UNIT IV
MONOPOLISTIC COMPETITION
OLIGOPOLY

CHAKRA B. KHADKA, PhD
Email: cfalkonet@hotmail.com

Oligopoly

- **Oligopoly** is a market structure dominated by a few large producers of homogeneous or differentiated products.
- Because of their “fewness”, oligopolists have considerable control over their price.
  - Examples: tires, beer, cigarettes, copper, steel, aluminum, and automobiles

Characteristics of Oligopoly

- ***A few large producers*** – firms are generally large and together they dominate the industry.
- ***Either homogeneous or differentiated products*** – the products are standardized, or differentiated with heaving advertising.
- ***Price maker*** – the firm can set its price and output levels to maximize its profit.

Characteristics of Oligopoly

- ***Strategic behavior*** – Self-interested behavior that takes into account the reactions of others.
- ***Mutual interdependence*** – each firm's profit depends not entirely on its own price and sales strategies but also on those of the other firms.
- ***Blocked entry*** – barriers to entry exist which make it hard for new firms to enter.

Characteristics of Oligopoly

- Two main kinds: **collusive and non-collusive oligopoly**
- i) **Collusive:** Collusive oligopoly refers to a situation in which a small number of firms (oligopolists) within an industry coordinate their actions to **maximize joint profits**.
- Firms in collusive oligopoly are highly interdependent, meaning they consider the reactions of their rivals when making pricing and production decisions.

Characteristics of Oligopoly

- Two main kinds: **collusive and non-collusive oligopoly**
- ii) **Non-collusive oligopoly:** Non-collusive oligopoly, refers to a situation where firms in an oligopolistic market compete with each other and do not engage in explicit collusion or coordination. Each firm makes decisions based on its own interests and market conditions.
- Non-collusive oligopoly are still interdependent and consider the reactions of rivals, they do not coordinate their actions through agreements.

Oligopoly: Non-collective models

- Non-collusive Oligopoly is the oldest theory of competition.
- It refers to the oligopoly in which firms compete with each other.
- In a non-collusive or non-cooperative oligopoly, the firms survive in a strategic environment, as they begin with a particular strategy without colluding with competitors.

Non-collusive oligopoly: Assumptions

- Firms are independent of each other.
- There are a large number of firms.
- Barriers to entry are very less.
- It has strict government regulations.
- Each firm develops an expectation as to what the rival firms are about to do.

Non-Collusive Oligopoly

a) Non-collusive oligopoly is one in which each firm sets its price and level of output and competes in the market.

b) The firms intend to increase their profit and determine the volume of output to be produced, **with an assumption that competing firms would not change the quantity supplied by them**.

c) To maintain competition and to work independently as a normal business.

d) The price and output decision is independent of other firms.

e) Firms collude with one another and a sense of competition exists among them, monopoly does not form.

f) Aggressive advertisement creates brand loyalty.

Non-Collusive Oligopoly Model Assessment

Stackelberg (Quantity Leader)	One firm leads by setting its output, and the other firm follows. When the leader chooses an output, it will take into account how the follower will respond
Cournot (Price Leader)	One firm sets its price and the firm chooses how much it wants to supply at that price. Again the leader has to take into account the behavior of the follower when it takes its decision.
Bertrand (Simultaneous price setting)	Each firm chooses its prices given its beliefs about the price that the other firm will choose. The only equilibrium price is the competitive equilibrium.
Edgeworth (Simultaneous price setting)	Each seller assumes that the price of its competitor, not its output, remains constant. Suppose there are two sellers, A and B, facing the same demand curve in the market. (Edgeworth's model follows Bertrand's hypothesis).
Collusion (Cartel)	A number of firms colluding to restrict output and to maximize industry profit. A cartel will typically be unstable in the sense that each firm will be tempted to sell more than its agreed upon output if it believes that the other firms will not respond.

THREE OLIGOPOLY MODELS

a) **Kinked Demand Curve**
b) **Cartels and Collusion: Collusion**
c) **Price Leadership: Collusion**

