

**UCSD Economics 201: Advanced Topics,  
Part 2 (October 21 – December 2)  
Fall 2009, Joel Watson**

This part of the 201 course will focus on models of contractual relationships. We will survey some of the concepts and issues that have dominated the literature in recent years and preview some of the topics for future research. Some relevant tools in mechanism-design theory and game theory will be covered. A few applications will also be discussed. There is no textbook for the course; most of the readings are journal articles. Each student is required to (a) read the articles as directed, (b) complete the occasional problem sets, (c) participate in class discussions, (d) prepare a short presentation on an article in the topic area, and (e) write a short referee report on an article. Students will be evaluated on the basis of their participation, quality of presentations, and written work.

Course schedule: Mondays and Wednesdays from 12:30 to 1:50 p.m. in room 304. We will also schedule an extra optional session to cover extra/optional material and discuss research ideas.

Watson's contact information: Econ 310, [watsonvs@weber.ucsd.edu](mailto:watsonvs@weber.ucsd.edu). Office hours will be announced.

We will aim to cover the following topics (stopping whenever we run out of lectures!):

1. Review of some standard models of contract (moral hazard, teams, adverse selection, hold up)
2. Technical tools — implementation theory, bargaining theory
3. Team production models (including evidence, collusion, and third parties)
4. Contracting and renegotiation with two players and complete but unverifiable information (technology of trade considerations; cases of durable and nondurable trading opportunities)
5. Relational contracts (repeated game methods, interaction between self-enforcement and external enforcement)
6. Emerging areas: intertwined contracts, behavioral contract models, contracting and investment with asymmetric information (private messages, asymmetric observations of effort/output).

**Relevant/Representative Papers**  
(not a comprehensive list; students will be directed as to which to read)

Surveys/books

Stole, L., “Lectures on the Theory of Contracts”  
(<http://faculty.chicagobooth.edu/lars.stole/papers/lectures.pdf>)

Jackson, M. “A Crash Course in Implementation Theory,” *Social Choice and Welfare*, 18 (2001): 655-708.

Myerson, R., *Game Theory: Analysis of Conflict*, Harvard University Press, 1991.

MacLeod, W.B., “Reputations, Relationships, and Contract Enforcement,” *Journal of Economic Literature* 95 (2007): 595-628.

Bolton, P. and M. Dewatripont, *Contract Theory*, MIT Press, 2005.

Papers to be read for class, by topic

*1. Review of some standard models of contract*

(Nothing assigned to read)

*2. Technical tools*

Rubinstein, A., “Perfect Equilibrium in a Bargaining Model,” *Econometrica* 50 (1982): 207-211.

Nash, J., “The Bargaining Problem,” *Econometrica* 18 (1950): 155-162.

Binmore, K., A. Rubinstein and A. Wolinsky, “The Nash Bargaining Solution in Economic Modeling,” *RAND Journal of Economics* 17 (1986): 176-188.

(plus some standard mechanism-design material)

*3. Team production models*

Holmström, B., “Moral Hazard in Teams,” *Bell Journal of Economics* 13 (1982): 324–340.

Legros, P. and S. Matthews, “Efficient and Nearly-Efficient Partnerships,” *Review of Economic Studies* 68 (1993): 599–611.

Rahman, D. and I. Obara, “Mediated Partnerships,” University of Minnesota, draft (2009).

(<http://www.econ.umn.edu/~dmr/partners.pdf>)

Bull, J. and J. Watson, "Evidence Disclosure and Verifiability," *Journal of Economic Theory* 118 (2004): 1-31.

Kartik, N. and O. Tercieux, "Implementation with Evidence: Complete Information," working paper ([http://www.columbia.edu/~nk2339/Papers/implementation\\_evidence.pdf](http://www.columbia.edu/~nk2339/Papers/implementation_evidence.pdf)).

Ben-Porath, E. and B. L. Lipman, "Implementation and Partial Provability," draft, Boston University, April 2009. (<http://people.bu.edu/blipman/Papers/current-proof.pdf>)

Eswaran and Kotwal, "The moral hazard of budget-breaking." *Rand Journal of Economics* 14 (1984): 579–581.

Baliga, S. and T. Sjöström, "Contracting with Third parties," *AJEM: Microeconomics*. 1 (2009): 75-100. (<http://www.atypon-link.com/doi/abs/10.1257/mic.1.1.75>)

Bull, J., "Third-Party Budget Breakers and Side Contracting in Team Production." (<http://www.fiu.edu/orgs/economics/wp2009/09-09.pdf>)

#### *4. Contracting and renegotiation with two players and complete but unverifiable information*

Klein, B., R. Crawford and A. Alchian, "Vertical Integration, Appropriable Rents and the Competitive Contracting Process," *Journal of Law and Economics* 21 (1978): 297-326.

Williamson, O. E., *Markets and Hierarchies: Analysis and Antitrust Implications*, New York: Free Press, 1975.

Williamson, O. E., "Transaction Cost Economics: The Governance of Contractual Relations," *Journal of Law and Economics* 22 (1979): 233-261.

Grossman, S. and O. Hart, "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration," *Journal of Political Economy* 94 (1986): 691-719.

