

TOMÁS RODRÍGUEZ BARRAQUER

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European University Institute
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ITALY

ACADEMIC POSITIONS

Max Weber Fellow, European University Institute, 2011-2012

EDUCATION

Ph.D. in Economics, Stanford University, June 2011

Msc. in Mathematics and the Foundations of Computer Science, Oxford University , 2001

BSc. in Mathematics and Economics, London School of Economics, 2000 (First Class Honors)

Universidad de los Andes (1996-1998) undergraduate student

DISSERTATION COMMITTEE

Prof. Matthew O. Jackson
Economics Department, Stanford University
(650) 723-3544
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Prof. Giacomo De Giorgi
Economics Department, Stanford University
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Prof. Muriel Niederle
Economics Department, Stanford University
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RESEARCH AND TEACHING FIELDS

Primary field: Microeconomic Theory

Secondary fields: Social Networks, Game Theory, Applied Econometrics.

TEACHING EXPERIENCE

2010 Teaching Assistant for Prof. F.Steiner, Stanford University, Econ 101 (Econ. Policy Anal.)
2009 Teaching Assistant for Prof. D. Bernheim, Stanford University, Econ 202 (Game Theory (Grad.))
Teaching Assistant for Prof. P. Hansen, Stanford University, Econ 102B (Interm. Econometrics)

- 2008 Teaching Assistant for Prof. M. Clerici-Arias, Stanford University, Econ 51 (Micro)
 Teaching Assistant for Prof. M. Clerici-Arias, Stanford University, Econ 101 (Econ. Policy Anal.)
 Teaching Assistant for Prof. M. Priebsch, Stanford University, Econ 202N (Game Theory (Grad.))
 Teaching Assistant for Prof. P. Hansen, Stanford University, Econ 271 (Econometrics (Grad.))
 Incoming graduate Economics students mathcamp instructor.
- 2002-2004 Instructor of Discrete Mathematics, Universidad de Los Andes (Bogotá, Colombia)
 2004 Instructor of Linear Algebra, Universidad de Los Andes (Bogotá, Colombia)

RELEVANT POSITIONS

- 2005-2008 Research assistant for Prof. Frank Wolak, Stanford University (Energy markets)
 2002-04 Departamento Nacional de Planeación. (research assistant doing work on Pensions Reform)

SCHOLARSHIPS, HONORS AND AWARDS

- 2011-2012 Max Weber Fellowship, European University Institute
 2004-06 Stanford University Dept. of Economics Fellowship

PROFESSIONAL ACTIVITIES

Referee for *Games and Economic Behavior*, *Econometrica*, *QJE*

PUBLISHED PAPERS

Social Capital and Social Quilts: Network Patterns of Favor Exchange

(with Matthew O. Jackson and Xu Tan)

(Forthcoming, *American Economic Review*)

We examine the informal exchange of favors among the members of a society. We focus on situations where the interaction between any two individuals is insufficiently frequent to provide incentives to exchange favors over time, but where the social pressure of the possible loss of multiple relationships can sustain exchange. We characterize the network patterns of exchange which are robust in the sense that deleted relationships only result in a local loss of favor exchange. Such robustness necessitates “social quilts”: networks that are tree-like unions of completely connected subnetworks. More generally, with heterogeneity in agents’ costs and benefits from favors, robust networks are such that all links are “supported”: any pair of individuals exchanging favors must have a common friend. We show that favor exchange networks in 75 villages in rural India exhibit a frequency of this sort of support that is significantly higher than a standard ‘clustering’ measure. We also find some significant contrasts between support levels in favor networks and purely social networks.

Epsilon-Equilibria of Perturbed Games

(with Matthew O. Jackson and Xu Tan)

(Forthcoming, *Games and Economic Behavior*)

We prove that for any equilibrium of a continuous (Bayesian) game, and any sequence of perturbations of that game, there exists a corresponding sequence of epsilon-equilibria converging to the given equilibrium of the original game. Thus, any equilibrium selection argument that is based on perturbations to a game is not robust to slight perturbations in best reply behavior (or to underlying preferences). This applies to many

standard equilibrium selections, including Selten's (1975) definition of trembling hand perfect equilibrium, Rubinstein's (1989) analysis of the electronic mail game, and Carlsson and van Damme's (1993) global games analysis.

