Optimal Design of Tokenized Markets

Michael Junho Lee[1] ✉
Federal Reserve Bank of New York, NY, USA

Antoine Martin ✉
Federal Reserve Bank of New York, NY, USA

Robert M. Townsend ✉
Massachusetts Institute of Technology, Cambridge, MA, USA

──── **Abstract** ────────────────────────────────

Trades in today's financial system are inherently subject to settlement uncertainty. This paper explores tokenization as a potential technological solution. A token system, by enabling programmability of assets, can be designed to eradicate settlement uncertainty. We study the allocations achieved in a decentralized market with either the legacy settlement system or a token system. Tokenization can improve efficiency in markets subject to a limited commitment problem. However, it also materially alters the information environment, which in turn aggravates a hold-up problem. This limits potential gains from resolving settlement uncertainty, particularly for markets that depend on intermediaries.

───────────────

[1] Corresponding author. The views expressed in this paper are those of the authors and do not necessarily reflect the position of the Federal Reserve Bank of New York or the Federal Reserve System.

3rd International Conference on Blockchain Economics, Security and Protocols (Tokenomics 2021).
Editors: Vincent Gramoli, Hanna Halaburda, and Rafael Pass; Article No. 8; pp. 8:1–8:1
OpenAccess Series in Informatics
OASICS Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Dagstuhl Publishing, Germany