Digital Financial Assets: Concept and Legal Nature

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Abstract. Tokens and other digital technologies, in essence, can be considered neither property nor objects of civil law, nor are they inherently a part of civil rights per se. These technical solutions acquire a corresponding legal status only when they become an object of such legal relations. When this occurs, they are considered digital assets and are consequently subject to legal regulations. The legal nature of tokens is a matter of much dispute: some define them as objects of civil law, while others view them as a means to confirm the rights to a legal object. This article aims to prove that tokens can serve both functions. In most cases, tokens serve as a means of confirming rights to certain tangible objects (for instance, tokens as a means to secure civil rights). In this function, tokens for cryptocurrencies and digital securities, however, become legal objects in and of themselves because they play a part in legal relations (that is, tokens serve as a legal object). Tokens can be objects of absolute and relative rights. The common law doctrine treats an absolute right to cryptocurrencies and digital securities as a property right. Continental law, on the contrary, cannot include them in the property rights category since property within this legal framework is always tangible. Digital assets, however, are intangible. Therefore, they are not property. This article suggests that digital assets are objects of a new absolute right that is similar to property rights, except for one distinction: an object is not necessarily a thing. Based on the authors' concept, this new right can be referred to as an absolute digital right.

Keywords: digital financial assets; cryptocurrencies; cryptoassets; digital rights; objects of digital rights; tokens.

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Introduction

Cryptoassets are relatively young actors on the international financial market and were first introduced as a part of the blockchain practice. For the longest while, cryptoassets had been treated as an innovative technology only and had been beyond the legal pale. However, the emergence of new social relations resulting from cryptoassets necessitated a certain amount of adequate legal regulation.

One of the first specific enactments for the regulation of digital assets was adopted in Belarus: Decree of the Belarus Republic No. 8, "On the Development of the Digital Economy" of 21 December 2017.[1] On 7 February 2019, the Italian Parliament passed the Decree Law on Distributed Ledger Technologies (DLTs).[2] France started devising their digital legislation in 2019 with Act No. 2019-486 (PACTE) adopted, on 22 May 2019. According to Dominique Legeais, that act was passed as a result of tokenization in the economy, which is characterized by the use of tokens that

[1] Декрет № 8 Президента Республики Беларусь от 21 декабря 2017 г. «О развитии цифровой экономики» [Decree No. 8 of the President of Belarus of 21 December 2017. On the Development of the Digital Economy] (Feb. 16, 2024), available at http://president.gov.by/ru/official_documents_ru/view/dekret-8-ot-21-dekabrja-2017-g-17716/.

[2] Francesco Maruffi, *Distributed Ledger Technologies and Smart Contracts in Italy* (2019) (Feb. 16, 2024), available at https://www.senato.it/japp/bgt/showdoc/frame.jsp?tipodoc=Emendc&leg=18&id=1096791&idoggetto.

represent assets and the rights associated with them and can be recorded, secured, and transferred using blockchain technologies.[3]

In 2020, Russia passed Federal Law No. 259-FZ "On Digital Financial Assets, Digital Currency, and On Amendments to Certain Legislative Acts of the Russian Federation" of 31 July 2020. Earlier, in 2019, Federal Law No. 34-FZ titled "On Amendments to Parts 1, 2, and Article 1124 of Part 3 of the Civil Code of the Russian Federation" of 18 March 2019 was added to Article 141.1 of Part 1 of the Civil Code of the Russian Federation, which addresses digital rights.

On 21 December 2022, Brazil passed Law No. 14.478, which defines the use of virtual assets in the country.[4] Nevertheless, a few BRICS countries do not have any specific laws addressing digital assets. For instance, South Africa does not have any specific law on cryptoasset transactions. Cryptoassets in South Africa may fall under a different legal regime than is applicable to other financial assets, should they possess all the necessary attributes. For example, some cryptoassets are considered participatory interests in collective investment schemes (CIS); hence, transactions involving them are regulated by the Collective Investment Schemes Control Act.[5]

We reckon that the need for omnibus legislation on digital assets is growing increasingly important as a result of the significant risks they pose. India, another BRICS member, currently has no law on digital assets of its own, and therefore they are planning to develop a universal regulatory framework that can be universally applied across countries to effectively address cryptocurrency risks.[6]

The above law-making initiatives do not, however, mean that the legal community has gained proper insight into the legal nature of digital assets. It is simply impossible to further delay the adoption of new laws that the general public needs. Therefore, new legislation is being framed without a clear understanding of its exact objective.

This study shows that digital assets remain *terra incognita* for legal science. In order to develop the adequate legislation required to supervise digital asset issuance and turnover, it is necessary to first define digital assets, develop their concept, classify them, and clarify their nature. This should precede any attempts to settle new digital relations through law. Legal scholars have frequently attempted to resolve

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[3] Dominique Legeais, *L'avènement d'une nouvelle catégorie de biens: les actifs numériques* [*The Advent of a New Class of Assets: Digital Assets*], Revue trimestrielle de droit commercial et de droit économique 191 (2019); Dominique Legeais, *Enjeux de la blockchain et des crypto-monnaies* [*Challenges for Blockchain and Cryptocurrencies*], 6 Revue de droit bancaire et financier 54 (2019).

[4] Lei brasileira Nº 14.478, de 21 de dezembro de 2022 [Brazilian Law No. 14.47821 of December 2022] (Feb. 16, 2024), available at https://www.in.gov.br/en/web/dou/-/lei-n-14.478-de-21-de-dezembro-de-2022-452739729.

[5] For more information, *see* https://iqdecision.com/regulirovanie-finteh-v-juzhnoj-afrike/.

[6] For more informaton, *see* https://indianexpress.com/article/business/market/india-g20-presidency-common-framework-crypto-risks-sitharaman-8549977/.

this issue, but so far, they have failed to provide a more or less unanimous theory on the legal nature of digital assets.

In Israel, cryptocurrencies are considered property.[7] In Japan, the same legal framework regulating traditional currencies applies to cryptocurrencies.[8] The European Court holds a similar stance since they treat cryptocurrencies as a means of payment.[9] Germany likewise describes cryptocurrencies as a means of payment. Cryptocurrencies in Cuba are considered a virtual asset.[10] In the United States, however, there is no unanimity as yet on cryptocurrencies since the different U.S. financial authorities have differing viewpoints on cryptocurrency: the U.S. Federal Reserve, for instance, treats cryptocurrencies as an object of ownership for tax purposes, while the U.S. Treasury classifies them as a means of payment.[11]

That is why the authors hereof aim to summarize the ideas of legal scientists from continental law and common law countries regarding the concept and legal nature of digital assets, examine the limited new digital regulations that are in place, and based on the results of this analysis, offer an original, complex concept on the matter.

1. Digital Assets: Concepts

At different stages in time, legal sources in various countries have used such terms as "cryptoassets," "digital assets," and "digital financial assets" as absolute synonyms. Evariest Callens makes a fair conclusion by stating that "the terminology at hand is not standardized and, hence, different commentators may understand these terms to mean different things."[12]

Thus, in order to determine the legal nature of digital assets, we need to first understand the difference in the meaning of these terms. We are of the opinion that differences in terminology found among lawmakers and researchers can be

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[7] *Сухова О.* Правовое регулирование интеллектуальной собственности и инновационной деятельности // Сборник статей участников научно-методологического семинара [Olga Sukhova, *Legal Regulation of Intellectual Property and Innovation*, in Collection of Papers, Scientific and Methodological Seminar] 145 (2018).

