Centralized Governance in Decentralized Organizations

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Background

- Most business activity has been organized via legally incorporated entities managed through a system of corporate governance - "corporations"
  - Executives control daily operations and answer to the board of directors
  - Board of directors reports to shareholders
  - Laws, policies, and regulations are enforced by authorities such as courts
- Hansmann (2000)
  - "*...investor ownership is only one of many possible forms of business organization...*" and "*...while we tend to take for granted that business enterprise is organized in the form of investor-owned firms, investor ownership is not a logically necessary concomitant of free markets and free enterprise.*"
  - The evolution of ownership forms is tied to changes in technology and market conditions, helping explain why new form of decentralized governance – Decentralized Autonomous Organization (DAO) – may now be viewed as a viable alternative to the investor-owned model.

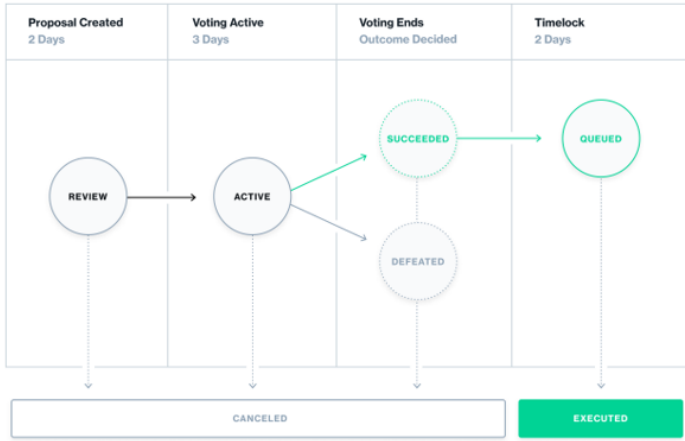
Decentralized Autonomous Organization

What is it? How does it work?

- An algorithmic organization defined by programmed rules encoded in smart contracts, which specify who can take what actions and under what conditions
- Operates in a decentralized manner—governance and decisions are made collectively by token holders, not a central authority
- Smart contracts automate core organizational processes through self-executing logic
- A DAO is a governance-layer dApp designed to coordinate or upgrade another underlying dApp

Example: Compound Governor

- One of the most prominent and widely adopted governance frameworks
- On-chain voting with delegation
- Voting power is determined based on the number of tokens delegated to each wallet



Structure of the Governance Process

DAOs' Governance Risks

Example:

On March 13, 2021, True Seigniorage Dollar (TSD) unveils that a malicious attacker:

- gradually bought TSD tokens at low price until he had 33% voting power
- proposed an implementation that added code to mint himself 11.8 billion tokens

My Overall View:

- A timely and well-motivated paper on an important topic
- At the core of Web3 and DeFi governance challenges
- Provides early evidence on real governance risks in DAOs
- Among the first rigorous academic studies in this space
- May offer insight into improving traditional governance models

Comment #1: DAO Governance vs. Corporate Governance

DAO governance is often compared to corporate governance—but the comparison is challenging due to fundamental differences in process and structure.

- Sequential voting: later voters observe earlier votes before casting theirs
  vs. simultaneous voting in traditional corporate governance

  →Results in selective participation: not all token holders vote on every proposal—it would be inefficient vs. mandatory voting: mutual funds are required to vote on all proposals

- Automatic execution: any approved proposal is executed, regardless of who submitted it
  vs. non-binding shareholder proposals, even if approved

  →Results in many proposals initiated by non-insiders in DAOs vs. management-dominated proposal flow in traditional firms

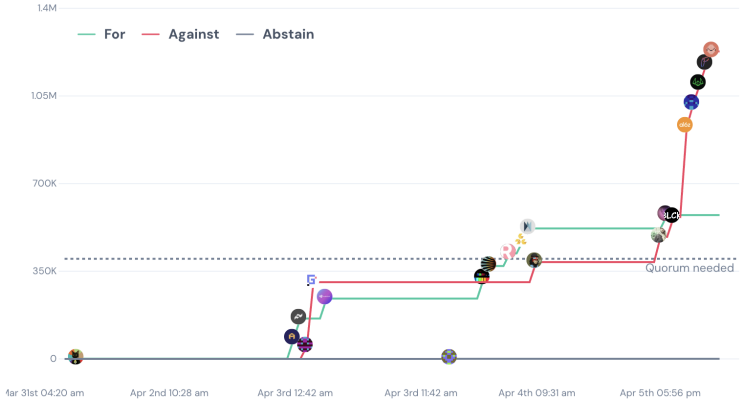
Recommendation: Soften DAO governance to corporate governance comparisons.

