**Chapter 10**

**Monopolistic Competition and Oligopoly**

* Monopolistic Competition involves a relatively large number of operating in a non-collusive way and producing differentiated products with easy industry entry and exit.
* In the short run, a monopolistic competitor will maximize profit or minimize loss by producing the output at which marginal revenue is equal to marginal cost (*MC+MR)*.
* A monopolistic competitor’s long run equilibrium output is such that price exceeds the minimum average total cost (implying that consumer does not get the product at lowest price attainable) and price exceeds marginal cost (indicating that resources are under-allocated to the product).
* The efficiency loss (or deadweight loss) associated with monopolistic competition is greatly muted by the benefits consumer receive from product variety.
* An oligopoly is made up of few firms producing either homogeneous or differentiated products, these firms are mutually interdependent.
* Barriers to entry as scale economies, control of patents, strategic resources, ability to engage in retaliatory pricing characterized oligopolies. Oligopolies may result from internal growth of firms, mergers or both.
* The four-firm concentration ratio shows the % of an industry’s scale accounted for by its four largest firms, the herfindahl index measure the degree of market power in an industry by summing the squares of the % market share held by the individual firm in the industry.
* Game theory reveals that **a.** oligopolies aremutually interdependent in their pricing policies **b.** collusion enhances oligopoly profit **c.** there is a temptation for oligopolists to cheat on a collusive agreement.
* In the kinked-demand theory of oligopoly, price is relatively inflexible because a firm contemplating a price change assumes that it rivals will follow a price cut and ignore a price increase.
* Cartels agree on production limits and set a common price to maximize the joint profit of their members as if each were a unit of a single pure monopoly.
* Collusion among oligopolists is difficult because of **a.** demand and cost difference between sellers **b.** the complexity of output coordination among producers **c.** the potential of cheating **d.** a tendency for agreement to break down during recession’s **e.** the potential entry of new firms **f.** antitrust laws.
* Price leadership involves an informal understanding among oligopolists to match any price change initiated by a designated firm (often the industry’s dominant firm).

**MCQ’s on “Monopolistic Competition and Oligopoly”**

1. Compared to a competitive firm, a monopolistically competitive firm:
	* Faces a less elastic demand curve
	* Is less likely to advertise its product
	* Faces a more elastic demand curve
	* Can earn positive profits in the long run
2. An industry whose Herfindahl index is 5300, producing a standardized product, is most likely an example of:
	* Pure competition
	* Monopolistic competition
	* Oligopoly
	* Pure monopoly
3. Use the payoff matrix (***diagram is at last option X***) to answer the next question: Refer to the matrix, which shows the profit payoffs to each of two oligopolistic firms of following either a high- or low-price policy. Gamma's payoffs are in the lower left corner of each cell; Delta's in the upper right. If Gamma uses a high-price strategy and Delta uses a low-price strategy:
* Their profits will be the same
* Gamma's profits will exceed Delta's profits
* Delta would prefer to switch to a high-price strategy
* Gamma would prefer to switch to a low-price strategy
1. Suppose several firms in a purely competitive industry begin to experiment slightly with their product designs. This product differentiation allows them to modestly increase their prices and increase their short-run profits. The industry now more closely resembles:
* Pure monopoly
* Oligopoly
* Monopolistic competition
* Competitive monopoly
1. Suppose only three airlines service a particular route. One of the airlines typically signals its price intentions through a daily posting on its internet site, which the other two quickly match. This best describes:
* Cost-plus pricing
* Price leadership
* A cartel
* Game theory
1. If an oligopolists demand curve is kinked at the going price::
* The loss in revenue from reducing output by one unit exceeds the gain in revenue from expanding output by one unit
* The gain in revenue from expanding output by one unit exceeds the loss in revenue from reducing output by one unit
* Total revenue will remain constant if price is changed in either direction
* Profits will rise if price is increased but fall if price is decreased
1. Use the following diagram to answer the next question. The monopolistically competitive firm illustrated in the diagram exhibits productive inefficiency because its profit maximizing:
* Output is not at the intersection of demand and marginal cost
* Output is not at the intersection of marginal cost and average total cost
* Price exceeds marginal revenue
* Price exceeds marginal cost
1. In an oligopolistic industry:
* Firms behave strategically
* Output is produced at minimum average total cost
* Firms make price and output decisions without regard to the responses of their rivals
* High profits will attract many new entrants to the industry
1. A particular industry consists of three firms whose market shares are 50%, 30%, and 20%. The Herfindahl index for the industry is:
	* 33.3
	* 100
	* 2400
	* 3800
2. Use the following payoff matrix to answer the next question. Refer to the matrix, which shows the profit payoffs to each of two oligopolistic firms of following either a high- or low-price policy. Gamma's payoffs are in the lower left corner of each cell; Delta's in the upper right. If both firms make their decisions independently, the most likely outcome is:
* $50 for both Gamma and Delta
* $30 for both Gamma and Delta
* $75 for Gamma and $20 for Delta
* $20 for Gamma and $75 for Delta

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| --- | --- | --- | --- | --- |
| **A** | **C** | **D** | **C** | **B** |
| **A** | **B** | **A** | **D** | **B** |

**Problems on Monopolistic Competition and Oligopoly**

**Problem 1:**

Suppose that the 6 firms in an industry have total annual sales of $70 billion, $40 billion, $30 billion, $30 billion, $20 billion, and $10 billion.

