

CRYPTO MARKET EXPERIENCE: Navigating Regulatory Challenges in Modern Conditions

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Abstract: The legal regulation of digital finance is at an initial stage. It has been proven that many countries are favorable to the full or partial recognition of cryptocurrency as a means of payment, among them: Spain - the official payment system; Germany - monetary unit and form of private money; USA - currency, form of money, Sweden - contractual means of payment; the object of money transfers in certain states, Canada - a means of calculation, etc. It has been established that in Ukraine, the conservative nature of legal regulation of financial relations is considered in the context of implementing digital financial technologies given the task of protecting both public interests and the interests of individuals. Conclusions have been made, first, the issue of legal evaluation of cryptocurrencies is still not finally resolved and their legal nature also remains debatable; second, cryptocurrencies being alternative settlement units pose a threat to the dominance of public currencies, as they enable competition between private financial agents and states; third, according to its essence, electronic money is a kind of electronic promissory note.

Keywords: Cryptocurrency, Payments, Legal Regulation, Digital Money.

Abstract: Regulasi hukum keuangan digital masih dalam tahap awal. Telah terbukti bahwa banyak negara mendukung pengakuan penuh atau sebagian mata uang kripto sebagai alat pembayaran, di antaranya: Spanyol - sistem pembayaran resmi; Jerman - unit moneter dan bentuk uang pribadi; AS - mata uang, bentuk uang, Swedia - alat pembayaran kontraktual; objek transfer uang di negara bagian tertentu, Kanada - alat perhitungan, dll. Telah ditetapkan bahwa di Ukraina, sifat regulasi hukum hubungan keuangan yang dianggap konservatif diamati dalam konteks penerapan teknologi keuangan digital mengingat tugas melindungi kepentingan publik dan kepentingan individu. Kesimpulan telah dibuat, pertama, masalah evaluasi hukum mata uang kripto masih belum terselesaikan dan sifat hukumnya juga masih bisa diperdebatkan; kedua, mata uang kripto sebagai unit penyelesaian alternatif menimbulkan ancaman terhadap dominasi mata uang publik, karena memungkinkan persaingan antara agen keuangan swasta dan negara; ketiga, menurut esensinya, uang elektronik adalah semacam surat promes elektronik.

Kata Kunci: Mata Uang Kripto, Pembayaran, Regulasi Hukum, Uang Digital.

Introduction

The use of digital technologies for the needs of private and public finance has become a sustainable trend in recent years. This is an objective consequence of fundamental transformations in the world economy under the influence of the FinTech industry. New opportunities for collecting, recording, processing, evaluating and transmitting information have found their application not only in the banking sphere, but they are also embodied in the formation of a new sector of the economy based on such digital technologies as big data, robotics, blockchain, tokenization, various Internet systems, artificial intelligence, neural networks, etc. Along with traditional settlement tools, new ones have appeared - electronic money and virtual assets- and based on them, platforms for providing various financial services have already been created, including cryptocurrency exchanges, electronic payment systems, etc. Such phenomena as DeFi, InsurTech, online banking, online marketplace, PayTech, *P2P crediting, etc.* brought to life by digital financial technologies require an appropriate legal assessment and an effective legal

regulation, including ensuring the protection of customers' rights and interests. Numerous publications and scientific studies of various legal aspects of the FinTech manifestation in economic relations are relevant. However, the theory of legal regulation of digital finance is at the initial stage of its formation; it is fragmentary and does not have a systematic nature. Therefore, clarifying trends in this area is necessary to develop financial law science. Such classification determines the need for awareness of the directions and content of legal regulation of social relations related to the digitalization of the public finance sphere.

Publications on FinTech issues have a relatively broad spectrum; they cover professional, scientific, educational and methodological, reference, and popular science literature from various fields of knowledge. But most often, publications of legal orientation are dedicated to researching the specifics of legal regulation of new virtual assets, payment services, digitization and informatization of state administration in various spheres of its manifestation, etc. The results of the scientific research presented are pluralistic and debatable, but

they have not yet formed a coherent concept of legal regulation of FinTech in public finance.

In recent years, special attention has been paid to the problem of defining the concept of payment systems and peculiarities of their legal regulation. However, despite the high dynamics in the development of payment services, understanding the term “payment system” remains a subject of scientific debates. Both domestic and foreign specialists can be specified among the authors who devoted their works to such topics. Most authors either reproduce provisions of regulatory acts in their works or leave such a problem unaddressed. Thus, Benjamin Geva outlined his vision of legal and regulatory measures regarding electronic payments. However, when highlighting peculiarities of the structure typical for regulatory bodies and certain aspects concerning legal regulation of electronic payment services in the European Union, as well as in such countries as Australia, Canada, and the United States, although the term “payment system” is used in his work, the author does not provide its definition. He does not systematically consider it in the context of ensuring the stability of monetary circulation in the new conditions of the digital economy.¹ The same flaw is inherent in the views of the Indian specialist Ahmed Shehnaz. Although he outlines the directions for modernizing the law on payment services in India, he does not reveal his vision of the payment system concept.²

Another approach to solving the indicated problem is to study the legal regulation of payment systems from the standpoint of

individual branches of law, as is done, for example, by M. A. Pozhidayeva in her work,³ Concerning studying financial and legal regulation of payment systems, however, this research was carried out even before the adoption of the Law of Ukraine “On payment services” No. 1591-IX dated 30 June 2021,⁴ Therefore, some objective adjustments are required by the new conditions of legal regulation.

