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CRYPTOCURRENCY

Abstract

The digital revolution is a change from analog and electronic technology to digital technology and is currently at its peak. Since we live in the digital era, it is logical that the digital form of money, that is, the cryptocurrency, had to appear. The cryptocurrency as a digital form of money functions with the help of a technique called cryptography. Cryptography is a process that translates legible information into codes that cannot be broken at all. The cryptocurrency is based on the digitized so-called. the main book of all crypto watch transactions called blockchain. Blockchain records individual transactions and ownership of all cryptocurrencies that are in circulation, and this system is managed by the so-called blockchain "miners" who have to update all transactions that have occurred and ensure the accuracy of the information. In this way, the security of the transaction is confirmed. This paper will address the theme of the cryptocurrency and their role in economic growth. Types of Cryptocurrencies will also be shown as well as their expansion in countries in transition. Among other things, we will see the market of the currency in Serbia and Switzerland.

Keywords: *cryptocurrency, economic growth, market, Serbia, Switzerland*

JELClassification: E42, M41, G35.

КРИПТО ВАЛУТЕ

Апстракт

Дигитална револуција представља промену из аналогне и електронске технологије у дигиталну технологију и тренутно је на врхунцу. С обзиром на то да живимо у дигиталној ери, сходно томе морао је да се појави и дигитални облик новца, односно, крипто валуте. Крипто валуте као дигитални облик новца функционишу уз помоћ технике под називом криптографија. Криптографија представља процесе који претварају читљиве информације у кодове, који се никако не могу разбити. Крипто валуте се базирају на дигитализованој тзв. главној књизи свих трансакција крипто валута под називом блоцкцхаин. У блоцкцхаин-у се бележе појединачне трансакције и власништво над свим крипто валутама које су у оптицају, а овим системом управљају тзв. блоцкцхаин „рудари" који морају да ажурирају све настале трансакције и обезбеде тачност информација. На тај начин се потврђује сигурност трансакције. Овај рад обрадиће тему крипто валута и њихову улогу на привредни раст. Биће приказане и врсте крипто валута, али и њихова експанзија у земљама у транзицији. Између осталог видећемо какво је тржиште крипто валута у Србији и Швајцарској.

Кључне речи: *крипто валуте, привредни раст, тржиште, Србија, Швајцарска*

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Introduction

We live in a fast world, wild world that is developing at tremendous speed. Every day is an opportunity for something new to see and learn and just when you think that that's it, more comes. Initially, we were all amazed by the fact that we don't have to go to the bank to pay our bills, that we can do that with just one click on the phone. As soon as we got used to it, a new phenomenon appeared and now we have to advance and understand the appearance of the new digital currency.

Cryptocurrency represents digital money that you can't feel, you can't hold it in your hands which can be confusing for a lot of people, especially those who are not able to follow all the changes that technology brought to us. The first and most popular cryptocurrency that emerged was Bitcoin in 2009. It didn't get the attention that it deserved back then, but now it is impossible to get around it. Some people sold their houses and properties just to buy Bitcoins with the expectation to wake up rich the next morning. Some of them did it, some of them are still working on it. Others have the opinion that there is no easy money without hard work which is pretty normal when you compare the way our ancestry used to live. Technology has developed to a very high level, but we have many educated people that are willing to share their knowledge and interesting facts about this new occurrence. Many questions appeared along with the new digital money, but the primary is what is it. In this paper, I tried to explain what is cryptocurrency, how does it function, what types can be found on the market, how did different countries around the world accept it. One thing is sure, a lot of noise and confusion was brought in when the cryptocurrencies became popular. Things are still not clarified, both sides have good arguments, those that accepted the cryptocurrencies and those that are afraid that it might all be just one big scam and bubble. One thing is sure, significant changes were made which can affect the economy in many different ways, and that is also mentioned in this paper.

The literature about this subject is endless, it could be studied for years and still find different opinions and understandings about this subject, but in this paper I presented the most important and most abundant ones.

Cryptocurrencies and their significance

One of the biggest inventions of technology in the modern world, that has attracted a lot of public attention, is the phenomenon of cryptocurrencies. According to some opinions, this is the biggest technology invention in the last ten years. So cryptocurrencies became very popular through a very short period of time.

Cryptocurrency represents a digital asset, whose main purpose is to be a medium in exchange, and while doing that, it uses the cryptography so that all the transactions are secured, everything new that appears is controlled by its own system. It is possible to say that cryptocurrency is a subset of digital currencies. The first cryptocurrency ever made was the Bitcoin, in 2009. After that, a lot of other cryptocurrencies appeared on the market, but they were called the altcoins, as they represented the mix of Bitcoin alternatives. Bitcoin does not have a centralized system, no one can control it entirely, like in electronic banking systems. In banking systems, we have an institution that

can issue currencies and print money. But things are different with cryptocurrencies. They use cryptography to gather all the information and data, and it all passes through blockchains, which represent the distributed ledger. The government has no power to produce new units it is all controlled through a virtual digital ledger. It is still unknown who made the Bitcoin, the only thing that is known to the public is that a person or maybe a group of people that go under the name of Satoshi Nakamoto made it happen.

