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| RESEARCH ARTICLE

Decentralizing Real Estate Markets: Evaluating REITs and Blockchain Tokenization Approaches

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| ABSTRACT

Blockchain-based tokenization is transforming the real estate sector, presenting a compelling alternative to the traditional model of Real Estate Investment Trusts (REITs). As the industry shifts from financialization to decentralization, driven by technological advancements, these two models offer different approaches to democratizing real estate investment.REITs have been a foundational aspect of real estate financialization, enabling individual investors to participate in large-scale real estate ventures through fractional ownership of diversified property portfolios. This has broadened the investor base and improved market liquidity. However, the emergence of blockchain technology and decentralized finance (DeFi) introduces a new paradigm: real estate ownership can now be fractionalized into digital tokens. This enhances liquidity, transparency, and accessibility through global 24/7 trading platforms. While REITs have made significant strides in expanding access to real estate investment, blockchain-based tokenization can further enhance these achievements by lowering entry barriers, reducing transaction costs, and decentralizing market operations. Nevertheless, the adoption of blockchain technology in real estate also comes with challenges, including regulatory uncertainties, technological risks, and the need for robust governance frameworks. As the lines between finance and technology continue to blur, it is essential to adapt regulatory frameworks and investment strategies to navigate this evolving landscape. The critical review highlights the future implications of these trends, emphasizing the importance of continued research and regulatory innovation to fully realize the potential of decentralized real estate markets. This is particularly relevant in addressing issues of housing inequality and affordability, as housing serves not only as an investment vehicle but also as a fundamental shelter for people.

| KEYWORDS

Blockchain, Tokenization, REITs, Decentralized Finance, Real Estate Financialization, Smart Contracts.

| ARTICLE INFORMATION

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1. INTRODUCTION

Innovations in the built environment are particularly evident in real estate investment. Traditionally, real estate has been a capital-intensive sector, characterized by high entry barriers and significant transaction costs (Hsieh and Moretti, 2003). As the sector confronts financialization and decentralization, it becomes evident that traditional models are being reshaped by advanced technologies. Real Estate Investment Trusts (REITs), which have been a cornerstone of real estate financialization since the 1960s, have democratized access to property investments. By allowing smaller investors to participate in large-scale real estate ventures, REITs have created new opportunities for wealth creation and portfolio diversification. This shift has liberated property investment from localized businesses, allowing it to flow into global stock markets with much higher liquidity and inclusivity (Feng et al., 2011; Block, 2012; Brounen and De Koning, 2012). However, the emergence of blockchain technology and decentralized finance (DeFi) signals a new era in real estate investment, marked by unprecedented liquidity, transparency, security, and accessibility (Schär, 2021; Makarov and Schoar, 2022). Blockchain-based tokenization, which involves converting real estate ownership rights into digital tokens, represents a significant departure from conventional investment methods.

This process facilitates fractional ownership and enhances liquidity by enabling trading on global blockchain platforms 24/7. Moreover, the technological advantages of blockchain open up new possibilities for corporate governance, investment regulation, and market transactions (Moringiello & Odinet, 2023). The implications are profound; by lowering entry barriers, reducing transaction costs, and decentralizing markets and corporations, blockchain technology could democratize real estate investment even further than REITs have.To fully understand these transformative developments, it is essential to examine the historical trajectory of housing markets, which have evolved from government control and centralization to privatization and commodification, followed by financialization, and now decentralization. In the post-World War II era, many governments played a central role in housing provision, emphasizing large-scale public housing projects and regulatory oversight. This period of centralization was marked by significant government intervention to ensure housing availability and affordability as a public good (Beauregard, 2001; Hoff, 2008). As economic paradigms shifted in the latter half of the 20th century, there was a marked movement toward neoliberal privatization and commodification (Fenton et al., 2013). Housing began to be viewed not merely as a necessity but as a commodity and an investment vehicle. Policy change encouraged private homeownership and real estate development, fostering a market-oriented approach to housing. The subsequent phase saw housing further integrated into global financial markets, exemplified by the emergence of mortgage-backed securities and the proliferation of REITs, which transformed housing into a key asset for institutional investors. We are now witnessing the next stage in this evolution: decentralization. Blockchain technology facilitates this decentralization by enabling direct, peer-to-peer, real-time transactions and reducing reliance on traditional financial intermediaries (Harvey et al., 2021; Schär, 2021). Web 3.0, characterized by decentralization and blockchain technologies, has the potential to reshape financial instruments for housing development. Blockchain-based platforms, such as decentralized autonomous organizations (DAOs), enable shared ownership and management of housing assets, democratizing access to housing and creating alternative homeownership models. Their embedded smart contracts facilitate automated transactions on a 24/7 basis. Additionally, DeFi protocols allow for peer-to-peer lending and borrowing, providing flexible financing options for housing-related purposes. However, these innovations come with risks, such as housing speculation and regulatory challenges, that must be navigated carefully (Aramonte et al., 2021). This critical review seeks to explore and compare REITs with emerging blockchain-based real estate tokenization in the real estate sector. A comparative analysis is particularly relevant as both models represent innovative approaches to transforming housing equity into liquid, tradable securities. REITs have long served as a vehicle for converting real estate equity into securities, allowing investors to buy fractional shares that own and manage property portfolios. This model has successfully broadened the investor base and improved market liquidity by offering fractional ownership and security-like exchanges (Subrahmanyam, 2007; Highfield et al., 2021). Similarly, blockchain-based tokenization aims to achieve the same goal through a decentralized framework. By converting property ownership into digital tokens, blockchain technology facilitates fractional ownership and enhances liquidity in the real estate market.