In recent years, the functioning of payment systems has been increasingly associated with using electronic money as a virtual asset. Such a question is hotly debated, which is reflected in unique literature. The number and range of publications on such issues are impressive. Science and practice are at the stage of finding solutions to many fundamental problems, and one of the essential places among these problems is the legal nature of cryptocurrencies. Approaches to its solution differ not only depending on the specific national jurisdiction but are also related to the multifacetedness of the conceptual apparatus. We can point out Suzanne Hammond and Todd Eret among the authors who devoted their works to such issues; they generalized the approaches to regulating cryptocurrencies depending on this or that country. However, despite the importance of such an overview, the legal nature of this type of virtual asset remains unresolved. In addition, one of the leitmotifs of such work was the issue of the taxation of operations with virtual assets. At the same time, the problem of using cryptocurrencies to pay taxes and budget financing was left out of the attention of researchers, although it is essential for any state.

¹ Geva Benjamin. *Electronic Payments: Guide on Legal and Regulatory Reforms and Best Practices for Developing Countries*. Osgoode Hall Law School of York University, 2020.

² Shehnaz Ahmed. *Modernising the Law for Payment Services in India*. FACULTY OF LAW BLOGS / UNIVERSITY OF OXFORD, 2021.

³ Pozhidayeva M. A. *Payment systems: theoretical foundations and financial and legal regulation in Ukraine: monograph*. Kyiv: Yurinkom Inter, 2020. 348

⁴ On payment services: Law of Ukraine dated June 30, 2021, No. 1591-IX. Retrieved from <https://zakon.rada.gov.ua/laws/show/1591-20#Text>

Authors such as Desmond Dennis, Lacey David, and Salmon Paul M. emphasize the insufficiency of research on various aspects of cryptocurrencies, including their protection systems. This fully corresponds to the general theoretical substantiation of the peculiarities of the legal regulation of virtual assets and social relations related to the provision of payment services developing on their basis. Therefore, it appears that the nearest tasks information of the doctrine of legal regulation of FinTech will consist in the search for the legal nature of virtual assets in their various forms of manifestation (electronic money, digital money, cryptocurrencies), as well as in assessment of the admissibility of their possible use for the needs of public finances. This is important not only from the point of view of providing public finances with modern settlement tools, but it also reflects the need to understand the danger brought by the new technological opportunities, meaning potential danger for committing economic offenses, first - tax evasion and laundering of "dirty money".

The methodological basis of the research is a combination of general and unique methods of cognition, such as dialectical, historical, descriptive, and scientific analysis, and generalization; comparative-legal, structural-functional, and analytical methods were also used. The dialectical scientific knowledge method is the primary general scientific method. Formal-legal and systemic-structural methods were applied while researching legal documents highlighting the functioning and development of relationships under the implementation of digital technologies. During the formulation of the legal structures "digital technologies", "electronic technologies", and "electronic legal relations," the logical-semantic method was used. The use of scientific analysis and generalization of methods made it possible to collect reliable

information about the current state of relations in the implementation of digital technologies, its parameters, and the peculiarities of the practical application of legislation, including its problems aspects.

In recent years, special attention has been paid to the problem of defining the concept of payment systems and peculiarities of their legal regulation. However, despite the high dynamics in the development of payment services, understanding the term "payment system" remains a subject of scientific debates. Both domestic and foreign specialists can be specified among the authors who devoted their works to such topics. Most authors either reproduce provisions of regulatory acts in their works or leave such a problem unaddressed. Thus, Benjamin Geva outlined his vision of legal and regulatory measures regarding electronic payments. However, when highlighting peculiarities of the structure typical for regulatory bodies and certain aspects concerning legal regulation of electronic payment services in the European Union, as well as in such countries as Australia, Canada, and the United States, although the term "payment system" is used in his work, the author does not provide its definition. He does not systematically consider it in the context of ensuring the stability of monetary circulation in the new conditions of the digital economy.⁵ The same flaw is inherent in the views of the Indian specialist Ahmed Shehnaz; However, he does not reveal his vision of the payment system concept in outlining the directions for modernization of the law on payment services in India.

Comprehensive research and a literature review were conducted using free-access resources (Academic journals, Google Book

⁵ Geva, B. (2020). Electronic Payments: Guide on Legal and Regulatory Reforms and Best Practices for Developing Countries. Osgoode Hall Law School of York University.

Search, Google Scholar, Scientific periodicals of Ukraine) and the full-text database ScienceDirect. The specifics of the research subject and its purpose and tasks determined the use of general scientific and unique methods of scientific cognition. The hermeneutic method was used to establish the content of the concept of "digital technologies", "electronic technologies", and "electronic legal relations" enshrined in both legislative acts and the legal doctrine. This analysis method was used to interpret provisions of normative legal acts (the Civil Code of Ukraine, laws of Ukraine, international normative legal acts and regulations, etc.), which establish the order and features of personal data protection. With the help of the method of systematic analysis, court decisions issued in lawsuits regarding "digital technologies", "electronic technologies", and "electronic legal relations" of consent for medical intervention or entering contractual legal relations were studied. The dogmatic method made it possible to analyze scientific studies devoted to general problems of "digital technologies", "electronic technologies", and "electronic legal relations". The comparative method was used to compare provisions of the civil legislation of Ukraine, the legislation of the EU, and the USA to identify standard features, differences, advantages, and disadvantages. The method of generalization helped to formulate conclusions that summarized the conducted research.

