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BENEFITS AND DRAWBACKS OF CRYPTOCURRENCIES IN FINANCIAL SYSTEM AND EFFECTS OF BLOCKCHAINS TO FINANCIAL SYSTEM.

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Abstract

Benefits and drawbacks of cryptocurrencies in financial system and effects of blockchains to financial system.

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This study dedicated to show the new technologies and financial instruments on financial system. These are cryptocurrencies and the system technology which is the base of these currencies: Blockchain technology. The study demonstrate that how this kind of innovation can affect to the financial system. Future economy is the digital economy, and cryptocurrencies and blockchain technology is the game changer on this economy. Study describe many aspects of cryptocurrencies and blockchain technology, at the end give suggestions about how Azerbaijan can integrate with these technologies on digital economy.

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2. Introduction.

2.1 What are cryptocurrencies and blockchain technology?

Cryptocurrencies is the new and mysterious trend in financial system. Its obvious specification is that it deny all intermediaries on financial transfers and transactions. Tracking transfers and transactions, which realized via cryptocurrencies is not possible for third parties, only participants of these operations can track state, amount of the transactions. Cryptocurrencies are not exist physically they use peer-to-peer mathematical algorithms for issuing and transferring these digital currencies. Systems mostly use specialized computer based technologies, their GPUs for producing these algorithms and use them at the operations, which related to cryptocurrencies. This system use the web network for managing financial operations and it is not similar with the traditional electron system which using for traditional electron, cashless money transactions, which called blockchain technology. Traditional system use network which starting from the one point, intermediaries such as Visa, MasterCard money system, and transfer datum from this point to the parties of transactions. For example: A company chose transfer transaction amount of products or services via MasterCard system to B company. Firstly system virtually send datum to “one point” which has mentioned above, then from that “one point” datum transferring to the B Company, additionally Company pay the additional fees for commission expense on side of MasterCard. This is the generally traditional system for transferring money electronically, which using by intermediaries. However, cryptocurrencies use the new system, which has not traditionally “one point”s. All parties in the system is the individual “one point”s.

2.2. Operations through cryptocurrencies: Black-markets, companies and governments.

Moreover, for transferring amount of cryptocurrencies, a company sends transaction amount directly from its own “one point” to the B Company’s “one

point". In this case it is not possible tracking the amount and the destination of transfers by third parties. Because of its encrypted by the system and only the two sides of the transactions can monitor it. Another point of cryptocurrencies is Decentralization of money, there is not any authorized body for regulating this operations through cryptocurrencies. In case of conjunction with its obscurity and being not regulating by any authorized body, what will happen on the illegal transfers and black market transactions? In last decade which cryptocurrencies started to developing there is numerous cases which indicate that black-market participants use this digital currencies as a payment method between consumer and suppliers, and it makes impossible for government bodies and financial organizations to track this users by virtue of encrypted systems cryptocurrencies. The most known transactions which prove this case again is that. Cyber attackers on HBO channels which stole the new series of Game of Thrones TV show. And they asked to HBO for paying the money in the form of "Bitcoin", which is the most famous and first cryptocurrency in the world, for not releasing this series of TV show. This is the only small cases for showing it's dangerous on Financial system. Due to the system for cryptocurrencies is all about Internet access and computer based system, the cyber attackers easily attack to the system and wallet of the users and miners of cryptocurrencies and steal their huge amount of wealth from their system and wallets, which also describe the drawbacks of cryptocurrencies is not only the problem of huge companies and government, it is also problem for the individual ordinary users. The other operations in Black Markets which related to the cryptocurrencies are trading illegally, buying and selling drugs, guns by cryptocurrencies. Also due to impossibility of the tracing operations in cryptocurrency exchange market, cryptocurrencies actively using for the money laundering and other financial crimes, such as envying taxes, and do not obeying regulations of the countries on the financial operations and system.

However in other case Cryptocurrencies can save the countries which facing with hyperinflation and banning or embargos from the international organizations. In

this cases local currencies of the country lost its value in Financial Markets and the life level of population dramatically decreases. Countries can create its own cryptocurrency using computer based technology and accept cryptocurrencies as the legally payment method and after that point cryptocurrencies will see its value among the other cryptocurrencies not in the Traditional Financial Market with other International Currencies such as US Dollar, Euro. The only need of country will be the staff with the good knowledge of computer based technologies and experienced human capital in this sectors. And it is probably will get high interest on Cryptocurrency market due to it will be the legal currency of some country which means it backed with the government promises and its resources such as oil or gold or something other valuable resource. But in other cases cryptocurrencies do not backed with the any physical resource, it only backed with the technological systems, network of computer based technologies. In this case participants, investors of the cryptocurrency markets, will rely on the cryptocurrency of the country which has been mentioned above. For instance Venezuela use same tactics after embargos of US against Venezuela. Currency of Venezuela lost its value after that processes and the prices in country start to flight and country faced with the hyperinflation. And government creates the new Cryptocurrency which called PetroCoin and it is backed with oil resources of Venezuela. Citizens use this cryptocurrency for international and local transactions. Many online shopping sites admit this currency as a payment method on their online system.

2.3 Usage areas of blockchain technology.

Besides of the complicated situation of cryptocurrencies which they created on the financial system, there is also new technology which gain the popularity after the creation of cryptocurrencies. This technology called Blockchains and usage area of this system is not bordered only by cryptocurrencies. It is inevitable fact that improving of technologies has changed how organizations do business. Technologies develop new solutions for old challenges. And as a new technology also blockchain

technology helps companies and organizations become more efficient. Blockchain technology is a kind of distributed ledger, which give opportunity for recording to be sorted by and stored in the blocks. Blockchain can be more trustful by removing the need for third parties, which also decreases costs in operations. For clarifying distributed ledger we can say that it is a group of technologies which also includes blockchain technology, in this ace ledger is maintained by a group of peers rather than a single central authority.

For instance using of this technology in real life can be described in this process; User requests a transaction after that the request is transferred to peer to peer "one point"s, after that point this individual "one point"s verify the transaction by the computer based mathematical algorithms. After that process winning "one point" groups the transactions, which forms a new timestamped block of transactions. It added to the blockchain and registering of all previous verified blocks happening in this step. At the end transaction is completed and ledger, which created by blockchain technology is updating by the technology. This is the more technical explanation of blockchain technology in real life example. In other cases without blockchain technology this processes are realized by the Centralized ledger not by distributed ledger. The main problem of the this technology for the ordinary financial organizations is that maintenance of the distributed ledger costs according to Chartered Accountants(Australia + New Zealand) approximately three times more than centralized ledger, which is using at traditional transactions. Developing this technology require huge amount of the investment in first step, due to that point this technology can be apply to the traditional money transactions and other operations by the technology companies like MasterCard, Visa and other international bank networks. In addition, blockchain technology can be used on other system beside financial system such as Logistics. As described above it reduce the costs which charging by the intermediaries.

Nevertheless, the systems like MasterCard and Visa, which already have the huge amount of computer-based network in the financial system, can easily adopt their system to this new technology for effective and efficient services. It is not surprising that MasterCard announced that it will be opening up access to its blockchain technology via its Application Programming Interface published on MasterCard Developers. Blockchain solution of MasterCard provides new way for consumers, businesses and banks to transact and is key to the strategy of company for providing payment solutions that meet every need of financial institutions and their end-customers. Blockchain solution of MasterCard has the ability to power secure and seamless non-card payment transactions such as B-to-B, which stand for Business to Business, payments and trade finance transactions. This technology of the MasterCard has the ability to power non-payment solutions such as proof of provenance that helps authenticate products across the supply chain.

In conclusion all these changes on Financial Systems which happening by the contribution of innovative technologies, can change all traditional processes and operations not only on Financial System but also on other sphere of Businesses. This changes never done before and nobody can say how it will be results.

