THE MINISTRY OF EDUCATION OF THE REPUBLIC OF AZERBAIJAN

AZERBAIJAN STATE UNIVERSITY OF ECONOMICS

INTERNATIONAL GRADUATE AND DOCTORATE CENTER

MASTER DISSERTATION

ON THE TOPIC

"CAN BITCOIN BECOME A WORKABLE ALTERNATIVE TO REPRESENTATIVE MONEY?"

QARAYEV AZAD ILHAM

BAKU – 2019

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Bitkoin real valyutalara işlək alternativ ola bilərmi?

Xülasə

Tədqiqatın aktuallığı: Kripto valyutaların dünya bazarında real pulları əvəzləməsi prosesi inkişaf etmiş ölkələrdə çox sürətlə davam edir. Gələcəkdə bu dalğanın Azərbaycan kimi inkişaf etməkdə olan ölkələri də əhatə etməsi danılmazdır. Aktuallığı önə çıxaran əsas səbəblər əməliyyatların operativliyi, faydalılığı və banklara bənzər xidmətlər göstərərək dünya miqyaslı prosesləri özündə cəmləməsidir.

Tədqiqatın məqsəd və vəzifələri: Araşdırmanın məqsədi olaraq, virtual valyuta dövriyyəsinin faydaları, gələcəkdə real valyutalarlarla rəqabətə davamlılığ, onları əvəz edə bilmə dərəcəsi və risklərinin qiymətləndirilməsi qeyd edilmişdir

İstifadə olunmuş tədqiqat metodları: Bu tədqiqatda kəmiyyət və keyfiyyət metodlarından istifadə edilmişdir. Metodlar tədqiqat məqsədi ilə seçilmişdir. Müqayisəli və statistik analiz metodlarından istifadə kripto valyuta istifadəsini bölüşdürülmüş reyestr texnologiyasının iqtisadi və konstruktiv xüsusiyyətləri prizmasından nəzərdən keçirmək və xaotik genişlənmənin ən geniş yayılmış üsullarını aşkar etmək imkanı yaratdı, qlobal bazarlar təcrübəsi nümunələri ilə dəstəklənən blockchainin istifadəsi metodlarının məqalədə göstərilən təsnifatı isə inkişafın perspektiv istiqamətlərini aşkar etdi.

Tədqiqatın informasiya bazası: Bu araşdırmada beynəlxalq səviyyədə təsdiqlənmiş müasir xarici ədəbiyyatlar, elektronik jurnallar, iqtisadi ədəbiyyatlar, kütləvi informasiya vasitələrinin məlumatları və digər internet resurslarının veb saytlarındakı statistik məlumatlardan istifadə edilmişdir.

Tədqiqatın məhdudiyyətləri: Bəzi statistik məlumatların olmaması, kripto valyutaların aktuallığının son onillikdə artması səbəbi ilə uzunmuddətli statistik məlumatların olmaması və bəzi nəzəriyyələrin kripto valyutalara tətbiq oluna bilməməsi bu tədqiqatda məhdudiyyətlər yaratmışdır.

Tədqiqatın nəticələri: Hal-hazırda, Bitcoin bir valyuta olaraq qiymətləndirilmə meyarlarını ödəmir, çünki mübadilə effektiv bir vasitə, hesab vahidi və ya dəyəri saxlamır. Bitcoin indiki zamanda sonlu bir təchizatla kifayət qədər rəqəmsal bir əmtəə kimi çıxış edir. Son istehlak və deflasyon təzyiqləri Bitcoin'i yüksək spekulyativ edir..

Nəticələrin elmi-praktiki əhəmiyyəti: Sistemli riskin minimuma endirilməsi və valyuta məzənnəsinin sabitləşdiricisi kimi çıxış edən Mərkəzi Bankın olmaması səbəbi ilə Bitkoin sabit valyutalarının dəyişkənlik səviyyəsinə çatmır.

Açar sözlər: Bitkoin, Kripto valyuta, Blokchain

Abbreviations

BTC bitcoin (unit of currency)

ATM Automated Teller Machine

ETFExchange-Traded Fund

DDoSDenial-of-service attack

CRT Credit Risk Transfer

GH/s Gigahash per second - primary measure of a Bitcoin "miner's" performance

FINTRAC. The Financial Transactions and Reports Analysis Centre of Canada

USD U.S. dollar

WBWorld Bank

WTO World Trade Organization

WEFWorld Economic Forum

ICO InitialCurrency Offering

GDP Gross Domestic Product

LTC Litecoin

COSSCrypto-One-Stop-Solution

LLCLimited Liability Company

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INTRODUCTION

As a matter of fact, many people have to pay for their personal value, such as gold, silver, or other valuable metal. The commodity turnover on the banknote was one of a kind of natural exchange, except for the fact that the mantas are more than a universal product, which makes it easy to store and transfer. Even though I had another option, it was a small rattle, a carrot, a dagger. But there are only those who want to believe that only a limited area, except for metals, which can be taken over any part of the world.

Post-procedure, with the sophistication of the economics, the demand for more than that, and the metal for their production. The paperwork, which was already worthless, was guaranteed by a variety of organizations (such as banks or government), but the warranties were far from extinction. To print a piece of paper can be anywhere, the money is still low. In the XX century, the world has dropped out of gold for the repayment of the bad gold metal, and the metal coins have the role of metal bills, which are guaranteed with full guarantees or real value.

Research Background: The cryptographic base is based on cryptography, and there is no data encryption in science. They are full of unobtrusiveness, lack of accessibility, and 100% protection from malicious attacks. It does not have any particular affiliation or organization, so it is up to the person to succeed, so steal. As a matter of fact, the crypto exchange rate cannot be overcome by inflation, because it protects the law, it is damaged. How much money does it cost, how much does it cost? If you want a total amount of money in a bitmap, the other user will have to use this system, and ten dollars will buy another one for the third time, and this will start with the electronic money will begin to make sense and mood exchange currency on some exchange rates. The course takes only the degree of fire, the more you can charge, the higher the course. Whatever happens to a non - existent jar, which controls or controls it. Read more about crypto-currency exchange.

Modern economy structural-production-technological. The main thing that distinguishes it from the point of view is its digital economy transformation. It's self President of the World Economic Forum Klaus Schwab in as well as in the IV Industrial Revolution. The IV Industrial Revolution is for the production of cyber-physics systems mass application. It is assumed that all physical systems in a single network, will be merged in real-time mode and new behavior model. So Great Data (BIG DATA) access to the economy significantly improves the quality of decisions made will have the opportunity. The development of new technologies is capital and the difference between earnings and labor. A new economy based on digital technologies will also change his identity. Because of the IV Industrial Revolution will also lay the foundation for the new principles of ethics and aesthetics. The contours of the new economy we talk about now seems to be.This is one of the new requirements created by the new economy a new form of service for the economy and a new service tool. It has been formed in response to this demand and today is the most

Actuality: The replacement of crypto currencies in the world market with real money continues to be very fast in developed countries. It is unbelievable that in the future this wave will also cover developing countries like Azerbaijan. The main reasons for its relevance are the fact that operations are operative, useful, and provide services similar to banks involving global processes.One of the discussed tools is Bitcoin. It appears from the analysis of Bitcoin data, the first reaction was almost negative. After a certain period of time, the cryptographic "death sentence" effective in its formation the technology will "live" forever. In his opinion, it is written about Bitcoin lately more comprehensive and more substantiated on prospects ideas differ. Human society cannot afford to denote the money. Money-specific product of maximal liquidity, which is universal the equivalent of other goods or services. Increasingly, the money is unrecognized cultivating all human civilization. With the advent of computer technologies and networking, the world has grown up in the epoch "Electronic money". The coins and banknotes are being plastered with plastic with Paypal cards, and the Internet works with many

payment systems, just for the electronically paid subscriptions, just like PayPal, WebMoney, Yandex.Money. At present, digital currencies do not emerge from national with central banks.

In our view, crypto-currency seems to be a reality. In addition, the digital economy and the IV Industrial Revolution digital currency is inevitable. Take note of an important point about Bitcoin would be replaced. We believe that the new industrial revolution and the new digital economy is large and small, advanced and a completely new economy for emerging economies the indicators will bring to agenda and in the world economy completely new "competitive" players. I am confident that the President of the Republic of Azerbaijan, Mr. Digital as a result of IlhamAliyev's far-sighted policy our country will also stand out in the field of economy. The world This is Azerbaijan in the current state of its economy the advantage of the economy, as well as its supplementary, is the chance.

Research Methods: Quantitative and qualitative methods have been used in this study. (Comparative, vertical and horizontal analysis, statistical analysis, correlation and regression methods, forecasting methods) Methods are selected for research purposes. The use of comparative and statistical analysis enabled the use of crypto currency to examine the economic and constructive peculiarities of the registry technology and to identify the most common methods of chaotic expansion, and the classification of blockchain techniques supported by global market practice patterns found the perspective of development.

Research Restrictions: The lack of statistical data, the lack of long-term statistical data due to the fact that the crypto currencies have increased over the past decade, and the inability of some theories to apply to crypto currencies have created restrictions on this research.

Significance of the results: The Bitcoin does not reach the volatility of the fixed currencies due to the lack of the Central Bank, which acts as a minimizing systemic risk and stabilizer of the exchange rate.

CHAPTER I. THEORETICAL CONCEPT ASPECTS OF A CRYPTO-CURRENCY AND BITCOIN

1.1. The essence of bitcoin as a new form of money

Bitcoin (from the English. Bit - a unit of information "bit" and coin - a coin) - a decentralized payment system for transactions with the same currency, also called virtual currency or cryptocurrency. The concept of the system was published in November 2008 on the Internet by its author (perhaps a group of authors) under the pseudonym Satoshi Nakamoto. Currently, one of the main programmers responsible for the system is American Gavin Andersen. In May 2016, Australian Craig Wright said that he was the creator of the system, but he did not show any weighty evidence. (Wikipedia)

In January 2009, the first version of the software for working with the payment system appeared on the Internet. Originally, the currency was used only by computer enthusiasts. On May 22, 2010, a programmer from the state of Florida Laszlo Khanich for the first time produced a documented exchange of bitcoins for a real item, transferring 10 thousand units of cryptocurrency to a user under the pseudonym Jerocs and receiving from him two pizzas. In 2010-2011 The first exchanges appeared on the Internet, where it was possible to exchange Bitcoins for real currency. In the spring of 2011, Bitcoin reached parity with the US dollar.

Since 2011, the payment system due to the anonymity of transfers has attracted the attention of people involved in drug trafficking and other illegal businesses. Starting from 2013, Bitcoins can pay for services and goods in some online stores, hotel booking services. In 2013, the University of Nicosia (Cyprus) became the first university that began accepting Bitcoins as a tuition fee. Currently, Bitcoin remains quite an exotic currency, but its scope continues to expand. As of August 2, 2017, the capitalization (the total value of all the bitcoins available in the market) is $ 44.7 billion, and the bitcoin cash that has separated from it - $ 7.2 billion. Principle of operation Bitcoins are not physically fit and are stored in an

electronic wallet. The data on user accounts and bitcoin exchange operations between them are stored in the system in an encrypted form based on the distributed blockchain database technology. The system is supported by users and volunteers who run their applications on their computers.Thebitcoin system works without regulatory authority. The only source of emission of a virtual currency is its "mining" (mining, from English mining) by users running applications: they use a small number of bitcoins for using their computer resources. The money supply in the system is limited - currently, about 16.5 million bitcoins are circulating, the system's algorithm assumes that their number does not exceed 21 million until 2040. In this case, fractional units can be used for operations: for example, 0.0001 bitcoin.Today trading in the global CRT market There are hundreds of crypto units available. However, the first non-centralized cryptocurrency of 2009 is the bitcoin introduced in January. Available Among the various types of crypto-currency.(S. Nakamoto,2008)

These crypto signatures are called "altcoin" less are characterized by innovation.

Compared to the beginning of 2016, cryptocurrencies the total market capitalization has tripled by mid-2017, reached $ 27 billion. Here's a great deal of more innovative crypto cash flows, and the lower share belongs to the subconscious. (SSRN Electronic Journal, 2018)

First of all, note that crypto-currency is electronic money, more preciselyit is one of its types. Cryptosystems - based on networks(network-based), anonymous (unmanaged), turnovernon-state payment systemsare a sample of non-state money. Crypto Currency - Creation and control based on cryptography, it is possible to remove the speed non-encrypted electronic money type. The first digital currency is bitcoin. Satoshi in October 2008aperson nicknamed Nakamoto is a network operating principle and the Internet"Bitcoin P2P e-cash paper" reflecting the description of the protocol file sharing and the first bitcoin was created in January 2009. It's also like onecoin, ethereum, steem, ripple,litecoincrypto-currency types

are also widespread. At present, there is more than one type of crypto-currency, and that's just the case in the near future, the demand for these currencies will be a high indication. The key point of the demand is the possibility of exchangewhich will determine the crypto valuation of many.

The advantages of electronic coins in cash are as followscan be evaluated:

• Excellent dividing and unifying - the remnants of money during the payment no need to repay;

• high compactness - the amount of money with the size and weight of the moneynot relevant;

• Very low emission value - money printing, metal,paper, paint and so on. it does not need to use it;

• Physical protection of electronic money, in contrast to cashmore simple

• security - without stealing, fraudulent, nominal modification and so on. protection (cryptography) and protectionelectronic systems.

In addition to the advantages, there are some deficiencies in electronic money.

