# **Ph.D. in ECONOMICS**

## APPLICATIONS OF GAME THEORY TO POLITICAL ECONOMICS

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#### **PURPOSE:**

This course is an introduction to topics in game theory. Its objective is to equip the students with tools, which are essential to study political economics and for setting up and solving a wide range of economic problems.

#### **COURSE DESCRIPTION:**

The course consists of two lectures and students' presentations of well established papers.

# The topics that may be covered in the reading group, depending on students preferences are

### **Topics and Papers**

1. Bargaining and applications:

This filed is interesting because it is not covered in standard micro course and there many possible interesting applications, as illustrated by the table of contents of the book by Muthoo, 2009.

- a. J. C. Harsanyi and R. Selten, A Generalized Nash Solution for Two-Person Bargaining Games with Incomplete Information, *Management Science*, Vol. 18, No. 5, 1972, pp. P80-P106
- b. Muthoo, A. Bargaining Theory with Applications, 2009, Cambridge University Press.
- c. Roger B. Myerson Two-Person Bargaining Problems with Incomplete Information Econometrica, Vol. 52, No. 2 (Mar., 1984), pp. 461-487
- d. Martin J. Osborne and Ariel Rubinstein Bargaining and Markets 1990 by Academic Press, Inc.
- e. William Samuelson Bargaining under Asymmetric Information, *Econometrica*, Vol. 52, No. 4 (Jul., 1984), pp. 995-1005

#### 2. Conflict and Contest Theory:

- a. O. Ashenfelter-G. Johnson, "Bargaining Theory, Trade Unions, and Industrial Strike Activity", American Economic Review, 1969, 59, 35-49.
- b. L. C. Corchón, The theory of contests: a survey, *Review Economic Design* 2007.
- c. R. Cornes, R. Hartley, Asymmetric contests with general technologies, *Economic Theory* 26, 923–946, 2005.
- d. P. Cramton-J. Tracy, "Strikes and Holdouts in Wage Bargaining: Theory and Data", *American Economic Review*, 1992, 82, 100-121.
- e. J. Hirshleifer, Conflict and rent-seeking success functions: Ratio vs. difference models of relative success, *Public Choice 63:* 101-112, 1989.
- f. E. Katz, S. Nitzan, I. J. Rosenberg, Rent-seeking for pure public goods, *Public Choice* 65: 49-60, 1990.
- g. S. Lohmann, "A Signaling Model of Informative and Manipulative Political Action", *American Political Science Review*, 1993, 87, 319-333.
- h. S. Lohmann, "Information Aggregation Through Costly Political Action", *American Economic Review*, 1994, 84, 518-530.
- i. J. D. Perez-Castrillo, A general analysis of rent-seeking games *Public Choice* 73: 335-350, 1992.
- j. K. Riaz, J. F. Shogren, S. R. Johnson, A general model of rent seeking for public goods, *Public Choice* 82: 243-259, 1995.

#### 3. Global Games and applications:

this literature is particularly interesting because of the role of players' private information and the wide range of applications, that range from macroeconomics to microeconomics, from finance to political science, from macro political economy to micro political economy.

- a. George-Marios Angeletos, Christian Hellwig, and Alessandro Pavan, Signaling in a Global Game: Coordination and Policy Traps in *Journal of Political Economy*, Vol. 114, No. 3 (June 2006), pp. 452-484
- b. George-Marios Angeletos, Christian Hellwig, and Alessandro Pavan, Robust Predictions in Global Games with Multiple Equilibria: Defense Policies Against Currency Attacks, mimeo.
- c. George-Marios Angeletos, Alessandro Pavan, Socially Optimal Coordination: Characterization and Policy Implications, mimeo.
- d. George-Marios Angeletos, Christian Hellwig, and Alessandro Pavan, Dynamic Global Games of Regime Change: Learning, Multiplicity, and Timing of Attacks, mimeo.
- e. George-Marios Angeletos and Iván Werning, Crises and Prices: Information Aggregation, Multiplicity, and Volatility, *The American Economic Review*, Vol. 96, No. 5 (Dec., 2006), pp. 1720-1736
- f. Hans Carlsson and Eric van Damme, Global Games and Equilibrium Selection, in *Econometrica*, Vol. 61, No. 5 (Sep., 1993), pp. 989-1018
- g. Sylvain Chassang and Gerard Padr´o i Miquel, Conflict and Deterrence under Strategic Risk, *The Quarterly Journal of Economics*, November 2010

