THE MİNİSTRY OF EDUCATİON OF THE REPUBLİC OF AZERBAİJAN
AZERBAIJAN STATE UNIVERSITY OF ECONOMICS
INTERNATIONAL GRADUATE AND DOCTORATE CENTER

MASTER DISSERTATION

ON THE TOPIC

"The Importance of Usage of Cryptocurrency in International Financial System and Trade."

Huseyn Ibadov Namig

BAKU – 2019

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Code and name of Programme: 060401 World Economy
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BAKU – 2019

Elm and

Mən, Hüseyn Ibadov Namiq oğlu and içirəm ki, **“**Kriptpvalyutanın Beynalxalq Maliyyə Sistemi və Ticarətdə Istifadəsinin Əhəmiyyəti” mövzusunda magistr dissertasiyasını elmi əxlaq normalarına və və istinad qaydalarına tam riayət etməklə və istifadə etdiyim bütün mənbələri ədəbiyyat siyahısında əks etdirməklə yazmışam.

Kriptovalyutanın Beynalxalq Maliyyə Sistemi və Ticarətdə İstifadəsinin Əhəmiyyəti.

Xülasə

Tədqiqatın aktuallığı: Kriptovalyutaların son illərdə sürətlə yayılması və onların beynalxalq ticarət və maliyyə sistemlərində olan təsiri mövzusu müxtəlif elm adamların və sıravi vətəndaşların bu mövzuya marağın artmasına gətirib. Beynəlxalq ticarət və maliyyə sistemi qlobal iqtisadiyyatın mühüm tərkib hissəsidir. İnnovasiya və ağıllı texnologiyaya sahib olan Bitkoin və digər kriptovalyutalar ticarət və maliyyə sistemi üçün gətirdiyi həlli bu sistemə köklü şəkildə təsir göstərəcək. Sistem üçün vacib olan mürəkkəb texnologiya və onun səmərəli istifadəsi müxtəlif alimlər tərəfindən öyrənilir və araşdırılır. Əgər dəyişikliklər və tənzimləyici orqanların yanaşmaları keçirilirsə, ticarət və maliyyə sistemi yaxın 5-10 ildə tamamilə fərqli olacaq. Vasitəçi istifadə etməyən kriptovalyutaların arxasında dayanan texnologiya gündəlik ticarət sistemini səmərəli və efektiv edəcək.

Tədqiqatın məqsəd və vəzifələri: Kriptovalyuta və onun arxasında təməl olan Blokçeyn texnologiyaları beynalxalq ticarət və transmilli əməliyyatların maliyyələşdirilməsi yolunda böyük dəyişikliklərə gətirib çıxardacaq. Cari işdə, kriptovalyutaların beynəlxalq maliyyə sistemi və ticarətə təsirini araşdırma məqsədi daşıyır. Təhlilin əsas sahələri ticarət maliyyəsi , beynəlxalq ticarət, müxtəlif ölkələrdə Bitkoin qanunvericiliyi, Blokçeyn texnologiyası, kriptovalyutanın spekulyasiya aləti kimi istifadəsi, kriptovalyutaların üstünlükləri və çatışmayan cəhətləri barədə məlumatlar teqdim edilib.

İstifadə olunmuş tədqiqat metodları: Əsas metod olaraq, keyfiyyət metodundan istifadə edilmişdir. Tədqiqat əsasında müxtəlif müəlliflərin ədəbiyət və resurlarından istifadə edərək müqayisəli təhlil aparılmışdər və mövcud məlumatlar yığılmışdı. Tarixi trendlər qrafik, cədvəllər və diaqramlar vaitəsi ilə analiz edilmişdir.

Tədqiqatın informasiya bazası : Kriptovalyuta və onunla əlaqəli mövzuların analizi üçün informasiya bazası kimi müxtəlif cari elmi-tədqiqat ədəbiyyatlarından, kütləvi informasiya mənbələrindən, konfranslardan və görüş materillardan, kitablardan, qazetlərdən və müxtəlif internet resurslardan istifadə edilmişdir.

Tədqiqatın məhdudiyyətləri: Tədqiqatın aparılması üçün əsas məhdudiyyatlardan , mövcud elmi-tədqiqat resursların və elmi ədəbiyyətın az və ya məhdud sayda olmasıdır.

Tədqiqatın nəticələri: Tədqiqatın gəldiyi nəticə kriptovalyutlar beynlxaq maliyyə sistemi və ticarət üçün əhəmiyyətlidir. Gələcək inkişaf üçün müxtəlif qurumlar və hökümətlər tərəfindən blokçeyn texnologiyasın tənzimlənilməsi və daha dərin öyrənilməsi, beynalxalq ticarət və maliyyə sisteminin inkişafı üçün çox önəmlidir. Hökumətin mövqeyindən Blokçeyn texnologiyası barədə məlumat təhlil edilməlidir və kriptovalyutaların dəyər stabilliyi tənzimlənməsi üçün qanunvericiydə dəyişikliklər aparılmalıdır.

Nəticələrin elmi-praktiki əhəmiyyəti: Bu mövzuda nəzəri praktiki tədqiqatların azlığı səbəbindən, əldə edilmiş nəticələr gələcək tədqiqatların inkişafı üçün informasiya mənbəyi olacaq və bu yöndə tədqiqatların daha genişlənməsi üçün təkan olacaq.

Açar sözlər: Bitkoin, Kriptovalyutlar, Blokçeyn, ticarət, maliyyə.

ABBREVIATIONS AND GLOSSARY

IP – Intellectual property
EU – European Union
US – United States
USD - United State Dollars
CIS - Azerbaijan and Commonwealth Independent States
DLT - Distributed Ledger Technology
AML – Anti-Money Laundry
Bln. – billion
Mln. – Million
RMB – renminbi, the official currency of the People's Republic of China (yuan)
BTC - Bitcoin
ETH - Ethereum
XRP - Ripple
BCH - Bitcoin Cash
LTC - Litecoin
SME – Small Medium Enterprise
VAT – Value added tax
ATM - Automated teller machine
FDI – Foreign Direct Investment
KABC - Kazakhstan Blockchains Association
AIFC - Astana International Financial Center
CBA - Central Bank of Azerbaijan
WTO – World Trade Organization
IT – Information Technology
CEO – Chief Executive Officer
NAFTA - North American Free Trade Agreement
G2G – government to government
UNCITRAL - United Nations Commissions on International Trade Law
ICO – Initial Coin Offering, which is the way for attracting capital for cryptocurrencies.
Blockchains - the record of all validated transactions grouped into blocks, each cryptographically linked to predecessor transactions down to the genesis block, thereby creating a 'chain of blocks.' (Hileman G.& Raughs M., 2017)
Smart Contracts - computer programs that self-execute when certain conditions are met (based on the if… then... logic – i.e.,). They express the commitments of each gathering to the "agreement," just as the advantages and punishments that might be expected to either party in various conditions. (Ganne E., 2018)
Hash Tree (Merkle Tree) – hash data structure which is consist of leaves and branches. Each branch provides a hashed value of the transaction. Two leaves are then chained ("concatenated") and hashed to form a branch. At that point, two branches are "connected" and hashed to frame another branch. (Ganne E., 2018)

Consensus protocol - a protocol through which exchanges are approved and blocks marked into the blockchain. The consensus protocol convention utilized relies upon the sort of conveyed record, what's more, the dimension of trust and control required by the application. (Ganne E., 2018)

Cryptography - the use of special codes to keep information safe in computer networks. (Cambridge.org, 2019)

Cryptocurrency – digital money that uses cryptography. The tone of the popular is Bitcoin. (Ganne E., 2018)

Distributed Ledger Technology- it is a database that is shared among a network in multiple geographical locations. It is related to the ledger in accounting which is a collection of financial accounts. (Liquid.com, 2018)

Blockchain - a record of every single approved exchange assembled into blocks, each cryptographically connected to antecedent transactions down to the beginning square, in this manner making a 'chain of blocks'. (Hileman G.& Raughs M., 2017)

CONTENTS

INTRODUCTION.

The actuality of the subject. The emerging of the trading and financial system are the main agenda for the economies nowadays. From the beginning of the appearance of cryptocurrencies, when Satoshi Nakamoto (November 2008) introduced the system in his article "Bitcoin: A Peer-to-Peer Electronic Cash System" (Nakamoto S., 2008) till today, there were huge developments. The trade implications are considered as easiness of payment, faster transaction, secretary of operations, usage of smart contracts, transaction without third parties, AML protections, less paper usage, a lower rate of failed payments and etc. The numerous advantages make it interesting for researchers from various fields.

The Bitcoin, which is officially considered the first cryptocurrency and opened the area for remaining more than 2000 coins, has the importance of consideration since wide popularity from media, investors, traders, and ordinary individuals. The recent price volatility played an essential role in the increase of interest in this topic.

From one side, the Bitcoin and other cryptocurrencies are considered one of the most convenient methods of payment because of secrecy of transaction with intermediaries, lower transaction fees, and faster process. On the other hand, there are cases of illegal usage of Bitcoin as a means of payment for unauthorized transactions. It uses operation without a bank as it can be used for the purchase of illegal terms of usability. Besides, there is a weakness of the system. The legislation of countries is varying with several, making it legal, and others prohibiting it. The thesis will analyze the importance of cryptocurrency in international financial system and trade.

Statement of problem and level of learning. The extensive areas presentations such as in finance, customs, procurement, transports, insurance, government procurement, and several others, possible samples provide interest in innovative technology which stays behind it.

The technology behind Bitcoin and Blockchains considered one of the most important since it can be applied in other areas, such as instrumental in simplification

trade, finance, and food industry. Blockchains could be infrastructural advancement for the economy as well as they can show up like robots to manufacturing.

A few new organizations are on the phase of creating of Blockchains applications for confirmation of value, item detail, and supply following. The sustenance segment, which had a few issues concerning quality, is on route of applying this innovation. Another striking point is that Blockchains has an extraordinary chance to make costs lower by improving straightforwardness and empowering computerization process. The technology behind cryptocurrency with its all benefits have an important role in the future of trade.

Purpose and objectives of the study. The main objective of research is to examine the impact of cryptocurrency on the international financial system and trade. To shed light on the importance of cryptocurrency in International trade and finance, in this study the focus will be on financial aspects of cryptocurrency which is currency functions, supply, application in international trade, Blockchains and other regulative technology as the critical dimension by which organizational governance can be determined. Additionally, information on the current legislation in the world has been presented and discussed.

The object of the study is to enhance knowledge of individuals about cryptocurrency and provide implications for international financial system and trade.

The subject of the study is examining the cryptocurrency's impact on the trade and financial system. The main subject of research is cryptocurrency with its history, money functions, blockchain technology, advantage and disadvantages, legislation in several countries, future perspectives and policy implications.

Research methods. Mainly qualitative methodology was used by analyzing existing literature and making a conclusion based on it. Below the ideas will be explored by applying the comparative analyses of various literatures and historical prices of Bitcoin from 2010 through 2019.

Information and empirical base of the research. The sources used are various scientific journals, articles and conference publications collected from

EBSCO, ideasrepec.org, google scholars and Web of science, the news, newspapers, magazines, books, articles and other public sources.

Limitations of research. The main limitation in the research process was insufficiency of the scientific literature on the cryptocurrency as a result of being new phenomenon.

The result practical and scientific application. The conclusion is that the cryptocurrencies have a significant impact on the International financial system and trade, which can make a modified trading system, financial sector, and daily usage much smarter and different than it is nowadays. It will ease the whole process, but the control and several weaknesses related to legislative nature, stability in prices and the complexity of Blockchains technology should be developed for a successful future.

Structure and volume. The remainder of the following work is structured in this way: Chapter 1 will discuss the importance of cryptocurrency in International Financial system, which will provide information on the history of the cryptocurrencies, most significant cryptocurrencies, analysis of money functions of cryptocurrencies and monetary model of cryptocurrencies. The Chapter 2 will discuss usage of Bitcoin in International Trade and its implication, where information about the case of current usage of cryptocurrencies in the trade, advantages, and disadvantages of the cryptocurrencies in the Trade and current legislation in the world and several CIS countries will be discussed. Chapter 3 will discuss the regulation and future perspective of cryptocurrencies where blockchain technology with its benefits and insufficiencies, the analysis of speculative nature and instability will be presented. The last part would discuss the whole information and provide a conclusion about the findings. The volume of work is 71 pages.

CHAPTER I.

THE IMPORTANCE OF CRYPTOCURRENCY IN INTERNATIONAL FINANCIAL SYSTEM.

From the beginning of the appearance of cryptocurrencies, when Satoshi Nakamoto (November 2008) introduced the system in his article “Bitcoin: A Peer-to-Peer Electronic Cash System” (Nakamoto S., 2008) till today, there were huge developments and changes. Growing popularity from investors who wish to gain on speculation, consumers who use the ease of payment feature of crypto assets and also traders who make colossal volume trade of goods and services in the International level, make it essential agenda for scientists.

The Bitcoin which is officially considered the first cryptocurrency and opened the area for remaining more than 2000 coins has the importance of consideration since wide popularity by the media, investors, traders and ordinary consumers. The recent historic recorded gain in the value of Bitcoin was approximately 2000%. Considering all of the facts, there are some barriers to further development, extensive usage, and application of Bitcoin and other crypto assets. One of them is the recent volatility in prices which occurred throughout time with a relative change from the maximum level of $19,345.49 (Yahoo Finance, 12.05.2019, amount as of 10.12.2017) to a minimum level of around $3,232.51 (Yahoo Finance, price as of 9.12.2018). The further price fluctuated, reaching $ 7,968.95 (Yahoo Finance, 12.05.2019).

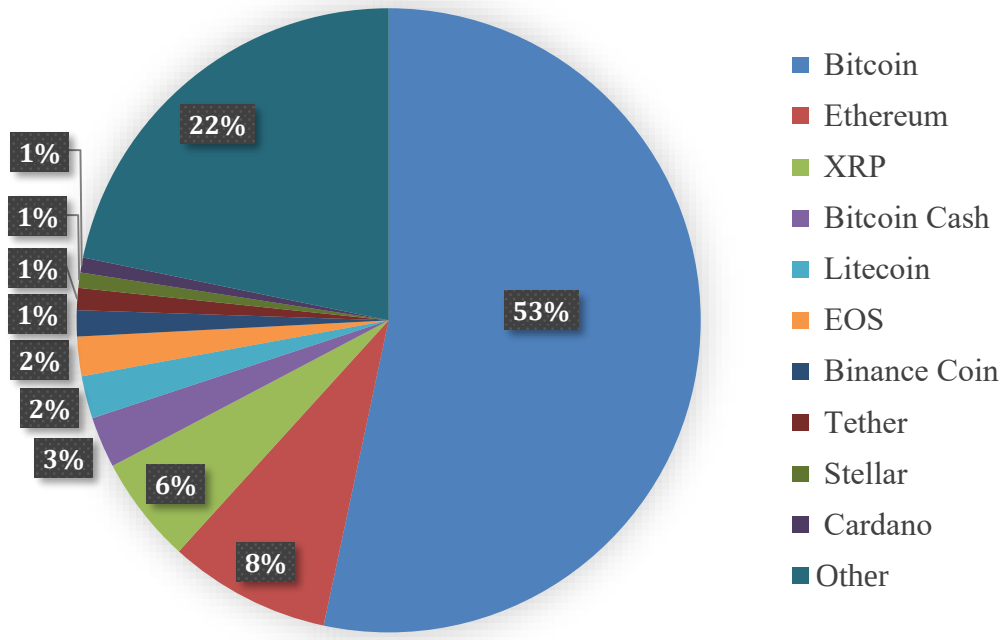
From one side, the Cryptocurrency is considered one of the most convenient methods of payment because of secrecy of the transaction with intermediaries, lower transaction fees, and faster execution process. On the other hand, there are cases of illegal usage of Bitcoin as a means of payment for unauthorized transactions. It uses operation without a bank as it can be used for criminal activity funding or business of goods. Also, there is a weakness of the system of cryptocurrency which can be hacked and damaged due to hackers, which could result in an inability to proceed with the transaction.

