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Contents

Bitcoin – A New Challenge for the European Monetary Structure

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Abstract

As in all parts of our everyday life the progress of technology has arrived in the monetary field. New forms of medium of exchange based on technology and IT networks are used in transactions and are slowly taking the place of sovereign money as a traditional tool for exchange. Bitcoin is perceived as a technological breakthrough that will change the landscape of the traditional monetary and payment systems. However, the launch of the bitcoin and other cryptocurrencies is not without controversy. On one hand, it makes the transactions faster and cheaper while providing anonymity for the participants. On the other hand, its use includes significant risks not only for the stability of the financial and monetary system but also for the broader public using it. Also, there are many legal questions and legal challenges deriving from the use of the cryptocurrencies. The paper presents different problems concerning the use of the bitcoin and its treatment by the European Union law and institutions and by other national jurisdictions.

A. Introduction

Money is always a symbol and pillar of the current economic system. From the very beginning of its use money has always been on the edge of technological progress and innovation. Money is, on its own, an innovation. When barter was no longer useful, became expensive and made the economic model of that period unsustainable, money appeared. The original commodities (seeds, precious metals etc.), were replaced by another revolutionary change i.e. paper money that was backed by precious metals. At that time,

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money could be changed for a certain quantity of precious metal.[1] It offered more security for transport and was more practical for use. Nevertheless, with the rejection of the gold standard in 1971, settled by the Bretton Woods post-war monetary order, money is no longer covered by gold. That is fiat money whose value depends entirely on the trust in the monetary system and on the institution responsible for preserving its value. In the last 20 years technology made the transfer of money without physical exchange of money, notes or coins possible. This is known as electronic money, which is perceived as another revolution in the monetary domain.[2]

The development of new technologies and the wide use of the internet has brought changes in the monetary and payment systems reshaping the entire economic system, Thus, banks are offering e-banking services, shopping is done more and more online while shares and bonds are bought through orders given online. The new technologies are becoming part of our everyday life in very high speed. The question was not if but when this new technology would enter the monetary sphere, thereby challenging the traditional monetary system.

Virtual communities have created different networks that in many cases have established their own system of payments with their own currencies in their core, which are used as a unit of account or medium of exchange.

Depending on the relationship between the virtual currency and the "real" money, which is the legal tender in the country, virtual currency schemes can be divided into three types. The first of these represents closed virtual currency schemas. The second are virtual currency schemes with unidirectional flow where the virtual currency is purchased with real money by certain exchange rate and later used for buying goods and services in the virtual community. Finally, the

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1 On the history of money see: *Ferguson*, The Ascent of Money, A financial History of the World, 2008, pp. 17-31.

2 Only small amount of the monetary base is cash money. It depends on the country's development and economy. There are some opinions that the cash should no longer exist, or little portions to be left and should be changed with electronic money. See: *Rogoff*, The Curse of Cash, 2016, pp. 1-11.

third type of virtual currency scheme has bidirectional flow or the virtual currency might be exchanged for real money and vice versa.[3]

Some virtual currencies have gained importance and become widely used. Currently, there are more than 200 different virtual currencies in the world.[4] The money is like a language. The more people use it the more important and valuable it is. However, virtual currencies are out of the competences of the monetary authorities in terms of its supply and supervision. The issuer is usually a private owned non-financial company that is not connected with the monetary authority or issuer of the currency, which is the legal tender in the country. This might pose a threat to the monetary, financial and overall economic stability in the country where the virtual currency is used. In the European case, things are even more complicated. The European monetary union is a *sui generis* monetary structure where a common monetary policy for sovereign states participants is decided and conducted by the ECB as an independent and supranational central bank. This makes the European monetary system even more vulnerable to disturbances, which might be caused by the virtual currency schemes as an alternative to classical money and traditional payment systems.

This paper aims to provide an analysis of bitcoin as the most popular virtual currency schema. Firstly, the notion of bitcoin is explored through presentation of its definition and the arguments for and against its use (B). Secondly, the paper gives an overview and tries to address the question of the legal treatment of bitcoin in the EU and in different jurisdictions (C). The conclusion follows.

