MICROECONOMIC THEORY II FDPE Spring 2007 Hannu Vartiainen

In the second half of the course we turn to game theory and its applications to microeconomics. We develop a language to discuss strategic behavior and design of economic institutions. The aim is to understand how rational decision-makers interact. Much emphasis will be put on the issues of information and incentives.

The main text is: Mas-Colell, A. Whinston, M. and J. Green (1995), Microeconomic Theory, Oxford UP. (MWG)

Occasionally we go beyond MGW. Then we use: Fudenberg, D. and J. Tirole. (1992), Game Theory, MIT Press, (FT) Osborne, M. and A. Rubinstein (1995), A Course in Game Theory, MIT Press. (OR)

Preliminary syllabus:

- 1. Elements of non-cooperative game theory. MWG 7-8, OR 1-2.
- 2. Normal form games of complete information. FT 1, OR 2.
 - Dominant strategies and dominance solvability.
 - Nash equilibrium.
 - Applications: Competition, Tragedy of the Commons.
- 3. Extensive form games. MWG 9, FT 3-4, OR 6-7.
 - Sequential rationality, backward induction, subgame perfection.
 - Applications: Chain Store Paradox, Bargaining.
- 4. Repeated games. MGW 9, FT 5.
 - Formulation and interpretation.
 - Cooperation and punishment: the Folk Theorem.
- 5. Formulation of incomplete information. MWG 8, OR 5.
 - Applications: speculation, coordination failures.
- 6. Asymmetric information and incentives. MWG 13-14.
 - Moral hazard.
 - Adverse selection,
 - Signaling and screening.

7. Communication and mechanism design. MGW 23, FT 7.

- The Revelation Principle.
- Efficiency concepts.
- 8. Trading mechanisms MWG 23, FT 7.
 - Virtual utility.
 - Monopoly and bilateral monopoly.
 - Auctions.

ADDITIONAL READING

Complementary texts:

Kreps, D. (1990), A Course in Microeconomic Theory, Princeton UP. A good general text, with lots of insightful discussion.

Osborne, M. (1999), An introduction to game theory, MIT Press. A good first text.

Myerson, R. (1991), Game Theory: The Analysis of Conflict, Harvard UP.

An alternative game theory text. Especially good and coherent in information and mechanisms.

Philosophical underpinnings:

Aumann, R. (1987), What is game theory trying to accomplish? In Arrow and Honkapohja (eds.) Frontiers in Economics, Blackwell.

Rubinstein, A. (1989), Comments on the interpretation of game theory, Econometrica 59, 909-24.

Rubinstein, A. (2006), A skeptic comment on the studies of economics, Economic Journal 116.

Behavioral debate:

Camerer, C. (2002), Behavioral game theory, Princeton UP.

Rubinstein, A (2003), "Economics and psychology"? The case of hyperbolic discounting, International Economic Review 44, 1207 - 16.

Information and knowledge:

- Aumann, R. and Brandenburger, A. (1995), Epistemic Conditions for Nash Equilibrium, Econometrica 63, 1161-80.
- Geanakoplos, J. (1997), Common knowledge, in Aumann and Hart (eds.): Handbook of Game Theory 2, Elsevier.

Equilibrium refinements and their critiques:

Van Damme, E. (1987), Stability and perfection of Nash equilibria, Springer-Verlag.

Reny, P. (1992), Rationality in extensive form games, Journal of Economic Perspectives 6.

Bargaining:

Farrell, J. (1987), Information and the Coase Theorem, Journal of Economic Perspectives 1, 113-29.

Rubinstein, A. (1982), Perfect equilibrium in a bargaining model, Econometrica 50, 97-110.

Myerson, R. and M. Satterthwaite (1983), Efficient mechanisms for bilateral trading, JET 29, 265-81.

Muthoo, A. (2001), Bargaining theory with applications, Cambridge UP.

Asymmetric information:

- Akerlof, G. (1970), The market for "lemons": quality uncertainty and the market mechanism, Quarterly Journal of Economics 84, 488-500.
- Spence, M. (1973): Job Market Signaling, Quarterly Journal of Economics 83, 355-377.
- Stiglitz, J. and A. Weiss (1981), Credit Rationing in Markets with Imperfect Information, American Economic Review 71, 393-410.
- Cho, I. and D. Kreps (1987), Signaling games and stable equilibria, Quarterly Journal of Economics 102, 179-221

Mechanism design:

- Bergemann, D. and S. Morris (2004), Robust mechanism design, forthcoming in Econometrica.
- Bergemann, D. and J. Välimäki (2005), Information in mechanism design Cowles Foundation Discussion Paper No. 1532
- Crémer, J. and R. McLean (1985), Optimal Selling Strategies under Uncertainty for a Discriminating Monopolist when Demands are Interdependent, Econometrica 115, 341-388.
- Laffont, J-J and D. Martimort (2002), The theory of incentives, Princeton UP.
- Stale, L, (2003), Price discrimination and imperfect competition, in Handbook of Industrial Organization, Elsevier.

Auction theory:

Dasgupta, P. and E. Maskin (2000), Efficient auctions, Quarterly Journal of Economics 115, 341-388.

Jehiel, P. and B. Moldovanu (2001), Efficient design with interdependent values, Econometrica 69, 1237-59.

Klemperer, P. (2004), Auctions: theory and practice, Princeton UP.

Maskin, E. (2004), The unity of Auction Theory, Journal of Economic Literature 42, 1102-15.

Milgrom, P. (2004), Putting auction theory to work, Cambridge UP.

Milgrom, P. and R. Weber (1982), A theory of auctions and competitive bidding, Econometrica 50, 1089-122.

Other applications:

Benobou, R. and J. Tirole (2002), Self-confidence and personal motivation, Quarterly Journal of Economics 117.

Benobou, R. and J. Tirole (2004), Willpower and personal rules, Journal of Political Economy 112.

Bagwell, K and Wolinsky A. (2002), Game theory and industrial organization, in Aumann and Hart (eds.): Handbook of Game Theory 3, Elsevier.

Baird, Gertner and Picker (1994) Game theory and the law, Harvard UP.