

Towards Fair Presentation of DAO Treasuries: An Evaluation of Native Governance Token Reporting Practices

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Abstract

Decentralised Autonomous Organisations (DAOs) are rapidly gaining popularity in the blockchain ecosystem. Given the widespread use of reported data to make informed decisions related to these entities, it is imperative to address the lack of reporting guidance for key metrics of DAOs. Currently, any governance tokens minted but not yet distributed by the DAO is recorded as an asset held in the DAO's treasury. As the value attributed to these undistributed tokens is material, poor reporting practices of this economic phenomenon would negatively impact the decisions made by users of this information. This study undertakes a qualitative non-empirical investigation to evaluate the reporting practice of recording native governance tokens held in DAO treasuries. The study identifies the reporting practices by examining websites that report on DAO treasuries, and the practice found is evaluated against the International Financial Reporting Standards (IFRS) to ensure fair presentation. The results of the study reveal that the current practice of recording all native governance tokens held as assets in the treasury fails to achieve fair presentation, as many governance tokens might fail the definition of an asset, and some might be required to be measured at cost rather than market value. As a result, the treasuries of DAOs are materially overstated, and investors may be relying on misleading information.

Keywords: *Decentralised Autonomous Organisations; Blockchain; IFRS*

JEL Classifications: *G32, G38, M41, O33, P2*

1. Introduction

Decentralised Autonomous Organisations (DAOs) have emerged as a rapidly growing phenomenon in the financial landscape. With the market capitalisation of the top 10 DAOs now exceeding \$14 billion [1] and the number of governance token holders increasing from 1.7 million in early 2022 to 6.4 million in early 2023 [2], the importance of accurate and transparent reporting practices cannot be overstated. Token holders rely on publicly available data to make economic decisions regarding DAOs, and one of the critical metrics being reported is the size and composition of their treasuries, which finance the DAOs' activities [3]. Despite the significance of DAO treasuries totalling \$13.4 billion [2], no prior research has been conducted on the reporting practices of these treasuries. This constitutes an important gap in the scientific literature, as poor disclosure practices could negatively impact the decisions made by token holders.

In reporting on the total value of DAO treasuries, reporting websites such as DeepDAO [2], DefiLlama [4] and OpenOrgs.info [5] include in their calculation any native governance tokens held by the DAO, which significantly impacts the reported total value. The top 10 DAOs hold a total treasury value of \$9.6 billion [2], of which \$8.0 billion

consists of undistributed governance tokens minted by the DAOs themselves (calculated using the breakdowns provided by DeepDAO). This study seeks to answer whether this disclosure practice of recording the DAOs' undistributed governance tokens as part of its treasury leads to unfaithful presentation and therefore DeFi investors trading on misleading information. If it is found that the inclusion of these native tokens in reporting on the value of the treasuries held leads to unfaithful presentation, the value of DAO treasuries is being significantly overreported.

The present study aims to address the lack of guidance on faithful reporting of DAO treasuries, as noted in previous research [6]. This study will fill the gap in existing knowledge by evaluating current accounting practices employed by reporting websites. The findings of this study will provide the initial guidance to reporting websites for accurately reporting on DAO treasuries, with the goal of enhancing the usefulness of information provided to existing and potential investors.

Additionally, this study will contribute to the emerging field of research on DAOs, which has gained increasing attention among researchers across multiple fields [7]. The value of DAO treasuries is often used as a metric in DeFi research [8], making this study relevant and important to this growing area of research.

Furthermore, this study serves as an initial foray into the accounting literature on DAOs, thereby providing a foundation for future research in the financial reporting of DAOs. By investigating the current reporting practices, this study aims to lay the groundwork for the development of an established framework for the reporting of DAO treasuries.

The main research question this study seeks to answer is as follows: Does the current common disclosure practice of recording the DAOs' undistributed governance tokens as part of its treasury lead to unfaithful presentation and therefore DeFi investors trading on misleading information?

The article proceeds as follows: Section 2 provides the research methodology. Section 3 provides background on how DAOs operate and the current reporting practices of DAO treasuries. Section 4 establishes a framework of what constitutes "faithful presentation." Thereafter, the current reporting practices of DAO treasuries are analysed against this framework. Finally, the article concludes whether DAO treasuries are currently being faithfully reported, with further recommendations on how to improve the usefulness of the information being reported.

