

Ph.D. in Economics and Management – University of Trento

**ADVANCES IN MACRO-FINANCIAL CYCLE STUDIES BY MEANS
OF NETWORK ANALYSIS**

CALL FOR PROPOSALS
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The huge literature sprung up in the aftermath of the global financial turmoil of 2007-8 has lead researchers and policymakers to pay increasing attention to the channels linking financial market conditions and economic activity, in order to gain a better understanding of how disruptions originating in one sector are transmitted to other one and, in due course, to persistence, amplification and feedback processes. Moving from the recognition that the fluctuations of financial variables are closely associated to fluctuations in the degree of interconnectedness of financial institutions, proposals for dissertation are welcome to analyze the role of time-varying financial network relationships in understanding the evolution of financial and business cycles on the one hand, and systemic risk on the other one.

The motivating idea for this call is that the dynamics of financial aggregates - such as credit, property and equity prices - plays a key role in the performance of real economies by reflecting the time-varying evolution of perceptions and attitudes towards risks of economic agents. As emphasized by Drehmann *et al.* (2012, p.1), it is nowadays apparent that “[...] regardless of the specific approach, any future work to model financial factors requires a better understanding of the stylized empirical regularities of the “financial cycle”, with its booms and busts possibly leading to serious financial and macroeconomic strains”.

The theoretical underpinning from which we expect the proposals to move lies in the notion of market frictions arising from strategic complementarities in risk-taking among financial intermediaries, due for instance to anticipated bail-outs (Fahri and Tirole, 2012), endogenously chosen correlation of returns on assets (Acharya, 2009), concerns for reputation by bank managers paying attention to their relative performance (Rayan, 1994; Aikman *et al.*, 2015), or cumulative feedbacks between credit expansions and systemic risk-shifting (Allen and Gale, 2000). It is well known that in this class of models, coordination failures among financial intermediaries can generate collective sub-optimal credit provision and asset growth dynamics, leading to swings between periods of excessive lending, bubbling asset prices and increasing risk, and periods characterized by credit crunches, fire sales and liquidity spirals. As shown in Shin (2010) and Barattieri *et al.* (2015), in turn, increases in systemic risk due to leverage and excessive asset growth are typically mirrored in a surge of interconnectedness among intermediaries.

The key message is that, far from being independent, the time series (evolution of risk due to financial imbalances over time) and cross-section (distribution of risk at a point in time due to direct or indirect interconnections among financial firms) dimensions of financial instability co-evolve.

We therefore call for proposals aimed at exploring the relationship between connectivity and systemic instability in financial networks (Allen and Babus, 2008; Glasserman and Young, 2015), by explicitly analyzing how the topological structure of the financial system evolves over time. This could be done along two complementary lines. First, by exploiting the features of game-based network formation models with strategic complementarities (Lageras and Seim, 2015), in order to provide a unifying theoretical explanation of co-evolution of the time-series and cross-section dimensions of systemic risk. Second, by recurring to agent-

based techniques to build computational models in which a financial network and a production network (Acemoglu *et al.*, 2013) interact.

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