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BITCOIN AND CRYPTOCURRENCY CLAUSES

Abstract: *Nowadays, it is almost impossible to imagine an effective legal system that is not somehow inspired by nominalistic ideas. However, the principle of monetary nominalism is not necessary in correlation with other higher principles, such as the principle of fairness, for example. Thus, legislators build and implement corrective instruments in legal acts, most of the time allowing legal subjects to choose and adapt those instruments to best fit their economic interests. In that context, (foreign) currency clauses are probably the most frequently used instrument. Those norms, when implemented in contract, prevent the negative effects of domestic currency depreciation through the denomination of the amount of debt in foreign currency. Whether we regard them as currency or not, cryptocurrencies are increasingly becoming an important part of our digitalized economic world. So, unless the legislature strictly limits or abolishes the freedom of will (the principle of party autonomy) in contract law by banning cryptocurrencies, contracting parties can hedge against domestic currency depreciation by pegging the amount of debt to the exchange rate of one of thousands of existing cryptocurrencies. If parties choose to make such an agreement, it is most likely that they will peg the amount of debt to the Bitcoin exchange rate. If parties choose to make such an agreement, it is most likely that they will peg the amount of debt to the Bitcoin exchange rate. In this paper, the author analyzes (crypto)currency clauses nominated in Bitcoin and their effects on contract relations in the legal system of the Republic of Serbia. This research heavy relies on the advantages of the normative and the comparative method, and various techniques of the analytical method.*

Keywords: *cryptocurrency, cryptocurrency clauses, Bitcoin, monetary obligations, principle of nominalism.*

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1. Introduction

The world we know is constantly changing. There is almost no part of social life where there are no new tendencies. In that context, monetary mechanisms, especially money we know, are no exception. Obviously, money has never been an immutable category. Nevertheless, when we bring cryptocurrencies into the equation, we can say that money is going through the fourth or even fifth big alteration, depending on historical interpretation.

The first projects aimed at creating digital money-like asset, even though not particularly successful, initiated this alteration more than fifteen years ago. Yet, the new era in monetary affairs truly began by launching the electronic paying system called Bitcoin. The actual transformation of centralized localized monetary systems into decentralized, digitalized, independent, almost entirely self-sustaining and self-regulating global financial structure began at that moment. Moreover, as we see it, a new wave of globalization[1] started at this point.

At first, this process had an evolutionary character. However, the outbreak of pneumonia of an unknown cause, later recognized by the World Health Organization as the first-ever pandemic sparked by a new kind of Coronavirus[2], acted like a catalyst, making the (financial) globalization lose its evolutionary character and turn into almost revolutionary tendency[3]. Precisely, the unique and complex circumstances in which states nowadays act, sometimes in desperate attempts to save the economy, industry and health systems pressured by the SARS-CoV-2 pandemic, revealed (once again) all the weaknesses of the monetary system built entirely on governments monopoly of issuing money and at the same time indorsed the idea of "competing currencies".

Considering the scope and direction of this paper, we cannot research these transitions in their entirety but we can detect, extract and study some of their

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1 The term *globalization* was created and used for the first time in 1961 and promoted through the scientific literature after the Cold War. It mainly refers to the transformation of primarily locally oriented societies into unified society with no state, cultural, economic or any other kind of borders (Радуловић, 2017: 468-469; Џамић, 2014: 1001).

2 WHO Timeline (2020) Rolling updates on coronavirus disease (COVID-19), published on 30 July 2020, available at https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen

3 If we set aside the optimistic thoughts on when and how globalization will be ended (Попић, Шуваковић, 2014: 388), we believe that it is of high importance to think of globalization as of a tendency not as an end goal. It is not possible, not even as a thought experiment, to speak of completely united society. We can recognize the degree of globalization. We can even quantify the level of globalization. But, we cannot speak of fulfillment of the objective expressed through the equation "humanity = unified society" (Марковић, Булатовић, 2014: 143).

segments. In this paper, we will extract two segments: digitalization and monetary tendencies. It is possible to analyze them separately. Then, if we put them in the same context, interesting conclusions can be drawn.

