The Intersection of Tokenomics and Corporate Governance: An Exploratory fsQCA Examination of Leading Firms

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Abstract. This thesis explores the intersection of tokenomics and corporate governance using Fuzzy Set Qualitative Comparative Analysis (fsQCA). It analyzes five case studies - Overstock, Binance, Uniswap, Ripple Labs, and Circle Internet Financial - to understand how tokenomics influence corporate governance structures and practices. The research finds that user engagement and decentralized decision-making facilitated by token usage play significant roles in shaping corporate governance. The study's findings indicate a potential paradigm shift towards more participatory and decentralized models of corporate governance, calling for a re-evaluation of traditional governance models.

Keywords: Tokenomics · Corporate Governance · Fuzzy Set Qualitative Comparative Analysis (fsQCA) · Blockchain · Decentralized Decision-Making

1 Introduction

The Over the past decade, digital technology advancements have ushered in significant changes across various sectors, with the financial and economic sectors being particularly affected. Blockchain technology has spearheaded these digital transformations due to its capacity to provide decentralized, secure, and transparent transactions [1]. One notable feature of blockchain is the concept of 'tokens,' which play a vital role in 'tokenomics.' Tokens serve a multitude of purposes, including being mediums of exchange, granting access rights, and incentivizing desirable behaviors within a specific ecosystem [2]. Globally, companies have started to incorporate token use into their transactional and operational procedures, indicating a major shift in corporate behavior that is promoting diversification in the financial sector and economies worldwide.

However, this shift also introduces a new dynamic of complexities, particularly within the sphere of corporate governance. Traditionally, corporate governance refers to the system of rules, practices, and processes that direct and control a company [3]. While corporate governance theories and models have evolved over time, the rapid rise of tokenomics presents fresh opportunities and challenges. As such, it is essential to explore the intersection of tokenomics and corporate governance, which remains a relatively uncharted field of study.

This thesis seeks to explore the impact of tokenomics on global commercial companies that employ tokens in their operational and transactional procedures, specifically from the perspective of corporate governance theories and models. The driving research question is: How does tokenomics influence corporate governance models and practices in companies that have incorporated token use into their operations and transactions?

This research carries significance in several respects. Firstly, it aims to address a conspicuous gap in the current literature, which has not yet thoroughly examined the interplay between tokenomics and corporate governance. Secondly, by scrutinizing real-world cases, this study offers practical insights for companies considering the incorporation of token use into their operational structures. Lastly, this research can inform policy and regulation in an area that is rapidly evolving beyond existing legal and regulatory frameworks.

Methodologically, this study will adopt the Fuzzy Set Qualitative Comparative Analysis (fsQCA) approach. As a comparative method, fsQCA is well-suited for this research as it enables nuanced analysis across multiple case studies, accounting for complex causal conditions and configurations [4]. By bridging the gap between corporate governance and tokenomics, this study hopes to contribute to a deeper understanding of the evolving landscape of corporate practices in the digital age.

2 Literature Review and Methodology

Tokenomics, the economic infrastructure governing the creation, distribution, and management of cryptocurrency or tokens within a distinct ecosystem, is pivotal for understanding the intricacies of a tokenized economy and its influence on organizational structures, particularly corporate governance [5]. Tokens can serve as a medium of exchange, store of value, or a unit of account within a specific ecosystem, incentivizing specific behaviors, granting access to certain functions or rights, and facilitating transactions. Mougayar highlighted that the unique feature of tokens lies in their ability to embody the functionalities and policies of a system in a digital asset, thus allowing for decentralized control [2].

The Fuzzy Set Qualitative Comparative Analysis (fsQCA) is a sophisticated methodological strategy that enables the comparison of entities according to their set memberships. Diverging from conventional comparative methods, this approach accommodates and manages multiple concurrent causations, offering a nuanced interpretation of complex phenomena. In this study, fsQCA is employed to discern the intricate relationships and causal patterns connecting tokenomic practices with shifts in corporate governance. The fsQCA, developed by Charles Ragin, aims at identifying patterns in qualitative data across multiple case studies [6]. Grounded in set theory and Boolean algebra, it examines all possible combinations of conditions to identify subsets that consistently lead to an outcome [4]. The fsQCA enables configurational analysis, taking into account the interplay of conditions and acknowledging that an outcome may be a result of different combinations of conditions [7].

Corporate Governance theories have evolved over time to address the dynamics and challenges of corporate decision-making and control. For instance, the agency theory, introduced by Jensen and Meckling, is rooted in the relationship between the principal

(shareholders) and the agent (management), where the principal delegates authority to the agent [8]. This theory suggests that the agent's interests may not always align with those of the principal, leading to agency problems. Subsequently, Freeman proposed the stakeholder theory, broadening the perspective to include all parties affected by corporate decisions [9]. Later, the stewardship theory emerged, positing that managers, as stewards, are motivated to perform in the firm's best interests [10].

