

## Introduction

K. Graddy  
*Industrial Organization*

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## Outline

- Introduction
- What is industrial organization?
- Topics to be covered
- Industrial Organization and Antitrust
- History of Industrial Economics

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## Industrial Organization is the Study of Imperfect Competition

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## Oligopoly and Game Theory

- Extreme market structures: Monopoly and perfect competition. No need to consider rivals' reactions.
- Oligopoly: An intermediate market structure consisting of only a few firms. Need to consider rivals' reactions.
- Strategic interdependence is the essence of oligopoly.

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## Two Approaches

- Business is war  
“It is not enough to succeed. Others must fail.”  
-- Gore Vidal
- Cooperation  
“You don't have to blow out the other fellow's light to let your own shine”  
-- Bernard Baruch

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## Cooperation

- The “best” outcome for an oligopoly is to act as one firm
- Collusion is illegal
- Cooperating without colluding

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## Strategy and Economics

- Princeton in the 1940's
  - John von Neumann and Oscar Morgenstern
  - John Nash: Nash Equilibrium
- Economics and Politics
  - Thomas Schelling
  - *The Strategy of Conflict, Arms and Influence*
  - Dixit and Nalebuff
  - *Thinking Strategically*
- Business Strategy
  - Brandenburger and Nalebuff
  - *Coopetition*

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## The Prisoner's Dilemma

Tchaikovsky

		Hold Out	Confess
		Hold Out	3, 3
Confess	25, 1	10, 10	

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## Focal Points Tacit Collusion

- 3 examples
    - 1) Lunch in Paris – behavioral norms
    - 2) The X-game – status quo
    - 3) Split the dollar -- fairness
- (from Shelling "Strategy of Conflict")

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## Topics

- Competition and Monopoly
- Market Structure and Costs
- Price Discrimination
- Product Differentiation
- Oligopoly and Cartels
- Entry Deterrence and Predatory Strategies
- Auctions
- Vertical Integration
- Information and Advertising
- Innovation

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## Course Mechanics

(Go to outline)

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## Industrial Organization and Antitrust Issues

- 'People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some instances to raise prices.'
- Adam Smith, *The Wealth of Nations*, 1776

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## Legal Approach: US

- Sherman Act– 1890
  - Every person who shall monopolize or attempt to monopolize, or combine and conspire with any other person or persons, to monopolize any part of the trade or commerce among several States or with foreign nations, shall be deemed guilty of a felony.
- Monopoly status alone is not illegal
- Concentrate on abuses of power

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- Price Collusion is a criminal act
- A “Smoking Gun” is important
- Increasing use of Clemency Agreements in order to improve detection

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## Legal Approach: EU

- Promotion of competition within the single European market
- Emphasis on attacking any behaviour which might appear to segment the European market into national markets
- Exemptions are made for R&D agreements, etc, which improve production efficiency

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## Concentration Indices

- M-firm concentration ratio (adds up the m highest shares in the industry)  $R_m = \sum_{i=1}^m \alpha_i, C_1, C_4$
- Herfindahl Index (equal to the sum of the squares of the market shares):  $H = \sum_{i=1}^m \alpha_i^2$

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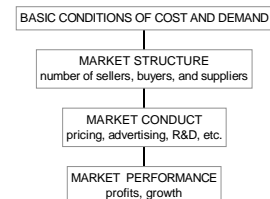
## The merger Guidelines and the HHI

- No concern if postmerger HHI is below 1000
- If postmerger HHI is between 1000 and 1800, no concern if postmerger change in HHI is 100 points or less.
- If over 1800, a merger raises concerns if the change in the HHI resulting from the merger is 50 points or more.

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## 1950's – Structure, Conduct, Performance Paradigm



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## Structure-Conduct-Performance Paradigm

- The SCP paradigm assumed a chain of causality which ran from market structure (entry barriers X, concentration C) to firm behaviour (collusion, conjectural variation, entry deterrence) to performance (profits):
- $S \rightarrow C \rightarrow P$
- Bain Data: 42 US industries in 1940s and their profit rates
- Results:

CR8	(p-c)/p
CR8 > 70%	11.8%
CR8 ≤ 70%	7.5%

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## Characteristics of SCP

- Empirical in Nature
- $\text{Profits} = a * (\text{concentration ratio}) + b * (\text{barriers to entry}) + \dots + e$
- Problems with causation
- Says little about causes of concentration or market power
- Empirical issues
- Porter's 5 forces

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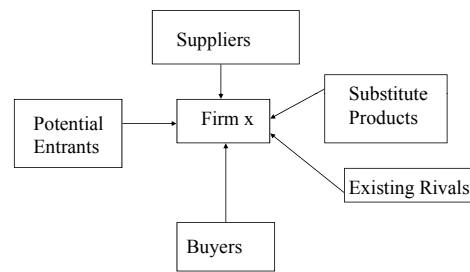
## SCP in Management

- Richard Caves and then Michael Porter (Harvard) have followed Bain's lead
  - Results in Porter's 5-forces– firms should choose to be in industries with the most favourable structure
  - 5-forces: buyers, supplies, rivals, potential entrants, substitute products (not a bad way to approach an industry analysis)

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## Porter's 5 Forces



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## New Theoretical IO

- Based on behavioural stories and stylised facts
- Formalized informal stories, rejected others
- Interesting and challenging – greatly influenced by game theory
- Difficult to test empirically

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## New Empirical IO

- Detailed studies of individual industries
- Intensive data collection of prices
- Generally interested in estimated structural parameters such as elasticities
- Little "testing" of models

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## Conclusion

- Overview of industrial organization
- Topics to be covered and course mechanics
- Antitrust Policy
- History of Industrial Economics