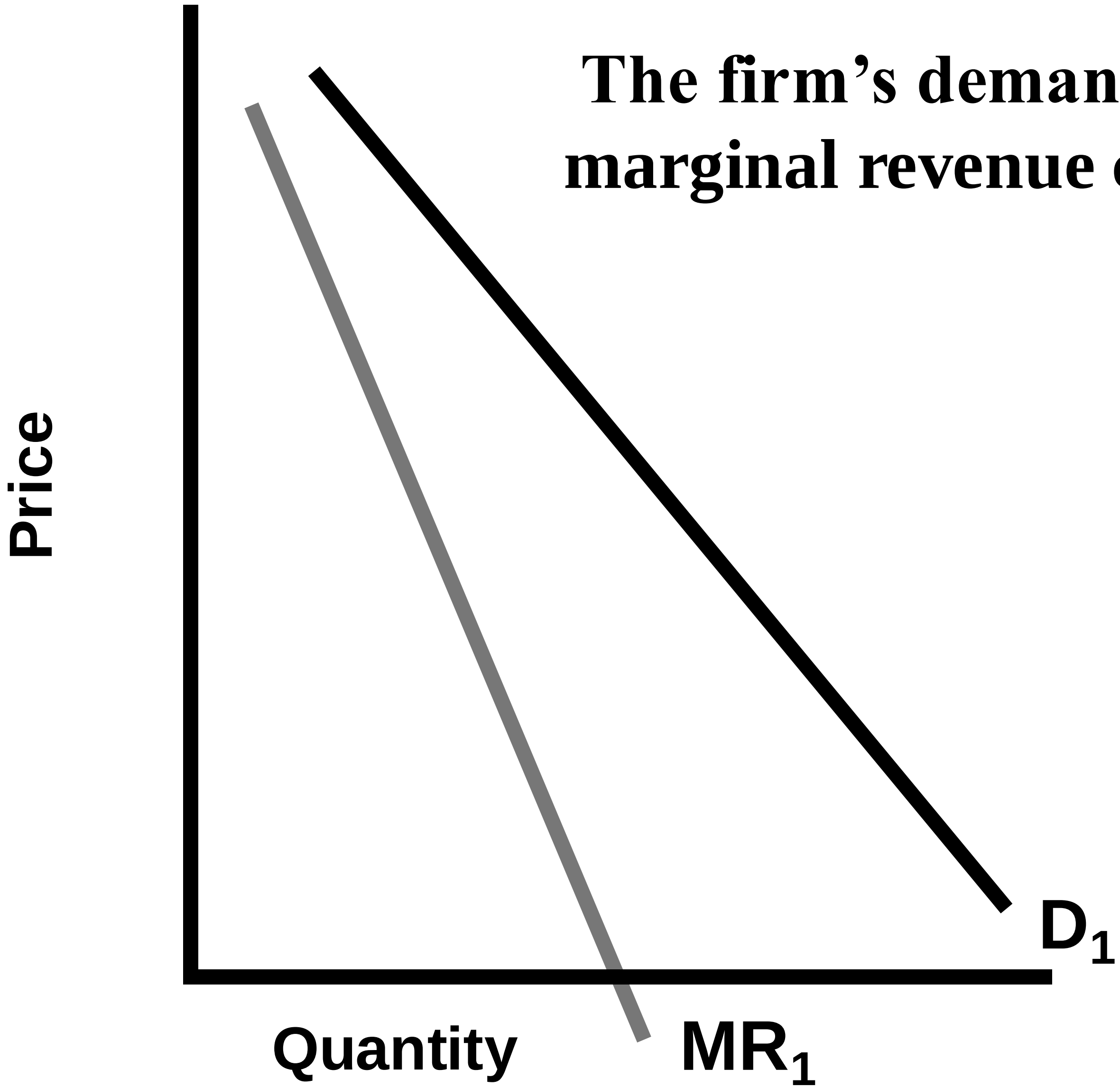
Non-Collusive Kinked-Demand Model

- In the kinked-demand model, oligopolists face a demand curve based on the assumption that competitors will ignore a price increase and follow a price decrease.
  - An oligopolist's competitors will ignore a price increase above the going price but follow a price decrease below the going price.
  - The demand curve is kinked at this price and the marginal revenue curve has a vertical gap.

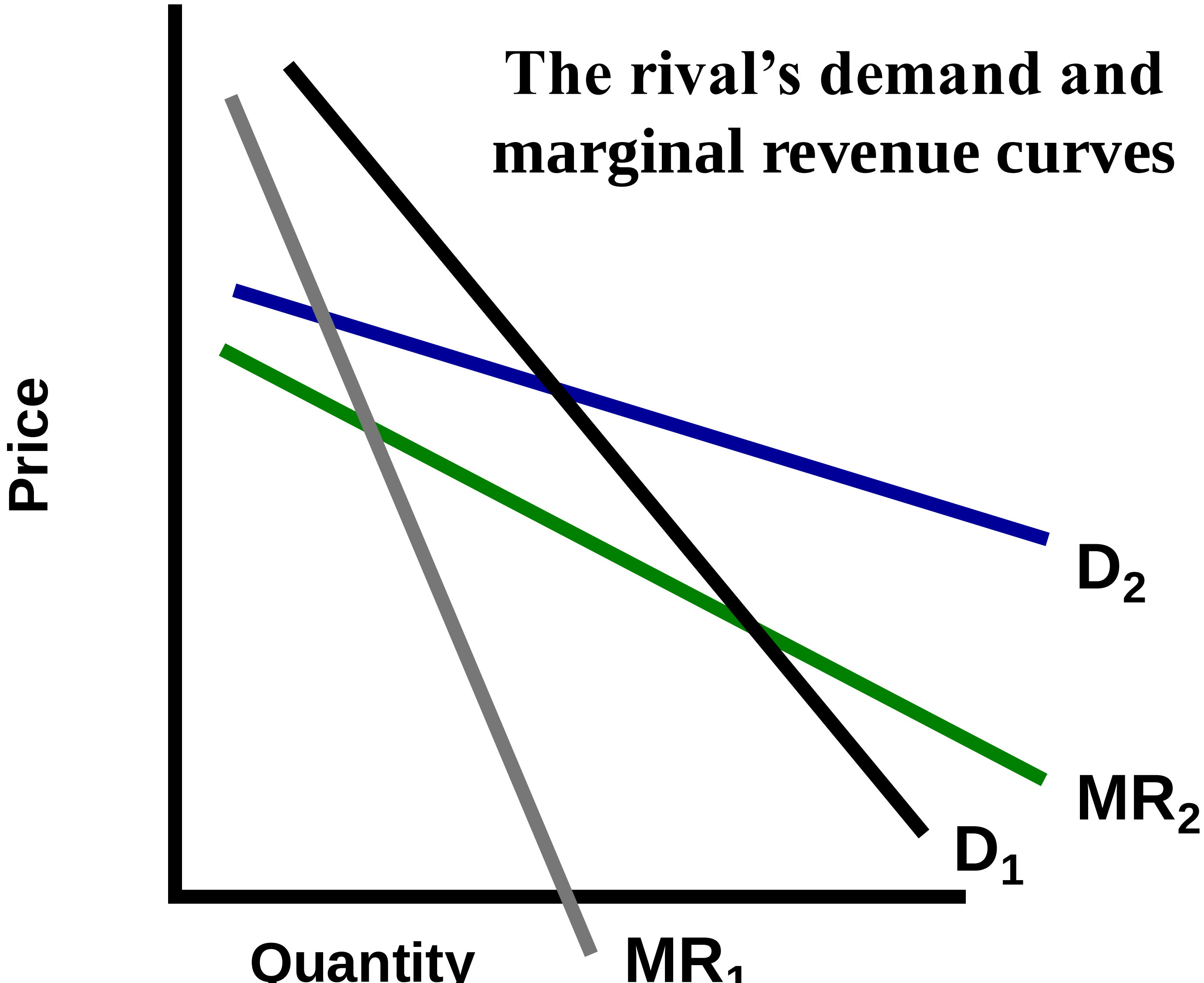
Kinked-Demand Model

- In the kinked-demand model, oligopolists face a demand curve based on the assumption that competitors will ignore a price increase and follow a price decrease.
  - An oligopolist's competitors will ignore a price increase above the going price but follow a price decrease below the going price.
  - The demand curve is kinked at this price and the marginal-revenue curve has a vertical gap.