1.1.1. The history of the appearance of cryptocurrency

The first and currently most popular cryptocurrency is considered Bitcoin, which was officially established in January 2009. Before Bitcoin, there have been experiments for creation of digital money. The best examples are B-Money (Wei Dai, 1998), which is considered "anonymous, distributed electronic cash system" and Bit Gold created by Nick Szabo in 1998 (Coincentral.com., 15.05.2019). The first cryptocurrency and the most famous for today is Bitcoin with around $142.03 Bln. Market capitalization (Coinmarketcap.com, 15.05.2019). Satoshi Nakamoto first presented the idea for Bitcoin in his article "Bitcoin: A Peer-to-Peer Electronic Cash System" (Nakamoto S., 2008). It was launched in January 2009 and made available for general usage of public. After it, the mining procedures began with further development. The valuation of Bitcoin goes back to 2010 when Laszlo Hanyecz, a computer programmer from Florida, decided to sell it for the first time to exchange for 2 two pizzas with the amount agreed at 10,000 Bitcoins (Yermack D., 2013), which would be equal to $80.2 million today (15.05.2019 Current Bitcoin price $8,023.34 according to coinmarketcap.com). In 2011 the competition in the cryptocurrency market began by the appearance of the first alternative for Bitcoin known as an altcoin, which offered higher speed, more anonymity, and other various advantages. Hello how are you doing in the universe. The most famous alternative coins are Namecoin and Litecoin. Nowadays, according to coinmarketcap.com, there are around 2177 cryptocurrencies in circulation with a total market cap around $244,657,831,010 (Coinmarketcap.com, 15.05.2019 12:50 PM). Throughout 2012-2015 several events occurred, which includes fluctuation of Bitcoin prices. In 2016 the appearance of etherium brought a new concept of Initial Coin Offerings which are considered as a fundraising platform for investors to trade stocks and shares in startups. (Investopedia, 2018). In 2017 the Bitcoin reached its maximum amounting to $ 19,345.49 (Yahoo Finance, 10.11.2017). The popularity of cryptocurrencies sometimes creates confusion between the concept of cryptocurrency and Blockchains. Any cryptocurrency, for example, Bitcoin is the generic name of the asset, but the Blockchains is called complex technology which is underlying it. Graph 1 describes the top 10

cryptocurrencies by market capitalization. Around 53%, according to coinmarketcap.com, is taken by Bitcoin. (15.05.2019). The Blockchains development can be applied not only in the crypto market sector but also in other industries. The history of Bitcoin and other cryptocurrencies provide reasonable pieces of evidence for future perspective.

Graph 1. Cryptocurrencies by market cap (Bln. USD).

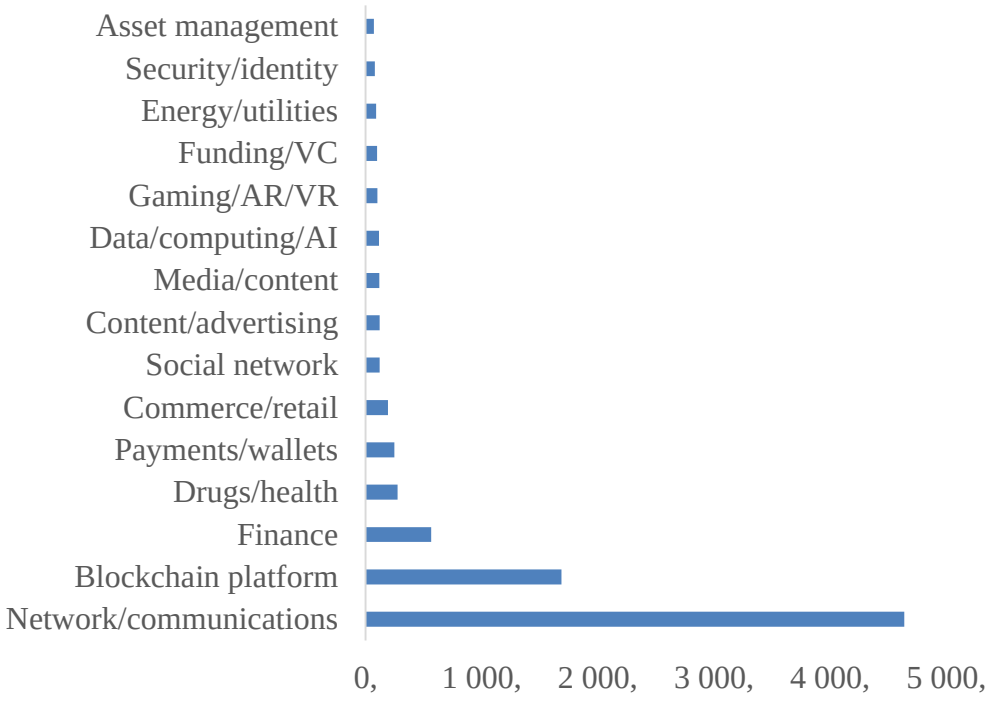


Source: CoinMarketCap.com, 2019. https://coinmarketcap.com. Prepared by Huseyn Ibadov. (15.05.2019)

The ICO (initial coin offering concept) which is considered one of the most important term in the cryptocurrency community is very crucial and getting popularity in the contemporary and technologically advanced world. The companies and several countries government is interested and using it in order to finance several projects. Graph 2 shows the amount of funds raised for ICO projects in the world by various industries. The biggest amount of capital raised was on the Network and communication. In the second place is Blockchain platforms with around USD 1.7 mln. The remaining categories have minority of amounts. The spread of the concept

and further development will pose a positive increase in the amount of money and development.

Graph 2. Capital raised for ICO projects by industry (mln. USD).



Source: ICO Watchlist, 2018. Retrieved from excel downloaded from icowatchlist.com, 802925. (15.10.2018)

1.2. The most significant Cryptocurrencies.

As mentioned above, there are nearly 2177 (15.05.2019) cryptocurrencies in circulation which registered in coinmarketcap.com. All of the cryptocurrencies have common characteristics which is having cryptographic basis and not having central authority. There are some differences with regards to specifications and functions. In the table 1, it is presented the information about top 10 cryptocurrencies taken from coinmarketcap.com website (14.05.2019). Below in Graph 3 the historic end of the month prices for the last 3 years are presented for the five most significant cryptocurrencies, which are the following:

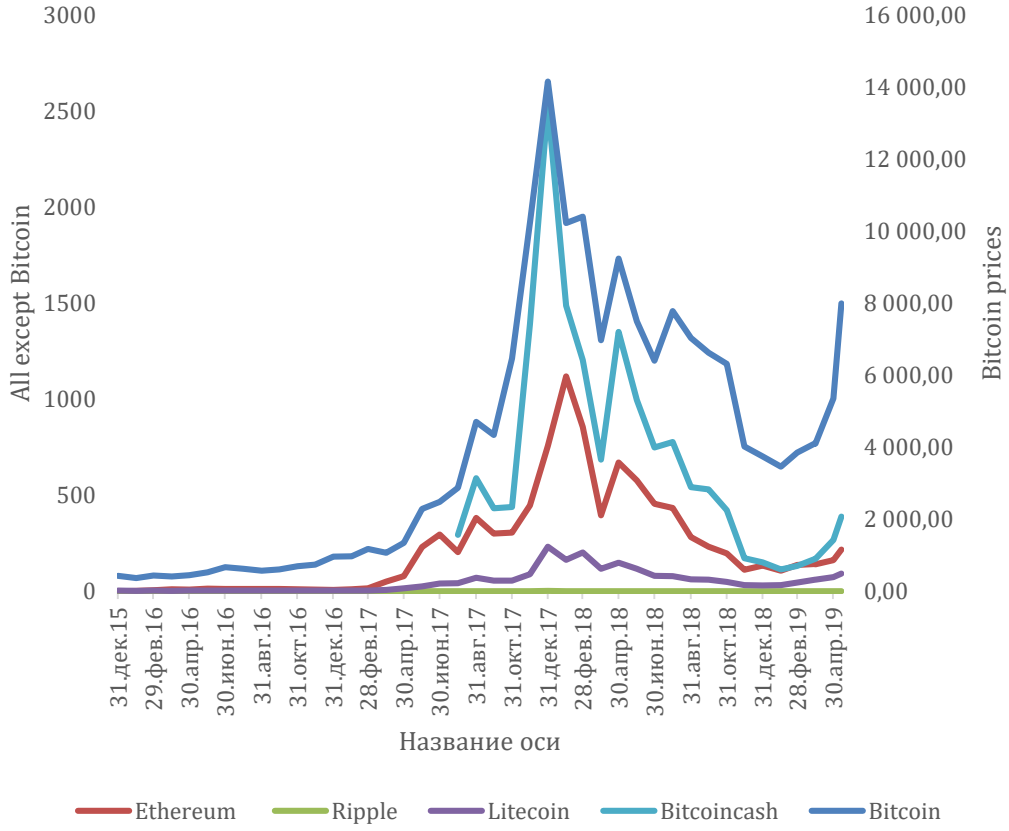
- Bitcoin (symbol – BTC)
- Ethereum (symbol – ETH)
- Ripple (symbol – XRP)
- Bitcoin Cash (symbol- BCH)
- Litecoin (symbol – LTC)

Table 1. Top 10 in terms of market cap cryptocurrencies.

#	Name	Sign	Market Cap (USD)	Price (USD)	Volume (24h USD)	Circulating Supply	Change (24h)
1	Bitcoin		$130,507,910,848	7,374	24,944,703,780	17,698,187 BTC	3.97%
2	Ethereum		$20,528,324,686	193.57	8,861,063,642	106,051,516 ETH	2.67%
3	XRP		$13,570,538,738	0.32	1,705,955,459	42,133,310,721 XRP	3.10%
4	Bitcoin Cash		$6,463,252,331	363.52	3,113,119,229	17,779,863 BCH	2.99%
5	Litecoin		$5,395,810,734	87.38	4,560,935,430	61,753,811 LTC	0.42%
6	EOS		$4,996,039,832	5.48	2,544,747,384	911,440,674 EOS	1.96%
7	Binance Coin		$3,301,321,606	23.38	370,705,118	141,175,490 BNB	11.92%
8	Tether		$2,795,326,354	1.01	21,907,173,960	2,778,093,795 USDT	0.44%
9	Stellar		$1,936,657,581	0.10	298,302,478	19,184,677,108 XLM	1.65%
10	Cardano		$1,901,147,170	0.07	95,825,595	25,927,070,538 ADA	4.05%

Source: CoinMarketCap.com, 2019. https://coinmarketcap.com. (15.05.2019)

Graph 3. Top 5 cryptocurrencies' prices 2016-2019 (USD End of the month)



Source: CoinMarketCap.com, 2019. https://coinmarketcap.com. (15.05.2019)

Top 5 cryptocurrencies are discussed in more detail below:

1. **Bitcoin.** As mentioned before, the appearance of Bitcoin is related to the name of Satoshi Nakamoto (November 2018). The more interest toward it was at the beginning of 2013. The Bitcoin is a virtual monetary unit which no physical representation. There are contradictions on the financial function of Bitcoin, but the reality is that it is accepted as a means of payments by several

businesses and countries. (The information about legislation and example of transactions will be presented further). A Bitcoin unit can be divided into a small proportion, which is 100 million "Satoshis." To use the Bitcoin system, an agent downloads a Bitcoin wallet. A Bitcoin wallet is a software that allows the receiving, storing, and sending of (fractions of) Bitcoin units. In order to make exchange fiat currencies, such as USD or Euro, for Bitcoin units, the popular way is to open an account at one of the many Bitcoin exchanges and to transfer fiat currency into this account. The owner of the account can use their savings to buy any cryptocurrency. Since the popularity of Bitcoin, the pricing is very competitive with small bid-ask price. An ordinary Bitcoin transaction occurs with a buyer broadcasting to the network the seller's address until this information is known through them, and all nodes provide information on the transfer of ownership. (Aleksander B. & Fabian, S.,2018)

2. **Ethereum.** It is the second in terms of market capitalization cryptocurrency with $20,528,324,686 (13.05.2019) released in July 2015. Vitalik Buterin created it. They are similar in terms of being decentralized and public track. It is different from Bitcoin because with Bitcoin, you can only transfer money, but with Ethereum, you can also execute smart contracts and make Dapps. Smart contracts are computer algorithms that automatically fulfill the terms of agreements as soon as the conditions met. The Ethereum is also called programmable money, so it is not just a Blockchains for transacting money but rather platform that linked to its cryptocurrency asset which runs the Etherium network. (Coinsutra.com., 2018)

3. **The Ripple**, which is the third in terms of market capitalization around USD 13,570,538,738 (13.05.2019) has been offered since 2012 and introduced by Authur Britto, Ryan Fugger, and David Schwarz. The difference of Ripple from other cryptocurrencies is that it doesn’t rely on the energy and computation intensive in comparison to Bitcoin. Ripple can be used both by individuals and banks. It avoids fees and waits times of the traditional banking system. The essential fact about the Ripple is that it is not a Blockchains because it uses Hash

Tree to compile the information into a single value that is compared across its servers. (Bitcoinmagazine.com, 2019). The Ripple isn't mined like Bitcoin, Etherium, Litecoin, and other cryptocurrencies but rather It is premined. The main parties in Ripple are summarized as follows: 1. Servers; 2. Clients, who make initiations of transactions; 3. Proposers, who can be represented as Servers; 4. The Unique Node List, which makes sure parties participating in the protocol trusted. (Lipton A, Hardjono T, Pentland A., 2018)

4. **Bitcoincash.** It is an alternative for Bitcoin which has more functions and specification than Bitcoin. Bitcoin Cash appeared on 1st August 2017 with more block size around 8MB, in order to scale the underlying technology of Bitcoin. Further, it has a different transaction signature for verification. The current market capitalization is around $6,463,252,331, making it is 4th in terms of market cap. (Cointelegraph.com, 2019)

5. **Litecoin** with a market capitalization of $ 5,395,810,734 (12/02/2018) is in the 7th place. It was created in 2011 by the developer Charlie Lee former employee of Google company. It is called the 'silver' when Bitcoin called gold. In the rough of all cryptocurrency, it has maintained a market value of more than $ 1bln for several years. It is faster than Bitcoin, it has more coins and has fair mining model than Bitcoin.(Coinmama.com, 2018)

Other cryptocurrencies have its specific characteristic which differs them from Bitcoin. The common characteristics for them are that they are a digital currency, decentralized which mean they don't have a central authority, anonymous which means the third party doesn't have access to information and they are instantaneous peer-to-peer transaction with high-speed execution rather conventional banking system.

1.3. The comparison of cryptocurrency with other financial assets

The rise of Bitcoin and other cryptocurrencies resulted in the appearance of discussions about categories of financial assets to which they belong. Some characteristics would more likely be similar to money, but others would be more

likely to refer as stock or other financial assets. In order to arrive at the analysis currency function of Bitcoin, it would be better to emphasize the general currency definition.