These are:

• lack of regulatory regulation – many countries still have an unequivocal position on electronic money did not;

• physical destruction of electronic money carriers, as in cash it is not possible to recover the owner's money at the time;

• No recognition - what to do without a special electronic device that amount, and so on. it is easy and quick to do;

• Cryptographic protection of electronic money systems

There is still a long history of successful exploitation:

• Theoretically interested persons will have the personal information of the payers and an effort to monitor the circulation of electronic money from the banking system can show (try);

• security (theft, fraud, nominal) modification and so on. protection) with extensive circulation and trouble-free history.

Theoretically, there are enough protection technologies by using innovative methods, using the absence of perfection money can be stolen. Increasing the popularity of cryptocurrency in recent years the dollar system crunch.

As you can see, the value of crypto-currency is increasing. That's although the issues of legal regulation of crypto-currency are still remaining unclear. The essence of the legal essence of cryptography is the legal regulation of their goals. For example, for tax purposes. Crypto-currency should be accepted as a property, commodity, stock exchange asset. In order to stimulate innovation in the financial market, there is a need to pay to be accepted as a tool.

Differentiation and investment from Bitcoin's other payment options

The advantages of mastery are as follows:

1. A solid emission - to control it from the outside

It is not possible;

2. Changes in the price - that is currency-economic-political it does not depend on factors but on the basis of demand and supply.

Bitcoins have risky sides. Here's a risk source that depends on the reliability of the plant exchange services.

Bitcoin's price rose by more than 500% this year, the gold, the stock market

indexes and property.

The World Economic Forum (DIF, WEF) "Block Chain (Blockchain) Potential Difference " citing the global economic crisis in 2008 followed by a person called Satoshi Nakamoto monetary system was established. It also operates

with names such as "digital money", "cryptocurrency" the main difference between virtual money and traditional money, governments not by management. According to the report, around 900 virtual money worldwide there is. Among them are Bitcoin over $ 106 billion market value is in the first place. Bitcoin this year is over 500%showing an increase in gold, stock, investment tools such as property has passed. (R. Grinberg,2011)

Following a bitcoin worth $ 29.2 billion Ripple comes with Ethereum and $ 7.8 billion. Daily operations on each crypto-currency type When considering bitcoin cryptanalysis compared to a lot more used now we can. The second most commonly used "Ether" is a crypto-currency type. Other types of cryptosystems

The volume of transactions is bitcoin and ether cryptocurrencies which is significantly lower. But litecoin from the end of 2016, with the exit of cryptographic.(Virtual Currency Schemes, European Central Bank, 2016)

Most of the currencies mentioned above there is an increase in transit volumes. That's it Monero and DASH Crypto the rise is faster. Statically closer price orders placed in terms of liabilities are passive it is considered, that is, they do not move maintains a certain level. Market strong resistance (or support) stock market when approaching level filled with passive orders and market struggles resulting in Resistance (or support) overturns the barrier, or the price is back from it splashes. Immediate orders are aggressive ie purchase/sale occurs at current prices This gives orders to the market and if the order is larger, the rate is so high (at the time of purchase) or low (sales time). The market price of bitcoin higher than those sold because it grows. This is the move or aggression from another direction depends. Bitcoin is not tied to other national currencies or assets, is not backed by anything other than the confidence of its holders. The cryptocurrency exchange rate is set on virtual exchanges, carrying out operations on its exchange for real money. The Bitcoin rate of 1 until 2011 was less than $ 1 but then began to grow, including due to the activities of speculators and the growing popularity of the system. The peak of the Bitcoin exchange rate fell on November-December

2013 when on a number of online exchanges for one Bitcoin offered more than $ 1.2 thousand. Then there was a sharp decline: by mid-January 2015 for 1 Bitcoin it was possible to help out on the stock exchange $ 250. A new round of growth in the Bitcoin exchange rate began in the summer of 2016. In early March, the exchange rate exceeded the record figures of the end of 2013, reaching a historic maximum on June 12 - $ 3,000 per Bitcoin. This was followed by a slight recession, as of August 2, Bitcoin costs $ 2.7 thousand. A number of reputable economic publications, including Forbes and The Economist, warned from June 2017 that a "bubble" appeared on the Bitcoin market, and the rate of cryptocurrency may in the near future fall sharply.n addition to bitcoins, there are other cryptocurrencies, some of which were based on the software algorithm of bitcoin itself - this is namecoin (neimcoin, created since 2011), peercoin (pyrcoin, 2012), etc. Since 2011, litecoin (lightcoin) which differs from bitcoin using open source software. After Bitcoin, the second most popular currency is currently ethereum (ethereum) with a market capitalization of $ 21 billion.

You download and install the program. Do not worry, they can not get into the program, the main protect yourself from the fires. When the software is in use, or if the computer is connected to the bitcoins, it will be unreliable, so that you can positively compromise. There is also a search for a croak off the key. You can leave a message to any amount of money that you have already posted on (for example, at the discretion of the customer, products or services). After you have your own bitmaps. How to use a cryptographic keystroke to describe here what to do, it will go beyond the user-defined system framework.

The information is transmitted in every part of the video block for each user, and it controls the content of the program and any other requirement. This is the most up-to-date refund, just in case you have to digit the number in the program, it is guaranteed by all members of the team. How are gold and gold? The developers are no longer able to set the limit on whether to add a single item to a large number of bits, just like a job. Thank you for your interest in informing the blocks that are

being saved by the users of the computer. I am sorry to say or do not know, what is to be rewarded for, and there is a lot of participants, there are some programmers.

Even if someone transferred something in Bitcoin, it is counted on a single transaction. The block contains a lot of transactions that last for a few minutes (mid 10 minutes). As the transaction takes place absolutely all the time, the unit can be created anywhere, but not all too simple. The block must have a special verb code from 100 symbols, calculated by cryptographic algorithms (seeing or designing). On the basis of the ten points in the block, the trail can be traced to another block. The code can be countless multiplayer options, but the unit can only be loaded in volume unless it is in line with the current program. This is a rule defined by a null in the code header.

As the code does not cope, it is counted that it will not be able to compete with it. You can only do one-to-one calculations up to the end until the resulting code is received. As soon as it's done, the block with the code can send the scan to the system. If you go all the way, you'll earn a living. Rewarding is only a ritzy one, who initiated the decision, diminishing the next block. The system has been set up for a minimum of 10 minutes by making the average time at the decision of the new block to complement the new block. It means that all the time spent in the dock cannot find the solution to the problem quickly, simply because of the power of computers. The solution can be detected only 3 minutes (in case of expiration), but after 20-30 minutes the unit can be molded, there is always a medium of time for all 10 minutes. If you either start or ignore it, then the rule code will be added to 0, which will allow the task to be made 16 times (using the six-digit code), and the amount will be deducted more than once. In the long run, the long-term recovery and the need to search for a lot of time, the problem can not be resolved, and what is going to happen is nonexistent. This will be the end of the duckling bitcoins. The unmatched mathematical scale is obtained, with the maximal size limited to 21 million. But the theoretical figure is not exactly what it takes to get it, but it can only be locked. If the developers have broken the rules again, the number

of bitcoins will be increased to billions of dollars, but the truth is that the right to change is already inaccessible.Each new block must contain a previous code, which guarantees the interconnectivity and error of 100% protection from breakage (to interrupt the whole chain, even if the same unit blends with the most difficulties). The information is blocked and stored on computers, called "blockage", technology is used in other domains, or just in crypto virtualizations.t was just the decision of the creator of Bitcoin. [This differs] Bitcoin philosophy from centralized monetary systems, where the central bank has the ability to press a button at any time and create many trillions of new money - and this means that money that people have in circulation will inevitably depreciate because the total amount money in circulation is growing. The creator of Bitcoin laid in the algorithms of another mechanism that limits their total number in circulation. There is no person who has the opportunity to press a button and make more bitcoins that is embedded in the algorithm. Theoretically, if the entire community agrees that the algorithm needs to be changed, this is also possible. For example, it is known that every year some bitcoins are lost: people lose passwords from their e-wallets, send incorrect addresses, something else. That is, the number of bitcoins is not just limited but will decrease over time. Now it is growing because bitcoins are more produced than disappears, but when their number reaches the ceiling, it will slowly begin to decrease. This will deflate. In other digital currencies, there are already thousands of them, because many are trying to do something similar to bitcoins, but even better, other algorithms can be laid. For example, in the "Ethereum" system, an algorithm is laid, which assumes a certain inflation every year. But since the total amount of emissions each year is limited or reduced, mathematically, the total amount of money still tends to a certain limit, does not grow unlimited. This is a matter of monetary policy, which the creators of a particular currency have developed, based on their economic and philosophical principles.People argue that bitcoin is not backed up by anything, but somehow they don't think that in today's world no currencies are backed up by any assets - this is our kind of collective hallucination. Once there was another monetary

system: for example, the US dollar was backed by gold, in the 1970s a monetary reform took place - when the US financed the Vietnam War and they did not have enough money (this was one of the factors that led to the abandonment of the gold and currency system standard. - RS), they began to print money just like that. Thus, any money has value only because we decided that they have value. In the same way, as the natives used stones with holes or shells. Why does bitcoin have value? He has a certain practical value: for example, it is easy to make a transfer to any country, which labor migrants can use to send money to their family in their homeland.If you do not have a date-centrum and supercomputer, then you will get a bitterly busy. Let 's consider it possible, but it' s a patch of time. Probably the very best thing to do is to throw a golden jacket, which is already going through the whole lot. You can only share with other members, just like a tech, who is going to do it, or who just wants to sell theirs. Sami does not care what they are looking for, but there is no problem, there are suggestions and suggestions. You buy a bitcoin if you have somebody to sell, or replace something frustrated? Wrath of course. But for those who want the price to go, the price goes up, and this creates a new price. It would be too long to go, unknowable. It is possible to overturn and agitate, and it means despondency. They are the majority of organizing, professional and noncommercial biceps, and others may be able to break the role of exchange points (buy the cheapest, buy the dorozh).

In some of the ATMs and terminal terminals, which support the cryptographic solution, appear. Some organizing, specializing in the sale of bitcoins, even exacerbate something in the banknotes or coins. Но это не совсем деньги, and just write the key ciphers on the tween nodes. He looked at the metal tray and opened the open key, allowing him to add a bitcoin, and a sharpened hole in the hologram, which could not be cut off without a break. Ideal on the first look of the idea has not even come to terms with the propagandistic. The first one that has been added to the bitmap is a large number of users. Uninterruptible finishes the sum of several money transfers, and all this is a necessity for users of computers. However, for the first time, it was possible to block the size of one unit

of information (in the meantime, to create specialists to create a lot) in 1 megabyte. If blocking a block is 10 minutes, then this is the time to generate more information about more than 1 megabyte. It is possible that you can only upgrade to 2-3 megabytes, or slow down the processing time of the block from 10 to 20-30 minutes, and the problem will be resolved. But it is noteworthy that all the members of the community are seduced by the fact that they can only change their content. Honestly, millions of participants will not be able to agree on a one-on-one basis so that one of the first ones has been released. Everyone who agrees with the new rule, cut into Bitcoin cash, as long as it keeps track of the old ones, just like in the old system. The truth is that the new exchange rate is already a different one, and it also exists exclusively from the dowry. What is excluded and distant, as well as switch to the new system or not, every time you decide. The second goal was to beat the opponent with their own hands. The findings of the findings are now diminished, and the workloads are already calculated by the deductive capacity. Poetry Professionals on mining (startup) with just the same amount of transaction (the request for the translation of the bitcoins), which adds an extra amount of money to the number of translators. Other, who can make a gratuitous payment, or, of course, repudiated, will be stolen over and over again, and there will be no survivors at all. With the exacerbation of the number of participants, the problem is exaggerated. In the future, when the new bitcoins will be nonexistent, experts will start working on the radio only for transplants. How much will the party members be? The plot is a translation of the crypto-virtual currency for a full-fledged idea, even if the amount of money you want to pay for is too small or too large, but the transaction can be omitted. Creating a crypto-wave will make many new ones so unmanly that new ones are constantly moving. With long-term storage of savings in nat. currency, they gradually lose their value, decrease the purchasing power of savings. The inflation of traditional money is mainly due to an increase in the money supply in the country in excess of the needs of commodity circulation. In fact, today, rubles, dollars, euros are not supported by anything, they are not provided with gold. It's easy to create a certain amount of

money, you don't need to mine gold to print an equivalent amount of paper money later. In this regard, the money supply easily increases if required by the government (the reasons may be different - the growth of government spending, massive lending with unsecured currency).Cryptocurrencies are initially deprived of even the possibility of inflation, since their number, like the amount of gold on Earth, is limited by the algorithm. To create new bitcoins you need to spend time and energy - that is why they have value, like gold. (Demagogy. Cryptocurrencies are changed into real currencies and goods. There are prices in cryptocurrencies. They participate in the economy like other currencies, affect prices. They change the money supply in the country, leaving the mass of goods unchanged, except for computing facilities of questionable utility.) And, as in the case of gold, when most of the bitcoins will be mined, the price will increase. Of course, this will happen only if Bitcoin is recognized in the whole world when more and more people will need more and more Bitcoins. And in order to compensate for a limited number of coins - the cost of 1 coin will increase.Fundamental problems of Bitcoin: despite the significant advantages of bitcoin over traditional money, it is not suitable for use as the main currency for a full-fledged economy.