Chapter I

3. Benefits of the cryptocurrencies on Financial System.

3.1. Independence from intermediary and centralized entities. Partnership between financial institutions and cryptocurrency community, and positive regulations on cryptocurrencies.

Cryptocurrency is a newly emerging currency that has just started to become popular. However, many people still do not understand why they use cryptocurrency.

Cryptocurrency is a currency that allows secure financial transactions through cryptography. This currency does not have any physical structure as it is produced in the software on the computer. Lacking a physical structure means that this currency can only be used in a virtual environment. These features make the cryptocurrency different from other currencies. American dollars, for example, are issued by the US government and are the official transaction tool of this country. The production and conservation of the US dollar is under US law. Like other countries' currencies, American dollars are supported by the government and the central bank. Cryptocurrencies, which is produced by means of Blockchain (a cryptographic process database) and has the largest transaction volume at the moment, is produced entirely through software and the protection is also made by this software. The use of cryptocurrencies is independent of the program in which the production is made, which makes it possible to use it in different environments. Bitcoin is the most famous cryptocurrencies and besides bitcoin there are other cryptocurrencies also, Ethereum, Bitcoin Cash, Ripple and Litecoin are the most popular. The production of all of these currencies is carried out by computer programs. However, today, using of cryptocurrencies in daily spending is impossible.

Belief can come a little hard, but the question of “Cryptocurrency is a "real money"?” can be answered both "yes" and "no". As a result, what we have defined as

money is an "exchange" tool. A country assigns its legal form of payment as its currency. In other words, payments made for goods or services received (except for certain exceptions) are made through the designated currency. The closing of debts and receivables is carried out in the national currency. In the case of a crypto currency, the situation is somewhat different because it is not currently possible to make payments with a cryptocurrency. But this situation seems is subject to change in the future.

In other words, if you have a crypto currency like Bitcoin, you can convert it to another currency and use it. Although there are some companies that accept Bitcoin as a form of payment, it is not possible to use crypto currencies in your daily spending. Having a crypto currency is, in a sense, like being a stock or gold owner. However, there is some companies which accept Bitcoin, one of the cryptocurrencies, as a way of payment:

1- Microsoft (Windows and Xbox)

2- Expedia.com (hotel reservations)

3- Overstock.com

4- eGifter.com (gift cards in outlet chains)

5- Foodler

6- Newegg (limited level operations)

7- Shopify

8- Dish

The number of medium and small-sized enterprises is much higher than the above.

The operations and production of this currencies should be clarify, which is more different than traditional currencies.

The production and conservation of national currencies is carried out by central banks and governments. These structures decide how much money will be printed and what interest rates will be kept at what level. You can easily visualize the American dollar and the administration of the Euro in your head. Is this situation different in crypto currencies? Yes, it is quite different!

Unlike traditional currencies (and even commodities like gold), the production of crypto currencies is at a limited level. Thanks to Blockchain (a database that provides encrypted transaction processing), the crypto currency can be traced (up to who owns it). Using Blockchain technology, Bitcoin produces a new amount of Bitcoin approximately every ten minutes. These produced Bitcoins are constantly on record. Another known fact is that there will be no more than 21 million Bitcoins - Bitcoin blockchain technology will stop production when it reaches this figure. This system is also similar in other cryptocurrencies.

Crypted currencies represent more than just giving opportunity to transfer money to the others. Cryptographic currencies open the door to a future where we can imagine the possibilities for each other's financial health.

One of the biggest FinTech innovations in human history, cryptographic currencies, is changing the story of the transfer of money between people, corporations, governments, and more. The best innovations are those who challenge traditional norms. At traditional money transferring between people, corporations, governments, and more, this will take enough time to verify this payment, also for this process we need intermediaries such as banks, and other financial institutions. Payer charging for services which this intermediaries provide for payment of the amount of the transactions or just money transferring additionally. When you pay a check from your own bank account to another bank, the bank usually keeps the money for a few days because you cannot be sure if you are in a position to pay the money. Similarly, international transfers can take a long time. Cryptocurrency operations are much faster.

If you are a "zero-approval" type, if the person you trade with will accept a payment not yet approved by the crypto money blockchain; your payment is instantaneous. If your payment is approved, it can take up to 10 minutes to process. This is faster than any transaction from one bank to another. “Zero-approval” type transactions are the transactions which payer pay the transactions amount with the cryptocurrency, but still wait for the approving of blockchain technology to approve this transaction. The one specification of the cryptocurrency transactions is that it cannot cancelled after payment. That means partner of the payer can easily accept this transaction before the approving of the system, due to it will not consider any risk at this point such as not paying or cancelling payment after providing service or product to the payer.

Bitcoin, during the global economic recession from 2008 to 2012, it appeared in 2009. This radical is a new idea; a digital currency protected by a democratic structure was difficult to accept on the market. Most people do not understand technology and see it as fraud. People living their lives all over the world with a kind of currency given and supported by governments and central banks. Can software written by random programmers be accepted as currency?

But this can happen when the right circumstances are taken into consideration. Bitcoin's creator / manufacturer drove Bitcoin to the market during a period of stagnation in 2008-2012, when central banks were struggling to support failed economies. The main tool against the recession of the banks is to lower interest rates and to pump the money into the market. Even if a confused economy needs this method, the money put into the market has significantly increased inflation. They are already punished by inflation for a second time, so that ordinary citizens who suffer from large-scale jobs and damage from house seizures. Many have lost faith in the financial system. Bitcoin, a safe, decentralized and anti-inflationary currency, was an attractive alternative and many saw Bitcoin as an anti-bank.

As we all know, the price of Bitcoin has risen strikingly in recent years. Bitcoin's success has led to the emergence of thousands of new crypto currencies. Many of them have the same three main features as Bitcoin: security, decentralization and anti-inflation.

It is expected that this technology, which is designed to get the control of the banks from the control of the monetary system, will face hard opposition by the banks, but this is not the case. In fact, the banks are mostly followed by the edge, and the crypto money market allows for a final volume of $ 100 billion. The strangest thing is that some banks have begun to develop projects with crypto money infrastructure and to work on supporting this technology.

There are a lot of valuable partnerships between crypto community and banks around the world.

Skandiabanken (Norway)

Skandiabanken, Norway's largest online bank, announced in May 2017 that it plans to offer its customers the ability to link their bank accounts with their cryptocurrency wallets. The first connection was established with Coinbase. Customers will be able to see amount of their cryptocurrency accounts in the application of Skandiabanken.

The People's Bank of China (China)

China's central bank, The People's Bank of China, announced in July 2017 that they plan to do business with private banks operating in China by means of a new cryptocurrency.

The benefits of a public crypto currency include lowering transaction costs, accelerating transactions, and reducing fraud and imitation rates.

Bitcoin Suisse AG (Swiss)

Bitcoin Suisse AG is the first public entity on the global scale to provide payment infrastructure for public services. In particular, it operates as a payment service provider for the Zug Municipality in Switzerland. The company also operates bitcoin ATMs in most major Swiss towns and trades crypto with a number of large companies in asset markets.

In the past month Swiss Financial Supervisory Authority gave the Swiss bank Falcon Private Bank a green light to manage crypto money assets. Bitcoin Suisse AG will make the bank's money broker.

South Korea

On July 3, 2017, the ruling Democratic Korean Party Representative Park Yong-jin announced that the South Korean government is ready to organize the Bitcoin market. Bitcoin will make arrangements for users and businesses to make the growth of the South Korean crypto money industry even easier.

Park Yong-jin's revisions to South Korean financial regulators; that businesses and trading platforms have at least $ 436,000 in capital, that customers should be identified and that data for data processing for black money blocking should be shared.

