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# DECENTRALIZED AUTONOMOUS ORGANIZATIONS: REDEFINING LEGAL PARADIGMS

## ABSTRACT

The article is dedicated to exploring the peculiarities of the legal aspects of decentralized autonomous organizations, specifying their characteristics, and legal status and formulating proposals for improving legislation in this regard (particularly in combating criminal activities and reducing instances of circumventing economic sanctions imposed by Ukraine, countries of the European Union, the United States, and others against entities of the Russian Federation through the use of decentralized autonomous organizations).

The legal status of decentralized autonomous organizations has been examined, their characteristics have been specified, and legislative improvements in this direction have been proposed to combat criminal activity and prevention of economic sanctions evasion. It is noted that a decentralized autonomous organization cannot be registered as a legal entity in Ukraine due to its "virtual" nature and the problems arising from provisions of national legislation. However, it can be qualified as a business entity acting as a virtual assets service provider. Proposed amendments to legislation regarding the registration of decentralized autonomous organizations as service providers and the imposition of sanctions on them have been suggested. Based on the obtained results, further research directions in this area have been specified.

**Keywords:** decentralized autonomous organizations, digitalization, virtual assets, virtual assets market, sanctions, smart contracts, legislation, virtual entities, virtual enterprises

**JEL Classification:** K24, K22, H56, G18

## INTRODUCTION

Starting from the moment of Russia's widespread aggression in Ukraine, there has been an increasing number of instances where various participants use the virtual assets market for activities posing a threat to Ukraine's national security (Verkhovna Rada of Ukraine, 2022). These instances involve circumventing previously imposed sanctions against the aggressor state and funding its terrorist, espionage, and diversionary activities through cryptocurrencies, particularly by using so-called "decentralized autonomous organizations" (DAOs). Prominent examples of such organizations include "Tornado Cash," "MakerDAO," "Uniswap," and others (GNcrypto, 2022). They operate through smart contracts without centralized control or third-party intervention and usually without registering as a legal entity. In turn, the ambiguity of the legal status and autonomous operation of DAOs complicates the identification of their founders (developers). Under such conditions, the application of sanctions (including asset freezing, confiscation for state revenue, etc.) becomes practically impossible, for instance, according to the provisions of Ukrainian legislation. According to Part 2 of Article 1 of the Law of Ukraine "On Sanctions," "sanctions may be applied by Ukraine against ... foreign legal entities, legal entities under the control of foreign legal entities or non-resident individuals, foreigners, stateless persons, as well as subjects engaged in terrorist activities." Confirmation of this thesis is the registered project of Resolution on the necessity of applying restrictive measures (sanctions) to service providers associated with the turnover of virtual assets collaborating with banks of the Russian Federation and the Republic of Belarus (according to the list attached to the Resolution) № 7590, which has not acquired the status of a regulatory act, including for the reasons mentioned

above (Draft Resolution of Verkhovna Rada of Ukraine; Specification on July 23, 2022, № 7590) (particularly due to the impossibility of (1) identifying DAOs (as per the list in the resolution) as legal entities and (2) determining their founders (developers)).

Such inconsistency in Ukrainian legislation, driven by the digitization of economic relations, leads to the complete disregard of criminal activities and reduces the effectiveness of imposed economic sanctions by countries such as the EU, the USA, and others against entities of the Russian Federation. It is noteworthy that this situation occurs against the backdrop of existing foreign experience (for example, the USA), where DAOs, along with all relevant consequences, are included in the sanction list. For instance, "Tornado Cash" was qualified by the Office of Foreign Assets Control (OFAC) of the U.S. Treasury as a "partnership, association, joint venture, corporation, group, subgroup, or other organization," without specifying its legal status but indicating that sanctions may be applied to "Tornado Cash" under US law (Office of Foreign Assets Control, 2022).

The approaches of countries regarding the legal regulation of the activities of such organizations, determination of their legal status, etc., are reasonable for implementation in Ukraine, but taking into account the specifics of the national legal system. This underscores the need for research in the relevant direction.