And the main reason is its deflationary nature and, at the moment, high volatility. Bitcoin, in its current form, cannot be a substitute for traditional money and is not suitable for the role of the main currency for the global economy. Even if regulators give up and accept bitcoin, deflation and other factors will impede the development of a cryptocurrency economy.And so far, bitcoin is used more for making fiat money on it than for regular exchange.To build an economy on cryptocurrencies, it is necessary to change a lot in them in order not to lose their merits, they become more like traditional money. Deflation leads to the fact that people start to accumulate more and spend less, which negatively affects the production of goods and services. And in conjunction with high volatility, this leads to the fact that people can make a profit only because of the accumulation. This will lead to the fact that the production will be less and fewer people, and it will kill the entire economy. It is difficult to determine the necessary amount of

money supply at a certain moment, therefore inflation is almost everywhere in the traditional economy. There are other things that we can do in this game (mine, mining, fishing, etc.), other limitations. Many of the new systems are being burned down to somebody else to solve a problem with other systems. However, the new system is up to a very small amount, and this is a very small amount of money, so the idea is to really believe that it is actually an interesting and hopeful idea to stay away from. Since Bitcoin does not have a central authority that decides when and how much Bitcoins should be added to the turnover, this aspect was predetermined by its creator. The man under the pseudonym Satoshi Nakamoto came up with a very simple and effective model for encouraging miners who keep the network running. (S. Nakamoto,2008)

To group incoming transactions into a block and distribute it throughout the network, miners need to solve a complex cryptographic problem. The first who decides it gets the right to add a new block of transactions to the blockchain. The miner, who has solved the block problem, adds the solution number to the transaction information contained in this block as if signing it. This signature indicates that the miner did the computational work correctly. Despite the fact that it takes about 10 minutes to solve each task, the validation of the solution by the other miners takes place almost instantly. If the majority agrees that the block is solved correctly, it is added to the main chain, and the miner who has found the solution receives his reward in the form of new Bitcoins. Through the proof of the work done (Proof-of-work), a consensus is formed between the miners of the network. One type of the participant is light clients. They do not need to download the entire blockchain. Enough to store the data necessary for the normal operation of the site. These customers do not require large computing power to maintain their work, due to which work fine even on mobile devices. By combining the PoW consensus algorithm with a peer-to-peer network, he created an impregnable repository for the value that everyone can see.(J. Brito, 2011)

First, the fact that copies of the blockchain are stored on many independent computers makes it protected from various hacker attacks. The Bitcoin network cannot be "put on" with a DDoS attack due to the lack of the main server. Cannot change account balance data. To do this, you will have to organize hacking of all computers that store a copy of the blockchain at the same time or take over 51% of the computing power of the Bitcoin network. İn the chapter defines the basic aspects of the recovery of cryptovalts with the use of nonfunctional units. Celestial/Task.based on the analysis of the international financial crisis and the economic and economic security of national and international practices, the implementation of the crypto-virtual technologies and specializations of privatization. Methodology: In the article, we use methods comparative, statistical and comparative analysis. Outputs: The crypto-realty of learning, the role, and role of the development of the financial and credit policy, appropriate qualifications, limitations and modernization of the financially successful stage of development:

-the market. Outcome/Significance. Use of digital technologies in payment systems;

-and the use of new technologies - that's just fine-to-do-nothing updates, but this is not the case for digital technologies and racketeering unobstructed development of right-wing innovations. Temporary lags and diffusers in the technological update of technology:

-and the right division in the payment system creates corresponding problems, in the development of new technologies in the financial sector economics are constantly gaining new financial products, or are controlled by existing law. Apply. We think that this is the "cryptocurrency exchange" in contact theoretical and practical-methodical context (under the "crypto-currency" is understood as a digital currency, the issuing and issuing of the asymmetric ciphering requirement cryptographic methods of protection) suggests that, in particular, to recapture the institutional and legal aspects of the particular aspect (aspects, regulating emission, repayment and settlement / payment using the crypt currency). In fact, the same is

true decentralization/anonymization emission (currency of the issuer) the state of the emission currency is distributed among the physical/juridical persons using some special software support for asymmetric ciphering and crypto-scripts) generate objective predictions for the development of "series" and non-deterministic schemes, using digital finance technology. In the framework of the Framework Fundamental Principles, the Fundamental Principles and Institutional Aspects Related to Digital Counterfeiting Technologies (in whole) and Sphere Settlements / Disclosures (in particular, Bitcoin). Creation of a crucial motivational factor, how much of an anonymous payment system and the creation of anonymity. Alternatively, the current financial system, which, as it seems, is constantly being erased. The cryptocurrency, which differ from ordinary currency, is their decentralization, there is no regulative authority, whether it regulates the cryptographic its emission. The emission of the crypto currency is the name of "mining" and is used in the power of the computer systems for generic unique sets of symbols that generate crystal currency. Any other means of subscribing, as well as the crypto currency, do the same with a high - cost tool, as well as only cost-free calculations the power of the cyberspace and the function of the cyberspace are used money. Bitcoin - a single payment system or a first-rate crypto-currency (in the incidence of contraction) . In 2016 Bitcoin and block building venture investments amounted to $ 550 million, by comparing with 2013 It has been more than 5 times that. Capitalization Bitcoin in 2017 made $ 16.9 billion. At the same time, it is worth to mention that the state-run and legislative separation of separated countries, starting in 2010, is active monitoring of the crypto - currency market (in particular, Bitcoin and others), and also optimally looking It is assumed that the normative-legal regulation of digital financial spheres. Similarly, the Bank of Angles in 2014 was the first in the year to the "Bank of the Digital Currencies", published by the authors in the report it is stated that "the bitcoinization is economical" because of the hypothetical risk for the creditworthy system from digital currencies. Under the subheading "Bitcoinization" is a subset of the crypto excitation of the base unit. The author believes that this would be justified by the

state control of the state, and the state regulator of the economy of the other methodologies. Although Bitcoinization is economically inefficient, its useBitcoin on one pound with pound sterling - is possible . In February 2015, the bankruptcy of the Hong Kong Stock Exchange was put into circulation by the investor in Hong Kong. 387 million dollars. At the time, either the applicant asked for a speculative pyramid Bitcoin, it is necessary to rely on the operations. Functioning of the crypto-currency exchanges has long been stabilized further in 2014, when the Governor-General of Canada favors the appropriate legal framework. By the way, in the Canadian Center for Financial Segment Analysis and Financial Transactions, and Reports Analysis Center of Canada, and further - the "FINTRAC") and to legally endeavor to legally endorse the law. In the other spheres, the stock exchange is either quoted or disposed of. Cash-in payments, with the help of digital finances, can be used to calculate barter strings. Income Tax (Income Tax), the Corporation Income Tax,Capital Gains version - telnet. The term "server" refers to a combination of Web sites that are publicly visible, which have a secret IP address on the server that is being split.Neither one nor the other is impossible. Secondly, the proof of work (proof-of-work) protects the network from the attack of the Sibyl and various manipulations in order to obtain illegal benefits.

Proof of work cannot be fabricated, or to calculate in advance. Due to the fact that the solution of a cryptographic problem that serves as proof of work, miners spend a lot of electricity, for which they have to pay, they have the motivation to act strictly in the interests of the network so as not to lose the right to earn rewards.

Proof of work provides a fair distribution of remuneration because it depends on the hash rate that the miner brings to the network. For example, if the miner owns 1% of the computing power of the network, then he will receive 1% of all the extracted Bitcoins at a distance.

Now almost all cryptocurrencies work on the same technology as Bitcoin, and the decision to use PoW for consensus in a decentralized network seems quite obvious. But it was Satoshi who first implemented this idea in practice. Bitcoin is

designed so that as the total computing power of the network grows, so does the complexity of cryptographic tasks that need to be solved in order to add a new block to the blockchain. The only way to solve these problems is to sort through all the numbers in a row until the solution converges.

In the early years of Bitcoin, when there were very few nodes on the network, it could be easily mined on a regular laptop with a factory processor. The computational power of the CPU was quite enough for quick problem-solving. Enthusiasts mine Bitcoins thousands, but because of their ridiculous cost at the time, no one was serious about storing their Bitcoats. As a result, about 2 million coins are lost forever. With the growing popularity and value of the world's first cryptocurrency, more and more people wanting to get money "out of thin air" began to appear. Along with the number of new miners, the complexity of Bitcoin mining also increased. Conventional CPUs have become very ineffective in solving these problems. Then mining began on top-end video cards with higher hashrate. Miners swept video cards from stores around the world, driving prices up to heaven. The national currencies that we all use are based on an inflationary model. It implies that tomorrow you will be able to buy fewer goods and services for your conditional $ 100 than today. The gradual depreciation of fiat money stimulates the population to actively exchange them for material goods, in order to earn more money, to get rid of them again, and so on in a circle. This alignment has been keeping afloat the capitalist economy and consumer culture for many years. People who believe in the value of the dollar, thereby trusting the US government, the Federal Reserve, and the global banking system. Without this confidence, the dollar will cost no more than the paper on which it is printed.

People who believe in the value of Bitcoin may not trust anyone at all except for the mathematical model on which it is based. This is just one of the reasons why Bitcoin and cryptocurrency have become popular, especially among young people. They do not trust the state and rely only on themselves. Many complain that the Bitcoin network is slow in processing transactions, that the blockchain

cannot be scaled, that the miners' commissions are too high. Some of this is true, something is outdated information.

It makes no sense to consider scalability as an actual problem of Bitcoin. Very few will use Bitcoin to buy coffee or fill the car for the reasons described above. For these purposes will use other coins. High bandwidth is important for a new generation of cryptocurrencies, designed to replace cash and electronic payments using fiat money. This problem will be solved by other projects, but not by Bitcoin. The Bitcoin network processes a maximum of 5-7 transactions per second. This is very small, but all the developers can do is increase the block size so that it can hold more transactions. But is network bandwidth really important if the majority of Bitcoins will lie on the cold storages of investors for years? A huge traffic jam in the queue of raw transactions, which arose at the peak of Bitcoin popularity at the end of last year, has long since resolved. And the introduction of the update SegWit allowed to partially smooth the problem of slow transaction processing. The transfer fee has dropped significantly and is now less than $ 1 regardless of the payment amount. More important is another Bitcoin issue that few people talk about. Despite the fact that he bears the proud title of a decentralized system for the transfer of value, designed to interrupt the hegemony of banks and put an end to the rule of the privileged minority, he unwillingly became part of the system he had to resist. Firstly, Bitcoin itself is extremely unevenly distributed. Slightly more than 1% of the addresses own 88% of the coins in circulation. Although, could one expect a different outcome in a world where everything is sold and bought for the American dollar? Secondly, the launch of Bitcoin futures on the US CME and CBOE sites in December 2017 enabled professionals with a lot of money to influence the value of real Bitcoin through a derivative. The cryptocurrency market is still very young. A full legislative base regulating the activity of the cryptocurrency assets market is just being formed. This allows whales to use various psychological tricks with impunity, for example, creating a negative news background in order to force people to sell their Bitcoins at the lowest possible prices. Third, the banks, seeing that Bitcoin and Altcoins are

gaining mass popularity, have shown quickness and decided to take possession of the main currency exchange markets. The Poloniex Exchange, through its company Circle, acquired Goldman Sachs. With the largest US stock exchange Coinbase agreed to cooperate Barclays, the oldest European stock exchange Bitstamp bought the Japanese bank MUFG through the company Yahoo! Japan. And, finally, the bright spot in the background of all the other crypto-market - Finance, most likely, will move to Malta, where it will cooperate with one of the "dirtiest" banks - HSBC. And all this happened within a couple of months. Perhaps, banks act according to the principle: "Can't win - lead", and try to take control of the crypt market, including Bitcoin in the early stages of development, until decentralized payment systems caused serious harm to the banking system. And the most interesting thing is that private investors perceive the arrival of large institutional investors, the same banks, on the crypto bank, as a positive phenomenon, expecting them to drive the price of the moon to them. Unfortunately, such investors do not understand that the institutionalists with big money and experience masterly own various techniques for extracting profits from the market, and that in this zero-sum game they never lose in the long run. I would be wary of the arrival of banks and hedge funds in the crypt, although this cannot be avoided.(CNBC, 2018)

1.2. E-money system development

At present, the scientific-technical progress allows for the procurement of the goods, or the business premises (the place of work). This is the way I can share my knowledge of computer technology as well as computer systems. At present, the state in the state, in the case of a lot of cultivars, the spheres of life are in the early stages of development. Electronic payment systems allow the buyer to purchase the goods from the merchant and the merchant. Many are plagued by the fact that this electronic money is plastic cards (debit or credit), allowing them to pay off in stores and in other companies. In addition, plastic cards like wide spreadsheets Visa, MasterCard, Cirrus, are no matter how much money they have. This user account can be accessed by opening the account, opening the box, issuing a card, and any other member of the same system as one-to-one.

It is possible to allocate to the basic stages of the development of the four basic electrons. The reason is that there is no link between electronic money in the development of electronic money, one-stop-shop in the banking system, and the lack of electronic money and electronic forms.

The history of the development of electronic payments is a combination of electronic records for bank accounts with cash register payers. By the way, the history of the electron monetary system is the first one with an electronic bank deposit. It's about 50 years old. 20th Stallion.

The embedded microprocessor in the plastic card has been preset to the second half of the 80th anniversary of the newest electronics. With an economical point of view, electronic money is an unobtrusive payment instrument. Delo in the volume, which means that the buyer of electronic money from the card is not the buyer of the card or does not accept the obligation to settle the bill with the bill for bank accounts. The right of a seller (in the case of a lender) will be deducted from electronic payments and will be restricted to the possibility of transferring money to the unsecured bank in the service bank.

