

## 2019 Young Researcher Award

The SCOR-PSE Chair is proud to announce the laureate of its 2019 Young Researcher Award. This prize distinguishes **outstanding research in the field of macroeconomic risk conducted by a junior economist** less than ten years after the Ph.D.

**A selection committee headed by Gilles Saint-Paul, scientific director of the SCOR-PSE Chair, has decided to award this year's prize to Maryam Farboodi for her recent work on intermediation and voluntary exposure to counterparty risk, for which a summary is provided in the next section.**



**Maryam is an Assistant Professor of Finance at the MIT Sloan School of Management.** Her research interests are in the areas of **financial frictions, corporate finance, macroeconomics, and mechanism design.** Previously, she was an Assistant Professor at the Bendheim Center for Finance at Princeton University.

Maryam holds a B.Sc. in computer engineering from Sharif University of Technology, an M.Sc. in computer science from the University of Maryland, College Park, an M.Sc. in economics from the University of Texas at Austin, and **a joint Ph.D. in financial economics from the Booth School of Business and the Department of Economics at the University of Chicago.**

The international community painfully learned during the 2008 crisis that specific events affecting a firm or a sector may spread to the entire economy. **Transmission of shocks from a firm to its suppliers and customers, or between financial institutions connected through portfolio investments, has been identified as a key channel of macroeconomic risk.**

The literature has analyzed how the geometry of such networks determines whether or not a micro shock is likely to trigger a contagious cascade and from there cause a global crisis. **Maryam Farboodi's key contribution is to study the conditions under which the network of joint financial relationships will self-organize so as to endogenously increase the risk of contagion.** ➕



**EVENT**

**Maryam will present her paper and receive her prize in Paris during the next SCOR-PSE Chair annual conference on July 2, 2019.** The conference will feature some of the best international specialists presenting and discussing research-frontier papers on macroeconomic risk. ➕





## Intermediation and Voluntary Exposure to Counterparty Risk

Farboodi, Maryam, *Intermediation and Voluntary Exposure to Counterparty Risk*, Working Paper, October 2017. [+](#)

In the aftermath of the financial crisis, the degree of interconnectedness in the financial sector has been heatedly debated and argued to generate excessive systemic risk. **How may systemic risk emerge in equilibrium and what are potential regulatory responses?**

The paper develops a model of the financial sector in which endogenous intermediation among debt financed banks generates excessive systemic risk, which is measured as the distribution of total value lost due to bank failures. Financial institutions have incentives

to capture intermediation spreads through strategic borrowing and lending decisions. By so doing, they tilt the division of surplus along an intermediation chain in their favor, while at the same time reducing aggregate surplus. It is shown that a core-periphery network (few highly interconnected and many sparsely connected banks) endogenously emerges in the model.

In other words, the model predicts that there is a small number of very interconnected banks that trade with many other banks and a large number of banks that trade with a small number of counterparties. **There is overwhelming recent evidence that interbank markets exhibit a core periphery**

**structure. Moreover, banks at the core have high gross exposures and low net exposures among themselves. The model not only provides a theoretical framework that jointly explains these empirical stylized facts; its main contribution is to do so by explicit modeling of intermediation among banks and its frictions.**

The financial network consists of banks and their lending decisions. Banks need to raise resources for investment either from households or from other banks. The model endogenously generates indirect lending and borrowing in the

interbank market, which is a prominent feature of both the federal funds market and over-the-counter market for derivatives. If the investment fails and the borrowing bank does not have sufficient funds to pay back her lender(s), it fails and potentially triggers a cascade of failures to the lenders, lenders of lenders and so on.

Banks are profit maximizers. There are two groups of banks in the model: those who have access to a risky investment opportunity, and those who do not. Each bank chooses its lending and borrowing relationships to get the highest expected possible rate on the

funding it lends out and the investment it undertakes, net of cost of failure. When there

are positive intermediation rents in the system, profit maximization creates private incentives to provide intermediation, which in turn leads to a particular structure for the equilibrium network. Since intermediation is profitable per se, in equilibrium, competition implies that the banks who are able to offer the highest expected returns become intermediaries. These banks are exactly the ones who have access to the risky investment technology. On the other hand, a bank who is not an intermediary still wants to earn the highest possible returns, thus opting for the shortest connecting path to investing banks to avoid paying intermediation spread as often as possible. These two forces give rise to a core-periphery equilibrium network in which a subset of banks with risky investment opportunities constitute the core. **The interbank network generated by the model is socially inefficient. Banks who make risky investments overconnect, exposing themselves to excessive counterparty risk, while banks who mainly provide funding end up with too few connections.**

**This paper suggests that explicitly modeling the interaction between banks' incentives to capture higher returns, with intermediation, a necessary mechanism to allocate liquidity within the financial system, jointly explains the stylized facts about global structure of interbank networks, interbank interconnectedness, and gross and net exposures among financial institutions. Moreover, by providing sharp predictions about sources of inefficiency in interbank relationships, the model contributes to the heated policy debate on how to regulate the financial market.**

**Explicitly modeling the interaction between bank's incentives to capture higher returns, with intermediation [...] jointly explains the stylized facts about global structure of interbank networks, interbank interconnectedness, and gross and net exposures among financial institutions**

**is overwhelming recent evidence that interbank markets exhibit a core periphery**