[8] Труды кафедры финансового права РГУП: сборник научных трудов / под ред. И. Цинделиани [Imeda Tsindeliani (ed.), *Proceedings of the Department of Financial Law, Russian State University of Justice: Collection of Scientific Papers*] 346 (2020).

[9] For more information, *see* https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62014CJ0264.

[10] La Resolución 215 del Banco Central de Cuba [Resolution No. 215 of the Cuban Central Bank] (Feb. 16, 2024), available at https://www.bc.gob.cu/noticia/banco-central-de-cuba-regula-el-uso-de-criptomonedas-en-el-territorio-nacional/1273#bottom.

[11] *Ручкина Г., Андреева Л., Кирпичев А.* Правовое регулирование экономической деятельности: учебник для вузов [Gulnara Ruchkina et al., *Legal Regulation of Economic Activities: Textbook*] 364 (2021).

[12] Evariest Callens, *Financial Instruments Entail Liabilities: Ether, Bitcoin, and Litecoin Do Not*, 40 Computer L. & Sec. Rev. (Article 105494) (2021).

explained by historical and technological reasons underlying the development of new digital technologies.

It is commonly known that digital assets first appeared in 2009 when an unknown person or a group of people acting under the name of Satoshi Nakamoto introduced the cryptocurrency, "Bitcoin" to global financial markets.[13] Consequently, the first digital legal acts aimed at regulating cryptocurrencies, also known as cryptoassets, were implemented. In most European countries, such terms as "cryptoassets" and "cryptocurrency" are still in use. For example, Simon Geiregat, a postdoctoral researcher at Ghent University, reportedly referred to "cryptocurrency" when talking about digital assets.[14] French lawyer Primavera De Filippi and Spanish scholar Samer Hassan stick to the term "cryptoassets," which, in their opinion, includes Bitcoin.[15] Sir Geoffrey Vos and some other researchers also prefer the term "cryptoassets."[16]

Cryptocurrency is known to be a derivative of two technologies: asymmetric cryptographic encryption and blockchain. As soon as lawmakers realized that digital assets were not always created using cryptographic encryption, the prefix crypto was removed from enactments. Since digital assets have always been used mostly on financial markets, legal sources have adopted yet another term, "digital financial assets."[17]

At the same time, digital assets are not necessarily used exclusively in financial markets. For example, images that are created by artificial intelligence,[18] computer software, and other similar digital products are digital assets, but not financial assets.

It follows thus that the most general term to use should be "digital assets" which, for example, was adopted by French lawmakers.[19]

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13 Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System* (2009) (Feb. 16, 2024), available at https://bitcoin.org/bitcoin.pdf.

14 Simon Geiregat, *Cryptocurrencies Are (Smart) Contracts*, 34(5) Computer L. & Sec. Rev. 1144 (2018) (Feb. 16, 2024), available at https://www.sciencedirect.com/science/article/abs/pii/S0267364918302279?via%3Dihub.

15 Primavera De Filippi & Samer Hassan, *Blockchain Technology as a Regulatory Technology: From Code Is Law to Law Is Code*, 21(12) First Monday (2016).

16 Geoffrey Vos et al., *Legal Statement on Cryptoassets and Smart Contracts*, UK Jurisdiction Taskforce, the LawTech Delivery Panel, UK Jurisdiction Taskforce (2019), at 7 (Feb. 16, 2024), available at https://35z8e83m1ih83drye280o9d1-wpengine.netdna-ssl.com/wp-content/uploads/2019/11/6.6056_JO_Cryptocurrencies_Statement_FINAL_WEB_111119-1.pdf.

17 *See* Federal Law of the Russian Federation No. 259-FZ, On Digital Financial Assets, Digital Currency; and On Amendments to Certain Legislative Acts of the Russian Federation of 31 July 2020; and Article L. 54-10-1 of the FMFC.

18 For more information, *see* https://fishki.net/1584046-zavorazhivajuwie-kartiny-sozdannye-iskusstvennym-intellektom.html.

19 *See* Article L. 54-10-1 of the FMFC.

The term "digital assets" is referred to as "*les actifs numériques*" in the French Monetary and Financial Code (FMFC)[20] and defined in Article L. 54-10-1.

With all of this in mind, it is deemed reasonable to have digital assets understood as follows:

- an object of civil law but not necessarily a thing;
- a digital code;
- something that is kept on a durable medium;[21]
- a command that can be executed only in the digital environment.

The above features equally apply to digital assets, digital financial assets, and crypto-assets. Therefore, such terms as digital assets, digital financial assets, and cryptoassets shall be used interchangeably throughout the article, unless indicated otherwise.

2. Types of Digital Assets

Apart from using various terms to define digital assets, different countries also distinguish between the various types of digital assets.

For example, as per Paragraph 2, Article 1 of Federal Law of the Russian Federation No. 259-FZ, "On Digital Financial Assets, Digital Currency and On Amendments to Certain Legislative Acts of the Russian Federation" of 31 July 2020, digital issuable securities belong to digital financial assets, while digital currency is excluded from this concept.

French legislators adhere to a different approach. As per Article L.54-10-1 of the FMFC,[22] digital assets are classified into two categories:

1. *les jetons* (tokens) that are defined in Article L.552-2 of the FMFC.

2. *valeur* (any digitally represented value[23]) that is not issued or guaranteed by the central bank or any other public institution. This digitally represented value shall

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[20] For more information, *see* https://codes.droit.org/PDF/Code%20mon%C3%A9taire%20et%20financier.pdf.

[21] The term "durable medium" is defined in Article 2 of Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on Consumer Rights, amending Council Directive 93/13/EEC and Directive 1999/44/EC of the European Parliament and of the Council and repealing Council Directive 85/577/EEC and Directive 97/7/EC of the European Parliament and of the Council. A "durable medium" is defined as "any instrument which enables the consumer or the trader to store information addressed personally to him in a way accessible for future reference for a period of time adequate for the purposes of the information and which allows the unchanged reproduction of the information stored."

[22] According to Article L. 54-10-1 of the FMFC, digital assets include:

1) tokens mentioned in Article L. 552-2, excluding those that meet the characteristics of the financial instruments mentioned in Article L. 211-1 and cash bonds mentioned in Article L. 223-1;

2) any digitally represented value that is not issued or guaranteed by the central bank or any public authority, that is not bound to a legal tender, and that does not have the legal status of money, but that is accepted by individuals or legal entities as a means of exchange and can be transferred, stored, or exchanged electronically.

[23] The Federal Council of Switzerland, in line with the French legislators, refers to digital currencies as a "digitally represented value." For more information, *see* Federal Council Report on Virtual Curren-

not be bound to any national currency that has an official exchange rate, nor shall it be formally treated as money, but shall be acknowledged by individuals and legal entities as a means of exchange.

The first type or category of digital assets distinguished by French lawmakers includes tokens that do not represent digital currency or cryptocurrency. The second type comprises the so-called tokens *monétaires* (money tokens), commonly known as digital money, digital currency, and currency tokens (cryptocurrency).