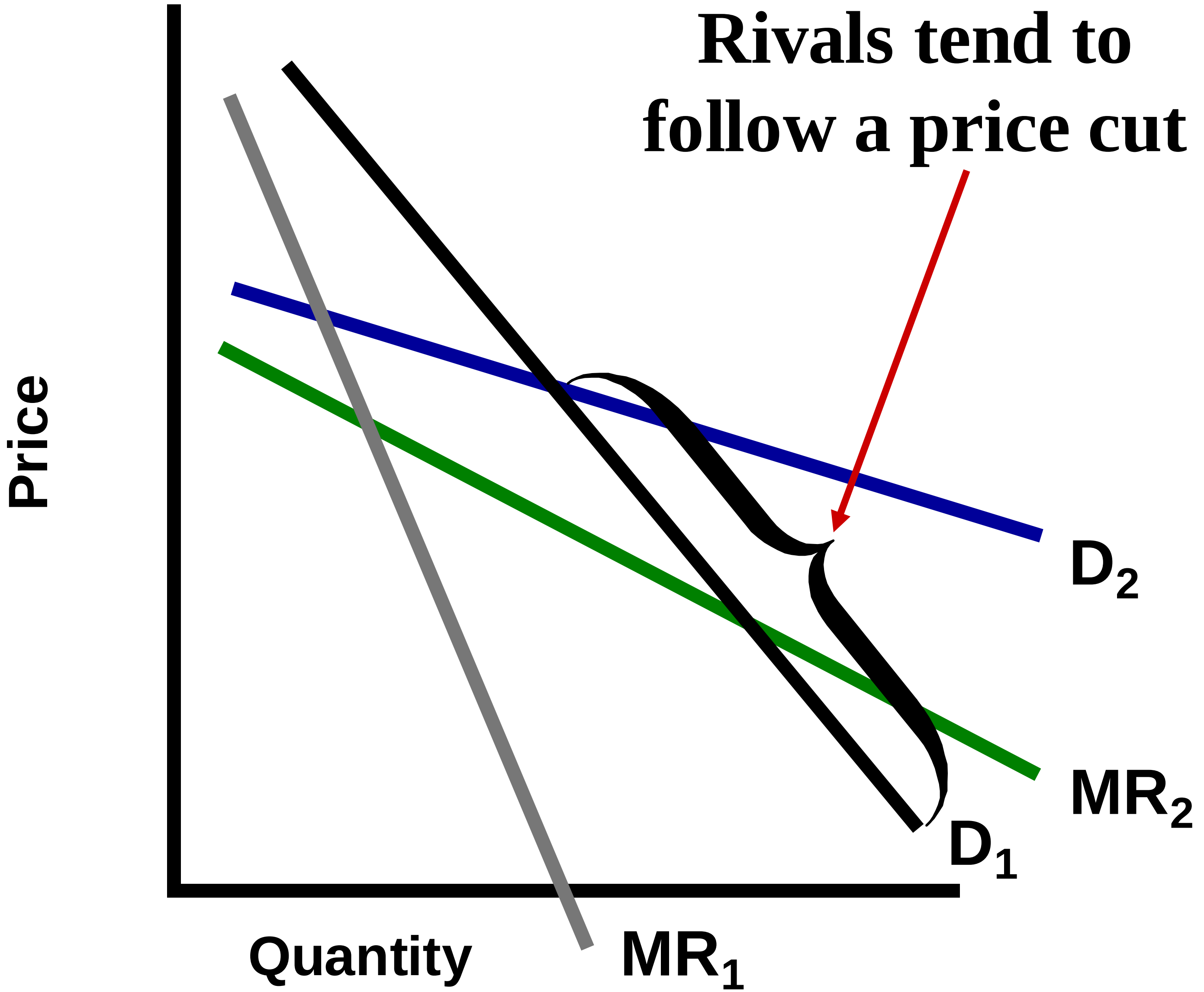
KINKED DEMAND THEORY



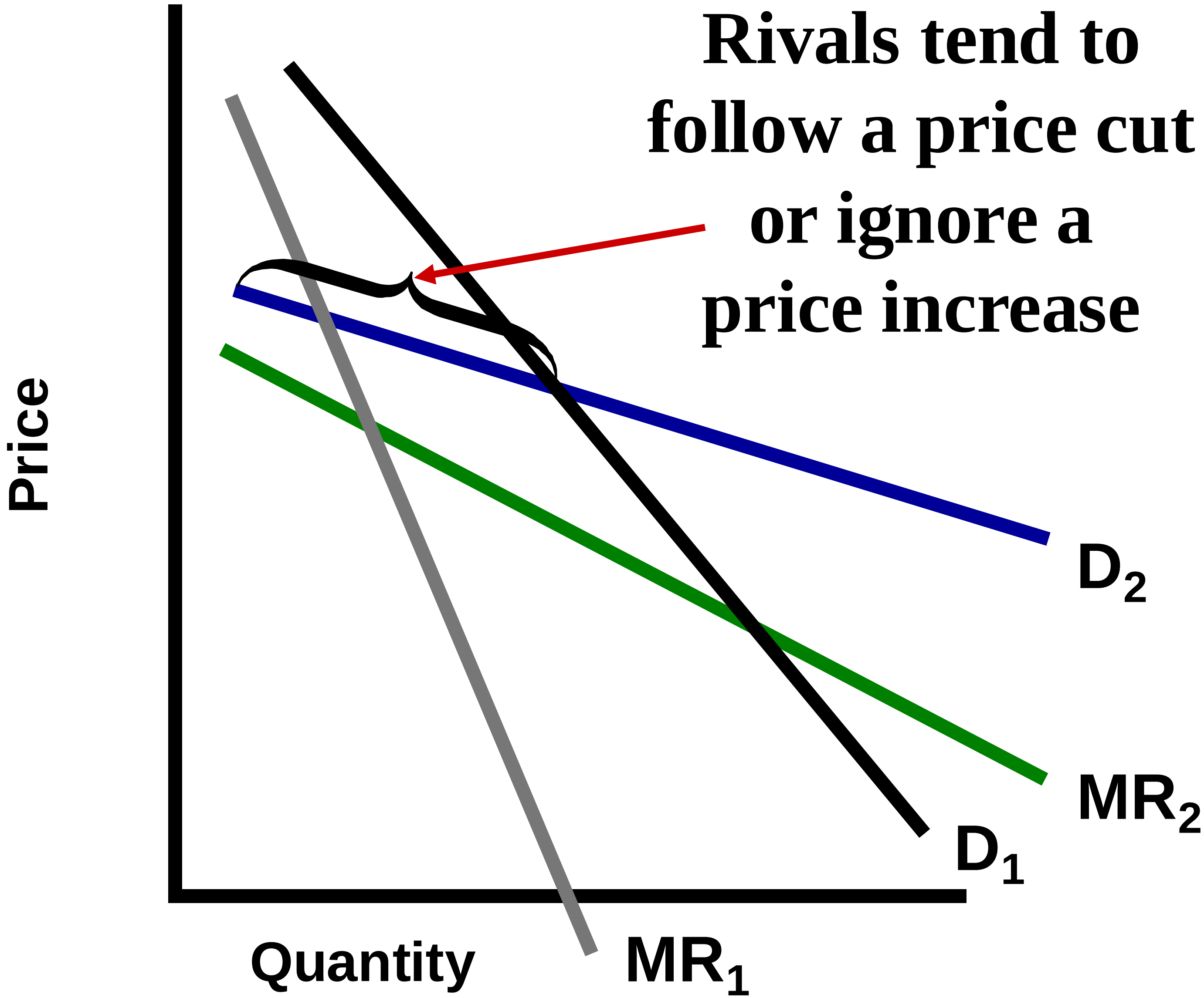
KINKED DEMAND THEORY



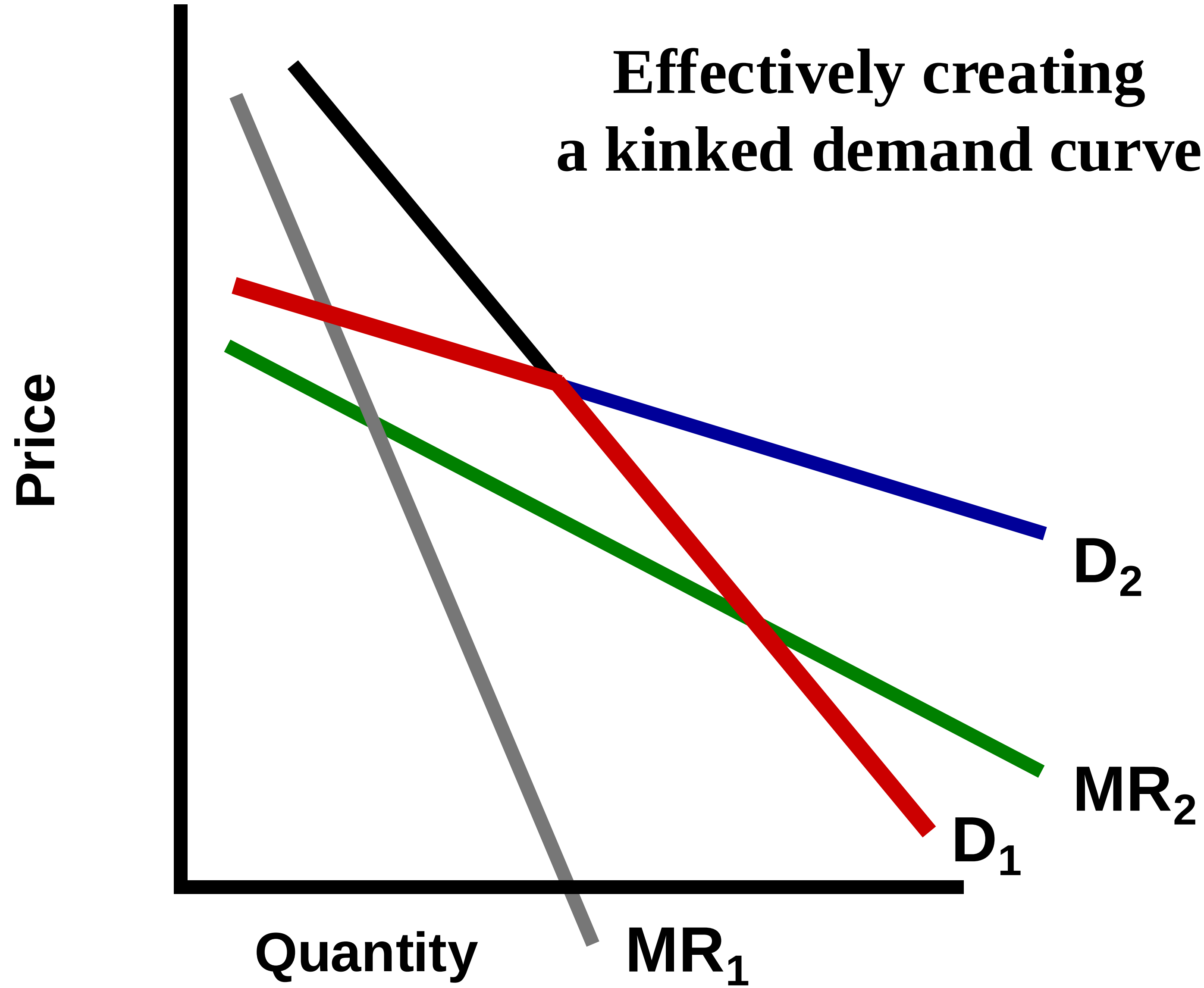
