

**Economics 724 : Advanced Microeconomic Theory
Network Formation Games and Financial Networks
Spring 2009**

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Objectives:

In all social and economic interactions, individuals or coalitions choose not only with whom to interact but how to interact, and over time both the structure (the “with whom”) and the strategy (“the how”) of interactions change. Our objectives will be to model the structure and strategy of interactions prevailing at any point in time as a directed network and to address the following open question in the theory of social and economic network formation: given the rules of network formation, the preferences of individuals over networks, the strategic behavior of coalitions in forming networks, and the trembles of nature, what network and coalitional dynamics are likely to emerge and persist. Thus, we propose to study the emergence of endogenous network and coalitional dynamics from strategic behavior and the randomness in nature.

As an area of application, we will focus on the endogenous formation of financial networks and endogenous financial dynamics and long run stability.

Outline:

Part 1: Abstract Games of Network Formation

1.1. Primitives

- 1.1.1 Feasible Networks
- 1.1.2 Players' Preferences
- 1.1.3 The Rules of Network Formation
- 1.1.4 Supernetworks
- 1.1.5 Dominance Relations

1.2. Stability

- 1.2.1 Network Formation Games with Respect to Irreflexive Dominance
- 1.2.2 Network Formation Games with Respect to Path Dominance: Basins of Attraction, Stable Sets, and the Path Dominance Core

1.3. Strong Stability, Pairwise Stability, Nash Stability, and Farsighted Consistency

- 1.3.1 Strongly Stable Networks

- 1.3.2 Pairwise Stable Networks
- 1.3.3 Nash Networks
- 1.3.4 Farsightedly Consistent Networks

1.4. Singleton Basins of Attraction

- 1.4.1 Network Formation Games with a Potential Function: Club Networks
- 1.4.2 Jackson-Wolinsky Network Formation Games

Part II: Dynamic Stochastic Games of Network Formation and Endogenous Network Dynamics

2.1. Primitives

2.2. Dynamic Network Formation Games and Nash Equilibrium

2.3 Endogenous Network Dynamics and Equilibrium Markov Transitions

2.4 Markov Supernetworks

2.5 Dynamic Basins of Attraction, Ergodic Measures, and Invariant Measures

2.5 Long Run Stability and Dynamic Consistency: The Dynamic Path Dominance Core and Dynamic Pairwise Stability

Part III Dynamic Financial Networks: Financial Supernetworks and Long Run Stability

3.1 Banking and Payment Networks

3.2 Corporate Ownership Networks and Executive Compensation

3.3 Asset Markets and Order Flow Networks

3.4 Contracting Networks and Strategic Competition in Mutual Funds Markets