B. Notion of Bitcoin

The importance of one medium of exchange is proportional to the economic operators taking it as a payment tool and willing to accept and exchange goods and services for it. Even if only a small fraction

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3 ECB, Report on virtual currency schemes, 2012, pp. 13-14, https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf (5/10/2017).

4 There is a strong competition between different cryptocurrencies, see: *Gandal/Hałaburd*, Competition in the Cryptocurrency Market, Working Paper 2014-33, pp. 8-15, http://www.bankofcanada.ca/wp-content/uploads/2014/08/wp2014-33.pdf (1/10/2017).

of today's global trade, only 1bn per day, is performed via cryptocurrencies their importance constantly grows. The popularity of bitcoin has contributed to global retailers from different industries accepting it as a medium of exchange. Tesla, Microsoft, Bloomberg, LOT Polish Airlines, Wikipedia, Subway, PayPal etc. are just few from the long list of companies that accept bitcoins as a medium of exchange.

The theoretical foundation of bitcoin may be found in the Austrian school of economics and the idea that the government should not have the monopoly over the issuance of money.[5] The money should not interfere in the economy and in economic cycles. Ups and downs in the economy are created by the monetary authorities by control of the money supply. With its limited monetary supply, bitcoin should be an effective tool for exchange without having any effect on the prices and other economic fundamentals.

However, the definition of bitcoin differs across various disciplines and among authors while there are also different opinions on its usefulness and effectiveness.

I. Definition of Bitcoin

Even the sceptics accept the fact that the bitcoin is a technological breakthrough that creates new opportunities for cryptocurrencies as an alternative to traditional money. Nevertheless, the word bitcoin is used in different contexts for explaining different things. In the literature, bitcoin is defined as the first fully decentralised digital currency *or it is the world's first completely decentralized digital-payments system.*[6]

Thus, the protocol, the network, the currency, the open source implementation are all described with the term bitcoin. Nevertheless, the bitcoin might be defined as a decentralised virtual currency with

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5 See: *Hayek*, Denationalisation of money, 1976, pp. 82-84.

6 *Brito/Castillo*, Bitcoin. A primer for policymakers, 2013, available at: http://mercatus.org/sites/default/files/Brito_BitcoinPrimer_v1.3.pdf (1/10/2017), p. 3, and *Karlstrøm*, Do libertarians dream of electric coins? The material embeddedness of Bitcoin, Distinktion: Scandinavian Journal of Social Theory, vol. 15, no. 1, 2014, p. 27.

no authority or institution behind it – backing, supervising or controlling it. The bitcoin is not backed by any quantity of precious metal or currency. The essence of bitcoin is a computer program whose creators' identity is unknown. The public knows Satoshi Nakamoto as the creator of the bitcoin. In its famous paper[7] from 2008 Satoshi Nakamoto presents the entire concept of bitcoin, including and explaining all the features and technical details.

Bitcoin is based on a peer-to-peer network of computers (nodes) running the software while there is no central server. The bitcoin system creates bitcoins by mining. The most important novelty in technical terms is that the bitcoin has successfully solved is the double spending problem. The validating of the transaction is done by other computers in the network, which are reworded with new bitcoins. The process of creation of bitcoins is strongly linked to the transactions. No authority has control over the bitcoin and since the code is open source and belongs to the public domain even its creators do not own or control the network.[8] For many that is the most important characteristic of the bitcoin, a key to its success.[9] The decentralised structure of the bitcoin makes it resistant to possible abuses from the controller or the owner by different changes of the supply. Bitcoin's monetary policy is determined by its monetary base, which is fixed at around 21 million bitcoins after which very small amounts will be minted.