Thus, modern domestic scientific research is mainly based on a general scientific method, such as a dialectical one. Dialectics as a science studies the most general laws of the development of nature, society, and thinking. The dialectical method is such a general scientific method of cognition that relationships and the constant development of phenomena need to be considered in the process of cognition of reality. Dialectics is a method of learning about nature, society, and thinking, considered in unity with logic

and the theory of knowledge. It is a fundamental scientific principle of studying multifaceted and contradictory reality in all its manifestations.⁶

This method "was developed over many centuries by scientists of various philosophical and political directions" and consists of an approach to studying phenomena of social existence based on the general regular connections of the development of society, the state, and nature.⁷

Therefore, according to the dialectical method, all phenomena are interconnected and dynamic. The basis of their development (dynamics) includes such laws of dialectics as transition from quantity to quality, struggle, and unity of opposites.

As for the topic of the research, thanks to the dialectical method, the current state of personal data protection and understanding of the essence of this legal phenomenon were established, taking into account their dynamics and development during historical time, their interdependence with other phenomena of social and state life, and the interrelation of one relationship with other ones.

The application of the axiological method aimed at clarifying and determining the public danger of violations in the sphere of "digital technologies," "electronic technologies," and "electronic legal relations," as well as the public utility of state activity to overcome these violations. The hermeneutic method made it possible to reveal the dependence of interpretation of normative legal acts or provisions outlined in scientific texts on interpretation, to reveal

⁶ Sheyko V. (2002). Organization and methodology of scientific research activity: a textbook". 2nd edition. Kyiv: Znannia-Press, Ukraine.

⁷ Maksimov S.I. (1997). Problems of the methodology of modern legal science. *Bulletin of the Academy of Legal Sciences of Ukraine*". Vol. 1. 146-150

the content of legal norms and scientific knowledge, based on the peculiarities of normative legal and scientific language.

Humanization of domestic legislation and determination of the priority of a person, their rights and freedoms about interests of the state determines the need to use a humanistic method to consider "digital technologies", "electronic technologies", and "electronic legal relations"⁸. As a result, it is concluded that the state and laws have a human nature: they are created, act, and are intended to provide for the needs of society and humans. The formal legal method was used to determine the specifics of the normative-legal regulation of social relations in the sphere of "digital technologies," "electronic technologies," and "electronic legal relations."

The comparative-legal (comparative-historical, structural, functional, axiological, typological, linguistic, semiotic, comparative-philosophical, comparative-political, etc.) for studying general, special and unique features between interpretation of the essence and content of "digital technologies", "electronic technologies", "electronic legal relations", as well as their protection in domestic legal and scientific doctrine about the foreign one, etc.

So, outlining the methodological foundations of researching personal data protection legal bases allowed us to reach several conclusions.

Firstly, the breadth of cognitive opportunities for extracting new knowledge about the subject of study and the adequacy of the obtained results depend on the methodological toolkit. Secondly, research lies in the plan of several sciences, which requires using a wide range of general,

philosophical, general scientific, partially scientific, and unique research methods. Thirdly, only the complex use of methodological approaches and research methods will contribute to an objective, comprehensive, and complete disclosure of this scientific work's subject.

Thus, the complexity and multifacetedness of the research subject, the goal, and the task set in this dissertation require the definition of worldview, philosophical, scientific, and theoretical foundations, as well as a comprehensive use of a wide range of general, intellectual, general scientific, partially scientific, and unique research methods. It is this approach that will contribute to a full, comprehensive, objective disclosure of the specifics of the legal basis for "digital technologies", "electronic technologies", and "electronic legal relations".

Results and Discussion

Features of the theoretical and legal basis of electronic money, cryptocurrency, and the payment system

The legal regulation of public finance in the conditions of digital technologies applied acquires new features and receives a significant impetus in its development. However, even in the presence of numerous FinTech publications and scientific studies, modern legal regulation of financial relations should objectively be conservative, as it is intended to protect both public interests and the interests of private individuals. When comparing the practice of introducing financial technologies into the economy, legal conflicts arise due to unavoidable inconsistencies in the content and direction of action of normative legal acts and the essence of new economic activity forms and methods. Thus, among the many problems faced by the modern science of financial law, one can single out the need to determine the legal nature of virtual means of settlement,

⁸ Suryani, Irma, et al. "Integration of Islamic Law in regional development in Indonesia." JURIS (Jurnal Ilmiah Syaria) 22.1 (2023): 1-11.

including cryptocurrencies; this need is characterized by a high degree of relevance, as it objectively reflects fundamental changes in the world economy due to its accelerated informatization and digitalization. Such transformations directly affect the general state of law and order in public finance; they entail the need to solve many general theoretical and applied issues. The growing role of the financial system information component requires its comprehensive consideration and awareness of existing trends in this area. Therefore, it involves forecasting and developing the legal regulation of financial relations. First, this concerns the specifics of money circulation organization and functioning; such money circulation is subjected to fundamental restructuring under the pressure of the FinTech industry, ultimately affecting all other groups of financial legal relations⁹.