As a matter of fact, the technical equipment, which can be stored in electronic money, can now be a plastic card, which can be driven by a cracked disk of the personal computer.

However, electronic data denomination is a matter of commercial bankruptcy, nor is it legally banned, which implies a significant shift in the spam. Fundamentals of non-renewable development of electronic devices are the main components of the system.

In any case, the

electronic money will be subject to the payment of all entities to the state by other means of payment. A new view of electronic money will make it possible to combine the uninhibited and non-monetary assets. They can even get used to technical devices, as well as commercial banks, as well as consumers. When dealing with the remedies, they have to transfer the technical equipment to one bank with a technical bank other than the bank account, which corresponds to the bank accounts, similar to those with no counterfeit money. As a matter of fact, electronic money can be used to turn off a single subject from the other party, and leave the bank without analogs with analogous counterparties.

The lack of innovation in some of the '90s has come to the fore from the newest electronic money. At the same time, two previous electronic monitors, denominational inexperienced forms of money, have a new look at analogs of digital money (banknote).

Electronic money totals model real money. When purchased, the issuer is emitting electronically identically similar to the different systems (eg, coupons). In addition, they are purchased with users, who pay with their purchases, and the salesman sells them on an emitter. If the emission is as follows, the individual is embedded in an electronic print, which is checked by removing a structured precedent.

From the physical properties of physical assets, anonymity, there is no indication of who and when they are exploited. Some systems, by analogy, allow the buyer to get an electronic value so that it is possible to define the connection between the two sides. This happens with the help of the scheme of the subordinate subset.

It is still worth noting that the use of electronic money will help to eliminate the inability of the authenticity because the system is basically the same as using the payment.

The scheme is embedded in the figure, with the help of digital finances.

The buyer realizes the real money on the electronics. The Client can store a duplicate of two items, which is defined by the system:

The computer is on the disk.

On smart cards.

Different systems offer different circuit diagrams. Some open special accounts that are listed on the stock exchange at the seller 's disposal. Some bottles can be remitted electronically. When buying or purchasing a subset of the buyer, the buyer makes a copy of the banknote, puts them in the bank, when the real money is deposited on the account and they are returned to the client. You do not have to worry about it. The dashboard or smart card is damaged by an inexhaustible amount of electronic money. The buyer is a listener on the server of electronic money for the purchase.

Emitting electronic signals to banks, as well as non-bank organizations. However, the original system can be converted to different types of electronic devices. Only the emitent can melt the electron in the melt. However, the use of similar non-financial structures is not guaranteed by the state with guarantees. However, the cost of the transaction processing is an electronic means of payment with electronic means of payment.

In the event of a payment through the Internet, with the help of credit cards you can:

Buyer. Client, having a computer with a Web browser and accessing the Internet.

Bank-issuer. Here is a bookkeeping account for the buyer. The issuing bank shall issue the Card and the guarantor of the financial obligation of the Client.

Producers. Subscribers are logged on to Electronic Commerce, and their products and services will be purchased from the Client for the purchase.

Bank-acquirers. Banks, which support the sellers. Every single seller has a single bank, with ten dollars in its own account.

Payment system Internet. Electron components, which appear to be interlocutors with other players.

Traditional payment system. Complex financial and technological support for card servicing. The basic tasks of the Fund are: - payment of the payment system, - use of banking products and services, as well as bank accounts, use of intermediate and other expenses; The payment system participants, are physically and economically dependent, using common credit cards.

Processing center payment system. Organizational, providing informational and technological interaction among the participants of the traditional payment system.

Estimated bank payment system. Credit organization, implementing interconnections with participants of the payment system, on the processing center.

Apparently second priority. In this case, the card cannot be deposited in the store, and, accordingly, will be exposed to the risk of loss of payment by the buyer or dealer. In the volume, and in other cases, when requisitioning credit cards, all or some of the users will be able to intercept their attackers into the network. To prevent this from happening, they are predacious.

Encryption, asynchronously, blocks the possibility of interception of data in the network, for example, the buyer/seller, the seller/payment system Internet, the buyer/payment system, the Internet access with the help of protected protocols. The SSL (Secure Sockets Layer) protocol is the most widely distributed day. In its core, the scheme of asymmetric ciphering with an open key is used, and the cryptographic scheme uses the RSA algorithm. Thanks to the technical and licensed features of the algorithm, it is counted that the SET (Secure Electronic Transaction) standard is now being introduced to SSL during transaction processing, which is based on credit card access to the Internet. With the new standard, you can not ignore the security features, including the possibility of authentication of all transactional signals. The payment system sends a request to the Internet to authorize the traditional payment system.

The following is a list of bank-issuer online banking database (BD) accounts. At the same time, the BD processing center will transmit the bank-issuance request to the authorization card and will be deducted. Whether or not this database is a part of a processor center, it also reserves the right to place cards, stop lists and queries for authorization. Herbal extracts are constantly being renewed by banks and issuers.

The authorization process is credited to the Internet system. The store earns the result of the authorization. The buyer wins the result of authorization through the Store or non-payment system from the Internet. At a positive result, the shop opens the office, or relinquishes the goods; the processing center transmits the offset banking transaction to the consolidated transaction. Money to the account of the buyer in the bank-issuer is recorded through a bank account on the store in the bank-acquisition.

For example, a similar payment system is not required to provide specialized software support. It can also be supplied to the buyer (called by an electronic pillow), which is sold to the customer and serves it. For the first time, we have reviewed the WebMoney Transfer electronic payment system. There is a lot of

money to pay for, and that's just about a minute before the money is transferred to the account. It is not necessary to pay for the amount of money you pay for at the time of the payment, because the person went to dinner, while the program was blocked, and the ten received the message, that this is a sum of money transferred.

The amount of payment is very high when purchased with the exact "digital goods" - all-in-pin-codes and access code. He had a phone call, and when he found out that he wanted to call for the granite and he did not know, it was a phone card, and he did not have to wait a week before the banknote. It is easy to understand the number of electronically dialed and now you can get a new code for the new call code. Analogously you can afford to use a variety of services that you need or just for a few days, and pay, for now, to pay for the Internet, mobile phone. By the way, they can only get the credit card, but they do not have much to do, and they are all accessible to the Internet. The second is a very good value for the electronic money - the ability to just pay, but not to pay the money. When you look up the possibility to get your money in the long run (which is not possible, even if you use a creditor), get paid for the expired work, sell any goods, services or products. It is understood that you can also pay for electronic money in a bank, get postal transfers or Western Union, but it is inconvenient. It is possible to use the service line. Triple-size property - the ability to pay for micro-payment (the order is 1-2 rubles, which is only available at other non-cash payment systems). This, of course, is a great deal of different Internet services, which make users more aware of the number of users. Just because the tax system is not very distracted. The client can deposit money on the bank account and make a note, send them to the post office, get the points in the nearest point. Electronic money - this is a very convenient tool for a great deal of money, in the number of microloans. They are allowed to enter into the electronic account, to pay for products, apartments, telephone, as well as to manage business assets in the network. Now, with a fast track record on the physical bank account, the virtual version will be the same as a virtual version. If you do not want to post an ordinary account anymore, then the Internet will allow you to go through the online mode. After all, banks offer low

tariffs for Internet-based account maintenance. Perhaps this is the fastest exclusion, the norm. Exactly the number of users of the Internet and popularity of electronic money and popularity of Internet-Banking. By the way, in the nearest two-three years, the number of bankers offering online payments on a paid basis varies considerably. And it means that the Internet banking service will start to decline. Modern technologies allow banks to use the multi-purpose system. In the ordinary subpaddet, typing on paper documents, a "virtual bank" client uses a numeric digital numerical digital signature (EDC). The pay-per-click subscription can be used to disable the floppy, chip-tablet or smart-card. Otherwise, the user will log in to the system. By the way, analysts, who want to sell their electronic devices, will be able to sell their products and services on a regular basis, as they offer more favorable goods and services. (S. Barber, X. Boyen, E. Shi, E. Uzun, 2015)

By subscribing to ABA / Dove, the electronic payment system can increase the amount of cash and cash flows, as today is the second time the store purchases electronic merchandise utilized. The most expensive items are traditionally paid for by 33% of buyers.

At the same time, online buyers can buy online credit cards, while the average percentage of respondents use electronic mail and money mail transfers, while virtual buyers use R2R-cards.

Both users use the same one-time account with electronic devices, including credit/debit cards, direct payments, or the use of online banking products. Analysts say that the online payment for the year 2007 has been postponed due to the fact that many users start using or paying for this option. At the same time, 21% of respondents were admitted that they were paying off their bills by their counterparts. In the field of successful market research, Internet-trading is guaranteed in the current financial markets and in other financial markets: state-of-the-art prints; currency; slim.

In the future, online trading will be determined by the following trends. All in all, the spectrum of markets and traded instruments, offered in the framework of

the Internet-trading system, providing accurate and offered services and spectrum of client-based services on the basis of full automation. We see an interconnected interconnection in the frameworks of single Internet banking function, banking system, Internet trading, and depository and back-office services. Otherwise, the process will continue to be actively expanded by analytical and informational support on the basis of client integration with informational and analytical Internet systems developed by informational agencies.

1.3. Bitcoins in coins and denominations

What is a cryptocurrency? In short, this is a decentralized currency with protection against reuse based on the achievements of modern cryptography. The idea is that each transaction is irreversible and is confirmed by newly generated blocks that meet certain requirements. These blocks are computed by the whole community, are chained together and are available to all for viewing as a single database. The procedure for calculating blocks is called mining.

Bitcoin technology is one of the first successful practical solutions to the so-called problem of the Byzantine generals. Briefly, it is formulated as follows: how to establish trust between parties connected only via a communication channel that cannot be trusted? One of the key points in the solution is the cryptographic method of proof-of-work - those “useless” calculations that must be carried out for a long time, but the proof that they were, should be checked instantly.

Over time, the size of the database will only grow, as will the capacity of the storage media. What is the database made of? A database is a blockchain, a chain of data blocks in JSON format. Each block contains all the information necessary for the functioning of the network, its own sequence number and the hash sum of the previous block. Naturally, in the very first block, there is no such hash sum. Moreover, stringent requirements are put forward to the hash (hexadecimal number): it must begin with a certain number of zeros, or more precisely, it must be less than a special parameter called "bits". The parameter inversely proportional to it is called "complexity". This mechanism allows you to securely store all other necessary data in a distributed network because if you change at least one character in a block, then its hash will change completely and all zeros will disappear instantly. What kind of calculations occurs during mining and how to achieve such beautiful hashes, which, in fact, are completely random numbers? Mining is nothing but Bruteforce. Bruteforce, which is carried out not for the purpose of attack, but for the purpose of protection. The system is such that it is much more

profitable to brute force in it for the purpose of protection than for the purpose of the attack. Just because, in order to protect, most of the people are bruteforcing (and in practice, everything). Despite the fact that the hash function is calculated using a rigorous mathematical algorithm, brute force with the aim of finding a beautiful hash is possible due to the nonce parameter. The miner simply scans the various nonce values one by one, calculates the block hash, and if one day you are lucky and the hash responds to the complexity parameter, then the lucky one will receive a reward in the form of new bitcoins and commissions of all transactions included in the block. Bitcoin clients are divided into two types: thick/heavy (Bitcoin-qt, Armory) and thin/light (Electrum, Multibit). The difference is that for their work, thick clients require a local copy of the entire database with a log of all transactions over the entire life of the network, and thin clients only download information from a decentralized network as needed. The existence of a network requires the presence of thick clients in it, however, thin clients also make it possible to fully use Bitcoin - for example, this is especially logical on smartphones. Before the central banks' monopoly, gold and silver served as money, which has a significant cost of production, while the cost of printing a hundred-dollar bill not secured by a rare asset is 800 times lower than its nominal value. And the cost of issuing a digital dollar is generally zero. In Bitcoins, despite their digital nature, there is a significant cost, similar to gold and silver coins. Moreover, the more bitcoins exist, the higher this cost is, just as gold or silver becomes more and more difficult with time because of their limited quantity. The maximum possible number of bitcoins is also limited since this is the sum of a decreasing geometric progression that is finite. The cost of unsecured paper money exists only at the expense of laws obliging to accept them as payment and the monopoly of central banks. If the printing press was completely de-monopolized, paper or digital money could not at the same time be worthless and not have real security if the printing presses would have the ability to issue unlimited emissions.

The network is built in such a way that one block is located with a certain periodicity, regardless of the computing power - that is, the complexity of the

calculations is self-regulated. At the same time, while the network is growing, each newly generated block also contains new coins. In the case of Bitcoin and some other types of cryptocurrency, the number of coins that may be in circulation is limited at the protocol level, and the number of newly mined coins gradually decreases exponentially so that it never exceeds the specified limit. Each user who generated the block receives a fixed reward, as well as a commission of transactions, which he confirmed by including them in the block. The cashier Bitcoin is a numeric code that uses a single peer exchange rate system and represents a cryptographic code. How can your Bitcoin be able to find out about any transaction or transaction in your account?

The physical coin of Bitcoin is an analog-digital currency that is embedded in the image of a straight - line coin with an exclusive design. Some of the coins are exceptional souvenir character, and at the same time as the other currency - a currency that is fed into a physical jacket.

That is why in the Bitcoin system, in which there is no monopoly, there is no possibility of unlimited emission. Even the immateriality of bitcoins is their advantage as a means of payment over gold due to the lack of mass and volume, as well as the presence of unlimited exact divisibility (at the moment, the divisibility is up to the eighth decimal place, however, if necessary, it can be increased) so that they would all. " But there is a drawback. Bitcoins are inferior to gold in that they currently do not have total recognition, the states still do not store their reserves in them, unlike gold (although South Ossetia once thought about this). And even the opposite - a number of central banks openly spoke out against bitcoins. But in silver reserves of the state or central banks also do not store.