KINKED DEMAND THEORY



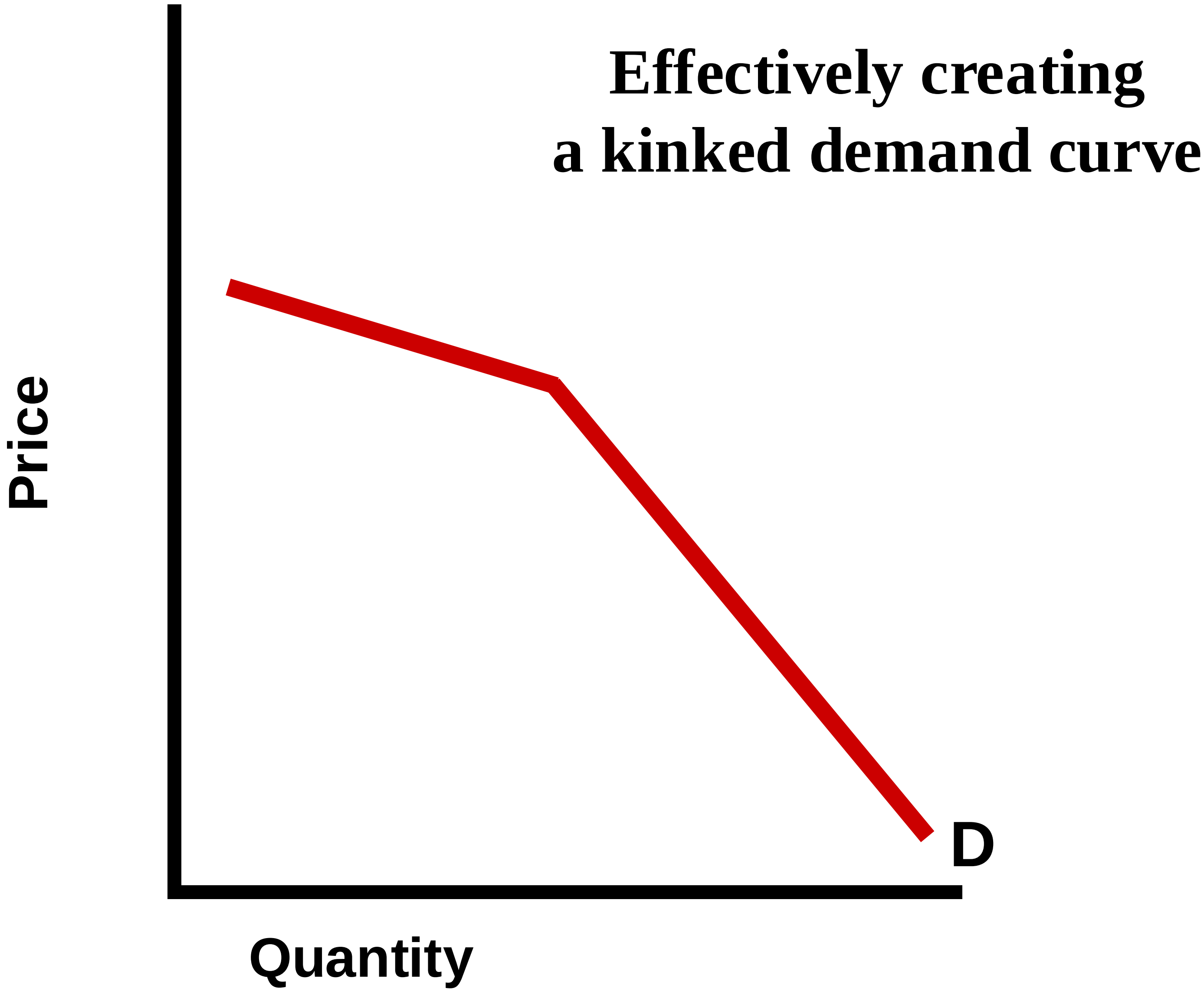
KINKED DEMAND THEORY



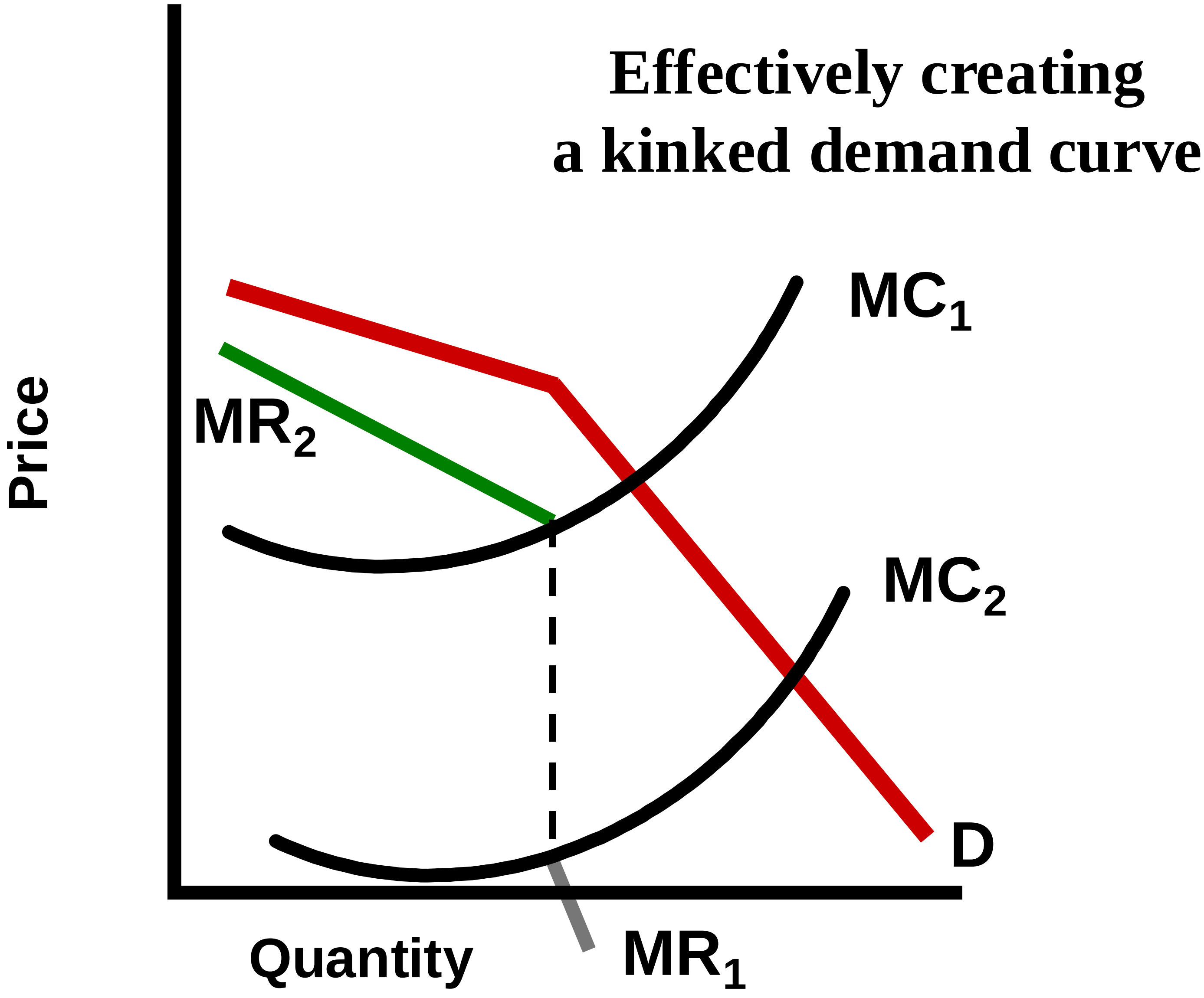
KINKED DEMAND THEORY



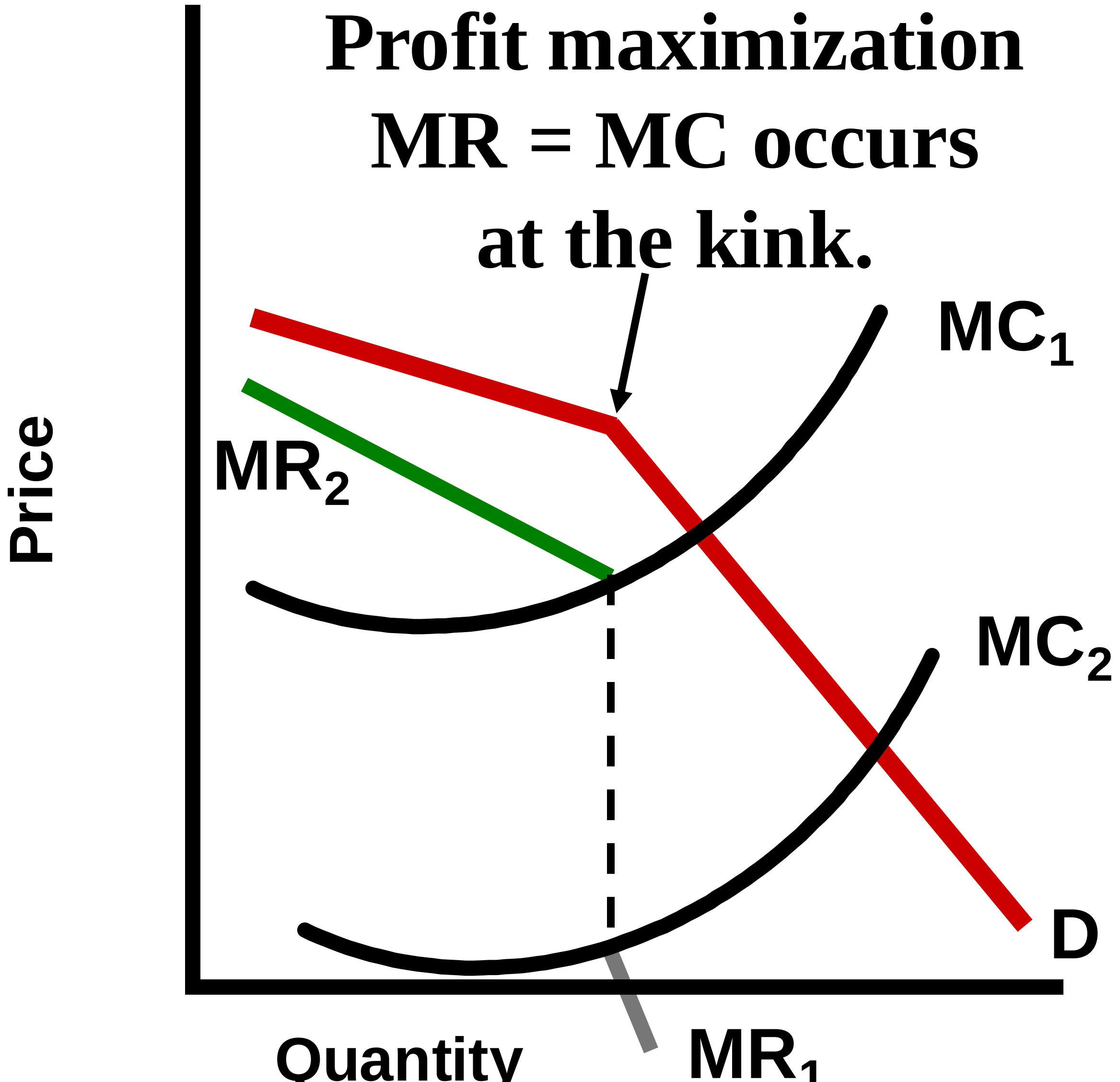