On the other hand, although the scope of this change is more pronounced than ever, which was the main hypothesis in the previously conducted research, contractual monetary obligations (when nominated in cryptocurrency) can function in a very well-known frame established through a legal system. To present the hypothesis accuracy indicators, this article is divided into two sections. The first section presents the fundamentals of both the concept and technology behind Bitcoin. The second section is reserved for thoughts on monetary nominalism, and analysis of contractual valoristic mechanisms, concretely (crypto)currency clauses and their effects.

2. Bitcoin — the idea and technology

On 31st October 2008[4], an unknown developer, or more likely a group of developers, with a fictitious name of "Satoshi Nakomoto"[5] released the White Paper titled "*Bitcoin: A Peer-to-Peer Electronic Cash System*" (Nakamoto, 2008:1-9) to the cryptography mailing list (Ducas, Wilner, 2017: 544). In this technical document, the basic idea behind an electronic payment system called Bitcoin was presented, the purpose of the system was explained, and technology details were outlined. Two months later, on 3rd January 2009[6], so-called "block 0"[7] was mined, and the

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4   The timing for the release of the White Paper and starting the Bitcoin network was impeccable. It corresponds to "Lehman Brothers'' filing for bankruptcy. At the time, it was the fourth-largest investment bank by all criteria, and it is widely considered that the Global Financial Crisis in 2008 started with massive losses of this bank (Caetano, 2015: 78; Roth, 2015:528).

5   Craig Steven Wright, an Australian programmer with an incredible academic career, affirms that he is the creator of the Bitcoin code, the first miner of bitcoins, and claims copyrights to the White Paper and the name of Bitcoin. However, so far, he failed to provide substantial evidence to prove that claim, neither in public nor in a court of law.

6   The first Bitcoin blockchain transaction, called the Genesis Block, included an encoded message containing the title of the London Times cover story "*The Times 03/Jan/2009; Chancellor on brink of second bailout for banks*" with references the front page of "The Times" Magazine from 03.01.2009; which served as proof that the genesis block was mined on this date, or at least not before. (See: https://www.thetimes03jan2009.com/)

7   Block 0 (Block 1, Genesis Block, the Original Block) is the first "page" of a digital ledger called a blockchain; there are no previous blocks that this block references to, and all following blocks necessarily reference to it.

first 50 bitcoins[8] were released into "circulation"[9] as a mining reward[10]. At this point, the Bitcoin Network became fully operational even though the number of individual participants, purely enthusiasts, was exceptionally low (Turudić, Milić, Štulina, 2017: 195); hence, the power of the network was relatively small.

The Bitcoin system operates based on fully transparent mathematical principles, which means that no one exerts control over it; so, the mysterious Satoshi Nakamoto withdrew from the public in April 2011 leaving the responsibility of developing the code and network to a thriving group of volunteers (Antonopoulos, 2014: 4). In less than two years, this group managed to elevate Bitcoin from a subcultural phenomenon into a common reference point in mainstream public debate (Bjerg, 2015: 3).

The release of Nakamoto's treatise is also considered as the conceptual origin of blockchain technology (Ducas, Wilner, 2017: 544). Although the technology itself was presented more than fifteen years ago by Stuart Haber and his colleague Scott Storneta, the author agrees on this one because the true potential of this technology was displayed for the first time through the Bitcoin network. The author genuinely believes that blockchain technology is not just a byproduct

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8   It is a common mistake that bitcoin is the name for currency, and that there are 21.000.000 of bitcoins. In fact, there are no bitcoins in circulation at all. Bitcoin is, as the White Paper suggests, an electronic payment system based on cryptographic proof instead of trust (Nakamoto, 2008:1) which cuts out unnecessary intermediaries and, therefore, steps to process paying at a lower cost and as fast as possible (Roth, 2015: 529). *Satoshi* circulates inside that system. Satoshi is the basic and the smallest unit of Bitcoin as a payment system (Antonopoulos, 2014: preface/xvii; 18, 116). However, it became common in practice to use bitcoin as a unit for easier calculation (bitcoin to Satoshi ratio is 1:100 000 000). To keep at least a minimum of technical accuracy, we will refer to Bitcoin as a system with capital letter "B" and when we speak of a unit or currency, we will refer to it with lowercase letter "b" (Antonopoulos, 2014: preface/xvii; 18, 116; Цветковић, 2018: 120)

9   One must be extremely careful when using the word "circulation" in the context of the Genesis Block and the first bitcoin mining reward because coins received as a reward for mining this block cannot be spent.