3.2. Unloved Dollar “System” and solving financial troubles in countries by accepting and issuing cryptocurrencies as legal currency of country.

Modern economy structure-production-technological the main point that distinguishes it from the point of view is its digitalization economy transformation. It can be see from the IV Industrial Revolution as President of the World Economic Forum Klaus Schwabin says. The IV Industrial Revolution is 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 Big Data access for economies significantly improve the quality of decisions, and it will make great opportunities for this economies. The development of new technologies will

increase the difference between earnings of labor and capital. A new economy based on digital technologies will also change his identity. Because of the IV Industrial Revolution will lay the foundations for new principles of ethics and aesthetics. The contours of the new economy talking about are already over 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's one of the most discussed tools are cryptocurrencies.

In the recent years, it was written about Bitcoin more comprehensive and more substantiated on the prospects different from ideas. So, the Executive Director of the International Monetary Fund Christine Lagarde is in support of Bitcoin making speeches and "everything is shows that Bitcoin will be world currency" opinion is more interesting.

Another point of interest is the United States the newly elected head of the Federal Reserve System of the United States It's connected with Ceram Powell. He notes that Bitcoin is at the moment does not endanger economic stability and digital currency will be very important in the future. In addition, the digital economy and the IV Industrial Revolution makes cryptocurrencies inevitable.

New industrial revolution and the new digital economy will bring agenda of completely new economic indicators for the large and small, developed and developing countries and the world economy will face with completely new "competitive" players.

At the moment, the popularity of cryptocurrencies is an unloved dollar system. The dollar crisis which caused by national currency of United States playing the role of the international. Central Bank of America try to solve internal economic problems in the United States by rising interest rate of the dollar. And it cause the huge amount of dollar outflow from the countries China, India, Turkey, Brazil and other industrialized countries . Due to dollar system, this process reduce the value of the national currencies of these countries. By virtue of this points many countries,

including China, Russia, and India have declared their intention to give up dollars in international trade.

Christine Lagarde mentioned that countries which has the weak financial institutions and unstable national currency can use cryptocurrencies instead of dollar. If the other cryptocurrencies have more risks, the countries which mentioned above can issue their own legally cryptocurrencies by their Central Banks. It is not surprising that some of the countries such as, Venezuela, Russia, Canada, Switzerland and other countries has announced their intention to issue their own legal cryptocurrencies.

Petro - Cryptocurrency of Venezuela

President of Venezuela, Nicholas Maduro, opened the front of Petro by announcing the idea of having the country's own crypto money with his statement made in December. Petro, which takes its name from the most important source of income for his country, oil.

Venezuela has begun sales of petroleum-backed cryptocurrency, Petro, which it has developed to break the dense US embargo. Venezuela has invested more than 82 million units of crypto money. Venezuela, one of the world's leading countries in terms of oil reserves, is suffering from the intense embargo imposed by the ideologically opposed US. Venezuela, which is spending huge efforts to end unemployment, is living in high inflationary pressures. But the economic system is preventing high inflation from making an impact like Venezuela's economic situation in capitalist countries.

Venezuela is located under the embargo of the United States, and this situation is causing the country's economy to collapse. While inflation in Venezuela has reached four-digit numbers, basic needs like medicine and food are scarcely affected. Petro is the country's greatest hope for mitigating these problems.

Petro is the world's first concrete counterpart, is seen as Venezuela's global economy-bound key. According to Venezuelan President Nicolas Maduro, the aim of the new crypto money was to strengthen the Venezuelan economy and to be an alternative to the national currency Bolivar. Maduro is finally planning to export 100 million Petro, supported by 100 million barrels of oil reserves. Behind Petro is oil, the country's largest natural reservoir, which separates Petro from other major crypto currencies. Because no other currency is supported by a real-world product.

This crypto currency created using the Ethereum platform in the pre-sale phase and available for sale. Preliminary sales will come to an end when 82,400,000 units are sold. With Venezuela's government think that Petro not only will reduce effect of the economic embargos, but at the same time a more transparent economy will be created.

The US government, on the other hand, stated that Petro's purchases could violate economic sanctions imposed on the country because it could express a credit extension for Venezuela. The US Treasury warned investors to pay close attention to Petro, due to US sanctions. However, this cryptocurrency even attracted the attention of investors from Turkey, Qatar, said that Europe and the United States.

Venezuela became the first country in the world to issue its own crypto money, as the Petro project had passed away in February. The first cryptocurrency of Venezuela, Petro, is collecting more than 700 million dollars in the pre-sale period.

Venezuela is thinking of making another crypto money backed by gold and other precious metals.

The other countries which want to eliminate dollar on their international trade are ready for trading with Venezuela via cryptocurrency of this country. One of these countries is Russia, which has the huge plans for eliminating dollars as an international money on oversea trades.

Russia will accept Petro in trade with Venezuela. Venezuela will use its national crypto money, Petro, to pay for the apparatus it receives from Russia. Russia accepts Petro as payment for oversea action with Venezuela. Venezuela will cooperate with the most well-known Russian company for trucks and two countries will use Petro as a way of payment between them. And also Russia will buy other natural resources from the Venezuela by using Petro as a way of payment.

Russia, which is regarded as a partner of Venezuela's cryptocurrency, is in fact pursuing a similar goal. After the Ukrainian crisis in 2014, Russia and the US and its partners have been subjected to various economic sanctions, many businessmen and companies have suffered from other countries' relations.

It is also experience for Russia on the aspect of how the Financial System, and national currency will react to this processes if taken by the government.

It is possible, however, that the Petro project is actually a "crypto money experiment" for Russia. In the past year, in Russia, a crypto ruble that imitates the basic elements of Bitcoin has been put forward by the idea of creating a digital currency and has been widely accepted by the masses.

Russia will be able to see what the financial system can do in support of a state-sponsored crypto-currency that supports Petro and to overcome US sanctions, as well as the risks that crypto ruble can create in the real ruble. And it is inevitable fact that if all of the processes will match the planes of the countries, many countries will issue their own cryptocurrency. This processes shows that the countries easily can use the national cryptocurrencies as the international payment method.

However, there is a point about that, this processes are actually against the nature of the cryptocurrencies, which one of the basic character of the cryptocurrencies is their decentralization. But issuing of cryptocurrencies by government disrupt this character of cryptocurrencies. And other point is about the negotiation between countries after IIWW which all of the countries accept only US

dollar as a international currency after Bretton-Woods dollar standard. All this process can renew the all financial system. And nobody can know how it will result for the Financial System and other countries.

4. Drawbacks of the cryptocurrencies on Financial System

4.1. Dynamic and dangerous financial instrument on the Financial Market. Bitcoin as a Digital Gold on cryptocurrency exchange markets and its effects on financial system.

As of December of 2017, this climb has been accelerated and transformed into a Bitcoin investment flier on a global scale. In the markets, "Mrs. Watanabe", which symbolizes the investor Japanese housewife, is now used to express the stage in which the person in the street enters the circuit of cryptocurrencies. Naturally, the claim that Bitcoin is a bubble ready to explode is also heard more often. According to forecasts for the middle of 2018, the bubble will explode according to some pessimists, and the price of Bitcoin will decline to 5,000 dollars, some 25,000 according to optimists and 60,000 dollars according to some.

The asset bubble in asset prices is defined as the overriding market pricing for the reason that it is breaking from the basic indicators of existence in the finance literature, in other words the intrinsic value. Well, according to today's sovereign theory of economics, what is the "inner value", as the "price", which is regarded as the "value" of a good, is defined as the point at which the supply and demand intersect in the market, Did not the market price reflect the real value in every situation? Obviously the financiers are different. But let us take a look at the housing price bubble, which triggers the global financial crisis, into the divergence of bubble without diving into the depths of value theory.

