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Digital Currency in Modern Russia: Legal Essence and Place in Turnover

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Abstract

The information society of our time is characterized by large-scale and intensive use of computer technologies in most areas of economic relations. Many procedures of interaction between people and business entities are computerized and digitized. Remote technologies used on the Internet allow groups of people, in particular, to perform mathematical calculations and use the data obtained in the interests of participants in such collective calculations. The totality of such electronic data in the Russian Federation is legitimized as a digital currency. The legal content and place of digital currency in property turnover and the system of its state regulation seems to be an actual object of research and development. The article solves the following tasks based on the study of domestic legislation and academic publications: the legal content of digital currency as encrypted information and the type of other property is substantiated; legislative constructions providing for the functioning of digital currency as a means of payment and investment are analyzed; qualitative features of digital currency inherent in the object of civil rights are identified. Digital currency is studied as a set of electronic data and information, the author's definition of digital currency

is presented. Digital currency in circulation is disclosed as encrypted information, settlement and exchange equivalent and investment asset. The fallacy of the legislative recognition of digital currency as a means of payment is argued. The legal constructions on the possibility of using digital currency as an investment are critically evaluated. The features of turnover and the development of regulatory regulation of digital currency in the Russian legal order are analyzed. A legal analysis of the parliamentary bill on the "mining" of digital currencies is being carried out. The essence is substantiated; the definition of activities aimed at obtaining digital currencies by mathematical calculations on private computers is formulated. Digital currency is considered as a kind of other property, the conclusion is made about the possibility of recognizing the "coin" of digital currency as an object of civil rights. The article examines the modern doctrinal developments of mainly Russian researchers on the subject of exploration, as well as encyclopedic and normative sources. Proposals are being made to improve the legal regulation of public relations in the field of property turnover of digital currency.

Keywords

digital currency; information technologies; mathematical calculations; information in electronic form; Internet; legislation; property turnover; other property.

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Introduction

About 14 years ago groups of anonymous individuals acting on a proactive basis and using specific computer programmes for rather unusual purposes began appearing on the Internet. And one such group began to make extensive use of a software programme called 'Bitcoin', which provides for the calculation of 21 million special 'coins'. Each member of this group could, using an appropriate software algorithm on special computer equipment, mathematically compute a 'coin' which, in consensus with the software algorithm and on the approval of all other members of that group, would be added to the chain of 'coins' already computed. Thus, the chain is getting longer every year, the computations are slowing down, and approximately by the year 2140 all 21 million 'coins' of 'Bitcoin' will have been calculated. Inside their group, the anonymous actors record the data on

the calculated 'coins' into special 'electronic wallets' and then use them as a payment instrument, as monetary surrogates. There are ATMs in some foreign embassies in Moscow exchange said monetary surrogates for US dollars, and payment service providers publish offers in Internet to exchange Bitcoin coins and other digital currencies for Russian roubles.

The software algorithms and the subsequent transmission of data within Internet communications must involve encryption, also called cryptoprotection. This is how, without any legitimate basis, the term 'cryptocurrency' was born about 10 years ago and has become globally widespread. However, the 'coins', the monetary surrogates calculated within groups of anonymous actors, do not belong to state currencies. By 2023, the term 'digital currency' has already been legitimised in a number of jurisdictions, although the application of both the first part of the term, i.e., 'digital', and the second part of the term, i.e., 'currency', is highly controversial. 'Digital' is apparently supposed to reflect the binary code of the software algorithms which use two digits, 0 (zero) and 1 (one). 'Currency' is apparently to meant to refer to the use of these monetary surrogates as a means of payment in exchange for the goods, works, services, etc. Federal Law No. 259-FZ of 31 July 2020 'On Digital Financial Assets, Digital Currency and Amendments to Certain Legislative Acts of the Russian Federation' (henceforth Federal Law 259-FZ) legitimated the disputed term. According to Article 1 (3) of the Law, digital currency is a collection of electronic data. The words 'digital code', 'digital sign' may be used along with the basic term. The legislator emphasises from the very first article of the law that digital currency, although it may be accepted as a means of payment and as an investment in certain local information systems of individuals, cannot replace public money and is not an international currency or unit of account.

The legislator also defines in the said Law main uses of digital currency as an object of property turnover: first, digital currency may be offered and may be accepted as a means of payment, e.g., for the calculation of digital currency 'coins' themselves; second, digital currency may be offered and may be accepted as an investment. The above legislative provisions raise questions: why and who needs in these new unofficial means of payment; and, is digital currency itself an object of investment or is digital currency a new investment instrument? In this context, we consider the legal content and place of digital currency in the system of state regulation of property turnover in present-day Russia to be an important object of scientific research. It should be clarified that 'cryptocurrency' does not represent any

interest from a scholar and legal point of view and is not explored in this paper, because it does not exist here in Russia as a legal category.