The first transactions have been carried out through barter, exchange, and debt. It was very suitable for a small variety of products within the economy. The next generation of the medium of exchange was gold and silver since it can be easily exchanged and carried out rather than animals and goods. Further, the creation of countries resulted in the acceptance of paper currencies, which resulted in massive trade between the various parts of the world. Recently, computer technology provided us with the opportunity to buy any commodity across the globe using e-commerce and decrease the need for paper currency and coins. Goods and services can be purchased using credit and debit cards, intermediaries such as Amazon, E-bay, and PayPal. The e-commerce eliminated the need for carriage a considerable amount of cash.

To clearly understand the cryptocurrency as a financial asset, it is essential to define the real meaning of currency, since there are contradictions in the opinions on whether cyber money is currency or no. The general economic literature describes money as having the following criteria:

- The medium of exchange;
- Unit of account; and
- Store of value.

The general analysis of Bitcoin for these criteria would result in making it clear the category to which Bitcoin belongs. Out of the characteristics as mentioned above, Bitcoin fully fulfills the function as a medium of exchange (Ammous S., 2018). Several stores, companies, restaurants, and other entities allow usage of Bitcoin as a means of payment. Second characteristic as a unit of account which is mean for measuring goods and services. Bitcoin is valued for many goods and services in various countries. Besides, it can also be fractionalized such as being part of the whole (E.g., If Bitcoin value is $ 3,000, then 10% will be $300, etc.). This characteristic makes it suitable for the function of the unit of account. The last feature is the store of value,

which is something that can be saved, stored, and spent. The Bitcoin and other cryptocurrencies have their wallets in which digital money can be saved, stored, and reused.

However, the store of the value function is violated because there is no price stability with memorable performance (Beate Sauer, 2016). Another important characteristic of currency, which is popular in economic books, is that it should be having trust from a large population and having legal binding. Generally, fiat-currency is backed by the government. The paper money has its value because of the trust of people who use it as a means for the exchange of goods and services. The Bitcoin currently employed by a small fraction of the world community, which is a result of lower awareness, trust, and instability. In addition, the legislative binding of some countries which are mainly having developed economies such as the USA, EU countries that have legislation in line with Bitcoin and other cryptocurrencies. Most of the states have either law which makes Bitcoin illegal or no legislation at all. In order to provide a prosperous future for digital assets, these factors should be addressed.

Considering all the above mentioned, the cyber currency could be regarded as being currency indeed. In addition, investment leader, Warren Buffet confirms the view of breach of stability that Bitcoin fails to meet characteristics as a store of value since the fluctuations and instability in recent prices, and usage as a speculative asset rather than currency.

"Berkshire Hathaway Chairman and CEO Warren Buffett stated in his interview that Bitcoin is not a currency' because it doesn't meet the criteria of a currency, including being a store of value." (Tracey A. Anderson 2014)

The idea of virtual currency, which is the kind of currency used exclusively in digital format without coins, paper money, or other physical forms, appeared before Bitcoin. One of the outstanding examples can be the currency used in video games. Practically, these monetary forms are like some other convertible currency and can purchase any products and services. (Pablo de los Ojos Araúzo, 2017)

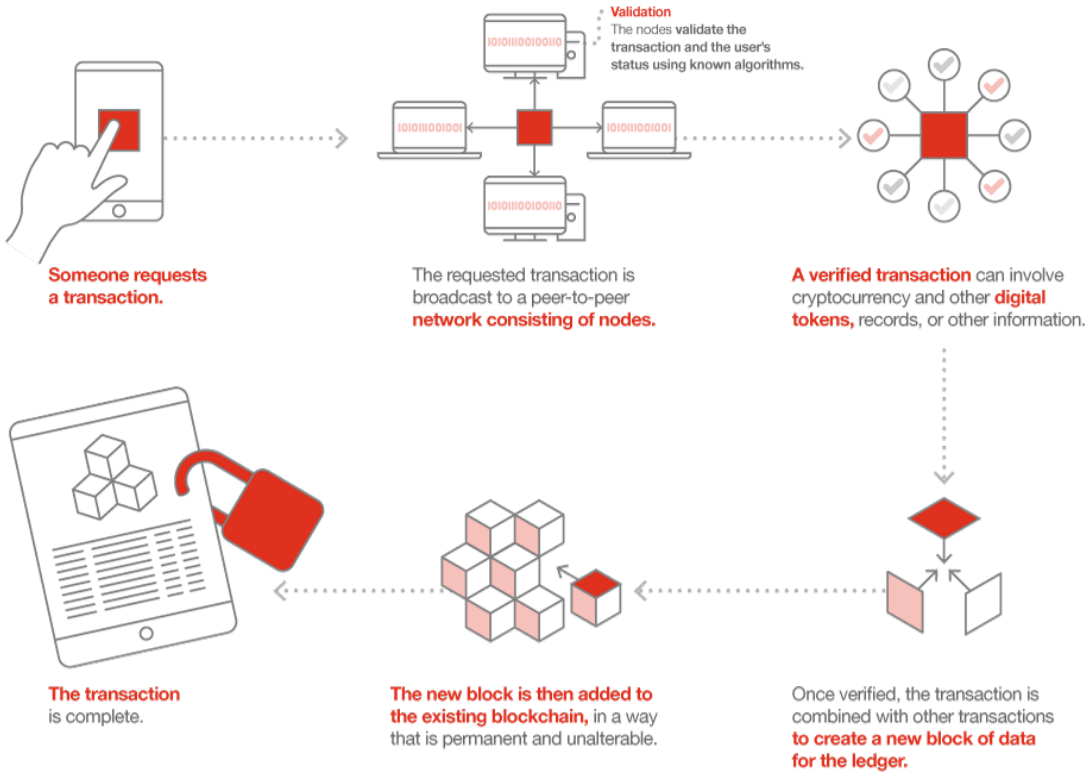
The border between money and a financial asset is not clear, which means that money is a very liquid financial asset. Other types of financial assets that are less liquid is stock, bonds, and others. Initially, Bitcoin was developed as currency but later with the emerging of interest of people who were buying it because of speculative price increase resulted in the being it as a speculative asset to make short term gain. The price increased so fast that the debate on the Bitcoin being the financial bubble arise. Famous investors called Bitcoin as a bubble, and they are valid to some extent. Bitcoin could be considered the currency of the future, but some regulative perspective and stability problems should be maintained.

In conclusion, even though Bitcoin has functions of money and considered currency but volatility in price and other behavior make it more or less close to other financial assets. The decentralization of cryptocurrencies is the main reason for speculation and volatility in its prices. In the future, there should be created mechanism for controlling the price. Further, interests and from central banks of various countries will result in the centralization process. (Scott A. Wolla, 2018)

1.4. The monetary model of cryptocurrency and its mechanism.

The vast majority of literature discussed the possible monetary models for crypto assets. According to Fernandez-Villaverde and Sanches (2018), the appearance of cryptocurrency brought many normative and positive questions for monetary economics. Anna Almasova (Almasova, Anna, 2018) proposed one of the possible models for the decentralized monetary system, which is operating within the Blockchains. In the decentralized model, financial transactions can be verified and executed by every individual, which is different from the traditional monetary system. One of the most critical features of this system is the lack of a central currency supplier. The additional supply is inserted into the network as a result of further reward for the execution of financial transactions. The process of sales is named mining, which centralized the process of money supply creation within the Blockchains system. The Diagram 1 provides information about the process of mining and general transaction process within the blockchain system.

Diagram 1. The process of mining and transactions within blockchain system.



Source: PwC August, 2018. "How blockchain works (infographic)", retrieved and cropped from https://usblogs.pwc.com/emerging-technology/a-primer-on-blockchain-infographic/ (15.05.2019)

One of the primary dependent variables for the mining process is the amount of time to process the input, and the other important variable is the cost of the energy which is needed to handle it. The main determinants of the money supply are considered mining costs and rewards for miners. Prizes are defined by a fee which is added to a transaction demand in order to facilitate the whole execution.

Last but not least, the circulation of the Blockchains-based currency provides the main direction for the externalities. The competition between miners has resulted in the only 1st miner being chosen as a reward for this transaction. According to Anna Almasova (2018) model, the increase in the number of miners results in a decrease in the amount of miner's success for processing. The success if positively affected, is linked to an increase in the number of transactions. The Anna Almasova, in her paper, provided one of the possible monetary models which include the factors as mentioned earlier and is useful for analysis of Blockchains system. The primary

basis of her system relies on the works of the Lagos and Write (2005), Fernandez-Villaverde and Sanches (2018). The Lagos-Wright approach is endogenous and includes the probability of trade on the decentralized market. The paper provided the matching function, which is widely used in labor economics. The matching function is used for the probability of miners' success and confirmation of the transaction. The general trend exists the higher reward to miners increase the money growth and results in a decrease in money return. On the other hand, more senior returns the higher cost of mining results in upward pressure in equilibrium return for money.

Another striking point in the process of money creating in the Blockchains system, which is a ledger that records blocks, the historic exchange between peers in the network. Peers are as "nodes" have connected to the Blockchains through the internet and ensure the safety of the network by validating transactions. Each block has two components: a reference to the previous block and answer to the mathematical puzzle, which serves as validation of transactions. To sum up, “Blockchains is a digital and decentralized ledger that keeps a record, in a highly secure, transparent, and traceable way, of every new datum or transaction that took place across a peer-to-peer network.” (Stratiev O., November 2018)

Further research on the model of cryptocurrency is needed. The general model is that money supply is mostly energy efficient, and the process of mining is vital for further increase in supply. The specific characteristic is that mining can be done by every individual who has access to computer and electricity. Other cryptocurrencies generally have the same system with minor differences.

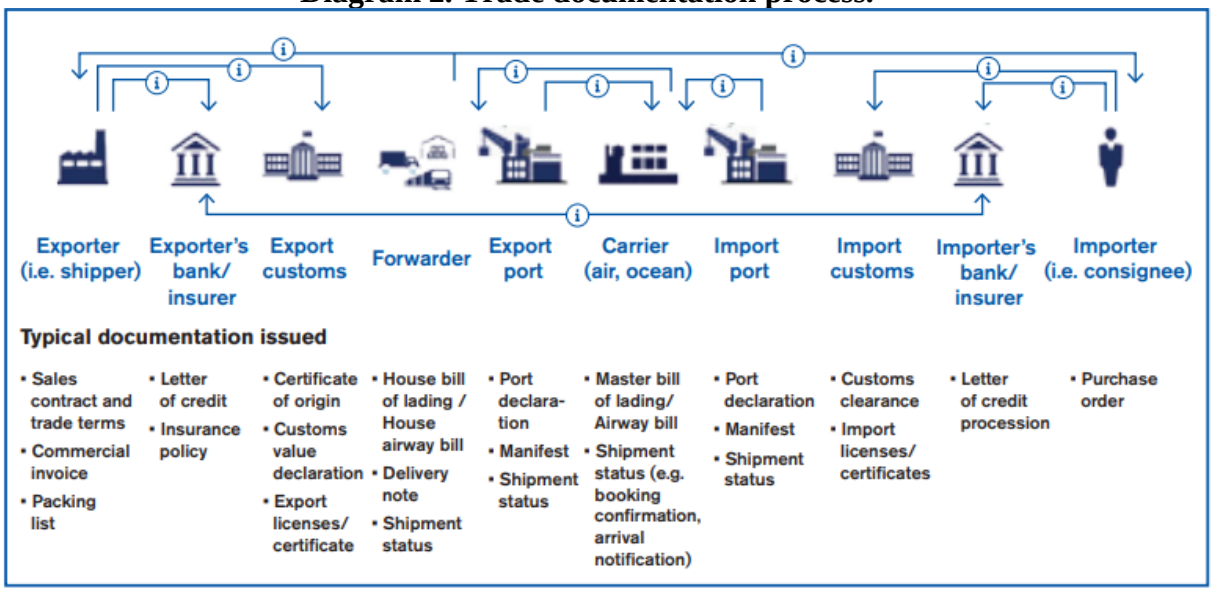
CHAPTER II.
CURRENT USAGE OF BITCOIN IN INTERNATIONAL TRADE AND ITS IMPLICATIONS

The Bitcoin revolutionized the way International Trade occurs nowadays. If previously trade occurred using a bank, cash and other methods by the appearance of cryptocurrency several innovations happened in the process of international trade transfer which should improve the way people exchange goods and services between each other.

The transactions in International level bring together a vast majority of participants with reliance on the cash. One of the examples of inconvenience is the real situation described by WTO 2018 in their paper "Can Blockchains revolutionize International Trade" written by Emmanuelle Ganne. According to this paper: "*In 2014, shipping company Maersk followed a refrigerated container filled with roses and avocados from Kenya to the Netherlands to document the maze of physical processes and paperwork that impact every shipment. The numbers speak for themselves: they found that around 30 actors and more than 100 people were involved throughout the journey, with the number of interactions exceeding 200. The shipment took about 34 days to go from the farm to the retailers, including ten days to process all documents. One of the critical document was lost, only to be found later amid a pile of paper*." (Ganne E., 2018, p. 17-19) Several numbers of documents should be processed for trade transactions. Diagram 2 below shows typical procedures for standard trade procedures. The complexity of the diagram shows the tradeoff between time and cost makes companies increase in keenness toward Blockchains since it makes the whole process time and cost efficient. The whole procedure includes the shift of the goods from exporter to importer. Around 9 parties involved which includes around 24 documents varying from simple sales contract and various trade terms to certificates, licenses, declarations and other documents. They play an important role as providing legal binding and tracking of goods. With the existence of blockchain and by using cryptocurrency the process can be

simplified and whole process can be maintained effectively and efficiently. For this reason, the development of blockchain technology is important.

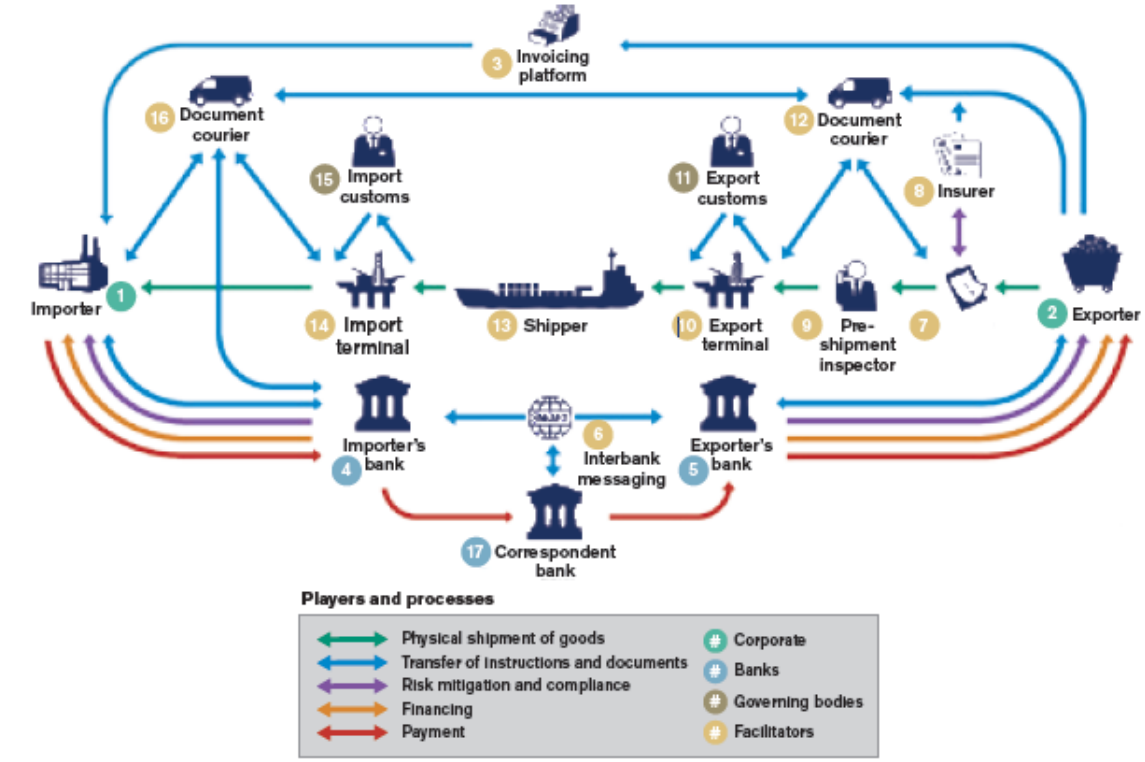
Diagram 2. Trade documentation process.