10   It is well known that the supply of bitcoin is limited, but not all coins were released in circulation at once. "Winning" miners receive brand-new bitcoin from the network as a reward for mining when a "coin base" transaction is placed in a new block (Antonopoulos, 2014: 115). Basically, miners are trying to solve mathematical problems to put verified transactions into a block and link it to a chain. The miner who fulfills this task receives a double reward: a different percent of each transaction that is written in the newly created block as a provision and a certain number of new bitcoins (Nakamoto, 2008: 4). At the beginning of the Network, miners received 50 new bitcoins as a reward for every mined block. Every time 210.000 new blocks are mined, which happens approximately every four years because the network is set to create new blocks every ten minutes on average (Antonopoulos, 2014: 2, 177-178; Roth, 2015: 528), the miners' reward gets cut by 50%. Since 11th May 2020, the mining reward per block is 6.25 bitcoins.

of the Bitcoin network, and there is absolutely no doubt that the possibility for using this technology goes way beyond creating different cash or paying systems (Цветковић, 2018: 122). However, blockchain technology itself is not in the focal point of this paper.

On the other hand, the idea of digital currencies is as old as the Internet itself. Moreover, Bitcoin is not even the first attempt to realize this idea. But, unlike its predecessors[11], Bitcoin network manages to overcome most of the technical or economic problems by firmly relying on blockchain technology. This means that it is almost impossible to understand how the Bitcoin network works without insight (at least a simplified one) into how the blockchain technology works because it is the "underlying transaction database" (Caetano, 2015: 77) for storing and validating information of each individual transaction. So, this paper will present some technical aspects of the blockchain technology in the context of the Bitcoin network.

First, there is no generally accepted definition of a blockchain (Catanzaro, Kain, 2020: 52), but in an oversimplified manner, a blockchain is an open-source digital database which records information on each change in the network and displays them publicly (Цветковић, 2020: 128). This revolutionary technology derives from the traditional idea of storing information in a form of ledger, while blocks are pages in the ledger (Цветковић, 2020: 128). Through this technology, the ledger becomes digitized. Even more importantly, the ledger architecture is built in such a way that there is no more need for any institutional or individual "trustful" intermediary (Roth, 2015: 528)or any central authority to keep the ledger and to guarantee the accuracy of its content like in classic non-digitized system (Catanzaro, Kain, 2020: 52). This is achieved by entering and permanently storing information in blocks cryptographically linked via "hash" (Цветковић, 2020: 128) which are uniformly ordered, chronologically time-stamped, substantially immutable (Цветковић, 2020: 129; Catanzaro, Kain, 2020: 52), and distributed in the network. What does that mean?

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11 Probably the most successful project of this type is *E-gold*, with almost five million users. Although there is no direct proof for that claim, there is a theory that releasing the White Paper and starting the Bitcoin Network is the answer to definite shutting down of this E-gold's network. Less successful, but still worth mentioning, is a project called *DigiCash.* It is considered to be the very first project of a group called Cypherpunks (Satoshi Nakamoto being the most famous representative) which believed that relying on software infrastructure that is widely dispersed is a better alternative to relying on governments and other inherently imperfect central authorities (Roth, 2015: 528). The technical background of modern-day cryptocurrencies is also considered to be rooted in the algorithm invented by David Chaum, the founder of *DigiCash*, which allows safe and unchangeable exchange of information between nodes (Turudić, Milić, Štulina, 2017: 193).