2. Methodology

This study employed a non-empirical qualitative approach based on a literature study of pure theoretical aspects. First, a literature review was performed to provide the necessary context to define and understand how Decentralised Autonomous Organisations (DAOs) originated with the evolution of blockchain technology, how they are structured and what role the economic phenomena of governance tokens and treasuries perform in their operations.

To evaluate whether the current reporting practices on DAO treasuries achieve faithful presentation, the following steps were then followed:

Step 1: Identify sources that report on the treasuries of DAOs. To identify sources that report on the treasuries of DAOs, this study employed an ad-hoc approach based on a literature review of existing research in the field. This involved examining references cited in the literature to identify sources that report on DAO treasuries. Additionally, a web search was conducted using keywords such as "DAO treasuries reporting" and "governance token reporting" to locate websites and publications that have reported on DAO treasuries in the past. The criteria used to select sources included a focus on websites and publications with a reputation for being trustworthy and reliable sources of information in the blockchain and cryptocurrency space. Ultimately, this approach led to the identification of three sources that will be used to evaluate the reporting practices surrounding native governance tokens held in DAO treasuries. This ad-hoc approach was necessary given the relatively new area of research on DAO treasuries and the lack of established methods for identifying sources in this field.

Step 2: Identify the reporting practices surrounding native governance tokens held in DAO treasuries of the sources identified in step 1. Specifically, it will be determined whether native governance held by the DAO in are included in the total treasury value reported, and if so, at what amounts.

Step 3: Identify an appropriate framework to be used to evaluate whether the reporting practices as identified in step 2 achieve faithful presentation. This study initially considered two accounting frameworks: the Generally Accepted Accounting Principles (GAAP) and the International Financial Reporting Standards (IFRS). After considering the characteristics of DAOs as identified in the background literature review, as well as the differences between GAAP and IFRS, IFRS was ultimately selected for use in this study. It is important to recognise that compliance with accounting standards is often linked to the legal jurisdiction in which an entity is registered [6]. Since DAOs frequently operate without a formal legal structure, these entities are not legally obligated to produce financial information according to established accounting standards [6]. However, the lack of formal regulation does not preclude the evaluation of DAO treasury reporting with respect to IFRS. While such an evaluation may not serve to ensure legal compliance, it is nonetheless valuable in assessing the accuracy and reliability of financial information provided by DAOs to their stakeholders. The aim of this paper was to examine the adherence of DAO treasury reporting to the IFRS framework in order to identify any potential sources of misinformation that may affect user decision-making.

Step 4: Identify the criteria for faithful presentation as set out in the framework chosen in step 3. Since this study aims to assess the faithful reporting of assets held in DAO treasuries, the recognition criteria for classifying an element as an asset were considered relevant. Additionally, the classification of the type of asset is also important as it will impact the value at which the asset may be reported (measurement).

Step 5: Apply the criteria for faithful presentation identified in step 4 to the reporting practices on DAO treasuries as identified in step 2, to determine whether native governance tokens held in DAO treasuries are being faithfully presented.

Step 6: Make a conclusion on whether governance tokens held in DAO treasuries are being faithfully presented and provide recommendations on how to enhance the faithful presentation thereof.

3. Decentralised Autonomous Organisations (DAOs)

3.1 The evolution of Decentralised Finance (DeFi)

In 2009, the first cryptocurrency, Bitcoin, was introduced with the objective of creating a peer-to-peer electronic cash system, devoid of intermediaries [9]. This was achieved through the implementation of a distributed ledger technology, later termed "blockchain." Bitcoin transactions are facilitated using public-key cryptography. The transactions approved by nodes

across the globe are recorded on a decentralised ledger referred to as the blockchain. Each node maintains a copy of the ledger, and the honesty of nodes is ensured through the consensus algorithm (Proof-of-Work in the case of Bitcoin), for which detailed exploration falls outside the scope of this study.

In 2015, another blockchain, Ethereum, was launched. Ethereum utilises two types of accounts: externally owned accounts (EOAs) and smart contracts [10]. EOAs function similarly to Bitcoin addresses, as they are controlled through private keys. EOAs can be used to transfer Ether, the blockchain's native cryptocurrency, or any other data to another EOA or smart contract. Smart contracts, on the other hand, are not controlled by private keys but rather by code. They are deployed by sending their bytecode from an EOA to "address zero." The code determines the fate of any cryptocurrency or data received from another address. As smart contracts are stored on the blockchain, its code cannot be modified, and is entirely transparent.