Source: Prepared by Accenture, 2017. Retrieved from Ganne E., 2018, p. 18.

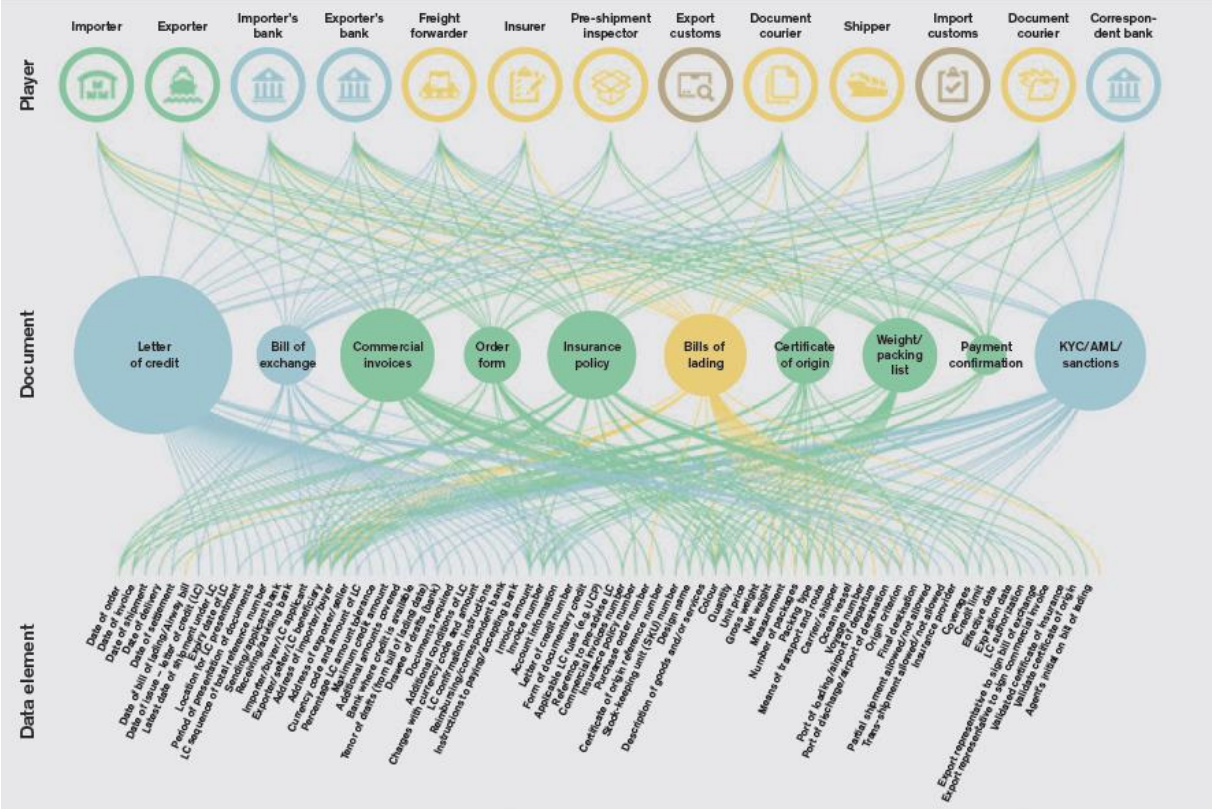
The traditional trade procedure is paper and labor effective, which is a letter of credit. The financial institutions which are dealing with trade finance are particularly involving many workers for verification of many documents. Research by Boston Consulting Group finds out that more than 20 people are needed for single trade finance transaction, with data captured in 10 to 20 documents creating around 5,000 data field interactions. The Diagram 3 provides information about the usual financial process of every transaction. Without cryptocurrency with its advanced blockchain technology the banker of exporter and importer with their correspondent banks should be involved in order to fulfill the whole process. In addition, invoicing throughout the whole process should be followed. The document courier should be involved in the process. The Diagram 4 provides the information on the complexity of whole process of finance in the international trade finance. The typical documents which included by the banks and companies attending international trade is letter of credit, bill of exchange, commercial exchanges, order form, insurance policy, certificate of origin, bill of landing, weight packing list, payment confirmations, KYC/AML sanctions. All of the document contain wide range of information which appear to be one of the important part of the whole trade process.

Diagram 3. The traditional trade financial process.



Source: Prepared by Boston Consulting Group, 2017. Retrieved from Ganne E., 2018, p. 21

Diagram 4. The complexity of the process for trade finance.



Source: Prepared by Boston Consulting Group, 2017. Retrieved from Ganne E., 2018, p. 22

The improvement in the Blockchains technology and involvement with widespread of cryptocurrency would be an asset for simplification of this problem. The cloud-based system ensures the security of the process and facilitates it without the participation of other parties. To support the further idea of cryptocurrency, several transactions have been recorded in recent years, which involve the various countries into these procedures. The one example which considered the first Blockchains –based trade-finance deal which occurred in 2016. It is approximately $100,000 and was an exchange of cheese and butter between Irish agricultural co-operative Ornua and Seychelles Trading Company. The whole process usually would take 7-10 day by using a letter of credit. With the contribution of crypto trade, it was decreased to around 4 hours. Using cryptocurrency would help to make the process of certification of traded goods and services faster. Enforcement of Blockchains system would result in a speedup of the whole process.

The usage of cryptocurrency has its advantages and disadvantages. Most of the CIS countries heading with Russia paid significant attention to cryptocurrency development and particularly creation and research of Blockchains system for ease of cooperation. In the upcoming sections, it will be discussed in more detail.

2.1. The advantage and disadvantage of usage of cryptocurrency in International Trade

The term international trade plays an essential role in today's world economy. There has been a long way since the beginning of the appearance of trade and evolution through the whole process. The history goes back to time BC when there was barter system with the further change to Mercantilism. Beginning from the 18th century, the direction had shifted toward neoliberalism. The exchange of goods and services between various nations had an innovative shift with improvement in effectiveness and efficiency. After World War II, the movement toward cooperation and creation of WTO and other organizations provided fast development in International Trade. In the contemporary world, the facilitation of trade and the appearance of cryptocurrency brought many benefits for International Trade.

Considering all the facts, it would be beneficial for further analysis to cover the advantages of Bitcoin and other cryptocurrencies.

The cryptocurrency and Blockchains system, in general, have the following advantages: (Medium.com, 2018)

1. Freedom of payments through any location with the same currency. The variation in currencies while trading creates significant problems. Various currencies create complexity in the process of buying and selling goods and services in International Level. By Bitcoin or any other digital currency, there will be only one-unit currency to trade with and no need for hedging of exchange rate or any other precautions to maintain stable trade. To provide an example, the small farmer who grows up and sells potatoes from Azerbaijan can quickly sell products to Moscow, Ukraine, Turkey, and other markets, not worrying about currency, the exchange rate between AZN and Ruble, etc. The cryptocurrency usage would make this process simpler and decrease worry about another aspect which would lead to efficiency.

2. The efficiency of the trade process. Simple transfer of money to and from abroad could take several days to proceed with all procedures. With Bitcoin, this process can occur instantly. For the developing counties which have a weak banking system, this can result in benefit by the creation of a simple and efficient operation.

3. Lack of transaction fees. This can be considered one of the most important. The involvement of banks and other parties can end up for companies paying higher transaction fees for transferring money for International trade between companies. With Blockchains, this process would result in elimination transaction fee or meager commission for transferring money with cryptocurrency. The user can increase the charge, in order to get the faster transaction in the network, which is extra payments. All in all, this would result in cost efficiency for companies and make the procedure much better.

4. Less failed payments. One of the issues within the trade is fees returned because of lack of resources and ability to maintain secure payment. Many

businesses have been affected by this kind of problem. In the event of usage of Bitcoin or other digital currencies, this is not a problem since the money should be on account for the transaction to be completed.

5. AML protection. The current AML legislation strives hard to maintain secure trade, which should be free from fraud and any criminal activities. These all can result in an increase in overall costs and risk associated with issuing credit letters. Blockchains technology would enable secure identification for purchasing goods. Blockchains makes it possible for trade finance to be far more accessible.

6. Less cybercrime and more security and control. The cryptocurrency characteristic is transparency and conclusiveness, which is more in line with the removal of the protection system. The system of cryptocurrency would be able to eliminate from vulnerability to hackers. The security maintains that all information in a different location is protected without system collapse. The technology with its decentralized ledgers would quickly detect any third party, which is an attempt to enter the system. Considering the fact that Blockchains has this kind of system, the system has no weakness.

7. Record of the track of all transactions. The mess of orders route is considered one of the issues arising from international trade. There are cases of manipulations of already existing software prepared for this reason. With cryptocurrency, all transactions which go in and out of business are maintained and verified which doesn't allow data to be manipulated for ensuring secure and ordered track.

8. End of password era. One of the issues in a complicated and rapidly changing world is due to weak passwords. There are many issues which aroused from weak passwords such as financial loses, additional cost, and other related problems. The hackers possess real danger to businesses with an insecure password. If the data is hacked, it will result in financial losses and lack of payment claims. The Blockchains technology can eliminate the issue of crafting passwords by avoiding problems of maintaining central servers for information

detection. The Blockchains can also offer clear password if the user wants to have more security. (Carina-Elena S., 2018)

9. Lower paper usage. The Blockchains would result in the elimination of paper contracts with smart contracts which require fewer employees for the provision and no paper usage. The sustainability of transaction and efficiency in labor would result in productive. The Blockchains also makes sure that recognition in a decentralized way and free of corruption.

The vast majority of advantage doesn't make the system strong. It has several disadvantages which are considered the most essential arguments by cryptocurrency critics.

1. Less population awareness. Most of the population doesn't know and understand the benefits of digital currency, and for this reason, they cannot use it in their daily lives. Networking can be considered one of the way of promotion of digital coin. Most of the companies use it because of its advantages with a relatively lower rate in comparison to fiat money. Reputable companies such as Dell, Overstock, NewEgg, and other companies accept Bitcoin as a form of payment, and several others are on the way to accept it. Employees of these companies should be guided on the customers' adoption of crypto assets.

2. Lack of central control. It is anonymous and has a lack of central authority, which considered a danger for instability in prices with inflation and speculators manipulation. This is one of the critical argument for people who stay away from Bitcoin transaction since it makes this problem complicated.

3. Risk and price volatility. It occurs because of the scarcity of coins, growing demand, and usage of the digital asset as a means of speculation. The price of Bitcoin would stabilize with the increasing popularity from media and further expansion. Currently, Bitcoin price is on the way to maintain with fluctuations. To ensure safety and volatility, new tools should be developed. Considering the infancy of digital money, it should be grown to sustain full

potential. The more detailed discussion on the future of the stability would be discussed in the next chapter.

4. Less trust from people. For the currency to be alive and widely used, it should gain confidence from the population. The older generation, which is relaxed with classic money (coins, fiat money, plastic cards), would be reluctant trusting and using crypto money as a source of savings and income. The complex system of virtual wallet could be frightening for public and businesses. (George C.D., 2017)

5. Limited supply. The maximum amount of Bitcoin which can be supplied is USD 21 mln. With current circulation around USD17.6 mln. For regular fiat money, there is no limitation from the supply side as money can be printed to meet the increasing money demand. It can be the disadvantages of the system.

Above mentioned and other disadvantages play a vital role as barriers for widespread of the cryptocurrency. In order to maintain the future development of the cryptocurrency and innovative technology behind it the disadvantages should be addressed for solution.

2.2. The case of countries with the usage of cryptocurrency and its impact on International Trade

The emerging of Bitcoin and other digital currencies together resulted in countries and central banks drawing their attention and consideration of legislation for controlling of cryptocurrency. The law of some countries have lags which result in need of regulation. Some states are putting effort into creating Blockchains as a tool for regulation while other countries are even negotiating the launch of their central cryptocurrency. Below we will review legislation and government relationship toward digital money. As an example of countries with an effort of creation of own cryptocurrency can be China with its renminbi (RMB).

One of the aspects of consideration is that many countries are still under consideration for the regulation of cryptocurrency. Some states even adopted a

regulatory framework with regards to cryptocurrency. Some countries had a friendlier attitude, while others have strict rules. Below in table 1 and 2 inspired by research "Bitcoin – A Brief Analysis of the Advantages and Disadvantages" (George C.D., 2017) the information on the list of countries with Bitcoin-friendly and unfriendly(hostile) attitude as of 2019. On the one side, some developing countries are trying to make progression in meeting the expectation of Blockchains technology promotions. The other countries are creating their cryptocurrencies. The pattern of change is, which shows the current situation and some future actions which should be done. The tables show the current situation in the various countries in the case of Bitcoin as it is accepted to be one of the first and most important cryptocurrency. Table 2 presents Bitcoin friendly countries with short information on the current situation. Generally, the EU, US and several other developed counties have positive attitude toward Bitcoin. They don't prohibit the usage of the crypto assets in the international financial system and trade. Some of the them such as Finland, Belgium exempt is from VAT taxes while other ensuring taxes. The United states of America is doing its best in the ensuring of the fulfillment of the payment with crypto assets. The Ukraine and Kazakhstan which is considered of the former Soviet Union counties differ from Russia who are staying more neutral in some cases prohibitive attitude toward legislation of the crypto money. The more information about the Russian and Kazakhstan on the cases of the CIS countries will be discussed further in the end of this section. The countries with unfriendly attitudes are presented in the Table 3. According the information presented, there are some examples such as Bangladesh, Venezuela where people using cryptocurrency can be jailed. The conservative attitudes of the countries with hostile approach toward Bitcoin happens because of the disadvantages which have been mentioned in previous section. The main cons are the real cases usage of Bitcoin for terrorism financing, money laundering and several other criminal activities. The future development in the cryptocurrency market will depend on the direction of the legislative changes in the countries. It poses a danger for the successful future spread of digital asset in the contemporary world.

Table 2. World's Bitcoin-friendly (in terms of legislation) countries.