Up until this year, a lot of other cryptocurrencies appeared, but most of the scientists and researchers think that they are similar to Bitcoin and that they are just a subproduct of Bitcoin. For this system to function, there are a lot of people from the general public that are called miners (Nakamoto, 2008). Their job is to use their computers for validation and timestamp transactions, as they add them to the ledger while using a special timestamping scheme. And also they get a big incentive for these actions.

Figure 1. The current value of the cryptocurrency on the market

#	Name	Market Cap	Price	Volume (24h)	Circulating Supply	Change (24h)	Price Graph (7d)
1	Bitcoin	$168,058,713,240	$10059.30	$5,994,810,000	16,706,800 BTC	4.40%	
2	Ethereum	$45,378,658,465	$472.65	$1,255,020,000	96,009,619 ETH	-0.76%	
3	Bitcoin Cash	$26,237,823,946	$1559.26	$1,303,260,000	16,827,100 BCH	-5.17%	
4	Ripple	$10,892,190,176	$0.282014	$566,001,000	38,622,870,411 XRP *	11.89%	
5	Bitcoin Gold	$5,493,125,189	$329.39	$99,534,300	16,676,711 BTG	-9.05%	
6	Litecoin	$5,054,491,011	$93.54	$342,408,000	54,036,708 LTC	4.03%	
7	Dash	$4,815,010,460	$624.04	$142,199,000	7,715,881 DASH	-0.90%	
8	Ethereum Classic	$3,325,399,399	$33.97	$1,652,010,000	97,884,172 ETC	33.06%	

Source: CoinMarketCap. (2017). Crypto-Currency Market Capitalizations, Retrieved on November 20, 2017, https://coinmarketcap.com. - screenshot –

The fact about these cryptocurrencies is that it is very difficult for the government and the law enforcement to control them. They cannot affect them in any way, they have no power in making decisions, they can only accept it as a legitimate way of trading, or not. The idea itself is brilliant, no one can control the flow of this currency, no government, no state, it belongs to nobody, but also it belongs to all the people who have decided to risk and buy their part of Bitcoin.

The first time that something similar to cryptocurrency and this way of trading was mentioned was in 1998 when Wei Dai tried to describe the "b-money", that represented an electronic cash system that was anonymous. And after that, Nick Szabo invented the "bit gold". It is considered to be the direct precursor for making of the Bitcoin. The "bit gold" represented a mechanism which was used for a decentralized digital currency, but it was never fully accepted and implemented. The idea was for participants to solve

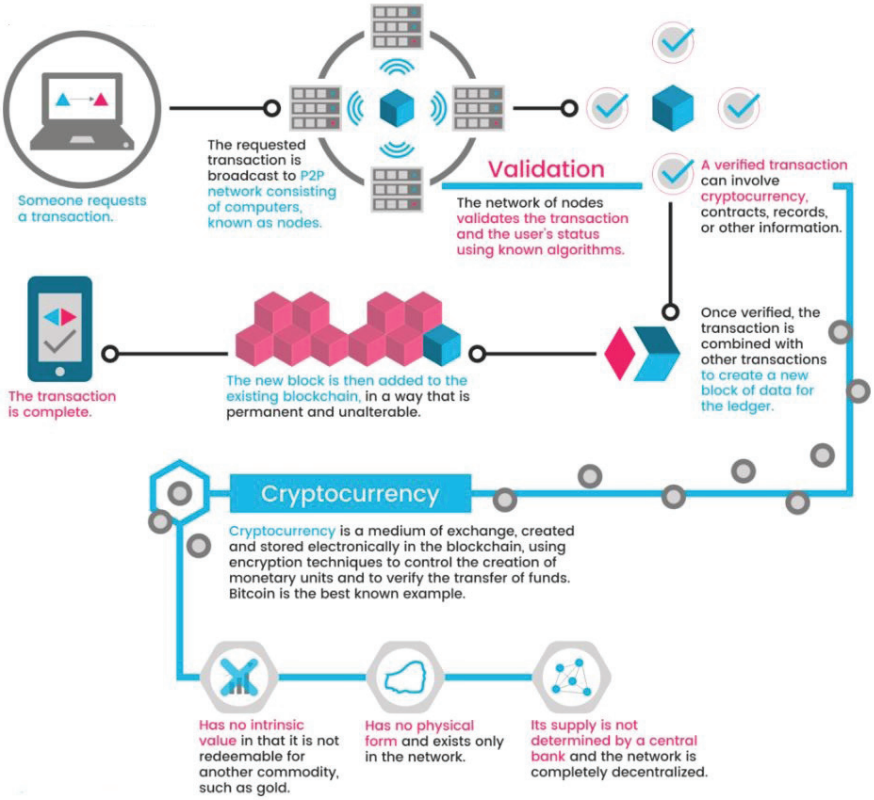
cryptographic puzzles with their computers, and through this network, all the puzzles that were solved would be sent to a public registry called the Byzantine-fault-tolerant and they assigned the solver a public key. So every solution just becomes a part of the next challenge, but if the majority of the parties doesn't agree to accept new solutions, next puzzle couldn't be started. In 2008. a proposal for Bitcoin was released, and many people suspected that it was Szabo who made it, but this time under the name of Satoshi Nakamoto. He categorically denied it, but there were many studies and researchers that tried to prove that it is actually him. When Ethereum appeared in 2015, they named one of their subunit value tokens the "Szabo".

