	2,2	3,4	43,8	206,9	3,0	0,006	33.537,0	64,5	0,9	0,9	75,8
27.03.16	146,7	1,8	3,2	45,1	277,8	3,4	0,008	34.440,0	856,7	10,6	10,9	78,5
26.06.16	194,4	1,6	4,2	46,4	226,0	1,8	0,006	35.108,0	1.151,4	9,2	14,2	81,4
25.09.16	181,1	1,5	3,8	47,7	262,1	2,2	0,007	35.459,0	1.093,6	9,1	13,0	84,3
25.12.16	213,2	1,3	4,4	49,0	229,7	1,4	0,006	36.003,6	635,8	3,9	7,3	87,3
26.03.17	204,0	0,9	4,1	50,4	353,4	1,5	0,009	37.388,9	4.600,5	19,7	51,5	90,1
26.06.17	2.323,8	2,1	45,0	51,7	11.781,3	10,8	0,310	38.291,4	30.219,2	27,7	325,7	92,8
24.09.17	2.564,1	2,0	48,3	53,1	6.758,2	5,2	0,176	38.343,8	26.967,2	20,8	284,5	94,8
29.10.17	2.940,8	1,7	54,9	53,6	7.778,8	4,6	0,200	38.531,5	28.494,6	16,7	298,7	95,4
26.11.17	4.675,5	1,7	86,6	53,9	9.681,2	3,4	0,250	38.622,9	44.175,6	15,6	460,4	95,9
03.12.17	5.443,1	1,6	100,6	54,1	9.850,3	2,9	0,255	38.622,8	44.944,3	13,5	467,7	96,1
10.12.17	7.571,2	2,0	139,6	54,2	9.121,0	2,4	0,235	38.739,0	42.921,6	11,2	446,0	96,2
17.12.17	17.329,5	2,9	318,9	54,3	29.249,6	5,0	0,755	38.739,1	69.354,0	11,7	719,5	96,4
24.12.17	15.053,3	2,8	276,5	54,4	42.496,3	7,9	1,100	38.739,1	66.472,3	12,4	688,6	96,5
31.12.17	12.000,9	2,1	220,0	54,5	82.199,9	14,3	2,120	38.739,1	69.767,5	12,2	721,7	96,7
07.01.18	16.400,5	2,0	300,1	54,6	123.601,4	15,0	3,190	38.739,1	106.276,6	12,9	1.097,7	96,8
14.01.18	13.826,1	1,9	252,6	54,7	75.120,9	10,4	1,940	38.739,1	132.809,8	18,3	1.369,6	97,0
21.01.18	10.979,3	1,8	200,2	54,9	57.332,6	9,6	1,480	38.739,1	107.468,0	18,0	1.106,6	97,1
28.01.18	10.180,1	1,8	185,2	54,9	49.538,2	8,6	1,280	38.739,1	113.010,2	19,5	1.162,0	97,3
11.02.18	8.131,3	2,1	147,4	55,2	38.016,9	9,6	0,975	39.009,2	79.578,8	20,1	815,8	97,5
25.02.18	11.575,3	2,7	209,1	55,4	37.186,9	8,6	0,950	39.094,8	82.562,8	19,1	844,0	97,8
03.03.18	11.560,4	2,5	208,2	55,5	35.314,8	7,7	0,903	39.092,0	83.215,6	18,2	849,4	98,0

Source: Authors' calculations after: CoinMarketCap, 2018. *Top 100 Cryptocurrencies by Market Capitalization*. [online] Available at: <<https://coinmarketcap.com/>> [Accessed 3 February 2018].

Table no. 3 presents the evolution of the other important cryptocurrency bitcoin, ripple, ethereum bitcoin.

Bitcoin, with an age of 7 years, which accounts for 2-3% of the market, increased in price from a few dollars at the beginning of the reviewed period, to a maximum of \$ 300, to be halved two months later, the growth copying bitcoin's development. Capitalization growth was due both to prices and number of units in the market, they tripled in the analyzed period, because it is created in proportion, though regressive, more than four times than the bitcoin.

Ripple has come to represent about 10% of the market, price increased from subunitary values to a maximum of 3 US dollars. Note that the maximum price of Ripple was registered in January 2018, one month after bitcoin reached maximum. Also in the

case of Ripple capitalization growth was generated by the rising price, and also by the units in circulation (ripple is not mined, but put into circulation according to projects funded by the issuing organization).

Ethereum the fourth important cryptocurrency has come to represent about 20% of the market, the price rose from about a dollar at issuance, in 2015, to a peak of almost 1400 \$ to fall further to \$ 850. Also in the case of Ethereum evolution was offset against bitcoin, the maximum being reached in five weeks after bitcoin reached the highest value. Price decrease for Ethereum was lower because it is widely used in most smart contracts/public offers of cryptocurrency. Capitalization was driven mainly by price, units in circulation generating less capitalization because Ethereum creation is uniform.