KINKED DEMAND THEORY



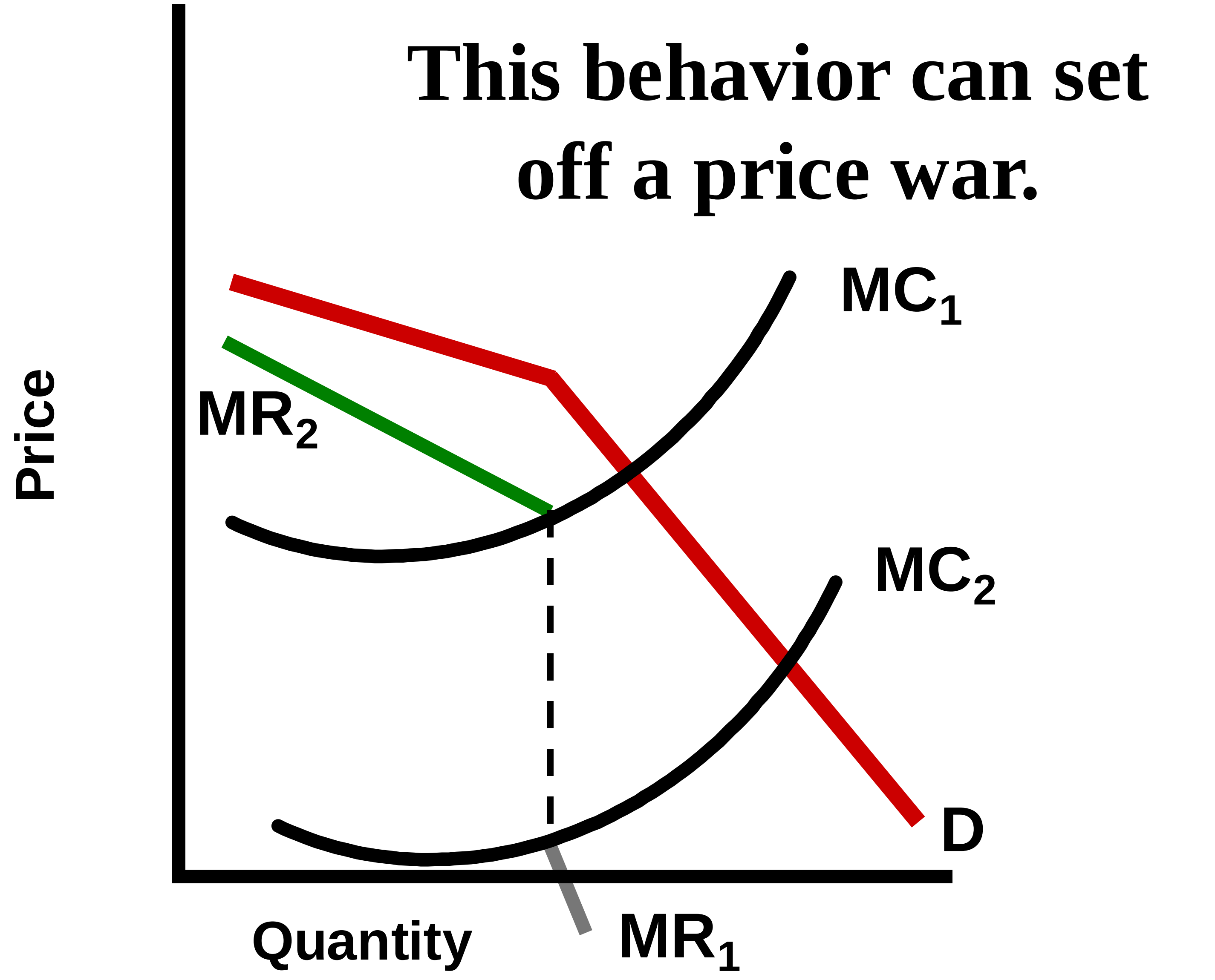
KINKED DEMAND THEORY



KINKED DEMAND THEORY



KINKED DEMAND THEORY