## LITERATURE REVIEW

It should be noted that scholarly interest in the peculiarities of DAO functioning has been steadily increasing in recent years, which is naturally explained by the active integration of technologies into the global economy. O. M. Vinnyk noted that digitalization has significantly impacted economic relations, leading to the emergence of qualitatively new entities (virtual enterprises in particular) and electronic resources (Vinnyk, 2021, p. 7), and has highlighted the necessity for modernizing legislation in line with the challenges and demands of the time. It seems that DAOs can be classified as such "qualitatively new" entities. Currently, such organizations lack a clear definition in the legislation of many countries. The legal doctrine is also characterized by the absence of approaches in this direction. At the same time, there are a number of interesting scientific works dedicated to this issue. Of particular note is the research by Sh. Wang and co-authors' "Decentralized Autonomous Organizations: Concept, Model, and Applications," which presents a systematic introduction to DAO, including its concept and characteristics, research framework, typical implementations, challenges, and future trends. Scholars emphasize the necessity of a legislative definition of DAO and specification of the responsibility that both the organization itself and its participants may bear (Wang et al, 2019, p. 877). In their view, a decentralized autonomous organization is a new organizational form in which management and operational rules are typically encoded on the blockchain in the form of smart contracts, and which can operate autonomously without centralized control or third-party intervention (Wang et al, 2019, p. 870). Similar approaches are followed in practice as well. For example, the U.S. Securities and Exchange Commission (SEC) defines DAO as a "virtual organization embodied in computer code and executed on a distributed ledger or blockchain" (Securities and Exchange Commission, 2017, p. 1). From the definitions provided, DAO is perceived to be characterized by decentralization, autonomy, virtuality, embodiment in computer code, and execution on a distributed ledger or blockchain. Considering the aim of this study, it seems expedient to further focus only on those DAOs that provide services related to the turnover of virtual assets.

In general, the ideologist and author of the open-source computer code behind the DAO is considered to be Christoph Jentzsch. In particular, in his work "Decentralized autonomous organization to automate governance final draft - under review," the author illustrated a method that for the first time allows the creation of organizations in which (1) participants exercise direct control over contributions in real-time and (2) governance rules in such organizations are formalized, automated, and implemented through software (Jentzsch, 2016). S. Wang and co-authors consider the concept of DAO to be entirely natural, seeing signs of "collective intelligence" in its origins, noting that in natural ecosystems, many animal populations are self-organized and, taking the example of an anthill, while the behaviour of an individual ant is simple and limited, an ant colony can perform complex actions such as searching for food, feeding, nesting, and defence (Wang et al, 2019, p. 870).

According to V.V. Serzhanov, V.P. Andryshyn, and Y.L. Kochan, DAOs are similar to traditional companies like LLCs and joint-stock companies. However, the main difference is that DAOs aim to create autonomous organizations where all processes are automated through smart contracts. These companies should be protected from external factors, preventing anyone from raiding them, and state regulators from blocking their websites and services (Serzhanov et al, 2023, p. 130).

There is an opinion that DAO addresses an economic problem called the "principal-agent dilemma." It arises when a natural or legal person ("agent") has the ability to make decisions and act on behalf of another natural or legal person ("principal"). If the agents are motivated to act in their own interests, they may disregard the interests of the principal. This situation

allows the agent to take risks on behalf of the principal. The problem is complicated by the fact that there may also be information asymmetry between the principal and the agent. The principals may never find out that their name is being used, and they have no way of ensuring that the agents are acting in their interests (Binance Academy, 2020).

In 2017, the U.S. Securities and Exchange Commission (SEC) published a report analyzing tokens issued by the "Slock.it" DAO ("DAO Report"). In the DAO Report, the SEC concluded that the virtual assets issued by the "Slock.it" DAO are investment contracts. In the same context, the SEC determined that individuals offering and selling securities in the United States must comply with the requirements of federal securities laws, including the requirement to register with the Commission or qualify for an exemption from registration as provided in federal securities laws. These requirements apply to those offering and selling securities in the United States, regardless of whether the issuer is a traditional company or a decentralized autonomous organization, regardless of whether these securities are purchased with U.S. dollars or virtual currencies, and regardless of whether they are distributed in certificated form or through distributed ledger technology (Securities and Exchange Commission, 2017, pp. 17-18).

In other words, the SEC concluded that any legal or natural person engaged in exchange activities, such as the DAO recognized in this case, providing services related to the trading of virtual assets, must register in the United States as a stock exchange. As for the provisions of Ukrainian law, it should be noted that the mere fact of activity involving the offer of exchange, transfer, or storage of virtual assets provides grounds to classify the DAO as a service provider related to the turnover of virtual assets, which can only be legal entities - business entities (Article 1, Section 1, Clause 8 of the Law of Ukraine "On Virtual Assets"). However, given the definitions of the DAO provided above, there is no unequivocal possibility to establish whether such an organization is a business entity, let alone a legal entity.