From the very beginning, in the letter dated 08.12.2014 No. 29-208/72889 regarding operations with a cryptocurrency such as Bitcoin, the National Bank of Ukraine (NBU) recognized it as a monetary surrogate.¹⁰ And according to Part 2 of Article 32 of the Law of Ukraine "On the National Bank of Ukraine" No. 679-XIV dated 20 May 1999, it is established that the use of monetary surrogates as a means of payment is prohibited on the territory of Ukraine.¹¹

However, later, this approach changed. According to the joint statement of the national financial regulators of Ukraine, cryptocurrency is considered one of the types of decentralized virtual currencies. It is indicated that the complex legal nature of such means does not allow them to be identified with any of the related concepts (money, currency, currency value, legal tender, electronic cash, securities, monetary surrogate, etc.). That is, the position indicated the need to consider cryptocurrencies as a new object of legal relations and the impossibility of applying the method of legal analogy to this new object. This, in turn, entails the need to develop new models, regimes, and schemes of legal regulation of financial relations adequate to the economy's needs.¹²

The following steps in the evolution of the official approach to the legal valuation of cryptocurrencies were presented as cancellation of the letter of the NBU No. 29-208/72889 dated 08 December 2014 and several legislative initiatives, culminating in the adoption of the Law of Ukraine "On Virtual Assets" No 2074-IX dated 17 February 2022, which has not still entered into force¹³. However, despite the changes in the national legislation of Ukraine and their widespread discussion in society, the legal valuation of cryptocurrencies has not been resolved entirely. It appears that there was a distortion of concepts. The law "On Virtual Assets" does not use "cryptocurrency".

⁹ Leheza, Yevhen. Yerofieienko, Larysa. Komashko, Volodymyr. (2023). Peculiarities of legal regulation of intellectual property protection in Ukraine under martial law: administrative and civil aspects. *Law of Justice Journal*, 37(3), 157-172. <https://doi.org/10.5335/rjd.v37i3.15233>

¹⁰ Regarding the attribution of operations with the "virtual currency/cryptocurrency "Bitcoin" to foreign currency trading operations": the National Bank of Ukraine letter from 08.12.2014 p. № 29-208/72889. Retrieved from: <https://zakon.rada.gov.ua/laws/show/v2889500-14#Text>

¹¹ About the National Bank of Ukraine: Law of Ukraine dated May 20, 1999 No. 679-XIV. Retrieved from:

<https://zakon.rada.gov.ua/laws/show/679-14#n434>

¹² Volobuieva, O. Leheza, Ye. Pervii, V. Plokhuta, Ye. Pichko, R. Criminal and Administrative Legal Characteristics of Offenses in The Field of Countering Drug Trafficking: Insights from Ukraine. *Yustisia*. Vol 12, No 3. 2023. 262-277. DOI: <https://doi.org/10.20961/yustisia.v12i3.79443>

¹³ On virtual assets: Law of Ukraine dated February 17, 2022, No. 2074-IX. Retrieved from: <https://zakon.rada.gov.ua/laws/show/2074-20#Text>

Neither is this term used in other legislative acts regulating relations in financial services. Such legal initiatives look like an attempt to circumvent the prohibition established by Part 2 of Article 32 of the Law of Ukraine "On the National Bank of Ukraine" No. 679-XIV dated 20 May, 1999, which concerns the issue and use of monetary units other than the hryvnia on the territory of Ukraine and cannot be considered constructive given the need to determine the legal nature of cryptocurrencies.

In addition, the provisions of clause 7 of Article 4 of the Law of Ukraine "On Virtual Assets" establish that virtual assets are not a means of payment and cannot be exchanged for property (goods), works (services)¹⁴ On the one hand, the law recognizes virtual assets as an object of civil rights; on the other hand, it deprives them of the function of a negotiable instrument.) This situation does not seem to be logical. Moreover, it is contradictory and inconsistent against the background of clauses 2, 5 of Article 3 subparagraph 3 paragraph 1 of Article 34 of the Law of Ukraine "On Payment Services" No. 1591-IX dated 30 June 2021, which determine the possibility of using electronic money and digital money in economic circulation, marking them as cash.¹⁵ Due to such peculiarities of determining the legal status of cryptocurrencies, the legal regulation of social relations (with virtual assets being their objects in Ukraine) has a fragmentary nature, which can be overcome only through the systemic coordination of the content of the regulatory framework and the programmatic conditionality of the rule-making activity performed by national

regulators, taking into account the legal and economic nature of such alternative settlement units (the ASU)¹⁶.

As for evaluating cryptocurrencies as private decentralized currencies, their use in civil circulation and the public legal sphere requires separate considerations. One of the fundamental provisions of the legal theory of money is the distinction between private currencies and state (official) money. Means of payment alternatives to any public funds in modern conditions can acquire economic significance and value as an object of civil rights only if the state allows their use in official transactions. The fundamental economic and legal value of state (official) money for the economy lies in its recognition as legal tender. In this context, public money serves to express and properly fulfill obligations. They must be accepted at face value for all payments. The requirement of the state to carry out financial settlements exclusively by legal means of payment appears to be particularly important in this regard. The state also makes payments for its obligations using legal means of payment.¹⁷

However, the seeds are breaking the state emission monopoly even in this area. These seeds originate from activities performed by the country's central bank (which chose the course for virtualizing money circulation) and other state authorities contributing to

¹⁴ On virtual assets: Law of Ukraine dated February 17, 2022, No. 2074-IX. Retrieved from: <https://zakon.rada.gov.ua/laws/show/2074-20#Text>

¹⁵ On payment services: Law of Ukraine dated June 30, 2021, No. 1591-IX. Retrieved from: <https://zakon.rada.gov.ua/laws/show/1591-20#Text>