Templates exist for writing code into smart contracts, which enable the creation and maintenance of tokens. The rules of token ownership are enforced by the code and typically ownership is automatically transferred to the address from which Ether is received. The smart contract maintains a record of the addresses that own the tokens stored within it. As smart contract syntax is Turing-complete, loops can be coded to automate state changes to the tokens based on predetermined conditions. The Ethereum blockchain records not only transfers of Ether across addresses but also any changes in state of smart contracts. The emergence of financial instruments as tokens in these contracts provided the technical foundation for a range of blockchain-based financial products beyond electronic cash, known as Decentralised Finance (DeFi) [11]. As of February 1, 2023, the total value locked in DeFi applications is estimated to be \$47.75 billion [12].

3.2 DAO structure

A protocol within the DeFi ecosystem refers to a set of smart contracts that collectively serve a specific purpose [13]. These protocols enable users to interact with one another without the intervention of central authorities. The two primary categories of DeFi protocols, as measured by total value locked, are Decentralised Exchanges (Dexes) and Lending protocols [14]. A Dex is a type of protocol which enables users to exchange cryptocurrencies in a peer-to-peer manner. A Lending protocol allows users to lend and borrow assets among each other.

Most DeFi protocols are structured as Decentralised Autonomous Organisations (DAOs) [13]. In contrast to traditional organisations, decision-making and administrative processes in DAOs are automated through a set of smart contracts, rather than being carried out by conventional management structures [7]. The rules encoded in the smart contracts, which are determined by the DAO members

through a voting mechanism, form the basis for the operation of the DAO [15].

The smart contract of a DAO protocol mints governance tokens, which may be sold in exchange for capital or distributed to users as a reward for interacting with the protocol, also known as an "airdrop" [16]. The activities of the DAO are funded by its treasury, which is a smart contract [3]. The DAO treasury is sustained by capital raised from the sale of governance tokens and profits generated from the services provided by the DAO [8].

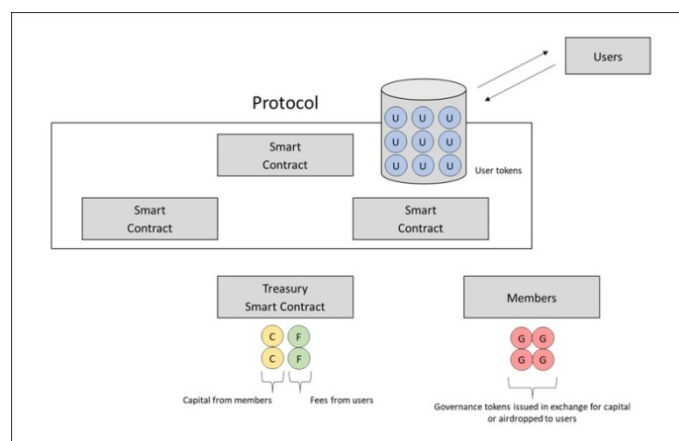


Figure 1: Structure of a DAO, adapted from [13]

Figure 1 depicts the structure of a DAO, specifically how users interact with the protocol and how the DAO is funded by its treasury and owned by its members. As mentioned earlier, governance tokens are originally minted by a smart contract of the DAO protocol and then distributed to members. Any governance tokens minted but not yet distributed are kept in the treasury of the DAO.

3.3 Rights of governance token holders

Holders of governance tokens have certain rights as determined and enforced by the smart contract. While a comprehensive taxonomy of governance token rights has yet to be developed, these rights can include the ability to vote on proposals that affect the direction and operations of the DAO, such as the interest rate model for the Compound protocol [17]. Additionally, token holders may have access to rewards based on their participation or contributions to the network, such as a share of the fees generated by the Curve Finance platform for CRV token holders [18]. In addition, governance tokens may also confer governance over the DAO's treasury, allowing holders to vote on how funds are allocated, such as the allocation of funds from the Aave ecosystem reserve for new features or protocols [19].

3.4 Current reporting practices of DAO treasuries

Websites dedicated to reporting on DAOs play a crucial role in furnishing users with the requisite information to

facilitate their economic decision-making regarding DAOs. Despite the visibility of on-chain data, the transparency of such data is somewhat limited, as conducting an analysis of on-chain transactions is a technical and laborious process [6]. To circumvent this issue, DAO reporting websites obtain pertinent data from blockchains and DAO documentation, thus offering valuable and comparable insights to users. This practice allows potential investors, who may not possess technical expertise, to gain a comprehensive understanding of DAO-related information in a user-friendly manner.