Despite the novelty of the DAO concept, studies have been conducted in economic science on virtual enterprises. For instance, M.B. Kulynych concluded that virtual enterprises are conditional organizational structures, the network existence of which consists of heterogeneous agents interacting in a computer-mediated environment and located in different locations (Kulynych, 2019, p. 10). It appears that such a definition of a virtual enterprise allows DAO to be considered as a type of virtual enterprise. Alongside this, the scholar believes that to carry out its activities to achieve its main goal – profit-making – a domestic virtual enterprise can only do so by acquiring the status of a legal entity, that is, by completing all legal procedures (Kulynych, 2019, p. 12). Therefore, according to M.B. Kulynych, DAO as a virtual enterprise (i.e., as a business entity) can exist only after its registration as a legal entity. At the same time, comparing the concepts of "business entity" and "legal entity," it should be noted that they are not identical. This view is also reflected in the research of O.A. Belyanevych, who points out that recognizing a person as a subject of business law in the theory of business law is not inherently linked to their status as a legal entity. The category of a legal entity serves as a characteristic of the external aspect of the organization's activities, while the organizational-legal form pertains to internal relations (Belyanevych, 2023, p. 66). V.V. Kochyn also points out that the development of legislation in independent Ukraine has led to the existence of duality in the legal concept of a legal entity: in its classical understanding (participant in civil relations - Article 80 of the Civil Code of Ukraine), as well as a business organization (subject of economic activity - Article 55 of the Civil Code of Ukraine). In this context, the scholar noted that the peculiarity of such a virtual association is the establishment of social ties sometimes without the need to create a legal entity (Kochyn, 2022, p. 54).

The foregoing, in the context of the non-identity of the concepts "business entity" and "legal entity," highlights the relevance of finding an answer to the question: can a DAO be an economic entity and a legal entity or be encompassed by at least one of the mentioned concepts?

## AIMS AND OBJECTIVES

The article aims to explore the peculiarities of the legal status of decentralized autonomous organizations, specify their characteristics, legal status and formulate proposals for improving legislation in this direction (particularly to counter criminal activities and reduce instances of circumventing economic sanctions imposed by Ukraine, EU countries, the USA, and others against entities of the Russian Federation by employing DAO).

## METHODS

To achieve the aim of the article and to ensure a high level of scientific substantiation and credibility of the obtained results, a methodological framework encompassing hermeneutical, comparative, and generalizing methods was applied.

The hermeneutical method was utilized for a thorough understanding of texts from international legal documents, legislation defining the status of decentralized autonomous organizations, and relevant scholarly publications. Comparative analysis helped identify parallels and differences in legal approaches among countries, including Ukraine.

Conclusions, recommendations, and proposals were formulated through generalization based on the understanding gained from analyzing this diverse experience. Such an approach contributed to the ability to make well-founded proposals for improving Ukrainian legislation.

## RESULTS

Analyzing the possibility of registering DAO as a legal entity, it is necessary to consider that by creating such an organization, its founders may intentionally seek to avoid registration. However, this may entail certain risks, particularly for its participants.

One recent dispute that illustrates this is the case of the Commodity Futures Trading Commission (CFTC) v. DAO "Ooki," which lacks legal entity status. Therefore, the CFTC decided that the DAO is liable as an unincorporated association for illegal asset trading and other violations. According to the CFTC, "each participant who has voting rights in the DAO may and should bear individual responsibility for any unlawful activity carried out by the DAO" (Commodity Futures Trading Commission, 2022).

At the same time, from the perspective of Ukrainian law, it should be noted that a legal entity is an organization that is established and registered following the procedure established by law (Civil Code of Ukraine, Article 80, Part 1). A legal entity is established from the date of its state registration, as stated in Article 87, Part 4 of the Civil Code of Ukraine.

Although T. Nielsen argues that US courts have sometimes recognised the existence of a legal entity even in the absence of its *de jure* registration, the above-mentioned suggests that it is not possible to consider any DAO a legal entity without its registration per the statutory procedure.