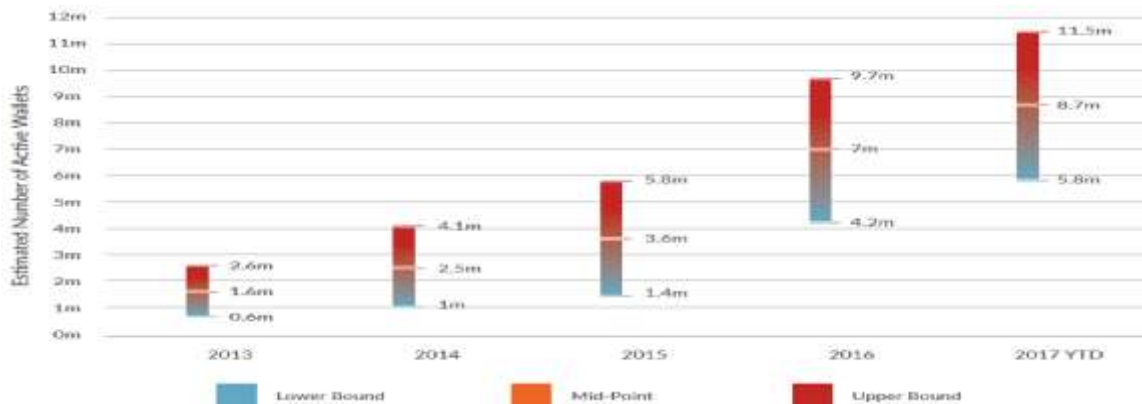
In total all three currencies make up, currently, more than one third of cryptocurrency market, worth in total over 130 billion dollars, about one third of the cryptocurrency market and half the altcoin market.

Chart no. 4. Estimates of the number of active users of cryptoassets



Source: Hileman, G. and Rauchs, M., 2017. *Global Cryptocurrency Benchmarking Study*. Cambridge: University of Cambridge, Judge Business School, The Cambridge Centre for Alternative Finance.

Chart no. 5. Estimates of the number of virtual wallets holders



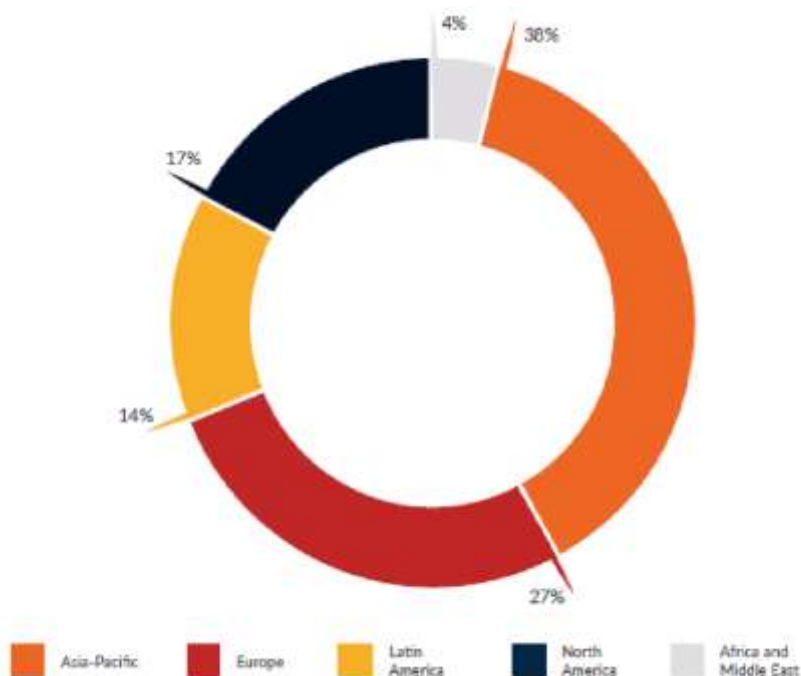
Source: Hileman, G. and Rauchs, M., 2017. *Global Cryptocurrency Benchmarking Study*. Cambridge: University of Cambridge, Judge Business School, The Cambridge Centre for Alternative Finance.

Regarding users of cryptocurrency, their number increased continuously, thus Global Cryptocurrency Benchmarking Study, estimates based on surveys of firms that have as a profile transactions with such assets, the number of investors reached about 4.3 million people in the first quarter of 2017 compared only 0.9 million in 2013 and probably doubled by the end of 2017 (Chart no. 4).

At the same time, because investors in cryptocurrency own several varieties, the number of virtual wallets was much higher. Estimates for the first quarter of 2017 for virtual wallets holders was 8.7 million versus 1.6 million holders in 2013 (Chart no. 5).

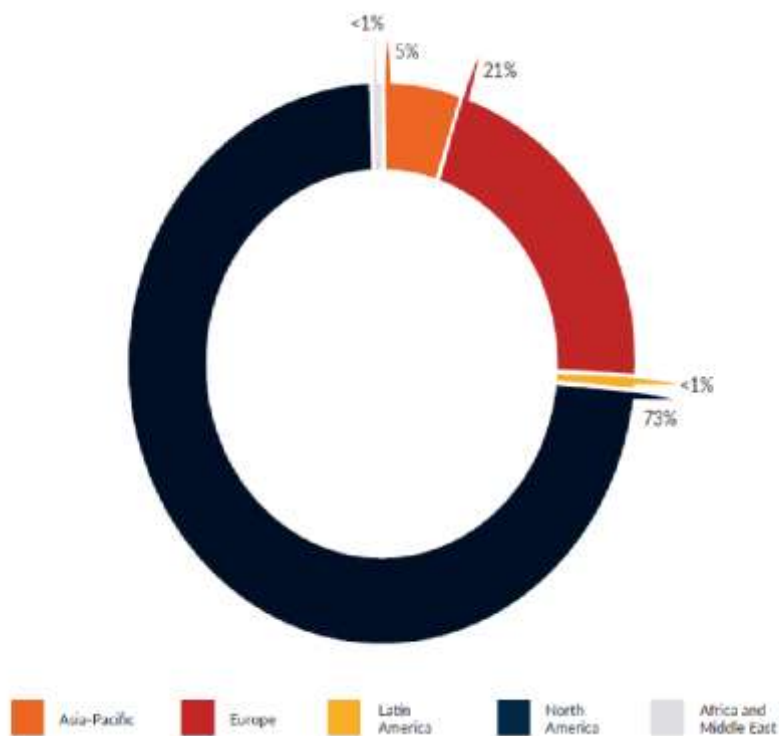
Most users of cryptocurrency are located in Asia-Pacific area, at a proportion of two out of five, then Europe, more than one fourth and one sixth are located in North America (Chart no. 6). But North America compensates by the fact that there located the majority of cryptocurrency ATMs (three-quarters of the total), followed by Europe, where there are 20% of total (Chart no. 7).

