

**Institut für Volkswirtschaftslehre**  
**- Geld, Währung und Internationale Finanzmärkte –**  
Prof. Dr. Thomas Lux

**MA-Seminar in Financial Economics**

The seminar will cover a range of topics around the central theme of systemic risk in the financial sector. The seminar will run as a 4-6 (half) day course during the summer term 2019. Students register via the central seminar registration group on OLAT (“Seminar Registration MA-VWL”).

The submission deadline for the seminar paper is January 7<sup>th</sup> 2020. A kick-off meeting will be held on July 31<sup>st</sup> at 9 a.m. in WSP 1-R.505 to fix dates for the seminar presentations.

Students are required to write a seminar paper (15 pages) and to present this paper, consisting of a 30 minutes oral presentation on their chosen topic and 5 minutes discussion of another topic, which will be randomly assigned. Successful participation is rewarded with 5 ECTS.

**1. Financial Contagion in the Interbank Market: Basic Models of Network Relations**

Allen, F. and Gale, D. (2000). Financial contagion. *Journal of Political Economy* 108, 1-33.

Haldane, A. and May, R. (2011). Systemic risk in banking ecosystems. *Nature* 469, 351-355.

**2. Financial Contagion and Network Structure: Simulations of Contagion in Banking Networks**

Nier, E., Yang, J., Yorulmazer, T. and Alentorn, A. (2007). Network models and financial stability. *Journal of Economic Dynamics and Control* 31, 2033-2060.

Cifuentes, R., Ferrucci, G. and Shin, H. S. (2005). Liquidity risk and contagion. *Journal of the European Economic Association* 3, 556-566.

Hałaj, G. and C. Kok (2013). Assessing interbank contagion using simulated networks, *Computational Management Science* 10,157–186

**3. The Network Topology of the Interbank Market**

Bech, M. and Atalay, E. (2010). The topology of the federal funds market. *Physica A* 389, 5223-5246.

Boss, M., Elsinger, H., Summer, M. and Thurner, S. (2004). Network topology of the interbank market. *Quantitative Finance* 4, 677-684.

Soramäki, K., Bech, M., Arnold, J., Glass, R. and Beyeler, W. (2007). The topology of interbank payment flows. *Physica A* 379, 317-333.

#### **4. Core-Periphery Models of the Banking Sector**

Craig, B. and von Peter, G. (2014). Interbank tiering and money center banks. *Journal of Financial Intermediation* 23, 322-347.

Van Lelyveld, I. and in't Veld, D. (2014). Finding the core: Network structure in interbank markets. *Journal of Banking & Finance* 49, 27-40

#### **5. Lending Relationships in the Interbank Market: Empirical Evidence**

Cocco, J., Gomes, F. and Martins, N. (2009). Lending relationships in the interbank market. *Journal of Financial Intermediation* 18, 24-48.

Liberati, C., M. Marzo, P. Zagaglia and P. Zappa (2015) Drivers of demand and supply in the Euro interbank market: the role of "Key Players" during the recent turmoil, *Financial Markets and Portfolio Management* 29 207–250

#### **6. Portfolio Overlaps and Systemic Risk**

Huang, X., Vodenska, I., Havlin, S. and Stanley, H.E. (2013). Cascading failures in bi-partite graphs: Model for systemic risk propagation. *Scientific Reports* 3, 2013.

Montagna, M. and Kok, C. (2013). Multi-layered Interbank Model for Assessing Systemic Risk. Kiel Working Paper no. 1873.

#### **7. Systemic Risk among Many Dimensions: Multiplex Network Models of the Banking Sector**

Hüser, A.-C., Halaj, G., Kok, C., Perales, C. and van der Kraaij, A. (2018). The systemic implications of bail-in: A multi-layered network approach. *Journal of Financial Stability* 38, 81-97.

Aldasoro, I. and Alves, I. (2018). Multiplex interbank networks and systemic importance: An application to European data. *Journal of Financial Stability* 35, 17-37.

#### **8. The Bank-Firm Credit Network and Systemic Risk**

Marotta, L., Micciche, S., Fujiwara, Y., Iyetomi, H., Aoyama, H., Gallegati, M., and Mantegna, R. N. (2015). Bank-firm credit network in Japan: An analysis of a bipartite network. *PLOS ONE*, 10, 18.

Marotta, L., Micciche, S., Fujiwara, Y., Iyetomi, H., Aoyama, H., Gallegati, M., and Mantegna, R. N. (2016). Backbone of credit relationships in the Japanese credit market. *EPJ Data Science*, 5 (1):10.

Poledna S., Hinteregger A., and S. Thurner (2018) Identifying systemically important companies by using the credit network of an entire nation. *Entropy* 20(10):792

## **9. Modelling and Simulation of the Banking Sector as a Dynamic System of Interacting Agents**

Chan-Lau, A. (2017). ABBA: An agent-based model of the banking system. IMF Working Paper No. 17/136.

Chan-Lau, A. (2014). Regulatory requirements and their implications for bank solvency, liquidity and interconnectedness risks. Insights from agent-based model simulations. Working paper.

## **10. Network Models of Macroeconomic Systemic Risk**

Gould, D., Kenett, D. and Panterov, G. (2018). Multidimensional connectivity: benefits, risks, and policy implications for Europe and Central Asia. World Bank Policy Research Paper No. 8438.

Lee, K.-M. (2011). Impact of the Topology of Global Macroeconomic Network on the Spreading of Economic Crises, PLOS ONE 6.

Supervisor for topics 1-6: Dr. Duc Thi Luu

Supervisor for topics 7-10: Dr. Matthias Raddant