

CIFREM SEMINARS

MULTI-AGENT FINANCIAL NETWORK MODELS FOR SYSTEMIC RISK MANAGEMENT POST 2007 FINANCIAL CRISIS: NEW COMPLEXITY PERSPECTIVES

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As with the US Office of Financial Research that aims to overcome problems of balkanization of financial and banking data and to have better models to provide quantitative oversight of the financial system nationally or globally, institutions such as the European Central Bank, International Monetary Fund and newly set up financial stability divisions in different countries have intensified efforts to investigate new ICT based modelling tools such as financial network mapping and analysis. These can yield bottom up holistic visualizations of interconnections of financial obligations that can help identify systemically important players and model misalignments between local incentives and system stability that arises in the context of systemic risk from excessive leverage becoming a negative externality analogous to environmental pollution. An overview and critique of reform efforts in this direction is given while drawing on an exemplar based on an empirical network mapping of the US Credit Default Swap (CDS) market which stands implicated as a key propagation mechanism in the 2007 crisis. The paper highlights the paradigm shift and skills gap involved in implementing large scale data base driven multiagent financial network (MAFN) models where strategic behaviour of financial intermediaries and regulatory incentives and constraints shape the structure and stability of the complex interconnected system. A complexity perspective places reflexivity and an arms race in strategic innovation at the centre of robust policy design, foundational issues that are missing in mainstream economics. Finally, the dichotomy between money and finance that has been a dominant feature of G10 monetary policy has placed and continues to place barriers for new thinking on cashlessness, inflation control and financialization of monetary systems and systemic risks thereof.