



Research article

UDC 34:004:347.73:336.1

EDN: <https://elibrary.ru/yxcjno>

DOI: <https://doi.org/10.21202/jdtl.2024.11>

Financial and Legal Development of Social Relations Using Digital Currencies in Metaverses

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Keywords

blockchain,
Central Bank,
cryptocurrency,
digital currency,
digital ruble,
digital sovereignty,
digital technologies,
financial law,
legislation,
metaverse

Abstract

Objective: based on the analysis of financial and legal policy of certain jurisdictions, to determine the initial prospects of financial and legal development of social relations in metaverse using digital currencies.

Methods: the research is based on the system of cognitive tools: first of all, formal-legal, comparative-legal, statistical methods, and the method of legal forecasting, which help to interpret the legal norms and financial-legal policy of various jurisdictions, assess the degree of current development of legislation on regulation of technologies in virtual worlds, and formulate ideas about the financial-legal regulation of public relations using digital currencies in the metaverse.

Results: the study reveals that modern legislation on metaverses is at the initial stage of its formation, as in developed jurisdictions metaverse is still considered only as a future technology. The author shows the degree of popularity of the metaverse first prototypes and the growing attention of some states to the metaverse in order to develop their socio-economic potential and consolidate international leadership in digital development. The paper points out the shortcomings of the metaverse definitions developed in doctrine and practice, and long proposes the author's definition. It is argued that in order to fully integrate metaverse technology into a certain country, whose policy is focused on achieving (maintaining) a high rating in terms of the economy digital transformation, it is necessary to determine the currency that will be legitimately used in the metaverse in future. A conclusion is made that it is necessary to plan financial and legal policy in this area, which will largely depend on the legal regime of cryptocurrency in a particular country. It is argued

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that further development of the metaverse concept in Russia will depend on the results of testing the digital ruble.

Scientific novelty: the paper is one of the first devoted to the convergence of metaverse and financial law, which proposes a concept for establishing full-fledged legality of digital currency in the metaverse depending on the attitude of a particular country to decentralized finance. Along with popular definitions formulated in doctrine and practice, the author presents their own interpretation of the metaverse, indicating its essential features.

Practical significance: the conclusions and proposals obtained can be used to improve the mechanisms of financial and legal regulation of social relations under the emerging metaverse concept. The presented ideas are important for further research of various financial and legal aspects of metaverses' development and functioning.

For citation

Sitnikov, M. S. (2024). Financial and legal development of social relations using digital currencies in metaverses. *Journal of Digital Technologies and Law*, 2(1), 200–220. <https://doi.org/10.21202/jdtl.2024.11>

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Introduction

A metaverse is defined as the next stage in the Internet development, which is gradually being fulfilled in real life. One of the motives for the metaverses creation is the development of commerce, which implies the movement of money flows within this virtual space. This circumstance cannot but cause interest of the state, suggesting the need to elaborate a flexible and effective legal regulation of a new form of economic turnover for the purposes of financial and legal policy of the state. In this connection many questions arise, including, in particular, the interest of the state in the metaverses development, specific options of financial regulation of the metaverses market, the

possibility of adapting the existing finance legislation to the emerging metaverses market, and others. This paper is devoted to answering these and some other questions.

1. Concept of metaverse and specificity of financial and legal policies of individual jurisdictions

One cannot imagine the future of all legal matter without the functioning of digital technologies. Recently, the issue of legal regulation of social relations in the innovative virtual space – metaverse – has gained relevance. Legal regulation of relations in virtual worlds has been the object of research for more than 10 years. For example, in 2008, a large-scale scientific study on the law of virtual worlds was published, authored by an American jurist B. T. Duranske (Duranske, 2008). A year before that, a work of another American legal scholar, E. Reuveni, had been published, covering the issues of copyright and contract law in the virtual world (Reuveni, 2007). In Russia, among the first of the most well-known publications on this topic are, in particular, the studies of V. V. Arkhipov (Arkhipov, 2013) and A. I. Savelyev (Savelyev, 2014). At the same time, the authors understood the virtual world primarily as an online game.

The metaverse cannot be labeled solely as an online game. These categories relate to each other as general and particular, respectively. Therefore, a metaverse is something larger than an ordinary online game. It should be noted that the subject of metaverses has long been mentioned in scientific research. For example, in 2008, American scientists in co-authorship with a Swiss expert drew attention to the possibility of embodying the idea of a metaverse (Hendaoui et al., 2008). The currently high attention to metaverse is very often associated with Meta company¹. In autumn 2021, Mark Zuckerberg stated that one of the corporation's activities would be connected with the construction of immersive virtual space Horizon Worlds. Although the project has received wide publicity, it should be said that the metaverse development is not limited to the embodiment of Horizon Worlds. The fact is that today there are many other projects called metaverse. According to statistics from foreign researchers, the total capitalization of the virtual real estate market in some metaverse prototypes was estimated at more than 1.4 billion dollars in 2022². Leadership is given to such platforms as Decentraland, The sandbox, and Somnium Space. Positive dynamics was also observed in the first quarter of 2023³.

¹ The organization is recognized as extremist, its functioning is prohibited in the territory of the Russian Federation.

² 2022 Annual Metaverse Virtual Real Estate Report. (2023, January 11). Parcel. <https://clck.ru/39CTbo>

³ Gherghelas, S. (2023, March 23). Virtual Worlds Soar: Record Land Sales Generate \$311M. DappRadar. <https://clck.ru/39CTdf>

The economic development of metaverses is gradually gaining momentum. According to experts of Citibank – the largest international bank – the total market of metaverse can be estimated from 8 to 13 trillion dollars by 2030⁴. It is worth mentioning the forecasts of metaverse development in the People's Republic of China (hereinafter – PRC, China). For example, the Shanghai plan for the metaverse development stipulates that the market will be estimated at 350 billion yuan by 2025⁵. Sichuan Province estimated the economic development of the metaverse sphere at 250 billion yuan⁶. Today, China appears to be one of the leaders in the metaverse development. At the end of 2021, PRC established a sectoral committee for metaverse development under the China Mobile and Communications Association. At the state level, it is recognized that the metaverse development will strengthen the PRC's position as a global technology leader⁷. It is also worth noting that the Chinese Institute of Contemporary International Relations issued a report on the country's national security in the context of metaverse development, emphasizing technological hegemony and information security⁸.

China's leadership in the metaverse development is explained by the country's special economic and legal policy. According to P. V. Troshchinsky, China's digital economy is based on its national interests. For this reason, Chinese platforms have displaced Western technologies from its market. In this regard, we can say that China is a stronghold of digital sovereignty (Troshchinsky, 2021).

