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The DAO of Real Estate

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By Joseph Bizub and David Reiss[1]

Real Estate Investment Trusts (REITs) have long proven their worth as liquid securities that give investors access to many real estate asset classes. Decentralized Autonomous Organizations ("DAOs") are one of several blockchain real estate innovations seeking to provide a new path to those searching to invest in real estate.[2] The success of the DAO model of real estate investment is far from assured, as it presents many of the same challenges and opportunities of other blockchain innovations that have begun to appear in the real estate sector in the last few years. If successful, however, these new investment options could offer real competition to REITs.

Scholars have just begun to assess these cutting-edge developments. Moringiello & Odinet have evaluated the potential for distributed ledger technology (DLT) to replace local land recording offices with a dedicated blockchain system. DLT is meant to address some of the drawbacks of the analog, paper-based system that all real estate lawyers are so familiar with.[3] While Moringiello & Odinet are skeptical that blockchain offers much benefit in the context of land records, they argue that it may offer real benefits in the tracking of intangible property.[4]

Speaking of intangibles, Freyermuth *et al*. have studied the legal implications of blockchain ownership of real estate. They evaluate a new business model in which title to real estate is transferred to an LLC, the ownership interests of which are represented by Non-Fungible Tokens ("NFTs"). An NFT is unique token that exists on a blockchain and cannot be

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[2] Blockchain is a type of distributed ledger technology that allows for the sharing and updating of records in a decentralized way. Dean Armstrong, *et al.*, *Blockchain and Cryptocurrency: International Legal and Regulatory Challenges* 4 (2 ed. 2022).
[3] Juliet M. Moringiello and Christopher K. Odinet, *Blockchain Real Estate and NFTs,* 64 WM. & MARY L. REV. 1131 (2023).
[4] *Id.*

replicated.[5] NFTs are capable of being used as collateral for loans–and such loans could potentially replace the traditional mortgage in real estate transactions. If widely adopted, this NFT model will upend traditional real estate finance, with far-reaching consequences for lenders, borrowers, and attorneys.

More recently, we (and our co-author) have examined how blockchain technology can impact smaller real estate investors who seek liquid and targeted investments in real estate.[6] New fintech companies are using NFTs or other types of tokens to fractionalize ownership of traditional business entities, such as an LLC. In theory, this innovation will allow investors to instantaneously trade real estate interests in relatively small dollar amounts on fintech exchanges. In practice, they may expose investors to all sorts of hidden risks, in addition to all of the well-known risks already inherent in real estate investing.

While all of these blockchain developments are still in their infancy and their survival is not yet assured, the DAO model diverges even further from traditional real estate investment models. As a result, DAOs offer promise and peril to investors, lenders, and end users of real estate. Many of the perils will be completely unfamiliar to those investors who have mainly invested in real estate through REITs.

The form of real estate investing vehicles obviously matters. This is particularly evident with REITs, entities that may own, lease, or hold the debt of income-producing real estate or real estate-related assets.[7] REITs are governed by onerous operating requirements and transaction

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[5] R. Wilson Freyermuth *et al.*, *Predatory Crypto in Real Estate*, ALABAMA L. REV. (forthcoming 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4268587; *see also* Armstrong *et al.*, *supra* note 2 at 28.
[6] Joseph Bizub, Justin Peralta, and David Reiss, *How Fintech Cos. May Transform Real Estate Investment,* LAW 360 (Sep. 19, 2022, 5:27 PM), https://www.law360.com/articles/1531040/how-fintech-cos-may-transform-real-estate-investment.; Joseph Bizub, Justin Peralta, and David Reiss, *Fintech Coming to a Block Near You: How Blockchain is Changing Real Estate Investing*, N.Y. REAL PROPERTY JOURNAL Vol. 51 No. 1 (Apr. 27, 2023), https://nysba.org/n-y-real-property-law-journal-vol-51-no-1/.
[7] U.S. Securities and Exchange Commission, *Investor Bulletin: Real Estate Investment Trusts (REITs)* (Dec. 2011), https://www.sec.gov/files/reits.pdf.

restrictions.[8] In particular, because a REIT must pay out most of its profits to investors as dividends and are required to earn certain percentages of income via real estate assets, they are a relatively passive investing vehicle with limited ability to grow their portfolios. These statutory restrictions are complemented by a number of significant advantages–pass-through taxation being a significant one–that balance out to make REITs an attractive investment vehicle. Somewhat counterintuitively, the statutory restrictions themselves have helped to establish REITs as a predictable structure for investors looking to balance risk with reward.[9]

What is a DAO?

