

TUFTS UNIVERSITY
Department of Economics
Spring 2006

Economics 204

MICROECONOMIC THEORY II

Professor Enrico Spolaore
enrico.spolaore@tufts.edu
Office Hours: MW 3:30-4:30

Class Time: K+ (MW 4:30-5:45)
Room: Braker 118

Prerequisite: EC 203 or Permission of Instructor

Course Description

This course will introduce you to game theory and its economics applications.

We will begin by extending the theory of individual decision-making to situations involving uncertainty. These situations can be thought of as games played against nature. We derive the *expected utility theorem*, a result of central importance in economics. The key assumptions leading to this result have been the subject of controversy, particularly when examined from a psychological perspective. We will review some of this literature as well.

In the next section of the course we look at playing games against other rational agents. This provides the groundwork for analyzing how the simultaneous behavior of many agents generates economic outcomes and how such multi-agent interaction gives rise to strategic interdependence – that is, economic agents recognize that their outcomes depend not only on their own individual actions but also on the actions of other economic agents.

We will consider not only the theoretical foundations of non-cooperative game theory but also applications and empirical evidence from real-world cases and experiments.

Textbooks

Our textbooks are

Hal R. Varian, *Microeconomic Analysis*, 3rd edition, Norton, 1992, and

Robert Gibbons *Game Theory for Applied Economists*, Princeton University Press, 1992

There will be additional reading, as specified in the course outline below.

Grading

Homework: 10 percent of your grade

Midterm Exam (Monday, March 13 in class): 40 percent of your grade

Final Exam (Wednesday, May 10, at 12pm): 50 percent of your grade

COURSE OUTLINE

I. Games Against Nature: Decision-Making under Uncertainty

Choice under Uncertainty and Expected Utility Theory: Basics

Varian, *Microeconomic Analysis*, Chapter 11

see also Parts (1) and (2) in *Choice under Risk and Uncertainty*, at the New School's *History of Economic Thought* website <http://cepa.newschool.edu/het/essays/uncert/choicecont.htm>

Problems and Alternative Theories

Mark J. Machina, "Choice Under Uncertainty: Problems Solved and Unsolved", *Journal of Economic Perspectives*, 1, (1987), 121-154.

www.jstor.org

Matthew Rabin, "Diminishing Marginal Utility of Wealth Cannot Explain Risk Aversion," in *Choices, Values, and Frames*, Daniel Kahnemann and Amos Tversky, editors, New York: Cambridge University Press, 2000, 202-208,

<http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1025&context=iber/econ>

Extra reading:

Daniel Kahneman, "Maps of Bounded Rationality: A Perspective on Intuitive Judgment and Choice," *Nobel Lecture*, December 2002,

<http://nobelprize.org/economics/laureates/2002/kahnemann-lecture.pdf>

II. Playing Games against Rational Agents: Strategic Uncertainty, Equilibrium Concepts and Information Structure of Noncooperative Games

Gul, Farek, "A Noble Prize for Game Theorists: The Contributions of Harsanyi, Nash and Selten", *Journal of Economic Perspectives*, 11, (3), Summer 1997, 159-74.

www.jstor.org

II.A Static Games

II.A.1 Static Games of Complete Information

Basics

Gibbons, *Game Theory for Applied Economists*, Ch. 1, 1.1, 1.2A, 1.2B, 1.3.

Varian, *Microeconomic Analysis*, Ch. 15.

Oligopoly (Cournot and Bertrand)

Varian, *Microeconomic Analysis*, Ch.16, 16.1-16.5.

Empirics

R. Nagel, A. Bosch-Domench, A. Satorra, and J. Garcia-Montalvo, "One, Two, (Three), Infinity: Newspaper and Lab Beauty-Contest Experiments, *American Economic Review*, December 2002, 92 (5), pp. 1687-1701.

www.jstor.org

Ignacio Palacios-Huerta, "Professionals Play Minimax," *Review of Economic Studies*, 70(2), April 2003, pp. 395-415.

<http://www.econ.brown.edu/~iph/pdf/professionals.pdf>

II.A.2 Static Games of Incomplete Information

Basics

Gibbons, *Game Theory for Applied Economists*, Ch. 3, 3.1, 3.2A

The Winner's Curse

R. Thaler, "The Winner's Curse," *Journal of Economic Perspectives*, 29(1), 1988.

www.jstor.org

John H. Kagel and Dan Levin, "Common Value Auctions and the Winner's Curse: Lessons from the Economics Laboratory," October 2001.

<http://www.econ.ohio-state.edu/kagel/CVsurvey.short.PDF>

II.B Dynamic Games

II.B.1 Dynamic Games of Complete Information and Repeated Games

Basics

Gibbons, *Game Theory for Applied Economists*, Ch 2, 2.1A, 2.1B, 2.2A, 2.2C, 2.3, 2.4.

Dynamic Oligopoly Games

Varian, *Microeconomic Analysis*, Ch. 16, 16.6-16.8, 16.10, 16.11.

Experiments

Alvin E. Roth et als., "Bargaining and Market Behavior in Jerusalem, Ljubljana, Pittsburgh and Tokyo: An Experimental Study," *American Economic Review* , 81(5), 1991.

www.jstor.org

Pedro Dal Bo, "Cooperation under the Shadow of the Future: Experimental Evidence from Infinitely Repeated Games", *American Economic Review*, 95(5), December 2005

http://www.econ.brown.edu/fac/Pedro_Dal_Bo

II.B.2 Dynamic Games of Incomplete Information

Basics

Gibbons, *Game Theory for Applied Economists*, Ch.4, 4.1, 4.2A, 4.2B,

Economics of Information

Varian, *Microeconomic Analysis*, Ch. 25

Experiments

David J. Cooper, John H. Kagel, Wei Lo, and Qing Liang Gu, "Gaming Against Managers in Incentives Systems: Experimental Results with Chinese Students and Chinese Managers," *American Economic Review*, 89(4), September 1999.

www.jstor.org

II.C More Applications of Game Theory (if we have time...)

Political Economy of Stabilizations

Alberto Alesina and Alan Drazen, "Why Are Stabilization Delayed?" *American Economic Review*, 1991.

www.jstor.org

Enrico Spolaore, "Adjustments in Different Government Systems," *Economics & Politics*, June 2004.

<http://www.tufts.edu/~espola01/adjustmentsE&Pfinal.pdf>

Conflict and Borders

Alberto Alesina and Enrico Spolaore, "War, Peace, and the Size of Countries," *Journal of Public Economics*, July 2005.

<http://www.tufts.edu/~espola01/warpeacejpube.pdf>

Long-term Evolution

Robert Axelrod and William D. Hamilton, "The Evolution of Cooperation," *Science* 211, March 27, 1981, pp. 1390-96.

www.jstor.org