The chart below shows the average real house prices in the UK starting from 2002 to mid-2007, rising at a speed well above the long-term trend curve (blue area).

By the middle of the year 2007, when the prices started to pass and the prices started to decline, the mortgage loans that were taken based on the assumption that the prices would never decrease were started to be unsecured and recalled. As a result, the customers of these loans, which were distributed without precaution, entered into the difficulty of payment, and the banks began to sell mortgage-backed houses under the value of mortgages, and the housing prices started to fall even more rapidly. The value of the derivative financial borrowing instrument, structured based on the payments of these lending loans, has also been rolled over, and a growing table of losses has been transformed from chained bankruptcies in the whole banking system to a global financial crisis. A typical example of the swelling and collapsing process of an entity balloon that appears in the chart. Once the settling is complete, we can see that the prices are closer to the trend curve again. Of course, in a market where the trading frequency and decision-making process are slow, such as real estate, this cycle can spread over a period of 15 years.

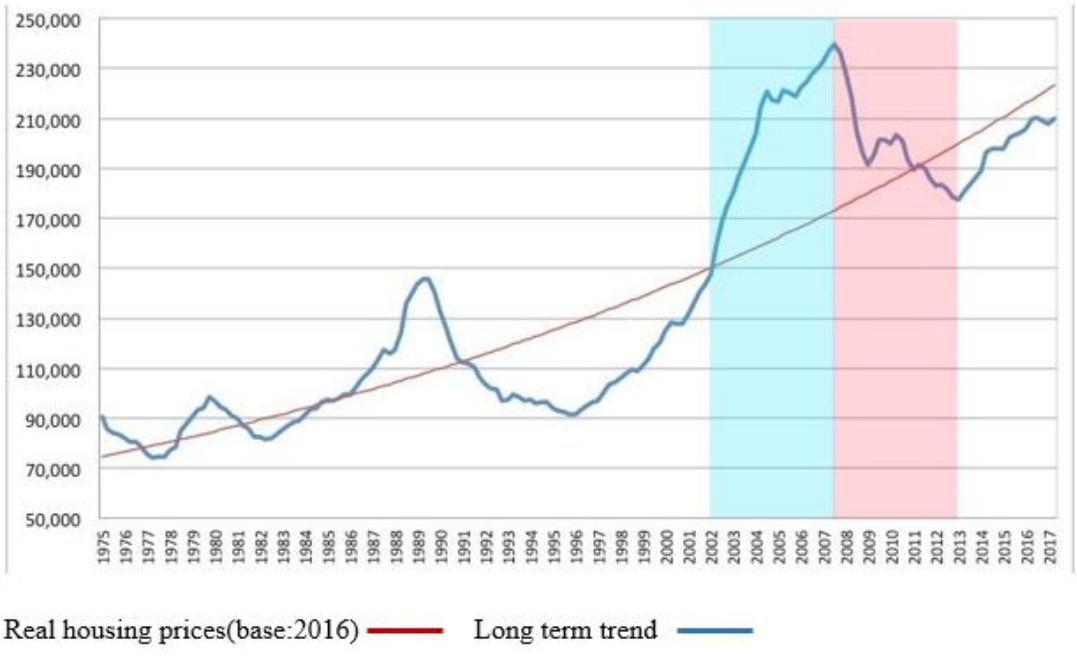

Figure 1. Average real housing prices in UK. (GBP)

Now let's look at Bitcoin's chart, which starts at the beginning of December and is priced at a much higher rate than the trend curve. The similarity in both inflation and

decline processes is striking. The difference is that the first one lasted eleven years and the other lasted one month.

Figure 2: Price of the Bitcoin (USD)

The question of are cryptocurrencies bubble? On the example of Bitcoin it can be answered as "yes" for a time period of certain scales. The swelling and extinction processes that is experienced in December can last again on both micro scale and longer scale. As if every being is on the market and always in scale. Even if the housing prices that led to a global price bubble burst, the real estate sector did not fly once, it continues its existence and its long-term trend. The same can be said for Bitcoin and other cryptocurrencies.

What is the source of the demand for bitcoin, which raises the price from $ 1000 to $ 20,000 within a year and raises the trend to $ 15,000? Is this demand stemming from the widespread use of it as a means of exchange? The using area of bitcoin in increasing volume of global trading is not such big for proving this statement. It does not seem easy to become widespread at the current level of volatility. Due to its volatility on the example of bitcoin, cryptocurrencies cannot easily replace the traditional money, which issuing by central banks of countries. The

volatility of cryptocurrencies can be opportunity for the investors and other small participants of cryptocurrency markets for using buy/sell option and gaining huge amount of money from this process. However, this is characterizing it not like a currency as in its name crypto – "currency", this characterizing it like other assets or stocks on traditional market.

Statements against to the idea that Bitcoin or other cryptocurrencies will turn into an international monetary system are primarily due to their structural characteristics, which makes the issuing of this currencies at limited numbers. For example, Bitcoin can be issuing maximum at 21 million number. It is stated that a supply-constrained currency cannot meet the needs of the evolving world economy at a great speed and will have a deflationary effect, and that it will be able to cope with such means as monetary expansion in the severe economic crises like the 2008 global financial crisis. However, it there are also other crypto coins that will meet the liquidity requirement outside Bitcoin. Which can be other sources for providing enough sources for global economy.

If there is no demand as a means of currency, then Bitcoin is demanding more as a means of preserving value. Indeed, simultaneous increases in the price of Bitcoin in crises such as the hyperinflation environment in Venezuela or the political crisis in Zimbabwe indicate that people prefer to secure their assets in Bitcoin, not in US dollars or Euros anymore. One opinion argues that Bitcoin's value does not increase, in fact the value of the dollar has fallen, and in other words Bitcoin has become the address of escape from the dollar.

The limited but regular increase in the supply of Bitcoin and the lack of any center's manipulation of Bitcoin's supply further augments its appeal as a means of retention because it reinforces the expectation that the long-term value increase will continue. In a sense Bitcoin seems to have been adopted as a precious metal instead of gold as a transferable and convertible asset that is more easily transportable from underneath.

As we know that bitcoin is common denominator for the other cryptocurrencies that means bitcoin can be reserve currency for other cryptocurrencies. The most of the alternative coins (AltCoins) should be buy with bitcoin. Buying this currencies with dollars or other fiat currency is not possible. People firstly buy the bitcoin after that they enter other cryptocurrency market for buy or sell other cryptocurrencies with cryptocurrencies.

One feature of these global stock exchanges is that there are no opening or closing times. These sessions are continuing 24/7. For example today's university students born to the heart of the information revolution are trading on mobile phones even during the course. As a result, this market will reach a value of approximately 1 trillion dollars. And it continue to increase, which can be resulted by insufficient dollars in economies. For now, Wild West conditions are valid in this market. There is no regulation, no measures to protect the small investor. Especially in communicating with messaging applications such as Telegram, WhatsApp it is possible to communicate all kinds of movements, such as manipulating prices in newly developed cryptocurrencies, to launch rallies and to send false messages to the online crypto news sites. A mechanism that can prevent insider trading is naturally yet imaginable in this transnational market. The crypto money exchanges, on the one hand, have the potential to become a money trap for many new traders without sufficient knowledge about these points, while transferring huge amount of money from the old economy to the unnamed new rich of the information technology age. New generations prefer to buy cryptocurrencies instead of stocks or shares in exchange markets.

