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The 14th Economic International Conference: *Strategies and Development Policies of Territories: International, Country, Region, City, Location Challenges* | May 10-11, 2018 | Ștefan cel Mare University of Suceava, Romania

The Need of Cryptocurrency on Today's Market and the Evolution of the Needed Processing Power

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Abstract

This paper intends to review the need of cryptocurrency on the European and International market. Why cryptocurrency is bad and good at the same time for the international financial market is one of the main issues of this paper. Where are Bitcoin, Ethereum, Ripple, Bitcoin Cash, Litecoin going to and why cryptocurrencies are necessary on today's market. Although there is no sure thing on crypto, on the long term, the market keeps going up and there is much interest in this direction.

Keywords:

Need of cryptocurrencies, evolution of crypto, processing power, crypto market.

1. I. Cryptocurrencies and the Market

Credit and cash are fundamental ideas, at least that is what all the players on the financial market know and agree to as an undisputed truth [1]. Nowadays credit card is the dominant paying method used because of the large e-commerce sales worldwide, as you can see in figure 1 [2] and it's going to double itself by the year 2021. Online shopping is one of the most popular activities worldwide, the only thing that is different is the usage that varies by region. For example, in 2016, 19% of all retail sales in China occurred via internet and Japan had only 6.7% [3].

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If we think of the way cryptocurrency is used to buy online, we don't have a big market share just yet, but if we think of the way the future might sound, big changes may occur. The total volume of transactions on the most important Bitcoin exchanges for 24 hours comes to 66,436 BTC [4], on a bitcoin price of 9,384\$, we have 623,435,424\$ for one single day. Of course, this could vary depending on the market evolution, but still is a big number for something that is as non-official as crypto. Still, it is a very volatile market. For an evolution of the Bitcoin market, we have figure 2.

Figure 1 Retail e-commerce sales worldwide from 2014 to 2021 (in billion U.S. dollars) [2]

The Bitcoin price evolution makes us understand the dependency worldwide and the timing of prices.

Figure 2. Bitcoin price evolution since the 28th of April 2013 to the 7th of April 2018 (by coinmarketcap.com) [4]

It could also mean that you don't have enough information on it and you could not know how the crypto market would evolve. If we preview the S&P500, the American stock market index based on the market capitalizations of 500 large companies having common stock listed on the NYSE or NASDAQ, we could see that it was founded in March the 4th, 1957 [5]. Therefore, you could see an evolution on a large period. Figure 3 shows the evolution of S&P500 since 1950 and this chart is important for investment strategies. In figure 2 you can see a shorter period for the Bitcoin and this also says a lot for a future investment strategy.

3. Cryptocurrencies versus Gold

Investors have very clear standards when thinking of investing in companies. What about cryptocurrencies? Are they the same when applying to standard investing rules? You can't see bitcoin as a business, because Bitcoin could be looked at as Gold or as Silver, because the only thing that counts is the need on the market. You could not have a long-time strategy, you could only know that it *should* grow in time, because of the need in the market. We want to find a possible evolution of Bitcoin in time. We could have a look at the Gold evolution chart since 1970 and as one of the greatest investors in USA say: think big. In figure 4 we could see 45 years of evolution for Gold. Although we can't predict for sure what the evolution of Bitcoin would be, on the long term, most likely prices would go up.

Figure 4. 45 years of Gold (by marketcalls.in) [6]

There's a big step for gold in 1980. It hit a record of 850 US dollars an ounce [7]. After reaching those dizzy heights it then plummeted down

and remained steady in the 300-400-dollar range for some years before starting to climb again to new levels. It then reached the same high value after the year 2000. This is a 20-year leap in time and we could also think of that. Why did gold get to 850 so quick? In January 1980 gold was fixed at a record 850 USD an ounce while high inflation, strong oil prices, Soviet intervention in Afghanistan as well as the impact of the Iranian revolution prompted investors to heavily buy the metal. Bitcoin and other cryptos that could stand the test of time are also spread worldwide and could have a similar fluctuation someday.