Since nobody could control what happens with the cryptocurrencies, the UK government assigned the Treasury homework. They were supposed to do a study on cryptocurrencies, to see what is their role, significance and can they change anything, or affect in any way on UK economy. And also, this way they would see if there is a need to regulate this type of exchange. The first appearance of Bitcoin ATMs was in Austin, Texas, in 2014. It was installed by the founder of Robcoin, Jordan Kelley, and it had scanners that could recognize documents that were issued by the government, like a drivers license or a passport. By 2017 a big amount of Bitcoin ATMs was installed everywhere around the world.

The most important thing about cryptocurrencies, and especially the Bitcoin is that it can't be controlled by no server or any authority, it is completely safe and there is a bigger chance for the humanity to be wiped from the face of the Earth, than for a transaction or a user on this platform can be revealed.

The idea was to create a digital cash system, that will work on the principle of peer-to-peer network and files would be shared like this. And that is how it became the cryptocurrency. So, there is no server that controls this platform, but every peer has to own a list that has all the transactions so it can see if some transactions in the future are valid. It is possible to simplify the definition of cryptocurrencies as *limited entries in a database no one can change without fulfilling specific conditions*.

Figure 2. How miners create coins and confirm transactions



Source: Multiple Authors (2017). What is cryptocurrency. Retrieved November 21, 2017, https://blockgeeks.com/guides/what-is-cryptocurrency. - screenshot –

The mechanism works on a simple principle that can be called a p2p-technology. Every peer has a record that consists of the whole history of every transaction that was made. When someone gives a number of Bitcoins to another person, that file gets signed by a private key, and after the key is signed, the transaction broadcasts in the network, and it is sent from one peer to all the other peers. There is a certain period of time that needs to elapse for some amount to be confirmed. Confirmation is a critical concept in cryptocurrencies because they are all about confirmation. A transaction can be forged while pending, but when it's confirmed, it is set in a stone, and it becomes a part of historical transactions, in the blockchain. Miners are the only one who can confirm these transactions, they take them, mark them as legit and let them spread through the network. Miners get paid in Bitcoins for their work.

According to the opinion of central bank representatives, adopting a cryptocurrency such as Bitcoin would be a very big challenge for the government, because they cannot control it or influence it in any way, and it would be impossible to steer the economy, because the statistical agencies won't be able to collect data that they need about economic activity. People are becoming bigger fans of cryptocurrencies than the normal

currencies that are issued by the government (Athey, Catalini, Tucker, 2013). The whole monetary and exchange rate policy could change because the banks won't be able to control their very important functions. There are many questions directed to the legality of the Bitcoin. In some countries, it is completely legal, and their use and trade are possible, while some countries decided to ban them, like China for example. And in Russia, even though they are legal, it is not allowed to purchase goods with some other currency that is not a Russian ruble.

Dr. Garrick Hileman and the Centre for Alternative Finance (June 2017) have done a research about the significance of cryptocurrencies, and as they state in their report more than 3 million people are using cryptocurrencies as an alternative payment system for goods and services. The study shows that there are more than 1 800 people across the globe that have full-time jobs in the cryptocurrency industry since the companies started massively to engage across different sectors. As he says, at that time the market value of all cryptocurrencies was nearly $40 billion, which can compare to the sizes and values of many big companies.

The cryptocurrencies, especially the Bitcoin have become so popular, and people everywhere in the world started buying them, hoping that someday they will wake up rich. People have started taking lessons and lectures about investments in Bitcoin and other cryptocurrencies, there are some who sold their houses to buy Bitcoins. In Holland, a thirty-eight-year-old man sold his house and went to live with his wife and three daughters in a trailer. He sold the house for some cash and the rest of it for Bitcoins (Chu, Nadarajah, Chan, 2015). They are waiting for 2020 when they expect a big growth of the Bitcoin when they will finally be rich. The cryptocurrencies have dramatically changed people's lives. Some of them woke up rich the next morning!

Cryptocurrencies in the role of economic growth

Cryptocurrencies represent digital gold it is money that cannot be influenced on by political regimes. It is digital money which will maintain its value and increase it over the time. It is very variable, but it is a fast and comfortable means of payment. The trade on the cryptocurrency market has become insane. Even though they are used for payments, it is also used for speculation and for value storage, which just minimizes the payment aspects. The market for investors and speculators has rapidly grown and it is very dynamic. There are certain exchanges like Okcoin, poloniex or shapeshift that make possible the trade of hundreds of cryptocurrencies. Their daily trade volume is bigger than on the major European stock exchanges.

According to newspaper article "5 Impacts of Bitcoin on the economy" (2017), there are five ways Bitcoin impacts banking, finance, and economics:

1. **Power to the Dark Web.** Dark Web represents a section on the web that you can not access to using your search engine. We only have access to web surface, which is not even a half of what internet exists of. There is special software that allows you to enter the Dark Web, like Tor Browser. It is a place where you can find lots of illegal stuff. The same way you can make illegal transactions, and you don't have to give any information about yourself. Such transactions are empowered by cryptocurrencies such as Bitcoin, so the cyber crime has recently increased when these transactions became popular all over the world.