As a result, with the spreading of cryptocurrency, bitcoin seems to have replace gold as a means of reserve. Which makes it digital gold. And most of the new cryptocurrencies are valued and indexed with bitcoin. While transfer times, approving of payments, getting longer time-period makes bitcoin unusable for daily transactions. And we also can say that we do not use gold in daily transactions. Due

to these complicated issues and scenario, Bitcoin can be called not digital currency, “Digital Gold”. And other cryptocurrencies would be replace fiat currencies. And they will continue to calling cryptocurrencies. Also trends among the some AltCoins demonstrate that some of these cryptocurrencies racing for becoming “Digital Silver” and “Digital bronze” of the cryptocurrency market. All these processes shows that money of the new information technology age can be cryptocurrencies or improved versions of these cryptocurrencies. As Bill Gates said we should not overestimate what will happened after two years, also we should not underestimate what will happened after ten years.

4.2. Unauthorized Financial System. Results of the illegal operations via cryptocurrencies without any controls by authorized body. Impossibility of Financial Monitoring and operations with cryptocurrencies on Black Market.

Operations with cryptocurrency any anonymously, without any trace of time it is possible to make a transfer to the address. Crypto Currency payments and settlements through transfer due to anonymity of registration the identity of the buyer and the recipient cannot be identified. This system is based on network of the computer based technology, and only participant of the transaction know the data and information about payment, prediction of transaction participants and calculation of amount of payment is impossible. For example, in Bitcoin, this letter is 34 letters and a code consisting of numeric symbols, which is only the code known to the owner of the cryptocurrency, identifying of information of this transaction is not possible. Such a means of earnings, as well as money creation and their anonymous transfer capabilities existence, especially doing this actions without any liability on state control systems and organs is the great “opportunity” for the illegal market participants and other businesses which want to do money laundering. All these properties of cryptocurrencies attracts the black market participants and create very comfort environment for doing their “Bad Businesses”. Cryptocurrencies are very

popular among the parties of illegal businesses. Such as selling of narcotic substances or buying and selling of illegal guns. Which also is very dangerous for the community.

The standard photo of the black market is illegal drugs and other illegitimate activities of a wholesome form. In fact these activities are very small portion of the whole “Black Market”. Employees without declaring, receiving payments and other operations like that which require control of the tax organs, and eliminating of taxation is the big part of the dark economy. Perhaps the most popular of these markets to seem is the Silk Road. Especially another e-shopping websites are forbid the selling of drugs and other products and services which are illegal in most countries. The silk road can only be accessed by a ToR browser – a program that locate on computers converts your data to codes before sending to other participants, which have volunteered to take a part in ToR Network.

Bitcoin and other cryptocurrencies has been the characteristic that allowed all this trade to flourish and up until early 2013 was probably half of all Bitcoin transactions are used by the participants of the Black Market. Even so – Bitcoin has now grown out of its dark phase and with opinion of regulation, is maturing beyond the darker regions of the internet as the most of operations are taking place on generic standard web platforms. But as Bitcoin has the probability for regulating and this makes risky for the Black Market participant to use it as a way of payment for illegal transactions – other crypto currencies such as CloakCoin and Dark Coin which has the more anonymity and makes them better tool for using it on illegal transactions such as selling drugs and guns on Black Market.

Besides of traditional cryptocurrencies there are also the cryptocurrencies which only used on Black Markets for making illegal transactions and doing other illicit actions which against the legislation of countries and against the health community rules. Mining of this cryptocurrencies are forced by the hackers group via

the different ads and other ways. The most popular cryptocurrencies which are generally using by parties of Black Market is: Monera.

This Cryptocurrency has been established in 2014, and it designed like keeping its users anonymously, this make it popular for the Black Web Market. In 2017 reports demonstrate that sellers accept this cryptocurrencies for the illegal gun selling, drugs, and purchasing for stolen credit cards and other illegal activities. Monera was created for solving only one problem of Bitcoin. That is the anonymity. Anonymity also the characteristic of Bitcoin but shape of Blockchain technology which Bitcoin system using for transacting and issuing of Bitcoins, can be tracked by the involvers of the transaction. Also if one time you use your bitcoin account for the bitcoin deals, it will be easy for the peoples to track your account and to learn how much bitcoin you have on your account. But, in the Monera's system it collect and merge individual operations with hundreds of operations and this make it possible to trace one special operation via this cryptocurrency. However, this cryptocurrency is in the top 20 popular cryptocurrency. Another cryptocurrency which is also very popular for Black Web Market is the Dash, which use the related technology for making any transactions impossible for tracing. The other dangerous point is that creators of this cryptocurrencies are very welcomed for disclosing this information about their cryptocurrencies and attracting Black Market participants using these cryptocurrencies for their illegal transactions and give them guarantee for anonymity.

It is inevitable fact that this technological development is very dangerous for human being. Governments try to regulate mining and using of cryptocurrencies. And they announce that future legislation will be release for regulating processes and operation through cryptocurrencies.

Russia

Chairman of the Russian Central Bank stated that, although some Russian companies accept cryptocurrencies as a way of payment and provide their services and products on exchange of cryptocurrencies, Russia think that these

cryptocurrencies cannot be using as a payment method for the internal market, and Russia will not permit it, and behaving these cryptocurrencies as a circular money on local economy cannot accepted. Also Russia has the strict rules on the mining of the cryptocurrencies, Russia register all miners for the traced them. In addition illegal mining of the cryptocurrencies can be accepted as a circumstance and local safety organization, police arrested number of miners due to illegal mining of cryptocurrencies. As mentioned above freely mining of cryptocurrencies can be harmful for the economy and the community of the country, freely circulation and mining of the cryptocurrencies can reduce the tax revenues of the countries, and it will affect financial system of the country badly, due to still the main key for the reglating financial system is the tools of the government, and main revenue source for reforms this kind of regulating is tax revenues in countries.

Russia stated that using of cryptocurrencies by the individuals are the risky for them and Central Bank are always responsible for the managing of the risk in country's financial system, And banning of the using of cryptocurrencies as a payment method by the individuals are the best regulation at this point. Due to decentralized system of the cryptocurrencies it is not possible choosing other methods for regulating and traced operations via cryptocurrencies.

USA

Moreover, USA has not applied any regulations on cryptocurrencies legally. But, authorities plan to make their decision about the policy for the cryptocurrencies. USA after the 11th September pay the attention to the financing of the terrorism and illegal transactions between the parties. USA has the attractive economy for the Black Web Markets and USA government try to eliminate this acts, which can be easily undertaken by the cryptocurrencies. And the Ministry of Finance of the US has the one purpose on the regulation of the cryptocurrencies, this is protecting financial system against illegal transactions via crypto currencies.

Canada

Canada also has the regulation against the using of bitcoin and other cryptocurrencies in the countries according to the legislation of the Canada the only way of payment in country is the using of dollar of the country. Stephen Poloz, the head of the Central Bank of Canada, however, is not too pleased with the crypt. In his view, the same Bitcoin is not a currency, and the crypt cost is based on speculation and gambling element.

South Korea

Until recently, South Korea was proud of its high position in the cryptocurrencies, and against the background of Chinese prohibitions of last year was perceived as a crypto-currency "asylum country". However, at the beginning of 2018 there was a split among the South Korean leadership on the "crypto-currency issue". It was accompanied by a number of statements, explanations and publications of false information. This uncertainty and the prospect of a possible ban became the cause of "Red Tuesday" - the collapse of crypto money on January 16. A similar collapse occurred on January 30 - when the Korean authorities began to apply in practice the January 23 prohibition of anonymous trade in crypto-currencies.

UK and EU

Although Brexit must lead to the United Kingdom's exit from the EU in a year, their plans for the cryptocurrencies remain similar. The British Treasury and the EU intend to put an end to anonymous cryptography, justified by the fight against money laundering and tax evasion.

Australia

After a financial scandal around the country's main bank, the Australian authorities plan to use the Japanese experience in the field of crypto-regulation and combating money-laundering. This position is different from that which the authorities occupied in 2015 - then the government decided not to interfere in the life of the cryptocurrency. However, the lack of clear "rules of the game" had a rather

negative impact: at the end of 2017, crypto-brokers were forced to suspend the receipt of Australian dollars because of the "reluctance of banks to cooperate" with the crypto industry.