As we said earlier, if we think of it as a network, Bitcoin fully relies on the advantages of the blockchain technology. If we think of it as a currency (including most cryptocurrencies), it basically means that bitcoin is the position in the chain of ownership (Antonopoulos, 2014: 19) represented as information in a digital ledger that is the blockchain (Цветковић, 2018: 124). It can also be said that bitcoin is a chain of digital signatures (Dinić, 2014: 110). Simply put, whenever there is a need for change in the network (assuming that one wants to make a transaction in the Bitcoin network, to make this change happen), a page in a ledger must be created and filled. In other words, when a user in a network initiates a transaction, this transaction must firstly be authenticated and then authorized.

Authentication is a synonym for the process of combining two special cryptographic keys (private and public one) to create the digital identity of a user and the digital signature which unlocks the wallet[12] and requests spending of assets referenced by the transaction. The second step is authorization of the transaction. To be realized, the transaction must be written in a block but, before that block is added to a chain of blocks, the transaction must be approved. Since the Bitcoin network is "trustless" in a sense that there are no intermediaries or any central authorities, the only way for a transaction to be authorized is through consensus that this transaction is valid.

In a public decentralized network, such as Bitcoin, every participant in the network aka *Node* has a copy of the entire chain of blocks, from the Genesis Block to the last mined block (Roth, 2015: 530; Цветковић, 2020: 128-129). So, once a transaction is successfully initiated, information on that transaction is sent to the closest nodes in the network. Transactions will be validated through a series of tests conducted by each individual node. All those tests basically come down to affirming that the payer is the recipient of bitcoins in the connected past transactions (Roth, 2015: 530). Once the "neighbor" nodes verify a chain of ownership (Nakamoto, 2008: 2), these nodes will automatically transmit it to the other nodes to which they are connected for validation in the same procedure (Antonopoulos, 2014: 26). This process is repeated until almost every node in the Bitcoin network validates the transaction.

After that, the transaction is validated once more, this time by special nodes called miners. They write transactions in a new block and update the ledger of transactions by linking this block permanently to the existing chain of blocks. A crucial task in this process is the creation of a unique hash for each block so that

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12   Simply put, a wallet in this sense is a collection of addresses created for receiving and storing cryptocurrencies and the corresponding keys that unlock the funds within (Antonopoulos, 2014: 9-10).

anyone who wants to verify that a transaction has occurred at a set moment in time can do that simply by verifying the hash (Nakamoto, 2008: 2; Roth, 2015: 530). Each node in the network is predefined to continually request and store the blockchain locally; so, an updated version of the digital ledger is distributed to every node in the network (Roth, 2015: 531)[13].

When a transaction is initiated by a user, it is important to know that it is tempo-rarily stored in a so-called "unconfirmed pool"[14] until verification or invalidation (Antonopoulos, 2014: 13), which creates several problems. But, when it comes to validation and synchronization of the ledger, it is of the highest priority to eliminate the possibility of so-called double-spending — a situation when a person spends the same amount of money more than once. For example, there is the possibility that one user creates more than one transaction with the same reference hoping that different miners would validate them independently at the same time and add them into different blocks, given that they go in the same unconfirmed pool of transactions. It is also highly important to know how the network deals with the potential problem of transaction reversibility.

Traditionally, the problem of „double spending" is solved by introducing a third "trusted" party, typically a bank or some state authority, which validates the ava-ilable balance and ensures synchronization between transactions. The myste-rious Satoshi Nakamoto particularly stresses out the problems with pre-given trust, pointing out that the basic idea is to create a purely peer-to-peer electronic paying system that would allow online payments to be sent directly from one party to another without going through any financial institution (Nakamoto, 2008: 1). Therefore, in the Bitcoin network, the problem of double spending is solved without including third parties. This is achieved via grouping tran-sactions into blocks, sharing and validating them through a network of nodes (Caetano, 2015: 80), or to be precise, by converting all nodes into ledger keepers and validators.