¹⁶ Leheza, Y., Shcherbyna, B Leheza, Y. Pushkina, O. Marchenko, O. Features of Applying the Right to Suspension or Complete/ Partial Refusal to Fulfill a Duty in Case of Non-Fulfilment of the Counter Duty by the Other Party According to the Civil Legislation of Ukraine. *Revista Jurídica Portucalense*, 2023. 340–359. Retrieved from <https://revistas.rcaap.pt/juridica/article/view/29662>

¹⁷ Leheza, Ye. Shablysty, V. Aristova, I. V. Kravchenko, I. A. Kornikova, T. Foreign Experience in Legal Regulation of Combating Crime in the Sphere of Trafficking of Narcotic Drugs, Psychotropic Substances, their Analogues and Precursors: Administrative and Criminal Aspect. *Journal of Drug and Alcohol Research*.

this process. Indicative of this is the possibility of issuing electronic money, denominated in hryvnia, by entities other than the National Bank of Ukraine, which requires an assessment of such an innovation from the point of view of its constitutionality and openness to conflicts¹⁸. A controversial point also concerns the adaptation of FinTech for fiscal and other financial and legal needs, which is consistently implemented through the circulation of electronic money. By its nature, electronic money is a type of secured virtual asset with a binding nature.¹⁹ In its economic essence, this money is a digital debt document, not funds. It acts as a kind of “electronic promissory note”, but it does not correspond to the formal features of such a security. And although Clause 2 of Article 3 of the Law of Ukraine “On Payment Services” No. 1591-IX dated 30 June 2021 defines electronic money as a type of funds,²⁰ But, as can be seen, such a prescription is a dubious step both from the point of view of economic expediency and from the point of view of legal validity (justification). Electronic money has characteristics inherent to various types of assets, including monetary surrogates. However, this does not prevent the state from using public finances as a separate investment resource and a means of paying taxes and fees. The assessment of some recent legislative innovations conditions this

vision. In particular, we are discussing changing paragraph 35.2 of Article 35 of the Tax Code of Ukraine regarding the permission to use electronic money to pay taxes and fees.²¹

Such introduction of the FinTech industry assets into the legal regulation of tax relations does not seem appropriate and well-considered, and again, in the context of part 3, paragraph 35-1.1 Article. 35-1 of the Tax Code of Ukraine is inconsistent, as it cannot accept electronic money on a single account²². The above statement again emphasizes the need for a balanced approach to selecting models for the legal regulation of digital financial technologies, greater visibility into their admissibility, and potential dangers and harm to public finances. In addition, this kind of legal regulation undermines trust in electronic money and causes significant reputational losses to the state.²³

And if electronic money can be considered suitable for making payments of a non-public nature within the limits of the relevant payment systems, and transactions with their use can and should be considered as objects of taxation, since they create a separate channel for movement of value in economic relations, then their use as a means for payment of taxes is considered socially unacceptable. A simple question arises - why

¹⁸ Korneyev M., Zolotukhina L., Hryhorash T. LehezaYe. & Hryhorash O., The development of small business as a source of formation of local budget revenues in Ukraine. *Investment. Management and Financial Innovations*. 15 (1). 2018. P. 132-140. DOI:10.21511/imfi.15(1).2018.12

¹⁹ Leheza Ye., Pisotska K., Dubenko O., Dakhno O., Sotskyi A. The Essence of the Principles of Ukrainian Law in Modern Jurisprudence. *Revista Jurídica Portucalense*, December 2022. 342-363. DOI: [https://doi.org/10.34625/issn.2183-2705\(32\)2022.ic-15](https://doi.org/10.34625/issn.2183-2705(32)2022.ic-15)

²⁰ On payment services: Law of Ukraine dated June 30, 2021, No. 1591-IX. Retrieved from: <https://zakon.rada.gov.ua/laws/show/1591-20#Text>

²¹ On amendments to the Tax Code of Ukraine and other legislative acts of Ukraine regarding payment services: Law of Ukraine dated January 12, 2023, No. 2888-IX. Retrieved from: <https://zakon.rada.gov.ua/laws/show/2888-20#Text>

²² Tax Code of Ukraine dated 02.12.2010 No. 2755-VI. Retrieved from: <https://zakon.rada.gov.ua/laws/show/2755-17#Text>

²³ Leheza Ye. O., Filatov V., Varava V., Halunko V., Kartsyhin D. Scientific and practical analysis of administrative jurisdiction in the light of adoption of the new code of administrative procedure of Ukraine. *Journal of Legal, Ethical and Regulatory Issues*. Vol. 22, Issue 5. 2019. P. 1-8.

should the state and local self-government bodies receive private debt receipts instead of legal means of payment? However, such private debt receipts may be insufficient for receiving corresponding “traditional money” amounts. Electronic money can become a “soap bubble” or “junk securities”. Therefore, in our opinion, only fiat money is suitable for paying taxes and fees, or (given the manifestation of FinTech) - digital money of the National Bank of Ukraine, since the state backs it with all its assets and power priorities, and therefore it is characterized by public-legal nature and relevant state guarantees of protection.²⁴.