In December 2017, the Australian Tax Administration issued a recommendation from which one can understand the direction of future rules of working with the country's crypto currency

Japan

Japan's legislation on crypto-currency is not liberal. Now she hardly wins the struggle to attract crypto business, fleeing from the Republic of Korea and the PRC, where governments either "squeeze out" the crypt, or constantly change their position. The Japanese authorities clearly treat crypto currencies better than their neighbors in the region.

Nigeria

Africa's largest economy recently suffered a recession, which caused an acute shortage of the currency. The turnover of bitcoin in Nigeria over the past year grew by 1500% - Nigerians used the crypt to circumvent the restrictions on access to the US dollar, introduced in order to contain the recession. And if at the beginning of the year the Nigerian central bank intended to prohibit crypto-currencies, by the end it already claimed that it could not control bitcoin and blockage, since it does not belong to them.

China

The only negative point about cryptocurrencies is not the misusing of this cryptocurrencies there is also the risk and lack of controls on the regulating internal risks in cryptocurrency exchange market. It is obviously seems that the risk of losing

money and wealth on cryptocurrencies exchange markets is highly possible. And most of the exchange markets has not any regulation and control for this point. At this issue the China has the biggest problem due to the biggest exchange markets of the cryptocurrencies are belong to Chinese. Government of the China require the regulating and started investigation on these markets in China. The BTC China-bitcoin exchange market, OkCoin and Huobi cryptocurrency exchange market, which located in cities of the China, Shanghai and Beijing faced with these investigations. And due to lack of control in exchange markets makes here suitable places for the money laundering acts. And with starting of these acts in China makes the participants of these exchange markets to withdraw their money from the cryptocurrency exchange market. In China there is also public organization which only investigate cryptocurrency operations in the People's Republic of China. And after that processes by government make the exchange market to face with huge amount of money outflow. Cryptocurrency exchange market try to make suspensions on the market for withdrawing of money. Although the main cryptocurrency mining and sell/buy options happen in China, government of China are make warning for misusing them and using this tools as a way of money laundering in China.

As a result using of the cryptocurrencies without any regulations and easily using them on exchange market for getting huge amount of wealth is the drastically trouble for the Financial system of the countries. Misusing of digital currencies shows that increasing number of cryptocurrencies without any financial regulation and registration of accounts at this cryptocurrencies create threatening for the financial system of the countries. This makes countries losing the national wealth of country on the hand of some anonym people. And also gaining money with envying taxes is also creates decreasing of countries' revenues. And if there are thousands of the cryptocurrencies on the exchange markets it makes impossible for the countries to trace or register users of the cryptocurrencies. It is inevitable fact that after using of cryptocurrencies and cryptocurrency exchange markets as a way of illegal trading in

Black Web Markets and easy tool for the money laundering. Government chose the way of blocking operations with the cryptocurrencies and releasing orders for the banks for stopping money transferring or accepting money which is related to the dealing of the cryptocurrencies.

The increasing number of the cryptocurrencies demonstrate that government will chose way of blocking operations with cryptocurrencies, buy/sell options in cryptocurrency exchange markets and mining of these cryptocurrencies at least until the releasing legislation about cryptocurrencies, registration of the participants of the cryptocurrency exchange markets, and making tax law for the miners of the cryptocurrencies and gainers of the cryptocurrencies with other options. There is not small amount of the cryptocurrencies for applying registration on these cryptocurrencies approximately there is 1 trillion US dollar market share of the all cryptocurrencies and thousands of the cryptocurrencies, which shows that how it can be threat the Financial System of the countries.

	Cryptocurrency	Symbol	Market Cap	Price(USD) (29.04.2018)
1	Bitcoin	BTC	$158,281,564,327	$9,307.71
2	Ethereum	ETH	$67,642,900,454	$682.42
3	Ripple	XRP	$34,007,324,693	$0.868726
4	Bitcoin Cash	BCH	$24,393,299,960	$1,426.49
5	EOS	EOS	$17,396,733,975	$21.10

6	Cardano	ADA	$9,524,205,654	$0.367346
7	Litecoin	LTC	$8,557,874,510	$152.00
8	Stellar	XLM	$8,323,423,543	$0.448189
9	TRON	TRX	$5,678,559,206	$0.086368
10	IOTA	MIOTA	$5,630,327,722	$2.03
11	NEO	NEO	$5,587,185,500	$85.96
12	Monero	XMR	$4,046,792,880	$253.24
13	Dash	DASH	$3,907,836,553	$486.23
14	NEM	XEM	$3,760,569,000	$0.417841
15	Tether	USDT	$2,403,010,208	$0.994154
16	VeChain	VEN	$2,372,373,305	$4.51
17	Ethereum Classic	ETC	$2,179,644,623	$21.49
18	Qtum	QTUM	$1,973,470,274	$22.28
19	OmiseGO	OMG	$1,812,336,945	$17.76
20	ICON	ICX	$1,776,683,256	$4.59
21	Binance Coin	BNB	$1,688,575,170	$14.81
22	Bitcoin Gold	BTG	$1,306,956,990	$77.00

23	Lisk	LSK	$1,288,447,333	$12.23
24	Aeternity	AE	$1,205,116,636	$5.17
25	Zcash	ZEC	$1,114,111,573	$292.64
26	Steem	STEEM	$1,047,840,813	$4.13
27	Verge	XVG	$1,039,863,042	$0.069623
28	Nano	NANO	$1,039,195,413	$7.80
29	Bytecoin	BCN	$1,013,394,951	$0.005512
30	Siacoin	SC	$988,776,587	$0.028993
31	Bytom	BTM	$970,057,158	$0.982834
32	Populous	PPT	$918,436,247	$24.82
33	Wanchain	WAN	$899,492,700	$8.47
34	Bitcoin Diamond	BCD	$863,961,336	$5.63
35	Ontology	ONT	$841,643,868	$7.47
36	Zilliqa	ZIL	$772,076,262	$0.105996
37	BitShares	BTS	$768,783,666	$0.293430
38	Waves	WAVES	$714,191,000	$7.14
39	Stratis	STRAT	$706,091,430	$7.14

40	Bitcoin Private	BTCP	$685,648,385	$33.58
41	Maker	MKR	$649,547,189	$1,050.66
42	0x	ZRX	$639,519,443	$1.22
43	Mixin	XIN	$625,970,829	$1,504.00
44	Dogecoin	DOGE	$605,591,531	$0.005302
45	RChain	RHOC	$603,451,605	$1.68
46	Status	SNT	$594,414,052	$0.171277
47	Decred	DCR	$591,718,962	$82.81
48	Loopring	LRC	$560,736,680	$0.980182
49	DigixDAO	DGD	$543,828,000	$271.91
50	Hshare	HSR	$529,726,353	$12.34

Table 1. The top 50 cryptocurrencies. [1]

As it is seen, these processes shows that centralized control is inevitable because it is relevant the classic function of the controlled state, the commodity-forms a basis of monetary relations. Markets stands on the three parties: the lender, the borrower and the regulator. The issuer-owner of each asset which is an investor-lender for these assets and is ultimately binary to protect their relationships and to give them legal guarantees the regulator must be able to trace them and making legislation for them. It is not different on cryptocurrency community and the legislation and regulator organ or agency for cryptocurrency markets and other operations which related to cryptocurrencies is very important for the countries for

protecting their national wealth and providing secure environment for their financial system. If legislation give permission doing cryptocurrency business with huge amount of losses for both investors and country, there will appear two big figures: the person who gives the money, and the money, or maybe lost and or stolen wealth of the people. If there would not any third regulator on this operations and cryptocurrency exchange market there will be anarchy and none of the countries will want this bad actions for happening in their countries.

