

**Chapter 17: Oligopoly**  
**Principles of Economics, 5<sup>th</sup> Edition**  
**N. Gregory Mankiw**  
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1. Introduction:

- a. The key to oligopoly—an industry with few sellers—is the interdependence of the firms.
- b. *Because it is much more dependent on the personalities of the players, it is more difficult to model.*
- c. *To the extent possible, oligopolistic firms will avoid price competition because it can be so easily matched.*
- d. *There are incentives of collude, which is illegal, but the largest gains will go to the party who cheats first on any agreement so any agreements are very fragile.*
- e. Oligopoly is a market structure in which only a few sellers offer similar or identical products. P. 365.
- f. Game theory is the study of how people behave in strategic situations. P. 365.

2. Markets with Only a Few Sellers

- a. A key feature of oligopoly is the tension between cooperation and self-interest.
- b. A Duopoly Example
  - i. A duopoly consists of two sellers.
  - ii. **Table 1: The Demand Schedule for Water. P. 367**
- c. Competition, Monopolies, and Cartels
  - i. What are the outcomes that we might expect from our duopoly?
  - ii. Def: Collusion is an agreement among firms in a market about quantities to produce or prices to charge. P. 367
  - iii. Def: Cartel is a group of firms acting in unison. P. 367
    - (1) *Cartels seldom work because of the incentives to cheat.*
- d. The Equilibrium for an Oligopoly
  - i. Here the assumption is that one seller assumes that the other will keep its output constant.
  - ii. Usually results in an outcome between monopoly and competition.
    - (1) Def: Nash equilibrium is a situation in which economic actors interacting with one another each choose their best strategy given the strategies that all the other actors have chosen. P. 368
    - (2) *John Nash's life was presented in the book and movie, A Beautiful Mind, which present different perspectives on him.*
    - (3) *Nash won the Nobel in Economics for his work on game theory.*
  - iii. When firms in an oligopoly individually choose production to maximize profit, they produce a quantity of output greater than the level produced by monopoly and less than the level produced by competition.
  - iv. The oligopoly price is less than the monopoly price but greater than the competitive price (which equals marginal cost).
- e. How the Size of an Oligopoly Affects the Market Outcome
  - i. In making decisions, the seller weights two effects:
    - (1) The output effect as selling more increases profits.

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- (2) The price effect as selling more reduces the price.
- (3) As the number of sellers increases, the output effect dominates the price effect.
  - ii. As the number of sellers in an oligopoly grows larger, an oligopolistic market looks more and more like a competitive market.
  - iii. The price approaches marginal cost, and the quantity produced approaches the socially efficient level.

3. The Economics of Cooperation

- a. *Game theory is more useful to describe what happened than to predict what will happen because it requires much more information than is commonly available.*
- b. The prisoners' dilemma is a particular "game" between two captured prisoners that illustrates why cooperation is difficult to maintain even when it is mutually beneficial. P. 370
  - i. Def: Dominant strategy is a strategy that is best for a player in a game regardless of the strategies chosen by the other players. P. 371.
    - (1) Here it is for both of them to confess.
  - ii. **Figure 1: The Prisoners' Dilemma. P. 371**

		Bonnie's Decision	
		Confess	Remain Silent
Clyde's Decision	Confess	8 each	B-20, C-free
	Remain Silent	B-free, C-20	1 year

- c. Oligopolies as a Prisoners' Dilemma
  - i. **Figure 2: Jack and Jill's Oligopoly Game. P. 372**
  - ii. Based on production levels.
- d. **Case Study: OPEC and the World Oil Market, P. 373**
  - i. *Members create and many do not belong.*
- e. Other Examples of the Prisoners' Dilemma
  - i. Arms Races
    - (a) **Figure 3: An Arms Race Game. P. 374**
  - ii. Advertising can be another example of prisoners' dilemma.
  - iii. Common Resources
    - (a) **Figure 4: A Common Resources Game. P. 375**
- f. The Prisoners' Dilemma and the Welfare of Society
  - i. Sometimes co-operation is good and sometimes it is bad.
- g. Why People Sometimes Cooperate

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- i. Because of repeat games and penalties
    - h. Case Study: The Prisoners' Dilemma Tournament, P. 376.**
      - i. The winner was a tit for tat strategy.
    - i. In The News: Aumann and Schelling, P. 377.**
      - i. Economic Work on "Game Theory" Wins Nobel Price
- 4. Public Policy Toward Oligopolies
  - a. Restraint of Trade and the Antitrust Laws
    - i. Case Study: An Illegal Phone Call, P. 379**
  - b. Controversies over Antitrust Policy
    - i. Resale Price Maintenance
      - (1) *It would normally be irrational for a wholesaler to want a high retail price.*
      - (2) It will encourage non-price competition.
    - ii. Predatory Pricing
      - (1) *To drive others out of market, the predator has to price below average variable cost.*
      - (2) The predator incurs the highest losses.
      - (3) *To recoup its losses, even if successful in driving out existing firms, a concern is the ability to keep out new entrants.*
    - iii. Tying
      - (1) *The book presents an example from the movie industry.*
      - (2) *Another example of price discrimination occurs when a machine is leased and the supplies are priced above marginal cost.*
        - (a) *The user with strong demand pays more than those with weak demand.*
  - c. **In the News: A Reversal of Policy, P. 382.**
    - i. Century Old Ban Lifted on Minimum Retail Pricing
  - d. **Case Study: The Microsoft Case, P. 383**
- 5. Conclusion
- 6. Summary