Chart no. 6. Estimates of the eographical distribution of users of cryptoassets



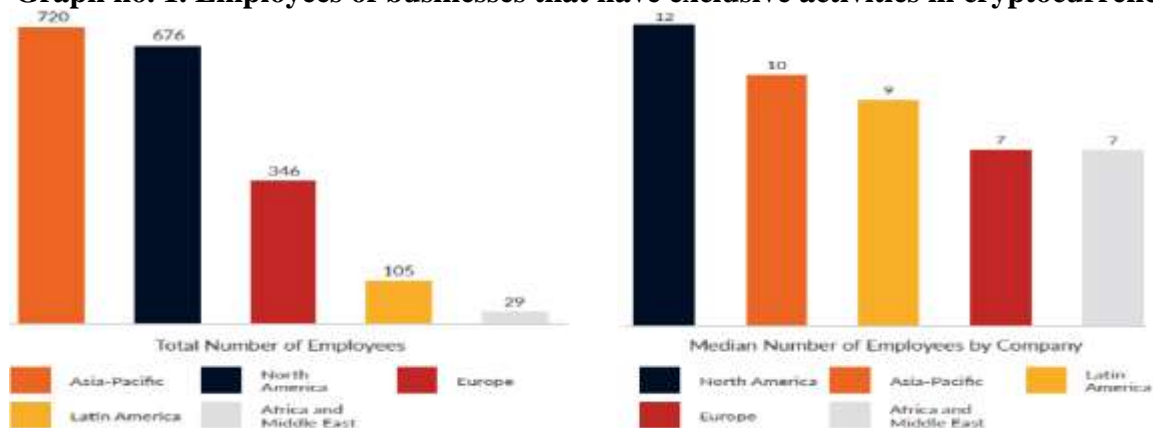
Source: Hileman, G. and Rauchs, M., 2017. *Global Cryptocurrency Benchmarking Study*. Cambridge: University of Cambridge, Judge Business School, The Cambridge Centre for Alternative Finance.

Chart no. 7. The geographical distribution of ATMs of cryptoassets



Global Cryptocurrency Benchmarking Study, estimated for early 2017 that in the companies that had as object of activity cryptocurrency were working full time about 1,900 employees, distribution by country being Asia-Pacific (40%), America (about one third), Northern Europe (20%) and on average in such a company were 9 employees (Graph no. 1).

Graph no. 1. Employees of businesses that have exclusive activities in cryptocurrency



Source: Hileman, G. and Rauchs, M., 2017. *Global Cryptocurrency Benchmarking Study*. Cambridge: University of Cambridge, Judge Business School, The Cambridge Centre for Alternative Finance.

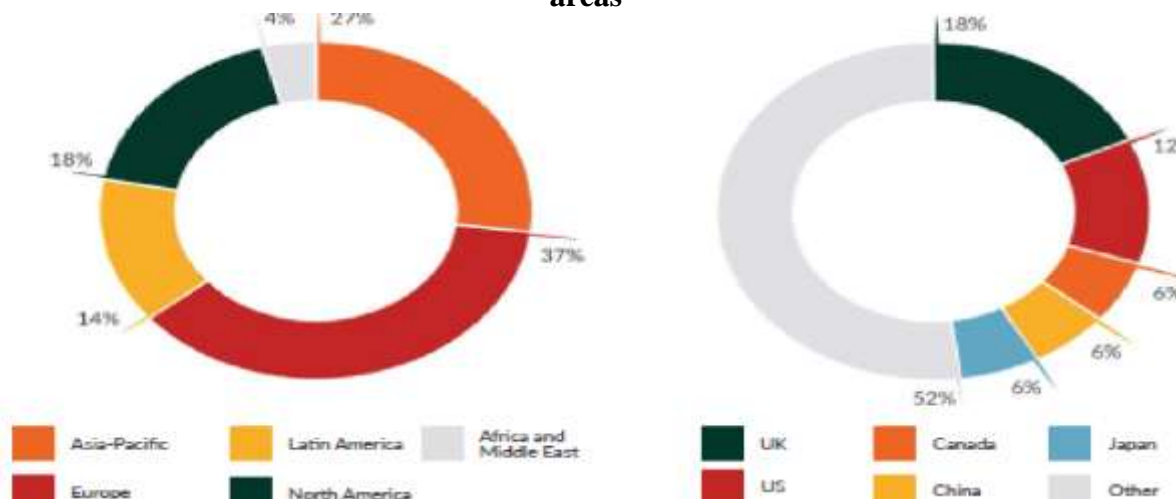
From research based on surveys of Global Cryptocurrency benchmarking Study resulted that in early 2017 the companies from the field of cryptocurrency conducted activities of:

- Cryptocurrency exchange: purchases, sales and transactions with cryptocurrency;
- Wallet of cryptocurrency: cryptocurrency preservation and storage;

- Payments with cryptocurrency: facilitate payments using cryptocurrency;
- Creation of cryptocurrency: mining and management of the lockchain.

