THE UNIVERSITY OF
NEW SOUTH WALES

Australian School of Business
School of Economics

ECON 4102 / ECON 6301

STRATEGIC MARKET BEHAVIOUR AND GOVERNMENT REGULATION

Course Outline

Semester 1, 2009

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1 STAFF CONTACT DETAILS

Lecturer-in-charge: Dr Shiko Maruyama
Room: Quadrangle Building, Room Q3116 (Green)
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Consultation Times – TBA

1.1 Communications with staff

You should feel free to contact the lecturer about any course specific inquiries. The lecturer may be contacted by email, during consultation time, or by appointment. Specific consultation hours will be posted on the course website.

Some information concerning administrative matters may also be obtained from the School of Economics Office on the fourth floor of the ASB Building.

2 COURSE DETAILS

2.1 Teaching Times and Locations

Tuesday 2 pm – 5pm, ASB 205.

2.2 Units of Credit

The course is worth 6 units of credit.

This course is taught in parallel to undergraduate (BEc Hons students) and postgraduate students in the MEc and PhD programs.

2.3 Summary of Course

Welcome to ECON 4102 / 6301! This is a course intended for honours and post graduate students interested in theoretical and empirical industrial organization. The main goal of this course is to provide students with a set of tools and knowledge so that they can critically read recent research papers and conduct their own original theoretical/empirical research in industrial organization. Particularly we focus on how firms exercise market power. The course consists of two parts: theory part (Weeks 1 - 5) and empirical part (Weeks 6 - 12). The assessment consists of Theoretical Problem Set (10%), Theory Project (20%), Empirical Problem Sets (10%), empirical part class participation (10%), and Final Exam (50%).

2.4 Prerequisite and Relationship to Other Courses

This course requires that you have completed QMA (ECON1202), QMB (ECON1203), and intermediate microeconomics (ECON2101) (or equivalent courses). In addition, this course assumes your knowledge of intermediate econometrics, so your completion of two econometrics courses such as ECON2206 and ECON2207 is strongly recommended. In particular, it is assumed that you have a solid understanding of basic game theory, elementary calculus, basic statistics and linear regression models, plus some knowledge of the method of maximum likelihood and discrete choice model estimation such as the Probit model.

2.5 Aims

The main goal of this course is to provide students with a set of tools and knowledge so that they can critically read recent research papers and conduct their own original theoretical/empirical research in industrial organization. Particularly we focus on investigation into how firms exercise market power in a variety of settings and how the government may curb the negative side effects through regulation. 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. Both monopoly and oligopoly market structures will be considered. The course consists of two parts: theory part (Weeks 1 - 5) and empirical part (Weeks 6 - 12). In the theory part, we will discuss:

- Monopolistic markets
- Oligopolistic industry structure
- The role of government regulation
- Firm strategies over prices, location choice, product characteristics, entry and exit, and mergers
- Dynamic competition and collusion

In the empirical part, we will read empirical research papers and discuss how these topics can be analysed with the real-world data and why it is relevant. Most papers we read will be challenging so that students will be exposed to the research frontier. Special attention will be paid to how to critically read challenging recent empirical papers.

2.6 Student Learning Outcomes

On completion of the course, students should be able to:

1. Analyse market power of firms theoretically and empirically;
2. Solve game theoretic models of oligopolistic markets;
3. Construct and present their own theoretic models of oligopolistic markets;
4. Evaluate the welfare implications of strategic behaviour;
5. Critically evaluate and discuss empirical research in this field; and
6. Distinguish the reduced-form approach and the structural approach in empirical research.