This study will be incomplete without mentioning definitions of the term "metaverse". An American venture specialist M. Ball notes: "A metaverse should be understood as a scalable and interoperable network of 3D virtual worlds, visualized in real time, that can be accessed synchronously and continuously by a practically unlimited number of users with an individual perception of presence and continuity of data such as identity, history, rights, objects, communications, and payments" (Ball, 2022). According to Chinese and Canadian experts, the metaverse is a synthesized world (virtual and real) that consists of user-controlled avatars, digital things, virtual environment, and other elements that allow people to use this space for communication, collaboration, and other purposes (Wang et al., 2022). Another study notes a metaverse is a new stage in the development of the Internet, characterized by the following aspects: (1) a symbiosis

⁴ Citi: Metaverse market size could reach \$13 trillion within 8 years. (2022, April 1). P&K. <https://clck.ru/39CViN>

⁵ Shanghai announces action plan for metaverse industry development. (2022, August 22). CJO. <https://clck.ru/39CVmw>

⁶ Ivanov, P. (2023, August 17). Authorities of China's Sichuan Province estimate the metaverse market at \$34 billion. Blockchair. <https://clck.ru/39CVpZ>

⁷ Hui, M. (2021, November 17). China is eyeing the metaverse as the next internet battleground. Quartz. <https://clck.ru/39Cm6r>

⁸ 元宇宙与国家安全 原创 美国研究所 中国现代国际关系研究院. <https://clck.ru/39CVuQ>

of different technologies, which can generate a mirror of the real world based on digital twin technology and blockchain to build an ecosystem, (2) a metaverse is a special form of social interaction between users, (3) hyperspatial temporality, which implies an open, free and captivating experience of using an immersive virtual reality (Wang et al., 2023).

A Russian legal scholar I. V. Ponkin uses the term cyber-meta-universe: “cyber-meta-universe is a complex virtual-real (hybrid) homeostatic and persistent digital multiuser meta-space formed and maintained by means of interoperable dynamic digital simulations and synthesis, which includes multiple decentralized and/or intersectional real-virtual multiscale (and scalable) three-dimensional spatial worlds (ecosystems, universes) of complex-cognitive and holographic-visual orders (of augmented or reproduced reality – in accordance and harmony with the natural laws of physical existence and human perception, understanding and transformation of the world), providing for interactive involvement (participation, interaction, active transformation) of users through their avatars and providing for the user immersion into the ontologies of these worlds” (Ponkin, 2023). A simpler definition is proposed by a Pakistani scholar who points out that a metaverse is a simulated digital environment that combines augmented (AR) and virtual (VR) reality, blockchain and social media principles to create an area of abundant interaction between users, which aims to simulate the real world⁹.

One cannot but mention the definition of virtual worlds, which is formulated in the Strategy of the European Commission of the European Union (hereinafter – EU), dedicated to the development of the Web 4.0 concept. According to this act, virtual worlds are permanent immersive environments based on technologies, including 3D and mixed reality (XR), that allow the integration of physical and digital worlds in real time for various purposes such as design, simulation, collaboration, learning, communication, transactions and entertainment¹⁰. Although the strategy uses the term “virtual worlds”, it most likely refers to the metaverse. It is worth noting that this is not the first time that the EU touches upon the topic of metaverse. For example, in 2022, the European Parliamentary Research Service published the results of the briefing “Metaverse: Opportunities, risks and policy implications”¹¹.

Recently, a sufficient number of definitions of the “metaverse” have appeared. However, the author of this paper believes that the existing positions regarding this category contain one or more defects, among which the following we can mention complexity for perception and/or lack of important features. Therefore, sometimes the metaverse is described through the plot of movies (Ready Player One, The Matrix, Protagonist, etc.). We believe

⁹ Laeeq, K. (2022). *Metaverse: why, how and what. How and What*.

¹⁰ EU. (2023, July 5). An EU initiative on virtual worlds: a head start in the next technological transition. <https://clck.ru/39CW2G>

¹¹ EU. (2022, June 27). Metaverse: Opportunities, risks and policy implications. <https://clck.ru/39CWFF>

that any definition should contain only two aspects: brevity and comprehensibility. In this regard, the following definition of a metaverse is proposed: a metaverse is an immersive virtual space with its own social and economic systems. Based on this definition, the following features can be distinguished:

1. A metaverse is virtual space.

2. A metaverse is an immersive space, which implies the effect of full presence of a user in the virtual space. Immersiveness is provided through the use of virtual and augmented reality technologies.

3. A metaverse has its own social and economic systems. This feature is expressed in the possibility for users to implement a special form of social interaction – in virtual reality. At the same time, a metaverse should allow users to profit from their activities (content monetization, full-fledged labor activity, activity based on gig-economy principles, etc.).

This interpretation does not claim to be legally enshrined, as it contains only a general understanding of the metaverse. It is impossible to formulate a single legal concept of a metaverse due to the specifics of the legislation of individual countries, which may differ significantly. Such a goal was not set within the present study. We can only assume that the definition of a metaverse in the Russian law will be related, first of all, to the provisions of the Federal Law “On Information, Information Technologies and Information Protection”¹², namely, to the “information system” notion.

It should be taken into account that despite the current attention to metaverses, today we cannot talk about its full-fledged embodiment in the life of society, because there is no criterion of scale. No platform positioned as a metaverse is such in the sense presented above. At the current stage of digital technologies development, it is more correct to speak about the first successful prototypes of metaverses.

2. Financial control (monitoring) under metaverse conditions

It was shown above that a metaverse should have its own economic system in the future. Today, Decentraland is probably the closest to a full-fledged ecosystem. This project is positioned as a decentralized metaverse based on the Ethereum blockchain, which allows users to earn profits that have value in the real world. The earning process can be outlined as follows: (1) a user converts real (fiat) currency into Ethereum cryptocurrency, (2) the user undergoes a full-fledged registration on the Decentraland platform by linking a MetaMask crypto wallet, which allows converting Ethereum cryptocurrency into Decentraland currency, called Mana, (3) the user multiplies Mana through various transactions, (4) the profit in

¹² On information, information technologies and information protection. No. 149-FZ of 27.07.2006. Collection of legislation of the Russian Federation, 31 (Part I), Art. 3448.

Mana can be converted into real currency in reverse sequence (Mana – Ethereum – real currency). Due to the high forecasts for metaverses development, it is necessary to consider the prospects of transactions' legal regulation in terms of financial control and monitoring.