Concretely, transactions must be announced in the network but it is important which transaction was earliest. To be precise, it is not important which tran-saction was actually first. What is important is that the majority of participants agree that a certain transaction order came first (Nakamoto, 2008: 2). When the majority of nodes agree on which transaction was initiated first, any later order for the transaction is rejected automatically (Nakamoto, 2008: 2).

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13 Technically, it may occur that some nodes in a network do not receive a newly created block which is added to the longest chain. When these nodes receive information on a new block later, they will realize that there is a block missing, and they will automatically request and receive a copy of the longest chain in the network (Nakamoto, 2008: 4).

14   It is also known as Mempool.

Second, the Bitcoin network architecture is built in such a way that a digital ledger in the form of a blockchain is basically immutable and transactions made in the network are non-reversible (Roth, 2015: 528). These "hard transactions" mimic the way exchange offices work, and this is possible thanks to implementation of POW functionality into a decentralized processing network of incentivized nodes (Roth, 2015: 529).

To be precise, transactions incorporated into a chain of blocks, technically speaking, could be altered, but, like all other changes in the network, altering the transaction must be the result of consensus of the majority of nodes. Someone might find this to be a weakness, because immutability is presented as the biggest strength of the Bitcoin network. However, we see at least two advantages in this technical solution. First, if a malicious hacker or a group of hackers tends to alter any transaction, the only way to do that is to perform a so-called "51% attack", which means that this person or group can collect the majority of network hash-power at a single point of time. Although this is a possibility, practically speaking, the ratio of the necessary investment (hardware and electricity) and potential earnings makes this venture overly expensive and, hence, discouraging (Nakamoto, 2008: 6). Second, the possibility to make the change in an otherwise immutable network creates a "safety net" for those situations when the change written in a block compromises the network more than breaking the principle of immutability would compromise the networks' unity[15].

3. Monetary nominalism and contractual valorism

Modern legal systems are founded primarily on the so-called nominalist money theory, according to which the value of money derives from its nominal value. The legal system of the Republic of Serbia is no exception in that sense.

This theory marks the difference between a 'valorist' and universally accepted 'nominalist' legal conception of money (Fox, 2013: 140). According to the latter, the obligor shall be bound to pay out the number of monetary units equivalent to the nominal value indicated on the face of the obligation[16], even if this means that the obligee now receives money of different purchasing power (Беговић, Илић, 2017: 29; Fox, 2013: 139-140).

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15 For example, after so-called "DAO hack" in 2016 when Ethereum network suffered damage to more than 50 million USD, developers in Ethereum network proposed, and the majority of nodes agreed to it, to "roll back the chain" and "delete" DAO hack by creating new "fork".

16 Article 394 (Principle of Monetary Nominalism). The Contracts and Torts Act, *Official Gazette* SFRY, 29/78, 39/85, 45/89 -decision CCY and 57/89, *Official Gazette* SRY, 31/93, *Official Gazette* S&M, 1/2003 - Constitutional Charter, and *Official Gazette RS,* 18/2020.

3.1. Between legal certainty and fairness

It appears that the implementation of monetary nominalism in its purest form increases the level of legal certainty. This is clearly true in short-term contracts or even in long-term obligations if monetary standard has not changed and there is no monetary imbalance of any kind (Беговић, Илић, 2017: 29-31). However, if the monetary standard changed,[17] an obligation that was once based on the principle of equal mutual consideration now loses a certain degree of equivalence. Depending on whether the nominal value of money was reduced or increased, this simply means that one of the two scenarios will occur.

For example, in a simple loan agreement, if inflation happens and the amount of loan remains fixed, when the time limit for loan restitution expires, the lender receives the same amount of money but the amount of money he receives has smaller purchasing power. Simply put, it means that the lender becomes poorer than he previously was. Vice versa, if deflation happens, the borrower becomes poorer than he previously was even though he restitutes the same amount of money. This is because the borrower needs to repay more than he truly and objectively received. In other words, the real value of his debt increased. So, it is often said that monetary nominalism puts all the risk of depreciation of currency on the creditor, which is actually true. It is also true that a potential risk of appreciation of currency is transferred to the debtor.