Comment #1: Token Voting Dynamics over Voting Window in Compound Governor

Example #1: Early large-holder votes decisively determine the outcome, discouraging further participation

Comment #1: Token Voting Dynamics over Voting Window in Compound Governor

Example #2: Voting remains active throughout the window when proposals are contentious



Comment #1: Token Voting Dynamics over Voting Window in Compound Governor

Example #3: High engagement by small token holders drives participation on certain proposals

Comment #2: Centralization in DAOs

DAO governance is often criticized as "failing" due to the centralization of token ownership.

But is this surprising? In fact, concentrated ownership is often optimal in business enterprises.

Why?

- **Hansmann (2000)** Tradeoff between market contracting costs and the costs of collective decision-making. In most cases, the cost of collective decision-making is prohibitively high.
- A key cost is disagreement among owners, which can lead to inaction, organizational stagnation, and the risk of losing entire business to more agile competitors.

Empirical evidence?

- In firm census data from Canada, Denmark, Italy, Norway, Sweden, ..., most firms are 100% owned by a single individual. The next most common structures are 50%/50% and then 33.3%/33.3%/33.3%—often among family members. (For optimality, see **Bennedsen and Wolfenzon (2000)**.)
- Even among the U.S. listed firms, where ownership is relatively dispersed, many listed firms are controlled by block-holders. Until February 2024, Amazon was effectively controlled by Jeff Bezos.

Comment #2: Suggested Perspective to Frame the Research Question

- Concentrated ownership should **not** be interpreted as evidence that a governance structure is failing, dysfunctional, or ineffective, "undermining equality and fairness in the decentralized system".
- Expectations that DAOs—because of their decentralized architecture—will naturally lead to dispersed (equal, fair) token ownership are unrealistic.
- While blockchain reduces some frictions that are key to governance process (e.g., transaction transparency, enforcement, commitment), it does **not** reduce the fundamental cost of collective decision-making among humans or organizations who hold the tokens.
- Depending on the benchmark, token ownership in many DAOs appears to be relatively dispersed—likely more than in most traditional companies.

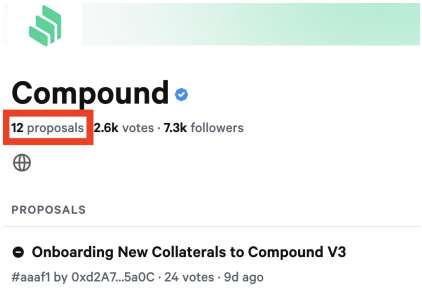
Comment #3: Proposals Sample

Sample is focused on data from the off-chain voting platform Snapshot.

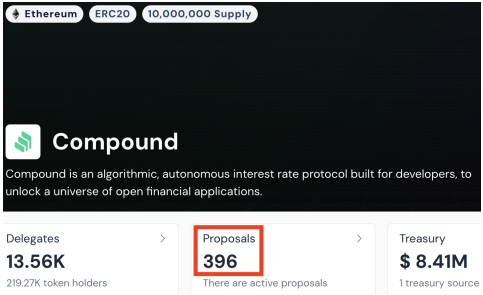
The analysis excludes on-chain voting activity for the DAOs in the sample.

As a result, many—and potentially the most consequential—on-chain votes are not captured.

Is this omission material to the results? Does it bias interpretation of DAO governance?



Snapshot Off-Chain Voting



On-Chain Voting (Not in Sample)

Comment #4: Delegation Transactions

In DAOs with delegation, voting power is based on the number of tokens delegated.

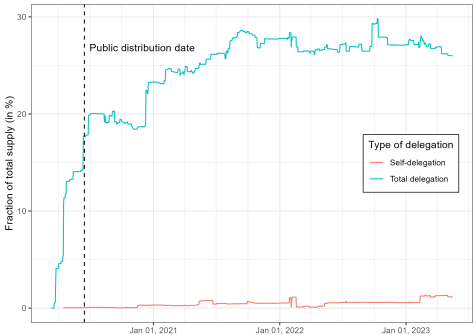
Token holders must actively submit a delegation transaction—either to another wallet or to themselves—before their tokens can be counted in governance votes.

The paper states: "Snapshot's panels only display delegations facilitated through their platform," and that "we supplement this data with information from Tally."