The coins can be molded out from hard and semi-finished metal or simply by spraying, with a variety of designs and nominal value. The industry does not regulate the production, but the fact that the real estate owner does not need the design and production of the monetas. So, restricting the issue of Bitcoin is due to the complexity. But the question may arise: how is this parameter regulated in an

unregulated system? First, the blocks include time in the UNIX format, that is, the number of seconds that have elapsed since midnight on January 1, 1970 (the so-called UNIX era). The time is taken from the clock of the system on which the block was found. This parameter directly affects the complexity of mining: it is periodically recalculated so that the average time between blocks remains equal to ten minutes.(D. Chaum, 2015)

The question arises: can a miner cheat with complexity, specifically slipping the wrong time? No, because the miner who finds the next block of the chain will be random. Small deviations in the system time, of course, are not critical, but if the deviation is strong, then the reward for finding a block with the wrong time will not be received since such a block will become an orphan.

Orphan blocks are another important element in the Bitcoin self-monitoring mechanism. They can occur even in the absence of the wrong time - for example, when two different blocks are found almost simultaneously, this is quite a regular situation.

Suppose two independent miners simultaneously found two blocks with the required hashes and learned about a competitor block only after finding their own. Such blocks will have the same sequence numbers, but the blocks themselves are unlikely to be identical since the addresses for crediting the rewards will be different. But blocks with identical sequence numbers are not allowed in the blockchain. Which one will go there? The fact is that, most likely, different miners will look for a nonce for a new block, including different hashes in it. The block will enter the block, the hash of which will earlier enter the next one.

However, they can either be used as a refund for a discounted system, but not for the value of collectors and can be replicated with a digital currency, you can switch on the hologram and skip the QR code for a particular key. The youngest physical bitcoin, bitmind, is a credit card, but a physical bitcoin Casascius followed by an embossed monet. And what if two new blocks with identical sequence numbers were found almost simultaneously, but now with different hashes of the

previous block? OK, no problem. Just looking for the next block. Theoretically, parallel chains can constantly lengthen, but the longer the length, the less likely the existence of such bifurcations of the chain. According to the Bitcoin protocol and the Bitcoin client software code, the reward for the block included in the chain will be considered received only after 120 subsequent blocks are included in the chain. That is, the maximum allowable length of a temporarily forked chain is 120 blocks. In practice, the length of the temporary bifurcation of the chain rarely reaches even three blocks, so the probability that it will reach 120 tends to zero. The same can be said about address collisions, but in order for a collision probability to be truly considered zero, it is necessary for the random number generator to create truly random numbers. In 2011, after 2 years of promoting the first virtual bitcoin, Mayku Caldwell, the author of Casascius, came in the idea of buying a little bit of physical obscurity, so that even virtual money could be used in the bag or to collect in the collection. Delaware souvenir coins are marked with a simple task, so the Mike for the development of the coin, which included a private key and earned 1 bit. There were 3500 coins minted by the author of the mines. The coins were immediately released by collectors, and in 2013, Mike launched a series of new designs. At the end of 2013, the United States regulators were selling a coin with a coin sold with a bitcoin. Caldwell did not pay any attention and did not want to sell the money. By the functionality of all physical monsters, Bitcoin can be divided into two cardinal differentials: souvenir monets and coins. In the first case, the Bitcoin coin can be compared with the collectible coins of the National Bank, and the second one is a prominent cryptographic collapse. The material Bitcoin is exhausted in different variations.

Casascius was first physically involved with bitcoin. Caseta Casascius, made of accessible monsters from silver, aluminum, and Latin algae. The first variant of Bitcoin is a special physicist block.. Monetary coins can be molded out of the smallest metal, but their prime value is determined by the balance.

Monetary coins are complemented by built-in public and private keyboards, quoted and by a digital-to-code codex. The private key is embossed on a special card, mounted in a coin, and protected by a hologram, which results in a new pattern. Balance moneties can be deducted from the public address, but the cryptocurrency will only be valid for monetization.

Some of the producers of the problem, in the legal order, produce monsters without parcels of digital monetas, but with the possibility of self-helping.

Alitin Mint: The product brand belongs to the premium class. They are made of silk silverware, they are weighing up to 2 oz each. The moment they get out of the way is: go to the expedition with associates.(D. Yermack,2013)

CHAPTER II. ANALYSIS OF THE ELECTRONIC MONEY DEVELOPMENT IN THE FORM OF BITCOIN

2.1. The basic principle of the work of bitcoin

Blockchain is the technology on which Bitcoin is built. But there are probably dozens of other ways to use the blockchain in isolation from cryptocurrency. There are brave souls who call blockchain the main technological breakthrough since the invention of the Internet. If you do not go into the technical nuances, the very principle of the blockchain is quite simple. It can be presented as an account book, which each participant of the event has and which is constantly updated. In fact, any event can be written in this book - from financial operations with cryptocurrencies Bitcoin, Etherum, etc., to the results of the voting in the presidential election or identification data. The basic blockchain system is an ever-growing sequence of blocks that are divided between the participants using peer-to-peer networks, which most people use to download and distribute torrents. A time stamp (hash sum) is added to each block, which is easiest to imagine as a unique fingerprint. These blocks are strictly in a certain order are added to the chain ("blockchain" - literally "chain of blocks"). If you try to rearrange the sequence of blocks, the system will reject the circuit due to the inconsistency of the structure and the hash sum.Mining cryptocurrency is a painstaking and costly business and, moreover, unpredictable in terms of profit. Nevertheless, many investors interested in cryptocurrency cannot resist mining. Perhaps the fact is that an enterprising speculator sees in him the opportunity to earn out of the blue, approximately as during the Gold Rush in California. And if you are technologically savvy, it's almost impossible to avoid the temptation. But before you spend money on equipment, read this guide - it will help you understand whether mining really suits you. Crypto Currency - Creation and Control Based on cryptography, it is possible to remove the speed non-encrypted electronic money

type. Learning to work on a crypto market can be challenging. But there are many online sites and professionals who can learn this. It is known that Bitcoin markets or any of the crypto-currency markets are very different from stock and currency trading. In fact, many people claim that traditional technical analysis (TA) is never true when talking about digital money markets. However, there are traders who are constantly trading in the market, trying to anticipate living and living short-term price changes. The first thing a trader needs to know is that the most commonly used financial graphics in the market are candle charts. Each wax volume shows a specific time interval. A member of the technical analysis team is trying to model the market through these candles. We can mark some form of shape. These are many graphic images that you can reproduce with Head-to-head, hill shapes, bottom shapes, and patterns. These shapes are seen through the eye after having gained some experience in the graph. As a next step, the crypto exchange traders use various tools known to help market price movements. For example, a simple motion average (SMA) is used to calculate the closing value for a given period of time. The Exponential Moving Average (EMA) and the Moving Average (DMA) are more complicated than the SMA. EMA is used to predict the market trends of the trader. DMA is the average response to price fluctuations that are moving in the range of time. Traders who are trained at a certain level can deduce all of these tools and distinguish themselves on how they can use such indicators. People interested in cybercriminals know that news and public opinion are affecting Bitcoin's price. For example, any attack on a quasi-currency stock market or a government's negative decision is a sign of Bitcoin's downfall. Most traders are closely interested in what happens in Bitcoin as they take material risks to implement their goals. A person who is very knowledgeable about technical analysis and at the same time closely follows the market can also give false predictions. Stability of the transaction chain database uses the cryptographic element to provide are. Currently, the legal status of the plant and its economic status Discussion about the essence of the topic.Dependent on the country bitcoins, a means of payment, a special product as well as restrictions in circulation (for

example, in credit institutions with bitcoins) prohibitions on foreign currency transactions). Many methods are used to emit Bitcoin such as stock market, stock, or ICO. Every day, the popularity of bitcoins increases and even the largest banks in the circulation of digital accounting units at one step of the application. So, CIS countries and Cash flows that flow throughout Europe for the whole world as it is impossible to manage There are barriers. Specifically, the Bank of England statement that the popularity of bitcoin increased as the center. The bank loses its authority over governance. Other monetary-credit institutions also support this idea. Today, trading in the global CRT market.

There are hundreds of crypto units available. However, the first non-centralized cryptocurrency of 2009 is the bitcoin introduced in January. Available among the various types of crypto-currency. There are differences in the application of innovation. Most cryptocurrency is either bitcoin currency or are different forms of other major cryptocurrencies. These crypto signatures are called "altcoin" less are characterized by innovation.

The total market capitalization has tripled by mid-2017, reached $ 27 billion. Here's a great deal of more innovative crypto cash flows, and the lower share belongs to the subconscious. Although bitcoin is still on the market is dominant cryptocurrency, and other cryptocurrencies gradually expanding its market share.

Bitcoin market capitalization in March 2015 if it covers 86 percent of the total market, 2017 in March this share dropped to 72 percent. Ethereum the second largest in the "ether" (ETH) network market capitalization is cryptographic. Daily operations on each cryptocurrency type When considering bitcoin cryptanalysiscompared to a lot more used, now we can. The second most commonly used "Ether" is a crypto-currency type. Other types of cryptosystems the volume of transaction is bitcoin and ether cryptocurrencies which is significantly lower. But litecoin from the end of 2016, with the exit of cryptographic Most of the currencies mentioned above there is an increase in transit volumes. That's it

Monero and DASH Crypto the rise is faster. Globalization in the global economy and the modern financial and economic crisis (2007) the basic principles of the Jamaican currency system it does not fit into the new trends in the global economy. Modern The world currency system is based on two currencies, USD and EURO. But, unfortunately, these frequently changing exchange rates of the leading currencies, the other has a negative impact on the economies of countries. A week in the form shown below thedynamics of the Euro / Dollar course, which is in the chart, confirms this. The dollar's rate is extremely variable, which is in the world economy it violates the function of its value and its position in the world monetary system gradually weakening. The World Bank is dominated by the dollar until 2025 predicts loss. It is now important to the world economy. The question is: what currencies or a set of currencies in the near future?

Can you replace it? At present, the development of crypto-currency in the world economy There is no single strategy for it, but the funding of electronic money

It is important that the regulators are under the control of the World the current state of its economy confirms that the world currency the transformation of the system is inevitable and the process is in the world Changing the configuration of leading political and economic forces related. Another aspect of Bitcoin is its unity is outside of control. Everyone has his own individual bitcoin there is a legal approach. It's a positive or negative situation There is no reason to say with certainty. But this is bitcoin both in the economic sphere and in other areas criminal the possibility of active use of circles is very high. Finally, we can say, "Bitcoin is an alternative to your daughter There is no exact answer to the question. In our opinion, it cannot be because bitcoin is only 8 years old. 8 years global a grounded idea about the global perspective of the phenomenon is a very short time frame to say. At the same time, financial markets, generally in the world economy Generating an alternative investment instrument, in general, are positive. Wide range of alternatives in each area the basic conditions of advanced capitalism is

and is. The variety of capitalist society From time to time, alternatives are created and which of them can be rooted in society only evolution. It needs time. Currently, the volume of gold as an asset This is also the case for over 1000 times the bitcoin directly points to our point of view.

We will focus primarily on Bitcoin. In essence, miners act as auditors: during the extraction of new coins, all previous transactions are verified at the same time. Thanks to this system, invented by the creator of Bitcoin Satoshi Nakamoto, users are interested in the stable operation of the network. By verifying transactions, miners help prevent the "double spending problem". Double spending is a situation in which the user gets the opportunity to spend the same amount twice. Bitcoin cryptocurrency appeared in 2009 and immediately interested members of the Internet community. Miners and private investors liked the idea of virtual money - they followed the market price, extracted Bitcoins, and even invested in cryptocurrency. After the course jump in 2013, community attention to BTC has grown tenfold. Many people call Bitcoin future money because it is based on an absolutely unique system. We are all accustomed to the fact that money has some kind of physical embodiment - paper money has for several centuries been a common unit of payment. As modern realities show, most likely, these very pieces of paper in the coming decades will completely outlive themselves, and they will be replaced by a new currency - the cryptographic signs fit this role perfectly.

Bitcoin exists on the basis of a cryptographic principle: in fact, each cue ball is a unique combination of ones and zeros. Due to the open source code, each owner of a powerful computing device can generate new codes and receive cryptographic signs.(S. Lo, C. Wang, 2015)

New cue balls are produced by mining (its mining), because, unlike all the usual money, there is no bank or organization that would issue bitcoins - only the computing ability of technical devices can generate a new crypto code.

Crypto-cash has no incarnations and it can not be stored in a safe or in another secluded place - crypto-codes exist only in the memory of hard drives. On the one

hand, without your password, no one can get access to such money, which excludes possible thefts. At the same time, the loss of a password or the hard disk itself will result in your losing bitcoins. And you cannot ask for help from a bank or organization that issues a cryptocurrency, and you cannot demand your cue back - such an organization simply does not exist.