DeepDAO is a leading data analytics platform for DAOs. It aggregates information on over 10,000 DAOs and profiles of over 4.6 million participants, offering a comprehensive overview of key metrics such as treasury value, number of token holders, proposals and votes [2]. The data reported by DeepDAO has been widely recognised and quoted by reputable media outlets, including Forbes [20] and The New York Times [21]. DeepDAO defines a treasury as the “total assets that the DAO may use at its own discretion” and calculates the value by obtaining the crypto assets held in the DAO’s smart contract and multiplying it by the market values of corresponding tokens. This calculation includes any native governance tokens held in the treasury smart contract. Thus, any governance tokens minted but not yet issued are reported as assets held by the DAO.

DefiLlama is an established platform that has gained a reputation as a reliable source of DeFi data and has been cited in numerous academic and industry publications [22]. DefiLlama reports on the treasuries of 125 DAOs, breaking down the assets into categories of stablecoins, major cryptocurrencies such as BTC and ETH, the DAO’s native governance token, and other assets [4]. The total value of each DAO’s treasury is then also reported, which includes the DAO’s own native governance tokens held.

OpenOrgs.info is another website that offers valuable insights into the treasuries of DAOs. Its homepage succinctly highlights the emerging trend of DAOs as new forms of companies and asks the critical question: “What’s on their balance sheet?” [5]. The website ranks 46 DAOs based on the size of their treasury and provides a detailed breakdown of each DAO’s assets. This includes the DAO’s native token, which is considered part of the reported value.

The treatment of native governance tokens held in DAO treasuries as assets held by the DAO by leading data analytics platforms therefore suggests that this is a common reporting practice. While these platforms provide valuable insights into the treasuries of DAOs, it remains unclear whether including governance tokens in the reported value leads to an accurate representation of the assets held by DAOs. This study seeks to address this gap in the literature by examining the impact of including native governance tokens in the value of DAO treasuries on the fairness of DAO reporting.

4. Framework for Faithful Presentation

4.1 Choosing an appropriate framework for faithful presentation

The absence of specific reporting guidelines for DAOs [6] necessitates the use of available accounting standards to evaluate the faithful representation of DAO treasuries. The Securities Exchange Commission requires domestic United States-listed companies to abide by the “US Generally Accepted Accounting Principles” (US GAAP) accounting standard [23]. DAOs do not however operate in only one jurisdiction and are run by members across the globe [24]. The International Accounting Standards Board (IASB) issued the International Financial Reporting Standards (IFRS) in 2001, with the aim of setting a single set of accounting standards to be applied globally. IFRS is currently adopted in 144 jurisdictions [25]. It is perceived that while US GAAP follows a rules-based approach, IFRS is principle-based [26]. As neither US GAAP nor IFRS prescribes the treatment of native tokens in DAO treasuries, principles of fair accounting, rather than specific rules of treatment, will need to be applied in this study. IFRS will therefore be used as a framework in this study to evaluate the fair presentation of native tokens in DAO treasuries.

4.2 Faithful presentation

The Conceptual Framework of IFRS posits that information is faithfully represented when it accurately reflects the essence of the phenomena it is intended to represent [27, paragraph 2.12]. To test whether the recognition of native governance tokens as assets held by the DAO leads to faithful presentation, the criteria for an element to be considered an “asset” is therefore relevant. To ensure faithful representation, information must be complete, neutral, and free from error [27, paragraph 2.13]. IFRS has different measurement criteria for different asset classifications. As an example, inventory should be measured at the lower of cost and net realisable value [28, paragraph 9], whilst intangible assets should be measured initially at cost [29, paragraph 24], and afterwards at either cost less accumulated amortisation [29, paragraph 74] or fair value [29, paragraph 75]. None of the websites reporting on DAO treasuries classify governance tokens in any such categories. However, as the classification will influence the value at which the governance tokens should be included in the treasury, these classifications will be explored in this study, to determine whether the amounts reported by these websites achieves fair presentation in accordance with IFRS.