Graduate Attributes

Course Learning Outcomes	ASB Graduate Attributes
1, 2, 3, 4, 5	1. Critical thinking and problem solving
3, 5	2. Communication
3, 5	3. Teamwork and leadership
4	4. Social, ethical and global perspectives
1, 2, 3, 4, 5, 6	5. In-depth engagement with relevant disciplinary knowledge
1, 2, 3, 4, 5, 6	6. Professional skills

3 LEARNING AND TEACHING ACTIVITIES

3.1 Approach to Learning and Teaching in the Course

The philosophy underpinning this course and its Teaching and Learning Strategies are based on "Guidelines on Learning that Inform Teaching at UNSW. These guidelines may be viewed at: www.guidelinesonlearning.unsw.edu.au. Specifically, the lecturer, problem sets, class discussion and assessment have been designed to appropriately challenge students and support the achievement of the desired learning outcomes. A climate of inquiry and dialogue is encouraged between students and the lecturer and among students (in and out of class). The lecturer aims to provide meaningful and timely feedback to students to improve learning outcome.

3.2 Learning Activities and Teaching Strategies

Lectures provide a logical structure for the topics that make up the course; to emphasize the important concepts and methods of each topic, and to provide relevant examples to which the concepts and methods are applied.

Out-of-Class Study
This course will be rather demanding. While students may have preferred individual learning strategies, it is important to note that most learning will be achieved outside of class time. Lectures can only provide a structure to assist your study.

An "ideal" strategy (on which the provision of the course materials is based) might include:

1. Attendance at lectures. Here the context of the topic in the course and the important elements of the topic are identified. The relevance of the topic should be explained.
2. For Weeks 1 – 5, which covers theoretical topics, review the contents after the lecture, especially when you find difficulty. If reviewing does not bring you a clear understanding of the contents, capitalize on the consultation hours.
3. For Weeks 6 – 12, which covers empirical literature, read the assigned readings and try the problem sets **before the lecture.** This is a **requirement**. This is essential for you to understand the lecture and participate in the class discussion. You will internalize the concepts and models much more clearly if you spend time struggling with the material before lectures.
4. Attempt all the problem sets and assigned project.

4 ASSESSMENT

4.1 Formal Requirements

In order to pass this course, you must:

- achieve a composite mark of at least 50 out of 100; and
- make a satisfactory attempt at ALL assessment tasks (see below).

4.2 Assessment Details

Assessment Task	Weighting	Learning Outcomes assessed	ASB Graduate Attributes assessed	Due Date
Theory Problem Set	10%	1, 2, 4	1, 5, 6	5:00 pm, 30 March (Mon)
Theory Project	20%	1, 2, 3, 4	1, 2, 3, 5, 6	5:00 pm, 20 April (Mon)
Class Participation	10%	1, 5, 6	1, 2, 3, 5, 6	
Empirical Problem Sets	10%	1, 5, 6	1, 5, 6	
Final Exam	50%	1, 2, 4, 5, 6	1, 2, 5, 6	University Exam Period
Total	100%			

4.3 Theory Problem Set

There will be one theory problem set that counts 10 marks out of 100. It will be given in Week 2 and due at 5 pm on March 30 (Monday). Students must submit their work to the lecturer either electronically or in person.

4.4 Theory Project

There will be one theory project that counts 20 marks out of 100. This is expected to give students an opportunity to develop their own theoretical model under a real-world topic and present it. Students may work in groups of up to three students. Students must submit their work by 5:00 pm, 20 April to the lecturer, either electronically or in person. On 21 April (Week 6), students will be asked to make a short presentation on their models.

The assessment will be based on the submitted work, but the presentation is required for the project to be marked. Marking criteria are:

- Whether the work is appropriately based on what are taught in classes (20%);
- Discussion of why particular models are chosen in the given topic (10%);
- Whether the analytical work (derivation, calculation, applying concepts taught) is conducted accurately (50%);
- Addition of creative, interesting or realistic twists (20%).

Students who do not attend and do not have adequate reason will be awarded a mark of zero. Documentary evidence for an absence (e.g. medical certificate) must be provided to the Lecturer-in-charge. If approved, the student will have the project marked based on what is submitted.