In contrast, the valorist monetary conception favors true value rather than the amount of money *per se;* most of the time, true value is expressed through its purchasing power or exchange rate to other currencies (Беговић, Илић, 2017: 29-30)[18]. According to this theory, the debtor is obliged to fulfill monetary obligation by transferring certain amount of "units of purchasing power" and not simple nominal number of monetary units (Марковић-Бајаловић, 2020: 71). This doctrine works well both in times of monetary stability and monetary instability, regardless of whether the later comes in the form of inflation or deflation. Although it may comes as a surprise, this theory is widely and unjustly criticized, primarily because its implementation leads to legal insecurity. This is the main reason why legislators, in general, promote the nominalist money theory. However, although the theory of monetary nominalism has generally been used to regulate monetary obligations, the legislator sets several exceptions to nominalist principle (Беговић, Илић, 2017: 30; Марковић-Бајаловић, 2020:

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17   In earlier times, when the value of money was directly linked to a certain amount of gold or silver, there were three main ways to change the monetary standard: issuing new coins on the same nominal value but smaller in size; reducing of the intrinsic fineness of coins; changing the standard through a proclamation by the sovereign (Fox, 2013: 140).

18   As it was stated in famous case *Hurst V. Chicago B. Q. R. Co.* the basic idea is that "the value of money lies, not in what it is, but in what it will buy" (Phanor, 1934: 66)

71-73). This means that the valorist theory serves as a corrective mechanism (Марковић-Бајаловић, 2020: 71).

3.2. Contractual correction of strict nominalism

All these cases of lawful valorism aside, the exception to monetary nominalism is also set through affirmation of autonomy of choice. This exception comes in the form of a wide normative frame for implementation of the so-called contractual valorism. If they find it necessary, parties involved in a contract can prevent potential decrease or increase in the purchasing power of money in the period from the occurrence of the obligation to the moment determined for its completion. A special hedging instrument called (foreign) currency clauses is at their disposal for that purpose.

By adding these clauses into the contract, parties aim to prevent the negative effects of domestic currency depreciation through the denomination of the amount of debt in foreign currency. In the Republic of Serbia, according to the new provisions in the 1993 Contracts and Torts Act, parties can hedge against domestic currency depreciation by pegging the amount of debt to the exchange rate of other currencies (Марковић-Бајаловић, 2020:70).

Unlike a number of other countries, bitcoin (and other cryptocurrencies) was never prohibited in the Republic of Serbia. In effect, cryptocurrencies were not regulated by the law until recently.[19] This means that mining, trading, or using criptocurencies was not forbidden.[20] At present, except for financial institutions operating under the Central Bank of Republic of Serbia[21], legal entities are allowed to use cryptocurrencies under a special set of rather liberal rules. Further, this means that it is possible to nominate the price of certain goods or services in bitcoin, for example. If contracting parties use this possibility, with due respect to the imperative nature of national currency, we can say that parties implemented a special kind of hedging instrument which is designated here as "cryptocurrency clauses".

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19 On 21st December 2020, the National Assembly of the Republic of Serbia adopted the so-called Digital Assets Act, *Official Gazette* RS, 153/2020. According to Article 146, the Act enters into force in 8 days from the moment of publication in the Official Gazette, and *vacatio legis* for this Act is 6 months.

20 The Bitcoin network is fully transparent as every transaction ever made is visible. However, no transaction is linked to any name, address, or any kind of personal data (Athey, Parashkevov, Sarukkai, Xia, 2016: 3). This makes it almost impossible to seize bitcoin unless the owner of the wallet is willing to hand over cryptographic keys to authorities. Further, this means that implementation of any kind of ban is almost pointless.

21 Article 13 of the Digital Assets Act, *Official Gazette* RS, 153/2020.

This idea raises noteworthy questions. Two of them are most frequent. The first question is whether bitcoin is a currency or not. The second one is summed up in an article published in *Forbes Magazine,* posing the following question: "Who in his right mind would sign a long-term contract based on Bitcoin? Had you had taken out a mortgage in March 2020 for $250,000 in Bitcoin, you would owe the bank almost $2 million today" (Forbes, 2021: 11).