4.3 Definition of assets

The Conceptual Framework defines an asset as a present economic resource that is controlled by the entity as a consequence of past events [27, paragraph 4.3]. An economic resource refers to a right that holds the potential to generate economic benefits [27, paragraph 4.4]. Many rights are established through contracts [27 paragraph 4.7]. It should be

noted that an entity cannot have the right to obtain economic benefits from itself, thus debt or equity instruments, such as treasury shares, that are issued and held by the entity, are not considered economic resources of that entity [27, paragraph 4.10]. An entity has control over an economic resource if it has the current capacity to direct the use of the resource and derive the economic benefits that may ensue from it [27, paragraph 4.20].

4.4 Classification of asset

Crypto assets can either be classified as inventory, financial assets, or intangible assets [30]. IAS 2 defines inventory as an asset “held for sale in the ordinary course of business, in the process of production for such sale, or in the form of materials or supplies to be consumed in the production process or in the rendering of services” [28, paragraph 6]. A financial asset is “any asset that is cash, an equity instrument of another entity, or a contractual right to receive cash or another financial asset from another entity” [31, paragraph 11]. An intangible asset is a “non-monetary asset without physical substance” [29, paragraph 8]. The standard for intangible assets (IAS 38) should only be applied if the asset is not within the scope of another standard [29, paragraph 2]. In the context of this study, the crypto asset will only be deemed an intangible asset if it was already determined that it is not inventory or a financial asset.

5. Application of Framework to Governance Tokens

5.1 Are the governance tokens “assets held” by the DAO?

For an item to be classified as an asset, it needs to be an economic resource (a right that has the potential to produce economic benefits) controlled by the entity as a result of past events. The item in question is the native governance tokens held in the treasury, i.e. tokens minted but not yet distributed. The item originates from the minting of the tokens, which is an event in the past.

5.1.1 Does the item have the potential to produce economic benefits?

Economic benefits can be realised through the sale of the item to new or existing investors, leading to the receipt of capital. Additionally, the distribution of accumulated profits of the DAO to governance token holders could also be considered as a source of economic benefits for the tokens held in the treasury. However, as these accumulated profits are already recorded in the treasury, it would constitute double accounting to then also record a right to those profits as an additional asset in the treasury. Hence, it is suggested that the only economic benefit that could potentially be derived from the tokens is capital through their sale. If it is the intention of the DAO to airdrop the governance tokens to the community at no compensation, no future economic benefits will flow towards the entity.

5.1.2 Does the entity have a right to the item?

With regards to the determination of rights over economic resources, it is commonly established through contract. In this case, the native tokens are held within a smart contract that constitutes the treasury of the DAO. The UK LawTech Delivery Panel has opined that smart contracts are legally binding and have the capability to enforce rights and obligations, similar to traditional contracts [32]. The panel recognises that the English law has the necessary framework to deal with both bilateral smart contracts and those structured around DAOs. Hence, for the purpose of determining whether the native tokens held are assets, it could be argued that the DAO does possess a right to it.

However, the Conceptual Framework stipulates that an entity cannot have a right to obtain economic benefits from itself. This means that any debt or equity instruments that are issued and repurchased by the entity are not considered as economic resources of that entity. Whether the governance tokens of the DAO should be considered debt or equity instruments is a crucial factor in determining whether these tokens held in the treasury should be considered assets.

IAS 32 defines an equity instrument as any contract that evidences a residual interest in the assets of an entity after deducting all its liabilities [31, paragraph 11]. If therefore the holder of a governance token has the right to the residual assets of the DAO, which will perhaps be the case if the smart contract grants its members significant discretion in the deployment of treasury funds, the token will be regarded as an equity instrument, in which case such native tokens held by the DAO will be equity instruments that have been issued and held by the entity, and therefore fail the definition of an asset.

IAS 32 defines a financial liability as a contractual obligation to deliver cash or another financial asset to another entity [31, paragraph 11]. If therefore the holder of a governance token has a right to cash or another financial asset from the DAO, which will perhaps be the case if the holder has a right to a share of the fees generated by the protocol, the token will be regarded as a debt instrument, in which case such native tokens held by the DAO will be debt instruments that have been issued and held by the entity, and therefore fail the definition of an asset.

5.1.3 Does the entity control the item?

According to the Conceptual Framework, an entity has control over an economic resource if it has the present ability to direct the use of the resource and receive the economic benefits derived from it. In some instances, governance tokens are distributed according to a predetermined supply schedule [33]. In such situations, it could be argued that the DAO lacks the ability to direct the use of the minted but still held native governance tokens. However, in other scenarios where the DAO has the discretion to sell the governance tokens, either democratically by its members or through a group of multi-

signature holders, the DAO could be considered to have control over the native governance tokens held.