1. What is the four-firm concentration ratio in this industry?
2. What is the Herfindahl index for this industry?
3. Suppose another industry has a Herfindahl index of 4000. What can you conclude about the relative competitiveness of these two industries?

**Answer:**

1. The four-firm concentration ratio is the ratio of the sales of the four largest firms in the industry relative to total industry sales, expressed as a percentage. In this industry, total sales are $200 billion and the top four combined have sales of $170 billion. The four-firm concentration ratio is then 170/200 = .85, or 85%.
2. The Herfindahl index is computed as the sum of the squared market shares for all firms in the industry. In this example, the 6 firms have market shares of 35%, 20%, 15%, 15%, $10%, and 5%. The index is 352 + 202 + 152 + 152 + 102 + 52 = 2200.
3. Larger index numbers correspond to more highly concentrated industries. Accordingly, firms in the second industry are likely to have more market power.

**Question on Monopolistic Competition and Oligopoly**

**Question 1:**

Compare the elasticity of the monopolistic competitor's demand with that of a pure competitor and a pure monopolist. Assuming identical long-run costs

1. Compare graphically the prices and outputs that would result in the long-run under pure competition and under monopolistic competition.
2. Contrast the two market structures in terms of productive and allocative efficiency.
3. Explain: "Monopolistically competitive industries are characterized by too many firms, each of which produces too little."

**Answers:**

The monopolistic competitor’s demand curve is less elastic than a pure competitor and more elastic than a pure monopolist:

1. See the Graph:

|  |  |
| --- | --- |
|  |  |

Price is higher and output lower for the monopolistic competitor.

1. Pure competition: *P* = MC (allocative efficiency); *P* = minimum ATC (productive efficiency). Monopolistic competition: *P* > MC (allocative efficiency) and *P* > minimum ATC (productive inefficiency).
2. Monopolistic competitors have excess capacity; meaning that fewer firms operating at capacity (where *P* = minimum ATC) could supply the industry output.

**Question2:**

Answer the following questions, which relate to measures of concentration:

1. What is the meaning of a four-firm concentration ratio of 60 percent? 90 percent? What are the shortcomings of concentration ratios as measures of monopoly power,
2. Suppose that the five firms in industry A have annual sales of 30, 30, 20, 10, and 10 percent of total industry sales. For the five firms in industry B, the figures are 60, 25, 5, 5, and 5 percent. Calculate the Herfindahl index for each industry and compare their likely competitiveness.

**Answers:**

1. A four-firm concentration ratio of 60 percent means the largest four firms in the industry account for 60 percent of sales; a four-firm concentration ratio of 90 percent means the largest four firms account for 90 percent of sales. Shortcomings: (1) they pertain to the nation as a whole, although relevant markets may be localized; (2) they do not account for inter-industry competition; (3) the data are for U.S. products—imports are excluded; and (4) they don’t reveal the dispersion of size among the top four firms.
2. See the Graph:

**Question3:**

Explain the general meaning of the following profit payoff matrix for oligopolists C and D. All profit figures are in thousands.

1. Use the payoff matrix to explain the mutual interdependence that characterizes oligopolistic industries.
2. Assuming no collusion between C and D, what is the likely pricing outcome?
3. In view of your answer to b, explain why price collusion is mutually profitable. Why might there be a temptation to cheat on the collusive agreement?



**Answers:**

The matrix shows the four possible profit outcomes for each of two firms, depending on which of the two price strategies each follows. Example: If C sets price at $35 and D at $40, C’s profits will be $59,000, and D’s $55,000

1. C and D are interdependent because their profits depend not just on their own price, but also on the other firm’s price.
2. Likely outcome: Both firms will set price at $35. If either charged $40, it would be concerned the other would undercut the price and its profit by charging $35. At $35 for both; C’s profit is $55,000, D’s, $58,000.
3. Through price collusion—agreeing to charge $40—each firm would achieve higher profits (C = $57,000; D = $60,000). But once both firms agree on $40, each sees it can increase its profit even more by secretly charging $35 while its rival charges $40.

**Question 4:**

1. Why is there so much advertising in monopolistic competition and oligopoly?
2. How does such advertising help consumers and promote efficiency?
3. Why might it be excessive at times?

**Answers:**

1. Two ways for monopolistically competitive firms to maintain economic profits are through product development and advertising. Also, advertising will increase the demand for the firm’s product. The oligopolist would rather not compete on a basis of price. Oligopolists can increase their market share through advertising that is financed with economic profits from past advertising campaigns. Advertising can operate as a barrier to entry.
2. Advertising provides information about new products and product improvements to the consumer. Advertising may result in an increase in competition by promoting new products and product improvements. It may also result in increased output for a firm, pushing it down its ATC curve and closer to productive efficiency (P = minimum ATC).
3. Advertising may result in manipulation and persuasion rather than information. An increase in brand loyalty through advertising will increase the producer’s monopoly power. Excessive advertising may create barriers to entry into the industry.