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BITCOIN AS A MODERN FINANCIAL INSTRUMENT

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This article is about one type of cryptocurrency – bitcoin. The main topic of this work is a level of risk connected with cryptocurrency market. The work consists of theory, a definition of cryptocurrency and bitcoins, an analysis of risk level in this kind of investments on cryptocurrency market and a bibliography.

A definition of cryptocurrency and bitcoins

A Cryptocurrency is a modern digital medium of exchange. It is a new decentralized, limited and peer–to–peer payment system. Most cryptocurrencies are created to introduce new units of currency, whose total amount is limited. All cryptocurrencies use cryptography to control the creation and transfer of money. The first cryptocurrency was Bitcoin, created in 2008 and introduced in 2009. Nowadays it is the most popular cryptocurrency which is used as an open source software. The creator of Bitcoin was Satoshi Nakamoto, a person or a group of people. Nakamoto published a work on The Cryptography Mailing list in which he described the Bitcoin currency. Next year, the first Bitcoin software was launched on the network, which started Bitcoin’s flow.

Bitcoins are introduced to the market by a process called mining. In this process engage computer network participants – users who provide their computing power, next verify and record payments into a network in exchange for minted bitcoins and transaction fees. Bitcoins are transferred by wallet software on a personal computer, web application or mobile device. All cryptocurrencies use public–key cryptography; a pair of public and a private cryptographic key make Bitcoins safe. All of the user's keys are called a digital wallet. The role of Bitcoin safety system is keeping keys in secure place.

Bitcoin transactions

Users make payments by digitally signed messages to the public transaction database, called the block chain. Ownership of transaction is transferred from one Bitcoin address to another and is recorded in the block chain. The "mining" process carries a reward (fee) of twenty–five bitcoins per each block added to the block chain. A reward of twenty–five bitcoins is the most important part of the cryptocurrency system. The computers which confirm transactions and participate in "mining" process also mint new bitcoins.

Cryptocurrencies such as Bitcoins, can be bought and sold in person for cash. In online exchange system bitcoins can be traded by buy and sell bids.

Risk level in transactions with Bitcoins

Nowadays Bitcoins and all cryptocurriencies are discuss by economists and media. The main problem of Bitcoin transactions is connected with a risk level. Bitcoin has become a target for speculators, which makes it a risky financial instrument.

Cryptocurrencies are high–risk investment. Bitcoins are traded by speculators whose main aim is to profit on short or medium term price changes. Some of international financial organizations such as The European Banking Authority or American institution like Financial Industry Regulatory Authority or Federal Reserve have called Bitcoin market a speculative bubble and warned investors of potential losses, theft or fraud. Also, the disadvante of Bitcoin system is connected with vulnerability to hacking and theft. But on the other hand there were some investors which has made a fortune on cryptocurrency market. For example Winklevoss twins made a US$1.5 million personal investment.

Next aspect of risk is a price volatility. Bitcoin is over eight times as volatile as the S&P 500 and seven times as volatile as gold [5]. High rate of volatility of bitcoin exchange rate damaged the ability of bitcoin to be a store of value. It refers to all the cryptocurrencies.

Bitcoin transactions are connected with possibility of criminal activity. Cybercriminals (users of online criminal behavior) trade bitcoins on so–called black market. Criminal activity with Bitcoin transactions like theft of the currency, money laundering, the use of bitcoins in exchange of illegal items or services is much higher nowadays. With the development of online services, black market which involves cryptocurrencies attracts the attention of financial regulators, law enforcement and journalists. The FBI published a report in a 2012 wherein stated that "bitcoin will likely continue to attract cyber–criminals who view it as a means to move or steal funds".

Bitcoin transactions are out of governmental control. For example FBI and The European Banking Authority are concerned about money laundering with cryptocurrencies. In 2014 the operators of two exchanges system for the cryptocurrencies were arrested – they had been charged with money laundering[6].

By some critics cryptocurrencies' systems are considered a Ponzi scheme. It's a type of fraudulent investment operation where the operator (in this case an exchange system) pays returns to current investors (users) from new obtained capital from new investors. In case of shortage of new capital system collapses. In October 2012 the European Central Bank has published a report "Virtual currency schemes" [7] stating that some Bitcoin shares characteristics of Ponzi schemes. The Bitcoin Savings and Trust, a virtual hedge fund which promised investors up to 7 percent interest weekly, in 2013 was charged with defrauding investors in a Ponzi scheme involving Bitcoin by the U.S. Securities and Exchange Commission (SEC) and then shut down.

Not only Bitcoin transactions are not safe but also keeping them in wallet. Theft often happens to users who keep Bitcoins in wallet online. But thefts are caused by bug in exchange system or by malware which steal the private keys. Bug in exchange systems occurs at exchanges, payment processors and at online wallet services, which have been already mentioned. But the possibility of existence of bug concerns also virtual currency exchange systems. On February 28 this year, Mt. Gox, one of the biggest virtual currency system was hacked and users lost 850,000 bitcoins which was worth approximately $477 million at the time (7 percent of the world's bitcoin supply). It caused the bankruptcy of Mt. Gox [8].

With the development of technology cryptocurrrencies' system are threatened by malware infections and unauthorized mining. Malware program uses capabilities of all infected computers and uses its hardware to mine bitcoins. Users whose computers are infected, are unaware that hackers can steal their bitcoins from online wallet. Much of malware log keystrokes to record password, crack the keys or replace users' address with different address and trick users into making transactions with hackers (users send bitcoins to invalid address).

Decreasing the risk level

The simplest way to decrease the risk level is to introduce legal regulations. It means introduce a definition of cryptocurrencies into legal systems, institutions and procedures. It would make it safer because no country regulates worldwide Bitcoins transactions [9].

Decreasing the risk level of Bitcoin transaction concerns also users' behavior. The private keys should be kept offline, because it then makes it impossible for hackers to hack them – it is the safest way to keep Bitcoins in a wallet. The next point is connected with the security of a personal computer, web application or mobile device. To make it safer from malware it is recommended to install antivirus or antimalware program. On the cryptocurrency market there are a lot of risky cryptocurrency whose share price is more variable than for standard cryptocurrency. Investments on risky cryptocurrency (such as Coinye West, Dogecoin or Catcoin) whose names come from Internet trends are unpopular and vulnerable to collapse. To reduce the risk level it is recommended to invest on popular and stable cryptocurrency such as Bitcoin or Litcoin.

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