Another indicative point that warns about its possible consequences in the context of the issue of the state monopoly of emission is presented in the provisions of Articles 34 and 35 of the Law of Ukraine “On Payment Services” No. 1591-IX, dated 30 June 2021 which determine the types of payment instruments and the procedure for implementation of their emissions. Analysis of these provisions allows us to assert that the procedure for issuing electronic payment instruments to be used in payment systems is determined by the rules of the relevant payment systems, considering the requirements of this Law and the regulatory legal acts of the National Bank of Ukraine.²⁵. That is, there is a significant liberalization of the legal regulation of the functioning of payment systems through local rule-making. However, the latter is significantly limited by the current legislation. However, such a state also reflects the constant tendency to

weaken the imperative of legal regulation of monetary circulation, which is fundamental for public finances. Instead, there have been discussions about defining the concept of payment systems for more than 20 years. Such a question remains relevant given the adoption of the Law of Ukraine “On Payment Services” No 1591-IX dated 30 June 2021²⁶. This normative legal act has changed some conceptual approaches to the organization of payment services, and it requires additional research into the ratio of dispositive and imperative principles of legal regulation of FinTech industry manifestations in the sphere of public finances.²⁷.

To summarize the information mentioned, it should be noted that the legal regulations for introducing FinTech in public finance are not limited to the above. The spectrum of problematic issues in digitalizing financial legal relations is much broader. However, the scope of this article does not allow even an overview of the most important of them. At the same time, the above makes it possible to create a general impression of the trends in the legal regulation of certain types of virtual assets and outline directions for further scientific research in this area.

Foreign experience of recognizing cryptocurrency as a means of payment

It is hard to deny the statement that whoever controls money controls the world. The emergence of cryptocurrencies as alternative settlement units (hereinafter referred to as ASUs) threatens the dominance of public

²⁴ Dymko I., Muradian A., Manzhula A., Rudkovskiy O., LehezaYe. Integrated approach to developing the effectiveness function of quality control of metal products. *Eastern European Journal of Enterprise Technologies*. 6/3 (90). 2017. P. 26-34. DOI: 10.15587/1729-4061.2017.119500.

²⁵ On payment services: Law of Ukraine dated June 30, 2021, No. 1591-IX. Retrieved from: <https://zakon.rada.gov.ua/laws/show/1591-20#Text>

²⁶ On payment services: Law of Ukraine dated June 30, 2021, No. 1591-IX. Retrieved from: <https://zakon.rada.gov.ua/laws/show/1591-20#Text>

²⁷ Leheza, Y. Panova, O. Ivanytsia, A. Marchenko, V. Oliukha, V. International models of legal regulation and ethics of cryptocurrency use: country review. *Journal of Legal, Ethical and Regulatory Issues*. 2019. –Special Issue 2. P.1-6.

(fiat) currencies and vividly illustrates the above thesis. The FinTech-supplemented formation of a new form of investment resources enables competition on the part of private financial agents concerning states and their associations in the economic sphere; this acts as a factor in breaking the state emission monopoly and requires awareness of the possible negative consequences of such innovations.²⁸

It is hard to deny the statement that whoever controls money controls the world. The emergence of cryptocurrencies as alternative settlement units (hereinafter referred to as ASUs) threatens the dominance of public (fiat) currencies and vividly illustrates the above thesis. The FinTech-supplemented formation of a new form of investment resources enables competition on the part of private financial agents concerning states and their associations in the economic sphere; this acts as a factor in breaking the state emission monopoly and requires awareness of the possible negative consequences of such innovations.²⁹

The world fintech market has evolved from the initial stage in which startups were the leading players to the modern one, which is characterized by the presence of professional companies capable of offering consumers a wide range of products. The increasing involvement of consumers in the use of new

financial technologies is evidenced by the increase in the level of penetration of financial services - in 2022, the average level of penetration was 16% (fintech markets of 27 countries were used for the study), in 2023 - 33%, in 2019 - 64%.

Several countries demonstrate impressive results: the fintech penetration level for China and India is 87%, Russia and South Africa 82%, and more than 70% Colombia, Peru, the Netherlands, Mexico, Ireland, and Great Britain. The lowest level of penetration was found in the USA (46%), Belgium and Luxembourg (42%), France (35%), and Japan (34%) (Fig. 1).

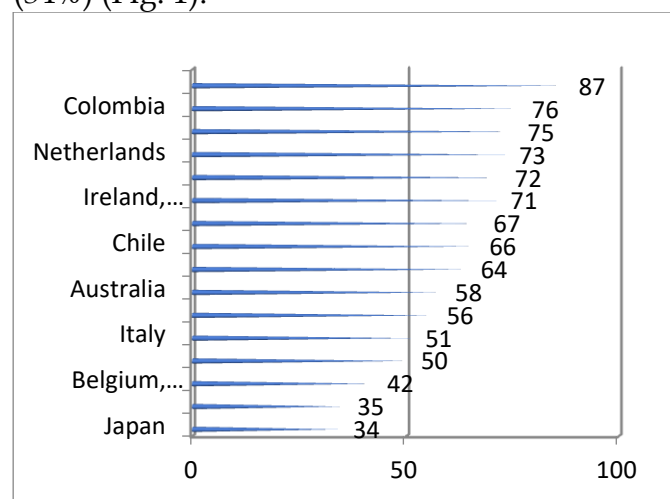


Fig. 1. Electronic money, cryptocurrency, FinTech on markets in foreign countries, %

According to some estimates, there are more than 16,000 separate cryptocurrencies in circulation, and their total value exceeded 3 trillion USD³⁰. However, the crypto euphoria caused by the awareness of potential opportunities for obtaining additional investment resources cannot negate several significant threats from the introduction of ASU. We are talking about uncontrolled non-bank settlement operations, financial fraud, tax evasion, corruption, and laundering of “dirty money”, which is dangerous for individual

²⁸ Korniienko, Maksym. Desyatnik, Anatolii. Didkivska, Galina. Leheza, Yevhen. Titarenko, Oleksiy. 2023. Peculiarities of investigating criminal offenses related to illegal turnover of narcotic drugs, psychotropic substances, their analogues or precursors: criminal law aspect. *Khazanah Hukum*. Vol. 5. No. 3, 205-215 DOI: <https://doi.org/10.15575/kh.v5i3.31742>.