The great advantage of cryptocurrency is its anonymity. No one can know the data about the owners of bitcoins, because they are not stored anywhere and do not appear. All that is, is a bitcoin address, thanks to which you can calculate (by transaction) how many bitcoins each of the purse holders in the system owns. That is how you can learn about the number of bitcoins in nature. Initially, the developers laid the figure of the final generation of the cue ball - it is 21 million units. Different sources interpret differently the calculations of when the issue of currency through mining will be discontinued - presumably, this will happen in 2140. The cryptocurrency movement can be considered quite young - it originates from 2008 - it was then that the first publication about Bitcoin appeared. Long before this, the principle of cryptography was used by one American entrepreneur in his calculations, but his idea was not widely spread due to the premature bankruptcy of the enterprise. The very publication about the cue ball was made by an unknown person who subscribed to Satoshi Nakamoto, about whose person the disputes are still pending. Whether this person is real or whether this group hides a whole group of scientists and developers of the cue ball is unknown.

A year after the publication, in which the principle of operation of a cryptographic payment system was described, the Bitcoin network was launched, and with it, wallets appeared. The first miners began producing bitcoins, and of course, the first cryptographs of Satoshi Nakamoto were most actively mined. Although very little is known about this person (or a group of people), but there is information that as long as everyone doubted the future strength of Bitcoin or simply did not know about it, Nakamoto himself solid Bitcoin capital and

disappeared from 1 million bits. Who is Satoshi and where he went, history is silent?

With the launch of the Bitcoin system, they began to find out about it in IT circles, and many joined the mining. IT specialists mined cue balls, although they didn't know if they were good with them - it's known that many people simply threw hard disks with thousands of bitcoins on them, and one of the Americans traded 10 thousand crypto units for two pizzas. But the times of oblivion are far in the past - today, not only do they know about this virtual currency, but they also desperately want to possess it. The Bitcoin exchange rate is extremely active. He often changes the vector of his movement, and sometimes very dramatically, which allows many to earn on his speculations. The fact is that the price of Bitcoin depends entirely on the demand for it - the more cryptocurrencies are bought and the less they sell, the higher the rate will be. And since everyone realized a long time ago that you can make good money on Bitcoin and it has good prospects, there are more and more people who want to buy this crypto-sign. Despite minor drops, the bitcoin rate remains at high levels today - at the time of this writing, it was $ 1,875 for 1 BTC, although a couple of days ago it was possible to buy a cue ball for $ 1,700. What to say about more ancient times, when a couple of years ago he "jumped" from $ 200 to $ 1,200. What is not a highly profitable investment tool?

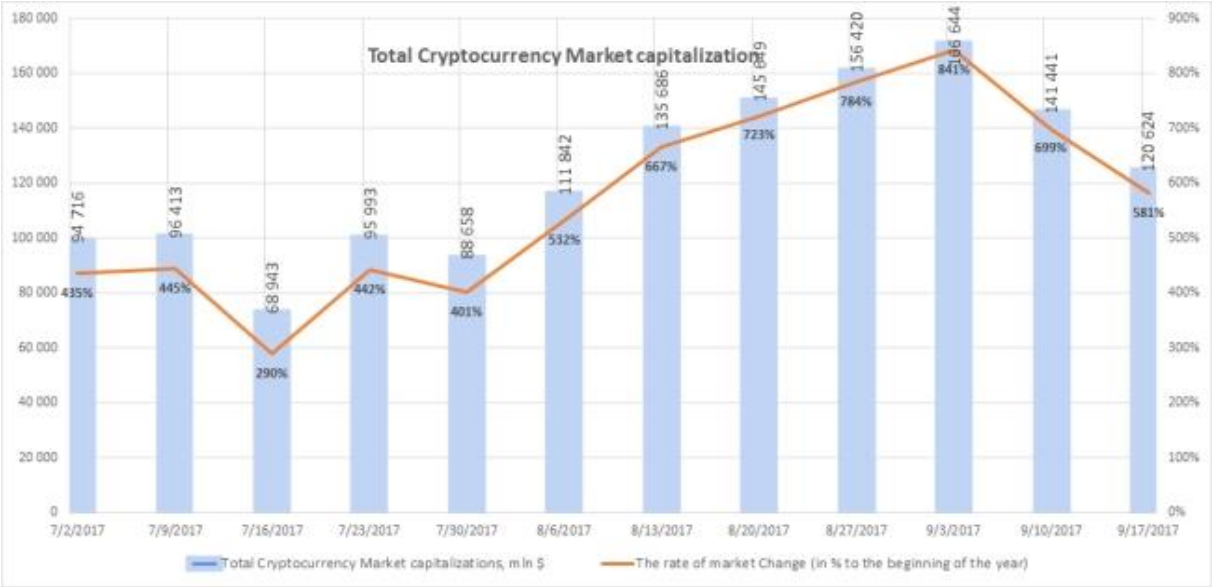
Bitcoin is the currency that marked the beginning of a revolutionary financial era. It makes big bets in society, they begin to recognize at the official level, and all over the world here and there Bitcoin terminals appear, allowing cash withdrawals in real money. And even if this cryptocurrency does not become a world monetary unit, a great future awaits it, which has already begun.

2.2. The amount and main indicators of the crypto-market

Comparative, vertical and horizontal analysis, statistical analysis, correlation and regression methods, forecasting methods.

Market dynamics since the beginning of 2017. The market dynamics of cryptocurrency and assets since January 1, 2017, is presented in the form of diagrams

Graphic 1: Weekly change in the cryptocurrency market from July 2, 2017, to September 17, 2017



Source:https://coinmarketcap.com/charts/ (10.01.18)

In fig. 1 is a diagram of a weekly change in the cryptocurrency market from July 2, 2017, to September 17, 2017. During this period, the market capitalization increased from $ 94,716 to $ 120,624 million, and compared to the beginning of the year, the increase was 581%. However, over the past two weeks, the overall market capitalization has decreased from $ 166,644 million to $ 141,441 million (by 10.09.2017), and then to $ 120,624 million (by 09/17/2017).

Despite the overall positive growth trend of capitalization of the entire cryptocurrency market for the year as a whole and in the third quarter in particular, it will take some time (most likely before the end of October) for the gradual stabilization and recovery of the previous market growth rates slowed down by the

events in China, associated with the prohibition of ICO and the activities of cryptocurrency exchanges. An important factor determining the development of the cryptocurrency market in the fourth quarter of 2017 and the next year will be the reaction of the main market players to the actions of the Chinese authorities, as well as the intentions of various governments to regulate and state regulation of this market. The risk of sharp market fluctuations will remain.

Results and discussions

1. General analysis of the cryptocurrency market and assets (for the week, month, quarter).

During the last 2 weeks (3-10.09.17 and 11-17.09.17) we observed a decrease in the total market capitalization (Total Market Capitalization) Cryptocurrency by 15.13% and 11.33% respectively (see Table 1). From 3.09 to 10.09.17 Bitcoin, Ethereum, Litecoincryptocurrency rates decline was 12.08%, 20.49%, 23.58%, respectively. Over the past week (11-17.09.17), the average decline in prices of the main cryptocurrency amounted to 9.48% (Bitcoin), 10.21% (Ethereum), 18.82% (Litecoin), i.e. course decline continues, but at a slower pace (Table. 1).

Picture 1: Dynamics of capitalization of a crypto banking market and main cryptocurrencies from July 01, 2017 to September 17, 2017

Crypto	Bitcoin (BTC)			Ethereum (ETH)			Ripple (XRP)			3 Crypto		
	Price Open	Volume (24h)	Market Cap	Price Open	Volume (24h)	Market Cap	Price Open	Volume (24h)	Market Cap	Volume (24h) 3 Crypto	Market Cap 3 Crypto	индекс ZAK-3 Crypto
Date	$	mln $	mln $	$	mln $	mln $	$	mln $	mln $	mln $	mln $	%
Sep 17, 2017	3606,3	1 239	59 758	245,9	427	23 273	0,1784	49	6 840	1 716	89 870	1,90%
Sep 16, 2017	3637,8	1 818	60 272	250,9	712	23 743	0,1819	84	6 976	2 615	90 990	2,90%
Sep 15, 2017	3166,3	4 148	52 454	215,2	1 936	20 365	0,165	289	6 328	6 373	79 146	8,10%
Sep 14, 2017	3875,4	2 716	64 192	276,6	1 185	26 166	0,2004	153	7 685	4 053	98 043	4,10%
Sep 13, 2017	4132	2 219	68 432	291,1	922	27 536	0,2096	105	8 038	3 247	104 006	3,10%
Sep 12, 2017	4168,9	1 865	69 033	294,6	753	27 862	0,2149	95	8 239	2 712	105 134	2,60%
Sep 11, 2017	4122,5	1 557	68 256	289,8	571	27 394	0,2125	138	8 149	2 267	103 799	2,20%
Sep 10, 2017	4229,3	1 679	70 018	294,1	698	27 797	0,2096	117	8 037	2 495	105 852	2,40%
Sep 09, 2017	4229,8	1 386	70 017	296,2	529	27 991	0,2113	51	8 102	1 966	106 110	1,90%
Sep 08, 2017	4605,2	2 701	76 220	329,6	1 099	31 147	0,2236	151	8 574	3 951	115 942	3,40%
Sep 07, 2017	4589,1	1 845	75 945	333,5	719	31 508	0,2264	103	8 680	2 666	116 133	2,30%
Sep 06, 2017	4376,6	2 172	72 419	313,8	1 059	29 639	0,215	163	8 242	3 394	110 300	3,10%
Sep 05, 2017	4228,3	2 698	69 954	297,6	1 551	28 100	0,2051	243	7 865	4 492	105 919	4,20%
Sep 04, 2017	4591,6	2 987	75 956	347,1	1 802	32 774	0,2288	240	8 772	5 029	117 502	4,30%
Sep 03, 2017	4585,3	1 933	75 842	350,2	986	33 060	0,2272	187	8 713	3 106	117 614	2,60%
Sep 02, 2017	4901,4	2 722	81 061	387,8	1 484	36 601	0,2493	330	9 561	4 536	127 223	3,60%
Sep 01, 2017	4701,8	2 599	77 748	383,5	874	36 183	0,2558	284	9 808	3 757	123 740	3,00%

Data source: coinmarketcap.com

Source:https://www.coinmarketcap.com, https://www.smithandcrown.com(17.09.2017)

The Bitcoin rate last week fell below a threshold of $ 3,000 (see Table 4) and the lowest value was recorded on September 15, 177 ($ 2,946.62). The Smith + Crown Index fell another 18.40% to 7694 on 09/17/17. Now the index takes into account the dynamics of change 11 cryptocurrencies (see Table. 1). However, despite the loss in value over the past 2 weeks, the growth of the total market capitalization of cryptocurrency amounted to 581% compared to the beginning of the year (see Fig. 1).

As we have already noted, first of all, the rate cuts are related to news from China: announcement of a ban on ICO in China (4.09.17), announcement of intentions about a possible ban on the activity of cryptocurrency exchanges in China (08.09.17), the official announcement of China's leadership on the prohibition of trade in all cryptocurrencies in the country (09/14/17). As a result of these prohibitions, BTCC announced one of the largest cryptocurrencyexchanges in China to cease all trading in China for Chinese citizens from September 30, and the OkCoin and Huobi exchanges from September 15, 2017 stop accepting cryptocurrencies and registering new users. The impact of these events on the

change in the rates of the main cryptocurrency, the volume of their trading (Volume) and their market capitalization is presented in Table. 2 (highlighted in red).

The above ZAK-3 Crypto and ZAK-5 Crypto indices clearly reflect the sharp increase in the daily trading volume on crypto-counters 4.09, 8.09, 14.09 and 15.09.17 (see Table 2, 3). For example, on 09/15/17, the Crypto ZAK-3 index was 8.1%, and the Crypto ZAK-5 index reached 9.9%, i.e. daily trading volume for 3 cryptocurrencies (Bitcoin, Ethereum, Ripple) amounted to 8.1% of the total value of their market capitalization, and daily trading volume (transactions) for 5 dominant cryptocurrencies (Bitcoin, Ethereum, Ripple, Litecoin and Bitcoin Cash) amounted to 9.9% of the total market capitalization value of the designated 5 cryptocurrencies.

The largest trading volumes (Volume) on a crypto-exchange were noted precisely on 4.09, 8.09, 14.09 and 15.09.17. For example, the volume of Bitcoin trading in 24 hours (Volume 24h) on these days amounted to 2,987; 2,701; 2 716 and 4 148 mln $ respectively (see Table 2).