Technically, however, cryptocurrencies are also simply tokens. Nicolas Barbaroux, Richard Baron, and Amélie Favreau emphasize that the French legal doctrine has oftentimes raised disputes on whether it is reasonable to divide digital assets into cryptocurrency and tokens. Some assume that it was pointless. Both cryptocurrency and tokens are assets, i.e. legally, they can both be treated as property. They both have blockchain records and exist in a digital format. Additionally, both can be used as a means of payment or exchange.[24] However, French lawmakers made a different determination, which gives rise to the notion, that under the French law, cryptocurrencies and tokens are not synonymous and cannot be used interchangeably. According to Hubert de Vauplane,[25] the difference between these two digital assets lies in their source. Cryptocurrencies require an individual blockchain protocol, while tokens are bound to an issuing company rather than a specific blockchain protocol.[26]

An idiosyncratic definition of digital (virtual) assets and their types follows from Article 3 of Brazilian Law No. 14.478 of 21 December 2022 on the use of virtual assets.[27]

The said article stipulates that a virtual asset is a digital representation of a value that can be negotiated or transmitted by electronic means and can be used for payments or investment purposes with the following exceptions:

- national and foreign currencies;
- electronic currency, as per Brazilian Law No. 12865 of 9 October 2013;
- instruments that provide their holders with access to the said products or services;
- assets that must be issued, accounted for, put to circulation, or used for settlements in line with special legislation, such as securities and financial assets.

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cies in Response to the Schwaab (13.3687) and Weibel (13.4070), Postulates of 25 June 2014 (Feb. 16, 2024), available at https://www.newsd.admin.ch/newsd/message/attachments/35355.pdf.

[24] Nicolas Barbaroux et al., *Blockchain et finance – approche pluridisciplinaire (IP/IT)* [*Blockchain and Finance – A Multidisciplinary Approach (IP/IT)*], 28 Répertoire IP/IT et Communication 125 (2020) (Feb. 16, 2024), available at https://shs.hal.science/halshs-03052351.

[25] Hubert de Vauplane, *Crypto-assets, token, blockchain, ICO: un nouveau monde?* [*Cryptoassets, Token, Blockchain, ICO: A New World?*], 810 Revue Banque (2017) (Feb. 16, 2024), available at https://medium.com/@maitrehub/crypto-assets-token-blockchain-ico-un-nouveau-monde-afdcb1d7a2b3#_ftn2.

[26] In other words, the amount of cryptocurrency that is issued is determined by a protocol, while with tokens, issuing companies themselves decide how to issue and distribute tokens and in what amount.

[27] Brazilian Law No. 14.47821 of December 2022, *supra* note 4.

Thus, under Brazilian law, only private digital currency, in particular cryptocurrency, qualifies as digital (or virtual) assets. Securities, on the other hand, do not qualify as virtual assets.

A comparative analysis of the concepts of "digital financial assets" under Russian law, "digital assets" under French law, and "virtual assets" under Brazilian law shows that these terms are conceptually different.

There is no strong theoretical ground behind the decision of Russian lawmakers to exclude digital currency from the category of "digital financial assets." Russian lawmakers have simply developed different legal regimes for digital currencies and for digital financial assets. For example, the turnover of digital financial assets is allowed by Russian law with some restrictions. At the same time, it is forbidden to use digital currency as a means of payment.

Brazilian legislators probably thought along similar lines when they removed electronic property from the aforementioned category, which at the time this law was passed had already been regulated by special acts.

We assume that distinguishing between digital financial assets and digital currency was crucial in order to restrict the turnover of cryptocurrencies. This approach can be rationalized for economic as well as purely political reasons. Its main goal is to protect the national economy. Or to put it another way, the national currency shall be protected from the competition of digital currencies. Nevertheless, while we do not reject the feasibility of protectionist measures applied by the government, we disagree that they should be considered while developing theoretical concepts. We believe that a scientific classification should be based solely on economic principles. From an economic perspective, digital financial assets and digital currencies correlate as wholes and parts. As the study delves further, it is apparent that the only way digital currency tokens differ from other tokens is in their use. Digital currency tokens are used as a means of payment, while other tokens have other uses as determined by the issuing company.

Therefore, we can assume that digital assets can be used as an umbrella term for both tokenized and non-tokenized assets. That is to say, digital assets include both digital financial assets and other types of digital assets.

"Digital financial assets," in turn, are comprised of different financial objects in the digital format, including, for example, digital currency (cryptocurrency), as well as investment tokens and tokens for other financial assets.

"Other digital assets" include any digital assets that are not directly related to digital financial assets.

We reckon that it is unreasonable to differentiate between digital currency tokens and other tokens when attempting to define their legal nature since both are digital assets. Thus, unless otherwise expressly provided, everything that is said about the legal nature of tokens is equally true for digital currency.

3. Legal Nature of Digital Asset Tokens: A Literature Review

Writer-novelist William Gibbson is acknowledged for making the following statement: cyberspace is a hallucination that exists legally and is fueled by millions of operations performed every day across countries. Today, cyberspace refers to a kind of space where interactions between electronic entities take place. Cyberspace makes it possible to distribute, recover, exchange, and manage large amounts of information through a variety of protocol applications. Together, all of these applications and protocols make up the World Wide Web.[28]

Given that cyberspace is a virtual world and therefore unreal, there is no place for real-world objects in it. Thus, in cyberspace, we deal with other unique objects. These objects have different names, and any correlation between the names causes controversy. A digital object exists in the form of a token, which, on the one hand, is viewed as a digital code of the object and, on the other, as a digital key, based on which the system finds a token holder.[29]

Doctrinal disputes around the legal nature of tokens fluctuate between recognizing them as new objects of civil law or a means of securing rights to a traditional object of civil law.

3.1. Tokens as a New Object of Law

The Swiss Bankers Association (SBA) treats tokens as a traditional object of law in their Guidelines on Opening Corporate Accounts for Blockchain Companies (FINMA edition of 16 February 2018[30]) where tokens are classified into money tokens, investment tokens, deposit tokens, etc.

Under French law, a token is *bien incorporel* (intangible property) that can be registered, transferred, and secured using a *dispositif d'enregistrement électronique partagé* (a distributed ledger), allowing the owner of a particular asset to be identified directly or indirectly.[31] This is specified in Article L.552-2 of the FMFC.

In France, like in Switzerland, the concept of "tokens" in the context of the FMFC can include quite different types of digital assets, such as utility tokens, security tokens, or asset tokens. As a result, the following disappointing conclusion made

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[28] Serge Kablan, *Pour une évolution du droit des contrats: le contrat électronique et les agents intelligents* [*Evolution of the Contract Law: Electronic Contract and Intelligent Agents*] 20, 25 (2008) (Feb. 16, 2024), available at https://corpus.ulaval.ca/jspui/handle/20.500.11794/19829?locale=en.

[29] *Василевская Л.* Токен как новый объект гражданских прав: проблемы юридической квалификации цифрового права // Актуальные проблемы российского права. 2019. № 5. С. 111–119 [Lyudmila Vasilevskaya, *Token as a New Civil Right Object: Issues of Legal Classification of Digital Law*, 5 Advanced Topics of Russian Law 111 (2019)].

[30] For more information, *see* https://www.finma.ch/fr/autorisation/fintech.