²⁹ Korniienko, Maksym. Desyatnik, Anatolii. Didkivska, Galina. Leheza, Yevhen. Titarenko, Oleksiy. 2023. Peculiarities of investigating criminal offenses related to illegal turnover of narcotic drugs, psychotropic substances, their analogues or precursors: criminal law aspect. *Khazanah Hukum*. Vol. 5. No. 3, 205-215 DOI: <https://doi.org/10.15575/kh.v5i3.31742>.

³⁰ Ehret Todd, Hammond Susannah. Compendium: Cryptocurrency regulations by country. Thomson Reuters, 2022.

states and the world economy. Cryptocurrencies and alternative monetary settlement systems created on their basis are potentially hazardous for international peace and security, as they are suitable for financing international terrorism and illegal trafficking in people, weapons, drugs, etc.

Given this, the legal assessment of cryptocurrencies as objects of legal relations is variable in different national jurisdictions, from their legalization to the complete prohibition of transactions performed with such virtual assets. Moreover, it can be contradictory and inconsistent. For example, despite the ban set by the People's Bank of China on the use of cryptocurrencies for official transactions, this country has become the world leader in cryptocurrency mining.³¹ Such inconsistency is also typical of Ukraine, where the official position regarding the legal status of cryptocurrencies has undergone a significant transformation.

Germany has recognized Bitcoin as a settlement currency and private money. In February 2018, the Federal Ministry of Finance of the Federal Republic of Germany clarified that virtual currencies are equated with legal tender to the extent that they are accepted by the parties to the agreement as alternative contractual and direct means of payment that do not serve any other purpose. In addition to using quality as a means of payment.³²

In February 2020, the Central Bank of Sweden announced the start of testing the first state cryptocurrency in the EU. E-Krona is traditional money in digital form, issued and managed by the country's central bank (as opposed to cryptocurrency, which is

managed by disparate online communities and not a centralized authority). In the October 22, 2015, decision in the Hedqvist v. Sweden case, Bitcoin was recognized as a contractual means of payment. The Swedish population almost completely abandoned cash.³³

In 2017, the Government of Japan approved changes to the Law "On Banking Activities" and officially recognized Wiisoip as a legal means of payment.³⁴ Cryptocurrency is considered "currency or other form of money" by US courts. For example, the decision of the judge of the Eastern District of Texas (Case NO. 4:13-CV-416) defined Bitcoin as a currency. It resolved the question of applying current law to transactions with it. Judge T. Mazant held that because Bitcoin can be used to pay for goods or exchanged for other currencies (such as the dollar, yen, yuan, etc.), it is a currency or form of money. However, in other states, the situation is different. By the decision of the District Court of Florida (Saze NO.: P14-2923), the court decided and declared the opposite, which led to the dismissal of the accusation regarding the legalization of income obtained through criminal means.³⁵ At the same time, the state of Washington recognizes digital currency as an object of money transfers based on the Law "On the Unification of Monetary Services"³⁶.

³¹ Rysin V.V., Rysin M.V., Fedyuk I.V. The legal status of cryptocurrency as a financial instrument. Efficient economy. 2018.

³² Chaplyan S. Emergence of means of payment and their relationship with related legal institutions. Entrepreneurship, economy, and law. 2020. Issue 7. P. 109–114.

³³ Yarova K. Cryptocurrency: determination of legal status in Ukraine. A young scientist. 2017. No. 10(50). P. 1117–1120

³⁴ Chaplyan S. Emergence of means of payment and their relationship with related legal institutions. Entrepreneurship, economy, and law. 2020. Issue 7. P. 109–114.

³⁵ Burdonosova M. Theoretical and legal analysis of state regulation of cryptocurrency in Ukraine. Actual problems of domestic jurisprudence. 2019. No. 1. P. 9–12.

³⁶ Leheza, Y. Panova, O. Ivanytsia, A. Marchenko, V. Oliukha, V. International models of legal regulation and ethics of cryptocurrency use:

In Canada, Bitcoin is a means of payment. In Spain, the Bitcoin system is recognized as an official payment system. The Canada Revenue Agency (CRA) views cryptocurrency as property, with profits subject to tax under income tax laws being either business income or capital gains.

Determining whether your cryptocurrency activity constitutes a business is critical since only 50% of capital gains are taxable, whereas business income is fully taxable. This guide provides a comprehensive overview of how to report and tax both types of income and addresses frequently asked questions about cryptocurrency taxation in Canada. Cryptocurrency tax rates in Canada are unique and set them apart from many other tax systems worldwide. Canada is not unlike some jurisdictions that differentiate between short-term and long-term capital gains. Instead, capital gains from cryptocurrency are taxed at combined federal and provincial income tax rates. An essential difference for individual crypto investors is that taxes only apply to 50% of total capital gains. In contrast, professional traders who regularly buy and sell cryptocurrency are taxed on 100% of their profits. The federal income tax rates for individuals in Canada for 2023 and 2024 are broken down into several categories. For 2024, these brackets have been adjusted for inflation and other economic factors: A 15% rate applies to the first \$53,359 of taxable income, increasing from \$50,197 in 2022. For income between \$53,359 and \$106,717, the rate is 20.5%, compared to the level between \$50,197 and \$100,392. Income between \$106,717 and \$165,430 is taxed at 26%, an increase from the previous bracket of \$100,392 to \$155,625. The next bracket, \$165,430 to \$235,675, is taxed at 29%, increasing from \$155,625 to \$221,708. For income above \$235,675, the rate is 33%,

adjusted from the previous bracket, starting at \$221,708.