As S. M. Mironova notes, financial control is one of the foundations for the economic well-being of the state: "Financial control is the control over the legality and expediency of actions when forming, distributing and using the state and municipal monetary funds with the aim of effective socio-economic development of the country as a whole and its regions" (Mironova, 2009). One of the varieties of financial control is financial monitoring, which M. M. Proshunin and M. A. Tatchuk understand as the system of informational, controlling and law enforcement legal procedures carried out by the financial monitoring bodies and agents and aimed at excluding the penetration of criminal proceeds into the national economy and preventing the use of financial monitoring agents for criminal proceeds laundering and terrorism financing¹³.

The object of financial control is money transactions. In the legal sense, the categories of "money" and "currency" are identical. Cryptocurrency is the key basis for metaverses development. It is worth noting that the issue of legal specificity of cryptocurrency use in metaverses was partially touched upon in scientific studies. For example, experts from Germany and the Netherlands noted that the cryptocurrency system development in metaverse can negatively affect the responsibilities of a country's central bank (Kasiyanto & Kilinc, 2022). Consequently, it is important to analyze the possible prospects for the development of financial and legal policy of certain jurisdictions in the field of metaverses, as it will allow (1) achieving technological leadership, (2) ensuring the legalization of shadow economy, (3) attracting new funds to the country's budgets due to the development of economic turnover in metaverse.

3. Option of cryptocurrency integration as a basis for metaverses

The issues of cryptocurrency functioning and development have been the object of research of various scientists for about 10-15 years. In doctrine, the cryptocurrency emergence is associated with the most famous one, i. e. Bitcoin, which became known in 2009¹⁴. Currently, the cryptocurrency market has achieved significant development. According to the Central Bank of Russia in December 2021, the total capitalization of cryptocurrency was estimated at \$ 2.3 trillion¹⁵. At the moment, despite the past "cryptowinter", the state

¹³ Proshunin, M. M., Tatchuk, M. A. (2014). Financial monitoring (combating legalization (laundering) of criminal proceeds and terrorism financing): tutorial. Kaliningrad: Izd-vo BFU im. I. Kanta.

¹⁴ Árnason, S. L. (2015). Cryptocurrency and Bitcoin: A possible foundation of future currency: why it has value, what is its history and its future outlook (Doctoral dissertation). Reykjavík: Verslunarfélag Reykjavíkur.

¹⁵ Bank of Russia. (2022, January 20). Cryptocurrency risks and possible regulatory measures: report for public consultations. <https://clck.ru/39CX2S>

of the cryptocurrency market can be assessed as positive. Traditionally, the top three leaders in terms of capitalization are Bitcoin, Ethereum and Tether.

As noted by Russian legal scholars I. A. Khavanova and I. I. Kuchеров, cryptocurrency in its essence is private money, the use of which is implemented through a distributed ledger system (Kuchеров & Khavanova, 2017). Due to the special economic value of cryptocurrency, the state needs to regulate operations with this digital asset. The main legal challenges are related, according to American researchers, to the very specifics of the blockchain system in which cryptocurrency circulation takes place. The high degree of anonymity of the digital asset owners allows its use for illegal purposes: terrorism financing, legalization of criminal proceeds, and tax evasion (Jafari et al., 2018).

At the same time, today a number of states are implementing positive legal policies regarding the use of cryptocurrency. In the opinion of the author of this paper, the legislation of the United Arab Emirates (hereinafter – UAE) is the most progressive in this regard. In accordance with the provisions of UAE Law No. 4¹⁶, cryptocurrency is a full-fledged digital asset that can be used as a means of payment, investment, accumulation and exchange. In addition, as of recently, the world's first International Court of Justice to hear cases in the digital economy between individuals has been launched at the International Financial Center in Dubai. In October 2022, the first judgment was rendered on a dispute directly related to cryptocurrency sale¹⁷. It should be noted that the UAE government is much interested in the development of metaverse. For example, in 2022 it was announced that the authorities developed a strategy for the metaverse development in the UAE, which provides for the organization of 40,000 jobs¹⁸. Sharjah launched a project of meta-city, called SharjahVerse. As was noted, its main objective was to develop tourism¹⁹. It is worth noting that the above-mentioned problem of control over the cryptocurrency circulation in the UAE is solved through the functioning of a special state executive authority, namely the Dubai Virtual Assets Regulatory Authority, established by Law No. 4²⁰. The authority has a wide range of powers to control cryptocurrency circulation (establishing special rules for the cryptocurrency use, attracting investors, controlling crypto exchanges, etc.). At the same time, it should be noted that the UAE has strict rules for crypto-business (for example, to establish a crypto-exchange), including obligatory licensing.

¹⁶ Law No. (4) of 2022 Regulating Virtual Assets in the Emirate of Dubai. (2022). <https://clck.ru/39CXHX>

¹⁷ (1) Gate Mena DMCC (2) Huobi Mena FZE v (1) Tabarak Investment Capital Limited (2) Christian Thurner 2020 DIFC TCD 001. <https://clck.ru/39CXJz>

¹⁸ Cabral, A. R. (2022, July 18). Dubai's new metaverse strategy to add \$4 bn to economy and create more than 40,000 jobs. The National. <https://clck.ru/39Ca9m>

¹⁹ Boreham, J. (2023, August 10). SharjahVerse: Where The Metaverse And Tourism Converge. The Metaverse Insider. <https://clck.ru/39CaBH>

²⁰ Árnason, S. L. (2015). Cryptocurrency and Bitcoin: A possible foundation of future currency: why it has value, what is its history and its future outlook (Doctoral dissertation). Reykjavík: Verslunarfélag Reykjavíkur.

Analysis shows that the UAE financial and legal policy regarding the cryptocurrency use as an economic basis for the metaverse functioning will be further developed in the following directions: (1) due to the authorities' special attention to cryptocurrency and metaverse, one may assume that a separate state authority on metaverse will be established, with a function of the metaverse financial development based on implantation of cryptocurrencies in the UAE; (2) the creation of metaverses requires significant investments, which will likely lead to establishing special tax benefits and preferences for investors; (3) one may assume that cryptocurrency will be used in metaverse directly, i.e. without conversion into the metaverse currency, as is typical, for example, for the Decentraland project.

