**Chapter 14: Oligopoly**

**Opening Example:** The opening example deals with collusion between Archer Daniels

Midland and Ajinomoto to carve up the market for lysine, an additive in animal feed.

Collusion is illegal in the United States, and these companies were caught red-handed.

This example is used throughout the chapter.

**I. The Prevalence of Oligopoly**

**A.** *Definition:* An **oligopoly** is an industry with only a small number of producers. A producer in such an industry is known as an **oligopolist**.

**1.** The number of firms determines whether or not a specific market is an oligopoly, not the size of each firm.

**2.** Each oligopolist has some market power.

**B.** *Definition:* When no one firm has a monopoly, but producers nonetheless realize that they can affect market prices, an industry is characterized by **imperfect** **competition.**

**C.** The most important source of oligopoly is the existence of increasing returns to scale, which gives bigger producers a cost advantage over smaller ones.

**II. Understanding Oligopoly**

**A.** A duopoly example

**1.** *Definition:* An oligopoly consisting of only two firms is a **duopoly**. Each firm is known as a **duopolist**.

**2.** *Definition:* Sellers engage in **collusion** when they cooperate to raise each other’s profits. A **cartel** is an agreement by several producers that increases their combined profits by telling each one how much to produce.

**3.** OPEC is the most famous of the world’s cartels.

**4.** Cartels among firms are illegal in the United States and many other jurisdictions.

**5.** Individual firms in a cartel have an incentive to cheat.

**B.** Collusion and competition

**1.** In a duopoly, firms choose a level of output and sell that output at the market price.

**2.** Individual firms have an incentive to produce more than the quantity that maximizes their joint profits because neither firm has as strong an incentive to limit its output as a true monopolist would.

**3.** Producing more output creates a positive quantity effect and a negative price effect. An individual firm in an oligopoly faces a smaller price effect than a monopolist because the firm only considers its own output and not that of the other firms. It seems profitable for one company to increase production.

**4.** *Definition:* When firms ignore the effects of their actions on each others’ profits, they engage in **noncooperative behavior**.

**5.** When there are only a small number of firms, collusion is possible. However, it is hard to determine whether collusion will actually materialize.

**III. Games Oligopolists Play**

**A.** *Definition:* When the decisions of two or more firms significantly affect each others’ profits, they are in a situation of **interdependence**.

**B.** *Definition:* The study of behavior in situations of interdependence is known as **game theory**.

**C.** The prisoners’ dilemma

**1.** *Definition:* The reward received by a player in a game, such as the profits earned by an oligopolist, is that player’s **payoff**.

**2.** *Definition:* A **payoff matrix** shows how the payoff to each of the participants in a two-player game depends on the actions of both. This is illustrated in text Figure 14-1.

**a.** In a **prisoners’ dilemma** game, each player has an incentive, regardless of what the other player does, to cheat, to take an action that benefits it at the other’s expense.

**b.** When both players in the prisoners’ dilemma cheat, both are worse off than they would have been if neither had cheated.

**c.** *Definition:* An action is a **dominant strategy** when it is a player’s best action regardless of the action taken by the other player.

**d.** *Definition:* A **Nash equilibrium**, also known as a **non-cooperative equilibrium**, is the result when each player in a game chooses theaction that maximizes his or her payoff given the actions of the otherplayers, ignoring the effects of that action on the payoffs received by those other players.

**D.** Overcoming the prisoners’ dilemma: repeated interaction and tacit collusion

**1.** Oligopolists in the real world play repeated games.

**2.** *Definition:* A firm engages in **strategic behavior** when it attempts to influence the future behavior of other firms.

**3.** *Definition:* A strategy of **tit for tat** involves playing cooperatively at first, then doing whatever the other player did in the previous period. Doing this, a firm can punish another firm for cheating.

**4.** *Definition:* When firms limit production and raise prices in a way that raises each other’s profits, even though they have not made any formal agreement, they are engaged in **tacit collusion**.

**5.** When oligopolists expect to compete with each other over an extended period of time, each individual firm will often find it in its own best interests to help other firms in the industry, and so there will be tacit collusion.

**IV. Oligopoly in Practice**

**A.** The legal framework

**1.** Before 1890 in the United States, cartels were legal but legally unenforceable.

**2.** *Definition:* **Antitrust policy** refers to the efforts of the government to prevent oligopolistic industries from becoming or behaving like monopolies.

**3.** The Sherman Antitrust Act was passed in 1890; its goal was to prevent the creation of monopolies and to break up existing ones.

**a.** One of the first actions taken under the Sherman Antitrust Act was the breakup of Standard Oil.

**B.** Tacit collusion and price wars

**1.** Oligopolists do succeed in keeping prices above their non-cooperative level.

**2.** Tacit collusion is a normal state for an oligopoly.

**3.** However, four major factors make it hard for an industry to coordinate on high prices.

**a.** Large numbers: The more firms in an oligopoly, the less incentive for firms to behave cooperatively.

**b.** Complex products and pricing schemes: In the real world, oligopolists produce many products, which makes it difficult for a firm to track what its competitors are doing.

**c.** Differences in interests: Firms differ in what they perceive as fair and what strategies are in their real interests.

**d.** Bargaining power of buyers: Often, oligopolists sell to large buyers who can bargain for lower prices.

**4.** *Definition:* A **price war** occurs when tacit collusion breaks down and prices collapse.

**C.** Product differentiation and price leadership:

**1.** Product differentiation lessens the competitiveness between firms in an oligopoly.

**2.** *Definition:* Firms engage in **product differentiation** when they try to convince buyers that their product is different from the products of other firms in the industry.

**3.** *Definition:* In **price leadership**, one firm sets the price and the other firms follow.

**4.** *Definition:* Firms that have a tacit understanding not to compete on price often engage in intense **non-price competition**, using advertising and other means to try to increase their sales.

**D.** How important is oligopoly?

**1.** Important parts of the economy are fairly well described by perfect competition.

**2.** Even in oligopolies, the limits to cooperation keep prices fairly close to marginal costs.

**3.** Predictions from supply and demand analysis are often accurate for oligopolies.

**4.** While it is difficult to model oligopolies, most economists take a pragmatic approach and know that there are important issues—from antitrust to price wars—that need to be analyzed and understood.

**Reference:** *Paul Krugman & Robin Wells, Economics, 3rd edition (2013) by Worth Publishers, New York.*