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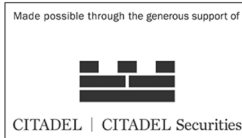
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Decentralised Autonomous Organizations: Targeting the Potential Beyond the Hype

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The current applications of distributed ledger technology extend far beyond payments and investments, the initial realm of blockchain finance. The advent of decentralised finance (DeFi) brings about complexities and offers new opportunities challenging traditional practices and norms of business



organisation. At the heart of this evolution lie Decentralised Autonomous Organisations (DAOs)—a potentially ground-breaking innovation promising to revolutionise entrepreneurial activities and governance decisions through digitally automated protocols.

In a recent article, we offer a pioneering exploration into DAOs, contributing to two distinct realms of literature. First, we enrich the discourse on DAOs and DeFi applications by grounding the debate in robust theoretical frameworks. This approach enables us to formulate hypotheses and propositions regarding the adoption of DAOs and their required legal framework. Second, our analysis contributes to the broader literature on business organisation forms, contextualising DAOs within the historical trajectory of business activities.

We endeavour to bridge the schism between DAO proponents and sceptics by identifying scalable applications of DAOs in business organisations. Our analysis reveals that both camps often fail to substantiate their arguments with solid theoretical underpinnings. On the one hand, proponents praise the virtues of decentralisation and autonomy from traditional legal systems, yet overlook the complexities, residual centralisations and other limitations inherent in DAOs. On the other hand, sceptics dismiss DAOs as impractical novelties, failing to recognise their potential.

Central to our examination is the analysis of DAOs vis-à-vis foundational economic theories of the firm and legal theories of business organisations. The basic analytical problem is to understand when a transaction should take place within a DAO and not through off-chain organisations or through simple peer-to-peer on-chain transactions. The theory of the firm suggests that this should happen when DAOs provide a cost advantage vis-à-vis other possible ways to organise such transactions. Cost advantages are a function of the economic incentives of interested parties, the applicable legal framework and technological opportunities.

In terms of economic incentives, we focus on the agency and hold-up costs, following the dominant theories of the firm. While the DAO enthusiasts claim that on-chain organisations drive these costs to zero, our analysis shows that these costs are positive but reshuffled. Their nature and magnitude are mainly shaped by the consensus protocol and by the ways in which the DAO tokens are initially allocated. This determines the allocation of contingent rights of control and agency tensions between majority and minority token-holders. Crucially, tokens are usually disproportionately allocated to founders and core developers. This is necessary to facilitate specific investments on the DAO protocol by these

key players but, at the same time, it creates agency issues with outside investors, which have an impact on the DAO cost of capital.

Then, we underline the difference between firms and legal organisations. DAOs and their protocols can be understood as a contract between members, but their configuration as legal organisations depends on the ability of such a contract to bind third parties. Such third-party impacts are usually sanctioned by law. Once again, DAO proponents often claim that DAO protocols are self-sufficient and do not need legal recognition. However, several courts have held DAO members unlimitedly liable as general partners. In this regard, our analysis underscores a dichotomy between the ability of DAOs to replicate the depersonalised features of business organisations and their lag in personalised aspects of business activities. While DAOs excel in replicating entity shielding and token transferability, they fall short in areas such as members' liability and legal agency. This paradox, while counterintuitive from an organisational development perspective, aligns seamlessly with the technological design ethos of DAOs.

Accordingly, we advocate for DAO-specific legislation tailored to unleash their potential while mitigating the associated risks. However, we caution against a one-size-fits-all approach, highlighting the need for legal frameworks attuned to the technological nuances of DAOs.

Finally, we delve into the technological advancements driving DAO proliferation as the technological component is crucial in understanding when a transaction should move from off-chain organisations to on-chain DAOs. In this regard, we emphasise two key technological features: asset tokenisation and artificial intelligence. The net impact of the latter is unclear: the integration of artificial intelligence in corporate decision-making reduced the costs for both on-chain and off-chain transactions. On the other hand, the scalability of asset tokenisation—especially when it comes to the tokenisation of off-chain assets—would provide a massive competitive advantage to DAOs compared to off-chain organisations.

In conclusion, our article contributes to the burgeoning field of DAOs and business law. By anchoring our analysis in solid theoretical frameworks, we offer stakeholders actionable insights for navigating the evolving landscape of DAO adoption and regulatory compliance. As DAOs continue to reshape the future of business organisations, our analysis paves the way for further research on the intricate interplay between technological innovation, business organisation, and the role of the law.

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The authors' article can be read here.

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