Systemic Risk and Central Counterparty Clearing*

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Abstract

This paper studies financial networks in a stochastic framework. We apply a coherent systemic risk measure to examine the effects on systemic risk and liquidation losses of multilateral clearing via a central clearing counterparty (CCP). The CCP is capitalized with equity and a guarantee fund, and it can charge a volume-based fee. We find that the CCP improves aggregate surplus, and reduces banks' liquidation and shortfall losses. In return, the CCP introduces tail risk, which can lead to higher systemic risk. We provide sufficient conditions in terms of the CCP's fee and guarantee fund policy for a reduction of systemic risk. In a numerical example we find that feasible Pareto optimal fee and guarantee fund policies come along with reduced systemic risk.

Keywords: Over the Counter Markets, Central Counterparty Clearing, Financial Network, Contagion, Systemic Risk, Credit Default Swap Markets.

JEL classification: C44, C54, C62, G01, G18, G32.

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