It was mentioned above that the issues of metaverse development were repeatedly touched upon by the European Commission of the EU; however to date Europe has no plans to develop its own metaverse. Perhaps the reason lies in the unsuccessful experience of using metaverse technology. In December 2022, the European Commission launched the Global Gateway project, positioned as a metaverse. Almost 400,000 dollars were spent on the implementation of this idea. The event was attended by no more than six people²¹. It is possible that the development of metaverse in the EU directly depends on the regulation of competition law, as IT-giants can monopolize the market of potential projects. In this regard, scholars analyze the possibility of reviewing the concept of competition regulation (Angeles, 2023).

The plan on virtual worlds²² contains provisions proclaiming the importance of elaborating virtual worlds for the socio-economic development of Europe. The document refers to the recently developed draft of the Markets in Cryptoassets (hereinafter – MiCA) ²³ regulation, which will be effective from 2024. The doctrine marks that the EU seeks to develop the crypto market through effective interaction between the state and business, so the attitude to regulating cryptocurrency transactions in the EU is assessed as positive (Tauda et al., 2023). Most likely, this approach was the main reason for the MiCA development, the central provisions of which can be reduced to two interrelated aspects: establishing rules for persons performing services with cryptoassets in relation to EU residents and protecting the rights of resident consumers using crypto-services. The doctrine states that, despite the ambition and scope of the initiative, there are many unresolved issues, particularly related to central bank currencies and decentralized finance (Teichmann et al., 2023).

²¹ Surgan, I. (2022, December 2). The European Commission's \$400k metaverse gala has failed miserably. Incrypted. <https://clck.ru/39CaGF>

²² EU. (2023, July 5). An EU initiative on virtual worlds: a head start in the next technological transition. <https://clck.ru/39CaJE>

²³ EU. (2023, June 9). Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on markets in crypto-assets, and amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937. <https://clck.ru/39Caq5>

Based on the above, it should be assumed that today, despite the lack of plans to develop its own metaverse, the EU is pursuing an active policy to build a legal framework in this area, including in the field of finance. Consequently, to preserve the leading positions in digital development, it is necessary, first, to allocate part of the state budget for the development of own metaverse projects. However, if the provided funds are used without a concrete plan of the metaverse technology creation and smooth implementation in the social life, it may lead to the same situation as with the Global Gateway project. Second, recognizing cryptocurrency as a legal means of payment, it is necessary to address the existing shortcomings in the control of cryptocurrency circulation. According to the MiCA provisions, the tracking of transactions rests entirely with cryptocurrency exchanges. Perhaps a specialized committee within the European Commission should be established to better control the activities of cryptocurrency exchanges.

Another country to pay attention to is South Korea. Recently, its capital, Seoul, launched a virtual city project, whose users can interact not only among themselves, but also with the state²⁴. The Metaverse Seoul project is often explored through the lens of urban science. For example, a Portuguese scholar notes that society is gradually moving from the concept of “smart” cities to the next stage – meta-cities, Metaverse Seoul being such. The aggregation of high technologies allows for a new view at the combination of real and virtual worlds, which requires the development of proper state policies (de Almeida, 2023).

It is still difficult to talk about the possibility of implanting cryptocurrency in the Metaverse Seoul project. This is due to the lack of legislative certainty. In a 2018 publication, a Malaysian scholar pointed out that South Korea’s policy in relation to crypto-exchanges hacking could have followed the Chinese approach (that is, to ban cryptocurrencies). At the same time, the state was developing regulations on the use of digital assets in ICOs (Moorthy, 2018). A more recent research suggests that South Korea is developing a framework law dedicated solely to digital assets²⁵. At the time of writing this paper, no evidence of the adoption of this law was found by the author. Consequently, the first priority in the development of South Korea’s financial policy in the field of metaverse is to determine the clear and unambiguous nature of cryptocurrency as a legitimate means of payment. If cryptocurrency is recognized as a legitimate means of payment, we can talk about its possible transformation into Metaverse Seoul.

²⁴ Shcheglov, G. (2023, March 6). Metaverse Seoul – South Korean government launches long-awaited metaverse with “public services” and brand offices. RB.RU. <https://clck.ru/39Cq5>

²⁵ George, K. (2024, January 17). Cryptocurrency regulations around the world. Investopedia. <https://clck.ru/39CbHr>

4. Searching for further development of the metaverses concept: shortcomings of legislation and testing of the digital ruble

The Russian doctrine marks that with the emergence of private decentralized financial instruments, the state faces the need to search for new state-oriented options for money transformation (Sidorenko, 2023). In this regard, the idea began taking shape that national digital currencies should be issued by the countries' central banks. In the opinion of the author of this paper, one should agree with the International Monetary Fund that the development of central bank digital currencies (hereinafter – CBDC) is a response from the state to the emerging private decentralized digital currencies (Bossu et al., 2020). It is most likely that the broad popularity of CBDC is characteristic of countries that are leading in terms of digital development, but do not fully or partially recognize cryptocurrency as a legitimate means of payment.

In this respect, the experience of China is of interest. In 2022 the People's Bank of China emphasized once again that the use of cryptocurrency is not safe for the social and economic development of the country²⁶. Despite the negative policy of China in relation to cryptocurrency, the country does not prohibit the possession of this digital asset. For example, D. Riley, analyzing the judicial practice of some Chinese provinces, wrote that the PRC recognizes the economic value of cryptocurrency, which implies the recognition of such as property, the rights to which should be subject to protection (Riley, 2021).

The PRC has long been developing a model for a national digital currency, and recently it has been successfully tested. According to the People's Bank of China, various transactions worth 87 billion yuan were made in China in 2021²⁷. However, the doctrine notes that the pilot testing of China's CBDC raised a number of questions not regulated at the level of legislation. A Singaporean scholar points out one of the main problems of the China's CBDC operation, which is the confidentiality of digital currency users. It is about the processing and collecting the users' personal data during CBDC transactions. The author justifies the need to solve this problem in the further implementation of the CBDC (Cheng, 2023). It is possible that this is due to the special state policy of China, where national interests are at the center.

As it was mentioned above, the top Chinese leadership is directly interested in its own metaverse development, which will not only ensure the country's leadership in the international arena, but also promote socio-economic development. The author of this paper is convinced that in the near future China will be the leader in the functioning of its own metaverses under state control. Since the use of cryptocurrency does not allow controlling operations, it is assumed that the digital yuan will be the economic basis of Chinese

²⁶ 企业不可用虚拟货币支付工资 北京日报 | 2022年07月06. <https://clck.ru/39Cbte>

²⁷ 2021年金融统计数据新闻发布会文字实录. <https://goo.su/lnzJ>

metaverse. This is one of the main directions of China's financial and legal policy in the field of metaverse development. There are no significant obstacles to the implementation of this idea.