[31] Barbaroux et al. 2020.

by William O'Rorke appeared in the legal sources: "a token can be what its holder needs."[32]

The legal nature of digital assets in France is rather controversial. Currently, there are two approaches to tackling this legal issue. The first approach appeared before digital asset rules were added to the FMFC. According to France Drummond, digital assets should be classified as a group of objects called *les biens divers* (miscellaneous property or miscellaneous assets).[33] Its turnover is regulated by Articles L.551-1–L.551-5 of the FMFC. According to Éric Normand, miscellaneous property is defined as *placements atypiques* (non-typical financial investments), since they do not belong to the category of banking and financial products.[34]

The second approach to defining the legal nature of digital assets emerged after a series of amendments were made to the FMFC related to the digitalization of the economy. According to Véronique Magnier and Patrick Barban, digital assets are not "miscellaneous property." Instead, they should be viewed as independent objects of the law. This approach is based on the legislative separation of the terms "miscellaneous property" and "cryptocurrency."[35] Dominique Legeais is of the same opinion.[36]

The inclusion of digital assets into the category of 'new objects of law' or *les biens divers* still does not help in determining whether they are individually defined objects of law or objects with generic characteristics. It is commonly known that even cryptocurrencies are not homogeneous. In addition to Bitcoin, there is Ethereum, Namecoin, Litecoin, Peercoin, MonaCoin, Cardano, Ripple, Darkcoin, Dogecoin, etc., which are also based on the bitcoin protocol but differ, for example, in terms of production costs, purpose, or transaction approval rate. Furthermore, they have different prices (i.e. exchange rates). The total number of cryptocurrencies in the world currently approximates 3,000.[37]

Therefore, when digital assets are used in legal practice, it is crucial to decide whether to qualify them as objects with generic characteristics or individually

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[32] William O'Rorke, *Le statut juridique des criptoactifs* [*Legal Status of Cryptoassets*] (2018) (Feb. 16, 2024), available at https://blockchainpartner.fr/wp-content/uploads/2018/03/Blockchain-cryptoactifs-et-ICO.pdf.

[33] France Drummond, *Bitcoin du service de paiement au service d'investissement* [*Bitcoin: From Payment Service to Investment Service*], 5 Bull. Joly Bourse 249 (2014).

[34] Éric Normand, *Réussir l'examen certifié* [*Passing the Certified Exam*] (2020) (Feb. 16, 2024), available at https://www.pearson.fr/resources/titles/27440100046980/extras/F0136_7835.pdf.

[35] For more information, *see* Patrick Barban & Véronique Magnier, *Blockchain et droit des sociétés* [*Blockchain and Corporate Law*] 81 (2019).

[36] Dominique Legeais, *Loi PACTE: les dispositions relatives aux actifs numériques et aux prestataires de services numériques* [*The PACTE Law: The Provisions Relating to Digital Assets and Digital Service Providers*] 26–38 (2019).

[37] *Заваров Н.* Сколько всего существует криптовалют? [Nikolai Zavarov, *How Many Cryptocurrencies Are There?*] (Feb. 16, 2024), available at https://iamforextrader.ru/skolko-vsego-sushhestvuet-kriptovalyut/.

defined property. In this respect, the "Ruling of the Commercial Court of Nanterre No. 2018F00466 of 26 February 2020"[38] is of interest.

The court ruled that bitcoin has the inherent properties of consumability and fungibility, and acknowledged the agreements concluded between the parties as non-cash loan agreements, indicating that bitcoin is consumed at the time of its use, whenever it is used to pay for goods or services, exchanged for legal currency, or used as legal money when granting a loan, despite not being fully recognized as a legal tender.[39] The court also indicated that bitcoin is fungible. Put simply, all bitcoins are considered to be "of the same property and quality" due to the fact that all bitcoins stem from the same protocol, and each bitcoin is equivalent to another bitcoin.[40] According to the court ruling, Article 1347-1 of the French Civil Code shall be applicable to bitcoins, since in line with this article, fungible obligations[41] are monetary obligations regardless of the currency, if the currency can be converted into another currency, or obligations, the subject of which are things of the same kind.[42]

Mehdi Bali has a different viewpoint, stating that cryptocurrencies should be considered individually defined property, since they are tied to a specific transaction number.[43] Gaëlle Marraud des Grottes would disagree, as he believes that each bitcoin has no unique identification number but corresponds to the Unspent Transaction Output (UTXO), which is an alphanumeric sequence reflecting a transaction history of each bitcoin. As a result, such a transaction record reflects all of its holders from the moment it was created while mining. Although it is conceivable to obtain a transaction record for each bitcoin, this does not allow for bitcoin individualization under the French Civil Code, i.e. is impossible to classify each bitcoin as a specific entity. In this case, traceability and fungibility should not be confused.[44]

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38 The court ruling is available at http://www.rdmf.es/wp-content/uploads/2020/03/TRIB.-COMERCIO-NANTERRE-26.02.2020-Bitcoin.pdf.

39 BTC (Bitcoin) is considered to be "consumed" whenever used, whether to pay for goods or services, to exchange it for currency, or to lend it – much like any other legal tender, even though it is not officially recognized as legal tender; As such, BTC is consumable by its use. *See* https://www.doctrine.fr/d/TCOM/Nanterre/2020/U42C38A741278C2180646.

40 BTCs are fungible, being "of the same type and the same quality" in the sense that all BTCs come from the same computer protocol and that they are subject to an equivalence relation with other BTCs. *See* https://www.doctrine.fr/d/TCOM/Nanterre/2020/U42C38A741278C2180646.

41 Hubert de Vauplane, *Fongibilité du Bitcoin: l'exemple du «Bitcoin Fork» et des contrats de prêt de Bitcoin* [*Bitcoin Fungibility: Case Study of the Bitcoin Fork and Bitcoin Loan Contracts*], 2/3 Revue Trimestrielle de Droit Financier 89 (2018) (Feb. 16, 2024), available https://www.kramerlevin.com/a/web/45946/181010-RTDF-Vauplane-Hubert-de-Fongibilit-du-Bitcoin-l-exempl.pdf.

42 According to Article 1347-1 of the Napoleonic Code, obligations are fungible if they involve a sum of money, even if in different currencies, provided that they can be converted, or if they have as their subject matter a quantity of things of the same generic kind.

43 Mehdi Bali, *Les cryptomonnaies, une application des blockchain technologies à la monnaie* [*Cryptocurrencies: An Application of Blockchain Technologies to Money*] 1–6 (2016).

44 Gaëlle Marraud des Grottes, *Bitcoin, fork et prêt: un arrêt structurant vient d'être rendu* [*Bitcoin, Fork and Loan: A Structuring Stop Has Just Been Made*] (2020) (Feb. 16, 2024), available at https://www.

Based on the foregoing, it seems reasonable to conclude that any claims for two reciprocal obligations in bitcoin can be terminated by offsetting, since they are homogeneous. However, if such obligations are denominated in different cryptocurrencies, they can no longer be considered homogeneous.

Bearing in mind that one and the same cryptocurrency has the same generic characteristics (including its exchange rate at a certain time), it then seems reasonable to agree with the scholars who assume that tokens of the same cryptocurrency are homogeneous, fungible, and consumable. And as such, tokens of the same cryptocurrency can potentially be the subject matter of a loan agreement.

Thus, another conclusion follows: tokens of one cryptocurrency borrowed by a debtor cannot be replaced by tokens of another cryptocurrency when returned to the creditor without the creditor's consent. That is to say, this operation is impossible without the creditor's consent, as it would constitute a change in the subject matter of contractual performance.

As a result, in accordance with French law, following the amendments to the FMFC, digital assets are now recognized as a new, distinct subject of civil law.

There are few research papers in Russia that provide sufficient grounds for the idea that tokens are objects of law.[45] For example, Lyudmila Novoselova and Oleg Polezhaev perceive tokens as independent objects of civil law only when they are functionally related to some traditional object of civil law (such as real estate, copyright objects, etc.). Thus, tokens can be qualified as new objects of law only when they represent a traditional object of civil law (as in real estate, intellectual property, etc.) in the blockchain. In other cases, a token is not an object of civil law since it does not have any value or utility.[46]

3.2. Tokens as a Way of Securing Civil Rights to a Traditional Object

Digital currency under Russian law is classified as property.[47] However, property can exist in the form of things, property rights, as well as other objects, as listed in

actualitesdudroit.fr/browse/tech-droit/blockchain/26266/bitcoin-fork-et-pret-un-arret-structurant-vient-d-etre-rendu.