However, even if interested parties wish to register a DAO as a legal entity, its virtual nature causes certain problems arising from the requirements of civil law. Therefore, it is important to consider the challenges that may arise when attempting to register a DAO as a legal entity: starting with the issue of determining the location of a legal entity, which according to Article 93 of the Civil Code of Ukraine cannot exist solely in virtual space or a distributed blockchain registry, and ending with the legal classification of a DAO as a corporation, institution or other legally recognized form.

About the virtual nature of DAO, it is worth mentioning A.I. Havrylenko's opinion that a virtual legal entity may exist. Therefore, further research on this topic is proposed by the author (Havrylenko, 2017, p. 264). Additionally, V.V. Kochyn has proposed a definition of a virtual legal entity as an organization created by participants using electronic technologies to manage electronic means for profit or non-profit purposes (Kochyn, 2022, p. 53).

Nevertheless, it should be noted that such opinions are rather explorations of the possibility of improving civil legislation, and it seems that, given the provisions of the current Ukrainian civil legislation, it is currently impossible to register a DAO as a legal entity. However, some scholars argue that legal entities' virtuality and fictitiousness are not determined by the absence or invalidity of a certain phenomenon. Instead, they are determined by the legitimisation of the system of relations in its entirety as a person - a subject of law. Therefore, the position on the "virtual" location may be revised in the future. However, this will require a rethinking of the institution of a legal entity in civil law (Kochyn, 2022, p. 55).

The choice of organizational and legal forms is a controversial issue that requires careful consideration, as it is a crucial aspect of any business activity. The legislation does not prescribe a specific form for the entities under consideration.

As noted above, OFAC has defined the legal form of Tornado Cash as a "partnership, association, joint venture, corporation, group, subgroup, or other organization." The organizational structure of Tornado Cash consists of (1) its founders and other associated developers, who together launched the Tornado Cash mixing service, developed new Tornado Cash mixing service features, created the Tornado Cash Decentralized Autonomous Organization (DAO), and actively promoted the platform's popularity in an attempt to increase its user base; and (2) the Tornado Cash DAO, which is responsible for voting on and implementing new features created by the developers (Office of Foreign Assets Control, 2022).

Some scholars argue that a DAO could be considered a general partnership, which would make each founder, participant, investor, or token holder of the DAO liable for its debts and actions (Wang et al, 2019, p. 877).

According to scientists, the DAO does not fit well into the list of existing organizational and legal forms. Therefore, instead of adjusting it to one of them, states should recognize the DAO as a new organizational and legal form, a "crypto corporation". T. Nielsen suggests that crypto corporations can maintain the anonymity, or "pseudo-anonymity" as the author calls it, that is inherent in the blockchain network. This is due to the secure electronic communication capabilities of blockchain-based accounting. Thus, by borrowing and developing the attributes of existing organizational and legal forms, the concept of crypto corporations can facilitate the productive use and development of smart contract technology for decentralized organizations. This reduces risks for investors and contributes to the creation of a more conflict-free market (Nielsen, 2019, p. 1129).

However, some jurisdictions provide opportunities for registering DAOs within their legal framework. Experts in this field offer advice and a list of the most suitable states for DAOs (Legal Nodes, 2024a).

For instance, in Switzerland, a DAO can be registered as an association or a foundation. Additionally, it is possible to establish a foundation in the Cayman Islands and an LLC in the Marshall Islands, which recently adopted new special legislation (Legal Nodes, 2024b).

In the United States, Wyoming, as well as Tennessee and Vermont, recognise DAOs as business entities. Like any other limited liability company, a DSO may be formed and operate for any lawful purpose, whether for-profit or not-for-profit (State of Wyoming, n.d. a). As of March 2023, there are more than 800 entities in the Wyoming LLC registry that include "DAO" in their name (State of Wyoming, n.d. b).

It would be logical to assume that In Ukraine, virtual assets service providers are likely to choose LLCs as their legal form of operation to limit the liability of their participants (founders). According to statistical data from the State Statistics Service of Ukraine, the most common legal form of business entity is a limited liability company (State Statistics Service of Ukraine, 2021).

However, Currently, under Ukrainian law, a DAO cannot exist as a limited liability company since an LLC is considered a business entity (Article 80 of the Commercial Code of Ukraine), which is a legal entity (Article 113 of the Civil Code of Ukraine). However, as demonstrated above, DAOs cannot currently be registered as legal entities.

