

THE UNIVERSITY OF
NEW SOUTH WALES



Australian School of Business
School of Economics

**ECON4102/ECON6301
STRATEGIC MARKET BEHAVIOR AND
GOVERNMENT REGULATION**

**COURSE OUTLINE
SESSION 1, 2008**

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1. COURSE STAFF

The presenter of the first half of the course will be

Associate Professor Hodaka Morita
Australian School of Business Building, Room 414
Tel: 9385 3341
Email: h.morita@unsw.edu.au
Office hours: TBA

The presenter of the second half of the course, and course coordinator, will be

Dr Shiko Maruyama
Quadrangle Building, Room Q3116
Tel: 9385 3386
Email: s.maruyama@unsw.edu.au
Office hours: TBA

1.1 Communication with Staff

Your questions are best answered during office hours or alternatively you can email us. Questions on each half of the course should be directed to the appropriate instructor.

2. INFORMATION ABOUT THE COURSE

2.1 Teaching Times and Locations

Monday 3pm – 6pm
Australian School of Business Building, Room 207

2.2 Units of Credit

6 UOC value for the course.

2.3 Parallel Teaching in the Course

Parallel teaching (ECON 4102/ECON6301) is involved in this course.

2.4 Relationship of This Course to Other Course Offerings

This course assumes that you have completed intermediate microeconomics, QMA, and QMB. Prerequisites and degree regulations are outlined in the UNSW Handbook.

3. COURSE AIMS AND LEARNING OUTCOMES

3.1 Course Aims

The purpose of this course is to introduce students to theoretical and empirical investigation into how, in the search for profits, firms exercise market power in a variety of settings and how the government may curb the negative side effects through regulation. Both monopoly and oligopoly market structures will be considered. We will investigate why monopolies occur, how they price and what the government should do in response. In oligopoly we consider what determines industry structure, through for example entry and exit or mergers, and the role of government regulation. For a variety of market structures we analyse firm strategies over prices, bundling, secondary markets, and product characteristics. Particular attention will be given to dynamic competition and collusion. The course emphasizes the importance of a theoretical understanding of strategic behaviour as the foundation for any practical application to industry.

3.2 Student Learning Outcomes

By the end of this course, you should be able to:

- Model the behaviour of monopolists in different circumstances.
- Evaluate the welfare implications of monopolists' behaviour.
- Solve game theory problems, as used in Industrial Organization.
- Understand the determinants of strategic behaviour in oligopoly markets.
- Understand the determinants of industry structure.
- Evaluate the welfare implications of strategic behaviour.
- Recognize the above theoretical effects in real-world data.

Evaluate empirical research in this field.

3.3 Approach to Learning and Teaching

This course will analyze a variety of important aspects of firms' strategic interactions in the market and their welfare and policy implications. We will develop rigorous theoretical models and empirical methodologies maintaining its close connections to reality, elaborate on economic logic and intuitions behind the analyses, and discuss real-world implications. Through this approach students learn how to apply economic theories and empirical methods to analyse a variety important issues.

3.4 Teaching Strategies

The major issues and models for a section are introduced in lectures followed by a discussion. Tutorials and assignments give you the opportunity to: (i) practise the techniques demonstrated in class, (ii) extend the analysis by deriving new results and/or by considering different situations, and (iii) evaluate the existing approaches on the basis of the associated empirical and theoretical literatures.

4. CONTINUAL COURSE EVALUATION AND IMPROVEMENT

Each year feedback is sought from students and other stakeholders about the courses offered in the School and continual improvements are made based on this feedback. UNSW's Course and Teaching Evaluation and Improvement (CATEI) Process is one of the ways in which student evaluative feedback is gathered.

5. LEARNING ASSESSMENT

5.1 Formal Requirements

In order to pass this course, you must:

- achieve a composite mark of at least 50; and
- make a satisfactory attempt at all assessment tasks (see below).

5.2 Assessment Details

- | | |
|--|-----|
| • Theory Problem Sets | 20% |
| • Class Participation, Empirical Section | 10% |
| • Empirical Problem Sets | 10% |
| • Final Exam | 60% |

Theory Problem Sets: There will be 2 theory problem sets. Each problem set will carry equal marks. Details will be provided in class. Assignments should be typed or clearly handwritten.

Class Participation and Problem Sets, Empirical Section: Each empirical paper is accompanied by a set of prepared questions. I will “cold call” students (ask one specific student to answer several questions, without asking for volunteers) in each meeting. I will also ask for volunteers for some questions. The participation grade will depend on performance in a cold call, and on volunteered contributions. Working in groups on the prepared questions is encouraged, but everyone must talk in class, not defer to a group spokesperson. Make a real attempt on all the questions, even the hard ones, as everyone can be cold-called. On several occasions (chosen at random) I will collect people’s answers to the questions, and the average of these will constitute the grade for ‘problem sets’.