Further details of the project and the format of presentation will be provided in class.

4.5 Class Participation and Empirical Problem Sets

In the second part of the course, we will read and discuss one empirical research paper per week. Each empirical paper is accompanied by a problem set. Students should carefully read the paper in advance and have the problem set ready for submission.

In each meeting in the second part of the course, I will "cold call" students (ask one specific student to answer several questions, without asking for volunteers). I will also ask for volunteers for some questions. The participation grade will depend on performance in a cold call, and on volunteered contributions. Higher marks will be given for students who contribute to class discussion in relevant and constructive ways.

Working in groups on the empirical problem sets 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 students' answers to the questions, and the average of these will constitute the grade for 'empirical problem sets'.

4.6 Assignment Submission Procedure

It is your responsibility to keep an extra copy of the assignment in case the original is lost or damaged. To be marked adequately, your assignment should be typed or clearly handwritten.

4.7 Late Submission of Assignment

Assignments submitted late will not be marked.

4.8 Final Exam Format

The final exam will be 3 hours and comprised of two compulsory sections, one theoretical and one empirical.

5 ACADEMIC HONESTY AND PLAGIARISM

The University regards plagiarism as a form of academic misconduct, and has very strict rules regarding plagiarism. For UNSW's policies, penalties, and information to help you avoid plagiarism see: http://www.lc.unsw.edu.au/plagiarism/index.html as well as the guidelines in the online ELISE tutorial for all new UNSW students: http://info.library.unsw.edu.au/skills/tutorials/InfoSkills/index.htm.

6 COURSE EVALUATION AND DEVELOPMENT

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. You are strongly encouraged to take part in the feedback process.

7 STUDENT RESPONSIBILITIES AND CONDUCT

Students are expected to be familiar with and adhere to university policies in relation to class attendance and general conduct and behaviour, including maintaining a safe, respectful environment; and to understand their obligations in relation to workload, assessment and keeping informed.

Information and policies on these topics can be found in the 'A-Z Student Guide': https://my.unsw.edu.au/student/atoz/ABC.html. See, especially, information on 'Attendance and Absence', 'Academic Misconduct', 'Assessment Information', 'Examinations', 'Special Consideration', 'Student Responsibilities', 'Workload' and policies such as 'Occupational Health and Safety'.

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 assignments 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 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 Keeping Informed

You should take note of all announcements made in lectures 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 AND SUPPORT

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

- **ASB Education Development Unit (EDU)** (www.business.unsw.edu.au/edu)

Academic writing, study skills and maths support specifically for ASB students. Services include workshops, online and printed resources, and individual consultations. EDU Office: Room GO7, Ground Floor, ASB Building (opposite Student Centre); Ph: 9385 5584; Email: edu@unsw.edu.au

- **UNSW Learning Centre** (www.lc.unsw.edu.au)

Academic skills support services, including workshops and resources, for all UNSW students. See website for details.

- **Library training and search support services:** http://info.library.unsw.edu.au
- **UNSW IT Service Desk:** Technical support for problems logging in to websites, downloading documents etc. Library, Level 2; Ph: 9385 1333. Website: www.its.unsw.edu.au/support/support_home.html
- **UNSW Counselling Service** (http://www.counselling.unsw.edu.au) Free, confidential service for problems of a personal or academic nature; and workshops on study issues such as 'Coping With Stress' and 'Procrastination'. Office: Level 2, Quadrangle East Wing ; Ph: 9385 5418
- **Student Equity & Disabilities Unit** http://www.studentequity.unsw.edu.au) Advice regarding equity and diversity issues, and support for students who have a disability or disadvantage that interferes with their learning. Office: Ground Floor, John Goodsell Building; Ph: 9385 4734

9 COURSE RESOURCES

9.1 Course Website

The website for this course is on WebCT Vista. The website will contain copies of:

- All course handouts;
- Lecturer notes:
- Assignments;
- Readings;
- Announcements.