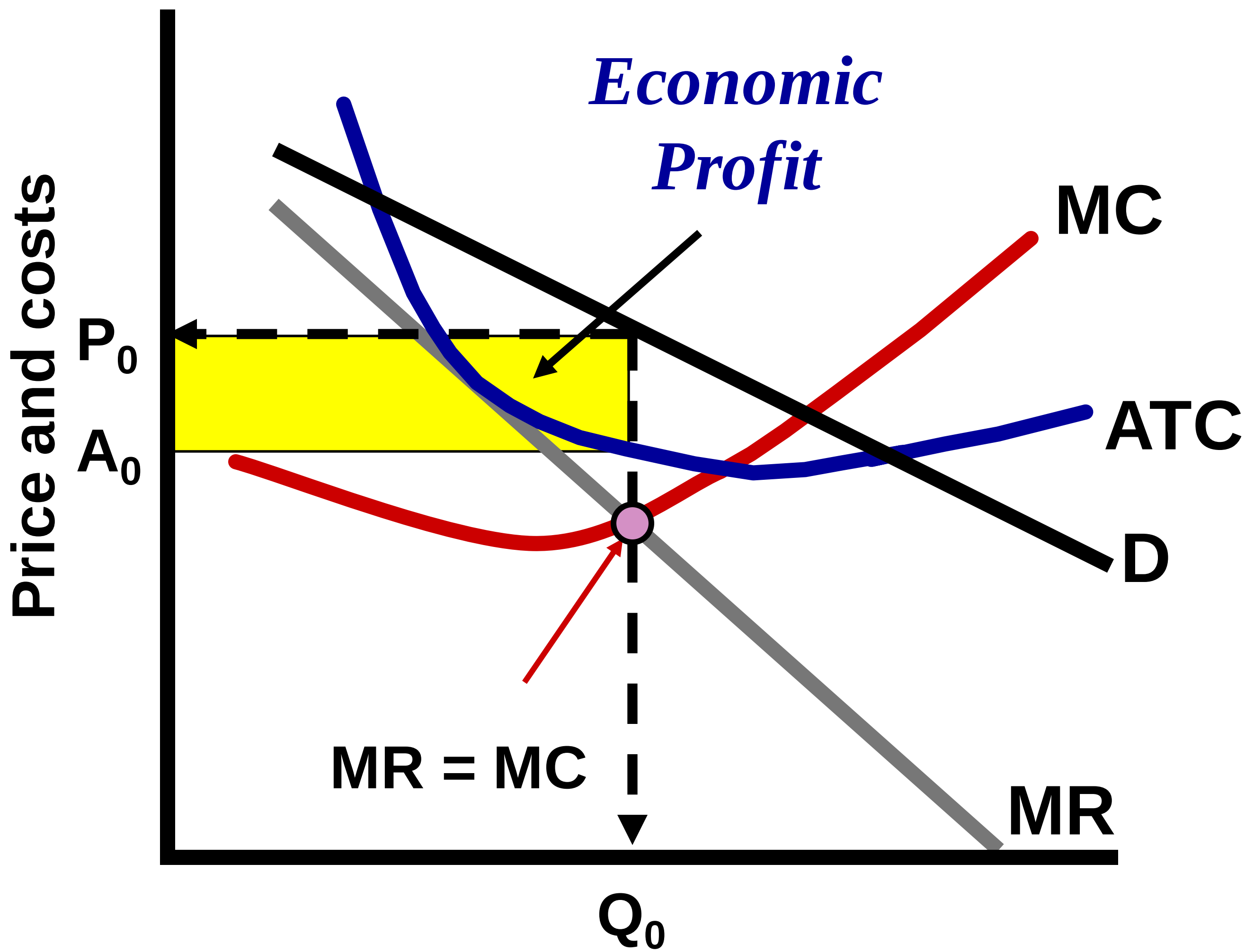


CARTELS AND OTHER COLLUSION

- An oligopoly is beneficial to collusion.
- If a few firms face identical or highly similar demands and costs they