Final Exam: The final exam will be comprised of two compulsory sections, one theoretical and one empirical. There will be a choice of questions in each section.

5.3 Assignment Format

Details will be provided with each piece of assessment.

5.4 Assignment Submission Procedure

Submission details for assignments will be provided in class. Assignments should be submitted at the beginning of the lecture in which they are due. Assignments should include your full name and student number. It is your responsibility to keep an extra copy of the assignment in case the original is lost or damaged.

5.5 Late Submission

Late submission of assignments will incur a penalty of 10% per day.

5.6 Special Consideration and Supplementary Examinations

UNSW Policy and Process for Special Consideration

(see <https://my.unsw.edu.au/student/atoz/SpecialConsideration.html>)

UNSW policy and information on special consideration, including supplementary exams can be found at: <https://my.unsw.edu.au/student/atoz/SpecialConsideration.html> . Further information concerning supplementary examinations is available on the ASB website.

6. ACADEMIC HONESTY AND PLAGIARISM

The University regards plagiarism as a form of academic misconduct, and has very strict rules regarding plagiarism. For full information regarding policies, penalties and information to help you avoid plagiarism see: <http://www.lc.unsw.edu.au/plagiarism/index.html>

Plagiarism is the presentation of the thoughts or work of another as one’s own.* Examples include:

- direct duplication of the thoughts or work of another, including by copying work, or knowingly permitting it to be copied. This includes copying material, ideas or concepts from a book, article, report or other written document (whether published or unpublished), composition, artwork, design,

drawing, circuitry, computer program or software, web site, Internet, other electronic resource, or another person's assignment without appropriate acknowledgement;

- paraphrasing another person's work with very minor changes keeping the meaning, form and/or progression of ideas of the original;
- piecing together sections of the work of others into a new whole;
- presenting an assessment item as independent work when it has been produced in whole or part in collusion with other people, for example, another student or a tutor; and,
- claiming credit for a proportion a work contributed to a group assessment item that is greater than that actually contributed.†

Submitting an assessment item that has already been submitted for academic credit elsewhere may also be considered plagiarism.

The inclusion of the thoughts or work of another with attribution appropriate to the academic discipline does *not* amount to plagiarism.

Students are reminded of their Rights and Responsibilities in respect of plagiarism, as set out in the University Undergraduate and Postgraduate Handbooks, and are encouraged to seek advice from academic staff whenever necessary to ensure they avoid plagiarism in all its forms.

The Learning Centre website is the central University online resource for staff and student information on plagiarism and academic honesty. It can be located at:

www.lc.unsw.edu.au/plagiarism

The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:

- correct referencing practices;
- paraphrasing, summarising, essay writing, and time management;
- appropriate use of, and attribution for, a range of materials including text, images, formulae and concepts.

Individual assistance is available on request from The Learning Centre.

Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

* Based on that proposed to the University of Newcastle by the St James Ethics Centre. Used with kind permission from the University of Newcastle

† Adapted with kind permission from the University of Melbourne.

7. STUDENT RESPONSIBILITIES AND CONDUCT

7.1 Workload

It is expected that you will spend at least **ten hours** per week studying this course. This time should be made up of reading, research, working on exercises and problems, and attending classes. In periods where you need to complete assignments or prepare for examinations, the workload may be greater.

Over-commitment has been a cause of failure for many students. You should take the required workload into account when planning how to balance study with employment and other activities.

7.2 Attendance

Your regular and punctual attendance at lectures and seminars is expected in this course. University regulations indicate that if students attend less than eighty per cent of scheduled classes they may be refused final assessment.

7.3 General Conduct and Behaviour

You are expected to conduct yourself with consideration and respect for the needs of your fellow students and teaching staff. Conduct which unduly disrupts or interferes with a class, such as ringing or talking on mobile phones, is not acceptable and students may be asked to leave the class. More information on student conduct is available at: www.my.unsw.edu.au

7.4 Keeping Informed

You should take note of all announcements made in lectures, tutorials or on the course web site. From time to time, the University will send important announcements to your university e-mail address without providing you with a paper copy. You will be deemed to have received this information. It is also your responsibility to keep the University informed of all changes to your contact details.

8. STUDENT RESOURCES

8.1 Course Resources

Recommended textbook: J. Tirole, (1988), *The Theory of Industrial Organization*, MIT Press.