The main activity of enterprises in the cryptocurrency field is the exchange one and occurs most often in the activity of those located in Europe (37%), and here the largest are located in the UK. Then comes Asia, where China detaches and North America here detaching US (Graph no. 2).

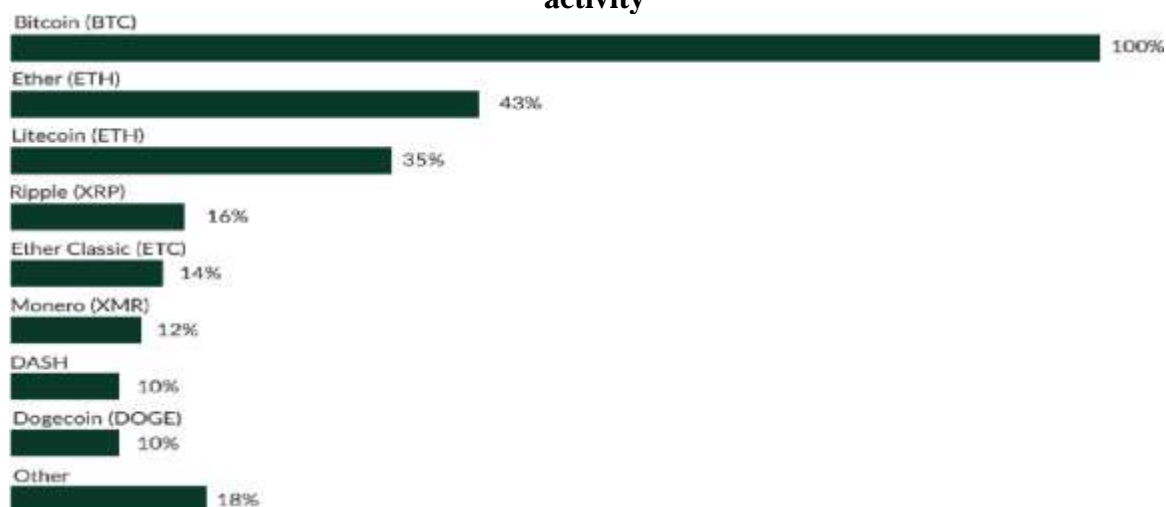
Graph no. 2. Exchange activity as object of activity of enterprises in cryptocurrency areas



Source: Hileman, G. and Rauchs, M., 2017. *Global Cryptocurrency Benchmarking Study*. Cambridge: University of Cambridge, Judge Business School, The Cambridge Centre for Alternative Finance.

Bitcoin is the cryptocurrency that is found in the offer of all cryptocurrency exchange companies (Chart no. 8), with it being more common the Ether, the Litecoin, Ripple, but also Monero, Dash, Dogecoin etc.

Chart no. 8. Cryptoassets which can be exchanged at companies with exchange activity



Source: Hileman, G. and Rauchs, M., 2017. *Global Cryptocurrency Benchmarking Study*. Cambridge: University of Cambridge, Judge Business School, The Cambridge Centre for Alternative Finance.

In Chart no. 9 is presented the turnover of the main companies in the field of cryptocurrency exchange, the source of these data is the annual report 2017 of CoinGecko. Notice that the first six have revenues from this activity of billions. Also it should be mentioned that many of them are in China.

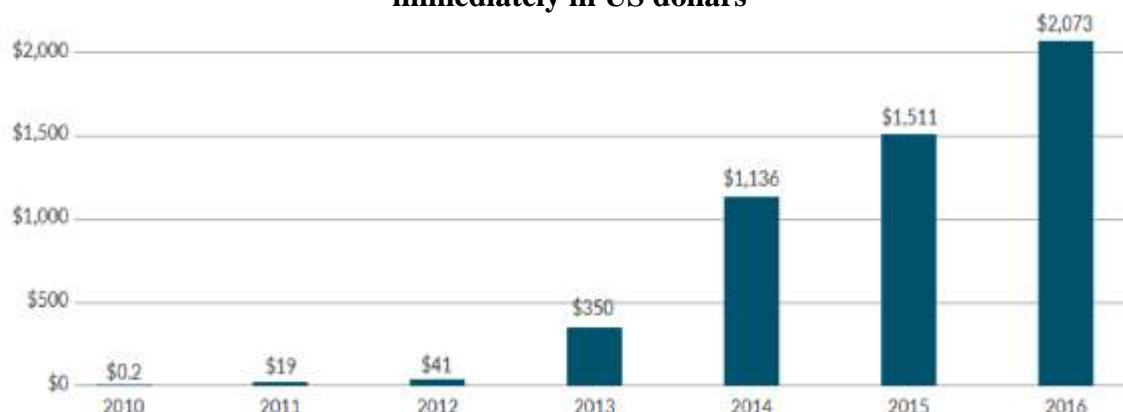
Chart no. 9. The turnover of the main companies in the field of cryptocurrency exchange



Source: CoinGecko, 2017. Year 2017, Cryptocurrency Report. Year in Review. [online] Available at: <<https://www.coingecko.com/en>> [Accessed 3 February 2018].

