University of Cambridge
Faculty of Economics

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Part II A - Paper 1
2020/21

Outline

Uncertainty and Information – Lent Term 2021

This part of the paper attempts to expose, analyse, and interrogate the prevalent conceptualisations of uncertainty and information within the discipline of economics. Its main aims are:

– To construct a framework on individual behaviour under uncertainty that can be used to think about decisions involving risk.

– To explore the 'value' of information and its relation to uncertainty and knowledge.

– To integrate these concepts into a unifying picture that can be used to analyse both individual and strategic behaviour.

– To investigate the theoretical basis of a number of economic institutions such as insurance markets, auctions, incentive contracts and markets for information.

Logistics

- Lectures:
  - Tuesday, 09:00 - 10:00, on Panopto
  - Wednesday, 11:00 - 13:00, on Panopto
- Resources: Course material on Moodle
- Office hours: Friday, 12:00-13:00, on *Teams, ECON Teaching, Part IIA*

Textbooks

- There are many good game theory and microeconomic theory textbooks. The course lecture slides will be posted on Moodle and will be the primary source of information, the following books may provide useful additional material.

  Hugh Gravelle and Ray Rees, *Microeconomics*, FT Prentice Hall, 2004, (GR hereafter).

  Martin J. Osborne, *An Introduction to Game Theory*, Oxford University Press, 2004, (Ch. 2, 3 available on Martin Osborne's webpage, Ch. 9, 10 available on Marshall Library Moodle) (O hereafter).

  Robert Gibbons, *A Primer in Game Theory*, Harvester Wheatsheaf, 1992, (G hereafter).

  Steve Tadelis, *Game Theory: An Introduction*, Princeton University Press, 2013, (Ch. 5.2, 12.2, 12.3, 15.2 available on Marshall Library Moodle) (T hereafter).

  Bernard Salanié, *The economics of contracts: a primer*, MIT Press, 2005, (S hereafter).

  L. Anderlini and L. Felli, "Agency Problems" in *The New Palgrave Dictionary of Economics*, Palgrave Macmillan 2008, (AF hereafter)

- Additional readings:

  Martin J. Osborne and Ariel Rubinstein, *A Course in Game Theory*, MIT Press, 1994, (available on Ariel Rubinstein's webpage).

  Martin J. Osborne and Ariel Rubinstein, *Models of Microeconomic Theory*, Open Book Publishers, 2020, (available on Ariel Rubinstein's webpage).

Course Outline

1. **Choice under Uncertainty,** (GR: pp. 446-466)
2. **Insurance Markets,** (GR: pp. 466-476, pp. 507-519)
3. **Information Acquisition,** (GR: Appendix L)
4. **Games under Incomplete Information,** (O: 9.1-9.4, G: 3.1, 3.2, T: 12.2, 12.3)
5. **(Perfect) Bayesian Nash Equilibrium,** (G: 3.1, 4.1, T: 15.2)
6. **Cournot Competition,** (T: 5.2.3, G: 3.1.A)
7. **Auctions,** (O: 3.5, 9.6, 9.8, G: 3.2.B)
8. **Revelation Principle, Optimal Auctions,** (O: 3.5, 9.6, 9.8, G: 3.3, S: 3.2.2)
9. **Adverse Selection,** (S: 3.1.3, 3.2.1)
10. **Double Auctions,** (G: 3.2.C)
11. **Signalling,** (S: 4, O: 10.5-10.7)
12. **Moral Hazard,** (S: 5.1-5.3.5, AF)
13. **Externalities** (O: 2.8.5, 9.5, S: 5.3.5, 5.3.7)
14. **Free-Rider Problem, Multitasking,** (O: 3.5, 9.6, 9.8, G: 3.2.B, AF)