[45] *Новоселова Л., Полежаев О.* О правовом режиме объектов гражданских прав, выраженных в цифровых активах // Закон. 2020. № 11. С. 165–172 [Lyudmila Novoselova & Oleg Polezhaev, *On the Legal Regime of Objects of Civil Law Expressed in Digital Assets*, 11 Law 165 (2020)].

[46] *Новоселова Л., Полежаев О.* Цифровые знаки как объекты гражданских прав // Предпринимательское право. 2019. № 4. С. 6 [Lyudmila Novoselova & Oleg Polezhaev, *Digital Signs as Objects of Civil Law*, 4 Business Law 3, 6 (2019)].

[47] Article 3 of Federal Law No. 115-FZ "On Counteracting the Legalization (Laundering) of Criminally Obtained Incomes and the Financing of Terrorism" of 7 August 2001, which states: "For the purposes of this Federal Law, digital currency is recognized as property." This stance of Russian legislators emerged as a result of a complex and contradictory judicial practice, which did not immediately recognize cryptocurrency as property. In case No. A40-124668/17-71-160F of 5 March 2018, the Moscow Arbitration Court is known to have refused to recognize bitcoin as property. Therefore, the court did not include it in the bankruptcy estate of a bankrupt citizen. For more information, *see*

Article 128 of the Russian Civil Code. The type of property that digital assets belong to is described in Part 2 Article 1 of Federal Law No. 259-FZ, "On Digital Financial Assets, Digital Currency and On Amendments to Certain Legislative Acts of the Russian Federation" of 31 July 2020. According to this provision, any digital financial assets shall be recognized as digital rights.

The conclusion that a token is the right to an object rather than an object of law can also be deduced from the laws of Belarus. Appendix No. 1 to Decree of the President of the Republic of Belarus No. 8 "On the Development of Digital Economy" of 21 December 2017 states that a digital token is an entry in the ledger of transaction blocks (blockchain), which is another distributed information system that certifies that a token holder has the rights to objects of civil law and that a token is a cryptocurrency.

Lydia Mikheyeva, in line with the lawmakers, defines digital assets as digital rights and suggests using the centuries-old German right-to-right theory in order to better explain their legal nature.[48] According to this theory, the subject of the right of one person may be a right that already belongs to another person.[49] The right-to-right theory was developed by German lawyers following the recognition of the right of obligation as part of the creditor's property and the extension of the absolute rights protection regime to include initially relative legal relationships.[50] Nonetheless, it is hard to agree with this standpoint since this theory cannot consistently explain the legal nature of all public relations arising from tokens. The theory is interesting in cases where the object of law of one person is either the right of obligation (claim) or the property right of another person. However, the right-to-right theory cannot be applied when the property right of a person becomes the object of law for the same person. In this case, a thing must be recognized as an object of law.

Currently, there is a practical need for tokens that can confirm one's property right to an object of law. Consider the example of "Everlenger," which is an immutable blockchain, used for the certification and transaction records of diamonds. Everlenger provides permanent recordkeeping of diamond ownership, which allows for the identification and tracking of gems using a single database. A diamond's serial number is registered in a centralized database (or in the blockchain), and users, such as insurance companies or law enforcers, have access to its entire record, including changes in the form of ownership and insurance features. At present, there are over

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http://kad.arbitr.ru/PdfDocument/3e155cd1-6bce-478a-bb76-1146d2e61a4a/45c24bb9-9d22-4-b57-8742-9a778f041b99/A40-124668-2017_20180305_Opredelenie.pdf. However, on 7 May 2018, the Court of Appeal overturned this ruling. For more information, *see* http://www.forbes.ru/finansy-i-investicii/361107-bitkoin-kak-imushchestvo-v-rossii-razreshili-vzyskivat-kriptovalyutu-s.

48 *Михеева Л.* Цифровые активы в системе объектов гражданских прав // Закон. 2018. № 5. С. 16–30 [Lydia Mikheyeva, *Digital Assets in the System of Objects of Civil Law*, 5 Law 16 (2018)].

49 *Гамбаров Ю.* Курс гражданского права. Часть общая [Yuri Gambarov, *Course in Civil Law: General Part*] 578 (1911).

50 Ludwig Ennekcerus, *Course in German Civil Law* 259 (1949).

900,000 diamonds registered in Everlenger that can be traced using blockchain technology.[51]

Therefore, in cases when a token confirms its holder's property right to a thing in the real world, it shall be recognized that such a token is a means of securing property rights in the virtual world, the object of which is a real-world object. In other words, a token becomes a symbol of this thing in cyberspace,[52] and whoever holds the token owns the thing.

The types of civil rights that tokens can certify in a distributed ledger are another matter of doctrinal dispute.

Since digital assets are considered digital rights, according to Russian law,[53] and digital rights are, first of all, rights of obligation,[54] the largest group of Russian researchers, following in the footsteps of Russian legislators, claim that tokens can mostly confirm rights of obligation in the blockchain.[55]

A similar idea is upheld by the Belgian researcher, Simon Geiregat. However, unlike Russian researchers, who consider tokens to be rights of obligation, Simon Geiregat suggests addressing tokens based on the grounds for the accrual of such rights. According to Simon Geiregat, cryptoassets are multilateral agreements.[56]

And finally, there is a group of researchers who assert that tokens can certify the absolute rights of a token holder while at the same time holding all third parties liable. For example, according to Roman Yankovsky, cryptocurrencies confirm absolute rights (which comprise the rights of the copyright holder and all third parties) rather than relative rights (such as between debtor and creditor). Roman Yankovsky states that technologically limited records in the blockchain represent absolute rights, and by their very nature, they are similar to things: their value is known, they transfer from owner to owner in a strictly defined order, and they do not contain any claims (like securities).[57]

Unlike Roman Yankovsky, who maintains that there is no absolute right, in his opinion, that tokens can confirm, Aleksei Sazhenov asserts that cryptocurrencies

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[51] *Генкин А.С., Михеев А.* Блокчейн. Как это работает и что ждет нас завтра [Artem Genkin & Aleksei Mikheyev, *Blockchains: How It Works and What Awaits Us Tomorrow*] 340–41 (2018)

[52] In this regard, we do not agree with the opinion that if we "tokenize" the right in rem, then a digital transaction will be a clear act of recognition of the right-to-right theory, which is denied by our civil laws (but not a doctrine!).

[53] *See* Part 2 of Art. 1 of Federal Law No. 259-FZ "On Digital Financial Assets, Digital Currency and On Amendments to Certain Legislative Acts of the Russian Federation" of 31 July 2020.

[54] *See* Art. 141.1 of the Russian Civil Code.

[55] For more information, *see* Genkin & Mikheyev 2018.

[56] Geiregat, *supra* note 14, at 1144–49.