5.2 Classification of asset type

If the native governance tokens held does meet the definition of an asset, the classification of asset as either inventory, intangible assets or financial assets should be determined, as this will impact the amount at which the item should be recognised in reporting the treasury value of the DAO to ensure “fair presentation” in accordance with the IFRS framework.

This study submits that native governance tokens held by the DAO cannot be classified as financial assets, as an entity cannot have an equity instrument in itself or a contractual right to receive cash or another financial asset from itself. Therefore, if the native governance tokens held meet the criteria of an asset, they can only be classified as inventory or intangible assets.

If the DAO holds the governance tokens “for sale in the ordinary course of business,” it will be classified as inventory. Given the novelty of DAOs, determining when the criteria are met may be challenging. IAS 2 does not explicitly require that the selling of items must be the primary business model of the entity for those items to be classified as inventory. Therefore, it is not a requirement for the DAO’s main business to be creating and selling governance tokens in order for the tokens to be classified as inventory. The term “ordinary course of business” is not defined in the standard, but it implies that the item is held for the purpose of resale and not for long-term holding. If the DAO therefore holds its native governance tokens with the intention of selling it to fund its short-term activities, it will likely be considered as inventory. In all other cases, such as the DAO reserving governance tokens for future developments in the long-term, these governance tokens will default to being classified as intangible assets.

The classification of native governance tokens held as either inventory or intangible assets has significant consequences on the measurement thereof. Whilst the measurement of intangible assets at fair value is allowed, inventory can only be measured at cost price. IAS 2 allows for the capitalisation of the costs incurred in bringing the inventories to their present location and condition [28, paragraph 10]. In the case of a governance token, the costs will likely mostly comprise costs incurred to develop and audit the smart contract code to mint the tokens. IAS 38 requires the fair value of intangible assets to be measured by reference to an active market [29, paragraph 75]. Governance tokens therefore classified as intangible assets should be valued according to the price at which it trades on an exchange, despite prior research suggesting that DeFi tokens are overvalued compared to their theoretical value as determined by fundamental and comparable analysis [34].

A summary of the findings is provided as a decision-tree in Figure 2.



Figure 2: Decision-tree to classify native governance tokens held

As noted earlier, platforms currently include native governance tokens at their market value, in reporting the value of a DAO’s treasury. Based on the classifications determined in this study in accordance with IFRS, platforms thereby treat all native governance tokens held as intangible assets. No governance tokens are treated as debt or equity instruments, which would require the exclusion of these tokens from treasury valuation, and no tokens are treated as inventory, which would require the inclusion of these tokens at cost price, rather than market value. It is therefore submitted that the current reporting practice of treating all native governance tokens held in treasuries as assets held by the DAO does not achieve fair presentation in accordance with IFRS.

6. Conclusion

The growth of DAOs highlights the importance of accessible and meaningful information regarding their financial position and performance for both current and potential investors. Despite this, there are currently no established reporting guidelines for DAOs. This study makes a significant contribution to the accounting literature by examining the reporting treatment of native governance tokens held in DAO treasuries through the lens of International Financial Reporting Standards (IFRS). The findings indicate that recognising all undistributed governance tokens as assets in the DAO treasury at their market value does not achieve faithful presentation, as many governance tokens might fail the definition of an asset, and some might be required to be measured at cost. The treasuries of DAOs are therefore likely being significantly overreported, leading to DeFi investors trading on misleading information.

To obtain a more comprehensive understanding of the classification of governance tokens held by DAOs it is necessary to consider the intentions of the governance token issuer. These intentions may not be explicitly coded into smart contracts or stated in whitepapers, highlighting the need for empirical research. A future study can be conducted using questionnaires to collect data from a sample of DAOs, followed by a quantitative analysis to determine the recommended classification of governance tokens held by the most prominent DAOs. Additionally, the materiality of incorrectly including all native governance tokens in treasury reporting can be assessed by quantifying the impact of removing governance tokens that fail to meet IFRS recognition criteria on the reported total value of DAO treasuries. Such a future empirical study can also aid platforms reporting on DAO treasuries to adopt a more accurate reporting practice that aligns with fair presentation. While it may be impractical for platforms to assess the appropriate treatment of native governance tokens held by each DAO individually (as it would require knowing the intentions of the DAO, and obtaining information relating to the costs incurred to mint the tokens if the tokens are classified as inventory might be difficult), such a study can provide valuable insights to help platforms adopt a standardised reporting practice that moves closer to fair presentation. For instance, if the study reveals that a significant proportion of native governance tokens are classified as equity instruments, it may be less misleading for platforms to exclude all native governance tokens from treasury reporting instead of including them all. This could contribute to greater transparency and comparability among DAOs and their treasuries.

