

## Research Project

### Systemic risk evaluation of interconnected banks

#### Third-party funded project

**Project title** Systemic risk evaluation of interconnected banks

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**Department**

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The recent global financial market crisis and the subsequent sovereign debt crisis in the euro zone has led the ECB and other central banks to introduce unconventional monetary policy measures with the aim to restore liquidity in the interbank and bond market across the euro area. Several programmes aimed to improve creditworthiness of banks and together with new regulatory frameworks tried to decrease systemic risk. My research aims to analyse the effects of the ECB's conventional and unconventional monetary policy as well as regulatory effects on the dynamics of systemic risk in the euro-zone from the perspective of financial institutions and markets. Understanding the effects of unconventional policy measures is important because it is very likely that they will become more prevalent in the future. In a low interest rate environment, central banks are constrained by the effective lower bound on nominal interest rates more frequently, making unconventional policies necessary. I will employ a network model in order to understand the dynamics of bank interconnectedness. Macro-prudential regulation views systemic risk as dependent on collective behaviour (endogenous), therefore, a network methodology is essential. I will follow a game theoretical network modelling approach based on Shapley values. Thanks to a unique dataset of interbank liabilities, available at the Swedish Riksbank, I can estimate realistic bank network dynamics, beyond mere simulations, which have been the convention so far due to limited data availability. I will, for the first time, be able to see the time evolution of individual bank's marginal contribution to systemic risk within the changing network structure of the banks, thereby gaining insights into dynamics of the systemic importance of banks. Hence, my network model, which is a macro-prudential approach, will provide valuable input to regulators, policy makers, and academic researchers. In this sense, the results will be highly relevant from a regulatory and supervisory viewpoint.

**Keywords** systemic risk, intrabank, monetary policy, regulation

**Financed by**

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