[57] *Янковский Р.* Государство и криптовалюты: проблемы регулирования [Roman Yankovsky, *Government and Cryptocurrencies: Regulatory Issues*] (2017) (Feb. 16, 2024), available at http://msu.edu.ru/papers/yankovskiy/blockchain.pdf.

are objects of property rights.[58] This idea converges with that of Sir Geoffrey Vos, the Chancellor of the UK High Court and other English researchers who also share the view that cryptoassets are a thing and an object of property rights.[59] For example, bitcoins meet the definition of property in the Proceeds of Crime Act 2002. [60] This law applies to a number of objects, including money, all forms of real or personal property, things under claim, and other tangible or intangible property. This is reflected in judicial practice as well.[61] In general, cryptocurrencies possess the fundamental feature of an object of intangible property that has material value.[62] They can be classified as personal property rights that can only be claimed or secured by action rather than physical possession.[63] According to Sir Geoffrey Vos and other researchers, cryptoassets should therefore not be classified as a thing in action but rather considered as a third type of property rights.

It is notable that this English doctrine has been endorsed in China. In July 2019, a Chinese court in Hangzhou ruled that bitcoin has such property features as value, rarity, and availability, qualifying it as an object of virtual property.[64] This appears to be the first comprehensive discussion of the property features typical of bitcoin in Chinese courts. However, it is important to emphasize that it is not recognized as a legal tender, but it is a legally protected asset.[65] In turn, the People's Court of Futian District in the city of Shenzhen ruled that Ethereum is a piece of legal property with economic value.[66] In addition, China's Civil Code protects inheritance rights pertaining to cryptocurrency.[67]

Although the above-mentioned concept of English common law that cryptoassets can be the object of property rights may appear reasonable, it cannot be accepted in the countries that follow continental law without further justification. The reason

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58 *Саженов А.* Криптовалюты: дематериализация категории вещей в гражданском праве // Закон. 2018. № 9. С. 106–121 [Aleksei Sazhenov, *Cryptocurrencies: Dematerialising the Category of Things in Civil Law*, 9 Law 106 (2018)].

59 Vos et al., *supra* note 16.

60 *See* https://www.legislation.gov.uk/ukpga/2002/29/contents.

61 For more information, *see* http://news.met.police.uk /news/379015.

62 For more information, *see* https://www.nortonrosefulbright.com/en-gb/knowledge/publications/6a118f69/singapore-courts-cryptocurrency-decision-implications-for-trading-smart-contracts-and-ai.

63 *See* https://www.iclr.co.uk/document/1901000528/casereport_46312/html.

64 *See* http://hztl.zjcourt.cn/art/2019/7/18/art_1225222_41401620.html.

65 For more on the Chinese court ruling that Bitcoin is an asset protected by law, *see* https://news.bitcoin.com/chinese-court-bitcoin-asset-protected-by-law/.

66 For more on the Chinese court declaring that Ethereum is legal property with economic value, *see* https://news.bitcoin.com/chinese-court-ethereum-legal/.

67 For more on China passing a law protecting cryptocurrency inheritance, *see* https://news.bitcoin.com/china-law-cryptocurrency-inheritance/.

for this is that the structure of property rights under common and continental law is very different from one another.

In continental law, property rights are perceived as a system of the owner's prerogatives, encompassing possession, use, and disposal. In common law, there are no property rights for an individual. One of the definitions of property rights, as proposed in the Anglo-American doctrine (by A. Honore), includes eleven elements rather than three core elements of property rights that are customary for the continental law countries. Becker, applying A. Honore's definition of property rights, believes that not all but only some of its elements or their combinations can reasonably be classified as variants of the property right. However, these combinations alone, according to Becker's calculations, amount to around 1,500 property options.[68]

Furthermore, according to Rosa Garcia-Teruel and Héctor Simón-Moreno, not only ordinary things (material objects) can be the object of property rights, but also the so-called *res incorporales*. Referring to Christian von Bar and Ulrich Drobnig,[69] they point out that all legal systems in European countries recognize not only material things as objects of *in rem* rights but also immaterial things as objects of property rights (for example, patrimonial rights).[70]

Even so, this conclusion appears to be somewhat premature for countries where civil law was historically the dominant legal system and where property rights have traditionally been regarded as rights *in rem*. This conclusion remains unchanged to this day. It is likely that the authors had an entirely different trend of civil law in mind. In response to practical needs, a number of continental law countries developed a set of norms that allowed for the transfer of so-called immaterial things by virtue of contracts that were drawn up specifically to enable the transfer of things. For example, as per Paragraph 4 of Article 454 of the Civil Code of the Russian Federation, not only a thing but also property rights, including digital rights, can be the subject matter of a sale and purchase agreement.

However, even such a mild departure from the theory of classical continental law draws criticism from legal sources. Thus, Daniel Guggenhiem and Anath Guggenhiem state that traditional legal structures (such as loans and storage) that imply property transfer in the form of corresponding material things cannot be used to explain the legal nature of a bank deposit, for example, which is arranged through *le contrat de*

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68 *Кикоть В.* Современные тенденции и противоречия учения о праве собственности в развитых капиталистических странах: научно-аналитический обзор // Актуальные проблемы современного буржуазного гражданского права: сборник научно-аналитических работ [Vladimir Kikot, *Modern Tendencies and Contradictions in the Doctrine of Property Rights in Capitalist Countries: Scientific and Analytical Review*, in Advanced Topics of Modern Bourgeois Civil Law: A Collection of Scientific and Analytical Works] 38 (1983).

69 Christian von Bar & Ulrich Drobnig, *The Interaction of Contract Law and Tort and Property Law in Europe* (2009).

70 Rosa M. Garcia-Teruel & Héctor Simón-Moreno, *The Digital Tokenization of Property Rights: A Comparative Perspective*, 41 Computer L. & Sec. Rev. (Article 105543) (2021).

depôt. In modern banking, the majority of deposit operations are performed through non-cash settlements, with non-cash money not being regarded as things. Daniel Guggenhiem and Anath Guggenhiem ultimately conclude that bank deposits operate based on a non-defined *sui generis* agreement, precisely because that agreement no longer applies to "things." In this case, any norms regarding commission agreements, loan agreements, or custody agreements can be applied only by analogy.[71]

Consequently, it follows that, unlike common law, which recognizes not only classical things, but also the so-called "immaterial things" as objects of property rights, continental law takes into account only material things. That is why Anna Zharova and Ian Lloyd fail to support Aleksei Sazhenov's stance on the legal nature of cryptocurrency.[72]

The above review of perspectives on the legal nature of cryptoassets highlights a certain lack of unanimity. It leads to the following disappointing conclusion made by William O'Rorke: a token can be what its holder needs. As a new object of civil law (a kind of "digital UFO"), tokens require a *sui generis* regime that would correspond to the way of using them as chosen by their user, be it fundraising, exchange of securities, or donation, etc.[73]

4. The Legal Nature of Digital Assets: A Synergetic Concept

The scholars whose works we have discussed in the preceding section analyzed digital assets discretely, focusing on the aspects they were interested in. This article aims to put all of those various aspects together and propose a holistic concept of the legal nature of digital assets and digital asset tokens.

Even though digital assets are not limited to tokens, it is possible to start research into the legal nature of digital assets by examining the legal nature of tokens, given that it is tokenized digital property that makes up the overwhelming majority of digital assets.

A token is understood as a long digital sequence created using specialized blockchain-based software. Thus, tokens and digital currencies, in their respective forms, constitute a common type of technical solution (consisting of sequences of 0s and 1s). It is nothing more than a form of digital technology. According to Andres Guadamuz, "a token is simply a code that represents fungible goods for trade, and these can be coins, shares, outcomes or tickets, or everything else which

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71 Daniel Guggenhiem & Anath Guggenhiem, *Les contrats de la pratique bancaire suisse* [*Contracts of Swiss Banking Practice*], 5 Stämpfli Editions SA Berne 200, 200–01 (2014).