Tirole is the recommended text and is the standard for a course at this level. You may however want to refer to these other text books:

(Advanced Level)

X. Vives, (1999), *Oligopoly Pricing: Old Ideas and New Tools*, MIT Press.

(Honours Level)

K. Basu, (1993), *Lectures in Industrial Organization Theory*, Blackwell Publishers.

O. Shy, (1995), *Industrial Organization: Theory and Applications*, MIT Press.

(Undergraduate)

D. Carlton, and J. Perloff (2005), *Modern Industrial Organization*, Pearson Addison Wesley.

8.2 Other Resources, Support and Information

The University and the ASB provide a wide range of support services for students, including:

Learning and Study Support:

• ASB Education Development Unit

The Education Development Unit (EDU) provides learning support and assistance to all students in the ASB, to enable them to enhance the quality of their learning. The EDU services are free, and tailored to meet the academic needs of students in the Australian School of Business.

The role of the EDU is to provide

- A range of support initiatives for students from the Australian School of Business in relation to their transition to university;
- Learning skills development, resources and activities for Business students
- Academic writing and skills workshops throughout the session;
- Printed and online study skills resources, such as referencing guides, report writing and exam preparation;
- A drop-in EDU Office containing books and resources that can be borrowed;
- A limited consultation service for students with individual or small group learning needs.

The EDU website www.business.unsw.edu.au/edu contains information, online resources and useful links as well as providing information and dates for workshops. More information about the EDU services including resources, workshop details and registration, and consultation request forms are available from the EDU Office.

EDU Contact Details

Location Room GO7 Ground Floor,
 West Wing, Australian School of Business Building

Telephone: 02 9385 5584

Email: Edu@unsw.edu.au

Website www.business.unsw.edu.au/edu

• UNSW Learning Centre (<http://www.lc.unsw.edu.au>)

In addition to the EDU services, the UNSW Learning Centre provides academic skills support services for all UNSW students. The Learning Centre is located on Level 2 of the Library and can be contacted by phone: 9385 3890 or through their website.

Technical support:

For any technical support issues (difficulty logging in to websites, problems downloading documents, etc) you can contact the UNSW IT Service Desk at: (02) 9385 1333 ; Email: servicedesk@unsw.edu.au

Counselling support - <http://www.counselling.unsw.edu.au>

Students experiencing problems of a personal or academic nature are encouraged to contact the Counselling Service at UNSW. This consultation service is free and confidential and run by professional counsellors. The Counselling Service also conducts workshops on topics such as 'Coping With Stress' and 'Procrastination'. The

Counselling Service is located on Level 2, Quadrangle East Wing, and can be contacted on 9385 5418.

Library training and support services - <http://info.library.unsw.edu.au>

Disability Support Services – Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the Course Coordinator or the Equity Officer (<http://www.studentequity.unsw.edu.au/disabil.html>). Early notification is essential to enable any necessary adjustments to be made.

In addition, it is important that all students are familiar with University policies and procedures in relation to such issues as:

- **Examination procedures** and advice concerning illness or misadventure <https://my.unsw.edu.au/student/academiclife/assessment/examinations/examinationrules.html>
- **Occupational Health and Safety** policies and student responsibilities; <https://my.unsw.edu.au/student/atoz/OccupationalHealth.html>

9. COURSE SCHEDULE

Not necessarily all of the following topics will be taught. The depth and inclusion of topics will depend on student and instructor interest.

Part 1: Morita (Weeks 1-6)

I. Basic Monopoly and Price Discrimination

II. Introduction to Game Theory with Perfect Information

III. Models of Oligopoly with Homogeneous Product

A. Bertrand competition, Cournot competition, solutions to the Bertrand Paradox

B. Antitrust Analysis of horizontal mergers

C. Entry and Social Efficiency

IV. Product Durability

A. Product Durability and Market Power

B. Planned obsolescence (if time allows)

V. Dynamic Competition and Collusion

VI. Entry

Part 2: Maruyama (Weeks 7-12)

VII. Product Differentiation: Price Competition and Non-Price Competition

VIII. Introduction to Empirical Industrial Organization

- A. Methodology: Linear Regression, Maximum Likelihood, and Limited-Dependent Variable Model
- B. The Reduced-Form (Non-Structural) Approach
- Gibson and Harris (1996), "Trade Liberalisation and Plant Exit in New Zealand Manufacturing", *Review of Economics and Statistics*, 78(3), 521-529.
- C. Entry and Competition in Oligopoly
- Bresnahan, T. (1987), "Competition and Collusion in the American Automobile Market; The 1955 Price War", *Journal of Industrial Economics*, 14(2), 301-314.
 - Bresnahan, T. and P. Reiss (1991), "Entry and Competition in Concentrated Markets", *Journal of Political Economy*, 99(5), 977-1009.
- D. Price Collusion
- Porter R (1983), "A Study of Cartel Stability: The Joint Executive Committee, 1880-1886," *Bell Journal of Economics*, 14(2), 301-314.
- E. Differentiated Products
- Berry, S. (1994), "Estimating Discrete-Choice Models of Product Differentiation", *RAND Journal of Economics*, 25(2), 242-262.
 - Mazzeo, M. (2002), "Product Choice and Oligopoly Market Structure", *RAND Journal of Economics*, 33(2):221-242.
- F. Mergers (if time permits)
- Baker J. and T. Bresnahan (1985) "The Gains From Merger or Collusion in Product-Differentiated Industries", *Journal of Industrial Economics*, 33(4), 427-444.
 - Baker J. and T. Bresnahan (1988) "Estimating the Residual Demand Curve Facing a Single Firm", *International Journal of Industrial Organization*, 6, 283-300.