#	Friendly Countries	Official position
1	Estonia	The first country in Europe which introduced a licensing regime. The government is under consideration for extensive usage of crypto money in several sectors such as healthcare, banking services, and other areas. (Bitcoin.com, 2018)
2	United States	The U.S. prevents usage for Bitcoin for illegal transactions, but for other payments, it is widespread. According to the U.S. Treasury, Bitcoin is a convertible decentralized virtual currency (Forexsq, 2017).
3	Finland	Bitcoin is a financial service and exempt from VAT. It is dealt as a commodity rather than as a currency. (Scott, 2016).
4	Sweden	The Swedish Financial Supervisory Authority (Finansinspektionen) announced that Bitcoin and altoins are legal.
5	South Korea	The country doesn't have any strict laws on digital money.
6	The Netherlands	The state does not regulate it, but the technology is under assessment, and if proved to be right, it will be implemented in the local banking to cut costs (Scott, 2016).
7	Belgium	It is exempt from VAT. They are in line with the European Union.
8	Denmark	The Central Bank of Denmark doesn't consider Bitcoin as a currency that it will not regulate its use in the country. Bitcoin is taxable Denmark will be digitalizing its currency.
9	Canada	Digital currencies such as Bitcoin treated as "money service businesses" (Scott, 2016). Taxation depends on the purpose of usage. For buy and sale of goods, it is treated money for speculation it is treated as income.
10	UK	Bitcoin is currently uncontrolled as foreign currency (private money) which make the regulatory environment more supportive. The Bank of England is analyzing the possibility to implement Bitcoin technologies to improve its monetary system.
11	Australia	It is not banned for country citizens to use cryptocurrencies for sale, purchase, and mining. (Scott, 2016)
12	Kazakhstan	The state announced the possibility to launch international currency for trading, which would eliminate monetary wars, the volatility of the market.
13	Spain	The country is lobbying to establish a crypto regulatory framework. There are many stores which accept Bitcoins and several companies investing in it. It is notable from EU members.
14	Ukraine	Despite some political; uncertainties, it is possible to purchase Bitcoins in ATM terminal. Many banks accepting it as means of exchange.
15	Czech Republic	Law on the identification of individuals has been set with further VAT charges.
16	Singapore	In 2014 g-t said that Bitcoin is useful purchased to purchase goods. It is not secure and not considered subject to regulation.
17	Poland	The g-t recognize the trading and mining as an official economic activity but considering the EU regulation.
18	Chile	The first exchange has been created with funding of Chilean g-t. The g-t provides oversight and regulation.

Source: George C.D., 2017. "Bitcoin-Brief Analysis of the Advantages and Disadvantages.", table 2, p. 3-4; Public sources, Thomson Reuters.

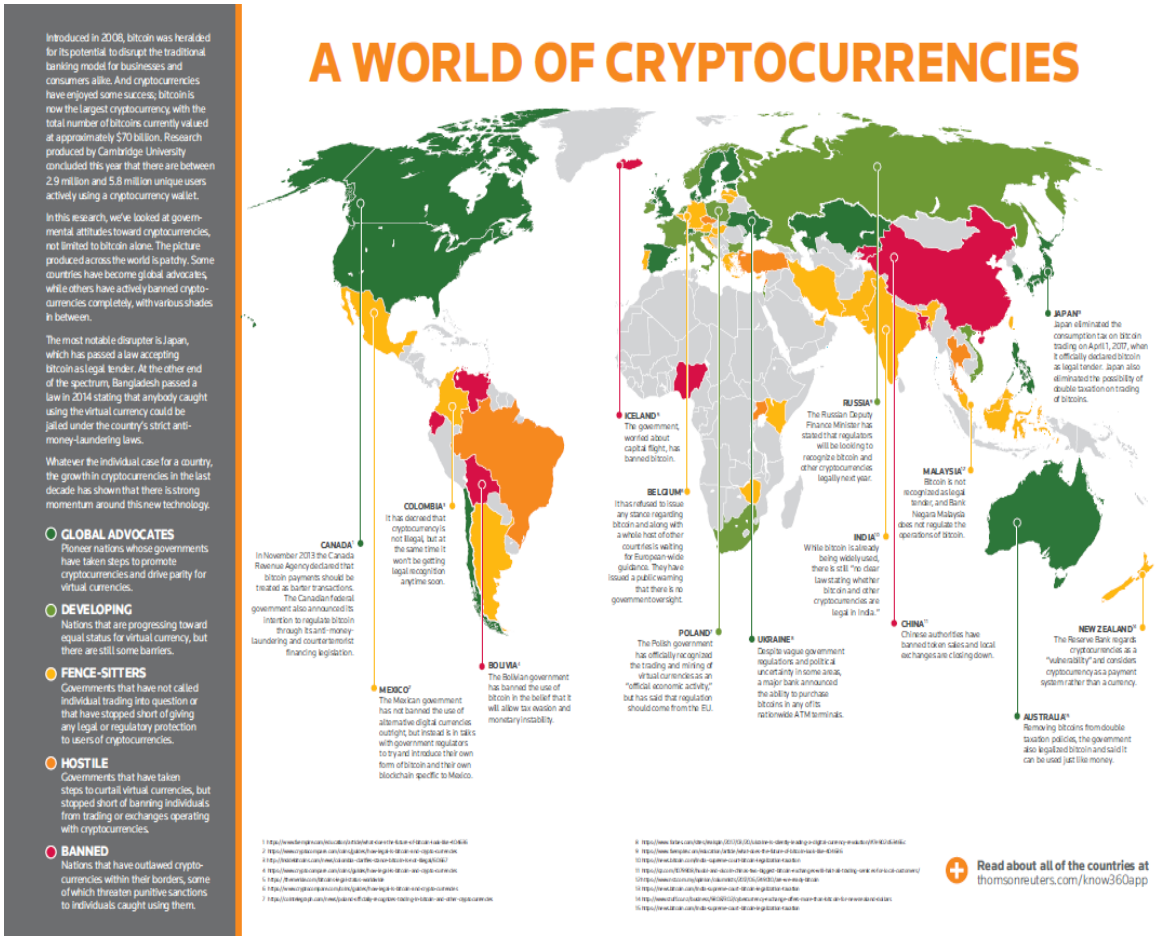
Table 3. World's Bitcoin- unfriendly (in terms of legislation) countries.

#	Hostile countries	Short description and reason
1	Bangladesh	The government issued a policy on the treatment of transactions with Bitcoin. It is punishable, and you may be jailed up to 12 years.
2	Nigeria	In January 2019 the Central Bank of Nigeria banned all transaction in Bitcoin and other virtual currencies by considering it as a means for terror financing and money laundering.
3	China	Bitcoin is officially banned and not allowed in the banking system. The mining operations are allowed. (Forexsq, 2017). China is planning to provide cryptocurrency, as per the announcement from September 2018 by the officials of the People's Republic of China. All other cryptocurrencies would be banned as per the decision of representatives from Bitcoinbans as local cryptocurrency appear (Bitcoinbans, 2017).
4	Ecuador	The country restricted altcoins. The state will engage in the development of a government-backed cryptocurrency in the future.
5	Iceland	The local currency is the primary means of exchange in the country, and for this reason, the purchase and sale of Bitcoin can break the law. (Cornell G., 2017)
6	India	Banks do not service Bitcoin businesses; even there is widespread of Bitcoin.
7	Bolivia	Based on the Bolivian g-t, it is illicit to use country which is not supplied, controlled by authority. (Cornell G., 2017)
8	The Russian Federation	The Ruble is considered the only means of payment in the Russian Federation. Central Bank believes transactions in Bitcoin as "dubious activities" connected to organized crime (money laundering, terrorism financing). Still, the government was intended to recognize Bitcoin as a kind of financial instrument in 2018. More information on the Russian Federation will be provided in the next section.
9	Thailand	In 2013 the central bank declared usage of Bitcoin is illegal. It is prohibited to buy, sell, or use Bitcoins to purchase goods or services inside or outside the country (Bitcoinbans, 2017).
10	Vietnam	Vietnam government banned the Bitcoin in 2014. It is a potential tool for illegal activities such as money laundering, drug trafficking, tax evasion. (Smart, 2015). It is currently under review.
11	Colombia	Bitcoin is considered illicit in the country at the end of 2016.
12	Argentina	The Bitcoins are not legal currency since they are not issued by g-t or other local authority.
13	Iran	They hold on the status of Bitcoin. Trading cryptocurrency is considered illegal.
14	Turkey	The country announced guidance that Bitcoin doesn't meet standards of electronic money. Most exchanges are leaving the country as local banks closed one of the accounts of the local company.
15	Venezuela	G-t would arrest or torture people using Bitcoin.
16	Kyrgyzstan	It is wholly forbidden usage of Bitcoin within national boundaries.
17	Hong Kong	Monetary Authority officially banned Bitcoin. Non-bank which trade Bitcoin need to receive permission which would result in no answer.
18	Malaysia	It is not recognized as legal tender. The central bank makes notification on the risks associated with Bitcoin.

Source: George C.D., 2017. "Bitcoin-Brief Analysis of the Advantages and Disadvantages.", table 2, p. 3-4; Public sources, Thomson Reuters.

Various countries have different legislative attitude toward crypto asset. Below in the Diagram 5 the map prepared by Thomson Reuters, which provides a general legislation of Bitcoin in the world. The dark green areas are considered the global advocates which is on the way to create good atmosphere for the future development. The USA Canada, UK, Australia, Kazakhstan, Spain, Norway, Finland and several others are marked green and supposed to be the countries with the positive attitude toward usage of cryptocurrency and legislation. The China is clear with its banned position since it want to develop its own cryptocurrency.

Diagram 5. Map of Legislation and usage of cryptocurrencies in the world.



Thomson Reuters, 2017. "A World of Cryptocurrencies", cropped from PDF available at https://blogs.thomsonreuters.com/answerson/wp-content/uploads/sites/3/2017/10/World-of-Cryptocurrencies-graphic.pdf (20.03.2019)

The particular focus should be given to the usage of Bitcoin in U.S.A as one of the developed country cases which have extensive spread usage of Bitcoin, and businesses most likely to accept Bitcoin as means of payment. Popular companies like DISH Network (DISH), the Microsoft Store, several sandwiches retailers such

as Subway are ready to take the payments by Bitcoin. Bitcoin is categorized as property for tax purpose by Internal Revenue Services. According to public information, The U.S. has the highest number of cryptocurrency users, Bitcoin ATMs, and Bitcoin trading volumes globally. However, the general picture is different through various: Texas, Kansas, Tennessee, South Carolina, and Montana appear to be the friendliest based on state regulation, but New York, New Hampshire, Connecticut, Hawaii, Georgia, North Carolina, Washington and New Mexico and others have rules which are unfriendly to virtual currency.

One of the examples of the country which opened negotiations for creating its cryptocurrency can be China. (Weforum.org, 2018) The first movement and evolution around the currency occurred when the world moved from silver and gold to paper money. Another revolution could happen if China decides to move from paper to digital currency. This keenness was driven by China's priorities, which arose by the US, pressing the potential of a trade war. Considering the 2018th mid-September decision of Donald Trump to put a tariff on trade between China and the US, which is around 250 bln USD with further increase. The export to the US from China is higher than from the US to China. The response to trade war would not give a similar result. China could respond to this action by releasing its digital currency called renminbi (RMB). The invention of Bitcoin by Satoshi resulted in interest drawn toward it by one of the significant financial institutions by the People's Bank of China, which is China's central bank. According to official information, the Central Bank of China is researching digital currency and planned to launch its cryptocurrency with advantages and benefits.

To pay attention to already innovations which occurred in the digital World such as payment applications WeChat and Alibaba’s Alipay. The online payment system evolved throughout time. Besides, master card and visa payment volume increased.

All of these payment systems are privately owned. The government needs to secure its payment within international trade. The dominance of the dollar in

international level brings necessity for China to maintain its dominance within the global economy.

The central bank backed currency would be able to reinforce and make innovation in trade. China's action on the creation and reinforcement of cryptocurrency would positively affect not only the economy but also society. To point out for current imperfections of digital money is a problem for the creation of an efficient payment system for China. On the other hand, smart contact and advantageous capabilities of Blockchains technology provide perfect motives for the development of Chinese cryptocurrency.

The digitalization of RMB would provide digital ledger between individuals, government, and companies. The whole procedure would allow us to make capital control. The further development would result in improvement toward tax collection.

The national program to conquer poverty by 2020 helped several families and planned to help more people in need. The people who live in a remote village live below the poverty line, which is around $360 a year. With the digitalization of currency, it would be easy to track the movement of intended money to prevent corruption and other illegal actions since people in need would be getting the money directly from the government with RMB account opened through the central bank.

The concerns are coming from the global effects and influence of implementation of cryptocurrency, which is immeasurable on a macro level. The situation where most of the population having an account linked to the central bank would affect the current banking system and require the development of some functions and replacement of others. The current system could be replaced by leveraging supercomputers and machine learning for automation of lending. This would eliminate corruption and further improve the development and whole transparent process.

Further Blockchains development in line with fairness and transparency. The creation of government-backed cryptocurrency would be a smart and vital step to solve citizens interest. Currently, we supplied our attention to the existing financial

institutions and companies in exchange for the satisfaction of our situation. The starting point of usage of cryptocurrency would result in an era of our data going to state authority.

2.3. Cases of usage of digital currency in CIS countries.

The development and spread of cryptocurrency also touched the CIS region. Brief information on the cryptocurrency has been provided above for several modern countries. Most of the states are not treating the Bitcoin and another cryptocurrency as currency because of its risky nature. Below broad clarification will be discussed for essential countries in the CIS region: Russia, Kazakhstan, and Azerbaijan.

As one of the most critical region in CIS countries, Russia plays a vital role in the adoption and development of crypto asset market in the area.

In 2017 Russian president Vladimir Putin ordered Central bank and ministries to put a law on the regulation of digital money. They are still discussing the code on the cryptocurrency with the following focus:

- Law on the "Digital Rights', which is expected to be implemented for Civil Law (article 1412) which is applicable for the person who has unique access to the digital code and has rights to make operations with it.
- Law on the "Digital financial assets," which would define the primary definition of virtual wallet, virtual currency, token, and others. A token can be issued only by a legal representative or individual entrepreneurs for attracting financing.

Under current regulation, the operations with cryptocurrency are not forbidden; rules on the virtual market are absent. The government tries to eliminate risks associated with cryptocurrency.

The application of suitable laws on Bitcoin would help on the regulation. In September 2017, Elvira Nabiulina mentioned that there is a misunderstanding in the relationship toward cryptocurrency since shortage in the law. Aleksey Moiseyev spoken on the forum in Moscow mentioned that cryptocurrency is that it is difficult to say whether the activity is legal or illegal.

The Chief representative made a point about the legislation which is on the way of implementation, but several uncertainties exist, which made it unclear whether activities are legal or not. The government is interested in the development of regulated cryptocurrency and even permitted several educated businesspeople to work with crypto asset development. Vladimir Putin agreed with the expression of Finance Ministry in 2017 where they pointed out for the possible dangers which are a door for money laundering, tax evasion, and terrorism sponsorship and several other usages which would damage Russian citizens. The Finance Ministry has done several strict administrative actions by providing tax collection on cryptocurrency miners on December 28, 2017. Vladimir Putin accepted the proposition for taxation on January 11, 2018. A draft law "On Digital Financial Assets." Was distributed on January 25, 2018, which make it clear the tokens, methodology for ICO and provide information on the legal regulation of digital currencies and assets. The emergence of Bitcoin would make it not only money but rather something more significant than that becoming future safe monetary model for financial institutions. The inefficiency and lack of awareness of individuals about Bitcoin play a vital role in the spread of Digital currency. The future perspectives of the regulatory framework and personal development of Blockchains. Bitcoin could be used in most of the sectors and will become an essential part of the future. It would have happened because of previously mentioned numerous advantages and other favorable characteristics.

Another country in the CIS region is Kazakhstan, which is different from Russia and other countries with a legislative attitude toward Bitcoin and other cryptocurrencies. The country authority is interested in cryptocurrency development as means to attract FDI for the economy. The government is taking effort to create the most favorable business climate for fintech and cryptocurrency. The government makes it clear the position to develop Blockchains technology and plans to regulate the cryptocurrency market. According to Astana Times reported as 23 November 2017, Kazakhstan established a Kazakhstan Blockchains Association (KABC) which was created

in order to regulate the cryptocurrency market. (World Financial Review, Brletich S., 28.03.2018).