Based on Russian law and doctrine, the article substantiates the legal content and understanding of digital currency as encrypted information, a special kind of property, and an object of civil rights. The study aims to develop knowledge about digital currency in the interpretation of Russian law and achieves this aim by solving the respective tasks: first, substantiate the legal content of digital currency as encrypted information and a type of other property; second, assess legislative constructions providing for the functioning of digital currency as a means of payment and investment; third, identify the qualitative features of digital currency inherent in an object of civil rights. Authors have carried out the study on the basis of materialistic positivism combined with the application of general research, special research and special methods of knowledge. In particular, were used special methods of legal science that included historical and retrospective method, comparative legal method, systematic research one, formal legal one.

1. Digital Currency as a Collection of Electronic Data and Information

According to the Bank for International Settlements, in 2022 more than 80% of national central banks developed terms and procedures for the introduction of public digital currencies in their national jurisdictions. Digital currencies of central banks currently operate in at least 10 countries. Notably, the Commonwealth of the Bahamas and Cambodia pioneered this path in 2020. In Russia, the central bank's digital currency was not yet legally regulated as of February 2023[1].

Federal Law 259-FZ stipulates in Clause 3, Article 1 on the subject of regulation and the scope of the law that digital currency is recognised as a set of electronic data. The legislator gives in brackets two more synonyms for the definition of digital currency as identical to this data set: digital code; digital symbol. These electronic data (digital codes and symbols) are recorded and exist in a special information system. Then, the law stipulates two ways to use such electronic data (digital codes and symbols): they may be offered and accepted as a means of payment, or, alternatively, without

[1] Central Bank of Russia. Cryptocurrencies: trends, risks, measures. A report. Available at: URL: htpp.:www.cbr.ru.content/document/file/132241/ consultant_paper_20012022pdf (accessed: 22.02.2023)

being offered first, may be accepted as a means of payment (e.g., for performing mathematical computations); they may be used as an investment. The legislator has clearly stipulated that such a means of payment is not public money of the Russian Federation, nor is it the monetary unit of a foreign state, nor is it an international monetary unit or unit of account.

The legislator gives a 10-line long definition that contains the fiduciary description, and describes the ways in which digital currency emerges and exists. We can see that in relation to sets of electronic data (digital codes and symbols) there is no person with an obligation before each holder of such electronic data. However, the text of the law is contradictory because it clarifies that there are still persons with an obligation, and that can be either of the following, or two together: information system operator; information system nodes. Also, the text gives an exhaustive list of their obligations. The persons in question are to ensure that the following parameters comply with the information system regulations: the procedure for issuing these electronic data (digital codes and symbols); the procedure for entering (altering) these entries (digital codes and symbols) in such an information system. Let us further elaborate on the legal content of digital currency by analysing parts of the legislative definitions.

Federal Law No. 149-FZ of 27 July 2006 'On Information, Information Technologies and Information Protection'[2] (henceforth Federal Law 149-FZ) stipulates in Article 2 on the main concepts used in the law that information is data (messages) irrespective of the form in which it is presented. Consequently, from a legal point of view, digital currency is information in electronic form. This information can be presented as a collection of data, as numerical codes, or as numerical symbols. Information is organised and stored in the computer memory as encrypted records in databases. It may be visually reflected on the computer monitor by a string of numbers, letters, or other graphic symbols in an archive folder with some unique name, maybe in the form of images of 'coins'. It is into these archived folders in computer databases in their group that anonymous actors record information about calculated 'coins' as they fill their 'electronic wallets' with digital currency.

The question arises: Who is the recognised and authoritative custodian of encrypted records in 'electronic wallets', and on what computer are such

[2] Federal Law No. 149-FZ of 27 July 2006 "On Information, Information Technologies and Information Protection" // Corpus of Legislation of the Russian Federation 2006. No 31. (Part 1). Art. 3448.

databases located? According to Federal Law 149-FZ, the holder of information is a person who has independently created such information or obtained the right to authorise or restrict access to information under the law or an agreement. The fundamental feature is that encrypted information about the 'currency' (newly added digital currency in collective circulation) is created, and access to it is restricted or allowed with the mandatory participation of all members of the group of anonymous actors and on every computer on that network. The way the algorithm works is that the consent of each group member is exercised as a duplication of the current state of the database with each member. A special computer programme and equipment is used for this purpose, which means that these people act coherently, in a coordinated and systematic way. We are dealing here with the functioning of an information system: information is systematically recorded into databases by means of special information technology. The whole process is conducted by special machines, which require electricity and Internet connection.

2. Digital Currency in Circulation as Encrypted Information, Settlement and Exchange Equivalent and Investment Asset

Digital currency, in each of its discrete units, i.e., a 'coin', is a unique group of symbols, a set of data in electronic form. This data is encrypted and stored in the memory of all the computers that are linked together in a local area network via the Internet and work together according to a specific digital currency software programme that certain people in that local area network want to obtain. Each computer has its own individual Internet address, hence such a node in a local network also becomes non-repeating and unique. Earlier we proposed quite a meaningful term: 'cryptocurrency'. And we believe this understanding of digital currency is still quite acceptable today, too. If the mathematical computations are successful, they culminate in new crypto records appearing in the 'electronic wallets' of the computer owners in such a network. Over time, the number of digital 'coins' of anonymous participants in this computation grows.

