

Economics 211A: Contract Theory

M,W 9:00-10:20, BH 2249, Autumn 2009

<http://www.econ.ucla.edu/sboard/teaching.html>

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This is a course in contract theory. It will cover many of the tools and techniques used in models of moral hazard, screening and incomplete contracting. Applications will be drawn from industrial organisation, corporate finance, public finance, personnel economics, and many other areas. In addition to the usual topics, I also plan to spend some time on recent innovations in the theory of relational contracts and dynamic signalling.

For those enrolled, there will be three problem sets (15% each) and a final (55%). The problem sets will be due on 21st October, 9th November and 2nd December. I encourage you to discuss the substance of the problems, but the final version should be your own.

Wednesday November 11th is Veteran's Day. There will be no class.

Books and Manuscripts

Bolton and Dewatripont (2005), *Contract Theory*, MIT Press.

Laffont and Martimort (2002), *The Theory of Incentives*, PUP.

Mas-Colell, Whinston and Green (1995), *Microeconomic Theory*, OUP.

Salanie (1997), *The Economics of Contracts: A Primer*, MIT Press.

Segal and Tadelis (2002), *Lectures on Contract Theory*, Unpublished, Stanford University.

Stole (1993), *Lectures on Contracts and Organizations*, Unpublished, University of Chicago.

1. Useful Techniques

Topics: lattices, supermodularity, monotone comparative statics, comparing equilibria, envelope theorems, stochastic orders.

Topkis (1998), *Supermodularity and Complementarity*, PUP.

Milgrom and Segal (2002), “Envelope Theorems for Arbitrary Choice Sets,” *Econometrica*.

Shaked and Shanthikumar (2007), *Stochastic Orders*, Springer.

Milgrom (1981), “Good News and Bad News: Representation Theorems and Applications,” *Bell Journal*.

Karlin and Rinott (1980), “Classes of Ordering of Measures and Related Correlation Inequalities I: Multivariate Totally Positive Distributions,” *Journal of Multivariate Analysis*.

Karlin and Rubin (1956), “The Theory of Decision Procedures for Distributions with Monotone Likelihood Ratio,” *Annals of Mathematical Statistics*.

Amir, (2003), “Supermodularity and Complementarity in Economics: An Elementary Survey.”

2. Moral Hazard: One Agent

Topics: two action model, continuous action model, optimal linear contracts, comparative performance evaluation, multitasking, private evaluations, debt contracts.

Bolton and Dewatripont, *Chapters 4 and 6.2*.

Milgrom and Roberts (1992), *Economics, Organization and Management*, Prentice Hall.

Holmstrom (1979), “Moral Hazard and Observability,” *Bell Journal*.

Rogerson (1985), “The First-Order Approach to Principal-Agent Problems,” *Econometrica*.

Mirrlees (1999), “The Theory of Moral Hazard and Unobservable Behaviour: Part I,” *Review of Economic Studies*.

MacLeod (2003), “Optimal Contracting with Subjective Evaluation,” *American Economic Review*.

Innes (1990), “Limited Liability and Incentive Contracting with Ex-ante Action Choices,” *Journal of Economic Theory*.

Holmstrom and Milgrom (1991), “Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design,” *Journal of Law, Economics, & Organization*.

3. Moral Hazard: Many Agents

Topics: tournaments, partnerships, comparative performance evaluation.

Bolton and Dewatripont, *Chapter 8*.

Lazear and Rosen (1981), “Rank-Order Tournaments as Optimum Labor Contracts,” *Journal of Political Economy*.

Holmstrom (1982), “Moral Hazard in Teams,” *Bell Journal*.

4. Moral Hazard: Dynamics

Topics: repeated moral hazard, justifying simple contracts, renegotiation, career concerns.

Bolton and Dewatripont, *Chapter 10*.

Rogerson (1985), “Repeated Moral Hazard,” *Econometrica*.

Fudenberg, Holmstrom and Milgrom (1990), “Short-term Contracts and Long-term Agency Relationships,” *Journal of Economic Theory*.

Holmstrom and Milgrom (1987), “Aggregation and Linearity in the Provision of Intertemporal Incentives,” *Econometrica*.

Radner (1985), “Repeated Principal-Agent Games with Discounting,” *Econometrica*.

Hermalin and Katz (1991), “Moral Hazard and Verifiability: The Effects of Renegotiation in Agency,” *Econometrica*.

Fudenberg and Tirole (1990), “Moral Hazard and Renegotiation in Agency Contracts,” *Econometrica*.

Holmstrom (1999), “Managerial Incentive Problems: A Dynamic Perspective,” *Review of Economic Studies*.

