

Interest Rate Swaps Clearing and Systemic Risk

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Abstract

We develop a model to highlight the systemic risks of clearing OTC interest rate swaps. Participants in the IRS trading and clearing ecosystem are mainly dealers and clients which we model as heterogeneous agents that interact with each other through swap contracts in order to achieve their objectives based on simple strategies. We then build a network of the credit exposures that arise due to interactions between agents. Next, we analyse the interconnectedness, systemic risk and stability of this network. Our model illustrates how greater interest rate volatility can be translated into systemic liquidity pressure on market participants. These endogenously formulated liquidity shocks may spillover to clients in the form of asset fire sales, or to dealers in the form of funding pressures. Furthermore, greater interconnectedness in the credit exposures network may amplify these fragilities.

Keywords: Systemic Risk; Interest Rate Swaps, Client Clearing, Networks, Agent-Based Modelling

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