To be able to identify the legal content properly, let us talk in theory and imagine each discrete unit of digital currency as a QR code all covered with black and white squares that are connected by rectangularly twisting black and white lines between them. This QR code is generated only once and will never be repeated again as long as it appears in this local information

system. If these QR codes are materialised by printing each one onto small pieces of paper of the same size, quasi cash (monetary surrogates) will be created. If people within a particular group agree to mutually accept such monetary surrogates in exchange for material values, what we get is fiduciary quasi-money with limited circulation within that group. But what was the reason for the legislator to propose the formula "a set of electronic data contained in an information system that ... may be accepted as a means of payment" in Federal Law 259-FZ?

Many goods (work, services, property rights) are, for a number of reasons, most often not sold immediately for cash. This happens due to the current ability of customers, service recipients, tenants etc. to pay. This gives rise to the need for the purchase and sale of goods (work, services, property rights) without paying at the time of receipt, i.e., paying in instalments, or by deferred payment, i.e., buying on credit. If the manufacturer (contractor, service provider, lessor) can act as the seller of the goods (contractor, service provider, lessor) before the counterparty can confirm its status as the buyer (customer, service recipient, tenant) by paying money, they enter into a credit relationship. Money as a means of payment begins to function when a creditor-debtor legal relationship arises between the agents. The legal category of a 'payment' only applies in connection with the legal category of 'money'. In view of this we ought to agree completely with A.V. Gabov that "digital currency is not the rouble" and that "the rouble is not money" [Gabov A.V., 2021: 58, 59]. Hence, digital currency is not money.

Money realises its function as a means of payment in a specific way that is reflected in the following formula: Good (Performance of work, rendering of services, granting of property rights) on credit (Debt) → Obligation to repay the debt → Performance of the debt obligation on time → Money. Here, the movement of goods (work, services, property rights) and money does not occur as a counter-movement, but at different points in time. The repayment of the debt obligation coincides with the end of the sale transaction (performance of work, rendering of services, granting of property rights) exactly through the repayment of the debt via the payment of money. It should be noted here that the gap in time between the transfer of goods and the receipt of money for these goods determines the probability (risk) that the debtor (buyer/customer/service recipient/tenant) does not pay to the creditor (commodity producer/contractor/service provider/lessor), because the solvency of the counterparty may deteriorate dramatically during the performance of the debt obligation. The functioning of money

as a means of payment is the basis for the emergence of a special form of money, namely, credit money.

Credit money is used very heavily in the economy of modern Russia. Digital information technology, in particular remote banking, makes it possible to solve questions of lending to borrowers with a positive credit history in a matter of hours within a single working day. There is a broad range of credit instruments available to individuals, such as mortgage, car loans, emergency loans, student loans, payday loans, home repair loans, point of sale loans, etc. The same applies for corporations: There are industrial mortgage loans, working capital loans, business development loans, overdrafts to cover cash flow gaps, etc.

It has a sense to ask here a valid question: How important to modern society are the activities of groups of people who anonymously compute a digital currency, which they then upload to their 'electronic wallets' on their computers in the form of crypto-records? All their activities are anonymous. They operate in unknown jurisdictions and outside state control. Consequently, all this has zero relevance and significance for society. On the other hand, if there are no violations of any law, people are free to dispose of the crypto-records computed in the algorithm of the special computer programme as they see fit. But why would the legislator recognise digital currencies created by anonymous calculators as a means of payment? Is there any social relevance to identify in the law an array of electronic data with the instrument of a credit relationship and a means of payment?

We believe that the words "a set of electronic data contained in an information system that ... may be accepted as a means of payment" are no more than a statement of fact. This formula does not work; it does not and cannot influence in any way the behaviour of people who compute digital coins and then dispose of them as items of their property, possibly using them as quasi-money in their local network group. By a long stretch of imagination we could imagine that the period of computation of yet another discreet unit of digital currency may be represented as deferred payment (you receive the coin when the computation is over, and you will not receive it before that moment in time). However, what is quite special about this situation is that there is no debtor, and the proactive volunteer computing the digital currency is not a creditor, either. Thus, the legislator has made a mistake by failing to understand the function of money as a means of payment, which can only be realised within the legitimate framework of the relationship between the creditor and the debtor. The relationship that

people have when they calculate digital currencies in an anonymous environment on local computer networks on the Internet cannot be regulated in any way even if the legislator recognises digital currencies as a means of payment. A single 'coin' computed within the group of anonymous persons is a block of encrypted information standardised within that group, which can be used in that group on a mutual trust basis as an electronic equivalent for settlements. And this will always occur spontaneously, each time on the unique terms of the current situation and depending on the material interests of the parties participating in the exchange. At the same time, Russian law does not prohibit people from using such electronic equivalents for mutual, private (local-network) settlements and exchanges.