- h. David M. Frankel, Stephen Morris, and Ady Pauzner, Equilibrium selection in global games with strategic complementarities, *Journal of Economic Theory* 108 (2003) 1–44
- i. Christian Hellwig, Public Information, Private Information, and the Multiplicity of Equilibria in Coordination Games, *Journal of Economic Theory* 107, 191–222 (2002)
- j. Christian Hellwig, Arijit Mukherji and Aleh Tsyvinski, Self-Fulfilling Currency Crises: The Role of Interest Rates, in *The American Economic Review*, Vol. 96, No. 5 (Dec., 2006), pp. 1769-1787
- *k.* Navin Kartik, Marco Ottaviani, Francesco Squintani, Credulity, lies, and costly talk, *Journal of Economic Theory* 134 (2007) 93 – 116
- I. Stephen Morris and Hyun Song Shin, Global Games: Theory and Applications in *Advances in Economics and Econometrics*, ed. Dewatripont, Hansen and Turnovsky, Cambridge University Press 2003
- m. Stephen Morris and Hyun Song Shin, Unique Equilibrium in a Model of Self-Fulfilling Currency Attacks, in *The American Economic Review*, Vol. 88, No. 3 (Jun., 1998), pp. 587-597
- n. Stephen Morris and Hyun Song Shin, A Theory of the Onset of Currency Attacks, mimeo
- o. Stephen Morris, Contagion, WP
- p. Stephen Morris, Hyun Song Shin, Coordination risk and the price of debt, in *European Economic Review* 48 (2004) 133 153
- q. Stephen Morris, Hyun Song Shin, Muhamet Yildiz, Common Belief Foundations of Global Games, WP 2015
- r. Stephen Morris and Hyun Song Shin, Rethinking Multiple Equilibria in Macroeconomic Modeling, mimeo.

#### 4. Group Contest

## Conflicts among groups is one the most interesting subfields within contest theory, and it is particular for political economy applications.

- a. Baik, K.H., 2008. Contests with group-specific public goods prizes. Social Choice and Welfare 30 (1), 103--117.
- b. Baik, K., Dijkstra B., Lee S., and Lee S. (2006). The equivalence of rent-seeking outcomes for competitive-share and strategic groups. In: European Journal of Political Economy Vol. 22, 2, 337 -- 342.
- c. Baik, K., & Lee, S. (1997). Collective rent seeking with endogenous group sizes. In: European Journal of Political Economy, Vol. 13, 121--130.
- d. Baik, K., & Lee, S. (2000). Two-Stage Rent-Seeking Contests with Carryovers. Public Choice, 103(3/4), 285-296.
- e. Baik, K., & Lee, S. (2001). Strategic Groups and Rent Dissipation. In: Economic Inquiry Vol. 39, No. 4, 672--684.
- f. Baik, K.H., Shogren, J., 1995. Competitive-share group formation in rent-seeking contests. Public Choice 83, 113-- 126.
- g. Balart, P., S. Flamandy and O. Troumpounis (2014): Strategic Choice of Sharing Rules in Collective Rent-Seeking and the Group Size Paradox, mimeo.
- h. Cárdenas, Juan C. and Mantilla, César (2015). Between-group competition, intra-group cooperation and relative performance, Frontiers in Behavioral Neuroscience, V. 9, article 33.