72 Anna Zharova & Ian Lloyd, *An Examination of the Experience of Cryptocurrency Use in Russia: In Search of Better Practice*, 34(6) Computer L. & Sec. Rev. 1300 (2018).

73 William O'Rorke, *Blockchain, cryptoactifs, ICO: panorama des enjeux juridiques* [*Blockchain, Cryptoassets, ICO: Overview of Legal Issues*] (2018) (Feb. 16, 2024), available at https://dspace.spbu.ru/bitstream/11701/44300/1/01.pdf.

is transferable and countable."[74] The 'code' in and of itself, however, has no meaning, no legal nature, and is of no use to anyone.

However, we disagree with Andres Guadamuz, who rejects the very idea of considering various blockchain-based technical solutions as legal categories. Speaking about smart contracts, he asserts that "smart contracts are not contracts and we cannot think of smart contracts as perfect self-executing code expressed in an immutable distributed ledger. It is more useful to think of them as computer programs running on the cloud."[75]

There is no doubt that the technological nature of tokens, smart contracts, or other technical solutions does not purport that they are property, objects of civil law, or civil rights. They acquire a certain value and a corresponding legal status only when they become part of legal relations. For example, the price of bitcoin exceeded 4 million rubles only due to a simultaneous decision taken by a large number of investors to reject fiat currency and invest in bitcoin.[76]

Any social relations exist in the real world, rather than in cyberspace or a distributed ledger. Therefore, civil rights emerge, change, and terminate in the real world as well, while in cyberspace they can only be confirmed, secured, and transferred. However, objects of civil law exist both in the real world and in cyberspace, and tokens interact with them in different ways.

Blockchain-based tokens perform several functions, including those of legitimization, transportation, and confirmation.

Legitimization becomes possible only if a token holder has a secret key to a digital wallet that keeps a record of the holder's tokens. A person who owns and controls a private key by some lawful means would generally be treated as the owner of cryptoassets.[77] In this way, tokens make it possible to legitimize an individual as a "rights owner" of a certain property that is blockchain-secured. When tokens establish relations between a legal object and a legal subject, they act as a confirmation because they confer respective rights to cryptoassets that are recorded in a distributed ledger to a legal subject.

Here is how a token performs a transportation function. According to Artem Genkin and Aleksei Mikheyev, blockchain systems resemble electronic mail, but instead of emails, one can send money, copyrights, and other rights of claim.[78] We agree with this viewpoint in light of the fact that the transfer of tokens in cyberspace is equaled to the transfer of things in the real world and results in "conveyance" in the real world. Thus,

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74 Andres Guadamuz, *All Watched Over by Machines of Loving Grace: A Critical Look at Smart Contracts*, 35(6) Computer L. & Security Rev. 1 (2018).

75 *Id.* at 8, 15.

76 At the exchange rate on 13 March 2021.

77 Vos et al., *supra* note 16.

78 Genkin & Mikheyev 2018, at 168.

the transfer of tokens in cyberspace that confirm the right of obligation (claim) is equal or essentially the same as the transfer of respective rights (claims) in the real world. Copyright is transferred in a similar manner. Guido Noto la Diega offers the following example: a blockchain-based music platform such as Mycelia can allow performers to issue a token that can be transferred only when its holder signs a transaction with their private key.[79] According to Andres Guadamuz, authors can publish works on the blockchain and then use smart contracts to automate the management and control of access to their works and the conditions under which they can be accessed.[80] Thus, the right to use the work is transferred.

In view of the foregoing, the transfer of tokens in cyberspace is legally equivalent to the transfer of objects of civil law in the real world and, at the same time, results in the transfer of rights to the object. Therefore, the transfer of tokens should be considered as a new way to transfer civil rights.

There is a close connection between the confirmation function of tokens and the right to cyberassets, which is confirmed by tokens.

Based on the correlation between objects of civil law in the real world and their respective tokens in a distributed ledger, all digital objects can be classified into one of the following groups:

1. First of all, let us consider traditional objects of civil law in the real world, which can be recorded using tokens in distributed ledgers. In this regard, we may recall the above example: Everlenger – an immutable distributed ledger for the certification and transaction records of diamonds.[81] Diamonds in this case act as objects of civil law. Tokens representing these diamonds serve as a digital representation, also known as a "digital avatar," of the real-world diamonds in a distributed ledger. A legal entity that is authorized to handle tokens for such diamonds under the distributed ledger rules is considered a qualified owner of diamonds. Tokens in this case are a symbol (an avatar) of an object of civil law in the real world, and at the same time, they confirm property rights to the diamonds in a distributed ledger.

Thus, an object of civil law existing in the real world is recorded and transferred in cyberspace. In this scenario, the blockchain is a distributed ledger that is "merely a record of ownership of conventional real-world assets, which can be said to have a particular location".[82]

In the above example, tokens serve as a way to secure a civil right to a tangible object in cyberspace. Tokens perform the same function as documents of title do

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[79] *Ла Диега Г.Н.* Блокчейн, смарт-контракты и авторское право // Труды ИГП РАН. 2019. № 14(3). С. 29 [Guido Noto la Diega, *Blockchain, Smart Contracts, and Copyright Law*, 14(3) Proceedings of the Institute of State and Law of the RAS 9, 29 (2019)] (Feb. 16, 2024), available at https://cyberleninka.ru/article/n/blokcheyn-smart-kontrakty-i-avtorskoe-pravo/viewer.

[80] Guadamuz 2018, at 7.

[81] Genkin & Mikheyev 2018, at 340–41.

[82] Vos et al., *supra* note 16.

towards objects of civil law in the real world. The difference is that tokens do not co-mingle with the objects of civil law that they represent in a distributed ledger. Tokens are basically analogous to a digital mark of legitimization, provided that the owner of a digital wallet has a private key to it and can use it in line with the protocol.

Moreover, in the above example, the absolute right to a tangible object in the real world is the property right, whereas tokens serve to confirm or validate property rights to objects in a distributed ledger.

2. There are tokens for objects that do not exist in the real world and have no value outside of corresponding social relations. Typical examples of such digital property include cryptocurrencies and digital securities. They are merely a symbolic representation (in other words, a token), devoid of inherent value outside of social relations. Sometimes the terms "token" and "cryptoasset" are used synonymously in the official documents of various countries. For example, in South Africa in 2019, the Intergovernmental Fintech Working Group (IFWG) developed a document that suggested tokens (digital representations) should be understood as cryptoassets. As per the Notice of the Banking Regulatory Commission, Main Department of Industry and Information Technology, Central Internet Office of the People's Bank of China, tokens are virtual currency.[83] In this context, it is appropriate to equate tokens with cryptoassets because cryptoassets are also blockchain-based digital assets created through asymmetric encryption. Today, cryptoassets include cryptocurrencies (ICOs) and uncertified securities (IPOs). An ICO (Initial Coin Offering) usually refers to a token offered to members of the public by an entity interested in raising funds, and those who participate pay for the token in return for some sort of benefit in the project, such as a license to use software, a claim to an underlying asset, or a promise of a share in future profits.[84]

Tokens for such digital property merge with the property itself and serve as representations of it: "It is merely a token to be used within the system."[85] In this instance, tokens are independent objects of civil law (in other words, cryptocurrencies or intangible securities).