The second line defined by legislator in Federal Law 259-FZ is the use of digital currency in property circulation: "...may be offered and may be accepted as an investment." This legal formula raises just as many questions as the previous one. What would it mean to offer digital currency as an investment? Let us assume that the legislator meant "as investment capital". This means that the owner of the digital currency offers the business entity that initiates a project to record a set of cryptocurrencies in the name of that initiator in a certain 'electronic wallet' as the currency owner's investment in that project. It may happen that this project initiator has ideas as to how to use such a crypto-investment for the benefit of the project. We believe it is worth clarifying that, on a relatively small scale, such projects to attract individual digital currencies as investment capital can be found on the Internet. However, we believe there is no option to legitimately invest digital currency as investment capital with interest under a bank deposit agreement, as only public money can be used in this legal construct; nor is there an option for a loan agreement (money, fungible goods, or securities). Nor is it legal to make a digital currency payment from the employer to an employee under a contract of employment.

Let us assume that what the legislator meant was to offer digital currency as an object of investment (investment asset). We agree that this is the area that attracts the attention of profit mongers the world over. Most of the analyses we know about the so-called capitalisation of digital currencies (e.g. Bitcoin, Bitcoin Cash, Dash, Ethereum, Ripple) over the past five to ten years reflect the surveys of the fluctuations in the 'prices' of these investments relative to the US dollar. For example, from our own observations, we can see that in the year 2011, one Bitcoin was worth $1; in 2013, it was 1000$; on 17 December 2017, it was 19,483$; and on 09 November

2021, 68,300$. On 21 February 2023, one Bitcoin was available for purchase for cash remotely on the website https://currency.com at $24,581. It is obvious that since the said digital currency, Bitcoin, has changed its price thousandfold against the US dollar over the 10-12 year horizon, it is a high-risk speculative investment asset. According to foreign authors, the rapid development of digital currencies specifically as investment assets is confirmed by the growth of crypto-investor accounts on crypto-intermediary websites from 45-48 million in 2016 to 190-200 million in 2020 [Blandin A., Pieters G. et al., 2020]. Russian authors confirm our view that investors look at digital currencies precisely as targets for short-term investments of public money, with an inevitable return from digital currencies back into public money, for the purpose of speculative gain. At the same time, digital currencies are of little interest as quasi-money in real crypto practice [Lunyakov O.V., 2021]; [Umyarov K.S., 2021]. We obviously come to the conclusion again that the legislator's wording, which states the facts of an established relationship and informs us that digital currency can be offered and can be accepted as an investment, has no regulatory relevance. At the same time the fact that people use digital currencies as an electronic settlement and exchange equivalent, an investment instrument, an object of investment, including a number of grounds listed below, allows to recognise digital currencies as a type of other property under Article 128 of the Russian Federation Civil Code[3] on the composition of objects of civil rights.

3. Special Features of Digital Currency Circulation and Regulation

Federal Law 259-FZ highlights the figure of the information system operator as the obliged person. According to Federal Law 149-FZ, the information system operator is the user that can be both an individual and a legal entity. This person operates the information system, which includes processing the information stored in this system's databases. Fundamentally new for legal regulation is that an 'information system node' is presented as the 'person with an obligation'. This is clearly a natural person, a human. But, due to this person's anonymity, it is impossible to define their legal standing more specifically. The person's age is unknown, their intellectual and physical state and their jurisdiction are unknown.

[3] Part One, RF Civil Code of 30 November 1994 No. 51-FZ // Corpus of Legislation of the Russian Federation. 1994. No. 32. Art. 3301.

What does the legislator mean by the category of 'a person with an obligation before each holder of such electronic data'? The term 'category' is the most appropriate here because we cannot use the more specific term 'subject'. Assuming, one day a member of the collective of the anonymous computers group (or a profiteer) finds out that the records of some or all 'coins' in their 'electronic wallet' have disappeared. For such a situation, the legislator specifies the defendant against whom the aggrieved person can lodge a claim for protection of their rights and compensation for damages. Hypothetically, this claim could be realised against the operator of the information system operator. But can one lodge a material claim against the node(s) of an information system? No, one cannot. We are dealing here with a fundamental contradiction. On the one hand, there is an information technology of distributed node-by-node entry of new data into the database (or of making changes in the existing data), where trust is eliminated and replaced by mathematical computation in the operation of a computer algorithm. On the other hand, the creation of encrypted 'currency' information implies there must be trust and readiness of all members of the anonymous group to respond positively to all offers to use the existing and/or newly created digital currency as a means of payment and as an investment, as well as their full trust in the operation of the computer algorithm.