Recently, the metaverses development in Russia has been discussed at the level of theory and practice. In September 2022, the issues of legal regulation of relations in the metaverse were raised at the Federation Council with participating representatives of the business community²⁸. At the time of writing this paper, no other discussions on the topic of metaverse at the level of the highest state bodies have been found. However, a number of the country's leading educational institutions organize round tables devoted to the metaverse development in Russia. For example, in the summer of 2023 at Moscow State University of International Relations, experts made proposals for further legal regulation of social relations in metaverse²⁹.

The Russian legal doctrine analyzes the possibility of changing the legislation under the pressure of the metaverse development. For example, I. A. Filipova conducted a study that raises the issue of labor relations transformation in the metaverse (Filipova, 2023). Based on our analysis of the studies by Russian legal scholars, we can state that none of the publications indicates the possibility of financial law transformation in connection with the metaverse development. It is very likely that this is due to the novelty of the topic of metaverses.

At the same time, it can be said that Russia is smoothly moving towards the development of its own metaverse. In August 2023, the Russian Ministry of Digital Development, Communications and Mass Media presented a draft strategy for the development of the communications industry up to 2030³⁰. One of the main messages of this document implies ensuring the competitiveness of Russian software along with foreign analogs. Consequently, Russia's policy will have to move towards the formation of its own digital sovereignty, which will allow creating its own metaverses. Some steps in this direction have been made already. For example, Sber launched the CoMeta platform, which is a virtual space where educational projects are implemented. Based on the above, more large-scale projects are likely to be developed in the future, in which certain transactions could be made. In this regard, it is possible to predict some directions of financial and legal policy of Russia in the field of metaverse.

²⁸ Federation Council. (2022, September 19). The Federation Council discussed legal aspects of metaverse regulation. <https://clck.ru/39Cc4s>

²⁹ Round table "Regulation of metaverse: using the existing arsenal of measures or developing new ones?" of MGIMO Center for Artificial Intelligence. June 27, 2023, Moscow. <https://clck.ru/39Cc7d>

³⁰ Mintsifri. (2023, August 15). Draft strategy for the development of the communications industry of the Russian Federation up to 2035. <https://clck.ru/39CcAy>

It is worth saying that the option of using cryptocurrency is of little use. The main and probably the only law to determine the legal nature of cryptocurrency is the Federal Law "On digital financial assets, digital currency and on amendments to certain legislative acts of the Russian Federation" (hereinafter – the DFA Law)³¹. The legislator does not use the term "cryptocurrency" (before the adoption of the said law, various drafts with a legal definition of cryptocurrency were proposed). Instead, the "digital currency" category was legally enshrined, defined by part 3 of Article 1 of the DFA Law as a set of electronic data (digital code or designation) contained in an information system, which are offered and/or may be accepted as a means of payment that is not a monetary unit of the Russian Federation, a monetary unit of a foreign state and/or an international monetary or settlement unit, and/or as an investment, and in respect of which there is no person obliged to each holder of such electronic data, except for the operator and/or information system nodes, which are obliged only to ensure compliance of the procedure for issuing such electronic data and actions in respect thereof making (changing) entries in such information system by its rules.

This definition is not quite correct, as it is limited only to the essence of decentralized finance. Actually, every decentralized digital currency is a digital currency, but not every digital currency is a decentralized digital currency. Along with a decentralized digital currency, there is a centralized digital currency, meaning CBDC.

The approach of the Russian legislator to the use of cryptocurrency as a means of payment can be called special. According to part 6 of Article 14 of the DFA Law, judicial protection of property rights to digital currency (cryptocurrency) is possible only in case of its tax declaration. Consequently, if the tax service is not officially informed, the court must refuse to protect a person's rights to cryptocurrency. This provision was criticized by a number of Russian scholars. For example, R. M. Yankovsky, considering this issue in a civil law context, points out that part 6 of Article 14 of the DFA Law hardly correlates with the provisions of the Russian Constitution on the guaranteed judicial protection. At the same time, not quite clear is the motive for the dependence of judicial protection on the fulfillment of tax obligations (Yankovsky, 2020). In general, the legislator's solution is understandable. The establishment of the obligation of cryptocurrency tax declaration in order to obtain judicial protection implies the cryptocurrency market legalization from the financial legal standpoint (budget replenishment); however, in practice it has led to a shadow crypto market development. Owners of cryptocurrencies perform transactions at their own risk, which does not protect their interests and hinders the implementation of financial policy in this area.

³¹ On digital financial assets, digital currency and on amendments to certain legislative acts of the Russian Federation. No. 259-FZ of 31.07.2020. (2020). Collection of legislation of the Russian Federation, 31 (Part I), Art. 5018.

Well-known is the position of the Bank of Russia³² that the cryptocurrency legalization may lead to financing crime. The Bank of Russia also holds that the cryptocurrency market has many characteristics of a pyramid scheme. Thus, the legislative regulation of cryptocurrency in Russia is very vague and ineffective. One may hardly expect that cryptocurrency will function as an economic basis for Russian metaverses.

The official and only currency in Russia is the ruble. The attention of the author of this paper was attracted by the provision on testing the digital ruble concept. In August 2023, the Central Bank of Russia issued a Regulation on the digital ruble platform³³, which regulates the general procedure for conducting the experiment with the digital ruble. The digital ruble concept has been developed since December 2021. This has led to a massive proliferation of scientific publications on the digital ruble. For example, T. V. Deryugina, based on the analysis of Russian legislation, concludes that the legal nature of a digital currency is different from that of the digital ruble (Deryugina, 2022).

One should agree with this opinion. According to the adopted law³⁴ on the digital ruble introduction, the digital ruble is not a digital currency. When the term “currency” is used, it should refer to it as a means of payment. It is known that the primary essence of money is a means of payment. Hence, the legislative meaning of digital currency is reduced to the following: digital currency is money that can be used under certain conditions only. To describe the essence of the digital ruble, the legislator uses the digital form of money. One cannot but notice some confusion of concepts, which may lead to some confusion in the legislation.

Despite the existing shortcomings of the legislation, one should admit that the testing of the digital ruble may affect further development of metaverses in Russia. Undoubtedly, now it is too early to speak even about approximate directions of the Russian financial and legal policy in the field of metaverses, but there are prospects for their further formation at the current stage of the Russian economy development.