The debate on whether bitcoin can be considered to be money has an interesting aspect - different actors provide varied definitions on what money is (Roth, 2015: 533). From a scientific perspective, both legal and economic, this debate is extremely attractive. Yet, practically speaking, the result of this debate is not relevant for drawing conclusions, nor is the author's standpoint that bitcoin is not money, but has capacity to take on that role (which will be presented in more detail in another article). There are at least two reasons.

Firstly, the author of this article is a proponent of more liberal theories of what money actually is. The author is not keen to accept the narrow-minded idea that money is simply what legislators promote as money, nor can he support the idea of absolute trust in the Central Banks estimations on how much national currency is worth at the specific moment. Thus, in response to the first question, the author's perspective is simple: money is a matter of (social) agreement; if parties are eager to accept a certain asset as a medium for value transfer, that asset (even if it comes in a digital form) can be considered as money in the broadest sense. Secondly, even if we accept the strict "state" or "imperative" money theory and state that bitcoin is not money, nothing changes from the perspective of our research. This is not a relevant question at the moment because there are almost no legal obstacles for using bitcoin as a substitute in what is traditionally considered to be monetary obligations.

The second question ("why would anyone use cryptocurrency clauses") is far more complex. There are many layers to this issue. Without aspiring to be exhaustive, we may note some interesting ideas worth considering.

First, on average, more than 200,000 transactions are verified through the Bitcoin network every single day. At this moment, there is no exact data on the actual number of transactions initiated from the Republic of Serbia: however, given that the denomination of price in bitcoin is an option available for parties in contract, it is clear that these clauses deserve to be respected and researched as a possible part of daily legal affairs.

Second, due to the volatile nature of bitcoin, its use in long-term transactions is not going to be the first choice for contracting parties (especially not for debtors) because of bitcoin's deflationary nature. Yet, this does not mean that bitcoin is not going to be used at all. There is a huge potential for using the bitcoin in

short-term obligations, particularly in cross-regional transactions. After all, an effective transfer of value with no intermediaries and the lowest possible fees have been and still are the main objectives of the Bitcoin network. Moreover, the author honestly believes that the Internet needs its own currency, and that bitcoin has the capacity to become "money of the Internet". It is safe to assume that bitcoin transactions will be more frequent even though there are projects in the "crypto world" with even bigger potential to become the currency of the Internet, as they offer enhanced speed in the process of verifying transactions, a great level of certainty and even lower transaction costs.

Third, when it comes to long-term obligations, it is important to bear in mind that parties involved in a contract are sometimes eager to take a higher risk than it is typical. Expecting bigger profits, they sometimes willingly step out of the legal safeguard of "the principle of equal mutual consideration". In such a case, they conclude a so-called aleatory contract and renounce the advanced legal possibility of nullifying the contract because of "obvious disproportion of mutual commitment". Taking those actions is not forbidden as long as parties involved are well-informed that gaining profits is only a possibility and that there is an implied risk that they will receive nothing in return for goods or services they provided.[22]

4. Instead of conclusion

Having in mind all the aforesaid, the phenomenon of prices nominated in bitcoin cannot be ignored. First, this phenomenon must be identified and researched. In that context, we find the term "cryptocurrency clauses" to be adequate. However, some degree of refinement is necessary.

The term "cryptocurrency clauses" unambiguously indicates the connection to currency clauses. If a currency clause is interpreted in the broadest sense, as any agreement to denominate price in currency other than the domestic one regardless of the goal parties tend to achieve, then the term "cryptocurrency clauses" fits perfectly because it expresses both *genus proximum* (the price denominating mechanism) and *differentia specifica* (the use of sophisticated cryptography) of the phenomenon under observation.