Another interesting fact about Kazakhstan is that there are intentions similar to China, Russia, and other countries in the creation of state-sponsored CryptoTenge in order to regulate the cryptocurrency market and make the integration. It will be legally recognized currency as fiat money, which would make the country first in Central Asia and develop a digital economy. The neighboring country Kyrgyzstan announced the intention for the creation of cryptocurrency, GoldenRock in June 2014 but the status of it is considered unknown, and currently, all cryptocurrency payments are illegal (World Financial Review, Brletich S., 28.03.2018). Another noting point about Kazakhstan is the creation Astana International Financial Center (AIFC), which is intended for cryptocurrency, market development and attracting investments. The AIFC signed an agreement with an investment company from Malta EXANTE in order to regulate cryptocurrency, further improvement in fintech. (World Financial Review, Brletich S., 28.03.2018)

Despite government actions, National bank is against the deal of extensive spread cryptocurrency usage within the economy. According to Interfax-Kazakhstan news as of 18 January 2018, the national bank tightens circulation of cryptocurrencies. According to the statement by Chairman of the National Bank Daniyar Akishev the bank will look into cases of cross border transactions. Besides, the bank warned individuals on the usage of crypto assets which are not backed by the state cannot be legally protected. (Interfax, 18.01.2018). Another exciting news on the opposing view of Kazakhstan is provided by Global Banking News as of 2 April 2018 that Kazakhstan's intention to a full ban on cryptocurrencies. The particular attention is driven toward the plan to stop trading and crypto-mining activities to preserve national currency. The steps from the government directed toward cryptocurrency development and further actions as well as contradicting relationship from the National bank provides uncertainties and the additional gap in cryptocurrency. (Global Banking News, 2.04.2018)

The Azerbaijan case is exciting in terms of relation to Bitcoin and other cryptocurrencies. The government is staying neutral from creating its cryptocurrency, which can be different from neighboring countries such as Russia and Kazakhstan. According to the news by Azernews (15.11.2018), the government doesn't have the intention of creating their cryptocurrency. The Central Bank of Azerbaijan (CBA) have views and relations toward cryptocurrencies very conservatively and states that such currencies pose an essential problem and risks, which was told by Alim Guliyev, first Chairman of the CBA on November 15, 2018. He stated that it is a tool for money laundering. Before in February 2018 Chairmen of Central bank make notification to the population about being cautious with regards to operations related to cryptocurrencies since they are risky investments. (Azernews, 15.11.2018) The investment is legal. Additionally, there is news on the possibility of the creation of "Bitcoin Embassy Azerbaijan." The project manager Sabina Mammadli mentioned on her reportage for banker.az. She said that this practice is taken from other CIS countries such as Georgia. It will help to make improvement in the sector of Blockchains and provide necessary training to population and IT specialists in the area of cryptocurrencies. (Banker.az, 30.04.2019) The general situation in the crypto market is that it is not prohibited but taxed, and further investigation needed to be done in this sector.

CHAPTER III.
REGULATION AND FUTURE PERSPECTIVES OF CRYPTOCURRENCY IN THE CONTEXT OF INTERNATIONAL FINANCIAL SYSTEM AND TRADE.

In previous Chapters, we mentioned the importance in the context of International

Trade. The monetary model of cryptocurrencies has been considered. To maintain future perspectives and sustainability, it is crucial to maintain the regulation and future development of Blockchain technology.

The cryptocurrencies revolutionize the way trade and finance occur nowadays. The particular importance of ensuring future development poses Blockchain technology and its advantages. The further price fluctuations which make the future of the currency is under question important consideration. To emphasize on the future perspectives of crypto assets, it is essential to make it stable, trustworthy, make progress in the technological development, ensure control from legislative framework, provide security.

3.1. The Blockchain as a tool for regulation of Cryptocurrency.

It is vital to endure the Blockchain and provide information on its development as a tool for regulation. Before going deep into analysis and discussion on the topic, it is essential to define the Blockchain clearly.

The concept for Blockchain technology is referred to as Distributed Ledger Technology or Shared Ledger Technology, which is sometimes considered as various forms of technology. "Blockchain" is regarded as a phenomenon which is in the technology and business worlds. The very first it has been introduced as a computer system which affected the development of cryptocurrency. The current status of technology is that it remains in its seed stage of development, and most of the projects have the possibility to fail. There are several facts that it has limitations which should be addressed in the future for growth. The various questions aroused from people of a different discipline. From legal perspectives, the challenge consists

of the identification of legal, political, and strategic side of Blockchain technology. The policymakers are in chase of regulation the uncertain nature of Blockchain technology. The regulatory and governmental environment should be resolved. Innovations should occur in order to maintain a stable system of development of Blockchain technology. (Michele Finck, 2018). Considering this information, the regulations which would take into account specific characteristics of the technology should be deployed to create the certainty and stability with consideration of public interests. This process will result in stimulation of arguments about law and technological innovation and provide direction for those who concerned with Blockchains regulation.

One of the WTO publications on the topic of “Can Blockchains revolutionize international trade?” (Ganne E., 2018) provide broad information about cryptocurrency and particularly Blockchains technologies and its application in International trade. The definition of Blockchains is specific, and according to Emmanuelle Ganne (2018), Blockchains is a decentralized and distributed record of transactions or ledger in which the operations are located by application of cryptographic techniques. Different from widely accepted databases, which is directed by the central administration, Blockchains are based on a peer-to-peer network which doesn't have primary authority for control. The confirmation of transactions is provided by "consensus protocol” which identify the rules for participants to collaborate without trust in each other with no third party. The system of Bitcoin is called "trust machine." Only attendants of Blockchains could check the ledger any time. The transaction security makes it difficult to trace it by others. Previously mentioned smart contracts which programs that self-executed and used for process automation. The security of transactions is ensured by decentralized nature and usage of cryptography. It is not considered correctly secured, but in comparison with the regular database, it is more secured.

The division of Blockchain is done generally according to being public (there is no particular entity controlling the system), private (the control by the private entity) and several companies. The other examples of classification are being

permissionless (when it is publicly accessible to everyone- Bitcoin is considered a relevant example for this type) and permissioned (when the Blockchains is accessible to restricted amount of people). Other classifications can be applicable, as well. Most of the nowadays used cryptocurrencies in the field of international trade are related to the category of permissioned Blockchains. Considering the fact that Blockchains is the only sample of distributed ledger technology, generally, it is not only related to distributed ledger technology. The importance of Blockchains from an international trade perspective is that numerous applications could affect international trade in a broad manner. The wide area applications such as in finance, customs, logistics, transportations, insurance, intellectual property, government procurement, and several others, possible applications make it as interesting technology which would make innovation with increasing of efficiency of these areas. It is important to maintain relevant consideration for it. The advantages of cryptocurrency and Blockchains have been discussed widely, which is going to influence several areas related to trade positively. It would result in the elimination of paper usage of the trade process, but there are several barriers for implementation of this process. Blockchains is considered the system to maintain ease of trade process and to make supply chain finance better. The number of banks is interested in this system since they see it as the potential for development. The pilot project looks more contributing, but still, several regulatory issues need to be addressed before widespread application of the system. The Blockchains technology and smart contracts could facilitate trade process data exchange and provide a more secure, efficient, and transparent procedure. The more interesting challenge will be to maintain cross border political efficient cooperation. In order to maintain this kind of cooperation, it is important to make sure that the political and regulatory framework is in line with paperless trade. In the end, the technology could be maintaining the full potential if all aspects of external cooperation are digitalized and aligned. The sectors of trade such as transport and logistics, which make an important basis for application of Blockchains due to large amount of people involved, are looking for the opportunities to make technology active in in the

development of trade platforms that could result in connection of all actors, who are banks, supply chains, customs and other authorities. If the whole process of development would be successful, the Blockchains will be the second biggest intervention in international trade since the intervention of containers. In order to make such a project viable, it is important to maintain standardization and complex integration within a regulatory environment. The cooperation between all stakeholders is essential. By its development nature Blockchains will also open the way for services such as projects with regards to trade finance, with a growing number of startups developing products and Blockchains apps for more effective, easy and efficient intercontinental payments. It makes financial institutions to reconsider the way they have been doing business. It will not make a huge revolution in the financial world but have a big impact in the trade process. It could be a powerful tool for making financial institutions more strong. The additional area of development could be in the insurance sector. The smart contracts would eliminate several administrative and costs needs to insurance contracts at the international level. Blockchains is entering the e-commerce business, which would not only provide a change in this sector, but it would give further way for modification of business procedures. Considering all specifications of smart contracts, Blockchains could be not only infrastructural development for the economy but also they can appear as robots to manufacture. Currently, it is unlikely to make much impact but only cost reduction. The Blockchains could make Intellectual Property (IP) rights more accountable and efficient and help to conquer contradictions. Blockchains could result in the field development of IP and also provide the flowing impact in the IP industry. The registered and unregistered rights of Blockchains could result in the provision of proof of work, ownership to register IP rights and make the whole process of administration, and facilitation more efficient. It could result in the solution of several program challenges, but it will not make all problems resolved. The one information is certain that practical and legal implication of technology would provide improvement in IP rights. The Blockchains would improve state procurement processes, but pros and cons should be reconsidered with careful

attention. The technology of Blockchains makes a promise to enforce legal contracts and improve the procurement process to help illegal usage prevention. The other benefits of Blockchains technology are that it will provide cross-border opportunities by building trust and ensuring the transparency of the supply system. Since it shows, new alternative offers for tracking of product which would ensure the credibility of supply chain and build consumers' trust. Several new businesses are on the stage of developing of Blockchains apps for proof of quality, product specification, and supply tracking. The food sector, which had several problems with regards to quality, made several companies move forward to Blockchains to maintain transparency and make tracking of products for restore of quality of bad products. Maintaining linkage between offline and online ceremonies is crucial and costly. The information would be correct if only it were verified offline correctly. Another striking point is that Blockchains has a great opportunity to make costs lower by enhancing transparency and enabling automation process. It can do it by the inclusion of verification, networking, process coordination, and several others. It would result in elimination cost of financial intermediaries and exchange rate. It could be impossible to precisely indicate the effect of Blockchains technology on the trade costs with further equipment, but estimation shows that it is a useful number. The relative reduction in the cost in the financial sector and shipping industry would vary from 15 to 30 %. Based on the World Economic Forum, the barriers which would be prevented by Blockchains technology would result in USD 1 trillion of new trade in the upcoming century. The Blockchains provides new ways for SME and other small manufacturers from developing countries by easing access and making it available for export. It would be possible to make it by taking out barriers and make it easier for companies to participate in the trade. The condition for the occurrence of this can be only of SME would have access to the internet and have necessary skills. The target of the digital gap is important in this case. The same impact could be distributed unevenly due to this situation.

The only realization of these opportunities would be possible if several technical issues would be solved, which include scalability. It is pointed out by many

observers having a limited amount due to the predetermined size of blocks and energy problems. It is mainly famous for a public Blockchains. The hot controversial disputes are around permissionless type is the number of energy consumptions. It is less energy intensive since new algorithms are developed faster, and for this reason, it can be scaled up easier. The other problem in the long term perspective is security. Since they are reluctant in comparison with traditional databases because of their decentralized and distributed nature and use of cryptography, they are not entirely secure, but advance in technologies, in particular, the widespread of quantum computing could result in the elimination of these challenges.

Another technical problem is interoperability. It is considered one of the most significant issues with the face of Blockchains. Many platforms are being proposed for the development of algorithms which is not communicated between each other. This research is considered an agenda for the Blockchains community. The several technical propositions are given, but they are at the beginning of their time. The International organizations created the working group to work on the understanding concept of interoperability and several other standards related to this concept. The other technical issue is related to legal aspects, which is a gap in legislation and inability to maintain legal binding of it. The regulation should be applied from different side, which is the way data transferred, transactions validated, and law and liabilities. The legislation which enforces the recognition of the legality of e-signatures, e-documents, and e-transactions is very crucial. The legal perspectives were initiated by the 2017 United Nations Commissions on International Trade Law (UNCITRAL) which made it possible for several governmental organizations to unit for discussion of recognition of Blockchains payments. This type of issues is more widespread to the pernmissionless Blockchains, for the permissioned Blockchains it allows so some types of technical workaround. Another challenge for the legal problem is data security and several gaps in this field. Even if there are several doubts related to data protection, but it should be addressed. The possible solutions for legislation are to make sure that it is codified and provide machine-readable in order to facilitate real knowledge about companies. The critical issue is to make sure

that legal aspects are understood, and solution to the applicable problems are in line with technology. For the development of technology, it is vital to ensure cooperation between internet governance, civic organizations, IT professionals, scientists, government, and other organizations. It is essential to receive strong support from International organizations such as WTO to maintain pure system flow and contribute to the development of the technology within the context of legislation.

3.1.1The important features of Blockchains.

Generally, Blockchains features are somehow similar to the general characteristics of cryptocurrencies. Firstly, it is decentralized, distributed structure of the trust. The information in the system is known to all participants immediately, and every individual who has access to it can keep a copy of it and can distribute it. The Blockchains system ensures fast and transparent transaction; the permission for reading some information can be restricted to several participants to serve system more precisely. Secondly, it has more security and traceability. The elaborate usage of various crypto schemas and mostly decentralized and distributed behavior of Blockchains systems provide the assurance that this kind of platforms were more resistant to attacks in comparison to the traditional method. Even if technology promotes safety, weak points still stay as agenda since the internal situation and individual cases can be hacked conventionally if they remain in the individual computers or central server. The information about private key makes sure that it is transferred from the user's account into the attacker computer. The several cases of theft of Bitcoin and Etherium private key, which resulted in a massive amount of losses, which made several doubts on the central authority. To prevent it, there are attempts for enhancing the wallet, which make it more secure. The private key has some applications. Firstly, it provides steps for the prevention and detection of modifications. The Blockchains could prevent fraud, but there are some obstacles in the way of prevention of false information leak into the system. Secondly, it is easy to back up the data that was lost as a result of a disastrous occurrence. The information is saved in all nodes, and it is difficult to modify it. The other advantage

of Blockchains is its automotive nature. The usage of smart contacts and other processes make it clear to implement efficiency.

3.1.2 The Blockchains in general.

The schema of Blockchains is consist of the main three steps.

The first step is the sender submitting and requesting transaction. The transaction can be involving any assets which can be tangible or intangible, which is transferred between participants in the network. After submission of operation, different processes occur. First is the generation of crucial pair which encompass public and private keys. The public key is transferred to the individual who are going to receive information. Second is to hashes the information which has been sent, which means that it is converted into a new digital string of predefined and fixed length. The hash is encrypted by the private key of the person who sent it. The encrypted ash forms appear to be the digital signature of the data. It provides the insurance that of message transfer. Thirdly the data and digital signature are sent to actors in this network. If the data needed to be private and person who carries it doesn't wish to make it, then t can be encrypted.

The second step is after information generation and data hash; they are transferred to actors in the network, named nodes- and then added to the unconfirmed pool of transaction.