Chapter II

5. New technology in Financial System: Blockchain technology

5.1. What is the Blockchain and how it can change the modern economy and financial system? Distributed Ledger Technology and usage areas of this technology.

Blockchain technology after creating of Bitcoin in 2009 seen as a major revolution on digitalization of economy and financial system. What is this blockchain? Blockchain is a continuously growing distributed database in which records are linked to each other by cryptographic elements (hash functions). Although not a centralized system, the data is stored by users integrated into the system. Blockchain, which is a distributed database that provides encrypted transaction follow-up, is defined as the simplest statement of digital or distributed ledger technology (DLT). With blockchain technology, crypto currencies are replaced by the mathematical precision of the two sides, eliminating the need for intermediaries. This is also pointed out as a function of trust. It is the high security that blockchain technology, which provides the infrastructure for cryptographic operations and infrastructure, does not require a tool and has the strongest strength in addition to being transparent. The benefits provided by users such as accelerating the Blockchain transaction process, lowering costs, increasing safety and facilitating

operational processes have great potential. The decentralized system of blockchain technology, which removes the need for third parties as a result of the spread of crypto-money, can bring about a significant change or disruptive effect in the financial system, as transfers are made anonymously and at a very low cost. The most important feature of Blockchain technology is that it has a decentralized verification system. In this respect, digital transformation is shown as one of the most effective areas of experience. Blockchain is a valuable technology that can be applied in many different fields, from birth and marriage and death certificates, realization of elections and management of intelligent contracts to storing, processing and managing financial documents. Blockchain technology provides unprecedented control over digital identity for individual users. Therefore, Blockchain, a global open accounting book, is used not only for the production of crypto money, but also for many different areas such as storage, management and storage. The ability to provide digital identity makes it a key to the confidence economy.

In this respect, the blockchain is not only confined to the financial sector, but also transformed into opportunities by the possibilities offered by digital technology. It is suggested that the blockchain technology gradually came in like tsunami and took place at the center of the fourth industrial revolution. So much so that in the coming period Don Tapscott, who expressed that the great effect that technology will bring to our lives is not realized through social media, massive data, robots or artificial intelligence, it means that the real revolution is the blockchain that forms the foundation of the virtual-digital money. Although main attention is given to the cryptocurrencies, but the technology which provide system for realizing operations with cryptocurrencies, Blockchain is more important than cryptocurrencies for the financial system.

Through Blockchain, significant steps are being taken to enable different sectors of the international arena to integrate with technology. In this framework, we can give a few examples of recent initiatives for blockchain technology. Using

technology provided by digital technology to facilitate international trade, IBM has attempted to establish a digital trading chain consortium through blockchain technology with financial institutions such as Deutsche Bank, HSBC, KBC, Natixis, Rabobank, Societe Generale and Unicredit, among the largest banks in Europe. IBM's interest continued with its partnership with UBS, Bank of Montreal, CaixaBank, Erste Group and Commerzbank for a blockchain-based trading financing platform. Previously, Wells Fargo and Commonwealth Bank of Australia blockchain technology was used for monetary transactions in shipment. Such developments show that the financial sector will adapt more quickly to the opportunities that digital technology, such as blockchain, will face in the coming period.

The Danish Maersk Line company, one of the world's largest maritime transport operators, has begun using its blockchain infrastructure to gain strategic and business alliance with IBM in order to save time and cost in the operation of ships and vessels navigating international waters, and to accelerate process and document procedures.

In South Korea, the Seoul government is going to the deal with Samsung for the blockchain-based technologies it needs, and Hong Kong and Singapore have announced that they will use blockchain technology to tackle trade issues and unify their trading platforms.

The global technology company Bitfury has signed an agreement with Georgia as pilot country for land title registration. Shortly afterwards, the same company aimed to realize the largest state blockchain agreement with Ukraine and to place all of the country's electronic data into the infrastructure of the system of interest.

Traditional systems tend to be bulky, error prone, and frantically slow. Mediators are often required to resolve conflicts. Naturally, it costs stress, time and money. In contrast, users find the block chain less costly, more transparent, and more effective. An increasing number of financial institutions are beginning to use this system for innovations such as smart debts and smart contracts. Smart debts

automatically make payments to bond holders when certain pre-programmed conditions are met. Smart contracts are digital contracts that self-maintain when they meet requirements.

Traditionally trading transactions can be expensive and risky, especially at the point of asset management (where the parties manage trade and assets), especially in the case of foreign transactions. Like the broker, trustee, or settlement manager, each actor keeps his or her own records, which makes it vulnerable to significant inefficiencies and mistakes. Blockchain book reduces errors by encrypting records. At the same time, this digital notebook simplifies the process by removing the need for a mediator.

Usage area of blockchain technology on the other important sector of the financial system is the Insurance companies and claims processing. Insurance companies have to fake fraudulent claims, fragmented data sources or abandoned policies and manually process these forms. The probability of error is too high. Blockchain provides a perfect system for risk-free management and transparency. The encryption features allow the insurers to acquire ownership of the assets to be insured.

Tangible assets, such as cars, houses or white goods, as well as tangible assets such as patents, property titles or company shares, can be integrated and recorded with intelligent technology. This record may be kept in the book together with the contractual details of others who are allowed to own it on this property. Smart switches can be used to facilitate access to the allowed side. The notebook maintains and stores these smart keys once the contract is verified. Distributed Ledger Technology also become a system for recording and managing property rights, while recordings or smart keys provide for the duplication of smart contracts. Making your property smarter reduces fraud, mediation fees and your risk of entering suspicious activity. At the same time, it increases confidence and productivity.

Smart contracts can revolutionize the traditional credit system. For example, lenders of cash lend money to persons with weak credit ratings, or institutions, by paying ten percent and fifty percent of the loan amount and claiming property as collateral. In this way too many borrowers went bankrupt and lost their homes. Blockchain can overthrow it by allowing a stranger to lend you money and take intelligent property as collateral. You do not need to show a credit memo or job history. You do not need to manually process a large number of documents. Property is coded in the blockchain for everyone to see.

These opportunities on financial systems and improvising the working scheme of the financial procedures by the blockchain, distrusted ledger technology makes blockchain very important for the banks, financial institutions and other companies on the near future. It is inevitable fact that economy of the future cannot imagine without virtual and technological tools, and blockchain technology is the one of the most essential tool for realizing businesses, and financial processes on digitalized economy, and financial sphere.

5.2. Applying Blockchain technology on current technology of Finance, Bank and Investment Companies. New technological services on Financial System and new competitors.

Blockchain technology makes new patterns on financial system as a new ways for payments, new systems for doing financial operations, and it provides less time and less cost concept for the financial operations.

The financial institutions try to develop new technologies which developed by adopting blockchain technology.

The MasterCard which is the financial company that provides payment system for individuals and banks, and has the important contribution on world financial system. It makes easy for the consumer paying the payments for the purchasing services or products. MasterCard is the one of the first companies which adopt its

technologies to blockchain technology. The changing demands from digital economy force to using new technologies for faster and efficient payments for increasing global needs. MasterCard announced its API system which based on blockchain technology. This blockchain technology use blocks for transactions and put them on individual blocks after that these blocks are connect to the previous block, and these connections make chai of blocks on the system. As blockchain technology is on its first steps on financial system and it seems as a game changer on the digital economy and financial system.

MasterCard implemented new distributed ledger technology for business to business transactions for overcoming the need for faster and efficient payment process. MasterCard also ready for implementing this technology on the transferring funds between the banks in the financial system. The technology which MasterCard planning to implement for the transferring funds between banks is called MasterCard Settlement Network. MasterCard do not use its technology for the cryptocurrencies and it use its system for the fiat currencies of the countries. The existing technology system of the MasterCard makes it easy for the company to implement blockchain technology on its service which company provide on financial system.

