Eco326: Advanced Economic Theory - Micro Information Economics

SB3131, Wednesday 11–1, Spring 2005

http://www.economics.utoronto.ca/board/teaching.html

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Description

This course analyses how markets function when agents have incomplete information. It explores how adverse selection may lead to the break down of markets and investigates how agents can overcome this through signalling and screening. The course also addresses a number of other topics including moral hazard, herding and cheaptalk. Applications covered in course include insurance markets, labour contracts, and advertising.

Prerequisites and Exclusions

Prerequisites:

- ECO200Y with 70% or ECO206Y

- ECO220Y or ECO227Y or (STA250H and STA257H) or (STA257H and STA261H).

Prerequisites are strictly checked and enforced and must be completed before taking a course. By taking this course you acknowledge that you will be removed from the course at anytime if you do no meet all requirements set by the Department of Economics. For further information you can consult the Undergraduate Academic Handbook which is found in the Economics Department Office, Kaneff Center Room 121. It can also be found in the 2005-2006 Courses Calendar which is available from the Registrars Office.

Grading

There will be two midterms and a final. Details:

- Midterm 1. 1st Feb 2006 (week 5). Covers weeks 1–4. Duration 1 hour.

- Midterm 2. 8th Mar 2006 (week 10). Covers weeks 1–9, emphasising weeks 5–9. Duration 1 hour.

- Final. Date TBA. Covers the entire course. Duration 2 hours.

The grade is given by

$$25\% \times \max\{\text{midterm 1, final}\} + 25\% \times \max\{\text{midterm 2, final}\} + 50\% \times \text{final}$$

Midterms are optional: no makeup midterms will be offered. Exams will be closed book. Requests for regrades will need to be in writing within one week of the exam being returned. To ensure consistency, I will regrade the entire test, not just a single question.

There will be three problem sets, however these will not be collected or graded: students are responsible for their own mastery of the solutions. Collaboration on problem sets is encouraged. I will put the problem sets by the website on the following dates.

- Homework 1. 18th Jan 2006 (week 3). Covers weeks 1–4.

- Homework 2. 22nd Feb 2006 (week 8). Mainly weeks 5–9.

- Homework 3. 15th Mar 2006 (week 11). Mainly weeks 10–13.

Academic Integrity

Students should note that copying, plagiarising, or other forms of academic misconduct will not be tolerated. Any student caught engaging in such activities will be subject to academic discipline ranging from a mark of zero on the assignment, test or examination to dismissal from the university as outlined in the academic handbook. Any student abetting or otherwise assisting in such misconduct will also be subject to academic penalties.

Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com web site.

Topics

Optional books:

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

- Salanie (1997), *The Economics of Contracts.*

Introduction to Asymmetric Information (3 weeks)

Asymmetric information introduces inefficiencies. The textbook monopoly problem can be interpreted as one of asymmetric information. Markets can also collapse when agents are privately informed. Warranties can solve these problems, but may not not be feasible.

- Akerlof (1970), "The Market for "Lemons": Quality Uncertainty and the Market Mechanism", Quarterly Journal of Economics, 488-500. The original article containing the two–type problem.

- MWG ch. 13A–13B. The source for the continuous type problem.

- The 2001 Nobel Prize was jointly won by Akerlof, Spence and Stiglitz. The press release: http://nobelprize.org/economics/laureates/2001/public.html

Signalling (3 weeks)

One way to overcome the problem of asymmetric information is for the informed party to take an action to signal their type. There are two main types of equilibria in these models. In pooling equilibria all the agents take the same action. More interestingly, if a single–crossing condition holds, there may be separating equilibria where agents can successfully signal their private information.

- MWG, ch. 13.C or Salanie ch. 4.2. Rigourous textbook treatments. There are many other textbooks that cover the model as well, e.g. Gibbons's or Osborne's game theory books.

- McAfee (2002), *Competitive Solutions*, ch. 13. This covers applications of signalling.

- Spence, "Job Market Signaling", Quarterly Journal of Economics, 355–374. The classic paper.

- Stiglitz (1975), "The Theory of 'Screening,' Education, and the Distribution of Income", American Economic Review, 283–300. A simple two–action model with lots of applications. A classic paper.

- Riley, J. (2001), "Silver Signals: Twenty-Five Years of Screening and Signaling", Journal of Economic Literature, 432–478. A survey article.

Information Disclosure (1 week)

What happens when parties can choose to disclose or hid verifiable information? We show that asymmetric information is no longer a problem for market efficiency.

- Milgrom (1981), "Good News and Bad News: Representation Theorems and Applications", The Bell Journal of Economics, p. 380-391. Section 5 of this paper is perhaps the best reference.

- Grossman (1981), "The Informational Role of Warranties and Private Disclosure about Product Quality", Journal of Law and Economics, p. 461-483.

- Grossman and Hart (1980), "Disclosure Laws and Takeover Bids", Journal of Finance, p. 323-334

- Milgrom and Roberts (1986), "Relying on the Information of Interested Parties", The RAND Journal of Economics, 18–32.

Competitive Screening (2 weeks)

Another way to overcome the problem of asymmetric information is for the uninformed party to offer a menu of contracts that cause different types of agents to choose different contracts.

- MWG ch. 13.D or Salanie ch. 3.3.1. Rigourous textbook treatments.

- Rothschild and Stiglitz (1976) "Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information", Quarterly Journal of Economics, 629-649. The classic paper. This analyses an insurance market rather than a labour market, but the logic is identical.

Moral Hazard (3 weeks)

What happens when a principal cannot observe how much effort an agent exerts? What's the best they can do? This is a powerful idea explaining why car insurance requires deductables and why unemployment insurance rarely works.

- Salanie ch. 5

- MWG ch. 14.B

- Milgrom and Roberts, *Economics, Organization and Management*, ch. 7.

- Lundberg and Startz (1983), "Private Discrimination and Social Intervention in Competitive Labour Markets", American Economic Review, 340–347.

Extra Topics

Cheaptalk (1 week)

What happens if a signal is costless? If agents interests coincide then the informed party may voluntarily release their private information. However, when interests are disparate, little communication will be feasible.

- Salanie ch. 4.3.

- Crawford and Sobel (1982), "Strategic Information Transmission", Econometrica, 1431–1451.

Signal Jamming (1 week)

Sometimes an agents' type may be visible, but agents have the ability to change other agents' perceptions by taking an action. This is called signal jamming.

- Holmstrom, (1999) "Managerial Incentive Problems: A Dynamic Perspective", Review of Economic Studies, 169-82.

- Fudenberg and Tirole (1986), "A 'Signal-Jamming' Theory of Predation", The RAND Journal of Economics, 366–376.

Herding (1 week)

Suppose many agents have private information. Agents make decisions sequentially and can observe the actions previously taken. In these situations a herd may develop, where all agents take the same action and ignore their own information.

- Banerjee (1992), "A Simple Model of Herd Behaviour", Quarterly Journal of Economics, 797–817.

- Bikhchandani, Hirshleifer and Welch (1998), "Learning from the Behavior of Others: Conformity, Fads, and Informational Cascades", Journal of Economic Perspectives, 151-170.