The third step is to ensure the validation of the data. It varies because of the DLT and protocol specific. The receivers approve the payment by the usage of the public key to decrypt the transaction. The successful transaction decryption is confirmed by sender claim. The sender can reaffirm the hash value sent by the sender and with the calculated data. If both amounts are equal, then it is proof that the information was accepted. The value is updated by "consensus protocol." The consensus protocol provides the general, unique transfer of data and assures the integrity and consistency among nodes. In the example of Blockchains technology, the guaranteed transactions are firstly combined with other payments for making a block, which is confirmed. In case of confirmation, the new block is linked to the

chain. Each block contains several transactions. The neighborhood is considered as block header and records of the transaction. The header has the following elements: block number, the time stamp which registers the chronological data line, the hash of the block which is called hash pointer and connect blocks, the "Mekle Root," which makes sure that information is easily compared and verified without need to consider the aggregate data. Additionally, the header includes the “nonce”-which is the random number which miner must find for validation and finding difficulties.

Fourth step is confirmation of the transaction. It happens after validation of block or, transaction validates then its time-stamped and connected the previous block with a hash pointer which maintains chronological chain of blocks. Later it is confirmed and cannot be changed. Every time it is added to the chain, the digital ledger on all the participating nodes updated. The other accounting has a slightly different structure, but logic is the same.

The uniqueness of Blockchains with central part- digital signature, hashing encryption, Merkle trees- have been the primary source of information for several years, the defense against attacks have been discussed. The main striking feature of Blockchains is that it is the properties of all these technologies and introduced the primary minor with its higher level of technology. The fact that records cannot be changed after validation is appeared to be the main leveraging property of the hash algorithm. On the other hand, instead of a simple address of the preceding block, it contains the whole record of the data. The minor modification in one block would result in alterations in preceding blocks. This makes Blockchains more reliable and unique. When validated, the Blockchains removes timestamping.

The main specification of Blockchains which are shared "distributed" or "decentralized" digital ledgers which transfer digital information over the peer-peer network. The primary operation basis is consensus protocols, cryptography, and several other economic motives build on game theory. The most popular of digital assets is Bitcoin, which enjoyed popularity from its appearance and widespread around the world. Besides, the Blockchains can be used to be used like other assets types such as

- fiat money;
- derivatives, stocks, bonds and other derivatives
- contractual rights;
- International trade; (Maupin, Julie, 2017).

The main two types which can public (permissionless – can be used by any individual) or private (permissioned – used only by certain people). The advantages and disadvantages of them depend on configurations and intended usage. The goals of each of it should be in line with intended usage. Considering the fact and advantages of Blockchains they can be useful tools in making global shaped in the right direction which include benefits such as distributed location with no central point, the traceability of transactions, the party confidentiality. These features make it called "internet of value" which make them able to exchange value inside the decentralized peer-to-peer network the same way as the internet. The information exchange in the system is cheap, like it is on the internet, which makes Blockchains attractive.

3.1.3. Policy concerns

The concerns on the regulation of cryptocurrencies should take into account the following concerns. First, The scope of new technology permission for innovative financing sources. Nowadays, ICO financing of cryptocurrencies is considered an essential part of the EU economy. The permissioned or public Blockchains would be a useful asset for expanding the ways for the funding for medium and smaller startups. Considering the infant stage of this kind of technology, it is early for making a decision about the advantages of governance and technology. The upcoming innovations should be addressed in this field. The second, the cryptocurrencies have been used and used nowadays for the financing of illegal activities since the secret nature of transactions which cannot be unpredicted. The reaction for the value of Bitcoin for sponsoring of drugs, unauthorized usage is an essential characteristic of cryptocurrencies. The policy actions should be taken to limit the illegal usage of Bitcoin. The legislation in the EU's anti-money laundering

has been directed towards dealing. The February 2018 the agency in European Union which deals with Law Enforcement provided information on the illegal usage of around 3-4%. (BBC News,2018) Third, the defense of consumers and investors is limited and considered as a danger. There have been cases of fraud when investors who used Bitcoin for ICO financing. The group "51 Crew" who controlled around 51% of the network of 2 significant crypto assets such as, Shift and Krypton. They stole off approximately $65 mln. in Bitcoin. (Huffpost.in 2017) Several other fraudulent and hacker activities have been registered, which pose an essential dilemma for the future of cryptocurrencies. Another critical concern is stability. The massive volatility of prices poses a significant problem. Even if it had some period of security, the daily and historical fluctuations in the prices would raise an essential issue. The fifth concern is the taxation of cryptocurrency. The gain from usage as a speculative vehicle is taxed as it is in the case of another financial asset like stocks, derivatives, etc. The other part is ICO financing of start-up companies which pose a question on taxation. The companies which use tokens the standard taxation procedures should apply. The problem arises when taxing the cash and token mix. The policy should regulate the taxation of every single case — the last but not least, legal question in finance and non-finance usages. The trade finance application would make it easier and efficient to decrease the cost associated with the whole process. However, the current use of Blockchains has to make a copy of the operation since the gap in current legislation. In order to maintain development and application of full process, the transfer of property should have legal binding. On the other side, if it is not applied, the uncertainties would be an issue.

3.1.4. The Blockchains approach.

The Blockchains gives safe data for private users of it with clear incentives. Considering the proof of work phenomenon used in cryptocurrency are monetary. The securitization provides the incentive to engage more in governance of Blockchains and gives shares of voting. The administration of Blockchains provides coordination of network nodes. (Böhme et al., 2015)

Blockchains, the nature of the business models, company, and industrial organization.

The appearance of Blockchains pose a doubts on the definitions of the firm and labor wage. Considering economic movements, the most of the companies are operating in quasi-monopoly position today. The first side of it is that the investment in the fixed capital nowadays create increasing return to scale which further result in favor of larger firms. The second effect is that network externalities create the winners-take-all condition. These 2 effects are maintained by decentralized Blockchain. A decentralized voting system can be created by a Blockchains. This can result in the creation of organizational structure where the strategical decision of organization is made by bottom of the employees with decision considered in the upper side and avoiding the CEO. It means that companies are run by decisions using Blockchains network. All voters choose strategic decision themselves. (Swan (2017)) The Blockchains extends the size of the work for lower-cost supplier and workers. There mainly two results for business processes and labors as a result of the Blockchains. Tapscott and Tapscott (2016) propose that Blockchains modify smart contracts, search costs, contract, and coordinating costs. The second effect is done by replacing labor with self-employment. From the market entry perspective, Blockchains technology also brings a positive effect. If IT and other hardware make significant barriers for entry, the Blockchains makes it easy for an agent to bring resources to perform tasks. Everyone with access to the internet and electricity using computers could mine public cryptocurrencies. The other concept is the delegation of tasks. The Blockchains using its decentralized nature tasks and work develop counter-trend to the development of centralized platforms. The discussion of UBER and Airbnb who want to use Blockchains technology for their existing business model to make it more innovative and efficient and consumer-friendly make it more actual topic.

The Uber can use Blockchains contracting consumer, and receiving payment and Airbnb can develop a Blockchains to automate payments. The more

government and private organization can use positives features of Blockchains to reinforce power for accessing resources available in the Blockchains system. (Tapscott, D., & Tapscott, A., 2016.)

The Blockchains, with its innovative perspective, has many useful features which provide implications for trade and finance nowadays. It will change the way trading process occur, increase efficiency and effectiveness. It will provide technology which can be used in other sectors such as food to maintain transparency, enhance automation process, and tracking record of information.

3.2. Perspective in price fluctuations and its impact on the future of digital currency.

The arguments about cryptocurrencies being the currency of the future or speculative tool could be discussed by considering the fact that recent and historical price fluctuations pose a problem. The future of the cryptocurrency primarily depends on the nature of Bitcoin. Most of the researchers confirm that Bitcoin and other cryptocurrencies satisfy the two primary functions of money which medium of exchange and unit of account. The breach of stability or store of value has been an important issue that prevents Bitcoin from being a currency. Another important consideration is that cryptocurrencies don't have trust from the population since it is not backed by any government and several legal issues which prevent widespread usage. My direction is that Bitcoin and other cryptocurrencies are used as a tool for speculation which is confirmed by many varieties of research and recent price fluctuation and uncertainty tied to it which appears to be a significant barrier on the way of development.

Speculative nature of Bitcoin and other crypto assets pose an essential argument for the future of the cryptocurrency. Before exploring features of Bitcoin as a speculative vehicle, it is vital to maintain a clear definition of speculation. Speculation is short-term income generation activity in financial markets, which is mainly focused on capital gains of speculators. Speculators are usually individuals who seek to gain on short-term price fluctuations and then exit the market after

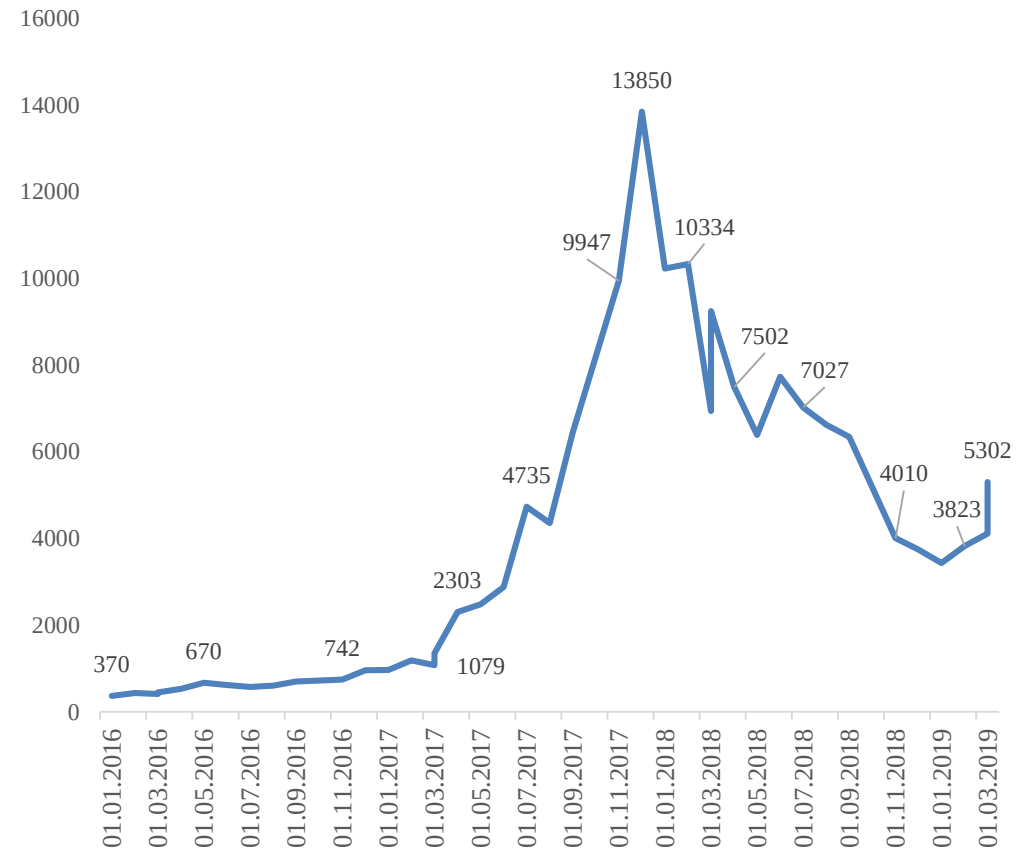
winning, which could result in price variation and abnormal behavior of the market. Their valuation of security depends on future price expectations, which are sensitive to noisy information, higher order expectations, and even recent price changes. Consequently, in a market populated by speculators, asset prices can be susceptible to high volatility and bubbles (Keynes 1936, Shiller 2000, Stiglitz 1989).

The discussion of speculative vehicles provides an example of some researchers who proposed that Bitcoin is not a currency instead of a speculative vehicle which is used to make a profit on the price fluctuation (C. Baek&M. Elbeck, 2015). They are valid to some extent. Most of the proposition was driven by price fluctuations which occurred recently and ongoing daily price volatility.

The speculative nature of the Bitcoin market is driven by Bitcoin exchange attendants who are buyers and sellers of digital money. The further growth of the usage of Bitcoin would result in a decrease in volatility and influence the market, which would make it internally and externally developed speculative vehicle. (C. Baek & M. Elbeck.,2015)

As Bitcoin is considered one of the first and most significant cryptocurrencies in today's technologically advanced and complicated world, we will explore its features and analyze price patterns to make the diagnose in the stability of price. The main arguments on the money function of the cryptocurrencies are that it breaches the third and one of the most important function of money which is stability. The historical price variations and sharp volatility emphasized on the risk associated with the currency. According to the historically recorded prices the analysis of pattern for the period of 2010-2019 was divided into 3 periods with beginning of the months prices. The most recent period which is January 2016 to March 2019, is represented in the Graph 4. The steady increase in Bitcoin prices for January 2016 and April 2017 when rates changed from USD 370 to USD 1079 was followed by a sharp rise for the period between 3/1/2017 and 12/1/2017 where it reached the pick of USD 13,850. It was a result of growing popularity and speculation from the vast audience who aimed to make a profit on a price increase. After this period prices went down with fluctuating nature reaching USD 5302 in March 2019.

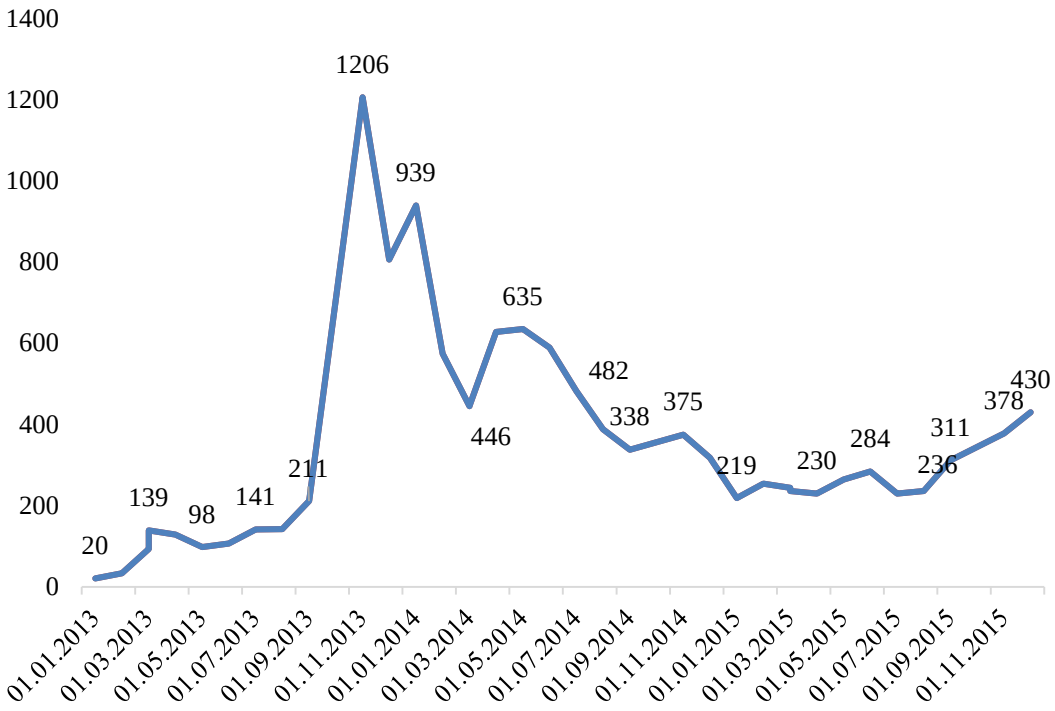
Graph 4. Bitcoin monthly prices 2016-2019 (USD).