2**. Speculations.** In January 2015 Bitcoin's value was $170 and in July 2017 it was $2772, now it is more than $8000. The value of the Bitcoin changes all the time, it falls and it rises and there is a possibility that this will continue to happen. One day, you can buy a Bitcoin for a hundred dollars, the next day you got ten times more, or you lost a certain percentage of it. These so-called ups and downs of the value are a very big possibility for speculation. Trading in Bitcoins is very massive and it will probably just grow even more. This is also because of increasing the costs of investing in the stock markets. One share in Apple or Facebook could probably cost about $150, but in Bitcoins, it can be bought in fractions, and for a very small price. So it becomes an easy target for speculative gains (Briere, Oosterlinck, Szafarz, 2015).

3. **Politicization of money.** The phenomenon of cryptocurrencies is a revolutionary change in the handling of transactions. And this change has the power to change the economic structure. Before them, all the monetary transactions were controlled and enabled through central banks, but now everything has changed. Instead of the government and central banks, the power of controlling these transactions is in the hands of the masses. Banks and financial institutions kept track of all the transactions that ever happened, but now with the digital money, this economic power can be challenged by people. This means that a new autonomous body was created to facilitate transactions. Bitcoins could easily lead to the politicization of money.

4. **Apprehension among the Central Banks.** Cryptocurrencies can't be controlled by banks and financial institutions, and they are a very unpredictable form of currency. It gives the possibility to launder money outside the country. It makes a lot of gaps and loopholes in monitoring and collecting the data about money transactions, which can just lead to an inability to track all the transactions and economic activities. They are becoming a big problem for the government which cannot affect it in any way or controls it, so they stay helpless.

5. **The emergence of new markets.** With the emergence of cryptocurrencies, a lot of new markets appeared. These new cryptocurrencies made it easy for the new kind of market to enter, where no one controls the money market. These forms of transactions have become superior to the traditional money that everybody uses, because the transactions are free and it has a lot of different advantages, like sending money in a couple of hours. So it brings the concern that maybe this is just the beginning and that in the near future we might use a different currency which will not be anything like the one we have now.

According to John Cryan (Nikolić, 2017), a British businessman and chief executive of Deutsche Bank, money is very expensive and inefficient, so he thinks that it will be replaced in certain ways with some other more effective assets. By that, he means that there will be a combination of finance and technology, which actually means that there will appear digital money so the transactions flow will be much faster (Nakamoto, 2008). Many banks have already started to use blockchain technology and cryptocurrencies in order to speed up the transactions and clearings in finances. There are many different opinions on this subject, many people think that the cryptocurrency will become the only way of payment and that it will take over the regular system that is known to all of us. But there are also those who think that this will not happen soon and that cash will never be replaced with digital money, but it will just become another option for payments, sending and receiving money and market trades.

Types of cryptocurrencies

There are many reasons to invest in cryptocurrencies, but making a profit is by far most important. All the digital values are very unstable, so that is a big opportunity to make some big profits, but also it can be a big risk for the investment. A lot of websites offer users a simple way of buying, holding or selling cryptocurrencies like Coinbase, Bitstamp, Cryptsy, and BitPanda.

There are a few different online wallets, some of them allow you to keep only one type of digital currency and there are some of them where you can keep different kinds. Each of these websites offers you a wallet that you can download, and every wallet has a unique address that you use for receiving digital currencies from other people. The best way to buy or sell these cryptocurrencies is to go to a website which is used for exchange. All you have to do is open an account and download your wallet, and then you choose a way of payment. After that, you can buy any currency you want. Their price can vary depending on the website. Buying of a cryptocurrency can sometimes last a few seconds, minutes or sometimes a few hours, depending on the offered price and the type of cryptocurrency you wish to buy. After the system for exchange finds a seller that wants to sell at the price you offer, cryptocurrency is sent to your wallet, and the money goes to the seller. That is one way to buy them. The other way is to buy cryptocurrency at online communities (Luther, 2013). The price is very similar or even lower than the price on the websites. After you find and make an arrangement with the seller, you need to exchange your wallet's addresses so you can receive the currency and the seller gets the money. This is a risky way of buying because sometimes it can happen that the seller decides not to send the cryptocurrency to your wallet.

Cryptocurrencies can be divided into those that belong to a decentralized system, or those that belong to a centralized blockchain system. When it comes to decentralized systems, that means that every computer is a working unit for itself, there is no institution that authorizes it. One of the main characteristics of this system is that it is anonymous in transactions, and everybody controls it, but nobody has the power over it. And in centralized systems, there is usually a group of people that manage the currency and they guarantee the success of the currency. They go by the rule – know your customer. In that way, they are trying to stop money abuse because it is possible to check the currency and pay taxes for it (Investopedia, 2017). Both systems have their advantages and disadvantages. It all depends on the market, whether the investor will earn or lose money. But, the most important things to pay attention to when buying a cryptocurrency are the final number of coins that will be circulation, the value of its market price, stability in certain periods of time, safety, number of users and traders that have said yes to that cryptocurrency, public support and legal regulative if some countries accepted them (Investopedia 2017). There are more than thousand different cryptocurrencies that can be bought, but here are some of the most valuable that have the biggest capital on the market.