Currently, an LLC is not suitable for operating a DAO because the DAO business model does not typically involve the creation of a legal entity. Moreover, based on the legal provisions analyzed, such creation of a legal entity is not possible.

Regarding the operation of the DAO as a business entity without establishing a legal entity, it is important to consider the opinion of O.A. Belyanovich. She refers as an example of the exercise of private property rights in a form that is not accompanied by the establishment of a legal entity to the participation of holders of property rights in collective investment institutions (CII) - corporate and mutual funds. The economic purpose of establishing collective investment institutions is to accumulate funds of individuals and legal entities and to involve them in investment activities by investing in securities of issuers-entities. It should be noted that a mutual investment fund, which does not have the status of a legal entity, is not considered to have its subjectivity (i.e. the ability to act on its behalf in civil and commercial transactions). However, it serves as a kind of "shell" for joint investment activities of a group of individuals (who are participants in such a mutual fund as a "collective owner") (Belyanovich, 2023, p. 72). The scientific literature highlights that mutual investment funds are atypical business entities that do not belong to either legal entities or individuals (Mashkovska, 2018, p. 51).

A mutual investment fund is not a legal entity. Its establishment enables an asset management company to organize collective investments. The asset management company is responsible for losses caused by the activities or inactivity of the collective investment institution (Shchetynin, 2008, p. 313).

The scientific theory provisions are fully correlated with the provisions of part 3 of Article 41 of the Law of Ukraine "On Collective Investment Institutions". This article states that a mutual fund is not a legal entity and cannot have officials. According to Ukrainian law, a mutual fund is a collection of assets jointly owned by its participants and managed by an asset management company. The assets are accounted for separately from the company's business activities, as stated in part 1 of Article 41 of the Law of Ukraine "On Collective Investment Institutions".

Based on scientific theories that classify mutual investment funds as a business entity, even though they do not have the status of a legal entity, it is possible to argue that DAOs should be regarded as "atypical business entities", similar to mutual investment funds.

Since a DAO provides services as a virtual asset service provider, i.e. it directly engages in economic activities, owns certain separate property (e.g. the virtual assets themselves), assumes certain economic rights and obligations (including the right to engage in economic activities as a virtual asset service provider) and is responsible for the results of economic activities,

it should be stated that DAOs are prevented from retaining all the features business entities solely due to the absence of an organizational and legal form and the uncertain legitimacy of their existence.

Since legitimacy of existence is manifested only in the official recognition of a DAO as an economic entity among other subjects of legal relations, legitimacy of existence will not be an obstacle for DAOs if there is appropriate regulation and position of public authorities. The only obstacle is the lack of an established organizational and legal form.

It seems to be that a DAO may not fit into any of the organizational and legal forms provided for by the Statistical Classifier of Organizational Forms of Economic Entities. However, if we consider a DAO as a set of assets owned by the participants on the right of joint partial ownership, similar to a mutual fund, then there is no need to fit a DAO into existing rules. It is possible to assume that a DAO may be a separate organizational and legal form in itself.

Therefore, it can be concluded that a DAO can be qualified as an economic entity according to the doctrine of commercial law, even though it does not have the formal status of a legal entity or an individual. A DAO serves as a kind of "legal wrapper" for the joint activities of participants in the virtual asset market (DAO participants as "collective owners"), which results in the provision of services related to the turnover of virtual assets.

In line with mutual funds, a DAO can be registered as a business entity that provides services related to the turnover of virtual assets. DAO may be registered as a business entity – virtual asset service provider based on the DAO's inclusion in such a list by the regulator of the virtual assets market in Ukraine. As a result, DAOs included in this register may be subject to sanctions.

Amendments to the Law of Ukraine "On Virtual Assets" are required to allow for the consideration of a DAO as a virtual asset service provider, as prescribed in the same law. It is noteworthy that MiCA (EU regulatory act in the sphere of crypto assets) defines a crypto-asset service provider as a "legal person or other undertaking whose occupation or business is the provision of one or more crypto-asset services to clients on a professional basis, and that is allowed to provide crypto-asset services..." (Article 3, part 15 of MiCA) (Regulation 2023/1114) Using the same construction of "legal entity or other business entity" will enable the coverage of DAOs under Ukrainian legislation. To implement the proposed amendments, it is proposed to amend clause 8 of part 1 of Article 1 of the Law of Ukraine "On Virtual Assets". The amendment should state that "virtual asset service providers are legal persons or another undertaking that carry out one or more of the following activities in the interests of third parties ...". To maintain the logical structure of the Law, it is recommended to include part 8 in Article 9 of the Law of Ukraine "On Virtual Assets" by stating that "A virtual asset service provider may be a decentralized autonomous organization, i.e. an organization embodied in computer code that functions without centralized control or intervention of a third party, which is not a legal entity, but is a participant of virtual assets market, and operates as a virtual assets service provider." The implementation of these proposals could help solve the current issue of imposing sanctions. However, amendments to the Law of Ukraine "On Sanctions" will also be necessary.