- i. Clark, D.J., Konrad, K.A., 2007. Asymmetric conflict: weakest-link against best shot. Journal of Conflict Resolution 51, 457--469.
- j. Chowdhury, S.M., Lee, D. and Sheremeta, R.M. (2013) Top guns may not fire: bestshot group contests with group-specific public good prizes. Journal of Economic Behavior & Organization 92: 94-103.
- k. Corchon, L. C. (2007). "The theory of contests: a survey". In: Review of Economic Design 11.2, pp. 69--100.
- I. Corchon, L. C. and M. Dahm (2010). "Foundations for contest success functions". In: Economic Theory 43, pp. 81--98.
- m. Corchón, L. C. and M Serena (2018). "Contest theory". Chapter 6 in Corchón, L. C. and M. A. Marini (eds), Handbook of Game Theory and Industrial Organization, Volume II, Applications, Edward Elgar Publishing, Cheltenham, United Kingdom
- n. Dasgupta, A. and K. O. Nti (1998). "Designing an optimal contest". In: European Journal of Political Economy 14, pp. 587--603.
- o. Davis, D., & Reilly, R. (1999). Rent-Seeking with Non-Identical Sharing Rules: An Equilibrium Rescued. Public Choice, 100(1/2), 31-38.
- p. Deck, C., Sheremeta, R.M., 2012. Fight or flight? Defending against sequential attacks in the game of siege. Journal of Conflict Resolution 56, 1069--1088.
- q. Derek J. Clark' and C. Riss (1996). A multi-winner nested rent-seeking contest. Public Choice 87: 177-184, 1996.
- Flamand, S. and Troumpounis, O. (2015) Prize-sharing rules in collective rent seeking. In R.D. Congleton and A.L. Hillman, (eds.), Companion to Political Economy of Rent Seeking (pp. 92--112). London: Edward Elgar.
- s. Hausken, Kjell 2000. Cooperation and between-group competition, Journal of Economic Behavior & Organization Vol. 42 417--425.
- t. Katz, E., Nitzan, S. and Rosenberg, J. (1990). Rent-seeking for pure public goods. Public Choice 65: 49-60.
- u. Katz, E. and Julia Tokatlidu, (1996), Group competition for rents, European Journal of Political Economy, 12, (4), 599-607.
- v. Kolmar, M. (2013) Group conflicts: where do we stand? Working Paper, University of St. Gallen.
- w. Kolmar, M. and Rommeswinkel, H. (2013) Contests with group-specific public goods and complementarities in efforts. Journal of Economic Behavior & Organization 89: 9--22.
- x. Krueger, A. O. (1974). "The Political Economy of the Rent-Seeking Society". In: America Economic Review 64.3, pp. 291--303.
- y. Lee, S. (1992). Optimal rent-seeking group. American Economist 36: 58-60.
- z. Lee, S. (1993). Inter-group competition for a pure private rent. Quarterly Review of Economics and Finance 33: 261-266.
- aa.Lee, S. (1995). Endogenous sharing rules in collective-group rent-seeking. Public Choice 85: 31-44.
- bb.Lee, D. (2012) Weakest-link contest with group-specific public good prizes. European Journal of Political Economy 28: 238--248.
- cc. Lee, S. and Lee, S. (2014). Endogenous sharing rules in collective rent seeking: A graphic characterization. Journal of Economic Research 19, 265-281.
- dd.Long, N.V. and Vousden, N. (1987). Risk averse rent-seeking with shared rents. Economic Journal 97: 971-985.

- ee.Nitzan, S. (1991a). Rent-Seeking with Non-Identical Sharing Rules. Public Choice, 71(1/2), 43-50.
- ff. Nitzan, S. (1991b). Collective rent dissipation. Economic Journal 101: 1522-1534.
- gg.Nitzan, S. (1994). "Modelling rent--seeking contests". In: European Journal of Political Economy 10, pp. 41--60.
- hh.Perez-Castrillo, J. D. and T. Verdier (1992). "A general analysis of rent-seeking games". In: Public Choice 73, pp. 335--350.
- ii. Rai, B. K. and R. Sarin (2009). "Generalized contest success functions". In: Economic Theory 40, pp. 139--149.
- jj. Riaz, K., J. H. Shogren, and R. S. Johnson (1995). "A general model of rent seeking for public goods". In: Public Choice 82, pp. 243--259.
- kk. Sheremeta, R. M. (2018). "Behavior in Group Contests: a Review of Experimental Research". In: Journal of Economic Surveys, Vol. 32, No. 3, pp. 683-704.
- II. Skaperdas, S. (1996). "Contest Success Functions". In: Economic Theory 7.2, pp. 283--290.
- mm. Ueda, K. (2002). Oligopolization in collective rent-seeking. In: Social Choice and Welfare 19: 613--626
- nn.Ursprung, H.W. (1990). Public goods, rent dissipation, and candidate competition. Economics and Politics 2: 115-132.
- oo. Van Long, N. (2015) The Theory of Contests: a unified model and review of the literature. In R.D. Congleton and A.L. Hillman, (eds.), Companion to Political Economy of Rent Seeking (pp. 92--112). London: Edward Elgar.
- pp.Waerneryd, Karl, 1998. "Distributional conflict and jurisdictional organization," Journal of Public Economics, Elsevier, vol. 69(3), pages 435-450.

#### 5. Macroeconomic Policies:

- a. R. Barro-D. Gordon, "A Positive Theory of Monetary Policy in a Natural rate Model", *Journal of Political Economy*, 1983, 91, 589-601.
- b. M. Canzoneri, "Monetary Policy Games and the Role of Private Information", *American Economic Review*, 1985, 75, 1056-1070.
- c. F.Kydland E. Prescott, "Rules Rather Than Discretion: The Inconsistency of Optimal Plans", *Journal of Political Economy*, 1977, 85, 473-480.
- d. W. Poole, "Monetary Policy Lessons of Recent Inflation and Disinflation", *Journal of Economic Perspectives*, 1988, 2, 90-98.