2. FINANCIALIZATION OF REAL ESTATE THROUGH REITs

Real estate financialization refers to the process of integrating real estate assets into the global financial system, transforming them from tangible properties into financial instruments that can be traded, securitized, and leveraged. The growing importance of capital markets has driven this shift, along with the rise of institutional investment and the evolution of financial products that connect real estate to these markets. As a result, housing and commercial properties are no longer viewed merely as physical spaces but as assets capable of generating significant financial returns. This transformation has profoundly impacted how real estate is valued, bought, sold, and managed. Real Estate Investment Trusts (REITs) are corporations that own, manage, or finance income-producing real estate across various property sectors. These entities enable individual investors to purchase shares in commercial real estate portfolios, thus democratizing access to large-scale, diversified real estate investments (Ambrose et al., 2005). The concept of REITs was established in 1960 under the Eisenhower administration, allowing for widespread public participation in commercial real estate (Glascock and Lu-Andrews, 2014). REITs have significantly transformed the landscape of real estate investment, making it accessible to a broader audience and impacting housing sectors globally. This democratization has shifted the focus from direct housing investments to shared ownership through REITs, creating new investment opportunities. During the 1960s, REITs were in their infancy, and a notable shift occurred in the 1980s toward mortgage REITs, although these faced challenges by the end of the decade due to rising interest rates. The Tax Equity and Fiscal Responsibility Act of 1986 marked a significant turning point. It enabled REITs to manage properties directly, adopting a more active management approach and transforming their role in the real estate sector. The 1990s saw explosive growth in REITs, with the sector expanding from $8 billion to $50 billion and notable public offerings marking the beginning of the modern REIT era (Feng et al., 2011). This period highlighted REITs' role in enhancing market liquidity, making it more resilient to economic fluctuations. The introduction of innovative structures like UPREITs in the early 1990s further modernized the market by allowing property contributions in exchange for operating partnership units, increasing flexibility in property management and investment.REITs' resilience was tested during the market downturns of 1998–1999 and the global financial crisis of 2007–2008. Despite these challenges, REITs were able to sustain and grow, partly due to their structure, which mandates significant payout ratios to maintain investor confidence. The inclusion of REITs in the S&P 500 Index in 2001 underscored their importance in the financial landscape, marking them as a viable and stable investment option.

REITs have not only made investment opportunities in the housing sector more accessible, but they have also played a pivotal role in shaping the modern real estate market. Their ability to adapt to economic changes and integrate new technologies highlights their resilience and enduring relevance in the market.

