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Economics 206:
Agency and Mechanism Design

Description

This is focused on the foundations of contract theory (also known as incentive theory) and its basic methods from mechanism design. Part I of the course carefully analyzes the hidden information (adverse selection) principal-agent model and its application to contracts. It covers the simple one agent model, and the multi-agent model using the set-up of mechanism design. Part II is devoted to the theory of Moral Hazard and its applications. Time permitting, part III concentrates on the Theory of the Firm and Incomplete Contracts.

Prerequisites

First year Microeconomics at the PhD level.

Requirements & Grades

Problem Sets: During the semester students will be required to hand in 3 problem sets. The problem sets are due a week after they are distributed. You are **strongly encouraged to work in teams**, but the product you turn in must be individual work

Final exam: A final take-home exam will be distributed at the end of the semester that will be due in 24 hours. These should **not be done in teams** but rather individual work is required.

Final grade: The final grade will consist of 75% problem sets and 25% final exam.

Readings

A set of detailed notes will be made available on the web. There is also a list of articles, those marked with an asterisk are highly recommended, and other articles are supplemental to the material. Most articles are available through JSTOR on the web, or can be found in the library.

Syllabus

I. Hidden Information (Adverse Selection)

I.1 Static Models.

(*) Fudenberg, D. and J. Tirole (1990) *Game Theory*, MIT Press (henceforth FT), ch. 7

(*) Baron, D. and R. Myerson (1982), "Regulating a Monopolist with Unknown Cost," *Econometrica* **50**:911-930

(*) Maskin, E. and J. Riley (1984), "Monopoly with Incomplete Information," *Rand Journal of Economics* **15**:171-196

(*) Mussa, M. and S. Rosen (1978) "Monopoly and Product Quality," *Journal of Economic Theory* **18**:301-317

Laffont, J.-J. and J. Tirole (1986), "Using Cost Observation to Regulate Firms," *Journal of Political Economy*, **94**:614-641

Mirrlees, J. (1971), "An Exploration in the Theory of Optimum Income Taxation," *Review of Economic Studies*, **38**:175-208

Maskin E. and J. Tirole (1990), "The Principal-Agent Relationship with an Informed Principal, I: Private Values," *Econometrica* **58**:379-410

Maskin E. and J. Tirole (1992), "The Principal-Agent Relationship with an Informed Principal, II: Common Values," *Econometrica* **58**:379-410

Mathews, S. and J. Moore (1987), "Monopoly Provision of Quality and Warranties: An Exploration in the Theory of Multidimensional Screening," *Econometrica* **52**:441-468 (especially Section 2)

I.2 Mechanism Design and Multiple Agents

The General Mechanism Design Problem: The Revelation Principle

(*) Mas-Colell, A., M. Whinston and J. Green, *Microeconomic Theory*, Oxford University Press (henceforth MWG), Ch. 23 section B Dominant Strategy Implementation: The Groves-Clarke mechanism 3

(*) MWG Ch.23 section C

Groves, T. (1973), "Incentives in Teams," *Econometrica* **41**:617-631

Laffont, J.J., and E. Maskin (1980), "A Differentiable Approach to Dominant-Strategy Mechanisms", *Econometrica* **48**:1507-1520

Bayesian Implementation: The Expected Externality (AGV) mechanism

(*) MWG Ch.23 section D

D'Aspermont, C. and L.A. Gerard-Varet (1979), "Incentives and Incomplete Information," *Journal of Public Economics* **11**:25-45

Bayesian Implementation: The Linear Utility Case with Participation Constraints

(*) MWG Ch.23 sections D & E

Myerson, R. and M. Satterthwaite (1983), "Efficient Mechanisms for Bilateral Trade," *Journal of Economic Theory* **29**:265-281

I.3 Dynamic Models and Renegotiation

(*) Dewatripont, M. (1989), "Renegotiation and Information Revelation over Time: The Case of Optimal Labor Contracts," *QJE*, **104**:589-619

Dewatripont, M., and E. Maskin (1990), "Contract Renegotiation in Models of Asymmetric Information," *European Economic Review*, **34**:589-619

Freixas, X., R. Guesnerie and J. Tirole (1985), "Planning Under Incomplete Information and the Ratchet Effect," *Review of Economic Studies*, **52**:173-191

(*) Laffont, J.-J., and J. Tirole (1988), "The Dynamics of Incentive Contracts," *Econometrica*, **59**:1735-1754

Laffont, J.-J. and J. Tirole (1990), "Adverse Selection and Renegotiation in Procurement," *Review of Economic Studies*, **57**:597-625

(*) Hart, O., and J. Tirole (1988), "Contract Renegotiation and Coasian Dynamics," *Review of Economic Studies*, **55**:509-540

III. Moral Hazard (Hidden Action)

III.1 Static One-Agent Models

(*) Grossman, S., and O. Hart (1983) "An Analysis of the Principal-Agent Problem," *Econometrica*, **51**:7-45

(*) Holmstrom, B. (1979), "Moral Hazard and Observability," *Bell Journal of Economics*, **10**:74-91

(*) Holmstrom, B. and O. Hart (1987), "The Theory of Contracts," Part I, in T. Bewley, Ed., *Advances in Economic Theory, fifth World Congress*, Cambridge: Cambridge University Press.