It is important to note that provincial and territorial taxes in Canada (except Quebec, which has its tax system) mirror the federal structure, allowing for seamless integration between federal and local tax calculations. Each province and territory provides specific tax packages that include the rates applicable to residents, ensuring that people can accurately calculate their overall tax liability, including those related to cryptocurrency transactions.

This simplified approach to cryptocurrency taxation highlights the need for Canadian crypto investors and traders to keep accurate records of their transactions. By understanding these tax rules and planning accordingly, cryptocurrency holders in Canada can more effectively meet their tax obligations and avoid potential pitfalls. Latin American countries consider cryptocurrency a legal asset, admissible in full or at least partially for civil circulation, but deny its status as national (fiat) money, foreign (fiat) currency, and legal tender. However, the legislation of El Salvador in September 2021 recognized it as legal tender -the de facto national currency of the country. This will give the decentralized financial product the official status of a foreign currency in other countries. In the event of a successful continuation of this payment experiment in El Salvador, the issue of cryptocurrency will become relevant; there will be a need to review legal formulations and approaches to certifying cryptocurrency as an object of civil rights in all Latin American countries.

In Singapore, the legal regime of digital payment tokens in the country was regulated in 2019, when this concept was included in the Law "On Payment Services" No. 2 dated 22.02.2019. According to Part 1 of the Law, "a digital payment token means any digital representation of value (except

country review. Journal of Legal, Ethical and Regulatory Issues. 2019. -Special Issue 2. P.1-6.

for established exceptions) which: a) is expressed in the form of a block; b) is not denominated in any of the currencies and is not linked by its issuer to any of the currencies; c) is or is intended to be a medium of exchange accepted by society or its part as payment for goods or services or to repay debt obligations..."³⁷In general, at the level of legislation, administrative, or judicial practice, most Asian countries recognize that cryptocurrency's real purpose is to act as a means of payment for goods/works/services, an alternative to fiat money. However, only some countries, such as Japan, South Korea, Singapore, and Thailand, have an undeniable attitude towards this function of this innovative object of civil rights.

Table 1. Advantages and disadvantages of using cryptocurrency

Advantages	Disadvantages
Cryptocurrency code	Lack of guarantees for the safety of electronic wallets
Limitless transaction possibilities	The danger of losing the key to cryptocurrency
Number of days of inflation	The instability of the cryptocurrency exchange rate
Anonymity	Dependence of the exchange rate on demand
Decentralization	Negative actions by national regulators are possible.
Number of days of the commission	Hacker intervention
Rivni Umovi Vikoristannya Mizh Koristuvachs	Problematic return in case of erroneous currency transfer
Independence from	Distrust of users

³⁷ Chaplyan S. Emergence of means of payment and their relationship with related legal institutions. Entrepreneurship, economy, and law. 2020. Issue 7. P. 109–114.

the economies of powers. Data protection from external threats	
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Consider the experience of Ohio (USA) accepting BitCoin. In October, Ohio Treasurer Robert Sprague suspended the use of Bitcoins, citing concern that the contract with a third-party payment processor was not competitively bid by Mandel, which would have been required if the Board of Deposit had approved the arrangement. OhioCrypto.com, a website launched in 2018 under Mandel, was the first state portal to facilitate cryptocurrency as a form of business payment. The website had been used for fewer than 10 transactions in just under a year. During that time, the state never came into possession of Bitcoin. Instead, when taxpayers used OhioCrypto.com to make payments, the Bitcoin was converted into U.S. currency by payment processor BitPay before it was deposited into the state's account.

In Switzerland, cryptocurrency is equated with foreign currencies – transactions with it are exempt from VAT but are taxed as property. In Finland, cryptocurrency is defined as a financial instrument; transactions with it are considered private and are exempt from VAT.

Conclusion

When researching existing artificial intelligence systems used in the judiciary of different countries, their features and potential advantages for improving the quality of court decisions were revealed. Information about these systems helped to understand how their use can contribute to the objectivity and efficiency of justice.

Analyzing artificial intelligence's valuable tools and advantages in evaluating evidence and motivating court decisions has

highlighted the potential of using these technologies in criminal justice. These technologies can help predict risks and develop effective strategies for responding to them. When considering challenges and risks associated with using artificial intelligence, it was found that protecting human rights, personal data, and the transparency of algorithms are actual challenges. These aspects require careful consideration and the development of appropriate measures to address them.

In the research process, it was established that integrating artificial intelligence technologies in criminal justice has a huge potential to increase the criminal justice system's efficiency, effectiveness, and fairness. AI can assist in decision-making, crime prevention, evidence evaluation, and legal research using advanced algorithms, machine learning, and data analysis. However, it is necessary to carefully consider the ethical and legal implications of implementing artificial intelligence, ensuring that privacy, transparency, and accountability issues will be addressed appropriately. With proper safeguards, artificial intelligence can become a valuable tool in administering justice and maintaining a fair and equal society.

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