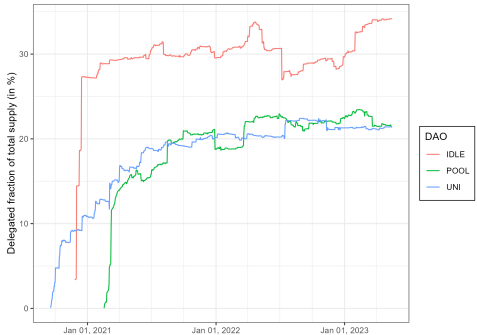
While Tally may provide accurate delegation data, a single missed delegation transaction—even from years ago or before public token distribution—can substantially distort the set of eligible voters and their relative power.

Recommendation: For robustness, delegation transactions should ideally be sourced directly from the blockchain.

Fraction of Delegation Over Supply



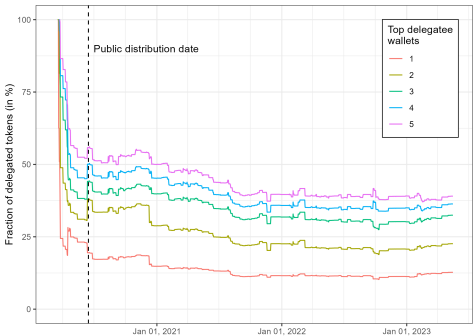
Compound



Other

Concentration of Delegated Tokens: Top Delegatee Wallets

Top 5 delegated wallets possess a signifantly high control of votable shares



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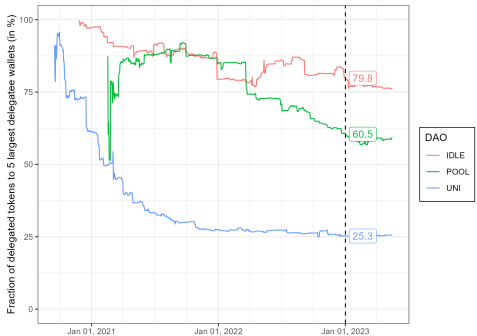

Other

Comment #5: Are Minority Token Holders Hurt?

The potential conflict between large and minority holders is well studied in corporate finance.

Negative View: Large block holders exploit minority token holders.

Neutral View: Token prices reflect equilibrium outcomes. Minority holders understand the terms of engagement and purchase tokens at a fair price, incorporating both: (i) benefits of large holders (e.g., skin in the game, superior information), and (ii) costs (e.g., private benefits of control).

- This is essentially a full-information rational expectations argument.
- Plausible in the DAO context, given the transparency of all transactions on the blockchain.
- If markets can assess the probability that a trade is insider-driven, then prices adjust accordingly—insider trading becomes part of the equilibrium.

Comment #5: Bottom Line

Empirically demonstrating the negative view is inherently difficult: no clear counterfactual, and we cannot directly observe the expectations of minority token holders.

Increased trading volume around governance proposals is expected. Those opposed to a proposal may sell *before the vote* or in response to the *vote outcome*.

I especially appreciate the heterogeneity results on profitability of insider trading. Notably, there are no abnormal returns from insider trading when:

- Delegated voting is used,
- Quadratic voting mechanism is in place, or
- The DAO is large.

This evidence suggests that in well-managed DAOs, insider trading is not a super important concern.

Recommendation: Since I argued earlier that token ownership concentration is also not inherently problematic, the interpretation of the findings may be more on a positive side.

Comment #6: FTX Shock

I see the collapse of FTX as a failure of traditional corporate governance—an instance of custodial risk, rather than an example of DAO governance failure.

For this reason, I recommend identifying a different shock that more directly illustrates the vulnerabilities of DAO governance. This would make the results easier to interpret.

The True Seigniorage Dollar (TSD) collapse is one such example.

In fact, there are multiple relevant events—which may be an advantage over relying on a single case.

Conclusion

- This is a timely and pioneering paper that opens up a rigorous conversation about governance in decentralized settings.
- It contributes to both the Web3/DeFi literature and traditional corporate governance by studying how governance structures operate without legal institutions.
- My comments focused on structural comparisons, token ownership concentration, delegation data integrity, and sample representativeness.
- I particularly liked the heterogeneity results on profitability of insider trading—suggesting that when DAOs are well-designed, risks related to insider behavior can be mitigated.
- Further refinement of empirical design—such as incorporating on-chain events, using blockchain-sourced delegation data, and DAO governance vulnerabilities events—would make the conclusions stronger.

An excellent and insightful paper. My takeaway: Go DAOs!