will tend to seek joint profit maximization.

CARTELS AND OTHER COLLUSION

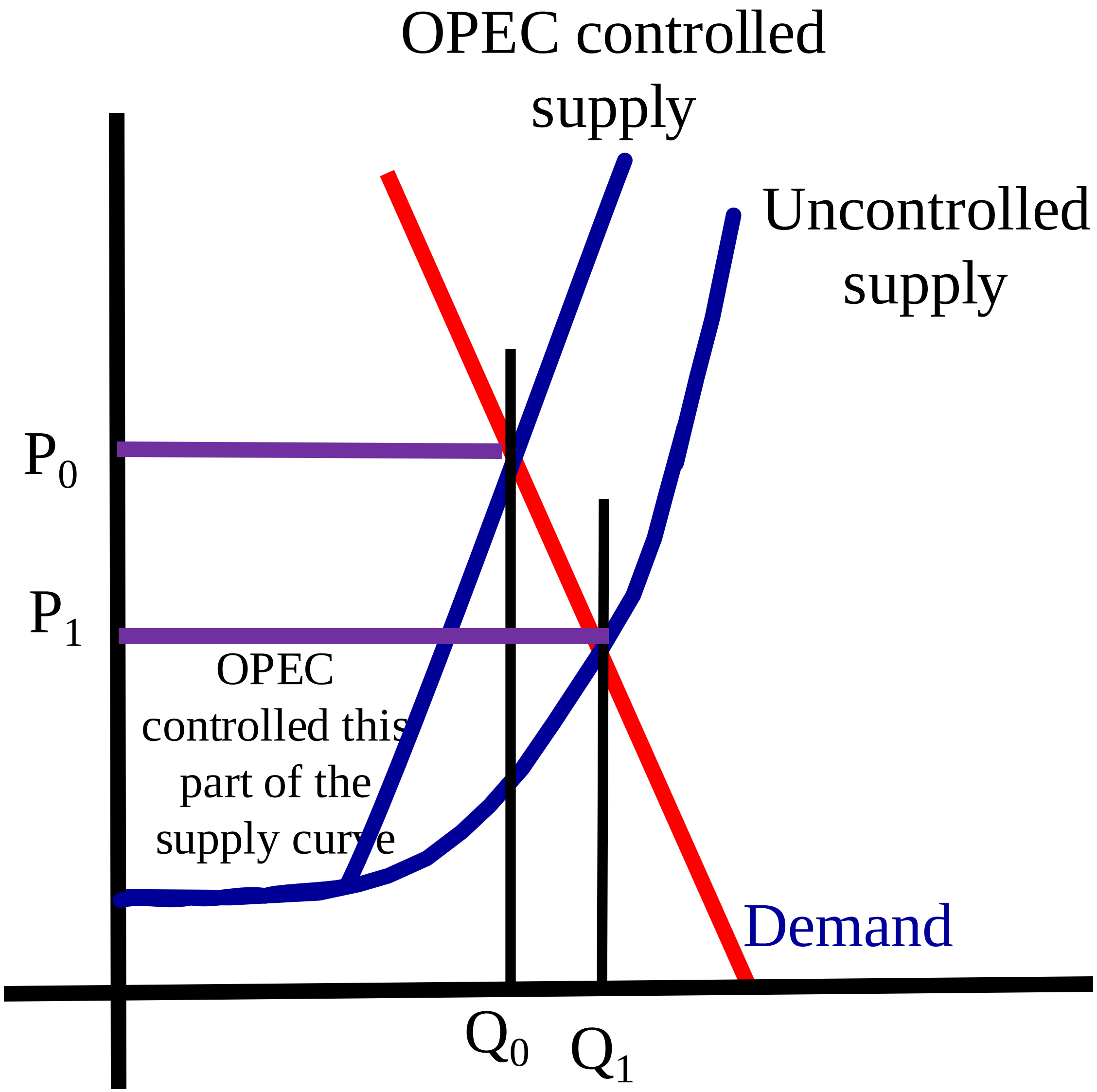
Colluding Oligopolists Will Split the Monopoly Profits.