What exactly is the task of the 'person with an obligation before each holder of such electronic data'? In the legislator's view, this person's task is to maintain order. This means: firstly, electronic data (numerical codes and symbols) must be released in accordance with the rules of the information system; secondly, the procedure for making (changing) entries regarding electronic data (digital codes and symbols) in the information system must also comply with its rules. It is extremely sad to see the legislator's passive approach to the attempts to regulate anonymous relationships in this area. A person, acting of their own free will and interest, joins a group of anonymous individuals who, on a voluntary and proactive basis, buy with public money, generate and encrypt information and, from time to time, modify in the database records belonging to certain holders, who appear in this respect on the Internet as 'electronic wallet' addresses with unique logins and passwords. The entire process uses a computer programme and is highly automated. Therefore, a properly functioning algorithm for such a programme is the very rules of the information system that must be followed. Consequently, non-compliance with the order only occurs as a result of improper operation of the software programme.

Such issues can take place due to a variety of causes, both technical and man-made. A technical failure may occur, or a computer programme may have been 'hacked' with malicious intent. However, preventing distortions in the algorithm of such a programme is not and cannot be part of the skills of an information system operator (according to the law, it any citizen and any legal entity can be an operator). Members of a group of anonymous actors, each on their own computer (in their own node) also have no influence whatsoever on the operation of such a programme's algorithm. Hence, the 'person with an obligation before each holder of such electronic data' cannot discharge their obligations. The legislator's formula in the fragment of Federal Law 259-FZ in question is nothing more than a good wish that the computer algorithm in the relevant group of anonymous users should work properly, both in terms of the mathematical computation of digital currency and in terms of the mode of entry of records about the digital currency into the database.

This naturally raises a series of straightforward questions. What is the role of the brilliant author of the computer programme that the groups of anonymous actors use in full trust to compute and record digital currency on a voluntary and proactive basis? Because the group may number in the tens of millions. How does this person behave in space and time? Can this person, for whatever reason, influence the algorithm of their brainchild, causing a global collapse of the entire information system? Clearly, this risk is totally real and this negative event could take place. Figuratively speaking, the entire group of anonymous actors that compute digital currency on a voluntary and proactive basis and conduct settlement and exchange transactions with this currency is hostage to this brilliant author. It is therefore the obligation of the government to take legislative measures to prevent potential conflicts and to develop a mechanism to protect the rights of participants in this area of social relations.

Hopes for progress in regulating the area of social relations in question appeared owing to Draft Law No 237585-8 submitted to the State Duma in November 2022. It is with deep disappointment that we must admit that our hopes have not been fulfilled. The law-making by a group of parliamentarians in this draft law is directly related to digital currency in terms of taking certain practical steps to obtain it. This draft law does not use the Russian word for 'mining', but the English loan word. It uses the following definition: "Digital currency *mining* is understood to be the activity of performing mathematical computations by operating computing devices and hardware and software complexes to make entries in an information

system using distributed ledger technology, with the purpose of creating digital currency and/or receiving remuneration in digital currency."[4]

We call digital currencies (a set of electronic data) monetary surrogates because money is issued by the central banks of states. Groups of users generate cryptocurrency data, i.e. digital currencies, as their computers perform computations by using algorithms. A special programme is installed on the computer of a volunteer member of the group, and it does not matter where on the planet this computer is located. This programme performs computations and finds a unique hash function to attach a new block to the block chain. In the course of millions of iterations, the group member's computer picks up a single hash (the result of some mathematical transformation of a block from the previous block in the chain), thus making it possible to 'attach' one more block to the block chain. When a block is 'attached', the group member whose computer was the first to solve this mathematical problem receives a reward, namely a collectively recognised cryptocurrency 'coin', which is written into their 'electronic wallet'. These records are generally referred to as 'cryptocurrency' (although, for no reason whatsoever), which is why the words 'amount in digital currency' are constantly used in this relationship. The terms 'wallet' and 'amount' are intrinsic to the concept 'money', but we have proven above that digital currency is not money. User groups that have gathered around cryptocurrencies with various exotic 'coin' names (such as Bitcoin, Bitcoin Cash, Dash, Ethereum, Ripple, etc.) have different computational features and time horizons for years to come. But in any event, to participate in such 'entrepreneurial activity' a person needs: one, certain intellectual and physical abilities; two, special computer hardware and software; three, uninterrupted and stable connection of their computer to the Internet; four, sufficient electric power for the functioning of the whole hardware and software complex.

