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Measuring Systemic Risk Across Financial Market Infrastructures *

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Abstract

We measure systemic risk in the network of financial market infrastructures (FMIs) as the probability that two or more FMIs have a large credit risk exposure to a common FMI participant. We construct indicators of credit risk exposures in three main Canadian FMIs and use multivariate extreme value methods to estimate this probability. We find large differences in the levels of systemic risk across participants. Conditional on the participant being distressed, we re-estimate these probabilities and find that some participants create large exposures to FMIs, resulting in a larger level of systemic risk than the rest of the participants. Our results suggest that an appropriate oversight of FMIs may benefit from an in-depth system-wide analysis, which may have useful implications for the macroprudential regulation of the financial system.

JEL classification: G21, G23, C58

Keywords: Credit risk exposure, systemic risk, financial stability, financial market infrastructure, extreme value theory, clearing, settlement.

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