1. **Bitcoin** – It appeared on the market in 2008, but it didn't attract much attention back then. It was represented by a person, or a group of people, it is still unknown that uses the pseudonym Satoshi Nakamoto in a scientific study called *Bitcoin: A Peer-to-Peer Electronic Cash System*. The greatest interest for this platform was in 2013. A lot of companies from all over the

world, South Corea, India, Australia and Japan started to question the Bitcoin as a reserve currency in the future, but also as an alternative monetary and financial system. They have an opinion that if it keeps growing like this it could become a reserve currency instead of the American dollar. First, everybody thought that Bitcoin is just a powerful asset that helps criminal do their money laundering, but that image changed when everybody started investing their money in this cryptocurrency. And now, everybody wants a part of it, because it is anonymous and the transactions cannot be tracked. When it comes to adopting this way of trade, Japan has become the leader. It is possible to pay some services or buy certain products with a digital currency, called the Bitcoin.

2. **Ethereum** – It is a decentralized platform that appeared in the middle of 2015. Its market value is €28,6 billion. The creator of this cryptocurrency is Vitalik Buterin, a young crypto-genius. There are similarities between Bitcoin and Ethereum because they both use the blockchain technology, a decentralized public track about every transaction. But, they are completely different when comparing their design and the usage itself. The primary function of Bitcoin is payment currency, but Ethereum blockchain is designed to allow much more functions that could be useful to the business world. Many corporations were interested in buying this cryptocurrency because of the smart contracts. Smart contracts are computer algorithms that automatically fulfill the terms of the contracts as soon as the conditions are met. Ethereum has a goal to decentralize the Internet and so far, it has good chances to become the new internet. But it can't be considered as a single currency because of the Hack of the DAO – an Ethereum based smart contract. The developers agreed to a hard work with no consensus which only brought to the emerge of Ethereum Classic. And also Ethereum is a host of several Tokens like DigixDAO and Augur, which just makes it more a family of cryptocurrencies.
3. **Ripple** – It was introduced in 2012 by Authur Britto, Ryan Fugger, and David Schwartz. Ripple Transaction Protocol (RTXP) was built on distributive open-source Internet protocol and the native cryptocurrency called the XRP (ripples). Banks are rapidly adopting this system because its primary function is to enable secure global financial transactions of any size, without any fees and very quickly. Its market value is €10,3 billion.
4. **Litecoin** – A former employee of Google company, Charles Lee, presented Litecoin in 2011. It is a P2P internet currency that allows very quick payments and it is almost free for everybody in the world. Litecoin is completely decentralized global payment network. Technically it is very similar to Bitcoin, but it has some improvements such as the greater amount of transactions that can be done at the same time. But Litecoin is like a younger brother of Bitcoin which hasn't found its real use, so now it is just a backup just in case if Bitcoin fails.
5. **Monero** – It was created in 2014 and it was focused on privacy and it is a decentralized system. It is the best example of the kryptonite algorithm. It was invented with the aim to add those privacy features that Bitcoin didn't have. Every transaction made in Bitcoin is documented in the blockchain and the

track can't be traceable. When they introduced the concept of ring-signatures, this algorithm was able to cut the trails. The first time this cryptonite called the Bytecoin was implemented, it was rejected by everyone. It achieved great popularity in 2016 when some darknet markets accepted it as a currency but its price still remains very low. Many other currencies are a clone of the native Bitcoin code, but Monero uses CryptoNote protocol which is an evolution of ideas behind Bitcoin. The main difference is that it is very difficult to follow digital currencies that are based on CryptoNote protocol, and also the inner algorithms are different.

6. **Ethereum Classic** – It is just like Ethereum, but it is used only for smart contracts, it has applications that work just the way they are programmed. There is no room for any sort of delay, censure, fraud or involvement of the third party. This is just a sequel to the original Ethereum, in which there is history that didn't change, there are no external interference and subjective changes that represent a consequence of the transactions. Its market value is €1,7 billion.
7. **NEM** – This is a Peer-to-Peer cryptocurrency and it has a blockchain platform that was started in 2015. It is a platform that entered some new functions in the blockchain technology. It has an algorithm of proof-of-importance, coded messages, and a different reputation system. Its value is almost €1,6 billion.
8. **Dash** – It was presented in 2014 and it was known by the name of Darkcoin and Xcoin. Its market value is €1,2 billion.
9. **IOTA** – It is the first cryptocurrency that didn't use the blockchain technology, but instead, it uses Tangle, which is based on directed acyclic graph technology (DAC). The transactions are done without any fees, no matter how big is the transaction, and the system can easily scale. It was founded by David Sonstebo, Sergey Ivancheglo, Dominik Scheiner, and Dr. Serguei Popov, but it is run by the IOTA Foundation. With Tangle technology, every transaction creates a new chain that confirms itself. Its market value is more than €1 billion.
10. **Waves –** It enables making custom tokens so it is possible to make your own cryptocurrencies. It is also used for trading and crowdfunding and it integrates fiat currency gateways in your wallet.
11. **Augur** – It is a decentralized market platform that is built on the Ethereum, as a set of smart contracts that exist on the Ethereum blockchain. It was created in 2014 by Jack Peterson and Joey Krug.

Cryptocurrencies in countries in transition

Since the beginning of cryptocurrencies, many ups and downs have happened, the value varied. At one point you could be a billionaire in the next one you could lose everything you got. Even though some opinions were that the cryptocurrencies might be just a temporary attraction, they proved the opposite. They are taking over the modern world and Bitcoins are being bought every day regardless the price that's been higher and higher every day. In just two days the value of Bitcoin increased for $2 000. The question

remains, how long will this craze for cryptocurrencies last, will it replace the current traditional currency or just become another way of trading and exchanging currencies and contracts.