In our opinion, such global computer calculations of mathematical formulas for adding the next block to the existing chain of blocks in a computer programme have no socially useful function and bring no economic growth. Clearly, at the same time computer equipment is improved, Internet services are developed, and electricity companies increase their sales. Along with this, opportunities for laundering money linked to criminal offences increase, illegal consumption of electricity rises sharply, and hundreds of millions of computers are involved in mathematical computations

[4] The State Duma. Zakonotvorchestvo (Law-making) State Automated System. Available at: URL: https://sozd.duma.gov.ru/bill/237585-8 (accessed: 22.02.2023)

that have no positive influence on human progress. E.g., in 2019, Interregional Distribution Grid Company of the North Caucasus discovered the theft of electricity worth RUB 130 million in the village of Plievo in Ingushetia. Its engineers found a site near the village where unidentified persons had illegally installed 2 transformers that supplied power to over 1,600 mining farms. Illegal miners have been detected at a Ukrainian nuclear power plant, and a officer of the Ukrainian Security Service told they could not rule out that not only plant employees but also National Guard officers who were guarding the plant were mining cryptocurrency.[5]

In essence, the result of such 'entrepreneurial activity' is turning electricity into cryptocurrency records in the 'electronic wallet' of the electricity consumer. In this connection, we do not consider it possible to use either the English loan word 'mining' or its Russian equivalent 'dobycha' ('mining') to define mathematical computation of digital currency. The Great Soviet Encyclopaedia states that "mining is the extraction of solid, liquid and gaseous minerals from the earth's interior. The process of mining consists of excavating minerals and transporting them from the face of the mine to the surface. Solid minerals are extracted by open-pit and underground mining. Peat is extracted from the surface with full mechanisation of the main production processes. Liquid minerals and natural gas are increasingly extracted by means of surface-drilled wells. Production of solid minerals (gold, tin, diamonds, zircon, monazite, ilmenite, etc.) and oil from the seabed has been developing since 1960s.[6]

As noted above, the member of the group of 'miners' whose computer first solves the mathematical issue for attaching next block to an existing block chain gets a certain number of crypto-'coins' of digital currency into their 'electronic wallet'. To increase the likelihood of success in these computations, the owners of the computers involved in the computations began to agree to link their computers in local networks, e.g., of 100 computers. Clearly, such a local pool of 'miners' will compute the single correct hash faster. In this way, 100 users within their local association will be able

[5] Sekret Firmy. Media registration certificate El No. FS77-68947 / Mining, the Caucasus Way. Bitcoin Hunter from Ingushetia Steals RUB 130M Worth of Electric Power. Available at: URL: https://secretmag.ru/news/.maining-po-kavkazski-okhotnik-za-bitkoinami-iz-ingushetii-ukral-elektroener giyu-na-130-mln-rublei-04-09-2019.htm (accessed: 22.02.2023). RosBiznesKonsulting. Available at: URL: https://www.rbc.ru/crypto/news/637e3 dfb9a7947082e0569b8 (accessed: 22.02. 2023)

[6] The Great Soviet Encyclopedia. 3rd ed. Moscow, 1969. Available at: URL: https://www.booksite.ru/fulltext/1/001/008/053/ 584.htm (accessed: 22.02.2023)

to 'attach' another block to the existing block chain in the course of combined computer operation with significantly higher likelihood and faster than each of them individually. In this draft law, unfortunately, we again see another fact of the Russian legislator's adherence to Anglo-Saxon terminology. E.g., such a term as 'association of miners' has been proposed: "A mining pool is the pooling of the capacity of several computing devices that belong to different owners (hereinafter, 'mining pool participants') and are used for mining purposes, which results in the distribution of the resulting digital currency among the owners of the said computing devices.'[7]

However, if one takes a close look, a 'mining pool' is not at all an association of people owning computers, or an 'miners association'. The draft law clearly refers to a classic asset package: a combination of the capacities of several computing devices that belong to different owners. This raises an avalanche of questions: Is it joint indivisible ownership of common property? Or is it shared divisible ownership of interconnected property? Or is it an association of businessmen like a general partnership? Or is it a membership-based production cooperative with one vote for each member? But parliamentarians do not care about such subtleties of civil and business law. The draft law is primarily driven by fiscal interest.

As a first approximation, one could imagine taxation of the property itself, as regulated, for example, under the transport tax, i.e., based on one horsepower of the car engine. But in real life, it is impossible to know reliably how many computers are looped into one pool, and the computers themselves may be scattered over several jurisdictions. And since it is impossible to tax, e.g., 100 computers located in different countries and looped into a local network, the legislators, in a somewhat naive and light-minded way, shift the duty of good faith reporting of taxable objects to the 'miners' themselves, leaving the practical tax administration to the Russian government. "In the event of receipt of digital currency as a result of mining, the person engaged in mining, including the participant of a mining pool, shall provide information on receipt of digital currency, and information on the unique sequence of symbols used to record transactions with digital currency credited as a result of mining to the person engaged in mining (address identifier), in accordance with the procedure and within the time limits established by Russian legislation on taxes and levies."[8] But the root of the issue here is that every anonymous individual plunges into

[7] Available at: URL: https://sozd.duma.gov.ru/bill/237585-8 (accessed: 23.02. 2023)

[8] Ibid.

the depths of the crypto-world via the Internet precisely in order to enrich themselves in a shadowy manner, so that no one will ever know the intensity and extent of their transactions, and certainly without the intention of paying taxes to any state or regularly sending their truthful statements to the tax authorities.