The traditional definition of money includes its three different functions as a medium of exchange, unit of account and a store of value.[10] When applying this definition to the bitcoin it may be concluded that it hardly fulfils one of the three criteria. Namely, the bitcoin serves as a medium of exchange but it could not be perceived as a unit of account nor a store of value. The latter function cannot be

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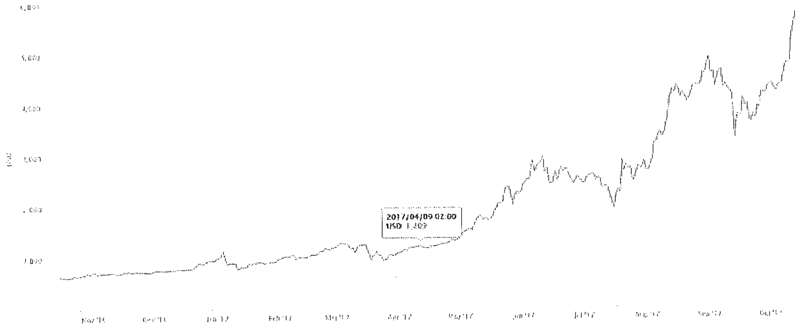
7 *Nakamoto*, Bitcoin: A Peer-to-Peer Electronic Cash System, available at: https://bitcoin.org/bitcoin.pdf (2/10/2017), pp. 1-8.

8 *Franco*, Understanding the Bitcoin, Cryptography, engineering and economics, 2015, pp. 49-73.

9 Some authors consider this characteristic of bitcoin as a key reason for its success. See: *Kelly*, The Bitcoin Big Bang, How Alternative Currencies Are About to Change the World, 2015, pp. 59-74.

10 *Proctor,* The Mann on the Legal Aspects of Money, 2012, pp. 9-12.

attributed to the bitcoin because of the high volatility of its value, which is presented in the following chart.[11]



Moreover, it is evident that the high volatility of the bitcoins' value is derived from the fact that there is neither an authority behind bitcoin nor is it covered by a certain amount of precious metal. Its value is solely based on the trust in it. In its first exchange on 30 July 2010, 1 bitcoin was exchanged for 0,05 dollars. In October 2017 its value has jumped to over 5.700 dollars while in December 2017 its value was above 11.000 US Dollars. Also, the absence of the recognition from the State takes the bitcoin outside of the legal definition of money, which puts the State as the most important factor in defining the money as the legal tender in the country.[12]

It appears that the bitcoin might be defined solely as a medium of exchange, the use of which has some advantages but also some disadvantages in comparison to sovereign money as the traditional medium of exchange.

II. Pros and Cons for Bitcoin

Bitcoin has certain advantages in comparison to traditional currencies. It is an innovative payment solution, which lowers the cost of payment. Since it is out of the banking and clearing system there are no fees or any other charges for the transactions. Also, there are

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11 https://blockchain.info/charts/market-price (4/12/2017)

12 *Ibid.*, p. 15.

no boundaries for any transaction and they cannot be limited by monetary or financial authorities for any reason. On the contrary, in the traditional system of payments there might be limits on transactions regarding payments, investments etc. towards foreign countries. The speed of settlement is another advantage of bitcoin transactions. However, there are some disadvantages of bitcoin in comparison to the traditional currency. Firstly, bitcoin is highly dependent on the IT network and since it is not backed by any public authority this might undermine its credibility. Secondly, the absence of transparency of the network makes counterparty risk connected to the anonymity of the payee very high. Thirdly, by abusing the anonymity of the transactions bitcoin might be used for transactions in illegal activities[13] and might be a treat for the public finances when used for tax evasion purposes. Also, bitcoin might be an obstacle for the authorities in different legal proceedings since it cannot be confiscated, restricted or seized.

Lastly, the very high volatility of bitcoin's value and possible illiquidity problem makes it very unattractive medium of exchange, which might not provide the function of the store of value as traditional money does. The chart presented above shows that bitcoin might lose half of its value in a short period while at the same time its value may soar in just a couple of hours' time.