Yet, currency clauses can be interpreted in a narrower sense. Precisely, we can interpret them as an agreement to denominate prices with a specific goal: to prevent depreciation of domestic currency. If we understand these clauses as hedging instruments, the situation is a bit different. Namely, the cryptocurrency market is extremely volatile, which also applies to bitcoin in particular. There

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22   Article 139 of the Contracts and Torts Act.

are a number of cases when the value of bitcoin in the market dropped more than 10% in a single day. There are also cases when bitcoin brought gains of more than 15% in a single day. So, it seems that cryptocurrency clauses cannot be interpreted as a hedging instrument, at least not as an effective one.

But, this is not entirely true, and there are a few reasons. First, not all cryptocurrencies work in the same way as bitcoin. Most of them use the same basic technology — blockchain, but they do not operate on the same economic principles, or they use different stabilizing mechanisms (e.g. "burning" of coins). Therefore, some cryptocurrencies offer safer crypto space that is way less volatile. In that sense, the best example are probably the so-called "stablecoins". These projects offer currencies whose market value is pegged to some external reference such as gold, silver, or some trusted and resilient asset. When parties incorporate clauses through which they denominate price in cryptocurrencies similar to these, then we have true cryptocurrency clauses. So, agreements to denominate price in bitcoin might not be "true" cryptocurrency clauses, but there is no doubt that they are a kind of "imperfect" cryptocurrency clauses.

Finally, we need to consider another important question. The author stands on the position that bitcoin is not money (this viewpoint will be elaborated in more detail in another article). It is a paying system (Цветковић, 2018: 122). However, in times of crisis such as this (sparked by a new kind of Coronavirus), bitcoin turns into a "store of value" because of desperate "printing" of money all over the globe, especially in the United States of America and the European Union. To be precise, trust in central banks is declining due to the increased money volume and fixed exchange rate, and (hyper)inflation is expected especially in countries in transition. So, the most important question that can be asked is whether bitcoin is the one that is really unstable and volatile. Is it possible that "trust-based" fiat currencies are those that are unstable and volatile? Are we using the wrong narrative when we say that bitcoin is worth a certain amount of US dollars for example, and that bitcoins price has raised or dropped? Is it possible that the right question is as follows: What is the price of USD or other fiat currencies in bitcoins? Is the fiat currency market (which is not pegged to any real asset) the one that is extremely unstable and volatile? It is up to economic experts to answer those questions but, if their answer to any of those questions is positive, we might even say that arrangements when price is denominated in bitcoin are "true" cryptocurrency clauses.

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BITCOIN И КРИПТОВАЛУТНЕ КЛАУЗУЛЕ

Резиме

Данас је практично немогуће замислити ефикасан правни систем који на овај или онај начин није инспирисан номиналистичким идејама. Ипак, принцип монетарног номинализма није нужно у корелацији са другим, вишим принципима правног поретка – начелом правичности, на пример. Зато законодавац изграђује и имплементира корективне инструменте у правне акте, махом остављајући простор учесницима правног посла да одаберу инструменте и прилагоде их својим економским интересима. У том контексту, вероватно и најчешће коришћен инструмент јесу (стране) валутне клаузуле. Ове норме, када се уграде у уговор, превенирају негативне ефекте смањења вредности домаће валуте кроз деноминацију износа дуга у страну валуту.

Без обзира да ли их сматрамо за валуту или не, криптовалуте су све значајнији део нашег дигитализованог економског света. Стога, осим уколико законодавац не ограничава или укида аутономију воље кроз забрану употребе криповалута, уговорне стране могу да се заштите од депрецијације домаће валуте кроз везивање износа дуга за „курсну" вредност једне од преко хиљаду доступних криптовалута. Уколико се одлуче за такву варијанту споразума, највероватније је да ће се уговорнице одлучити да износ дуга вежу за вредност Биткоина на тржишту. Правни поредак Републике Србије не регулише криптовалуте, али их не забрањује. Стога у раду анализирамо правне ефекте које криптовалутне клаузуле номиноване у Биткоину производе у уговорним односима у праву Репбулике Србије. У истраживању аутор налази ослонацу нормативној и компаративној методи, као и различитим техникама аналитичке методе.

Кључне речи: криптовалуте, криптовалутне клаузуле, биткоин, новчане облигације, начело монетарног номинализма.