Conclusions

Today we are witnessing a new stage in the development of the Internet, which is associated with innovative immersive virtual spaces – metaverses. The analysis of statistical data has shown the degree of development and popularity of the first metaverse prototypes, which, apparently, have a great future. The growing attention of some states to the topic of metaverses with a view of advancing their socio-economic potential and strengthening

³² Proshunin, M. M., & Tatchuk, M. A. (2014). Financial monitoring (combating legalization (laundering) of criminal proceeds and terrorism financing): tutorial. Kaliningrad: Izd-vo BFU im. I. Kanta.

³³ Regulation of the Bank of Russia No. 820-P of 03.08.2023. (2023). Garant.ru. <https://clck.ru/39CcLQ>

³⁴ Law draft No. 270838-8 “On amending certain legislative acts of the Russian Federation (as regards the formation of a legal framework for the introduction of the digital ruble)”. <https://clck.ru/39CcPF>

their global leadership in terms of digital development makes it necessary to plan financial and legal policy in this area.

Financial and legal development of legislation on metaverses directly depends on the regulation of the cryptocurrency legal regime in a particular country. Depending on this circumstance, it is possible to assess the prospects of cryptocurrency implantation as an economic basis for metaverses. The UAE is the undoubted leader in this area, as it has all the necessary conditions for the creation of its own metaverse. MiCA provisions, which will be applied in the EU from 2024, deserve special attention. It should be noted that the EU pays special attention to the prospects of regulating social relations in the metaverse, but there are no plans to create their own platforms in the EU. An opposite example is South Korea, where the meta-city project is being successfully implemented, but the legal regime of cryptocurrency has not yet been defined.

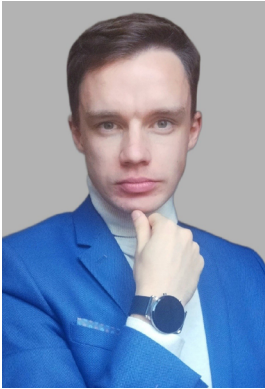
At the same time, there are a number of states that are leading in the digital economy but do not recognize cryptocurrency as a legitimate means of payment. Such countries are characterized by the use of the national central bank digital currency. The undisputed leader among them is China, where the digital yuan model has been successfully tested since 2021. Moreover, the Chinese authorities are much interested in creating their own national metaverses. Russia is likely to follow this path as well. The topic of metaverse development in Russia is just beginning to be discussed in science and practice. Since August 2023, the Bank of Russia has been testing the third form of the ruble – the digital ruble. It can be assumed that in the future the digital ruble will function as a financial basis for Russian metaverses.

References

- Angeles, J. C. (2023). Los guardianes de acceso al metaverso. (Re)pensando el Derecho de la competencia de la Unión Europea. *Cuadernos De Derecho Transnacional*, 15, 275. <https://doi.org/10.20318/cdt.2023.7541>. (In Spain).
- Arhipov, V. V. (2013). Virtual law: main problems of the new direction of legal studies. Proceedings of Higher Educational Institutions. *Pravovedenie*, 2, 93–114. (In Russ.).
- Ball, M. (2022). *The metaverse: and how it will revolutionize everything*. New York: Liveright Publishing, W.W. Norton & Company.
- Bossu, W., Itatani, M., Margulis, C., Rossi, A., Weenink, H., & Yoshinaga, A. (2020). *Legal aspects of central bank digital currency: Central bank and monetary law considerations*. <https://doi.org/10.5089/9781513561622.001>
- Cheng, P. (2023). Decoding the rise of Central Bank Digital Currency in China: designs, problems, and prospects. *Journal of Banking Regulation*, 24(2), 156–170. <https://doi.org/10.1057/s41261-022-00193-5>
- de Almeida, G. G. F. (2023). Cities and Territorial Brand in The Metaverse: The Metaverse SEOUL Case. *Sustainability*, 15(13), 10116. <https://doi.org/10.3390/su151310116>
- Deryugina, T. V. (2022). The digital currency and the digital ruble: to the question of the legal innovation. *Tsivist*, 1(37), 8–11. (In Russ.).
- Duranske, B. T. (2008). *Virtual law: Navigating the legal landscape of virtual worlds*. Chicago: American Bar Association.
- Filipova, I. A. (2023). Metaverses: how their development will affect workers and employers. *Russian Journal of Labour & Law*, 13, 45–64. (In Russ.). <https://doi.org/10.21638/spbu32.2023.103>
- Hendaoui, A., Limayem, M., & Thompson, C. W. (2008). 3D social virtual worlds: research issues and challenges. *IEEE Internet Computing*, 12(1), 88–92. <https://doi.org/10.1109/MIC.2008.1>

- Jafari, S., Vo-Huu, T., Jabiyev, B., Mera, A., & Farkhani, R. M. (2018). *Cryptocurrency: A challenge to legal system. Reza, Cryptocurrency: A Challenge to Legal System*. <https://dx.doi.org/10.2139/ssrn.3172489>
- Kasiyanto, S., & Kilinc, M. R. (2022). The legal conundrums of the metaverse. *Journal of Central Banking Law and Institutions*, 1(2), 299–322. <https://doi.org/10.21098/jcli.v1i2.25>
- Kuchеров, I. I., & Khavanova, I. A. (2017). Tax Consequences of Using Alternative Means of Payment (Theoretical and Legal Aspects). *Perm University Herald. Juridical Sciences*, 35, 66–72. (In Russ.). <https://doi.org/10.17072/1995-4190-2017-35-66-72>
- Mironova, S. M. (2009). Legal bases of financial control: problems and prospects of development. *Finansovoe pravo*, 4, 6–9. (In Russ.).
- Moorthy, D. (2018). A study on rising effects of cryptocurrency in the regulations of Malaysian legal system. *International Journal of Business, Economics and Law*, 15(4), 35–41.
- Ponkin, I. (2023). Metaverse: Legal Perspective. *International Journal of Open Information Technologies*, 11(1), 118–127. (In Russ.).
- Reuveni, E. (2007). On virtual worlds: copyright and contract law at the dawn of the virtual age. *Indiana Law Journal*, 82(2), Art. 2.
- Riley, J. (2021). The current status of cryptocurrency regulation in China and its effect around the world. *China and WTO Review*, 7(1), 135–152. <http://dx.doi.org/10.14330/cwr.2021.7.1.06>
- Savelyev, A. I. (2014). Legal nature of virtual objects purchased for real money in multiplayer online games. *Civil Law Review*, 1, 127–150. (In Russ.).
- Sidorenko, E. (2021). Digital currency of central banks economic scenarios and forecasts. *International Trends*, 19(2), 151–165. (In Russ.). <https://doi.org/10.17994/IT.2021.19.2.65.8>
- Tauda, G. A., Omara, A., & Arnone, G. (2023). Cryptocurrency: Highlighting the Approach, Regulations, and Protection in Indonesia and European Union. *Bestuur*, 11(1), 1–25. <https://doi.org/10.20961/bestuur.v11i1.67125>
- Teichmann, F. M. J., Boticiu, S. R., & Sergi, B. S. (2023). The EU MiCA Directive—chances and risks from a compliance perspective. *Journal of Money Laundering Control*, 27(2), 275–283. <https://doi.org/10.1108/jmlc-02-2023-0030>
- Troshchinskiy, P. V. (2021). Digital economy of modern China: features of legal regulation. In *Transformation of the national social and economic system of Russia, the trend of digital technologies. Works of the 3rd International scientific-practical conference, Moscow, December 4, 2020* (pp. 345–349). Moscow. (In Russ.).
- Wang, H., Ning, H., Lin, Y., Wang, W., Dhelim, S., Farha, F., Ding, J., & Daneshmand, M. (2023). A Survey on the Metaverse: The State-of-the-Art, Technologies, Applications, and Challenges. *IEEE Internet of Things Journal*, 10(16), 14671–14688. <https://doi.org/10.1109/JIOT.2023.3278329>
- Wang, Y., Su, Z., Zhang, N., Xing, R., Liu, D., Luan, T. H., & Shen, X. (2022). A survey on metaverse: Fundamentals, security, and privacy. *IEEE Communications Surveys & Tutorials*, 25(1), 319–352. <https://doi.org/10.1109/comst.2022.3202047>
- Yankovskiy, R. M. (2020). Cryptovalues in the Russian Law: surrogates, “other property” and digital money. *Pravo. Zhurnal Vysshey shkoly ekonomiki*, 4, 43–77. (In Russ.). <https://doi.org/10.17323/2072-8166.2020.4.43.77>