Students should consult this website at least once a week as it contains important information about the course. It will be assumed that all students have seen any notice posted on the course website. Support for Vista can be found at: http://support.vista.elearning.unsw.edu.au

9.2 Textbook and Other Readings

There is no required text for the course but some material is taken from the following two texts:

(Advanced Level)
J. Tirole, (1988), *The Theory of Industrial Organization*, MIT Press.

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

The readings covered in the lectures are listed in the lecture schedule below. Students may also find the following advanced level textbooks useful for some parts of the course.

X. Vives, (1999), *Oligopoly Pricing: Old Ideas and New Tools*, MIT Press.
K. Basu, (1993), *Lectures in Industrial Organization Theory*, Blackwell Publishers.
O. Shy, (1995), *Industrial Organization: Theory and Applications*, MIT Press.

For more readings in the empirical literature, advanced students may find the following websites of top researchers useful:

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/

10 LECTURE SCHEDULE

The following schedule is tentative. Not necessarily all of the following topics will be taught. The depth and inclusion of topics will be adapted to the size, interest and composition of the class.

The first part of the course discusses basic issues of monopolistic and oligopolistic markets with theoretical models. We conclude the first part with assigned student presentations in Week 6. The second part of the course is an introduction to empirical industrial organisation. We will read and discuss top quality empirical research papers, aiming to present students the frontier of the relatively new field called New Empirical IO.

Week 1: 10 March Introduction & Basic Monopoly and Price Discrimination

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

Week 2: 17 March Introduction to Game Theory with Perfect Information

- Tirole, Chapter 11 (Sections 11.1 – 11.3)

Week 3: 24 March 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., S. Switzer, and R.J. Reynolds (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 C. Davidson (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 H. Morita (2006), "Free Entry and Social Efficiency under Vertical Oligopoly," *RAND Journal of Economics*, 38(2): 539-552.

Week 4: 31 March Dynamic Competition and Collusion; Entry

- 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.
- Tirole, Chapter 8

Week 5: 7 April Product Differentiation: Price Competition and Non-Price Competition

- Tirole, Chapter 7

Mid-semester Break

Week 6: 21 April Student Presentations; Empirical Method

Week 7: 28 April Reduced-Form Approach

- Gibson and Harris (1996), "Trade Liberalisation and Plant Exit in New Zealand Manufacturing", *Review of Economics and Statistics*, 78(3), 521-529.

Week 8: 5 May Collusion I: Bresnahan [1987]

- Bresnahan, T. (1987), "Competition and Collusion in the American Automobile Market; The 1955 Price War", *Journal of Industrial Economics*, 14(2), 301-314.

Week 9: 12 May Collusion II: Porter [1983]

- Porter R (1983), "A Study of Cartel Stability: The Joint Executive Committee, 1880-1886," *Bell Journal of Economics*, 14(2), 301-314.

Week 10: 19 May Entry: Bresnahan and Reiss [1991]

- Bresnahan, T. and P. Reiss (1991), "Entry and Competition in Concentrated Markets", *Journal of Political Economy*, 99(5), 977-1009.
- Manuszak, M. (2002), "Endogenous Market Structure and Competition in the 19th century American Brewing Industry," *International Journal of Industrial Organization*, 60: 673-692.

Week 11: 26 May Entry & Product Differentiation: Mazzeo [2002]

- Mazzeo, M. (2002), "Product Choice and Oligopoly Market Structure", *RAND Journal of Economics*, 33(2):221-242.

Week 12: 2 June Experimental Industrial Organisation

- McDonald, I. (2008), "*For the Student:* Behavioural Economics", *The Australian Economic Review*, 41(2): 222-8.
- Hinloopen, J. (2008), "Laboratory Evidence on the Effectiveness of Corporate Leniency Programs", *RAND Journal of Economics*, 39(2):607-616.