Shavell, S. (1979), "Risk Sharing and Incentives in the Principal Agent Relationship," *Bell Journal of Economics*, **10**:55-73

MWG Ch. 14 section B

(*) Rogerson, W. (1985), "The First-Order Approach to Principal-Agent Problems," *Econometrica*, **53**:1357-1367

Jewitt, I. (1988) "Justifying the First-Order Approach to Principal-Agent Problems," *Econometrica*, **56**:1177-1190

Innes, R. (1990) "Limited Liability and Incentive Contracting with Ex Ante Action Choices," *Journal of Economic Theory* **52**:45-67

III.2 Static Multi-Agent Models

(*) Holmstrom, B. (1982) "Moral Hazard in Teams," *Bell Journal of Economics*, **13**:324-340

Lazear, E. and S. Rosen (1981), "Rank Order Tournaments as Optimal Labor Contracts," *Journal of Political Economy*, **89**:841-864

Mookherjee, D. (1984), "Optimal Incentive Schemes with Many Agents," *Review of Economic Studies*, **51**:433-446

Ma, C.A., (1988), "Unique Implementation of Incentive Contracts with Many Agents," *Review of Economic Studies*, **55**:555-571

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

III.3 Dynamic Models and Renegotiation

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

Rogerson, W. (1985), "Repeated Moral Hazard," *Econometrica*, **53**:69-76

(*) Holmstrom, B., and P. Milgrom (1987), "Aggregation and Linearity in the Provision of Intertemporal Incentives," *Econometrica* , **55**:597-619

(*) Atekeson, A. and R.E.Lucas (1992) "On Efficient Distribution with Private Information" *Review of Economic Studies*, **59**:427-453

Spear, S., and S. Srivastava (1987) "Repeated Moral Hazard with Discounting," *Review of Economic Studies*, **54**:599–617.

Radner, R. (1981), "Monitoring Cooperative Agreements in Repeated Princial Agent Relationships," *Econometrica*, **49**:1127-1148

Fudenberg, D., and J. Tirole (1990), "Moral Hazard and Renegotiation in Agency Contracts," *Econometrica* **58**:1279-1320

Hermalin, B., and M. Katz (1991) "Moral Hazard and Verifiability: The Effects of Renegotiation in Agency", *Econometrica* **59**:1735-1753

Ma, C.A., (1991), "Adverse Selection in Dynamic Moral Hazard," *Quarterly Journal of Economics*, **106**:255-275

Matthews, S. (1995), "Renegotiation of Sales Contracts," *Econometrica* **63**:567-589

Segal, I., and S. Tadelis (1995), "Renegotiation in Agency Contracts: The Value of Information," mimeo

III.4 Multi-Task Analysis

(*) Holmstrom, B., and P. Milgrom (1991) "Mutlitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design," *Journal of Law, Economics, and Organization*, **57**:25-52

IV. Theory of the Firm

IV.1 Established Views of the Firm

Alchian, A., and H. Demsetz (1972), "Production, Information Costs and Economic Organization," *American Economic Review* **62**:777-795

Coase, R. (1937), "The Nature of the Firm," Economica, 4: 386-405, reprinted in O. Williamson and S. Winter (1993), eds., *The Nature of the Firm: Origins, Evolution, and Development*.

(*) Hart, O. (1995) *Firms, Contracts, and Financial Structure,* Oxford University Press, chapter 1

Simon, H. "A Formal Theory of the Employment Relationship," *Econometrica* **19**:293-305

Williamson, O. (1985) *The Economic Institutions of Capitalism,* New York: Free Press

IV.2 Incomplete Contracts and Renegotiation

(*) Aghion, P., Dewatripont, M. and P. Rey (1994) "Renegotiation Design and Unverifiable Information," *Econometrica*, **62**:257-282

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

(*) Edlin, A., and S. Reichelstein, (1996) "Holdups, Standard Breach Remedies, and Optimal Investment," *American Economic Review* **86(3)**:478-501

(*) Hart, O. (1995) "Firms, Contracts, and Financial Structure," Oxford University Press, chapters 2-3

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

(*) Hart, O., and J. Moore (1990), "Property Rights and the Nature of the Firm," *Journal of Political Economy*, **98**:1119-1158