#### 6. Political Economics as Principal-Agent Models:

- a. T. Besley, Political Selection, *The Journal of Economic Perspectives*, Vol. 19, No. 3 (Summer, 2005), pp. 43-60
- b. T. Besley and A. Case, Incumbent Behavior: Vote-Seeking, Tax-Setting, and Yardstick Competition, *The American Economic Review*, Vol. 85, No. 1 (Mar., 1995), pp. 25-45
- c. T. Besley and S. Coate, An Economic Model of Representative Democracy, *The Quarterly Journal of Economics*, Vol. 112, No. 1 (Feb., 1997), pp. 85-114
- d. T and M. Ghatak, Competition and Incentives with Motivated Agents, *The American Economic Review*, Vol. 95, No. 3 (Jun., 2005), pp. 616-636

#### 7. Political Economics, Institutions, Conflicts and Development:

- a. Acemoglu, D., and Robinson, J., 2000. Why Did the West Extend the Franchise? Democracy, Inequality, and Growth in an Historical Perspective. Quarterly Journal of Economics, CXV: 1167-1200.
- b. Acemoglu, D., and Robinson, J., 2001 A Theory of Political Transition. American Economic Review, XCI: 938-963.
- c. Acemoglu, D., 2003. Why not a political Coase theorem? Social conflict, commitment, and politics. Journal of Comparative Economics, 31, 620-652.
- d. Acemoglu, D., Robinson, J., and Verdier T., 2004. Kleptocracy and Divide-and-Rule: a Model of Personal Rule. Journal of European Economic Association, 2-3: 162-192.
- e. Acemoglu, D., 2005. Politics and economics in weak and strong states. Journal of Monetary Economics, 52, 1199-1226.
- f. Acemoglu D., Johnson S., and Robinson, J., 2005a. Institutions as a Fundamental Cause of Long-Run Growth, In: Aghion, P., and Durlauf, S. N. (Eds.), Handbook of Economic Growth, vol. 1A, North Holland, Amsterdam, pp 385-472.

#### 8. Political Parties as organization

- a. Philippe Aghion and Jean Tirole, Formal and Real Authority in Organizations, *Journal of Political Economy*, Vol. 105, No. 1 (Feb., 1997), pp. 1-29
- b. Bernard Caillaud and Jean Tirole, Party governance and ideological bias, *European Economic Review* 43 (1999) 779Đ789
- c. Bernard Caillaud and Jean Tirole, Parties as Political Intermediaries, *The Quarterly Journal of Economics*, Vol. 117, No. 4 (Nov., 2002), pp. 1453-1489
- d. Mathias Dewatripont and Jean Tirole, Advocates, *Journal of Political Economy*, Vol. 107, No. 1 (February 1999), pp. 1-39
- e. Mathias Dewatripont, Ian Jewitt and Jean Tirole, The Economics of Career Concerns, Part II: Application to Missions and Accountability of Government Agencies, *The Review of Economic Studies*, Vol. 66, No. 1, Special Issue: Contracts (Jan., 1999), pp. 199-217
- f. Mathias Dewatripont, Ian Jewitt and Jean Tirole, The Economics of Career Concerns, Part I: Comparing Information Structures, The Review of Economic Studies, Vol. 66, No. 1, Special Issue: Contracts (Jan., 1999), pp. 183-198
- g. Gilat Levy, A model of political parties, *Journal of Economic Theory* 115 (2004) 250–277
- h. Jean Tirole, The Internal Organization of Government, *Oxford Economic Papers*, New Series, Vol. 46, No. 1 (Jan., 1994), pp. 1-29

#### 9. Political Economy Applications of Signaling Games

- a. Jeffrey S. Banks and Joel Sobel, Equilibrium Selection in Signaling Games, *Econometrica*, Vol. 55, No. 3 (May, 1987), pp. 647-661
- b. Pierpaolo Battigalli, Rationalization in Signaling Games: theory and applications, International Game Theory Review, Vol. 8, No. 1 (2006) 67–93
- c. In-Koo Cho and David M. Kreps, Signaling Games and Stable Equilibria, *The Quarterly Journal of Economics*, Vol. 102, No. 2 (May, 1987), pp. 179-222
- d. Joel Sobel, Lars Stone and Inigo Zapater, Fixed-Equilibrium Rationalizability in Signaling Games, *Journal of Economic Theory*, 52, 304-331 (1990)
- e. Sobel, J., Signaling Games in Political Science, 1994, Harwood Academic Publishers.