The total crypto industry today is in the hundreds of billions. Many developed countries have already accepted cryptocurrencies, especially Bitcoin, as a legal method of payment, but there are those with a weak economy that are still afraid to embrace all the benefits that these cryptocurrencies offer. Some of the countries even tried to develop and make their own cryptocurrencies that they will use. China completely banned the use of cryptocurrencies and trading them is now only allowed in offshore businesses. The main reason why countries decide not to use them is to reduce criminal activities and to include tax. Fear of not being able to follow any transactions happening on the internet keeps them from allowing this progressive digital currency to be a part of their economy. Russia is working on their own cryptocurrency that will be called the cryptoruble. There is not much information about it, but it is known that it will not be mined and that only government can issue it and keep track of all the transactions, just like the traditional currency.

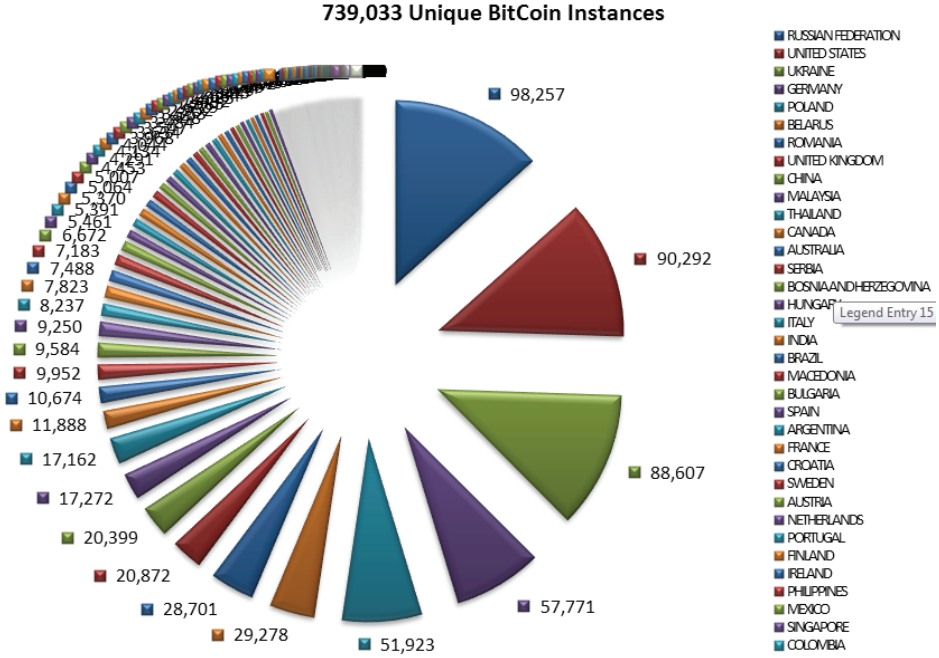
The market of cryptocurrencies itself is developing very fast. Every cryptocurrency that appears on the market has some new promises and a big story waiting to be told. They all have positive and negative effects or can have different outcomes. Fear is present, people buy digital money to secure themselves if the traditional currency devaluates. It is a normal state that in most of the countries, especially in those in transition, digital money is used for cyber crime, for selling and buying forbidden things, so there is no doubt that some illegal things are going on on this market.

Bulgaria made its own cryptocurrency and she called it OneCoin. It had a private blockchain and was promoted by offshore companies OneCoin Ltd from Dubai and OneLife Network Ltd from Belize, and the owner of both of these companies is Ruja Ignatova. But this was proved to be a scam in many different countries through various investigations. Bosnia and Herzegovina don't have any options to pay any products or services using these cryptocurrencies. Even if somebody has a presentation about cryptocurrencies in Bosnia it is probably some sort of scam or a trick because there is no reason for someone to try to convince you, it is just a very easy way to earn a large amount of money by investing a certain amount. In June 2017 in Astana, the capital of Kazakhstan, the President suggested a proposition on how to save the world economy from the currency war by creating a global cryptocurrency. As he announced, the time has come to think about introducing an international monetary payment unit which will save the world from wars, currencies, and decrease the instability on the market. His opinion is that the new currency should be based on the simple understanding of the emission mechanism which will be controlled by its users. The University of Macedonia conducted a survey about acceptance and adoption of digital currencies. This is a controversial issue because the legal framework still hasn't been made. It is not widely accepted everywhere, but every country has an opinion of its own and made a different decision.

Cryptocurrencies in Serbia

Cryptocurrencies are widely distributed all over the world, they are taking over the markets and people from all over the world are trading them. The fear of the unknown is very common and people are afraid of losing their money somewhere on the internet. Some people have the opinion that if you can't touch it and hold it in your hands it doesn't exist. There are even some examples of people saying that if you can't buy bread and milk in the store with a bitcoin, it is no good then.

Figure 3. According to a research done by William Fleurant, Serbia takes 14th place in the world by the usage of Bitcoin



Source: http://files.campus.edublogs.org/blogs.umb.edu/dist/2/123/files/2012/01/countries-v5q30e.png

The only legal way of payment of Serbia is with the native currency – dinar, unless if you want to buy an apartment, for example, which is defined by legislative. The National Bank of Serbia doesn't accept this currency as a legal way of payment, it doesn't guarantee anything that has to do with cryptocurrencies. It is not possible to go to a bank and just ask for one Bitcoin or any other cryptocurrency. They don't trade and do exchanges. Regardless of that, there are some organizations in Serbia that are trying to introduce this new technology to people and make it a regular part of our everyday lives (Minović, 2013).