Source: Yahoo Finance, https://finance.yahoo.com/ (20.04.2019)

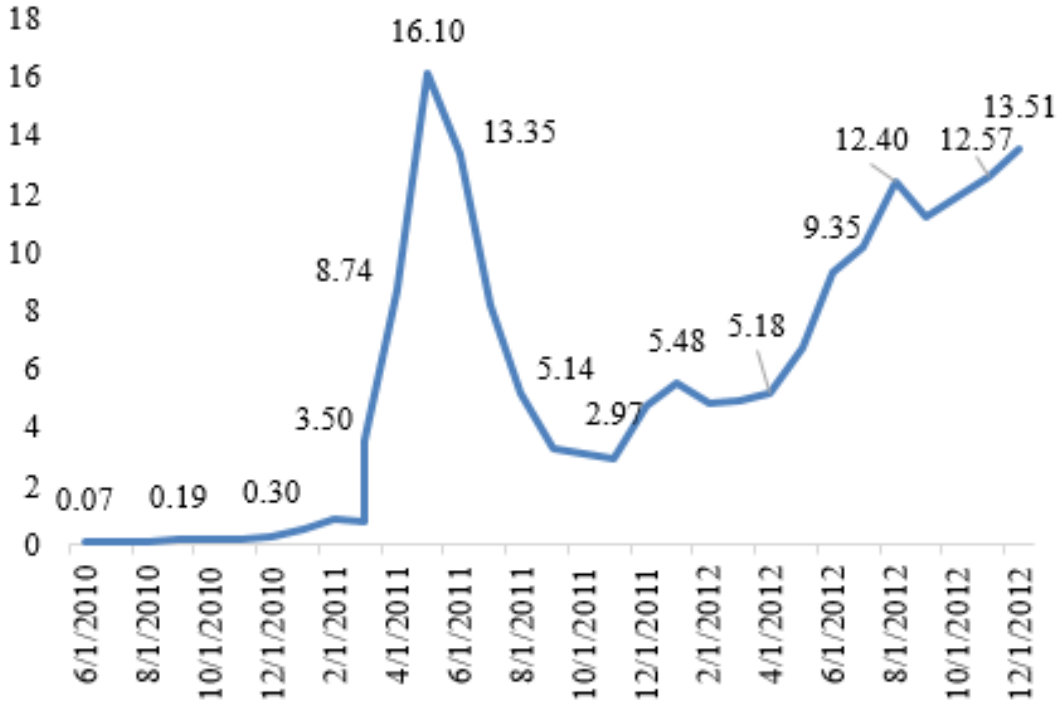
Graph 5 represents the period of January 2013 and November 2015. The graph also shows an unstable sharp increase from USD 20 to USD 1206 between January and November 2013. A fluctuating decrease follows it to the amount of USD 430 as of November 2015. Graph 6 represents the early stage of Bitcoin the period between June 2010 and December 2012. The sharp increase from USD 0.07 to USD 16.10 between June 2010 and June 2011. After it decreased sharply to USD 2.97 as of the end of 2011, beginning from that date it had a stable hike reaching USD 13.51 as of the end of 2012. As graph represents in all periods, it had unstable fluctuations, which are another reason which makes most people stay away from keeping their wealth in Bitcoin and using it. In order to fulfill the function, the money the fluctuation should be decreased. It would be possible if the wide range of people will use it as means of exchange for goods and services and also trust from population increased. In the long run process of the assets are stabilizing itself. This is anther contributor for the future price stability.

Graph 5. Bitcoin monthly prices 2013-2016 (USD).



Source**:** Yahoo Finance, https://finance.yahoo.com/ (20.04.2019)

Graph 6. Bitcoin monthly prices 2010-2013 (USD).



Source: Yahoo Finance, Retrieved from https://finance.yahoo.com/. (20.04.2019)

Bitcoin fluctuations are enduring for the short-term, which makes it be shown more speculative. Being speculative makes it also to appear inefficient. Inefficiency makes more reluctant toward widespread usage. It is ineffective due to infancy,

volatility, and speculation in prices, lack of regulation, and inelastic supply of money (Refk Selmi, Aviral Kumar Tiwari & Shawkat Hammoudeh, 2018). All of these factors have significant attention. Even after the increase which occurred in history, it is on the way to reach its stable value, but considering the fact of periodical fluctuations in prices, make it remain the unstable speculative vehicle that cannot be as a means of exchange for a wide range of the population. To mitigate risks for speculations, one of the possible solutions is developing a regulatory environment which would ensure the pure control of supply and dement of crypto money. Propositions by China and other counties which are planning to benefit from the advantages of blockchain technology and digitalize its currency.

Considering all mentioned arguments and monetary features of Bitcoin with a wide range of usage but frequent price fluctuations and strange behavior make it more being close to the category of an asset rather than currency. Out of three functions of money which is medium of exchange, a unit of account and store of value only the first two functions satisfy the Bitcoin, making one of the most critical features, stability, remained unsolved. The decentralization nature of cryptocurrencies is considered the main contributing factor for speculation and fluctuations in the prices. The future technological and innovative enhancement should be directed toward improvement in controlling mechanism of crypto assets. The current interest from global powers in establishing its cryptocurrency and programs led by central banks in regulation would result in the centralization process.

Another aspect which necessary for consideration is people's usage of crypto assets. As for usage increases, it would make Bitcoin volatility decrease coordinating more stable externally and internally driven investment. As trust from a significant population increase and legislative binding would make Bitcoin permanent and maintain usage as currency.

Nonetheless, if Bitcoin usage grows, then we expect Bitcoin volatility to drop and attract market and economic influence representing a more balanced internally and externally driven investment vehicle.

3.3. Impact of cryptocurrency on the International Financial System and trade.

After discussing the general importance of cryptocurrencies in the International financial system and trade it would better to point out on the impact they have on the whole system. The change in financial sector which could maintain transaction without intermediaries, lower fees, and several other benefits. The uncertainties about status of cryptocurrencies take place nowadays with some researchers consider it as currency while others pointing out on the speculative vehicle nature. The general function of money could mean that Bitcoin as one of the examples of cryptocurrency is related to currency only if stability maintained. The other impact will be on the trade, and it will be significant from making the procedure of payment easier to making the contractual, legislative process better.

3.3.1. Impact of cryptocurrencies on the International Financial System.

The monetary model of cryptocurrency is considered as being dependent on the energy consumption and mining process. The digital assets don't have any paper or other proof of being money. The overall impact on the financial system is that it will provide transaction without fees, provide freedom of trade with the same currency, lower failed payments, AML protection. The uncertainties about prestige of digital money occur where some scientists relate it as currency while others propose that it is a speculative tool and cannot be considered as future currency. The propose it as it fails to maintain one of the most important money feature, stability. The next development mainly depended the blockchain technology spread.

3.3.2. Impact on International trade

The nature of Blockchain, which is more decentralized and distributed, could increase the efficiency of information between government entities. It poses particular attention when traditional traders involve many actors who act in sequential nature, the documentation is separate, and any participant can make addition or modifications ensuring fraud-resistance of reports. On the other hand, in

Blockchains driven technology, the information shared and kept in the nodes, which makes it impossible for modification. The sequence can be tracked, and actions can be performed. If the export situation occurred, then the exporter will be required to enter information only once, which result in the usage of data only one time. The example from the trade process from Kenya to Netherland, which was mentioned in Chapter 2 emphasizes the importance of the trading system using cryptocurrencies. The export of flowers from Netherland requires six different party involvement. The farmer from Kenya sends his packing list, which then becomes visible to all actors in the system. The application of smart contracts allows for tracking of procedures and improve the effectiveness of the documentation process among parties and agencies involved in the trade. The usage of technology makes the flow easier for the farmer since he uses a mobile application to submit and track all the procedures. At the same time, Netherland representatives receive information about updates on the flower conditions and current location and whole other procedures. All the time about the process is provided in the permissioned system of Blockchains which is only accessible to people who authorized to perform it: who send the documents, when it was posted, by whom it was modified and all other information. Another essential notation is the Blockchains can help to enhance the approval of workflow of certificates. The certificates are related to various procedures and are the critical process of the trading system. The other advantage of Blockchains can be that it makes the possibility for reference to the previous method concerning the certification process. For example, the phytosanitary certificate requires the approval of a prior transaction and cannot be split into different licenses. With the application of Blockchains technology, the certification will not be time-consuming requesting the replacement of the previous certificate since actors are the part of the same trade. It will result in facilitation of process if consider regulatory system can assure it. The other certificate example is import and export permit, which can be lost in standard trade procedure. With Blockchains technology it would result in making it safe to preserve the whole process since custom authority, traders will be able to access it quickly and make entire procedure flowing. The renewal of certificates can be an

issue in the example of the trading process. The other useful feature of Blockchains technology in application to certificate origin. The two leading documents are eCertify and TradeCert, which was registered in May 2018. The chamber of commerce can access these certificates with the help of Blockchains technology to maintain adequate confirmation (essDOCS, 2018). Most of the countries are working on the projects related to simplification of trade. One of the examples can be the announcement by the Common Market for Eastern and Southern Africa (COMESA) to maintain the connection of trade platforms using Blockchains. (Mbogo, 2018). One of the critical consideration is that authorization by Chamber of commerce will be in reality not that important. The state of relationships with Blockchains will not be changed. The benefits of issuing the certificate in Blockchains system would be limited. The announcement of US Customs and Border Protection, which would leave, which will initiate a test for tracking information of NAFTA imported products can be one of the direction in the development of Blockchains technology. (Baydakova, A., 2018).

The Blockchains technology would result in the release and custom clearance of goods, which would result in the need for verification. The main purposes of usage are the following:

- Complete requests for binding decisions by customs authorities. The intended end-users, such as all custom offices and administrations, would be able to use all documentation issued on a Blockchains, in public ledgers, with fast clearance and release process.
- Make faster pre-arrival processing. This is the process before the arrival of goods.
- Make optimal risk assessment. After information entered in the system, the in-depth examination will begin, which is considered as part of the risk assessment process.
- The technological basis is still under consideration. In May 2018, the Korean Customs Service announced that it would be dealing with the

development of the e-commerce platform. This technology will prevent fraudulent activity, make the import process better. (CCN, 2018)

The other importance of usage of Blockchains for goods which will be re-exported with no change since they are released from the customs duties is that it will release the process from duties. (Wcoomd.org, 1990)

Besides, the process of revenue collection will be improved. The program can be easily adapted to meet the changing conditions of payment. The Oracle can be programmed on the way to fulfill the expectations of the program. For example, if the good cross the border, then payment initiated. The system gives the chance to take taxes on behalf of the intermediaries and then send them to than needed parties. For example, bring it on behalf of the government and then send them tax ministry. The final process is that users would contribute to the transparency of transactions.

Another implication is that it can help in further audit clearance. The new process of audit can be maintained through Blockchains since the system makes records of all previous transactions.

The Blockchains technology helps to maintain identity organization of the system. It makes individuals and businesses be able to be read. It makes sure that B2G transactions at the national level are maintained. Even if the various International organizations explore profound possibilities of application of Blockchains technology. The limitation is to make G2G process efficiency for Blockchains.

The expectation of trade simplification from Blockchains is at a higher level. The Government to Government transactions are not famous cases with current usage of Blockchains. The more popular to trade Business to Business. (Stokes, P., 2017) The technology of Blockchains shows the importance and easiness of the process of G to G trade. The technological advancement could provide a simple procedure for transactions between governments without reliance to third parties. It will ensure transparency and cooperation development in this field. It gives a traceable mechanism for ensuring data protection, sequence, and other procedures. The full potential of technology is still under testing. The further considerations and

research should be directed to answer a question related to maintaining the facilitation of intercontinental G to G cooperation in the field of international. The main areas are interoperability, regulatory issues, data modifications, and standardizations. The main problems are related to political and legislative nature of Blockchains technology. Further development would make it more efficient and effective.

CONCLUSION.

The emerging of various types of cryptocurrencies made significant innovations in the sector of finance and trade. The main advantages which are the freedom of trade with same currency, efficiency of trade, lack of fees and intermediaries, less failed payments, AML protections, less cybercrime, ability to track record all of the transactions, end of password and less pap usage. It provides motivation for exploration and extensive application the crypto asset and technology behind it.

The Blockchains technology, with its innovative solution for the trade, would make the whole process smarter with suitable smart solutions and standardization. It could become possible only if cooperation between scientists, IT specialists, internet government, civil society takes place. It such agreement take place the trade would look different in upcoming decade, which will make it easier, smart, and efficient.

The modern technological revolution of the 21st century which propose its innovative technology, Blockchains- a distributed ledger- has been explored and continue to be examined by most of the scientists as the technology of the future which can shape areas of trade and finance. The Blockchains, which is digital innovation with no reliance on the third party in transaction, has many promises which provide hope for a more efficient and transparent trade process. It would maintain security for people and businesses in the contemporary and technologically advanced world with its smart, economical, quick transactions. Additionally, it will be a contributor to the way international trade occur beginning from financing to intercontinental operations, by decreasing whole process, confirmation, tracking, transportation costs and making a digital structure with the involvement of several stakeholders. This process before has been made on paper. The result of the development of Blockchains technology will be improved IP rights administration, open new chances for small businesses. A recent innovation from stream to electricity and the internet era has a significant impact on production. The Blockchains technology will be of such essence for transactions as the internet for

the communication. The break of existing trade standards would result in the moving of international trade to the next level. It is not the solution for all problems, but technology serves best for existing issues. The use of Blockchains creates preventions for the transactions with its significant investment efforts and modifications to systems and culture. It is substantial to weight up the trade-offs.

The most important to mention that with technological advancement, there are many challenges which should be solved to maintain full exposure of the program. In particular, the solutions to technical problems should be addressed. The current law and regulation should be directed toward the improvement of the Blockchains. With the absence of the law the Blockchains will be just pilot project. The Blockchains would lead us toward the solution of the problem will we be able to see the nature of economies of a distributed ledger. The change will not be giant — the development of technology which can be slightly different in upcoming years. The more modified new secure and less energy-intensive projects are evolving. The one thing is sure that even if the future of Blockchains has gaps for developing or under development, it is worth investigating and need to be provided with opportunities for making full out of its potential — the complex solutions which satisfy the full possibilities needed to be developed. To ensure full potentials within the Blockchains, businesses, individuals, scientists, government and its organizations should be cooperating. The trade could become smarter with Blockchains, but it requires more complex standardization process which only can be ensured through standardization. It can become different from what it is nowadays if we improve.

The work of Blockchains and technological changes brings new economic models for development with enhanced speed and safety, decreased consumption of energy, which makes it being away from the "block" and "chain" phenomenon. The contemporary models are used as the reference of DLT to the Blockchains.

The creation of digital currency, which could make payments more accessible and provide anonymity into the network, was in line with the law and regulation. The widespread followed by development is more related to the pressure of governments most of the countries on the businesses of the financial sector with the

purpose of identification of black and grey areas in the economic systems. The currency has several shocks in recent year, and currently, this pressure is continuing. For some population, it is overvalued, and for this reason, further fluctuations are expected. This hypothesis can result from the current popularity and growing demand for it. We can suppose that every upcoming year more companies will be offering payment of services with cryptocurrencies in order not to lose current and potential clients. The cryptocurrencies are considered to be one of the best methods for making business in the shadow part of the economy. Owning to the fact that this situation occurs it will be making constant affecting factor for the Bitcoin exchange rate. The appearance in global financial and international trade system of a new instrument for payment such as cryptocurrency, which can simplify of payment operations, making them cheaper by decreasing amount of intermediaries and also providing anonymity for the services was expected. We cannot anticipate the next prevailing cryptocurrency for the time being, but it is a fact that new type of currency becoming an inevitable part of the everyday of businesses and individuals. It can be mean that nowadays, the world economy is on the stage of the unpredicted innovative revolution which would affect the financial system and trade.

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