Global Cryptocurrency Benchmarking Study, estimated that second income producing activity for firms in the cryptocurrency field was the mining and the most income was generated by creation and transactions with Bitcoin, which had generated cumulatively by the end of 2016, over two billion dollars (Chart no. 10), but annual revenues are declining (Chart no. 11) and this is due to declining revenue from mining (reward for validating transactions halves from about four years, last fall took place in July 2016, when BTC reduced from 12.5 per block to 25 BTC as it had been to date. This reduction in income from mining tried to be compensated by increased trading fees. The latter increased both as result of the increased number of transactions but also because they increased as a percentage.

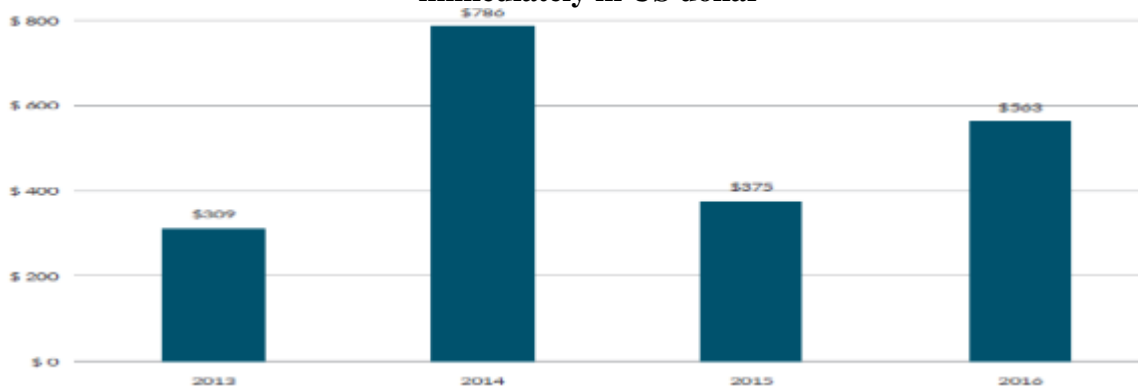
Chart no. 10. The cumulative revenues generated by the mining activities of Bitcoins (validation of transactions and producing of cryptoassets) if they were changed immediately in US dollars



Source: Hileman, G. and Rauchs, M., 2017. *Global Cryptocurrency Benchmarking Study*. Cambridge: University of Cambridge, Judge Business School, The Cambridge Centre for Alternative Finance.

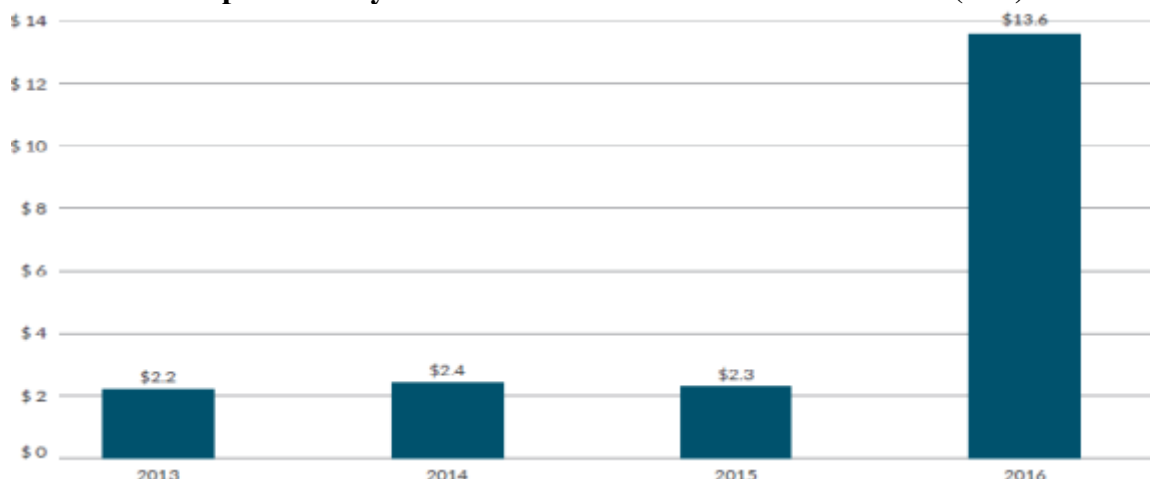
For instance, according to <https://bitinfocharts.com>, trading fees were on average 0.0002 USD in 2010, reaching in 2015 to 0.05 USD, growing at 0.1 USD in 2016, 1 USD in the first part of 2017 to reach a level of approximately 55 USD in December 2017, at maximum (Graph no. 3). Thus, trading fees are increasing as a share, in total revenue made by Bitcoin (Graph no. 4), reaching a share of 6% in total, compared to values close to 1-2% by 2014 and certainly exceeded 10% in December 2017, the following average values supraunitary duty during 2017, which have made profitable the transactions with Bitcoin.