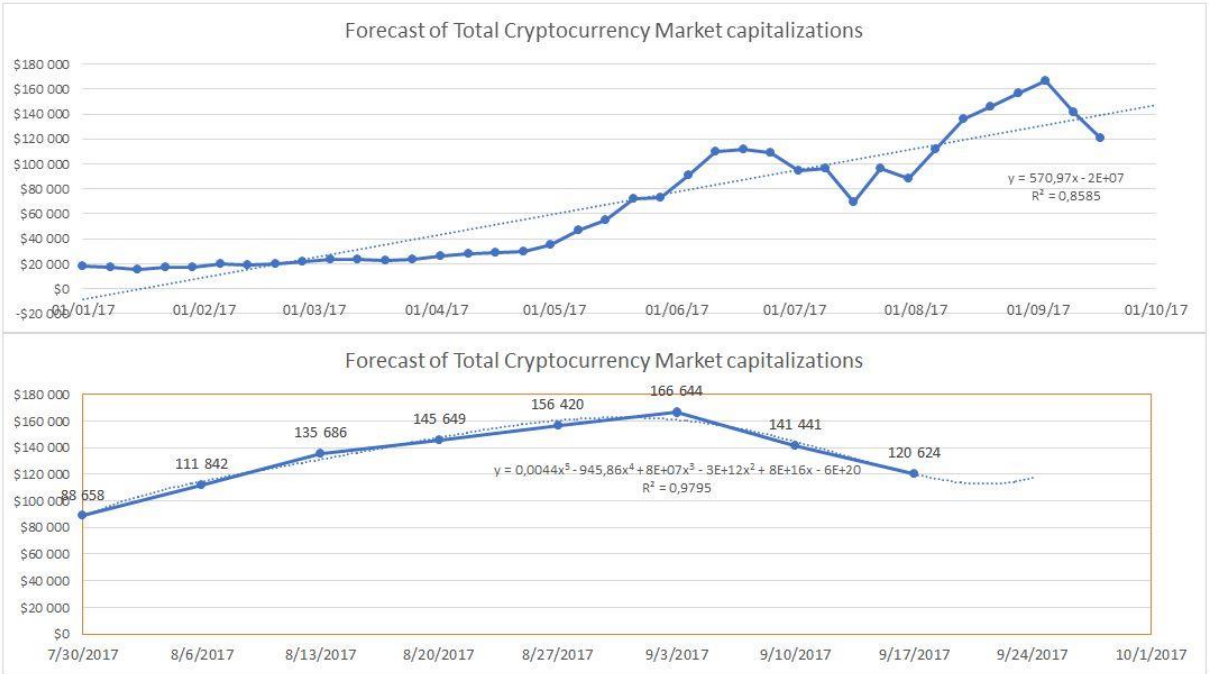
Picture 2: Dynamics of capitalization of a crypto banking market and main cryptocurrencies from July 01, 2017 to September 17, 2017

Crypto	Litecoin (LTC)			Bitcoin Cash (BCH)			5 Crypto		
	Price Open	Volume (24h)	Market Cap	Price Open	Volume (24h)	Market Cap	Volume (24h) 5 Crypto	Market Cap 5 Crypto	индекс ZAK-5 Crypto
Date	$	mln $	mln $	$	mln $	mln $	mln $	mln $	%
Sep 17, 2016	48,23	245	2 554	438,9	222	7 280	2 183	99 704	2,20%
Sep 16, 2017	48,13	562	2 549	424,49	314	7 040	3 490	100 578	3,50%
Sep 15, 2017	41,69	1 554	2 207	369,49	707	6 127	8 635	87 480	9,90%
Sep 14, 2017	61,64	750	3 262	504,22	257	8 360	5 061	109 664	4,60%
Sep 13, 2017	64,32	502	3 403	509,47	340	8 446	4 088	115 854	3,50%
Sep 12, 2017	66,24	481	3 503	539,03	274	8 934	3 467	117 571	2,90%
Sep 11, 2017	61,65	412	3 260	537,19	275	8 903	2 954	115 961	2,50%
Sep 10, 2017	65,8	530	3 478	546,48	290	9 055	3 314	118 386	2,80%
Sep 09, 2017	67,21	468	3 552	584,73	235	9 688	2 669	119 350	2,20%
Sep 08, 2017	78,45	931	4 145	654,37	810	10 841	5 691	130 927	4,30%
Sep 07, 2017	79,88	527	4 219	636,85	1 082	10 549	4 276	130 900	3,30%
Sep 06, 2017	71,78	831	3 790	541,28	693	8 965	4 918	123 054	4,00%
Sep 05, 2017	65,25	1 016	3 444	514,9	339	8 527	5 847	117 890	5,00%
Sep 04, 2017	76,73	922	4 049	608,26	329	10 072	6 280	131 623	4,80%
Sep 03, 2017	78,98	675	4 167	578,27	345	9 575	4 126	131 355	3,10%
Sep 02, 2017	85,83	1 364	4 527	621,96	350	10 297	6 250	142 046	4,40%
Sep 01, 2017	70,86	1 552	3 736	588,4	394	9 740	5 702	137 216	4,20%

Source:https://www.coinmarketcap.com , https://www.smithandcrown.com(17.09.2017)

To reflect the activity of trading on a crypto exchange, a new ZAK-n Crypto index has been proposed (see Glossary). The values of the indexes ZAK-3 Crypto and ZAK-5 Crypto are presented in Table. 2. These indices reflect the ratio of trading volumes on a crypto-exchange in 24 hours on the 3rd and 5th dominant cryptocurrencies to the sum of their market capitalization. Bitcoin, Ethereum and Ripple were chosen as the 3 dominant cryptocurrencies. at the beginning of 2017, its market capitalization was the largest. When calculating the ZAK-5 Crypto index, trading volumes and market capitalization of Bitcoin, Ethereum, Ripple, Litecoin and Bitcoin Cash are taken into account. The index for these 5 cryptocurrencies with the highest market capitalization is currently calculated from August 2017, since it was in August 2017 that the Bitcoin Cash cryptocurrency appeared on the crypto-exchange, which arose as a result of the separation of Bitcoin. High trading activity (Volume 24h) with respect to market capitalization contributes to the increasing volatility of the cryptocurrency market, drastically changing their prices. In table 4 reflects Bitcoin courses from 1.09.17 (Open, High, Low, Close)

Graphic 2: Bitcoin courses from 01.09.17 (Open, High, Low, Close)



Source:*https://www.coinmarketcap.com*(01.10.2017)

The total number of types of cryptocurrency and crypto active assets on the stock exchange in the third quarter increased from 881 to 1052. At the same time, the average cost of capitalization of cryptocurrency and crypto active assets increased from $ 107.5 to $ 114.7 million. However, the news of the past two weeks led to a decrease in the average cost of cryptocurrency capitalization from $ 154.7 to $ 136.7 million, and then to $ 114.7 million.(Statista, 2018)

2.3. The spread of crypto-currency in the world and obstacles to the development of the bitcoin market

There are also many guesses, often incorrect ones. To somehow clarify the situation, it was decided to write this article. To my taste, the issue of money is simple and elegant. In each block, the first transaction in the list is a special transaction. It always has one input, which has the coinbase property instead of the scriptSig property. The idea is to create pending transactions so that they are not added to the current generated block, but, for example, to the following one. They add this transaction to their block and continue generating. Sooner or later someone will be able to generate a block. Such a block is sealed (no more transactions are added to it) and sent over the network. Next, clients check the block and transactions inside it for validity. If there are no problems, then the transactions are considered approved. At this point, a fresh block has already reached every customer and has been added to the chain. After this, the process repeats - customers begin to generate another block and collect new transactions into it. One of the clients creates a new transaction and sends it to other clients who are busy generating the block. The initial value of gold was determined solely by those who mined it. For the mined gold, he asked so much so that it was possible to compensate for the efforts made to mine. And after that, the market starts to influence the price of gold.It is implied that this property indicates the number of blocks that a transaction should skip before adding. To know this for sure, you can only understand the principles of operation of Bitcoin. Here you can recall the analogy with gold, the extraction of which takes a lot of time and resources. But you can understand that gold is in front of you almost immediately. In this sense, Bitcoin also has its value. But do not understand this as the price in dollars or in the electricity bills that the computer used during the selection of the hash.This makes it possible for some time to change the transaction and re-sign it. This property can contain anything. Once Bitcoin has hit the market, its value is

determined solely by the level of trust in the system. If someone has transferred the amount in bitcoins to someone, this is considered one transaction. The block contains many transactions that occurred in the last few minutes (an average of 10 minutes). Since transactions can see absolutely everything, anyone can create a block, but everything is not so simple. The block must have a special verification code of 100 characters calculated by cryptographic algorithms (we will not consider them). It is calculated based on the data stored in the block, therefore it cannot be calculated for another block. The code can have countless options, but it can be assigned to a block only if it complies with the current program rule. This rule is a certain number of zeros at the beginning of the code.Since the code is not invented but calculated, it is impossible to pick it up manually. You can only do uniform calculations until the result is a suitable code. Once this has happened, a block with a code can be sent to the system for review. If everything fits together, then you get a reward. The reward is received only by the one who first sent the decision, then the next block can be drawn up.The more people trust, the more Bitcoin will buy, the more dollars they will invest in it, and, consequently, the more expensive Bitcoin will be. Before people can trust Bitcoin, they have to find out if this system has a sufficient degree of security, and whether it can be used as money, that is, it has the properties of money, which I listed at the beginning. It works as follows. The dollar price is a bit different. It is not incorporated into Bitcoin and is determined solely by the market. After all, gold itself does not guarantee you a certain price in dollars. It is guaranteed only by a person who wants to exchange gold for dollars. For centuries, money had its own value, for example, coins were made of gold, silver, or another valuable metal. The exchange of goods for such money was one of the forms of barter, the exception was that coins are a much more universal commodity that is convenient to store and transport. Although there were other options for money - small shells, pebbles, even bars of salt. But only residents of a limited territory could believe in the value of these products, unlike metals readily accepted in any part of the world. Summarizing, we can say that the emergence of technology Block. The underlying

chain of bitcoin opens up great opportunities for innovative solutions in the economy. But, as practice shows, Bitcoin, despite its recent appearance, attracts attention to various criminal groups and associations, primarily for the account of anonymity and global scale. Bitcoin Essence Wearscontradictory nature: neither in scientific terms nor in terms of practice. There is no clear interpretation of this economic phenomenon. Many dreams of creating their own cryptocurrency, so it is not surprising that new ones are constantly emerging. Based on the above, we can say that the world currency-financial system changes, in particular, the dependence on particular economies the new currency-financial mechanisms that are formed for the purpose of reducing the future of the countries that are not ready for these changes below. From this point of view, it is necessary to emphasize that the global national level in line with innovations in the currency-financial system should apply reforms in currency-financial systems. For this purpose Regulation of crypto money in Azerbaijan, transactions in this currency tax incentives and so on. the legislative base should be formed. Creating a legislative framework for the use of crypto money would help to avoid risks that may arise from the global financial market.They may have other rules for mining money (mining, minting, forting, etc.), other restrictions. Many are trying to introduce something of their own in a new system that would solve the problem of other systems. But the chances of developing a new system to the level of a real cryptocurrency are very few, because many have to believe in it, so the idea should be really interesting and hopeful that there are no possible problems. (Clinch, Matt, 2015)

CHAPTER III. THE PROSPECTS FOR THE BITCOINS MARKET DEVELOPMENT

3.1. The ways of fraud management using crypto-currency

Regulation of cryptocurrency in different countries as a new economic phenomenon is constantly changing and adjusting. Each central bank is guided by its own approaches:

-from formal permission (including recommendations for the industry about possible risks,

-research in this area, etc.) or the application of general regulatory principles in the field of

-payments until the complete ban of such activities. The following pattern can be revealed:

-countries with high GDP per capita, high penetration of bank accounts and

the quality government created favorable regulation of cryptocurrency.

The ban on cryptocurrencies is more often imposed by countries with unstable economic situations or problems of the domestic market.

1. Cryptocurrencies are digital assets. The population should be familiar with

digital money and ready to accept them in everyday life.

2. Countries should have appropriate government bodies that seek to adopt

new developments and technologies. Countries with unfavorable regulations are more concerned about existing issues and tend to prohibit cryptocurrencies as something new and, possibly difficult to regulate.

However, there are exceptions. Recently, quite often negative statements, regulators who fear the uncontrollable consequences of the rapid growth of

cryptocurrency, increase in volatility, the expansion of speculative activity, as well as unlawful actions related to money laundering and terrorist financing.

If we consider what the consequences may be in terms of a formal permit activity with digital currencies, then central banks sticking to this approach should pay attention to the negative statistics of bankruptcies of digital exchanges (includingrelated to fraud and hacker attacks). The solution to these problems could belicensing activities related to virtual currencies such as activities virtual currency exchanges; administration and issuance of virtual currencies, storage, and management of third parties. The implementation of a complete ban on these activities in a global regulatory environment, the trend for the formal resolution of such activities in the framework of special licenses may lead to the curtailment of innovative projects in this area and transfer them to more transparent regulatory jurisdiction.(CNBC, 2016)

3.2. Bitcoin market development trends

Cryptocurrencies are considered the future of the financial system: many believe that Bitcoin (Bitcoin) will soon replace all cash and bank cards. Given how fast the digital currency industry is developing, this assumption is justified. A lot has already been said about the impressive profitability gained by traders in 2017, so we suggest returning to 2009 when Bitcoin was just born. At first, few people understood what was going on at all. The first "breakthrough" was the creation of a thematic forum, an analog of the current Bitcointalk, where associations were gradually created to improve the system. On the same portal, a well-known message about buying two pizzas for 10 thousand bitcoins appeared. As Bitcoin grew in popularity, so did its value, from $ 0.06 to $ 0.5. This led to the emergence of the first Mt.Goxcryptocurrency exchange, where it was possible to exchange and buy cryptocurrencies. If someone guessed how much noise the bankruptcy of this exchange will cause in 2013! At the same time, an incident occurred that cast doubt on the security and invulnerability of Bitcoin ideas: an anonymous user managed to create 182 billion Bitcoins - despite the fact that the final number is limited to 21 million. The error in the protocol was quickly corrected, and since then to the security of the Bitcoin system as a whole no questions The price of the first cryptocurrency (EXANTE: Bitcoin) for the first time since the beginning of the year has risen above $ 5,600. According to Alexander Kuptschievich, FxPro analyst: "Further targets for growth can be levels near $ 6000–6100. Bitcoin slid down from these marks in November last year, and now there is no significant resistance for growth from the technical analysis. However, it is worth remembering that many factors affect the course, so sudden jumps may well be replaced by equally unpredictable failures. " Tesla will launch an unmanned taxi service in 2020. In 2020, the company plans to launch an unmanned taxi service, its head Elon Musk said at an event for investors. An order unmanned taxi will be using a mobile application. Tesla owners will be able to rent their cars at a time

when they are not in use. The company will charge a commission of 25–30% from them, as Uber and Lyft do. The cost of a trip to Robotaxi will be $ 0.18 per mile - less than in a regular car sharing ($ 2-3). Estimated Mask, so the owners of electric vehicles will be able to earn up to 30 thousand dollars a year. He also predicts that in the next year and a half the park will consist of up to 1 million cars. Amazon has the opportunity to buy goods for cryptocurrency. An online store website has the opportunity to buy goods for Bitcoin - this option has become available thanks to the startup Moon. The developers of the processing service have created a browser extension that can interact with any wallet that supports the Lightning Network (LN) technology. The expansion allows you to buy products on some online sites, including Amazon. The new function works in beta mode, and about 250 people have already taken advantage of it. You can also pay at Amazon.com using your Coinbase account. The bankrupt cryptocurrency exchange promised to pay compensation even to those creditors who did not leave the application in the prescribed manner, a letter published by one of the users of Reddit testifies. From the document, it follows that to compensate for Mt.Gox uses the identification information that lenders provided during the verification of accounts. The trustee of Mt.Gox, Nobuaki Kobayashi, wrote: "The lenders who opposed the independent approval of compensation claims refused their objections. Accordingly, such applications received the force, and you do not need to make additional appeals. " First, the market for crypto active assets can (and will definitely become) independent. Part of private capital will flow in this direction. The first step has already been taken: ICO.(Walton, Joe, 2014)

Secondly, the global economy does not always develop. And when it develops, it is definitely uneven. The new market will create an additional tool not only for stabilization but also for the evolution of the financial system. Therefore, gradually cryptocurrencies may well take the place of old instruments, first of all, cash.