Before we look at how DAOs operate in the real estate sector, let us explain more fully what a DAO is. A DAO is an "autonomous" organization run by computer code that allows for consensus-based decision-making and leverages smart contracts to execute community rules and governance.[10] To break this definition down further, the "code" consists of a series of smart contracts, or virtual contracts on a blockchain network, that automatically executes upon the occurrence of stipulated conditions, using if-then statements.[11] It may be helpful for lawyers to think of the code as the "bylaws" of a DAO, although they allow for more discretion on the part of decisionmakers than traditional bylaws do. One of the key differences between a DAO and a traditional corporation (as well as REITs), is that the latter's divide between ownership and management is erased.[12] The decentralized and autonomous nature of a DAO stems from its lack

[8] *See generally* 26 U.S.C. § 856 (2023).
[9] Jason Oh and Andrew Verstein, *A Theory of the REIT*, YALE L.J., at 1(forthcoming 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4365127.
[10] Armstrong *et al.*, *supra* note 2, at 10-11.
[11] Ethereum Foundation, *Smart Contracts*, Ethereum, https://www.ethereum.org/en/smart-contracts/ (last visited April 18, 2023); *Point of Intersection Where Blockchain Meets Bankruptcy: Can the Ingenuity of Blockchain Restructure and Streamline the Bankruptcy Process?*, 3 WAYNE J. BUS. L. 8, 35. Some examples of these if-then statements can be found at http://daoscript.org/help/en/dao.control.if-else.html.
[12] Chris Brummer and Rodrigo Seira, *Legal Wrappers and DAOs*, (Whitepaper, July 7, 2022) at 3, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4123737.

of hierarchical management, meaning it is incumbent on individual DAO token holders to propose actions for the organization, and then to discuss and ultimately vote on them.[13] These actions typically require the holders of a majority of DAO tokens to approve of an action for it to be taken.[14] To become part of a DAO, one must purchase a DAO token, which may be either fungible or non-fungible (like an NFT).[15] Communication among members regarding proposed transactions often occurs on online platforms such as Discord (a communication app that allows users to send video, voice, or text messages to other users).[16]

To analogize, a DAO operates like a multiple-owner-operated business. Each of the owners has the ability to be heard on management decisions and vote. The DAO's code organizes and governs the way in which decisions are made, including how voting occurs. The structure contemplates many, many owners making many, many decisions. This is very different from the decision-making process of most other types of entities.

The Promise and Peril of DAOs

While they are not yet common, DAOs are certainly of growing interest. There were roughly 6,000 DAOs in June of 2022, a significant increase from the 700 DAOs in existence in May 2021.[17] There is a wide range of DAO activities including investing, charitable efforts, and collecting (both digital assets such as NFTs and real assets like physical artwork).[18] Real estate

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[13] *Id.*
[14] Wulk A. Kaal, *Blockchain-Based Corporate Governance*, STAN. J. BLOCKCHAIN L. & POL'Y (2021), https://stanford-jblp.pubpub.org/pub/blockchain-corporate-governance.
[15] Andrew McAfee and Jonathan Ruane, *What a DAO Can–And Can't–Do,* HARV. BUS. REV. (May 10, 2022), https://hbr.org/2022/05/what-a-dao-can-and-cant-do.
[16] *Id.*
[17] Steven Lofchie et al., *A Primer on DAOs,* HARV. L. FORUM ON CORPORATE GOVERNANCE (Sep. 17, 2022) https://corpgov.law.harvard.edu/2022/09/17/a-primer-on-daos/.
[18] Cathy Hackl, *What are DAOs and Why You Should Pay Attention,* FORBES (June 1, 2021), https://www.forbes.com/sites/cathyhackl/2021/06/01/what-are-daos-and-why-you-should-pay-attention/?sh=658686d17305; *see also* Siamak Masnavi, *Bitcoin Tower: Merging Real Estate and Crypto in Dubai's Futuristic Vision,* CRYPTOGLOBE (May 25, 2023), https://www.cryptoglobe.com/latest/2023/05/bitcoin-tower-merging-real-estate-and-crypto-in-dubais-futuristic-vision/.

DAOs have taken various angles to leveraging the DAO form. For example, indaod.io is seeking to develop a portfolio of vacation rentals, offering investors cashflow from the underlying properties and potential discounted or even free stays at their properties.[19] CityDAO has a mission of building a "blockchain-native network city of the future," presenting an opportunity for investors to own parts of what they call a decentralized city–or a series of geographically diverse properties that are associated through common ownership by the DAO.[20] Lofty, another DAO, plans on selling investors fractional ownership of individual rental properties for as low as $50 per token, promising investors daily cashflow and potential capital gains from appreciation.[21] Proponents of DAOs argue that this new type of entity brings collaboration to a new level–making governance more transparent, efficient, and secure.[22]

The perils of DAOs are serious. First and foremost, they have a questionable legal status. Most jurisdictions do not find DAOs to be a legally-recognizable corporate form, meaning a court may find it to be an unincorporated association or general partnership.[23] As such, DAO token holders may be personally liable for any and all debts incurred by the DAO.[24] To address this, some DAOs have opted to use traditional corporate structures, like corporations or limited liability companies, that they find most aligns with their purpose and the needs of their token