C. Legal Status of the Bitcoin

Cryptocurrencies, and the bitcoin as the most famous type of such currency, might be the revolution that will reshape the notion of money but it might also be a balloon that, upon bursting, will create financial losses and cause problems for the economy. If this is true, it is the public authorities that are responsible for taking care of the mess created in the financial and monetary system. Also, digital currencies might affect the work of the central bank as the operator and overseer of the payment system and as the ones responsible for monetary and financial stability. Thus, the digital currencies might possibly have an impact on financial market infrastructure, broader

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13 As was the case with the *Silk Road* where many illegal activities and products were available online. See: *Vigna/Casey*, The Age of Cryptocurrency, How Bitcoin and Digital Money are Challenging the Global Economic Order, 2015, pp. 102-106.

financial intermediaries and markets, central bank seigniorage revenue and for the implementation of the monetary policy decided by the central bank.[14] That is why the central banks and other monetary authorities should pay more attention to the phenomenon of virtual currency schemes while supporting the innovation represented by new technological opportunities. Usually, the authorities react only if the core functions are under threat. The reaction of the public authorities is different across countries and include different measures from public warnings, regulation of the currency administrators, overall regulation to the prohibition of the digital currency use.

I. The Bitcoin in the European Monetary Framework

The European monetary union is a *sui generis* monetary construction. The monetary policy for the Eurozone countries is decided by the ECB as a highly independent institution responsible for the monetary policy and financial stability of the Member State participants. Also, there are EU Member States that have not introduced the euro as their national currency. Moreover, there are European states, such as Kosovo and Montenegro that have unilaterally introduced the euro as a national currency without being part of the ESCB. This makes the use and the regulation of the cryptocurrencies an important task for the authorities. The monetary structure of the EU makes the union more vulnerable to both internal and external economic and financial shocks. Currently, as explained before, the cryptocurrencies are used in only a small portion of transactions, so they cannot have significant effects on the EU monetary and financial system. However, it is undeniable that each day cryptocurrencies are gaining more importance. The bitcoin's value has surged in the last years while it is widely used by the economic operators on the European soil. A common European response is necessary in order for citizens and companies to be protected and for financial stability to be preserved while fostering innovation in the payment system.

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[14] *Bank for International Settlements*, Committee on Payments and Market Infrastructures, Digital currencies, 2015, pp. 13-16.

The fact that they are based on new technology, which does not have boundaries and make no difference in terms of different responsible authorities, mean that cryptocurrencies are posing many regulatory and policy challenges for the authorities.[15] The national authorities in the European states have remained silent on the question of regulation of cryptocurrencies. On the EU level the reaction came from the institution responsible for monetary and financial stability i.e. the ECB. Thus, in its broad and widely accepted definition ECB defines the virtual currencies as "a type of unregulated, digital money, which is issued and usually controlled by its developers, and used and accepted among the members of a specific virtual community".[16] Nevertheless, the ECB has decided to amend this definition by deleting the word "money" because the virtual currencies do not achieve the level of acceptance of money. Also, the word "unregulated" has been removed because many authorities have now regulated the virtual currencies schemes. The new definition defines virtual currency as "digital representation of value, not issued by a central bank, credit institution or e-money institution, which, in some circumstances, can be used as an alternative of money".[17] As it is not yet clear even for the regulator what the bitcoin and other VCS are one might better understand the letter of the ECB president: a response to a question from the Member of the European parliament in which he states that "VCS are not scriptural, electronic, digital or virtual forms of a particular currency. They are something else, different from known currencies".[18] The idea that "they are something else" without defining what this may be confirms the confusion that is present for regulators as far as cryptocurrencies are concerned. On the EU level the situation is much more complicated since different jurisdictions or Member States do not

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15 *He et al*, Virtual Currencies and Beyond: Initial Considerations, IMF Staff Discussion Note, SND/16/03, 2016, pp. 25-35.

16 *ECB*, Report on virtual currency schemes, 2012, https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf (5/10/2017), p. 13.

17 *ECB*, Virtual currency schemes - a further analysis, 2015, http://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemesen.pdf (5/10/2017), p. 25.