Given that no third parties are permitted to violate the rights of the owner of these digital assets, we reckon that absolute legal relations are established between the owner of cryptoassets and all the third parties, while the owner is entitled to an absolute right to these digital financial assets. An object of this right cannot be recognized as a thing under continental law. Therefore, an absolute right to this object does not constitute a property right.

3. Products of human intellectual activity can also be recorded in a distributed ledger. In such a scenario case, objects are recorded using tokens and may exist

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[83] Igor Sarnakov, *Digital Financial Assets: Segments and Prospects of Legal Regulation in the BRICS Countries*, 6(4) BRICS L.J. 95 (2019).

[84] Guadamuz 2018, at 7.

[85] Vos et al., *supra* note 16.

in the real world or in cyberspace. Examples of such objects include databases, digital photographs, software, and various pieces of literature, etc. Some sources provide examples of how tokens record copyright. According to Guido Noto la Diega, a blockchain platform could indeed issue a token bearing a timestamped copyright registration, which would serve as a proof of authenticity.[86]

Thus, tokens for the above-mentioned objects shall be considered as a means to secure products of human intellectual activity in a distributed ledger. Such tokens legitimize an individual as a rights holder. Absolute legal relations are established between the rights holder and all the third parties, and the rights holder acquires an absolute right to this product of human intellectual activity. This right in Russian law is referred to as an exclusive right.[87]

4. Some digital objects exist primarily in cyberspace and, *prima facie*, appear to be products of human intellectual activity, but they are not objects of an exclusive right since no intellectual activity was involved in their creation. Such objects, for instance, may include images created by artificial intelligence. Provided that there is a rights holder, this digital property will be an object of a special absolute right that is established between a rights holder and any third parties, has no name in continental law, and cannot be associated with property rights because its object is intangible.

If such property is recorded in a distributed ledger, tokens for it shall be considered a digital avatar of that property. Furthermore, they also serve as a means to identify the rights holder and confirm that they have an absolute right to such digital property.

5. In the event that the right to use an object is transferred by virtue of an agreement, for example, a loan agreement, a token issued for this object in pursuance of the agreement confirms the right of obligation (claim) and legitimizes the tenant as a rights holder.[88]

The legal nature of an absolute right to cryptoassets, as described in sections 2 and 4, namely, the rights to cryptocurrencies, virtual uncertified securities, and images created by artificial intelligence, is of particular interest because there is no detailed description of these rights in continental law.

In order to tackle this challenge effectively, it is crucial to draw some intermediate conclusions first.

As we have deduced above, tokens in a distributed ledger may represent either traditional legal objects or completely new ones. When it comes to traditional legal objects (such as things, rights of claim, and products of human intellectual activity), tokens become a means to record them in a distributed ledger, legitimize

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86 Noto la Diega, *supra* note, at 25.

87 Similar to intellectual property rights (IPR).

88 For more information, *see* Цифровое право в банковской деятельности: сравнительно-правовой аспект [*Digital Law in Banking: Comparative Legal Aspect*] 177–81 (2021).

rights holders, and confirm corresponding rights to these objects. When speaking about new objects of civil law (for example, cryptocurrency and virtual uncertified securities), tokens become independent objects of civil law and are *de facto* equated with cryptocurrency and virtual uncertified securities.

In the majority of instances, tokens in a distributed ledger represent a traditional object of civil law that belongs either to the real world or cyberspace. The types of rights associated with these objects are also traditional, such as property rights, exclusive rights to products of human intellectual activity, and rights of obligation.

When a token is defined as an independent legal object (as in the case with digital currency and virtual uncertified securities), it takes on the status of an independent object with a range of various rights, both absolute and relative.

Under the continental law doctrine, an absolute right to digital assets (which include digital currencies and digital securities) is not a property right, although functions as its analogue. According to Sir Geoffrey Vos and other scholars,[89] cryptoassets should be treated as property. However, continental law does not allow this. According to this doctrine, only a thing can be treated as property. This might also be the reason why Aleksei Sazhenov had to conclude that cryptoassets are things.[90] Yet, cryptoassets can hardly be considered things, given that things are tangible objects, that is, *res corporales*. The term *res incorporales* is certainly applicable to cryptocurrencies, but it is nothing more than a *façon de parler* (figure of speech). It refers to intangible objects regulated by the same legal regime as things; this legal regime is similar to the concept of property rights under continental law.

The objects of this absolute right also include other digital assets that exist in cyberspace, unless they are designated as objects of exclusive right. This refers, for example, to images created by artificial intelligence.

In other words, what is being referred to here is the absolute right to digital assets, which has no name in continental law.

Therefore, an absolute right to digital assets shall be defined as a new absolute right. Obviously, we cannot advise the authorities of the countries that follow continental law on what names they should assign to such concepts. However, the name for the above-mentioned rights in Russia can be deduced from the Russian Civil Code by means of a proper interpretation of Article 141.1 of the Russian Civil Code. As per Article 141.1 of the Russian Civil Code, digital rights include rights of obligation and other rights. A non-exhaustive list of digital rights allows the interpretation of the phrase "other rights" as any rights pertaining to digital assets, including absolute rights.

Consequently, according to Russian law, digital rights include both rights of obligation and absolute rights.

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89 Vos et al., *supra* note 16.

90 Sazhenov, *supra* note 58, at 114, 115, 120.

As stated above, tokens for digital assets in a distributed ledger may represent any tangible property in the real world, which is an object of two types of absolute rights: property rights and exclusive rights. Thus, tokens for this property confirm either property rights or exclusive rights. And clearly, neither property rights nor exclusive rights to products of human intellectual activity that are confirmed with digital technologies can be considered "absolute digital rights."

The authors therefore suggest that absolute digital rights should be understood as absolute rights to digital property that exist only in cyberspace, unless it can be an object of property rights or exclusive rights.

Conclusion

The authors of this article have attempted to bring together the best ideas and practices of global jurisprudence in order to define the legal nature of digital assets (cryptoassets) from the point of view of continental civil law, taking advantage, where possible, of conclusions and propositions available in common law.

According to Sir Geoffrey Vos and a number of other scholars, cryptoassets are objects of property rights.[91] However, continental law cannot recognize an absolute right to digital assets as a property right because, under the doctrine of continental law, only a thing can be an object of property rights, while digital assets are intangible and therefore not things.

This study demonstrated that digital assets are objects of a new absolute right, which is similar to property rights, with the only difference being that an object is not a thing. It is this right that is referred to by the authors as "absolute digital right."

Due to the fact that digital assets are involved in economic turnover, they are not only objects of absolute digital rights but also of various agreements and the resultant legal relations.

The majority of digital assets are recorded in distributed ledgers using tokens. In most cases, tokens in a distributed ledger represent distinct objects of civil law that belong either to the real world or cyberspace. Tokens in this instance function as documents of title. Tokens also confer the right to ownership over an object to a particular legal subject. Tokens for cryptocurrencies and digital securities are new independent objects of civil law. Valid conclusions have been drawn on both sides, by scholars who argue that a token is an object of civil law[92] and those who assert that a token confirms rights to these objects.[93] A token, in essence, combines both functions. It can represent a legal object or belong to a legal subject and confirm their right to a legal object.

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91 Vos et al., *supr*a note 16.

92 Dominique Legeais; France Drummond; Eric Normand; Patrick Barban; Véronique Magnier; Nicolas Barbaroux; Richard Baron; Amélie Favreau; Lyudmila Novoselova; Oleg Polezhaev.

93 Lydia Mikheeva; Simon Geiregat; Roman Yankovsky; Aleksei Sazhenov; Sir Geoffrey Vos, et al.

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