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[19] *See* indaod.io, https://indaod.io/ (last visited Jun. 7, 2023); *see also* indaod.io, *Whitepaper v1*, (May 24, 2022), https://docs.google.com/document/d/1h6-jz3YAX92hJnMucgdIiTphnhu_-tWY/edit.
[20] CityDAO wants to create a "decentralized city" by purchasing properties in different locations and allow its token holders to use them. For example, the DAO may purchase properties in Wyoming, Tennessee, and Vermont, all of which would be part of the "decentralized city" open for member use. CityDAO, *CityDAO's Mission and Key Metric* (Jun. 15, 2022) https://city.mirror.xyz/OQ-VjksyKPgdswhN8vmnk3o_CNPym6PJ0EAFdX6h5TA; *see also* CityDAO, https://www.citydao.io/ (last visited Jun. 7, 2023).
[21] Lofty, https://www.lofty.ai/learn (last visited Jun. 7, 2023).
[22] Kaal, *supra* note 14.
[23] Brummer and Seira, *supra* note 12 at 6-7.
[24] *Id.*

holders.[25] DAO proponents refer to such traditional corporate structures as "legal wrappers" around the DAO form.

There are some jurisdictions, however, that are beginning to recognize a DAO-specific LLC. Wyoming introduced the DAO LLC in 2021. The Wyoming DAO LLC is different from a regular LLC in that (1) the articles of organization states that the entity is a DAO, (2) the LLC is member-managed by default, (3) there must be some information regarding the DAO's smart contracts included in the LLC, (4) no fiduciary duties are levied upon DAO token holders unless specified in the articles of organization, and (5) there is no duty to furnish information to DAO token holders.[26] There is not yet much caselaw to provide guidance about their use. [27] While some other states–like Tennessee and, unsurprisingly, the Cayman Islands–have chosen to follow suit, other jurisdictions–like New York–have not yet taken any action. Other jurisdictions looking to attract DAO activity may focus their efforts on enacting their own DAO-specific LLC statute to provide some legal clarity for this innovative type of entity.[28]

Another peril of DAOs s that decision-making may be much less distributed than advertised, at least at this early stage in their existence.[29] According to a 2022 study by Chainalysis of 10 major DAO tokens, 90% of the voting power was held by less than 1% of DAO token holders.[30] This level of concentration in voting power renders the idea of a majority-based decision-making absurd.

Fundamentally, DAOs are offering the same opportunity as other blockchain business models in the real estate sector: the opportunity to purchase a fractional ownership interest in an

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[25] *Id.* at 3-4.
[26] Lofchie *et al.*, *supra* note 17.
[27] Brummer and Seira, *supra* note 12 at 10-11.
[28] Ravi Guru Singh, *New York is Losing the Race To Be a Home for DAOs,* N.Y.L.J. (July 18, 2022).
[29] *See generally* Lofchie *et al.*, *supra* note 17.
[30] Chainalysis, *Dissecting the DAO: Web3 Ownership is Surprisingly Concentrated* (June 27, 2022), https://blog.chainalysis.com/reports/web3-daos-2022/.

entity owning real estate. A key legal risk today, when comparing real estate DAOs to their blockchain counterparts, is the uncertainty over liability. The potential lack of limited liability opens investors to an untenable level of risk that significantly raises the perils of investing in a DAO, as investors will typically avoid investments with unlimited liability if there are reasonable alternatives that offer limited liability. There are key non-legal risks as well. Decision-making may not be as distributed as advertised. And more importantly, decentralized decision-making has not proved its mettle at all in the hyper-competitive real estate sector.

The REIT Stuff

The bigger question is whether DAOs will provide an investment opportunity that is a meaningful alternative to REITs. REITs are a predictable, more stable investing vehicle that not only delivers consistent returns. This is evidenced by the growing number of REITs and their long-term performance. As of October 7, 2021, there were 225 publicly listed REITs in the US.[31] From December 31, 1978, to March 31, 2016, U.S. Equity REITs[32] have generated an average annual return of 12.87%, outperforming the Russell 3000, which had an average annual return of 11.64%.[33] REIT shareholders just need to worry about their investment return, not whether they are incurring unlimited liability from their investment. This is far from the case for many DAO investors.

We are unwilling to count DAOs out at this early stage, given the explosive growth of the crypto sector more generally, but DAOs have not yet made the case that they will provide investors with a meaningful alternative to REITs on a purely financial basis. That may come in

[31] Howard E. Berkenblit *et al.*, *Real Estate Investment Trusts* (Whitepaper Dec. 8, 2021), https://sullivan.gjassets.com/content/uploads/2022/09/2022-Real-Estate-Investment-Trusts-USA.pdf.
[32] U.S. Equity REITs were measured by using the FTSE NAREIT All Equity REITs Index.
[33] Brad Case, *Comparing Average REIT Returns and Stocks over Long Periods*, NAREIT MARKET COMMENTARY BLOG (Apr. 20, 2019), https://www.reit.com/news/blog/market-commentary/comparing-average-reit-returns-and-stocks-over-long-periods.

time. DAO organizers may also figure out how to bundle a financial investment with other intangibles (vacation shares, community, cool factor) in a way that investors and consumers find attractive. For now, though, lawyers should be aware of DAOs as entrepreneurs seek to exploit this new business structure, but be keenly aware of the risks they pose as they advise their clients.