18 *Draghi*, ECB President, Letter, 20 October 2015, http://www.ecb.europa.eu/pub/pdf/other/151022letter_kaili.en.pdf (5/10/2017).

have the same approach towards bitcoin. They do not define it as illegal but at the same time there is no legal framework regulating it.[19]

However, different situations in the everyday use of bitcoin makes the regulation of cryptocurrencies even more necessary. Even if the central banks would like to ignore them because they could become a competition for their conventional money, the bitcoin has gained the status of means of payment. Namely, the Court of Justice of the European Union has allocated this role to the bitcoin. The request in the proceedings between the Swedish tax authority and the other party was relating to the preliminary decision of the authority on whether the transaction to exchange a traditional currency to virtual currencies, in that case bitcoin, were subject to Value Added Tax. In its judgement[20], the Court carefully defined the bitcoin as a virtual currency and gave it a status of means of payment.[21]

However, the modest attempts to understand the phenomenon of cryptocurrencies and different efforts for defining them for various practical reasons, as in the case before the Court, does not solve the problem and does not fill the gap in the regulation concerning the use of the cryptocurrencies in the EU. While the national authorities remain silent, there is no regulation and only general statements on the use of the cryptocurrencies underlining the risk of investing in it, the ECB as the institution fully responsible for the regulation of the payment system and what is more important for the overall financial stability in the Eurozone. Nevertheless, in his statement in front of the European Parliament's Committee on Economic and Monetary Affairs, the President of the ECB Mario Draghi has said that "it would actually not be in our powers to prohibit and regulate" bitcoin and other digital currencies.[22] Thus, it is evident that there is no will for

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19 The Law Library of Congress, Global Research Center, Regulation of Bitcoin in Selected Jurisdictions, 2014, https://www.loc.gov/law/help/bitcoin-survey/regulation-of-bitcoin.pdf (5/10/2017).

20 CJEU, case C-264/14, *Request for a preliminary ruling under Article 267 TFEU, from the Högsta förvaltningsdomstolen (Supreme Administrative Court, Sweden)*, ECLI:EU:C:2015:718, para. 10-58.

21 *Ibid.*, para. 24.

22 Hearing of the Committee on Economic and Monetary Affairs of the European Parliament. Introductory Statement by Mario Draghi, at the ECON committee of the

regulation of cryptocurrencies as from the national authorities as well as from the ECB. The future practical problems coming from the wide use of cryptocurrencies will force the ECB to change this position and to take an active role in the regulation of bitcoin and other cryptocurrencies.

II. The Bitcoin in some other Jurisdictions

Although the world's three largest banks are Chinese and while China's banking system has surpassed that of the Eurozone to become the biggest in the world in terms of assets,[23] the USA is still the most developed and thus a very important part of the global financial system. The importance of the US Dollar as a dominant reserve currency and the geopolitical power of the US gives this financial system a central role in the current global financial structure. For that reason, the US position on virtual currencies is extremely important for the future of bitcoin as a medium of exchange. Also, the financial market in the US is the most advanced in the world in terms of innovation and new technologies. However, there is no clear position from central authorities with respect to the use of bitcoin. The increased use of bitcoin and possible effects for investors has required the Security and Exchange Commission to issue an Alert highlighting all the risks involved in investments in cryptocurrencies.[24]

To protect its financial and economic order and to disrupt the rise of speculation and illegal financial activities China has banned the use of virtual currencies. Defending its decision with the negative consequences of multiple risks in coin offering fundraising and trading, including risk of false asset, risk of operation failure, risk of speculation etc. the authorities have taken a hard stance towards bitcoin and other virtual currencies. In September 2017, the Chinese authorities declared virtual currencies illegal and banned

European Parliament, Brussels, 20 November 2017, https://www.ecb.europa.eu/press/key/date/2017/html/ecb.sp170925_2.en.html (30/11/2017).

23 *Financial Times*, China overtakes eurozone as world's biggest bank system, March 2017, https://www.ft.com/content/14f929de-ffc5-11e6-96f8-3700c5664d30 (4/10/2017).