Thus, sanctions may be imposed by Ukraine not only on individuals or legal entities but also on "subjects engaged in terrorist activities" (Article 1(2) of the Law of Ukraine "On Sanctions"). According to Article 4 of the same law, virtual asset service providers may also be subject to sanctions. The following measures may be taken against them: 1) blocking of assets; 2) recovery of their assets, as well as assets in respect of which such service providers may directly or indirectly perform actions identical in content to the exercise of the right to dispose of them; 3) restriction of trade operations; 4) prevention of the withdrawal of capital from Ukraine; 5) cancellation or suspension of licenses and other permits, the receipt (availability) of which is a condition for carrying out a certain type of activity; and 6) restriction or termination of the provision of electronic communication services and use of electronic communication networks.

The authors of the draft resolution of the Verkhovna Rada of Ukraine expressed the same opinion regarding the approval of proposals for the application of special economic and other restrictive measures (sanctions) to virtual assets service providers (Draft Resolution of Verkhovna Rada of Ukraine; Specification on July 5, 2022, № 7521).

However, Article 4 of this Law specifies that most of these sanctions can only be applied to individuals and legal entities. To include other entities engaged in terrorist activities, the relevant provisions should be amended to add the phrase "or other subjects engaged in terrorist activities" after the words "individual or legal entity". The implementation of the aforementioned provisions will not compromise the logical structure of the Law. However, it will enable the imposition of sanctions on virtual asset service providers that function as DAOs.

These changes, which envisage expanding the scope of sanctions to include DAO activities, underscore the importance of regulation and oversight in the field of virtual assets. However, in the context of the ongoing development of the digital economy, it is also necessary to consider DAOs through the lens of business social responsibility. The use of DAOs can be conducive to the development of effective mechanisms for social responsibility in the virtual asset space. This includes, for

example, cryptocurrencies, tokens, NFTs, and others. The ability to utilize DAOs can enhance socially responsible business behaviour through 1) mobilizing resource support for financing social (including through crowdfunding platforms to build systemic philanthropy) or investment projects (DAOs can also be actively used as investment companies that attract funds from participants, evaluate all risks, and invest them in the implementation of the most attractive projects of companies that adhere to socially responsible behaviour, as they demonstrate the greatest market resilience); 2) creating an environment among DAO participants who adhere to principles of conscious consumption and responsible investing; 3) implementing a monitoring and reporting system to track the use of virtual assets for social purposes and assess their impact, and so on.

Ensuring transparency, openness, and engagement with the public can contribute to the positive perception of DAOs and their participants. It is also important to develop mechanisms for monitoring compliance with social commitments and ethical standards in the circulation of virtual assets.

## DISCUSSION

The use of the term "decentralized autonomous organization" or DAO is quite common in both scientific literature and practice (Hassan S., & De Filippi P., 2021; Wang S., et al., 2019; Wright A. J., 2021; El Faqir Y., Arroyo J., & Hassan S., 2020; Singh M., & Kim S., 2019). However, clarity in its definition and understanding of its essence remain subjects of active debate. Additionally, there are controversies regarding the legal status of DAOs. For example, it remains unclear whether DAOs can be considered legal entities even in the absence of specific legal regulation, or whether they can be recognized as such only when explicitly provided for by legislation. In reality, the "autonomous" nature of DAOs is incompatible with the concept of legal personality, as legal subjectivity can only be established in the presence of one or more identified subjects responsible for the actions of a specific organization. The discussion on recognizing DAOs as legal entities has significant implications in the legal field, affecting the possibility of applying regulatory measures, imposing liabilities, and ensuring the protection of developers and participants from the obligations of such organizations. In other words, the lack of regulation of DAOs can lead to a range of risks associated with their use for financing criminal activities, circumventing economic sanctions, etc., while simultaneously making it impossible to hold such organizations or their participants accountable under existing legislation. To prevent such negative consequences for the country, the authors formulate the following proposals and conclusions.

