

Liquidity Savings Auctions

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Abstract

Central banks around the world are adopting liquidity-saving mechanisms (LSMs) to reduce the huge liquidity needs associated with RTGS systems. While participants ideally provide enough liquidity to process all payments in the queue, in practice the queue operator must search for subsets of payments that can be processed with the available liquidity. This leads to a constrained integer programming problem that becomes NP-hard for larger systems. To avoid this problem, one option would be to introduce take-it-or-leave-it offers that include side payments to allocate liquidity costs. However, to determine such side payments, private information would be needed. In this paper, we propose to use two-sided auctions to elicit private information from participants in order to determine side payments. We use the agent-based modeling approach to evaluate the effectiveness of such a mechanism and run simulations for different scenarios. The results suggest that determining the liquidity contribution through auctions can indeed improve welfare, even when participants do not follow an optimal bidding strategy.