

# EE481: Industrial Economics

## Overview

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15 August 2012

## Contact Information

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# Textbooks

- Textbooks

- Carlton, D.W. and J.M. Perloff, *Modern Industrial Organization*, 4th Edition, Pearson Addison-Wesley Press, 2005. (Maintext, abbreviation = CP)
- Rasmusen, E., *Games & Information*, 3rd. Edition, Backwell, 2001.
- Church, J. and R. Ware, *Industrial Organization: A Strategic Approach*, International Edition, McGraw-Hill Press, 2000. (Supplement text, CW)
- Tirole, J., *Industrial Organization*, The MIT Press, 1989.

## Other Readings

- Harvard Business Review (<http://hbr.org/>)
- The Economist (<http://www.economist.com/>)
- Prachachat Online (<http://www.prachachat.net/>)
- Bangkokbiznews (<http://www.bangkokbiznews.com/home/>)

## Grading

- 10% Homework and Pop quizzes
- 15% Short Essays (2 people, count the best 2 out of 3)
- 5% Group Presentation at the end of the term (5-6 people, on a case study)
- 30% Midterm Exam
- 40% Final Exam

## The Works

- Late homework = 50% of the earned points
- Essays = 3 pages (double spaced). Should include proper reference. Otherwise, you will get an "F". Late essays not accepted. The best 2 of 3 counts.
- Presentation = a group of 5-6 students present their solution to a case study. The presentation takes at most 15 minutes. Overtime is punished by 2 minutes = 1%.
- Pop quizzes = every time students talk while I teach. Otherwise, the 5% is yours for free.

## The Purpose of this Course

- The purpose of this course is **NOT** to teach you how to do business.
- This course will teach you how to apply economics theory to explain firms behaviors.
- This course will enable you to view business situations from the society's perspective using economics tools.

# What is Industrial Organization?

- “The Study of the structure of firms and markets and of their interactions” (Carlton and Perloff, 2005)
  - For example: a study of how **commercial banks** in Thailand **compete** in the **credits market**.
    - firms -> commercial banks
    - market -> credits market
    - interactions -> how firms compete, strategies they use
  - Or .. a study of how **phamaceutical companies** set price of their products.

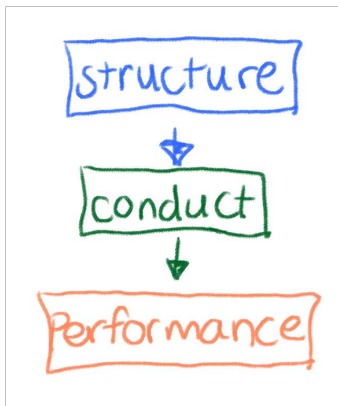
## Major tools used in this course

- 1 Structure-Conduct-Performance (SCP)
- 2 Game Theory
- 3 Price Theory
- 4 Transaction Costs Theory

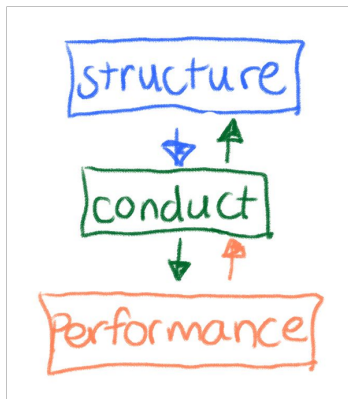
# Structure-Conduct-Performance

- Structure = Factors that determines competitiveness of the market, i.e. number of firms, barriers to entry, etc.
- Conduct = behavior of firms, i.e. whether they are collusive, type of competition strategies used, etc.
- Performance = Competition outcomes, i.e. whether firms can deliver the most efficient outcome or the highest benefits to the consumers.

# Structure-Conduct-Performance



# Structure-Conduct-Performance



# What will you learn in this course?

- 1 Learn how to analyze the **market structure** of an industry
  - Monopoly, duopoly, oligopoly, perfect competition
  - Barriers to entry
  - Product differentiation
  - Vertical integration
- 2 Learn about different competition strategies (**conducts**) firms adopt to compete
  - Collusion, Merger, Advertising, R&D, Pricing behavior, etc.
- 3 Learn how we can assess firms' **performance** from the society's point of view
  - Price, Production Efficiency, Equity, etc.
- 4 Learn what the government can do in order to promote for more desirable outcomes (**performance**).
  - Anti-trust policy, Government Regulation

## Questions we will explore (for example)

- Why do firms offer price match deals?
- Why do firms sometimes sell their products in bundles?
- Why do firms form a cartel?
- Why do manufacturers set price for their retailers?