Chart no. 11. Dynamics of annual revenue generated from mining Bitcoins (validation of transactions and production of cryptoassets) should they be changed immediately in US dollar



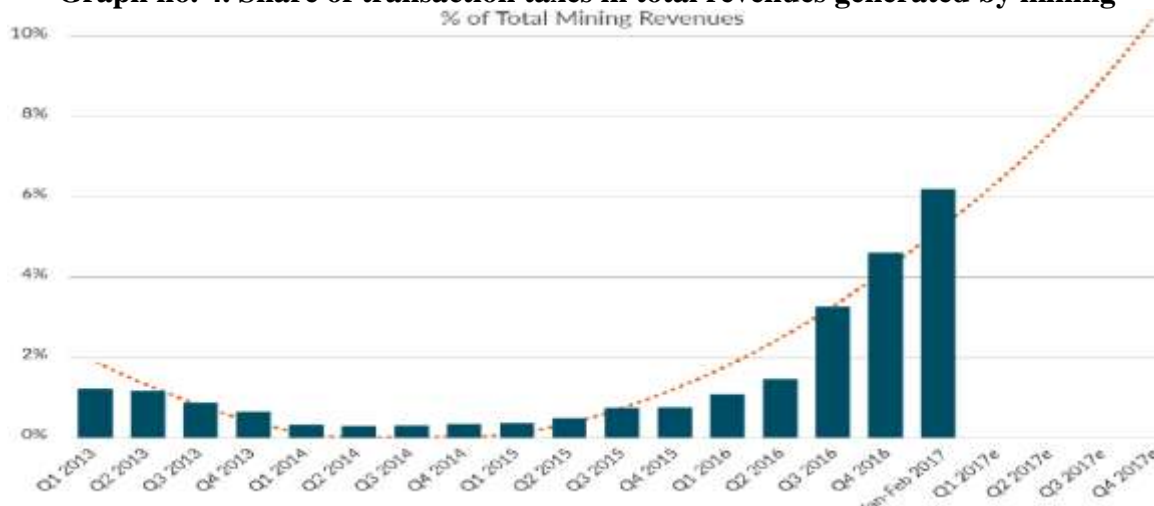
Source: Hileman, G. and Rauchs, M., 2017. *Global Cryptocurrency Benchmarking Study*. Cambridge: University of Cambridge, Judge Business School, The Cambridge Centre for Alternative Finance.

Graph no. 3. Dynamics of transaction taxes with Bitcoins (mil.)



Source: Hileman, G. and Rauchs, M., 2017. *Global Cryptocurrency Benchmarking Study*. Cambridge: University of Cambridge, Judge Business School, The Cambridge Centre for Alternative Finance.

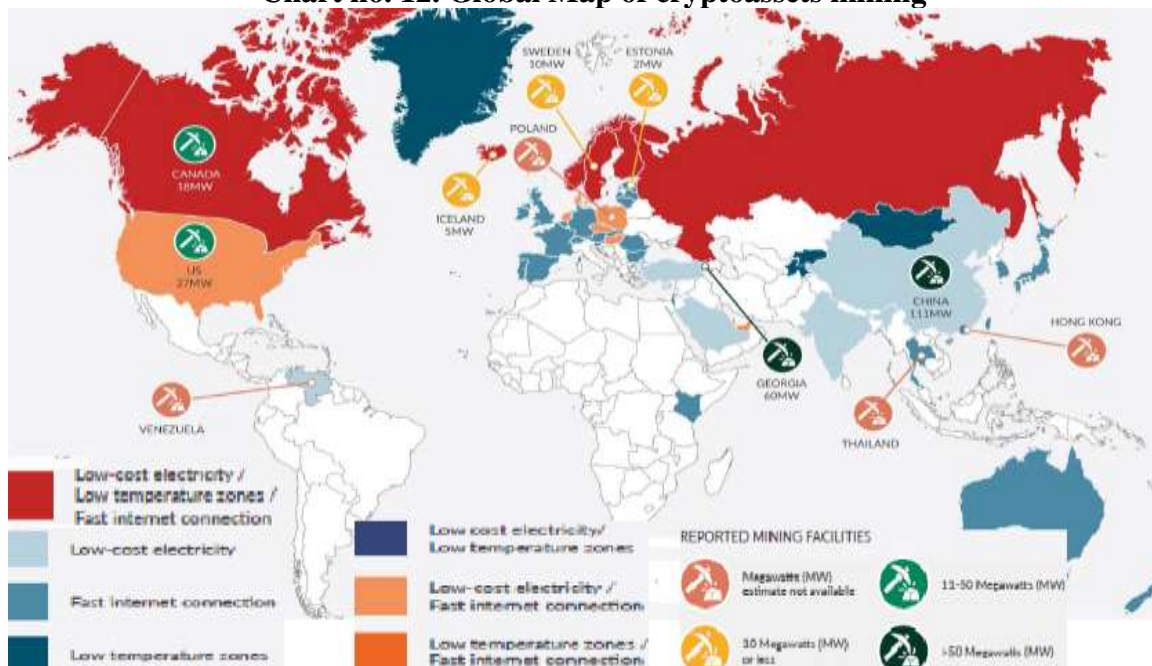
Graph no. 4. Share of transaction taxes in total revenues generated by mining



Source: Hileman, G. and Rauchs, M., 2017. *Global Cryptocurrency Benchmarking Study*. Cambridge: University of Cambridge, Judge Business School, The Cambridge Centre for Alternative Finance.