Reading List

Specific directions on readings will be given in class.

I. Basic Monopoly and Price Discrimination

Tirole, Chapter 1 (Section 1.1.1), Chapter 3 (Sections 3.1, 3.2)

II. Introduction to Game Theory with Perfect Information

Tirole, Chapter 11 (Sections 11.1 – 11.3)

III. Models of Oligopoly with Homogeneous Product

A. *Bertrand competition, Cournot competition, solutions to the Bertrand Paradox*

Tirole, Chapter 5 (Sections 5.1 – 5.4, 5.7.2)

Kreps, D. and J. Scheinkman (1983), "Quantity Precommitment and Bertrand Competition Yield Cournot Outcomes," *Bell Journal of Economics*, **14**, 326-337.

B. Antitrust Analysis of horizontal mergers

Salant, S. W., Switzer, S., and Reynolds, R. J. (1983), "Losses from Horizontal Merger: The Effects of an Exogenous Change in Industry Structure on Cournot-Nash Equilibrium," *Quarterly Journal of Economics*, **XCVIII**, 185-199.

Deneckere, R. and Davidson, C. (1985), "Incentives to Form Coalitions with Bertrand Competition," *RAND Journal of Economics*, **16**, 473-486.

Farrell, J. and C. Shapiro (1990), "Horizontal Mergers: An Equilibrium Analysis," *American Economic Review*, **80**, 107-126.

C. Entry and Social Efficiency

Mankiw, G. and M. Whinston (1986), "Free Entry and Social Inefficiency," *RAND Journal of Economics*, **17**, 48-58.

Ghosh, A. and Morita, H. (2006), "Free Entry and Social Efficiency under Vertical Oligopoly," forthcoming in *RAND Journal of Economics*.

IV. Product Durability

A. Product Durability and Market Power

Coase, R. (1972), "Durability and Monopoly," *Journal of Law and Economics*, **15**, 143-149.

Bulow, J. (1982), "Durable Goods Monopolists," *Journal of Political Economy*, **90**, 314-332.

Waldman, M. (1997), "Eliminating the Market for Secondhand Goods: An Alternative Explanation for Leasing," *Journal of Law and Economics*, 61-92.

Waldman, M. (2003), "Durable Goods Theory for Real World Markets," *Journal of Economic Perspectives*, **17**, 131-154.

Morita, H. and M. Waldman (2004), "Durable Goods, Monopoly Maintenance, and Time Inconsistency," *Journal of Economics & Management Strategy*, **13**, 273-302.

B. Planned Obsolescence

Bulow, J. (1986), "An Economic Theory of Planned Obsolescence," *Quarterly Journal of Economics*, 729-749.

Waldman, M. (1993), "A New Perspective on Planned Obsolescence," *Quarterly Journal of Economics*, **108**, 273-283.

Choi, J. (1994), "Network Externality, Compatibility Choice, and Planned Obsolescence," *Journal of Industrial Economics*, 167-182.

V Dynamic Competition and Collusion

Tirole, Chapter 6.

Rotemberg, J. J. and G. Saloner, "A Supergame-Theoretic Model of Price Wars During Booms," *American Economic Review*, 76 (June 1986), 390-407.

Green, E. and R. Porter, "Non-cooperative Collusion Under Imperfect Price Information," *Econometrica*, 52 (January 1984), pp. 87-100.

VI. Entry

Tirole, Chapter 8

VII. Product Differentiation: Price Competition and Non-Price Competition

Tirole, Chapter 7

VIII. Introduction to Empirical Industrial Organization

For your general interests in this field, excellent reading lists of empirical industrial organization can be found in the websites of the following researchers:

Philip Haile, Ford Foundation Professor of Economics, Department of Economics, Yale University: <http://www.econ.yale.edu/~pah29/>

Liran Einav, Associate Professor, Department of Economics, Stanford University: <http://www.stanford.edu/~leinav/>

Aviv Nevo, Professor, Department of Economics, Northwestern University: <http://faculty.wcas.northwestern.edu/~ane686/>

Andrew Sweeting, Assistant Professor, Department of Economics, Duke University: <http://www.econ.duke.edu/~atsweet/index.html>