This study also serves as a catalyst for further research into the reporting practices of DAOs, including the reporting of liability claims, income, and expenses incurred by the DAO. Moreover, the study raises questions about the need for financial reporting standards specific to DAOs, and who should be responsible for presenting financial statements given the decentralised governance structure of these entities. In conclusion, this study sheds light on a critical issue that requires further exploration to enhance the transparency and accountability of DAOs.

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References:

- [1] CoinMarketCap, 'Top DAO tokens by market capitalization', 2023. <https://coinmarketcap.com/view/dao/> (accessed Apr. 04, 2023).
- [2] DeepDAO, 'DeepDAO – Organizations', 2023. <https://deepdao.io/organizations> (accessed Apr. 08, 2023).
- [3] C. Bellavitis, C. Fisch, and P. P. Momtaz, 'The rise of Decentralised Autonomous Organizations (DAOs): A first empirical glimpse', *Venture Capital*, pp. 1–17, 2022, doi: 10.1080/13691066.2022.2116797.
- [4] DefiLlama, 'Treasuries', 2023. <https://defillama.com/treasuries> (accessed Apr. 06, 2023).
- [5] OpenOrgs.info, 'DAOs are the new companies. What's on their balance sheets?', 2023. <https://openorgs.info/> (accessed Apr. 06, 2023).
- [6] K. Lommers, M. Ghanchi, K. Ngo, Q. Song, and J. Xu, 'DAO accounting', *SSRN Electronic Journal*, 2022. [Online]. Available: <https://ssrn.com/abstract=4200414>
- [7] C. Santana and L. Albareda, 'Blockchain and the emergence of Decentralised Autonomous Organizations (DAOs): An integrative model and research agenda', *Technological Forecasting and Social Change*, vol. 182, Sep. 2022, doi: 10.1016/j.techfore.2022.121806.
- [8] C. Ziegler and I. M. Welpé, 'A taxonomy of Decentralised Autonomous Organizations', in *ICIS Proceedings*, 2022. [Online]. Available: <https://aisel.aisnet.org/icis2022>
- [9] S. Nakamoto, 'Bitcoin: A peer-to-peer electronic cash system', 2008. Accessed: Apr. 07, 2023. [Online]. Available: <https://bitcoin.org/bitcoin.pdf>
- [10] A. Antonopoulos and G. Wood, *Mastering Ethereum: Building Smart Contracts and Dapps*. O'reilly Media, Sebastopol, California, 2018.
- [11] E. A. Meyer, I. M. Welpé, and P. Sandner, 'Decentralised finance - A systematic literature review and research directions', in *ECIS Proceedings*, 2022, pp. 6–18. [Online]. Available: https://aisel.aisnet.org/ecis2022_rp/25
- [12] DefiLlama, 'All chains TVL', 2023. <https://defillama.com/categories> (accessed Feb. 08, 2023).
- [13] D. Kerr, 'A legal framework for Decentralised Autonomous Organizations', 2022. <https://www.reuters.com/legal/litigation/crypto-user-asks-1st->
- [14] DefiLlama, 'Categories', 2023, Accessed: Mar. 23, 2023. [Online]. Available: <https://defillama.com/categories>
- [15] N. Ilyushina and T. MacDonald, 'Decentralised autonomous organisations: A new research agenda for labour economics', *The Journal of The British Blockchain Association*, vol. 5, no. 1, pp. 50–53, Apr. 2022.
- [16] P. De Filippi and A. Wright, *Blockchain and the Law: The Rule of Code*, 2018, doi: 10.2307/j.ctv2867sp.
- [17] R. Leshner, 'Compound governance. Steps towards complete decentralization', 2020. <https://medium.com>.