WORKING PAPERS

A Model of Competitive Signaling (with Xu Tan)

We examine the choice of research topics by scholars in stages of their careers during which concerns about their future, as influenced by the impression that society has of their underlying research abilities are substantial. We focus on environments in which the outcome of research efforts is uncertain, in the sense that a scholar's underlying research ability determines her probability of success in topics with varying degrees of difficulty. We show that under a refinement of the concept of sequential equilibrium, which demands that society's assessment of an individual's underlying skill gives more credence to successes in more difficult topics, all equilibria have the two following properties 1) All agent types work on topics of the same relative difficulty 2) The topics are conspicuous in the sense that they showcase differences in agents' underlying abilities especially well. To the extent that the natural conspicuousness and the social value of different topics may not be reconcilable, this unraveling towards conspicuousness may be the source of substantial inefficiency.

The Structure of the Lattice of Equilibria of Graphical Games of Strategic Complements

I study simple threshold games of complements. These are graphical games of complete information in which each agent's incentives to adopt a given action strictly increase with the number of his neighbors that take the action. In particular I focus on games in which players only have two actions, 0, or 1, so that each player i 's preferences are fully captured by a threshold t_i such that whenever t_i or more of i 's neighbors take action 1, i finds it strictly optimal to take it as well. In any such game, the set of pure strategy Nash equilibria constitutes a complete lattice under the set inclusion relation. I ask the question: When does an arbitrary complete lattice under set inclusion constitute the set of equilibria of some graphical game of thresholds? I define regular games of thresholds as games of thresholds in which every agent has a link to every other agent, and uniform games of thresholds as games of thresholds in which every agent has the same threshold. I provide a complete characterization of the set of lattices that constitute equilibria of regular games of thresholds, and a partial characterization in the case of uniform games of thresholds and in the case of general games of thresholds.

Exploring the Nature of Equilibria in the Colombian Wholesale Electricity Market

In the last two decades many countries in the world have implemented across the board reforms seeking to increase the reliability and efficiency of their electric power sectors. These reforms have often included the introduction of hourly/half-hourly multiple-generation-units electricity auctions as the core electricity supply and demand clearing mechanism. Thorough economic analyses indicate that by and large these market mechanisms have yielded significant efficiency improvements; however the experiences have been mixed. In particular, the level of competitiveness among electricity generators that they are able to induce seems to be very sensitive to 1) The precise details of the mechanism 2) The technological composition of the country's energy sector. These concerns have spawned individual country studies to measure in detail the market power of the participants, the precise ways in which they exercise that market power and the features of the economic environment and the market's design which may explain them. The standard models of these markets, represent them as sequences of independent Cournot competition encounters between the electricity generating firms. That is, a key assumption of the model is that the markets do not exhibit any forms of inter-temporally sustained tacit collusion. However, the details of these market mechanisms seem to match closely with the broad conditions which the theory of repeated games has identified as conducive towards tacit collusion: 1) the interaction is very frequent and occurs at regular intervals; 2) information about competitors' fundamentals is public and easily available; 3) there are a number predictable, naturally focal variables in the environment which can serve as correlating devices. This paper is the first part of a project studying the Colombian wholesale electricity market. The main objective of the project is to formulate an explicit model of tacit collusion for this market with three specific goals in mind: 1) That it matches the data better than the standard Cournot models 2) That it can be used to

explicitly test hypotheses asserting that generating firms are tacitly colluding 3) That it can provide concrete policy recommendations to increase this market's efficiency by reducing the amounts of tacit collusion. Concretely, I have in mind a very simple kind of tacit collusion: The weather (specifically the amount of rainfall) serves as an intertemporal coordination mechanism, indexing how aggressive each participant can be at any given time. Given the transparency of the environment and visibility of the actions of all participants, no "punishments phases" ever occur on the equilibrium path. This means that in the data, the behaviors of the generators should be fully driven by a *small* finite partition of the periodic rainfall levels. In this paper I begin this exploration by studying the conjecture that the behavior of participants in this particular market is driven by a *small* partition of a set of publicly observable variables, not including past behaviors.

LANGUAGES

Spanish (native)

CITIZENSHIP

Colombian, Spanish (Dual)