Also Visa which is another company in the same sphere of financial system, planning to implement blockchain technology on its service. The company is working on researching opportunities of using blockchain technology for faster and efficient payments between participants of the transactions.

SWIFT which is the provider of almost half of the international payments with huge amounts, tested the system of blockchain technology, distributed ledger technology, for transferring money between 34 banks. These tests demonstrated that how the huge international financial service provider try to adopt their technologies to blockchain for less time less cost concept, and efficient service. Tests between accounts of banks showed that the banks can easily make their operations through these technology of the SWIFT and can enjoy the efficient service, however besides

applying distributed ledger technology by the SWIFT also banks should adopt their policies and regulations for the easily using these system of the SWIFT.

The blockchain technology also bring new competitors to the financial system such as Ripple which provide services for banks using blockchain technology and try to reduce cost of the international payments among the banks, which is the same thing with the SWIFT try to do.

Other service which would be change characteristic of all financial negotiations and processes is the smart contracts, which use the distributed ledger technology for realizing processes of the agreements. Smart contracts are a computer protocol designed to facilitate, verify, or implement a contract's negotiation or performance. Smart contracts were first proposed by Nick Szabo in 1996.

Parties supporting smart contracts claim that many of the contractual provisions may be partly or completely self-executing, self-employed, or both. The purpose of smart contracts is to provide greater security than traditional contract law and reduce other transaction costs associated with the contract.

One of the best things about blockchain is that there is no centralized system between all the allowed parties, so you do not have to pay for brokers and save you time and disputes. The blockchain has its problems, but banks and governments tend to blockchain technology because they are faster, cheaper and safer than traditional systems. And distributed ledger technology makes it more transparent for the allowed parties to control the system. The developing this technologies by the financial service provider give the great opportunity to them for more efficient operations. And using smart contracts with the fiat money will make it new, and most efficient and transparency system for banks and other financial institutions during the financial processes. Smart contracts help you change money, property, shares or anything of value in a transparent way, away from conflict, without taking advantage of the services of a mediator.

From financial derivatives, smart contracts can be used for everything from insurance premiums, violation contracts, real estate law, credit usage, financial services, legal transactions and crowded financing agreements.With smart contracts can provide payments or dividends with automated, non-contact, efficient, error-free, and independent of human intervention service.

Moreover, while payments are made in an autonomous manner in the Smart Contacts, the service or product is transmitted to the other side, while the intermediaries is not required.

Today many of the financial institutions are going to use the distributed ledger technology of the Ethereum and they unite around the alliance which called The Corporate Ethereum Alliance. This alliance combines Fortune 500 companies, entrepreneurs, academics and technology suppliers with Ethereum specialists. Together, they work to create enterprise-class software to accelerate Ethereum, the single-block chain that works in real life and supports smart contracts, to accelerate the most demanding complex applications of the business world. There are many famous institutions which are the member of this alliance and try to research and develop new system by using distributed ledger technology of the Ethereum which is the second popular cryptocurrency. The companies below shows that how the financial intuitions are interested new technology of the digital economy.

JP Morgan Chase (United States)

In February 2017, a community named Enterprise Ethereum Alliance was established to set general standards for Ethereum developments. JP Morgan was among the hundreds of companies that joined the Enterprise Ethereum Alliance. JP Morgan launches a special blockchain project using the open-source Ethereum infrastructure called Quorum. This system aims to speed up intra-bank operations.

National Bank of Canada (Canada)

Canada's sixth largest commercial bank, National Bank of Canada, has joined the Enterprise Ethereum Alliance and is interested in developing financial applications and platforms using the Ethereum protocol.

Banco Santander (Spain)

Banco Santander is a Spanish banking group. In May 2016, Santander ranks 37th on Forbes Global 2000's list of the world's largest publicly listed companies. Group President of Blockchain R & D, Julio Faura, Chairman of Enterprise Ethereum Alliance

6. Conclusion and suggestions.

Developing technologies and computer based systems are the major directions of the digital economy. Changing trends on global economy shows that countries which have the specialized human capital on information technology will change the players of the future economy. As a backbone of the economy financial system is not exception in this case. After the financial crisis in 2008 the new type of the financial instrument, cryptocurrencies has been launched to the market. As we discussed before these crypted currencies has both good and bad sides for the economies of the countries, and for financial system. Cryptocurrencies are the new on market and they need more reforms on it. Especially misusing of these currencies can harm the economies of the countries and can create new collapses on economies and financial system. Due to the major aspects of the cryptocurrencies we can focus on Bitcoin as a most popular cryptocurrency, and widespread users of this crypted currency, it will also make it easy for describing whole ecosystem of all cryptocurrencies. The anonym users and misusing of Bitcoin is the major threat for economies and new regulations on them are essential for protecting community from the bad results of the bad actions of cryptocurrency users. These regulations firstly should determine is it currency or money or commodity on financial market. And these regulations should

include rules for mining of Bitcoin and saving of Bitcoin on their wallet as a asset or currency. If someone gain revenue from Bitcoin there should be taxation on this revenues. Other point is the controlling and managing of risks on cryptocurrency exchange market, for securing residents of the country which are the participant of this market. Besides of this lacking aspect as we see from the example of the Venezuela, it can help for solving financial troubles, economic crisis on country.

Changing prices of the oil and other trends on global financial market are created financial threat for the economy of the Azerbaijan. Republic of Azerbaijan can make the plan B for its reforms in the case of severe economic downing on economy of Azerbaijan and also testing this new technology for pilot regime also can provide experience for Azerbaijan and can create the new opportunities for taking a place on the line of new economic player on global market. In this case the new cryptocurrency in cryptocurrency exchange market can provide huge amount of money inflow to the country, if the cryptocurrency of Republic of Azerbaijan backed the rich natural resource of the Azerbaijan, obviously this scenario will happen and the new investments would inflow to Azerbaijan economy.

In addition Blockchain technology, distributed ledger technology which provide system for the operations for bitcoin is very important for its faster and efficient operations. This technology is not works only for the Bitcoin, it can adopted for using as a new system for the fiat currencies. The volume of the global trade is increase year by year and the increasing need for international payments and money transfers require new more efficient less costly system for providing these services. SWIFT is the largest system which provide service for almost half of the big amount of the oversea payments, and this system started to test distributed ledger technology for more efficient service. The blockchain technology is demand more investment than traditional system for establishing. Due to this point the small service providers at this time is not able to use this technology for their services. The new company which provide the same service with the SWIFT, which called Ripple use the wholly

blockchain technology for these services, and approximately have the agreement with the one hundred banks for providing its service. The reports shows that adopting existing technologies to the blockchain technology is more efficient than establishing new technology from zero. MasterCard use this procedure for using blockchain technology and it started to adopt its huge computer based technologies which use for servicing to banks and other financial institutions to the blockchain technology.

There is an Enterprise Ethereum Alliance for researching and developing of blockchain technology and its advantages. Well-known banks and financial intuitions make investment and try to be a part of this alliance for gaining information on this new generation technology on financial system.

Especially Central Bank of Azerbaijan can make agreement with this alliance for gaining information on this technology and taking active part on researching and developing of this technology, which can be the future of the financial system. This technology is not only about providing more efficient system, it also brings new technological services to financial system such as smart bond or smart contracts, which is only about algorithms and the side of the contacts will not need intermediaries for analyzing or making deals. System will direct them and will make deal with the interesting sides automatically, the only requirement is that filling true datum right place on system. Which can contribute to the Central Bank of Azerbaijan for more efficient services in local market.

These new technologies can change future of the economy and financial system. As Bill Gates mention, “We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten.”

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