In connection with the Russian parliamentarians' initiatives, it should be noted that the share of China, which until recently was the world's largest mining hub, has fallen from 46% to zero. This drop is explained by imperative regulatory measures that have led to a total ban on cryptocurrency mining in China since autumn 2021. As a result, digital currency mining companies had to move to other jurisdictions. China has imposed a total ban on cryptocurrency transactions, recognising them as illegal financial activity. We believe that the government of the People's Republic of China clearly sees more important areas for application of the country's electricity resources that are not so abundant in China. At the same time, according to our estimates, there is a surplus of generated electricity in Russia today, especially in the areas around the eight hydro-electric power plants and 12 nuclear power plants. Mathematical computations can be organised under public-private partnerships and special legal regulations.

4. Digital Currency as a Type of Other Property and an Object of Civil Rights

Studying doctrinal judgments on the topic we found no fundamental and sharp contradictions to our views regarding the legal content of digital currency. What we did find was confusion in the statements made by some authors. The most widespread mistake is the confusion of the terms 'cryptocurrency' and 'digital currency'. We believe this is unacceptable at the legal level. For example, E.R. Vergeles claims that Federal Law 259-FZ "says nothing about cryptocurrency and blockchain. Moreover, according to the said federal law, cryptocurrencies are not digital money whose circulation is allowed in the Russian Federation, due to the fact that there is no definition of cryptocurrency itself" [Vergeles E.R., 2022: 37]. We do not believe that one should look in Federal Law 259-FZ for an interpretation of cryptocurrency in the places where there should be none, as Article 1 on the subject of regulation and the scope of the law clearly states the limits and categories of regulation. K.O. Boykova classifies all types of cryptocurrencies according to their degree of financial security: cryptocurrency (monetary surrogates) and the digital rouble [Boykova K.O., 2022: 189]. We believe it is a mistake

to classify the digital rouble (one of the legitimate monetary units of the Russian Federation) as a cryptocurrency. Furthermore, the term 'degree of financial security' needs a separate scientific justification. E.A. Mosakova erroneously claims, contrary to the current legislation of most developed countries, that cryptocurrency is "the new form of money", "a new word in monetary circulation", and "will allow cryptocurrencies to become one of the world currencies in the medium term" [Mosakova E.A., 2021: 2–4, 6,7]. M.M. Dolgiyeva correctly points out the mathematical principles of digital currency generation and its automatic management by means of software [Dolgiyeva M.M., 2022: 128-129]. V.D. Kuligin comes to a conclusion with which we cannot agree: "Cryptocurrency is private money. Such money has always been present in the circulation of any country in the form of bills of exchange, coupons and certificates, etc." [Kuligin V.D. et al., 2022: 151]. Firstly, there is no such money in circulation, and secondly, bills of exchange, coupons and certificates have never been and cannot be a form of money.

The scholarly findings of a number of prominent Russian legal scholars deserve close attention. Professor I.I. Kucherov believes that "it is necessary to extend the range of objects of civil rights by adding a new object which could include cryptocurrency. In the author's view, documented information could be such a type" [Kucherov I.I., 2018: 189]. Corresponding Member of the Russian Academy of Sciences A.V. Gabov quite rightly points out that "the system of objects of civil rights is therefore not static, but rather quite fluid; the legislator must respond to changes in the outside world and reflect them in the law in time." [Gabov A.V., 2021: 63]. The work closest to our topic is that of Professor L.Y. Vasilevskaya. In our view, owing to the depth and breadth of this work, it should be considered the best specifically on the subject of digital currency as of early 2023. Our views concur on a number of points: "Cryptocurrency is the antipode of the digital rouble, since it circulates within an inherently global, decentralised digital payment system of individuals extending beyond the territory of any state». On the other hand, we cannot agree with her that "digital currency should be qualified as a digital financial asset" [Vasilevskaya L.Y., 2023: 16, 17]. This is not possible, because, at the very least, the legislator makes the distinction in the title of Federal Law 259-FZ.

Around 50 years ago Soviet scholars described in the Great Soviet Encyclopaedia the legal understanding of property as: the totality of things and tangible assets in a person's possession...; the totality of things and property

rights to receive them from other persons...; the totality of things, property rights and obligations which characterise the property status of their bearer. Currently the Russian legislator in Article 128 of the Civil Code on the composition of objects of civil rights, develops and details the interpretation of property: things (including cash and certificated securities), other property, including property rights (including non-cash funds, uncertificated securities, digital rights); results of work performed and services provided; protected intellectual products and similar means of individualisation (intellectual property); intangible goods.