Thirdly, the cryptocurrencies themselves expand the possibilities of using large volumes of financial injections by small and medium-sized businesses, which means that very soon we will see a new market of startups filled with private money.

The market of the virtual economy is ahead, at least in general indicators, of 133 states of the world, which is 66.83% of all state entities as a whole. Of course, if we consider that each of the top 15 global economies exceeds a trillion, the growth potential of p2p has not yet been reached.

It can be assumed that the political elite will slow down the growth of cryptocurrency capitalization. We see this in the examples of the SEC in the USA, MAS in Singapore, the Central Bank in Russia, the Chinese government. However, there is a reverse trend: the emergence of, for example, new offshore zones or zones with favorable crypto-economics. Such as the city of Zug in Switzerland, the Isle of Man and others. Of course, cryptocurrencies and tokens are a large market on a global scale, but still quite a noticeable one. All cash in the world is about $ 5 trillion. M3 money supply (cash in circulation, demand deposits, time deposits, savings deposits, as well as certificates and government bonds) is about $ 80 trillion.(D. Golumbia,2016)

In August 2017, the total capitalization of the cryptocurrency market exceeded $ 150 billion. Then this figure was compared with the indicators of the world's largest investment bank Goldman Sachs: $ 198 billion. By the end of this year, the cryptocurrency market may well reach this level. In September, he took the bar for the third largest company in the world - the Agricultural Bank of China ($ 152.7 billion versus $ 153 for altcoins). about the information of the founder of the ICO platform and crowdfunding of Kickico Anti Danilevsky, on average, 2-25 thousand people participate in the ICO, while their spending varies between $ 2-35 thousand. The average payment in large ICOs is $ 8,000. We have not yet witnessed massive fees (for example, $ 1 million collected from 1 million people), but the potential for market development is very high. And that's why:

- Now there are jurisdictions in which the ICO will become a full-fledged instrument for attracting fiat funds. This means a significant increase in capitalization since not many people keep savings in crypto-money.

- Capitalization of $ 1.5 billion or more is just the beginning. Even in relation to the IT business numbers are much higher. It is worth considering the novelty of the blockchain economy itself, which will evolve (and therefore attract an order of magnitude more money).

- Very affordable projects are emerging on the market using blockchain technology (for example, DsPlus). I believe that in the next 1-3 years the financial indicators of such projects will grow from thousands to tens of millions of dollars.

- The number of active Bitcoin wallets increased from 0.6-2.6 million units in 2013 to 5.8-11.5 million units in 2017. Currently, 2.9-5.8 million unique users use cryptocurrency wallets. Dependency: “more wallet users - more depositors in ICO” - direct.

- When large infrastructure projects appear on the market, real development will begin. Now the figure of $ 180 billion is beautiful but wrong. It does not reflect the economy, but only a small part of it - the exchange purchase and sale.

- Since the creation of Ethereum attempts to create alternative platforms for accepting cryptocurrencies, conducting ICOs, creating applications (Tesos, EOS, Lisk and others) have not ceased. One can expect that one of them will “shoot” and form a new community of small and medium investors. There are more and more specific ecosystems tied to the provision of different services to users (COSS). Now we have two opposite, but, strangely enough, not mutually exclusive tendencies: on the one hand, small states (Maine, Switzerland, Estonia, Japan, etc.) legalize cryptocurrencies and digital assets, and on the other - large states (China, USA, India, Russia) are trying, by hook or by crook, to prohibit the circulation of those or to make it unbearably difficult. (D. Chaum, 2015)

Of course, cryptocurrency is not a paradise on Earth: this phenomenon has both positive and negative sides.

Of the negative - large volatility, the variability of the course.Cryptocurrencies are often created as “clean” technological tools, whereas the nature of money is in the regulation of social relations (in this regard, Bitcoin forks stand out most clearly: BTC, LTC, DodgeCoin, etc.). And more?

Of the positive, I would like to indicate the following:

1. A new, more equitable approach to the distribution of funds - decentralized;

2. Careful attitude to personal data and preservation of anonymity at the proper level due to the use of the latest achievements of cryptography (a positive example is Dash, a negative one is Monero);

3. Development of various kinds of consensus (PoW, PoS, PoI, etc.), which help to find different universal solutions for specific tasks or, on the contrary, whole global markets (now Ripple is used in the banking sector; IOTA is “sharpened” for the Internet things, etc.);

4. The possibility of issuing "money" by any entity or their associations, which means a significant simplification of the procedures for raising funds, both in terms of interest rates and the bureaucracy process.(P. Surda, 2014)

Cryptocurrencies and tokens are not just new technological solutions, but also a new approach to understanding the role of money in society: you can accept or deny them, but it’s obvious that they will change the future. The main thing is not to prevent this market from developing and stabilizing. If you set standards, but not by pressure “from above”, but by learning “from below”. Otherwise, we risk in the bud to kill new approaches, methods and, most importantly, whole sectors of the economy.

3.3. Bitcoin and other cryptocurrencies can also be money

This is the first and most famous of the many cryptocurrencies, the symbol, and flagship of the cryptocurrency world, as well as the eponymous monetary unit that circulates within the system. Later in this article, we will describe how cryptocurrency works, using Bitcoin as an example.

What is the most significant feature of Bitcoin in terms of economics? This is a digital product with a limited offer, its algorithm is designed in such a way that there can be a maximum of 21 million units in the system, each of which is also called "bitcoin". The emission schedule is determined programmatically and is known in advance. After the last coins are generated, their number will not change. Bitcoin's economy is built on a deflationary model, which causes concern to many economists. But they do not find practical justification.

Bitcoin features that distinguish it from other types of electronic and paper money:

Decentralization and accessibility. The Bitcoin network is a combination of all client programs (wallets) and a distributed blockchain database (blockchain, blockchain) that is stored on each computer where the full client is installed. Blockchain is a fully open registry of all transactions in the system. Connection to this registry is possible using your own wallet or web interface of special monitoring services from anywhere in the world, without passwords or any other authorization.

Full transparency of calculations. The history of any payment can be (theoretically) traced to the very moment of coin generation and it will never be deleted from the database. Knowing only the Bitcoin address, you can at any time find out all transactions accepted by this address or sent from it.

Free choice of degree of participation. You can install the official Bitcoin Core client, which stores the entire transaction history. If you do not need

autonomous work and analysis of the blockchain, you can install one of the lights or mobile wallets that require significantly fewer resources. If you are going to only pay for small purchases on the way or just try the technology, then a mobile or online wallet will suffice. For maximum security, there are hardware wallets with additional degrees of protection.

Lack of control over the network. Since blockchain is a distributed base created on the basis of equal nodes, the Bitcoin network does not have a controlling center that can freeze an account, change the number of monetary units in the system, block or cancel a payment. There are small commissions, the amount of which in practice is almost imperceptible and does not depend on the amount of transfer. Transactions in the system are non-refundable, as are cash transactions.

The possibility of anonymous payments. Bitcoin provides a convenient and, if desired, anonymous means of settlement, the address — the account number in the system — is not associated with its owner, and no documents are required to open it. This is a string of about 34 characters of numbers and letters of the Latin alphabet in differentcases. It can be translated into the form of a QR code or another two-dimensional code for the convenience of calculations, as well as transferred as is.

In the blockchain, blocks are sets of transactions. The breakthrough idea of bitcoin and blockchain: transactions — instead of being approved in a centralized system — are approved by a network of interconnected computers that work with each other in peer-to-peer mode. Accordingly, when you send money to your mom, and I send money to a friend, so-called unconfirmed transactions are sent to the cloud. The miner computers that serve the entire network take these transactions and verify them. Further, according to a certain algorithm, the network chooses which miner will have the right to sign a transaction with an electronic signature, for which the miner receives a reward from the network, that is, the network pays the mining services for checking and confirming the transaction. When the miner

signs a transaction with an electronic key, a "block" is created, an encrypted data set. If you change at least one digit in the block, anyone can instantly check the digital signature and understand that something is wrong with the block, that its contents and digital signature do not match. When the block is approved, signed, fixed, the miner computers start working with other transactions on the next block. In it, including, there is information about the digital signature of the previous block, it is also encrypted, so this is called a chain. That is, they are all interconnected. And due to this, it is impossible to change a single digit in the whole chain without violating the rules for building blocks - you can always check whether the data in it matches its digital signature, - if they do not match, then the validity of transactions is questioned.(Keidar, Roy, and Stephane Blemus, 2018)

CONCLUSION AND RECOMMENDATIONS

Bitcoin is one of the main inventions of mankind in the last decade. The main value of Bitcoin lies not so much in its price, as in living proof of the viability of the distributed registry technology, and the ideas of decentralization are gaining more and more popularity. It seems that Bitcoin set the vector for the development of the FINTECH industry for the coming years, and we are at the dawn of the formation of technology of comparable importance to the Internet and mobile communications. In fact, the distributed nature of the blockchain-based database makes it possible to effectively and reliably monitor the accuracy of transactions without the supervision of any financial regulators. Since all this is connected with complex calculations, miners must have very powerful computers. For their work, miners are rewarded according to how much they support the overall system. No more and no less. This is how the first electronic currency appeared - Bitcoin (Bitcoin), whose popularity began to grow rapidly and gain more confidence. The sharp rise in the Bitcoin exchange rate occurred immediately after the exchanges began to exchange it for ordinary money. Then came other cryptocurrencies. A blockchain does not have a central authority, so transactions are checked by all participants in the system. This allows you to simplify the procedure and get rid of intermediaries. The network code is open, and anyone can access it, but the identity and other personal information remains secret. All that the creators of the blocks see is only data for each specific operation. At the same time, the blockchain technology, which is essentially a secure account that cannot be cracked, allows it to be used in other areas. A number of states are already interested in this information storage technology. This system has a huge potential, which the whole world will still explore over the years. Yes, there are cryptocurrencies, where scientific calculations have already been attempted to bind to the blockchain, but now, first of all, this is a system aimed at making money. It is also becoming very popular Litecoin, for the acquisition of equipment for the

extraction of which the company Bitmain has a queue of several thousand users. As for the "great-grandfathers" of all cryptocurrencies - Bitcoin, the difficulty of its extraction has grown so much lately that today's mortals are practically unprofitable and impossible. In this process, with a reasonable approach, all remain in profit. The owners of cloud farms quickly return the funds invested in them, and their clients earn from collecting cryptocurrency, also paying a small percentage from this.

Why did cloud mining develop? The fact is that the period of return of funds invested in hardware increases in proportion to the growth of participants in the mining process, which increases the complexity of calculations. There is no instant profit. Miner, I'm talking about the device, should work and gradually pay for itself at first. Back in April of this year, the refund period was three months, now it is eight. And cloud mining allows owners to more quickly cover the costs of equipment already purchased and, if necessary, send funds for further development.

Anyone with computer equipment with the necessary power and special software can today deal with the extraction of cryptocurrency online. In the process of mining computers, calculating the correct data blocks, extract "coins" - a set of encrypted information. Blockchain is a kind of account. The cryptocurrency is also stored decentralized, distributed over the users' electronic wallets. Today in the world there are already more than 1000 different cryptocurrencies that exist exclusively in electronic form. And, for certain, there will be more technological projects than Bitcoin. Already arise. And it's worth thinking about. Will Bitcoin be relevant in 20 years? After all, no one now uses huge mobile phones from the 90s and does not use a modem to connect to the Internet. On the contrary, things are getting smaller, faster, more efficient, and this raises a question. Is there any place in the future for a slow, inert and energy-inefficient Bitcoin? Now his place of the first cryptocurrency market capitalization seems unshakable, and, most likely, it

will still be gold 2.0, digital gold, retaining the first line on the coinmartketcap. The huge period for which technology will step far ahead.

But what if you look at it from the other side? Some significant improvements to the Bitcoin protocol will be extremely difficult due to the lack of flexible turing-complete programming language. And this means that we are now seeing Bitcoin as it will be in 10-20 years.

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