5. Relational Contracts

Topics: Bilateral contracts, multilateral contracts, embedding relational contracts in markets.

Abreu, Pearce and Stacchetti (1986), “Optimal Cartel Equilibria with Imperfect Monitoring,” *Journal of Economic Theory*.

Shapiro and Stiglitz (1984), “Equilibrium Unemployment as a Worker Discipline Device,” *American Economic Review*.

Macleod and Malcomson (1989), “Implicit Contracts, Incentive Compatibility, and Involuntary Unemployment,” *Econometrica*.

Macleod and Malcomson (1998), “Motivation and Markets,” *American Economic Review*.

Levin (2003), “Relational Incentive Contracts,” *American Economic Review*.

Thomas and Worrall (1988), “Self-Enforcing Wage Contracts,” *Review of Economic Studies*.

Thomas and Worrall (1994), “Foreign Direct Investment and the Risk of Expropriation,” *Review of Economic Studies*.

6. Mechanism Design: One Agent

Topics: revelation principle, discrete type problems, continuous type problems, ironing, credit rationing, implicit labour contracts, regulation, insurance, labour contracts, contracts as barriers to entry, costly state verification.

Bolton and Dewatripont, *Chapter 2*.

Laffont and Martimort, *Chapters 2 and 3*.

Myerson (1982), “Optimal Coordination Mechanisms in Generalized Principal-Agent Problems,” *Journal of Mathematical Economics*.

Maskin and Riley (1984), “Monopoly with Incomplete Information,” *RAND Journal of Economics*.

Mussa and Rosen (1978), “Monopoly and Product Quality,” *Journal of Economic Theory*.

Baron and Myerson (1982), “Regulating a Monopolist with Unknown Costs,” *Econometrica*.

7. Mechanism Design: Many Agents

Topics: optimal auctions, bilateral trading.

Mas–Collé, Whinston and Green, *Chapter 23*.

Bolton and Dewatripont, *Chapter 7*.

Myerson (1981), “Optimal Auction Design,” *Mathematics of Operations Research*.

Krishna (2002), *Auction Theory*, Academic Press.

Milgrom (2004), *Putting Auction Theory to Work*, CUP.

Myerson and Satterthwaite (1983), “Efficient Mechanisms for Bilateral Trading,” *Journal of Economic Theory*.

Cremer and McLean (1988), “Optimal Selling Strategies under Uncertainty for a Discriminating Monopolist when Demands are Interdependent,” *Econometrica*.

Neeman (2004), “The Relevance of Private Information in Mechanism Design”, *Journal of Economic Theory*.

8. Mechanism Design: Dynamics

Topics: commitment solutions, no commitment, renegotiation, entry of new agents, durable goods monopoly, consumption smoothing.

Bolton and Dewatripont, *Chapter 9*.

Laffont and Martimort, *Chapter 8*.

Baron and Besanko (1984), “Regulation and Information in a Continuing Relationship,” *Information Economics and Policy*.

Courty and Li (2000), “Sequential Screening,” *Review of Economic Studies*.

Board (2007), “Durable-Goods Monopoly with Varying Demand,” *Review of Economic Studies*.

Segal (2003), “Optimal Pricing Mechanisms with Unknown Demand,” *American Economic Review*.

Thomas and Worrall (1990), “Income Fluctuation and Asymmetric Information: An Example of a Repeated Principal-Agent Problem,” *Journal of Economic Theory*.

Bulow (1982), “Durable-Goods Monopolists,” *Journal of Political Economy*.

Gul, Sonnenschein and Wilson (1986), “Foundations of Dynamic Monopoly and the Coase Conjecture,” *Journal of Economic Theory*.

Ausubel and Deneckere (1989), “Reputation in Bargaining and Durable Goods Monopoly,” *Econometrica*.

Fuchs and Skrzypacz (2007), “Bargaining with Arrival of New Traders or New Information,” Working Paper, Chicago and Stanford GSB.

Hart and Tirole (1988), “Contract Renegotiation and Coasian Dynamics,” *Review of Economic Studies*.

Laffont and Tirole (1988), “The Dynamics of Incentive Contracts,” *Econometrica*.

9. Mixed Models

Topics: false moral hazard (optimal taxation), adverse selection and moral hazard.

Bolton and Dewatripont, *Chapter 6.3*.

Laffont and Martimort, *Chapter 7*.

Mirrlees (1971), “An Exploration in the Theory of Optimum Income Taxation ”, *Review of Economic Studies*.

Laffont and Tirole (1986), “Using Cost Observation to Regulate Firms,” *Journal of Political Economy*.

McAfee and McMillan (1987), “Competition for Agency Contracts,” *RAND Journal of Economics*.