In fact, efficiency of creation of Bitcoin one of the current problems of this cryptocurrency and will probably appear soon in other cryptocurrencies. The problem is that the remuneration for block validation is reduced to about four years. As I said earlier presently it is of 12.5 BTC / block. But to produce Bitcoin costs involve (a) cheap electricity to operate computers, (2) again cheap energy for cooling / ventilation computer or climatic conditions to allow cooling / natural ventilation of computers (such as polar regions and sub-polar and high altitudes) and (3) high-speed internet. The more the area holds as many of the three previous factors, the more there may occur more Bitcoin production. Map of Chart no. 12 shows that Russia, Canada, Scandinavia and Iceland are countries that cumulate the three factors previously named, but China has the cheapest energy, here consuming, in 2016, the largest amount of energy, over 111 MGW, for the production of Bitcoin, although as it can be seen from the map in Chart no. 13, for most locations where Bitcoin is produced, there is no data available on electricity consumption for this purpose.

Chart no. 12. Global Map of cryptoassets mining



Source: Hileman, G. and Rauchs, M., 2017. *Global Cryptocurrency Benchmarking Study*. Cambridge: University of Cambridge, Judge Business School, The Cambridge Centre for Alternative Finance.

Chart no. 13. Map of cryptoassets mining in China

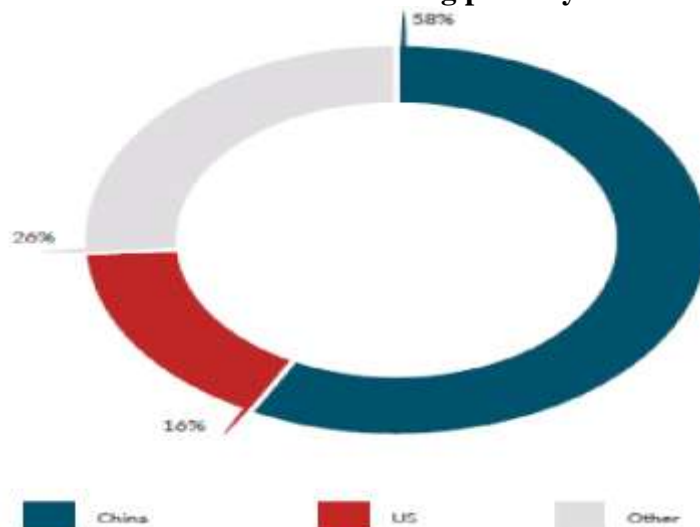


Source: Hileman, G. and Rauchs, M., 2017. *Global Cryptocurrency Benchmarking Study*. Cambridge: University of Cambridge, Judge Business School, The Cambridge Centre for Alternative Finance.

Also because the creative process of bitcoins implies that the power of computers used to validate the transactions with this cryptocurrency, be proportionately greater as the number of users increases, mining can't be done individually, but through collectives / groups, called mining pools, uniting increasingly more and more computers to solve /

decrypt hashes more and more complex of each transaction. Thus, Chart no. 14 shows that by far most such mining pools are found in China.

Chart no. 14. Distribution mining pools by countries



Source: Hileman, G. and Rauchs, M., 2017. *Global Cryptocurrency Benchmarking Study*. Cambridge: University of Cambridge, Judge Business School, The Cambridge Centre for Alternative Finance.

Lately, amid growing revenues generated by investments in these cryptoassets, and growing fraud or illegal economy which is possible due to the opacity of the area, it has been put increasingly more in question its legality. It must be said that there are few countries that have declared cryptocurrency illegal, the most opt for sector regulation either fiscally or investment wise. Chart no. 15 shows a group of states (made in CoinGecko, Year 2017 - Cryptocurrency Report. Year in Review) on two groups, one group in which the holding and trading is legal and a group of countries where trading is strictly prohibited, such as Nepal, Kyrgyzstan, Bolivia, Ecuador, Bangladesh, Morocco.

Chart no. 15. Where are cryptocurrencies legal



Source: CoinGecko, 2017. *Year 2017, Cryptocurrency Report. Year in Review*. [online] Available at: <<https://www.coingecko.com/en>> [Accessed 3 February 2018].

The year 2017 has brought a paradigm shift in the sense that many start-ups can turn to the market of cryptocurrency to obtain financing, successfully competing with traditional channels (Chart no. 16). In chart 20 is seen exponential growth in the value of ICO from insignificant in January 2017 to over 200 million USD in May. It must be said that values are monthly and are considering subscription prices lower than the market prices. In the box of Chart no. 16 are presented the biggest ICO launched in 2017. The current value is much larger. For March 2018, coinmarket.com establishes a total capitalization of all ICOs of 31.6 billion USD (Table no. 4).

Chart no. 16. The largest ICOs in 2017



Source: CoinGecko, 2017. *Year 2017, Cryptocurrency Report. Year in Review.* [online] Available at: <<https://www.coingecko.com/en>> [Accessed 3 February 2018].