- com/compound-finance/compound-governance-5531f524cf68 (accessed Apr. 04, 2023).
- [18] D. Kuhn, 'Curve finance votes to disperse \$3M in fees to governance token holders', 2021. [Online]. Available: <https://www.coindesk.com/markets/2020/11/27/curve-finance-votes-to-disperse-3m-in-fees-to-governance-token-holders/>
- [19] Aave, 'Incentives policy & AAVE reserve - Aavenomics', 2021. <https://docs.aave.com/aavenomics/incentives-policy-and-aave-reserve> (accessed Apr. 04, 2023).
- [20] J. Kauflin, 'DAOs aren't a fad — They're a platform', 2022. <https://www.forbes.com/sites/jeffkauflin/2022/02/03/daos-arent-a-fad-theyre-a-platform/?sh=17c9731c19d0> (accessed Nov. 22, 2022).
- [21] E. Lipton and E. Livni, 'Reality intrudes on a Utopian Crypto Vision', 2022. [Online]. Available: <https://www.nytimes.com/2022/03/08/us/politics/cryptocurrency-dao.html> <https://www.nytimes.com/2022/03/08/us/politics/cryptocurrency-dao.html>
- [22] J. Piñeiro-Chousa, A. Šević, and I. González-López, 'Impact of social metrics in decentralised finance', *Journal of Business Research*, vol. 158, p. 113673, Mar. 2023, doi: 10.1016/j.jbusres.2023.113673.
- [23] Securities and Exchange Commission (SEC), 'Financial reporting manual', 2019. Accessed: Apr. 07, 2023. [Online]. Available: <https://www.sec.gov/corpfin/cf-manual#regulation-s-x-audit-standards-and-reports>
- [24] H. Axelsen, J. R. Jensen, and O. Ross, 'When is a DAO decentralised?', *Complex Systems Informatics and Modeling Quarterly*, no. 31, pp. 51–75, 2022, doi: 10.7250/csimq.2022-31.04.
- [25] Z. G. K. Eroglu, 'Global adoption of IFRS as an example of international financial law making', *George Washington International Law Review*, vol. 53, no. 2, 2021, Accessed: Apr. 04, 2023. [Online]. Available: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3986216
- [26] M. E. Barth, W. R. Landsman, M. Lang, and C. Williams, 'Are IFRS-based and US GAAP-based accounting amounts comparable?', *Journal of Accounting and Economics*, vol. 54, no. 1, pp. 68–93, Aug. 2012, doi: 10.1016/j.jacceco.2012.03.001.
- [27] International Accounting Standards Board (IASB), 'Conceptual framework for financial reporting'. <https://www.ifrs.org/issued-standards/ifrs-conceptual-framework/> (accessed Apr. 07, 2023).
- [28] International Accounting Standards Board, 'IAS 2 — Inventories'. <https://www.ifrs.org/issued-standards/list-of-standards/ias-2-inventories/> (accessed Apr. 07, 2023).
- [29] International Accounting Standards Board, 'IAS 38 — Intangible assets'. <https://www.ifrs.org/issued-standards/list-of-standards/ias-38-intangible-assets/> (accessed Apr. 07, 2023).
- [30] EY, 'Applying IFRS: Accounting by holders of crypto assets', 2021. Accessed: Apr. 04, 2023. [Online]. Available: https://www.ey.com/en_gl/ifrs-technical-resources/accounting-by-holders-of-crypto-assets-updated-october-2021
- [31] International Accounting Standards Board, 'IAS 32 — Financial instruments: Presentation'. <https://www.ifrs.org/issued-standards/list-of-standards/ias-32-financial-instruments-presentation/> (accessed Apr. 07, 2023).
- [32] LawTech Delivery Panel, 'Legal statement on cryptoassets and smart contracts', 2019. Accessed: Apr. 04, 2023. [Online]. Available: <https://resources.lawtechuk.io/files/4.%20Cryptoasset%20and%20Smart%20Contract%20Statement.pdf>
- [33] P. Freni, E. Ferro, and R. Moncada, 'Tokenomics and blockchain tokens: A design-oriented morphological framework', *Blockchain: Research and Applications*, vol. 3, no. 1, Mar. 2022, doi: 10.1016/j.bcr.2022.100069.
- [34] T. A. Xu, J. Xu, and K. Lommers, 'DeFi vs TradFi: Valuation using multiples and discounted cash flow', Oct. 2022. [Online]. Available: <http://arxiv.org/abs/2210.16846>