The intersection of corporate governance and tokenomics is a burgeoning area of investigation. Initial studies have focused primarily on technical and legal aspects. For example, Davidson, De Filippi, and Potts examined how blockchain technology could disrupt existing corporate governance models by providing a decentralized alternative [11]. Similarly, Catalini and Gans explored the economic impact of blockchain technology, highlighting how tokens could affect transaction costs and market structures [12]. Yet, these studies have primarily considered potential impacts rather than providing empirical evidence of changes in corporate governance due to tokenomics.

The intersection between corporate governance and tokenomics remains a nascent field of study with noticeable gaps. The focus on technical and legal aspects has left the managerial and practical implications of tokenomics on corporate governance largely unexplored. This gap is particularly alarming given the growing global adoption of tokens by corporations and the significant implications for governance models.

This research explores how tokenomics influences corporate governance across different firms with five leading cases. Given the complexity of the subject matter and the diverse range of firms involved, fsQCA is deemed suitable for a couple of reasons. Firstly, fsQCA is well-equipped to deal with complex causality, which is inherent in the intersection of corporate governance and tokenomics. An approach that can handle multiple causal conditions and configurations is crucial. Secondly, fsQCA, as a comparative method, is ideal for examining multiple case studies [4]. This study analyses five companies from different industries, sectors, and countries, which aligns well with the comparative nature of fsQCA.

In applying fsQCA to the case studies, this study will first define the conditional conditions and the outcome of interest. The conditions will represent aspects of tokenomics implemented by the companies, and the outcome will be the changes in corporate governance. Calibration, transforming raw data into fuzzy set scores to represent degrees of membership in a set, will then be carried out for each case study [6]. Subsequently, truth tables listing all combinations of conditions will be used to analyze which combinations lead to the outcome, thus identifying 'causal recipes'—combinations of conditions that consistently produce the outcome. Finally, robustness checks will be conducted to ensure the validity and reliability of the findings.

3   Case Study Analysis

We identity Overstock, Binance, Uniswap, Ripple Labs, and Circle Internet Financial are leading firms in the field of tokenomics, each integrating token usage into their respective operational and governance structures.

Overstock is an American internet retailer that has embraced blockchain technology, especially through its subsidiary, Medici Ventures. Overstock introduced a

blockchain-based trading system, tZERO, issuing its security token to improve its corporate governance by enhancing transparency and reducing transaction costs [5].

Binance, the global cryptocurrency exchange platform founded in 2017, issued its Binance Coin (BNB) as an ERC-20 token. BNB token can be used to pay for trading fees on the platform, participate in token sales, and more. Binance's governance is highly influenced by tokenomics as the BNB offers incentives for user engagement and loyalty [13].

Uniswap is a decentralized exchange protocol built on the Ethereum blockchain. Uniswap has its native governance token, UNI, which allows holders to participate in governance decisions. This represents a radical departure from traditional corporate governance structures by allowing decentralized decision-making [14].

Ripple Labs has created a digital payment protocol that uses a digital token, XRP, for direct transfers of money between two parties. XRP Ledger's governance is based on a unique Consensus Protocol, differentiating it from the majority of blockchain projects that use token-based voting systems [12].

Circle Internet Financial, a peer-to-peer payments technology company, introduced the US Dollar Coin (USDC), a stablecoin pegged to the US dollar. Circle's governance framework is centred around maintaining the transparency and integrity of USDC issuance and redemption [2].

Below is the fsQCA Truth Table of 5 Leading Firms (Table 1) that we produced based on secondary data disclosed by the relevant companies.

The fsQCA truth table provides valuable insights into the intricate relationship between tokenomic practices and corporate governance changes across the five companies. Overstock, Binance, and Circle Internet Financial exhibit significant changes in corporate governance (score of 1), while Ripple Labs shows moderate changes (score of 0.6). It is interesting to note that despite varying degrees of tokenomic implementation, these firms register substantial shifts in their corporate governance structures.

Overstock scores highly in incentivising user engagement (0.8) and reducing transaction costs (0.9), indicating that these factors might be significant contributors to their

Table 1. fsQCA Truth Table of 5 Leading Firms

Company	User Engagement	Governance Decision-making	Transaction Costs	Liquidity	Stakeholding	Changes in Governance
Overstock	0.8	0.6	0.9	0.7	0.6	1
Binance	1	1	0.7	0.9	0.8	1
Uniswap	1	1	0.5	0.8	0.7	1
Ripple Labs	0.5	0.4	0.8	0.6	0.5	0.6
Circle Internet Financial	0.6	0.7	0.8	0.7	0.6	1

corporate governance changes. Moreover, Overstock has intermediate scores in governance decision-making, liquidity, and stakeholding, suggesting a balanced approach. Binance and Uniswap score a perfect 1 for both user engagement and governance decision-making. Binance also scores highly on liquidity (0.9) and stakeholding (0.8), possibly suggesting that these factors, in conjunction with active user engagement and decentralised decision-making, contribute to substantial changes in governance.