The good part is that Bitcoin is fantastic for trading. The volatility is really catchy, and this is why many people want to invest. Many want to invest but don't know too much about indices that could help understand better the fluctuation. Traders love this because most of the people think they could be right and win all the time. But still, this is not investing, this is trading. And it is not recommended to trade with money you can't afford to lose.

Cryptocurrencies are a bit like options when thinking about trading. You need to define your edge. It's the same with crypto. The power of options lies in their versatility, and their ability to interact with traditional assets such as individual stocks [8].

Cryptocurrency is considered as a fair trade, not as an investment. Therefore, Warren Buffet says that you when it comes to investing, you can't beat putting your money in America businesses. We can extrapolate this by getting the idea on a stable market for businesses in any country. Still, it is not anything wrong with having a small percentage of your portfolio exposed to crypto but having too much on it could be a big problem. On the other side, Gold doesn't fluctuate so much, although there are still people that think Gold is a safe investment.

4. Frauds in the Crypto Market

Where there's money, there is also bad will. When you have banks, there's a need for security, because you must watch out for bank robbers. If you have crypto, that means value. When you have value, you must watch out for people that steal.

One of the frauds in crypto market was and still is ICOs. ICOs fewer spawns massive scams. There are no real promises and investors take a leap of faith when they part ways with their money [9].

In April 2018, two ICOs run by the same company in Vietnam got away with 660,000,000 \$ out of the pockets of 32,000 investors. The names:

Pincoin and iFan have been classified as multi-level marketing scams and were built by Modern Tech.

OneCoin has been the subject of several investigations. In July 2017, Italian authorities fined them with 2.5 million Euros and before that, the Chinese authorities seized over \$30 million. It got to the point where countries like Thailand, Croatia, Bulgaria, Finland and Norway warned investors that OneCoin is not a good idea.

Bitconnect was long accused of being a ponzi scheme and discontinued operations in January 2018. After that, several users have since launched a class action lawsuit against them to recoup the lost funds: \$0.7 million in their case. It was about lending with interest.

Plexcoin was about the same but luckily the \$15 million dollars were frozen by the SEC.

A single and great conclusion can be drawn. Crypto investors must smarten up to resist on today's market.

5. HASH, Mhash and Thash

Hash per second is an SI derived unit representing the number of double SHA-256 computations performed in one second, referred to as hash rate. It is usually symbolized as h/s (with an appropriate SI prefix).

The hash rate is the primary measure of a Bitcoin miner's performance. In 2014, a miner's performance was generally measured in Ghash/s, or billions of hashes per second.

To understand more and to see the needed processing power used for mining, the two charts below are a good start point.

Figure 5. BTC difficulty chart (highcharts.com) [10]

Figure 6. ETH difficulty chart (highcharts.com) [10]

CPUs (Central Processing Units) were long time seen as the primary processing power and therefore they were used for calculations. When Bitcoin appeared, GPUs (Graphical Processing Units) were more important because GPUs are also equipped with many Arithmetic Logic Units (ALU). ALUs are responsible for performing mathematical computations. Courtesy of these ALUs, the GPU can perform more calculations, leading to improved output for the crypto mining process.

Now, GPUs are facing competition from FPGAs (Field Programmable Gate Arrays) and ASICs (Application Specific Integrated Circuits). They score better than CPUs and GPUs and are now much more interesting for hash calculations.

6. Conclusions

One thing is for sure: one should be wise when investing. The first rule of investing is *don't lose money*. That is why you should know as much as you can on cryptocurrencies if you want to trade them. There are plenty of people that won big investing in crypto. There are also more people that got ruined when investing without enough knowledge. Cryptocurrencies imply that you know laws, tax regulations, IT and you also must rise your ability to cumulate that knowledge to predict the evolution on the market. It is also important to understand that investing is somewhere between games and real life. It is like a game when playing with numbers and it hurts hard when losing.

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