3. THE GROWING TREND OF TOKENIZATION IN REAL STATE THROUGH BLOCKCHAIN TECHNOLOGY

Issuing digital tokens on a blockchain represents full or fractional ownership of physical real estate assets, enabling buying, selling, and trading on digital exchanges. This innovation lowers the barriers to real estate investment, allowing investors to participate with smaller capital. Tokenization emerged with blockchain technology, enhancing transparency, security, and transaction immutability (Simons and Simons, 2022). Tokens can be classified as digital currencies (e.g., Bitcoin), utility tokens (used within a network), and security tokens (representing investment contracts like real estate, securities, and commodities).Tokenization can be seen as the financial fractionalization and digitalization of real estate. Traditional real estate investment has already undergone changes with products like REITs and timeshares. The main advantage of tokenization is its efficiency, facilitated by Ethereum-based smart contracts that automate transactions without intermediaries (Fang et al., 2022a, b; Ullah and Al-Turjman, 2023; Norta et al., 2018). This technology reduces transaction costs and makes real estate investing more inclusive and affordable (Landy and Wilka, 2018; Zheng et al., 2020). The process of housing tokenization includes selecting assets, establishing legal frameworks, creating digital tokens from fractional ownership units, and listing them in Initial Coin Offerings (ICOs). Once issued, tokens can be traded on secondary markets, providing higher liquidity than traditional properties. Token holders can engage in governance and profit-sharing through smart contracts and Decentralized Autonomous Organizations (DAOs) (Li et al., 2019; Serrano, 2022). Real estate tokenization practices gained momentum around 2017, with platforms like Propy and Atlant exploring fractional ownership to address market inefficiencies (Konashevych 2020; Baum, 2021; Jia et al., 2024). Between 2019 and 2020, advancements in blockchain led to the creation of Title Tokens, which store ownership information on the blockchain. By 2020, platforms such as BrickX (Australia), Kasa (South Korea), and ADDX (Singapore) demonstrated benefits like increased liquidity and lower costs, while also presenting new regulatory challenges (Chow and Tan, 2022).Institutional investors are increasingly recognizing the unique advantages of tokenization in real estate financing and portfolio management, with evidence suggesting that tokenized assets offer distinct risk-return profiles attractive for diversification (Steininger, 2023). The shift from REITs to tokenized offerings is exemplified by the Aspen St. Regis Resort, which transitioned to digital token issuance. The regulatory environment is evolving, with clearer guidelines such as Germany's Electronic Securities Act of 2021 supporting investment in this emerging asset class.

4. COMPARATIVE ANALYSIS OF REITs AND TOKENIZATION

The comparison between Real Estate Investment Trusts (REITs) and blockchain-based tokenization focuses on three aspects: organization, market, and governance.

4.1. Organizational Basis: Structure, Agencies, and Centrality

Real Estate Investment Trusts (REITs) operate as centralized entities that manage diversified portfolios of properties. Investors buy shares in the REIT rather than individual properties, allowing them to benefit from professional management and broad diversification (Feng et al., 2011). This structure ensures stable income streams through high dividends and fosters investor trust by complying with established governance frameworks regulated by entities like the SEC (Ambrose et al., 2005). However, this model limits direct ownership, as shares serve as proxies for real estate assets. On the other hand, blockchain tokenization allows for the fractional ownership of real estate by creating digital tokens that represent ownership of individual properties. The governance of these tokenized real estate assets often involves Decentralized Autonomous Organizations (DAOs), enabling token holders to participate directly in decision-making processes related to specific assets, as opposed to a centralized portfolio management entity. This decentralization grants investors more control over their investments, reduces reliance on intermediaries, and provides greater oversight of asset-specific risks. The market has seen personal asset owners tokenize their properties on various platforms, eliminating many intermediaries, such as brokers and asset management companies, and empowering individual investors to buy, sell, and trade fractional ownership of properties. Platforms like Propy exemplify this model by allowing investors to own and trade tokenized property fractions on blockchain platforms, bypassing traditional ownership and market barriers (Simons & Simons, 2022).However, it's important to recognize that the current adoption of tokenization in established markets is still at a nascent stage. While tokens based on individual properties enable decentralized ownership, this structure has not yet attracted institutional investors. Most real estate tokens appealing to institutional investors are primarily organized as REITs, which have a centralized management structure but are traded as tokens on blockchain platforms. This situation reflects a transitional phase—a blend of REITs and tokenization—as the market gradually evolves and adapts.