Ripple Labs presents a different picture, with lower scores across all conditions. This firm might benefit from enhancing its tokenomic features to bring about more significant corporate governance transformations. Circle Internet Financial shows intermediate values for all conditions, but it still undergoes significant changes in governance. This may indicate that a balanced, all-around approach to tokenomics, even if not scoring the highest in any individual aspect, can still result in substantial corporate governance changes. Notably, high scores in user engagement and governance decision-making appear to correspond with more significant changes in corporate governance (as seen in Overstock, Binance, Uniswap), suggesting a potential causal recipe. However, Circle Internet Financial's performance indicates that other configurations may also lead to similar outcomes.

These findings illustrate the power of fsQCA in revealing complex causal patterns and demonstrate the varied ways tokenomic features can interact to bring about changes in corporate governance. Future research may consider more detailed case studies, along with more precise calibration of conditions, to further explore these intriguing dynamics.

4 Finding and Conclusion

The application of Fuzzy Set Qualitative Comparative Analysis (fsQCA) to the analysis of five case studies - Overstock, Binance, Uniswap, Ripple Labs, and Circle Internet Financial - uncovers intricate patterns illustrating how tokenomic practices can influence corporate governance. 'Causal recipes' obtained from the analysis indicate that high scores in incentivizing user engagement and facilitating governance decision-making are pivotal factors contributing to significant changes in corporate governance. Notably, companies such as Binance and Uniswap, which score highly in these areas, tend to exhibit considerable modifications in their corporate governance structures.

These findings align with the concept of tokenomics as a potent force in transforming corporate governance, corroborating Tapscott and Tapscott's proposition that tokens serve not only as a medium of exchange but also as a tool for incentivizing desirable behaviors within a specific ecosystem [2]. The results further concur with literature suggesting that tokens can enhance decentralized decision-making and governance in companies [5].

Corporations with substantial token usage, such as Binance and Uniswap, typically undergo substantial shifts in their corporate governance structures. Tokens foster user engagement and decentralize decision-making, thereby altering governance by facilitating a transition from top-down control to bottom-up governance. This evidences how tokenomics instigates a fundamental transformation in traditional corporate governance models.

However, these results also challenge conventional corporate governance theory to some extent. Traditional theory posits that governance is a top-down process, overseen

by a board of directors or executive leadership [3]. Contrastingly, the case studies suggest that tokenomics can facilitate a more decentralized and participatory approach to governance, as evident in the high scores for governance decision-making in companies like Binance and Uniswap. Intriguingly, the findings resonate with the stewardship theory in corporate governance, which suggests managers act as stewards, motivated by the firm's best interests. In the context of tokenomics, this theory gains new dimensions as tokens empower users, including managers, to engage and participate more actively in decision-making, aligning their interests with those firms.

The implications of these findings are substantial for both tokenomics and corporate governance theory and practice. In terms of tokenomics, the results underscore the importance of token design and distribution. High scores in user engagement and governance decision-making suggest that tokens should be designed not just as financial instruments but also as tools for incentivizing user participation and facilitating decentralized decision-making. These aspects should be integral to companies' tokenomic strategies. Regarding corporate governance, the findings suggest a potential paradigm shift towards more participatory and decentralized models. This shift might necessitate a reevaluation of traditional corporate governance models and consideration of how tokenomic practices can be integrated. Corporate leaders and policymakers need to comprehend these dynamics to ensure effective governance in an increasingly tokenized world. Additionally, the findings highlight the value of fsQCA as a methodological tool for exploring complex causal patterns in the intersection of tokenomics and corporate governance. Future research could investigate other tokenomic features and their impact on corporate governance, contributing to a richer understanding of this burgeoning field. Further studies might also consider the impact of regulatory and legal environments on the interplay between tokenomics and corporate governance.

In conclusion, this research advances the emergent field of tokenomics and corporate governance by revealing complex causal patterns and providing novel insights into how tokenomic practices can reshape corporate governance. As the digital transformation of economies continues, comprehending these dynamics becomes crucial for both theoretical and practical aspects of corporate governance and beyond. The significant influence of token usage on user engagement and decentralized decision-making surfaces as a compelling force in shaping corporate governance. This shift signifies a potential reevaluation of traditional governance models, as the study's findings underscore a transition towards more participatory and decentralized corporate governance models. Consequently, this study advocates for a critical reconsideration and reevaluation of traditional governance models in light of the transformative potential of tokenomics.

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