In 2013 in Novi Sad, an E-High School announced that the tuition fee for the next school year could be paid in Bitcoins and therefore became the first school in that region that accepted payments in virtual currency.

The first time a Bitcoin ATM appeared in Serbia was in 2014 when a group of three young men, owners of the company Bitcoin365 set it up in a restaurant in Belgrade, Appetite. This is the first restaurant in this region that allows payment in Bitcoins. This project, Bitcoin 365, was created as a mutual project of some individuals that entered the world of this digital virtual currency in 2011, at the very beginning. So they decided to try and create an exchange that could operate on a global level. This ATM could only accept euros, and at that point, they were working hard to empower the machine to also accepts native currency – dinar. Since the law does not allow Bitcoins as a legal way of payment, the main goal was to raise awareness about Bitcoins. Later in 2015, one of the co-founders of Bitcoin Association, Mladjen Merdovic presented a new Bitcoin ATM at the same restaurant, only now it is possible to buy this cryptocurrency by using the native currency, dinar. As he implies, they didn't wait for the National Bank of Serbia to give their permission when they let this ATM work, but they did follow all the rules and regulations related to this matter.

One of their main goals is for Bitcoin to be accepted as a legal method of payment, not to be overwhelmed with unneeded regulations, but to exist some kind of order in doing business with cryptocurrencies and to stop misuse. In their opinion, it should be regulated by law, but in a certain way that will respect how specific this new trend is. In February this year, there were only three ATMs where you can buy Bitcoins in Serbia, one in Novi Sad and two in Belgrade. Aleksandar Matanovic, also a member of Bitcoin Association Serbia says that the transactions are very fast, cheap and that once that you send a transaction you can't bring it back (Matanović.Petrović, 2017). There are big oscillations in the value of this currency, but in his opinion, there is no need to rush and sell it, a better solution is to wait and invest in some other cryptocurrency. The next and so far the last Bitcoin ATM in Serbia was installed in June this year, in ICT Hub Space Playground and it can be used by those who already have accounts, but also those who want to create a new one. Serbia is the first country in the region, after Slovenia, that installed the Bitcoin ATM. This ATM is connected to the Bitcoin system and it refreshes every ten seconds and displays the current value of Bitcoin. Nikola Cvijovic, another member of Bitcoin Association Serbia, said that people should not be worried about the safety of this cryptocurrency and that it only loses its value when people get scared and decide to sell it, so they sell it for a very low price, and that is how the value of Bitcoin drops. The only way that Bitcoin platform could crash is if the whole internet crashed, or if the Bitcoin protocol stops working, which would be a miracle.

Switzerland and Cryptocurrencies

Switzerland is one of the countries that fought for people's privacy and freedom, but after a long time, this country has started to limit these rights. Since most of the European countries have fallen into an economic crisis, they had no other option but to fill their budgets by increasing the tax rates. When Bundestag adopted the new law that gave power to the Federal Police to control any data sent over the internet, like address, password, PIN codes, and when that was also done in Great Britain and other countries in Europe, many of their citizens had to find their safe place, which was Switzerland. However, the country that represented the symbol of safety in wartime or in peace,

started to act just like her neighbors and destroyed everything that she had built for centuries. In May 2015, Swiss Senate brought in a resolution that allows the exchange of information about everyone who has an estate in that country. New agencies were created that had the authority to follow, tap and collect private and personal data about any individual on their territory (Clancy, 2017). As a consequence of this new practice, people started to withdraw their funds from their accounts, because of very high fees. The most popular banknote in the world is the Switzerland's thousand francs bill. Almost 50 billion francs in cash are kept out of banks and out of reach for tax collectors. That is why Switzerland decided to stop the hiding of personal assets. So most of the payments now in Switzerland have to be done online, the tax must not be avoided (Jaag, Bach, 2013).

A fintech expert Rino Borini is a co-initiator of Finance 2.0, Switzerland's largest fintech and crypto event platform (Swiss Financial Center, 2017). He emphasizes the importance of crypto finance and how relevant it is that people understand it because it is becoming a very common subject. He tries to explain the difference between digital currencies such as Bitcoin, for example, and the blockchain technology that powers them. Cryptocurrencies are a faster, cheaper and much safer way of exchanging funds and information. According to him, the Crypto Valley represents a huge step ahead for Swiss technology and financial system.

Giracoin was founded in 2016 in Switzerland by the Gira Financial Group. It strives for a revolution in global currency and merchandise trading. They have launched a new cryptocurrency on the market which allows access to every person in the world through the mining process. It is independent of the state banking system and it works on a local level. It also uses the universal blockchain technology just like every other cryptocurrency. It was accepted by the Switzerland authorities and it has permission to perform its services.

Last year Switzerland was only considering the blockchain technology, and now she has become a part of it. There is even a city, Crypto Valley, which is the center for companies that work with cryptocurrencies. Crypto Valley is a nickname for Zug, a town in Switzerland which was established in January 2017. The government supported the building of this independent association to be a leading blockchain and cryptographic technology ecosystem in the world. The creation of Crypto Valley was initiated by Johann Gevers who was inspired by all the advantages that global industry offers. His opinion is that Switzerland is a perfect country for building the new generation of decentralized technologies since it is decentralized, citizens control the political system, it is stable, neutral, and open for all sorts of businesses. He helped to promote all the cryptocurrencies and the new technology that is based on blockchains by letting people give presentations, making good relationship with the authorities and developing an ecosystem of professional service providers.