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Conflict of interest

The author declares no conflict of interest.

Financial disclosure

The research had no sponsorship.

Thematic rubrics

OECD: 5.05 / Law

PASJC: 3308 / Law

WoS: OM / Law

Article history

Date of receipt – October 15, 2023

Date of approval – October 25, 2023

Date of acceptance – March 15, 2024

Date of online placement – March 20, 2024



Научный обзор

УДК 34:004:347.73:336.1

EDN: <https://elibrary.ru/yxcjno>

DOI: <https://doi.org/10.21202/jdtl.2024.11>

Финансово-правовое развитие общественных отношений с использованием цифровых валют в метавселенных

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Ключевые слова

блокчейн,
законодательство,
криптовалюта,
метавселенная,
финансовое право,
центральный банк,
цифровая валюта,
цифровой рубль,
цифровой суверенитет,
цифровые технологии

Аннотация

Цель: на основе анализа финансово-правовой политики отдельных юрисдикций определить исходную перспективу финансово-правового развития общественных отношений в метавселенных с использованием цифровых валют.

Методы: исследование основано на системе познавательных инструментов, прежде всего, формально-юридическом, сравнительно-правовом, статистическом методах, а также методе правового прогнозирования, способствующих истолкованию норм права и финансово-правовой политики разных юрисдикций, оценке степени сегодняшнего развития законодательства в области регулирования технологий виртуальных миров, формулированию представлений о финансово-правовой регуляции общественных отношений с использованием цифровых валют в метавселенной.

Результаты: в проведенном исследовании выявлено, что современное законодательство о метавселенных находится на начальном этапе своего формирования, поскольку в развитых юрисдикциях метавселенная рассматривается пока что только как технология будущего. Показана степень популярности первых прототипов метавселенных и возрастающий рост внимания отдельных государств к тематике метавселенных с целью развития собственного социально-экономического потенциала и закрепления международных лидерских позиций по уровню цифрового развития. Отмечены недостатки выработанных в доктрине и практике определений метавселенных, наряду с которыми предлагается авторская дефиниция. Утверждается, что для полноценной интеграции технологии метавселенной в отдельно взятую страну, политика которой сосредоточена на достижении (сохранении) высокого рейтинга в части цифровой трансформации экономики, необходимо определиться с валютой, которая легитимно может использоваться в метавселенной в будущем. Сделан вывод

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о необходимости планирования финансово-правовой политики в данной области, которая во многом будет зависеть от правового режима криптовалюты в конкретной стране. Утверждается, что дальнейшее развитие концепта метавселенных в России будет зависеть от результатов тестирования цифрового рубля.

Научная новизна: данная работа является одной из первых, посвященных вопросам конвергенции метавселенной и финансового права, в которой предлагается концепция по установлению полноценной легальности цифровой валюты в метавселенной в зависимости от отношения конкретной страны к децентрализованным финансам. Наряду с популярными определениями, сформулированными в доктрине и практике, представлена собственная трактовка метавселенной с указанием ее существенных признаков.

Практическая значимость: полученные выводы и предложения могут быть использованы для совершенствования механизмов финансово-правового регулирования общественных отношений в условиях формирующейся концепции метавселенных. Высказанные идеи и утверждения имеют значение для дальнейшего исследования разнообразных финансово-правовых аспектов развития и функционирования метавселенных.

Для цитирования

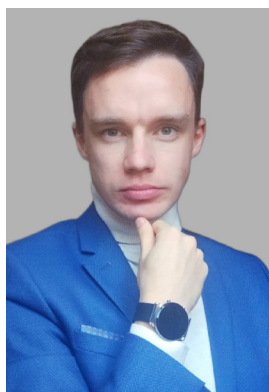
Ситников, М. С. (2024). Финансово-правовое развитие общественных отношений с использованием цифровых валют в метавселенных. *Journal of Digital Technologies and Law*, 2(1), 200–220. <https://doi.org/10.21202/jdtl.2024.11>