## CONCLUSIONS

Based on the description of decentralized autonomous organizations, the following conclusions can be drawn.

A decentralized autonomous organization cannot be registered as a legal entity, since its "virtual" nature causes certain problems arising from the provisions of civil law: starting with the issue of determining the location of a legal entity, which according to Article 93 of the Civil Code of Ukraine cannot exist solely in virtual space or a distributed blockchain registry, and ending with the legal classification of a DAO as a corporation, institution or another legally recognized form.

At the same time, this study gives grounds to conclude that based on scientific theories that classify mutual investment funds as a business entity, even though they do not have the status of a legal entity, it is possible to argue that DAOs should be regarded as "atypical business entities", similar to mutual investment funds.

It is proposed that the DAO may be registered as a business entity – virtual asset service provider based on the DAO's inclusion in such a list by the regulator of the virtual assets market in Ukraine. To implement the proposed amendments, it is proposed to amend clause 8 of part 1 of Article 1 of the Law of Ukraine "On Virtual Assets". The amendment should state that "virtual asset service providers are legal persons or another undertaking that carry out one or more of the following activities in the interests of third parties ..." To maintain the logical structure of the Law, it is recommended to include part 8 in Article 9 of the Law of Ukraine "On Virtual Assets" by stating that "A virtual asset service provider may be a decentralized autonomous organization, i.e., an organization embodied in computer code that functions without centralized control or intervention of a third party, which is not a legal entity, but is a participant of virtual assets market, and operates as a virtual assets service provider."

To enable the imposition of sanctions on DAO, the Law of Ukraine "On Sanctions" needs to be amended. Currently, Article 4 of this Law limits the application of sanctions to individuals and legal entities. The relevant provisions should be revised to include "or other subjects engaged in terrorist activities" after the words "individual or legal entity". Implementation of

the above provisions will not violate the logical structure of the Law itself but will allow sanctions to be imposed on virtual asset service providers that function as DAOs.

Further research could be conducted on the taxation of activities carried out by decentralized autonomous organizations.

In the context of business social responsibility, it is important to note that registering a DAO as a business entity can be a step towards creating a more transparent and accountable business environment. Ensuring compliance with rules and norms related to the circulation of virtual assets will contribute to increasing trust among both consumers and regulators, thereby promoting the sustainable development of cryptocurrency and other virtual asset markets.

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## ADDITIONAL INFORMATION

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## **ДЕЦЕНТРАЛІЗОВАНА АВТОНОМНА ОРГАНІЗАЦІЯ: ПЕРЕОСМИСЛЕННЯ ПРАВОВОЇ ПАРАДИГМИ**

Ця стаття присвячена виявленню особливостей правових аспектів функціонування децентралізованих автономних організацій, визначенню їхніх ознак, правового статусу та формулюванню пропозицій щодо вдосконалення законодавства в цій царині (зокрема в частині протидії злочинній діяльності та зменшення випадків обходу економічних санкцій, запроваджених Україною, країнами Європейського Союзу, США та іншими державами проти суб'єктів російської федерації шляхом використання децентралізованих автономних організацій).

Досліджено правовий статус децентралізованих автономних організацій, уточнено їхні характеристики та запропоновано вдосконалення законодавства в цьому напрямі з метою боротьби зі злочинною діяльністю й унеможливлення обходу економічних санкцій. Зазначено, що децентралізована автономна організація не може бути зареєстрована як юридична особа в Україні через її "віртуальну" природу та виявлені проблеми, що виникають із приписів національного законодавства. Проте вона може бути кваліфікована як суб'єкт господарювання, що виконує роль постачальника послуг, пов'язаних з оборотом віртуальних активів. Запропоновано внесення змін до законодавства щодо реєстрації децентралізованих автономних організацій як постачальника послуг та застосування санкцій до них. Ґрунтуючись на отриманих результатах, автори визначили напрям подальших досліджень у цій царині.

**Ключові слова:** децентралізовані автономні організації, диджиталізація, віртуальні активи, ринок віртуальних активів, санкції, смарт-контракти, законодавство, віртуальні особи, віртуальні підприємства

**JEL Класифікація:** K24, K22, H56, G18