In May this year, a computer virus by the name WannaCry attacked the systems of carmakers, hospitals and train operators and the hackers demanded the users pay so they can get back their data. The payment had to be done in the digital currency Bitcoin. Some of the users paid and when the hackers wanted to transfer the digital money, they used the platform of ShapeShift, which is a digital currency based in Zig. They didn't get to launder all the money, only a part of it before the authorities spotted the transactions and shut them down (Jaag, Bach, 2013). ShapeShift was in an awkward situation but they

denied to give any statements about this event, they only announce that they are working with law enforcement to prevent such things from happening again. Switzerland's approach has helped Zug to attract many managers and brokers that do business with the digital currencies. It is a home of the Ethereum Foundation (Luther, 2013). The city looks are not very innovative, but it proved how ready it is for new and revolutionary ideas. Zug Mayer Dolfi Mueller had a conversation with councilors in order to discuss what could be the role of the city. He accepted the idea that the city should start accepting bill payments in Bitcoin. It was a way of showing how open-minded the city is.

The headquarters of Bitcoin Suisse has more than 20 employees. In 2015 the company was doing 13 million Swiss francs in trading volume for one year, and now it is close to 300 million francs a month. If you want to buy a Bitcoin you can do it without using banks, and the transfers are recorded by blockchain technology (Briere, Oosterlinck, Szafarz, 2015). But if you want to buy or sell, you can ask the middleman to help you, and that is where Bitcoin Suisse enters the game. Most of Bitcoin Suisse's business is in trading currencies and it has 12 Bitcoin ATMs in Switzerland. They offer help to banks in Switzerland that want to start their business with cryptocurrencies and give opportunities to those who had some mistakes in the past. Bitcoin Suisse can screen prospective clients with accuracy and it can rely on the past transactions that were recorded on the blockchains. This way they can check their client's background and see if someone has a tendency to become the next Silk Road.[2] Bitcoin Suisse is also a member of the Financial Services Standards Association which is in charge of checking if everybody complies with the rules against money-laundering. The operators can choose to be self-regulated or Finma[3] can regulate them. But still, there is a lot of skepticism about moving Bitcoins, since the incident that happened with WannaCry. According to Candid Wueest, nobody can guarantee that the same thing will not happen again (Miller, 2017). He sees the infrastructure as a very dangerous place because the only reason they stopped WannaCry was that they made a mistake and returned to the same generic address while trying to exchange their Bitcoin. In September, Finma shut down unauthorized cryptocurrency provider called E-Coin. This company accepted millions of francs in public deposits and it did not have a banking license (Chu, Nadarajah, Chan, 2015). There were also some suspicions about the Ethereum, that it was being used by cybercriminals, but the Ethereum did not respond to this. The president of Crypto Valley, Oliver Bussmann said that they can't allow citizens in Switzerland to go back to letting people hide their financial secrets. They need to regulate this cryptocurrency business because they need to have a clear record what is going on with the cryptocurrencies if someone is moving traditional currency to a digital one (Franklin, 2017).

[2] Silk Road was an online black market and the first modern darknet market, best known as a platform for selling illegal drugs.

[3] The Swiss Financial Market Supervisory Authority (FINMA) is the Swiss government body responsible for financial regulation.

Conclusion

A cryptocurrency is a form of digital money that uses the blockchain technology and cryptography to protect the information about transactions and exchange made on the digital market. The most popular one is Bitcoin, but there are also other cryptocurrencies like Etherium, Ripple, and many others. They are decentralized which means that no one can control it, no banking system, financial institution or the government itself. It is unknown who created it, and the creator goes by the pseudonym, Satoshi Nakamoto.

The idea was to create a Peer-to-Peer Electronic cash system, which will be decentralized and no one would own it. In the decentralized network, there is no server, so individual entities do all the work by themselves. Every peer in the network has a list of transactions, so it seems like everybody controls it, but nobody owns it. A cryptocurrency like Bitcoin consists of a big network that has many peers working on it and every peer has a record of the whole history that contains all the transactions that ever happened. So if you want to transfer something, one person gives it to another and then the sender signs the transaction with his private key, and after that, the transaction is broadcasted in the network, so that everyone gets the information. It takes some time for the transaction to be confirmed, sometimes it takes seconds, minutes or even hours. But only miners can confirm transactions, mark them as legit and spread them across the network. When the miner finishes his job, every node adds it to its database where it becomes a part of the blockchain. Miners get paid in cryptocurrencies, for example with Bitcoins.

There are a lot of discussions about how it affects the economy of the country, of the whole world actually. Also, many people wonder if it is goin g to replace the traditional currency, but there is no answer to that question. It just remains to wait and see what will happen, but one thing is sure, cryptocurrencies are here to stay, it is not something that will just disappear in time. Many countries have developed their own cryptocurrencies which are used as a payment asset, in the form of digital money. It could be just a scam which will bring no good, but it could also be an easy way to get rich. We will just have to wait and see. So far, it is accepted as an digital currency and people are massively trading them.

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