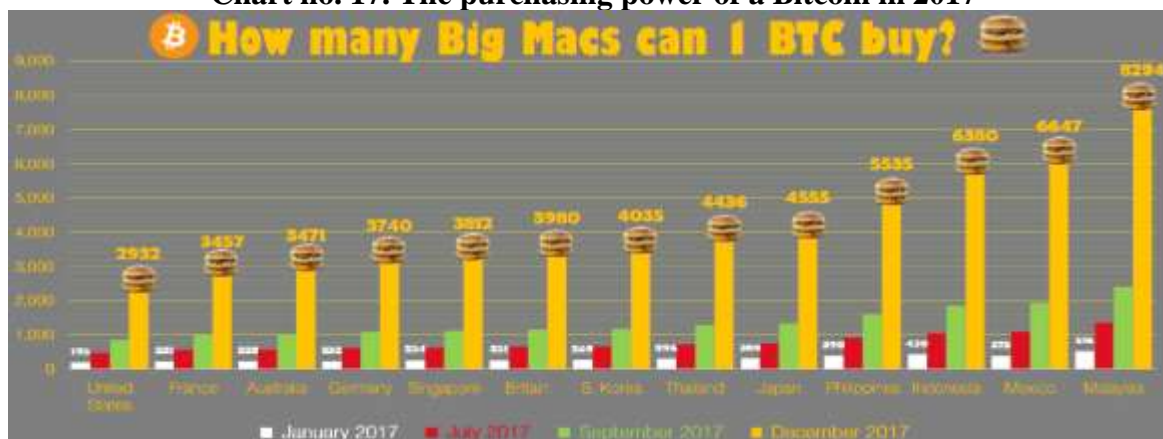
Table no. 4. Tokens / ICOs in March 2018

	Name	Platform	Market Cap (USD)	Price (USD)	Circulating Supply
1	EOS	Ethereum	4.567.019.862	6,39	714.160.371
2	TRON	Ethereum	2.462.559.100	0,037454	65.748.192.476
3	Tether	Omni	2.207.106.034	0,995474	2.217.140.814
4	VeChain	Ethereum	1.896.206.219	3,99	475.221.788
5	OmiseGO	Ethereum	1.436.953.010	14,08	102.042.552
6	ICON	Ethereum	1.120.622.447	2,9	385.966.359
7	Binance Coin	Ethereum	870.353.853	8,79	99.014.000
8	DigixDAO	Ethereum	808.784.000	404,39	2.000.000
9	Populous	Ethereum	605.730.017	16,37	37.004.027
10	Status	Ethereum	569.895.084	0,164212	3.470.483.788
11	Maker	Ethereum	541.053.161	875,17	618.228
12	RChain	Ethereum	531.152.993	1,48	359.409.272
13	Waltonchain	Ethereum	440.528.443	17,69	24.898.178
14	Aeternity	Ethereum	439.653.706	1,89	233.020.472
15	Augur	Ethereum	424.706.700	38,61	11.000.000
40	Bancor	Ethereum	163.152.411	4,18	39.064.387
44	TenX	Ethereum	152.241.388	1,45	104.661.310
650	*****	*****	*****	*****	*****
Total	-	-	31.645.597.293		

Source: Authors' calculations after: CoinMarketCap, 2018. *Top 100 Cryptocurrencies by Market Capitalization*. [online] Available at: <<https://coinmarketcap.com/>> [Accessed 3 February 2018].

Comparing data from the box in chart 20 with the values in Table 4, we observe that some tokens have registered very high growths, up to near a bubble. For example project EOS, which has proposed the creation of a new architecture of blocks designed to enable scaling vertically and horizontally of decentralized applications, aims to attract 183 million USD (by issuing 1 billion, token EOS - of which only 90% for sale - at a price of 0.99 USD / token EOS available through use of ethers, currently values 4.5 billion USD. But all the same, we can mention some 130 tokens for which although coinmarketcap.com displayed prices, they do not indicate that any transaction would be done for them.

Chart no. 17. The purchasing power of a Bitcoin in 2017



Source: CoinGecko, 2017. *Year 2017, Cryptocurrency Report. Year in Review*. [online] Available at: <<https://www.coingecko.com/en>> [Accessed 3 February 2018].

Finally, those from CoinGecko, correlate Bitcoin prices in 2007 with purchasing power and which is found in Chart no. 17. In principle, there isn't a notable change, the

purchasing power of a Bitcoin, amid rising prices of it, remains high in poor countries and much more reduced in rich countries, but if we look at things in time, we see that the price of Bitcoin in USA led to an increase of 15 times in the purchasing power (from 195 to 2932 Big Macs) , while in Malaysia the increase is of 16 times (from 516 to 8294 Big Macs), but certainly this is not due to the cryptocurrency but to economic conditions in the two countries.

4. Conclusions

Until 2017 cryptocurrency meant Bitcoin, although there were others outside of it. What 2017 brought was that Bitcoin although registered incredible increases had restricted its share, falling to more than half the market. Earnings brought to Bitcoin investors were registered also to other cryptocurrency, and performance rates were much higher, because other cryptocurrencies started from lower price levels. Although the market has grown, users of cryptocurrency still remain a minority. But there appears a cryptocurrency market, there are users, enterprises with different activity profiles, with prices and taxes, with costs and revenues.

There are places where you can produce cryptocurrency cheaper than in others. Factors determining cryptocurrency production efficiency are computer power, electricity prices and the cost of Internet access.

Start-ups also call to the new market of cryptocurrencies, using the instrument ” initial offers of currency”, market growths being more than benefic for companies who demand for money here, because regular liquidities are higher.

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