DISCUSSION:
ON OPTIMAL COMMUNICATION NETWORKS

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IESE, June 16, 2007
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Introduction

- General framework for information transmission
  - Team: how information does/does not aggregate
  - Decentralized information transmission (no central market clearing: stock exchange, prediction markets,...)
  - Tension between internal (experimentation) versus external (coordination, sharing) information acquisition

- This paper:
  - Higher order beliefs in networks (see also DeMarzo e.a.)
  - HOB an-isotropic: depend on order of pairwise interactions
  - HOB w. asymmetry (early HOB in macro, Lucas, Phelps)

- Results:
  - Unique Bayes-Nash equilibrium
  - Knowledge index: equilibrium strategy is a linear function of knowledge index (Radner) + closed form for HOB
  - Comparative statics: network (eg closure), knowledge index
UNIQUENESS

- Not Global Games argument: uniqueness also with common priors
- Quadratic Payoffs $\Rightarrow$ Best responses are linear
- Facilitates technique: matrix algebra + normality of signal distributions
- Linear BR (+ distribution properties): sufficient, not necessary
GET MORE OUT OF THIS MODEL?

- Maintained assumptions: clever, allow progress
- May be able to consider some limited class beyond this class of games:
  - Bounded strategy space: linear BR
  - $\sigma_{ij} > \sigma_{ii}$? convergence of KI vs. uniqueness
  - Simple network structure: e.g. stochastic dominance of random networks
- Multiplicity may have interesting economic interpretation
- Both good and bad communication/information transmission can be an equilibrium: norms, corporate culture
Example Herding: sequential move, differentially informed agents, internal-external information tension

Can lead to "bad" outcomes: restaurants, looking up...

Many market environments: near-simultaneous trade, prices reflect all past decisions,...

Differential information on network (vs herds): simultaneous move (still multiple rounds), yet differentially informed agents: prices don’t reflect all the information agents hold (portfolios,...)

Two issues: Efficiency and Multiplicity (bubbles)