# Financial and Investment Aspects of Tokenized Real Estate

## Summary

*This PhD project examines real estate tokenization—using blockchain-based digital tokens to enable fractional property ownership, reduce intermediaries, and enhance market access and transaction efficiency—by filling the gap in empirical research on its practical performance. Leveraging on-chain transaction data, it will analyze investor behavior (trading frequency, holding periods, diversification), assess secondary-market liquidity through trading volumes and bid-ask spreads across platforms, and investigate price discovery and volatility in response to economic events to determine whether token prices track underlying real estate values or resemble more volatile crypto assets. The goal is to evaluate tokenization's impact on market efficiency and inclusiveness while identifying persistent challenges in liquidity and price stability.*

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| Research field: | Economics and finance |
| Supervisor: | Prof. Dr. Tõnn Talpsepp |
| Availability: | This position is available. |
| Offered by: | School of Business and Governance<br>Department of Economics and Finance |
| Application deadline: | Applications are accepted between June 01, 2025 00:00 and June 30, 2025 23:59 (Europe/Zurich) |

## Description

Main supervisor: Tõnn Talpsepp

Co-supervisor: Syed Jawad Hussain Shahzad

*The research*

Real estate is the largest asset class globally, valued at over $300 trillion. However, traditional real estate markets are costly, slow, and difficult for most individual investors to access. High transaction costs, limited liquidity, and legal complexities make real estate one of the least flexible financial sectors.

This PhD project focuses on real estate tokenization, where property ownership is represented as digital tokens on the blockchain. Tokenization enables fractional ownership, reduces intermediaries, and can improve market access and transaction efficiency. Despite these advantages, there is limited empirical research on how tokenized real estate performs in practice.

The research will analyze investor transaction patterns in tokenized real estate, including trading frequency, holding periods, and diversification strategies, to understand how investors behave in these new markets. It will also examine whether tokenization improves secondary market liquidity by comparing trading volumes, bid-ask spreads, and market activity across different platforms. Additionally, the project will study price discovery and volatility by investigating how token prices react to economic events and whether they reflect the underlying real estate values or show characteristics similar to more volatile crypto-assets. By using blockchain transaction data, this research aims to assess the true impact of tokenization on market efficiency and inclusiveness, identifying remaining challenges in liquidity and price stability.

*Responsibilities and (foreseen) tasks*

- Collect and process blockchain transaction data for tokenized real estate
- Analyze investor behavior metrics (trading frequency, holding periods, diversification)
- Measure and compare secondary-market liquidity (trading volumes, bid–ask spreads, platform activity)
- Investigate price discovery and volatility dynamics in response to various events
- Synthesize findings to assess impacts on market efficiency and inclusiveness
- Prepare and disseminate research outputs (working papers, conference presentations, journal articles)
- Contribute to other research and teaching activities of the research group

*Applicants should fulfil the following requirements:*

- a master's degree in in Finance, Economics, Computer Science, Statistics, or a closely related field with at least minoring in Finance
- demonstrated quantitative aptitude (econometrics, statistics, data analysis)
- familiarity with blockchain concepts and tokenization mechanisms
- proficiency in a scientific programming language (Python, R, or similar)
- excellent command of English
- strong and demonstrable writing and analytical skills
- commitment to independent, rigorous empirical research
- a clear interest in the topic of the position
- capacity to work both as an independent researcher and as part of an international team
- capacity and willingness to provide assistance in organizational tasks relevant to the project

*(The following experience is beneficial: )*

- prior involvement in empirical financial-market research or econometric studies
- hands-on experience with on-chain/blockchain data extraction and analysis
- practical skills in building and querying large datasets (SQL, pandas, data-wrangling tools)
- exposure to market-microstructure analysis or liquidity modelling
- experience with financial modelling

The candidate should submit a research plan for the topic, including the overall research and data collection strategy. The candidate can expand on the listed research questions and tasks, and propose theoretical lenses to be used.

*We offer:*

- 4-year funded PhD position in the largest, most internationalized and leading Business School in Estonia with a large portfolio of ongoing pan-European and national research projects;
- Active involvement in research projects of the assigned research group;
- The chance to do high-impact research in one of the most dynamic digital settings globally;
- Opportunities for conference visits, research stays and networking with globally leading universities and research centers in the BEG fields;
- All PhD positions are guaranteed a gross income of at least 2300 EUR and Estonian national health insurance.

*About the school*

TalTech School of Business and Governance is the leading provider of higher education in the fields of economics, business administration, law and public administration in the Baltic States. Our faculty includes internationally recognised top scientists and outstanding practitioners not only from Estonia but also from abroad - we have 34% international faculty members from 33 countries. About 23% of international students from over 60 countries confirm the attractiveness of the School in the international education landscape.

*(Additional information)*

For further information, please contact Prof Tonn Talpsepp, tonn.talpsepp@taltech.ee or visit: https://taltech.ee/en/department-economics-and-finance

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