Список литературы

- Архипов, В. В. (2013). Виртуальное право: основные проблемы нового направления юридических исследований. Известия высших учебных заведений. *Правоведение*, 2, 93–114. <https://elibrary.ru/qbkcff>
- Дерюгина, Т. В. (2022). Цифровая валюта и цифровой рубль: к вопросу о правовой новации. *Цивилист*, 1(37), 8–11. <https://elibrary.ru/uxvdmu>
- Кучеров, И. И., & Хаванова, И. А. (2017). Налоговые последствия использования альтернативных платежных средств (теоретико-правовые аспекты). *Вестник Пермского университета. Юридические науки*, 1(35), 66–72. EDN: <https://elibrary.ru/ynbrqd>. DOI: <https://doi.org/10.17072/1995-4190-2017-35-66-72>
- Миронова, С. М. (2009). Правовые основы финансового контроля: проблемы и перспективы развития. *Финансовое право*, 4, 6–9. <https://elibrary.ru/kdrnnn>
- Понкин, И. В. (2023). Кибер-мета-вселенная: правовой взгляд. *International Journal of Open Information Technologies*, 11(1), 118–127. <https://elibrary.ru/cuhrzx>
- Савельев, А. И. (2014). Правовая природа виртуальных объектов, приобретаемых за реальные деньги в многопользовательских играх. *Вестник гражданского права*, 1, 127–150. <https://elibrary.ru/smtixj>
- Сидоренко, Э. (2023). Цифровая валюта центральных банков экономические сценарии и прогнозы. *Международные процессы*, 19(2), 151–165. EDN: <https://elibrary.ru/eafgwe>. DOI: <https://doi.org/10.17994/IT.2021.19.2.65.8>
- Трощинский, П. В. (2021). Цифровая экономика современного Китая: особенности правового регулирования. В сб. *Трансформация национальной социально-экономической системы России, тренд цифровые технологии: материалы III Международной научно-практической конференции, Москва, 4 декабря 2020 г.* (с. 345–349). Москва. <https://elibrary.ru/jvrlts>
- Филипова, И. А. (2023). Метавселенные: как их развитие повлияет на работников и работодателей. *Ежегодник трудового права*, 13, 45–64. <https://doi.org/10.21638/spbu32.2023.103>
- Янковский, Р. М. (2020). Криптовалюты в российском праве: суррогаты, «иное имущество» и цифровые деньги. *Право. Журнал Высшей школы экономики*, 4, 43–77. EDN: <https://elibrary.ru/dllnyf>. DOI: <https://doi.org/10.17323/2072-8166.2020.4.43.77>

- Angeles, J. C. (2023). Los guardianes de acceso al metaverso. (Re)pensando el Derecho de la competencia de la Unión Europea. *Cuadernos De Derecho Transnacional*, 15, 275. <https://doi.org/10.20318/cdt.2023.7541>. (In Spain).
- Ball, M. (2022). *The metaverse: and how it will revolutionize everything*. New York: Liveright Publishing, W.W. Norton & Company.
- Bossu, W., Itatani, M., Margulis, C., Rossi, A., Weenink, H., & Yoshinaga, A. (2020). *Legal aspects of central bank digital currency: Central bank and monetary law considerations*. <https://doi.org/10.5089/9781513561622.001>
- Cheng, P. (2023). Decoding the rise of Central Bank Digital Currency in China: designs, problems, and prospects. *Journal of Banking Regulation*, 24(2), 156–170. <https://doi.org/10.1057/s41261-022-00193-5>
- de Almeida, G. G. F. (2023). Cities and Territorial Brand in The Metaverse: The Metaverse SEOUL Case. *Sustainability*, 15(13), 10116. <https://doi.org/10.3390/su151310116>
- Duranske, B. T. (2008). *Virtual law: Navigating the legal landscape of virtual worlds*. Chicago: American Bar Association.
- Hendaoui, A., Limayem, M., & Thompson, C. W. (2008). 3D social virtual worlds: research issues and challenges. *IEEE Internet Computing*, 12(1), 88–92. <https://doi.org/10.1109/MIC.2008.1>
- Jafari, S., Vo-Huu, T., Jabiyeve, B., Mera, A., & Farkhani, R. M. (2018). *Cryptocurrency: A challenge to legal system*. Reza, Cryptocurrency: A Challenge to Legal System. <https://dx.doi.org/10.2139/ssrn.3172489>
- Kasiyanto, S., & Kilinc, M. R. (2022). The legal conundrums of the metaverse. *Journal of Central Banking Law and Institutions*, 1(2), 299–322. <https://doi.org/10.21098/jcli.v1i2.25>
- Moorthy, D. (2018). A study on rising effects of cryptocurrency in the regulations of Malaysian legal system. *International Journal of Business, Economics and Law*, 15(4), 35–41.
- Reuveni, E. (2007). On virtual worlds: copyright and contract law at the dawn of the virtual age. *Indiana Law Journal*, 82(2), Art. 2.
- Riley, J. (2021). The current status of cryptocurrency regulation in China and its effect around the world. *China and WTO Review*, 7(1), 135–152. <http://dx.doi.org/10.14330/cwr.2021.7.1.06>
- Tauda, G. A., Omara, A., & Arnone, G. (2023). Cryptocurrency: Highlighting the Approach, Regulations, and Protection in Indonesia and European Union. *Bestuur*, 11(1), 1–25. <https://doi.org/10.20961/bestuur.v11i1.67125>
- Teichmann, F. M. J., Boticiu, S. R., & Sergi, B. S. (2023). The EU MiCA Directive—chances and risks from a compliance perspective. *Journal of Money Laundering Control*, 27(2), 275–283. <https://doi.org/10.1108/jmlc-02-2023-0030>
- Wang, H., Ning, H., Lin, Y., Wang, W., Dhelim, S., Farha, F., Ding, J., & Daneshmand, M. (2023). A Survey on the Metaverse: The State-of-the-Art, Technologies, Applications, and Challenges. *IEEE Internet of Things Journal*, 10(16), 14671–14688. <https://doi.org/10.1109/JIOT.2023.3278329>
- Wang, Y., Su, Z., Zhang, N., Xing, R., Liu, D., Luan, T. H., & Shen, X. (2022). A survey on metaverse: Fundamentals, security, and privacy. *IEEE Communications Surveys & Tutorials*, 25(1), 319–352. <https://doi.org/10.1109/comst.2022.3202047>

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WoS Researcher ID: <https://www.webofscience.com/wos/author/record/JEZ-2565-2023>

Google Scholar ID: <https://scholar.google.com/citations?user=7w60M80AAAAJ>

Конфликт интересов

Автор сообщает об отсутствии конфликта интересов.

Финансирование

Исследование не имело спонсорской поддержки.

Тематические рубрики

Рубрика OECD: 5.05 / Law

Рубрика ASJC: 3308 / Law

Рубрика WoS: OM / Law

Рубрика ГРНТИ: 10.21.61 / Правовые основы расчетов и денежного обращения. Основы валютного законодательства

Специальность ВАК: 5.1.2 / Публично-правовые (государственно-правовые) науки

История статьи

Дата поступления – 15 октября 2023 г.

Дата одобрения после рецензирования – 25 октября 2023 г.

Дата принятия к опубликованию – 15 марта 2024 г.

Дата онлайн-размещения – 20 марта 2024 г.