24 See: *U.S. Securities and Exchange Commission*, Investor Alerts and Bulletins: Initial coin offerings, 25 July 2017, https://www.sec.gov/oiea/investor-alerts-and-bulletins/ib_coinofferings (4/10/2017).

fundraising through coin offering. Thus, individuals and organisations that have completed fundraising through coin offering should return any funds that were raised. Also, the platforms that provide trading and exchange services for coin offering shall not engage in exchange businesses between legal tender and virtual currencies. The decision will be accompanied with sanctions for non-adherence to the decision and with campaigns for public awareness of the risks.[25]

The position of Russian authorities towards bitcoin and other cryptocurrencies is ambiguous. On one hand, the Moscow Stock Exchange is proposing and working on building an infrastructure to allow cryptocurrencies to be traded on the exchange. On the other hand, the Russian central bank is more cautious and considers that cryptocurrencies should not be accepted for treading in Russia in the near future. In its statement the Russian central bank highlights the risks of the use of the cryptocurrencies and considers the acceptance of the cryptocurrencies in circulation and its use at organised trades as premature.[26]

In its Federal Council report the Swiss Federal Council considers that the economic importance of virtual currencies as a means of payment is currently insignificant and believes that this will not change in the foreseeable future. Virtual currencies have no influence on the mandate of the Swiss National Bank.[27] Also, Supervisory law in Switzerland does not contain specific provisions relating to bitcoin or other virtual currencies. Trading is supervised and in some cases authorisation is required, depending on the business model in question.[28]

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25 See: *The People's Bank of China,* Public Notice of the PBC, CAC, MIIT, SAIC, CBRC, CSRC and CIRC on Preventing Risks of Fundraising through Coin Offering, September 2017: http://www.pbc.gov.cn/english/130721/3377816/index.html (4/10/2017).

26 *Central Bank of the Russian Federation*, Statement, 4 September 2017, https://www.cbr.ru/press/pr/?file=04092017_183512if2017-09-04T18_31_05.htm (4/10/2017).

27 *Federal Council*, Report on virtual currencies in response to the Schwaab (13.3687) and Weibel (13.4070) postulates, June 2014, http://www.news.admin.ch/NSBSubscriber/message/attachments/35355.pdf (4/10/2017), p. 3.

28 *FINMA*, How investors can protect themselves against unauthorised financial market providers, Bern, 1 August 2017, pp. 14-15.

As an institution responsible for deciding and implementing the monetary policy, for supervision of the credit institutions and for the oversight of the payment system, the National Bank of the Republic of Macedonia made a public statement on the use of virtual currencies and bitcoin by Macedonian residents and companies. In its statement the Central bank refers to the Macedonian legal framework relating to foreign exchanges, which forbids any direct investment from residents in foreign financial markets. Thus, the Macedonian central bank considers bitcoin to be a very risky investment and strongly advises the broader public to avoid its use and to refrain from investments in cryptocurrencies.[29]

D. Conclusion

The bitcoin and other cryptocurrencies are becoming a widely used means of payment even if they do not fulfil the three criteria or functions of money as a medium of exchange, unit of account and a store of value. There are positive aspects of using bitcoin including the speed and anonymity of the transactions as well as the low or non-existent transaction costs. However, the use of bitcoins involves substantial risk for both the private parties using it and for the authorities responsible for providing monetary and financial stability. The response of the regulators differs from one country to another. In the European monetary framework the situation is much more complicated since it is a *sui generis* monetary union. The national authorities in the EU Member States remain silent on the question of regulation of bitcoin and other cryptocurrencies while limiting their statements to the question of risk of investing Even if there are some modest attempts for the ECB to define cryptocurrencies, in his recent statement the ECB's President Mario Draghi stated that the ECB has no powers to prohibit and regulate bitcoin and other cryptocurrencies. However, the use of bitcoin has opened some practical problems in the field of taxation, which were brought in front of the Court of Justice of the EU, which has carefully defined bitcoin while admitting its function as a medium of exchange. As in this case, the wide use of cryptocurrencies will force the ECB to have

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29 *NBRM*, Press release, 28.09.2016, http://nbrm.mk/ns-newsarticle-soopshtieniie_na_nbrm_28_9_2016.nspx (4/10/2017).

a more active role in the process of regulation. Nevertheless, other jurisdictions across the globe have different approach towards bitcoin. Some have issued general statements highlighting the risk of the use of cryptocurrencies while others are trying to regulate it and even forbid the trading platforms from exchange of the cryptocurrencies.