ILLINOIS STATE UNIVERSITY
DEPARTMENT OF ECONOMICS
Econ 443: Competition and Managerial Strategies
Fall Semester 2018

Classroom: STV 436
Time: TR 3:35p.m.- 4:50p.m.

Instructor: Dr. Chen
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Office: Stevenson 426K
Office Hours: by appointments only
Course Website: ReggieNet

Course Overview and Objective

Game theory has traditionally been a tool of economists, but its use in management situations has been growing rapidly in recent years. This trend is sure to continue. Managerial decisions are not static and cannot be made in isolation. Instead, a manager must account for the reactions of rival firms, subordinates, and superiors to his directives and proposals. Game theory is a tool one can use to examine these interactions.

The course provides an introductory but in-depth analysis of game theory and its applications to managerial strategy. The ultimate aim of the course is to strengthen students' ability to think strategically in business situations, rather than to teach you facts or theories. To achieve this goal, we will iterate between theory and practice. We will use a combination of formal theories and academic research papers, as well as closely related real-world examples to sharpen our strategic thinking skills. Upon course completion, you are expected to
- Develop a thorough understanding of basic game theory models and their applications to managerial decision.
- Develop game theoretical tools for managerial decisions in the areas of production level, pricing, competition, product mix, demand forecasting, and market analysis.
- Improve their economic intuition concerning the types of problems faced by managers and their solutions.
- Evaluate the impact of time and uncertainty on economic decision-making.
- Analyze the microeconomic news items in the media and evaluate them in light of the theories and relationships learned in class.
- Improve presentation skills, including developing the ability to convey information to others and to clearly explain using economic terminologies.
- Establish analytical skills using STATA for empirical research papers.

Recommended readings and additional materials

Required:
A list of reading materials will be posted on ReggieNet, mostly academic journal papers. Class discussions will also use selected chapters from several important textbooks (listed below).

Optional:
Games of Strategy by Avinash Dixit and Susan Skeath, (2014), 4th edition, Norton.

Industrial Organization – Contemporary Theory and Empirical Applications by Lynne Pepall, Dan Richards, and George Norman, (2014), 5th edition, Blackwell Publishing.

Prerequisites
ECO 240 or consent of the instructor.

Grading policy
Final course grades will be calculated as follows:
Class Participation   10%
Homework   10%   Midterm   20%
Quizzes   10%   Project   50%

The exact date of the midterm will depend on actual progress of the class. For more information, please check in-class announcements and/or through ReggieNet.

The following scale will be used to determine the final grade:
A   90 – 100 percent
B   80 – 89 percent
C   70 – 79 percent
D   60 – 69 percent
F   Below 60 percent

Class participation
Missing four or more classes will forfeit the *entire* class participation credit. However, attending each class does <u>not</u> automatically grant you the full credits. I expect a healthy give-and-take during the lectures. This requires that you be responsible enough to pay attention and read ahead, and more importantly, active participation in class discussions. The readings for each lecture will be posted on ReggieNet. Since there are lots of applications of the basic theory, you will have many opportunities to participate including playing games. In some cases, when teamwork is required, your participation grade heavily depends on the group performance. In others, your individual contribution matters more.

Absences due to Student Bereavement. Students who experience the death of an immediate family member or relative as defined in the University Student Bereavement Policy will be excused from class for funeral leave, subsequent bereavement, and/or travel considerations. Students are responsible for providing appropriate documentation to the Dean of Students office and for contacting the instructor as soon as possible to make arrangements for completing missed work. More information is available in the Student Bereavement Policy at
http://www.policy.illinoisstate.edu/2-1-27.shtml

POLICY ON CELL PHONES AND OTHER ELECTRONIC DEVICES: Cell phones must be turned off before class. I will not tolerate the use of cell phones, e.g., voice or text messaging, during class under ***any*** circumstances. There are ***no exceptions*** to these rules. <u>One</u> reminder email will be sent upon first violation, and any further violations will cause loss of the *entire* class participation credits (a 10% of your final grade).

Homework
Homework assignments are always due at the beginning of the class. **NO late homework will be accepted**. Always show steps to receive full credits. You are encouraged to discuss the assignments in groups; however, each should produce his/her own work. Duplicate copies will be returned with no credit.

Quizzes
A number of quizzes will be given during the first half of the semester. **NO make-up quiz is available.**

Midterm
The midterm is a closed-book and closed-notes test. A review sheet will be distributed prior to the exam. **There is <u>NO</u> make-up exam.** All questions are problem-solving. Working through quizzes and homework assignments is the best way to prepare for the exams.

Project
This is an individual assignment. Students should find an approved journal article to replicate and extend for the term project. After midterm, each student will present the model in the article, in addition to a 5-10 page draft. By the end of the semester, the final paper (15-20 pages) should extend the model by incorporating an empirical analysis. Finally, an oral presentation of the final paper is required. To ensure a good starting point, each student is required to meet with me individually to discuss the plan for your term project. Feel free to see me before that time and throughout the semester regarding the project. More detailed instructions will be provided later.