# The Objective of a Firm

- Firm = an organization that transforms inputs into outputs
- Neo-Classical Theory of the Firm (**we use this theory in this course**)
  - Most firms maximize profits
  - Firms utilize its resources in the most efficient way
- There are some other theories of the firm, for example, managerial and behavioral theories. We don't use them in this course.

# Ownership and Control

## Three Basic Forms of Ownership

- 1 Sole proprietorships - owned by 1 owner
- 2 Partnerships - owned by multiple owners
- 3 Corporations - companies whose capital is divided into shares.  
A corporation raises funds through two channels
  - 1 from shareholders (equity owners)
  - 2 from debt holders (banks, people who buy the company's corporate bonds)

## Separate Ownership and Control

- Managers (employees) may not have an incentive to maximize the owners' (shareholders') profits.
- The owners have to find ways to make the managers maximize their owners' interests.

**How?**

# Size of Firms, Mergers and Acquisitions

- Smaller firms are easier to administer but larger firms can 1) do more activities and 2) experience economy of scale/scope.
- How do firms increase their size?
  - Keep accumulating assets and invest
  - Vertical Merger
  - Horizontal Merger
  - Conglomerate Merger

## Types of Costs (you should know about this already)

- Firms minimize costs in order to operate efficiently. However, what kind of cost it minimizes? Some important types of costs:
  - 1 Fixed Costs ( $F$ )
  - 2 Variable Costs ( $VC$ )
  - 3 Total Costs ( $C = F + VC$ ) or ( $TC = F + VC$ )
  - 4 Average Cost ( $AC = \frac{C(q)}{q}$ ) or ( $ATC = \frac{TC(q)}{q}$ )
  - 5 Average Variable Cost ( $AVC = \frac{VC(q)}{q}$ )
  - 6 Average Fixed Cost ( $AFC = \frac{F}{q}$ )

## Types of Costs (Fill in the Blank)

Output	$F$	$AFC$	$VC$	$AVC$	$TC$	$ATC$	$MC$
0	100	-	0	-	100	-	-
1	100	100	10		110		10
2	100		19	9.5	119	59.5	
3	100	33.3	25	8.3	125	41.7	6
4	100		32		132	33	
5	100		40	8.0		28	8
6	100	16.7	49	8.6	149	24.8	
7	100	14.2	60	9.1		22.9	11
8	100	12.5	73	9.8	173	21.6	13
9	100	11.1	88	10.8	188	20.9	

## Short Run vs. Long Run

- Short Run - not enough time to change the factors of production or production technology.
- Long Run - long enough time to allow change in the factors of production or production technology.

## Economy of Scale

- Economies of scale (or increasing returns to scale) -  $AVC$  falls as output increases
- Constant returns to scale -  $AVC$  is constant
- Diseconomy of scale (or decreasing returns to scale) -  $AVC$  increases as output increases
- Minimum Efficient Scale (MES) - the minimum units of output required to produce in order to achieve the lowest long-run average cost.

# Indivisibilities Create Economies of Scale

- 1 Long-run fixed costs, Set-up costs
- 2 Specialized resources and the devision of labor
- 3 Volumetric returns to scale
- 4 Economies of massed reserves



## Economy of Scope

- There are positive spillovers (cost-saving, cost-sharing) effects when 1 firm produces more than 1 type of products.

$$C(q_1, q_2) < C(q_1, 0) + C(0, q_2),$$

where  $C(\bullet)$  is the cost function,  $q_1$  is output of product 1,  $q_2$  is output of product 2.

# Reference and Further Reading I

-  Carlton, D.W. and J.M., Perloff.  
*Modern Industrial Organization*. 4th Edition.  
Pearson Addison Wesley Press, 2005.
-  Church, J. and R. Ware.  
*Industrial Organization: A Strategic Approach*. International Edition.  
McGraw-Hill Press, 2000.