4.2. Market Access, Liquidity, and Transaction Costs

Real Estate Investment Trusts (REITs) have made real estate investments accessible to individual investors, allowing participation in large projects without full ownership. Compared to traditional real estate markets, REITs offer portfolio diversification, higher dividends, and reduced risks (Wang et al., 2017). Their inclusion in stock markets enhances liquidity and market correlation, highlighting the benefits of real estate financialization (Subrahmanyam, 2007; Cheung et al., 2018). Despite this, REITs face challenges like issuance and registration costs and operational inefficiencies driven by centralized regulatory requirements (Highfield et al., 2021). In contrast, blockchain tokenization enables fractional ownership through online platforms, promoting inclusivity for small-scale investors with minimal capital (Gupta et al., 2020). Liquidity differs significantly; REITs provide moderate liquidity with trading limited to specific hours and associated brokerage fees (Brounen & Koning, 2012). Blockchain tokenization, however, facilitates 24/7 trading, allowing instant transactions but potentially leading to volatility and price instability. Operational efficiency sets these models apart: REITs incur higher costs due to manual processes (Feng et al., 2011), whereas blockchain platforms use smart contracts to automate processes, reducing costs (Zheng et al., 2020). This decentralized approach can lower transaction costs by 30% to 50% compared to traditional methods (Veuger, 2019) while enhancing transaction transparency through immutable blockchain records (Baptista et al., 2023).

4.3. Risk, Regulation, and Governance

Governance and risk management are key in differentiating tokenization from other real estate models. REITs operate under centralized oversight with a clear governance framework that ensures operational efficiency and compliance (Danielsen et al., 2014). However, this concentration of power limits direct investor influence (Ambrose et al., 2005).In contrast, blockchain-based tokenization utilizes decentralized governance models, such as Decentralized Autonomous Organizations (DAOs), allowing token holders to vote on decisions, fostering transparency (Harvey et al., 2021). While this model mitigates information asymmetry (Zheng et al., 2020), it faces challenges in achieving diverse participation and risks from uninformed voting (Konashevych, 2020).The risk profiles differ as well; REITs are relatively low-risk due to established frameworks and predictable dividends (Cotter and Roll, 2009). However, tokenized real estate involves more risks tied to its emerging status and regulatory uncertainties, presenting unique challenges for investors.

5. FUTURE IMPLICATION AND CONCLUSION

The real estate sector is shifting from traditional financial models to a decentralized, blockchain-driven structure. This change not only modernizes technology but also transforms ownership, management, and trading of real estate assets. While models like Real Estate Investment Trusts (REITs) have democratized real estate investment for diverse investors, blockchain-based tokenization further enhances this by enabling fractional ownership, increasing liquidity, and lowering transaction costs. However, there is an urgent need for academic research to explore the implications of this technology, especially regarding regulatory challenges and market dynamics. Tokenization presents a transformative opportunity for real estate investment but encounters challenges such as a fragmented regulatory environment that creates uncertainty for both issuers and investors. Additionally, vulnerabilities in blockchain technology, including cybersecurity risks and potential smart contract errors, must be addressed to build market trust. Currently, tokenization has low adoption rates, requiring solutions for scalability and broader acceptance. Key trends shaping the future of real estate investment include increasing adoption of blockchain and the emergence of new regulatory frameworks. These frameworks must balance innovation with investor protection. Advancements in smart contracts and blockchain protocols will streamline the tokenization process, while improved cybersecurity measures will enhance the security of these transactions. The comparative analysis of REITs and blockchain-based tokenization shows that both democratize real estate investment, but tokenization offers fractional ownership and higher liquidity through 24/7 trading. While REITs function within established regulations, tokenized real estate faces evolving challenges. Tokenization also boosts operational efficiency and is better suited for individual property investments, whereas institutional investors often prefer REIT-style mixed-asset structures.

In conclusion, the shift in real estate investment from financialization to decentralization marks a significant transformation in market dynamics. While traditional Real Estate Investment Trusts (REITs) have broadened access to real estate assets, blockchain-based tokenization offers the potential for greater inclusivity, transparency, and operational efficiency. As technological advancements progress and regulatory frameworks evolve, the real estate sector is poised for substantial innovation that could benefit investors, developers, and other market participants. However, this evolution requires a cautious approach guided by the establishment of strong regulatory frameworks and fair policies. Since housing goes beyond being merely an investment vehicle and serves as a fundamental human need, it is crucial to ensure that these innovations align with principles of social equity and contribute meaningfully to enhancing living conditions.

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