The goal of your paper is to incorporate both a theory component and an empirical analysis using Stata to fully answer the research question you have chosen. Ultimately, the final version of your paper could be developed into your capstone paper, and be potentially submitted to a reputable journal for publication. To learn the most up-to-date research topics, consider these top journals in the field for inspiration:
- American Economic Review
- Journal of Political Economy
- Quarterly Journal of Economics
- RAND Journal of Economics
- American Economic Journal of Micoeconomics
- Journal of Industrial Economics
- International Journal of Industrial Organization
- International Journal of Game Theory

Timeline and grade distribution:
- In-person consultation (during the first two weeks of October)
- Proposal: an outline of your paper including the main research questions and the significance of your topic (10/18) – 10%
- Progress report and in-class presentation (11/8) – 35%
  - A 5-10 page paper consisting of the following sections: Introduction, Literature Review, A Simple Theoretical Model, Data and Preliminary Results
  - A 15-minute presentation
- Final paper (12/6) and in-class presentation (11/27 or 11/29) – 55%
  - A 15-20 page paper.
  - A 30-minute presentation

Course outline: Topics and Readings *(Very Tentative)*

DS = Dixit and Skeath
PRN = Pepall, Richards, and Norman
RM = Reading materials to be distributed on ReggieNet

Part I. The Basics

Games with Continuous Strategies: Oligopoly Models	DS Ch.5
Games with Mixed Strategies	DS Ch7
Hotelling Model	PRN Ch7
Price Competition: Oligopoly Models in a Spatial Setting	PRN Ch10

Varian, H. (1980). A Model of Sales. *The American Economic Review, 70*(4), 651-659. Retrieved from http://www.jstor.org/stable/1803562

Baye, M., & Morgan, J. (2001). Information Gatekeepers on the Internet and the Competitiveness of Homogeneous Product Markets. *The American Economic Review, 91*(3), 454-474. Retrieved from http://www.jstor.org/stable/2677873

Baye, M., & Morgan, J. (2004). Price Dispersion in the Lab and on the Internet: Theory and Evidence. *The RAND Journal of Economics, 35*(3), 449-466. Retrieved from http://www.jstor.org/stable/1593702

Gans, J., & King, S. (2006). Paying for Loyalty: Product Bundling in Oligopoly. *The Journal of Industrial Economics, 54*(1), 43-62. Retrieved from http://www.jstor.org/stable/3569869

Choi, J. (2010). TYING IN TWO-SIDED MARKETS WITH MULTI-HOMING. *The Journal of Industrial Economics, 58*(3), 607-626. Retrieved from http://www.jstor.org/stable/40985901

Part II. The Applications

Search theories

Baye, M., & Morgan, J. (2004). Price Dispersion in the Lab and on the Internet: Theory and Evidence. *The RAND Journal of Economics, 35*(3), 449-466. Retrieved from http://www.jstor.org/stable/1593702

Baye, M., Morgan, J., & Scholten, P. (2003). The Value of Information in an Online Consumer Electronics Market. *Journal of Public Policy & Marketing, 22*(1), 17-25. Retrieved from http://www.jstor.org/stable/30000838

Hotelling model and its extensions

Gravelle, H., Scott, A., Sivey, P. and Yong, J. (2016), Competition, Prices and Quality in the Market for Physician Consultations. J Ind Econ, 64: 135–169. doi:10.1111/joie.12098

Chen, J., & Waters, G. (2017). Firm efficiency, advertising and profitability: Theory and evidence. *The Quarterly Review of Economics and Finance*, 63, 240-248. doi:10.1016/j.qref.2016.04.004

Hastings, J. (2004). Vertical relationships and competition in retail gasoline markets: Empirical evidence from contract changes in Southern California. *American Economic Review,* 94 (March), 317-328.

Lach, S. and Moraga-González, J. L. (2017), Asymmetric Price Effects of Competition. J Ind Econ, 65: 767–803. doi:10.1111/joie.12158

Chen, J. & Fu, Q. Do exclusivity arrangements harm consumers? J Regul Econ (2017) 51: 311. https://doi.org/10.1007/s11149-017-9325-y

Empirical applications

Chen, J., & Liu, Q. (2011). THE EFFECT OF MOST-FAVORED CUSTOMER CLAUSES ON PRICES. *The Journal of Industrial Economics, 59*(3), 343-371. Retrieved from http://www.jstor.org/stable/41289458

Lin, H. and Wang, I. Y. (2015), Competition and Price Discrimination: Evidence from the Parking Garage Industry. J Ind Econ, 63: 522–548. doi:10.1111/joie.12080

Gregory J. Werden, Andrew S. Joskow and Richard L. Johnson. (1991). The Effects of Mergers on Price and Output: Two Case Studies from the Airline Industry. *Managerial and Decision Economics*, 12(5), 341-352.

Zhuo, R. (2017), Do Low-Price Guarantees Guarantee Low Prices? Evidence from Competition between Amazon and Big-Box Stores. J Ind Econ, 65: 719–738. doi:10.1111/joie.12154

Important Note: Academic integrity is a serious matter, and any deviations from appropriate behavior (such as plagiarism) will be dealt with strongly. You are prohibited from using any old answer keys to exams and homework sets distributed in my prior courses, unless I have distributed them myself. Any published work that is used in your assignments must contain the appropriate citation. At my discretion, situations of concern may be dealt with as a scholastic matter or a disciplinary matter. As a scholastic matter, I have the discretion to determine appropriate penalties to your workload or grade, but the situation may be resolved without involving many individuals. An alternative is to treat the situation as a disciplinary matter, which can result in suspension from the University, or have lesser penalties. Be aware that I view this as a very serious matter, and will have little tolerance of or sympathy for questionable practices. A student who attempts to obtain credit for work that is not his/her own (whether that be on a paper, quiz, homework assignment, exam, etc.) will likely receive a failing grade for that item of work, and at my discretion, may also receive a failing grade in the course.