Grout, P., "Investment and Wages in the Absence of Binding Contracts: A Nash Bargaining Approach," *Econometrica* 52 (1984): 449-460.

Watson, J., "Introduction to Mechanism Design and Contract: The Case of Two Players and Complete Information" (some notes for class).

Hart, O. and J. Moore, "Incomplete Contracts and Renegotiation," *Econometrica* 56 (1988): 755-785.

Nöldeke, G. and K. Schmidt, "Option Contracts and Renegotiation: A Solution to the Hold-Up Problem," *RAND Journal of Economics* 26 (1995): 163-179.

Maskin, E., "Nash Equilibrium and Welfare Optimality," *Review of Economic Studies* 66 (1999): 23-38.

Maskin, E. and J. Moore, "Implementation and Renegotiation," *Review of Economic Studies* 66 (1999): 39-56.

Che, Y.-K. and D. Hausch, "Cooperative Investments and the Value of Contracting," *American Economic Review* 89 (1999): 125-147.

Segal, I., "Complexity and Renegotiation: A Foundation for Incomplete Contracts," *Review of Economic Studies* 66 (1999): 57-82.

Hart, O. and J. Moore, "Foundations of Incomplete Contracts," *Review of Economic Studies* 66 (1999): 115-138.

Segal, I. and M. Whinston, "The Mirrlees Approach to Mechanism Design with Renegotiation (with Applications to Hold-Up and Risk-Sharing)," *Econometrica* 70 (2002): 1-45.

Watson, J., "Contract, Mechanism Design, and Technological Detail," *Econometrica* 75 (2007): 55-81.

Brennan, J. and J. Watson, "The Renegotiation-Proofness Principle and Costly Renegotiation," 2002 working paper.

Watson, J., "Contract and Mechanism Design in Settings with Multi-Period Trade," 2006 working paper.

Evans, R., "Simple Efficient Contracts in Complex Environments," *Econometrica* 76 (2008): 459-491.

Watson, J. and C. Wignall, "Hold-Up and Durable Trading Opportunities," 2009 working paper.

## 5. Relational contracts

Bull, C. "The Existence of Self-Enforcing Implicit Contracts," *Quarterly Journal of Economics* 102 (1987): 147-59.

Crawford, V., "Long-term Relationship Governed by Short-term Contracts," *American Economic Review* 78 (1988): 485-499.

Fudenberg, D., B. Holmstrom, and P. Milgrom, "Short-term Contracts and Long-term Agency Relationships" *Journal of Economic Theory* 51 (1990): 1-31.

Pearce, D. and E. Stacchetti, "The Interaction of Implicit and Explicit Contracts in Repeated Agency," *Games and Economic Behavior* 23 (1998): 75-96.

Ramey, G. and J. Watson, "Contractual Fragility, Job Destruction, and Business Cycles," *Quarterly Journal of Economics* 112 (1997): 873-911.

Che, Y.-K. and S.-W. Yoo, "Optimal Incentives for Teams," *American Economic Review* 91 (2001): 525-41.

Baker, G., R. Gibbons, and K. Murphy, "Relational Contracts and the Theory of the Firm," *Quarterly*

*Journal of Economics* 117 (2002): 39-84.

Levin, J., "Relational Incentive Contracts," *American Economic Review* 93 (2003): 835-857.

Rayo, L., "Relational Incentives and Moral Hazard in Teams," *Review of Economic Studies* 74 (2007): 937-963.

Watson, J., "Contract and Game Theory: Basic Concepts for Settings with Finite Horizons," 2006 working paper.

Miller, D. and J. Watson, "A Theory of Disagreement in Repeated Games with Renegotiation," draft (2009).

Kranz, S. and S. Ohlendorf, "Renegotiation-Proof Relational Contracts with Side Payments," University of Bonn working paper (2009).

## 6. Emerging areas

Prat and Rustichini, "Games Played Through Agents," *Econometrica* 71 (2003): 989-1026.

Galasso, "Multi-Agent and Common Agency Games with Complete Information: A Survey," draft (2004).

Segal, "Contracting With Externalities," *Quarterly Journal of Economics* 114 (1999): 337-388.

Gomes, A. "Multilateral Contracting with Externalities," *Econometrica* 73 (2005): 1329-1350.

Hart, O. and J. Moore, "Contracts as Reference Points," *Quarterly Journal of Economics* 123 (2008): 1-48.

Hart, O., "Hold-Up, Asset Ownership, and Reference Points," *Quarterly Journal of Economics* 124 (2009): 267-300.

Gul, F., "Unobservable Investment and the Hold-Up Problem," *Econometrica* 69 (2001): 343-376.

Skrzypacz, A., "Bargaining under Asymmetric Information and the Hold-up Problem," draft (2005).

Hermalin, B. and M. Katz, "Information and the Hold-Up Problem," draft (2006).

Sloof, R., H. Oosterbeek, and J. Sonnemans, "Does Making Specific Investments Unobservable Boost Investment Incentives?" *Journal of Economics & Management Strategy* 16 (2007): 911-942.

Schmitz, P., "Information Gathering, Transaction Costs, and the Property Rights Approach," *American Economic Review* 96 (2006): 422-434.

Lau, S. "Information and Bargaining in the Hold-Up Problem," *Rand Journal of Economics* 39 (2008): 266-282.