From a formal legal point of view, things include cash and securities — special documents on sheets of paper. No doubt, in addition to these two types, things include a whole huge world of material goods whose list would not fit into any code. Other property includes property rights and everything that can be attributed to other property for a reason that does not contradict the law. We cannot find any restrictions on classifying digital currency, i.e., the encrypted information existing in electronic form, as a type of other property that belongs to objects of civil rights in the context of the above provisions of Article 128 of the Civil Code. We share A.V. Gabov's position that "The object of civil rights is, above all, a certain idea that emerges by abstracting features of various phenomena (objects) of the external world that are not attributable to its subjective part, and 'marking' a certain group of objects by a single generic concept". We also fully agree with his concern "What if, in the form of digital currency, we are dealing with a play on words that obscures meaning?" [Gabov A.V., 2021: 62, 64].

V.D. Kuligin and his co-authors formulate conclusions that resonate with ours: "Bitcoin is a digital, informational structure designed to perform an exchange" [Kuligin V.D. et al., 2022: 151]. We support the position of R.M. Yankovskiy that "regulating cryptocurrency rights as an absolute right will require a new object of civil rights to be described in the law, similar to the special legal regime for uncertificated securities." We also agree with the him that "although the RF Civil Code does not define 'other property', given the current realities and level of technology, this concept may be interpreted as broadly as possible, in particular by including cryptocurrency as part of property" [Yankovskiy R.M., 2020: 50, 52].

A single 'coin' computed within the group of anonymous persons is a unique block of encrypted information standardised within that group, which can be used in that group on a mutual trust basis as an electronic equivalent for settlements and as an investment. Each digital currency 'coin'

is discrete and individual. It is a cipher that is never repeated — a block of information in electronic form; it is always assigned to a specific person and can circulate by being transferred between 'electronic wallets', which are maintained on the computers of the participants in this settlement (investment). And this digital currency 'coin' is continually assessed in terms of public money, usually of US jurisdiction. The steady, long-standing practice of using digital currency 'coins' as settlement equivalents, investment instruments and investment targets allows us to treat digital currency as a type of other property, and digital currency 'coins' as an object of civil rights in the context of Article 128 of the Civil Code.

Conclusion

The steady, long-standing practice of using digital currency 'coins' as settlement equivalents, investment instruments and investment objects allows us to treat digital currency as a type of other property, and digital currency 'coins' as an object of civil rights in the context of Article 128 of the Civil Code. Network nodes are created through the free affiliation of new members to the existing group, which increases the package of technical facilities functioning according to a specific programme for the benefit of the entire group. From the point of view of investments and economics, we define this growing network as a financial pyramid, a Ponzi scheme. It is compulsory for a member of the local network to connect their node (computer) via an individual address to the Internet and to a source of power. Information (digital currency as a set of electronic data) is recorded, generated and modified via a mathematical computation algorithm on each computer within such a local network. The 'person with an obligation before each holder of such electronic data' cannot discharge their obligations to upkeep order. There is a real risk of external interference with the proper operation of the mathematical computation algorithm, in particular by the author of the software programme. In this regard, we propose to introduce a compulsory by law state registration of the author of such intellectual products and to formalise the author's obligation to conduct supervision over the proper functioning of the corresponding algorithm of mathematical calculations. In addition, a legal regime of state control corresponding to the said obligation of the software author is necessary.

Russian jurisprudence regulating property turnover describes the place of digital currency as *terra incognita*. On the one hand, the legislator mentions digital currency in virtually a few phrases, merely stating the fact that

it exists in information systems. Legal regulation of digital currency currently in force in Russia is so far presented in its most general, initial form in the federal law on digital assets. The law stipulates this encrypted information in electronic form can be offered as a means of payment and as an investment. We believe that the fact that the legislator recognises digital currencies as a means of payment will in no way regulate the relationships that develop among people who interact anonymously on an extraterritorial basis when they compute digital currencies on local computer networks within the global Net. The legislator's statement that digital currency may be offered and may be accepted as an investment has no regulatory value. Digital currencies are high-risk speculative investments. On the other hand, digital currency appears in Russian tax law as an object of taxation, in bankruptcy and enforcement laws as an object of recovery, in family law as joint property of spouses, and in inheritance law as property. In the context of Article 128 of the Civil Code, digital currency must be classified as other property and the digital currency 'coin' is an object of civil rights.

It is regrettable that the legislators use the verb 'may' in Federal Law No. 259-FZ with reference to digital currency. The Dictionary of the Russian Language states, inter alia, that "may" is "...an expression of uncertain confirmation, probably, apparently...". And "perhaps" is the very first synonym in the list of synonyms. So we see here a failed, uncertain attempt by the legislator to approach the regulation of shadow circulation of digital currencies, which is decentralised and free of any law, and the relationships within this circulation. But the first steps, the most difficult ones, have already been made. Doctrinal development of the legal content and place of digital currency in the system of state regulation of property turnover, and the formation, accumulation and scholar understanding of judicial practice on this issue should continue.

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