Cartels/Collusion: Overt Collusion

The OPEC Cartel

- A formal, usually secret, collusion agreement among competing firms (mostly oligopolistic firms) in an industry designed to control the market, raise the market price, and otherwise act like a monopoly.
- Also termed explicit collusion, the distinguishing feature of overt collusion is a formal agreement.
- This should be contrasted with implicit or tacit collusion that does not involve a formal, explicit agreement.



OPEC controls the "low cost" part of the supply curve. By exercising control and reducing output from where it would be in an uncontrolled, competitive market, they can shift the equilibrium from the competitive point (P_1, Q_1) to the "OPEC" point: P_O, Q_O, which gives a price that is higher than the competitive market price.

Cartels/Collusion: Covert Collusion

Tacit (Silent) Understandings

Seemingly independent, but parallel actions among competing firms (mostly oligopolistic firms) in an industry that achieve higher prices and profits, as if guided by an explicit collusion agreement.

Also termed implicit collusion, the distinguishing feature of tacit collusion is the lack of explicit agreement.

The key is that each firm is acting independently, each responding to the same market conditions, but the result is the same as an explicit agreement.

This should be contrasted with explicit or overt collusion that does involve a formal, explicit agreement.

Examples of covert collusion

- Covert/tacit collusion can be seen in the airline business, where airlines frequently adjust their prices to changes in the pricing strategy of other major airlines.
- If an airline observes that another airline has increased or decreased its fares, it may follow suit without any direct communication, thereby engaging in covert/tacit collusion.

Collusive Models: Price Leadership

Price Leadership: In a price leadership model, one dominant firm fixes the price of the goods while the rest of the rivals follow it.

- **Low-Cost Price Leader**: To maximize the profit, a low-cost firm sets a price lower than the profit-maximizing price of the high-cost firm so that the high-cost firm will be forced to lower its price.

CARTELS AND OTHER COLLUSION

Obstacles to Collusion

- **Demand and Cost Differences**
- **Number of Firms**
- **Cheating**
- **Recession**
- **Potential Entry**
- **Antitrust Law**

PRICE LEADERSHIP MODEL

Leadership Tactics

- **Infrequent Price Changes**
- **Communications**
- **Limit Pricing**

Breakdowns in Price Leadership-Price Wars

Price Leadership

- Price leadership involves an implicit understanding that other firms will follow the lead when a certain firm in the industry initiates a price change.
- A price leader is likely to observe the following tactics:
  - Infrequent price changes
  - Communications
  - Avoidance of price wars

Market Share by Oligopoly

- Computer Operating Systems: New high-tech markets can become oligopolies when the companies provide unique products that are supported by an ecosystem of supporting technology. Computer operating systems are dominated by Microsoft's Windows, Apple's Mac OS and the open source Linux operating systems. These three systems capture close to 100 % of the computer operating system market due to their established positions.
-
- Music Industry: The music entertainment industry is dominated by four music companies that control 80% of the market and these are universal Music Group, Sony Music entertainment, Warner Music Group. 35.10% 22.80% 21.10% 21% universal Sony warner others

Market Share by Oligopoly

- Auto industry: Auto industry is another example of an oligopoly, which is dominated by few firms and these firms are Hero Motor Corp., TVS and Honda. HERO: 40% Market Share Honda: 25% Market Share TVS: 14% Market Share 40% 14% 25% 21% HERO TVS HONDA OTHERS
-
- Oligopoly in soft drink industry: Two firms control 74 % of soft drink sales: o 42.8% Coca-Cola's 25 brands and 139 varieties. o 31.1% Pepsi's 18 brands and 163 varieties. Coca-Cola and Pepsi are in an oligopoly market. They are mutually and strategically interdependent, as a decision made by one firm invariably affects the other. They are selling the homogeneous product so they can control over price. 42.80% 31.10% 26.10% Series 1 Coca-Cola Pepsi others

World's Top 10 Brand Names, 2018

1. Amazon. **Brand** value: $150.8 billion.
2. Apple. **Brand** value: $146.3 billion.
3. Google. **Brand** value: $120.9 billion.
4. Samsung. **Brand** value: $92.3 billion.
5. Facebook. **Brand** value: $89.7 billion.
6. AT&T. **Brand** value: $82.4 billion.
7. Microsoft **Brand value:** $81.2 billion.
8. Verizon (Smart Phone) **Brand value:** $62.8 billion.
9. Walmart **Brand value:** $61.5 billion.
10. ICBC (Industrial and Commercial Bank of China) **Brand value:** $59.2 billion.

OLIGOPOLY AND ADVERTISING

- **Less Easily Duplicated**
- **Adequate Resources**
- **Positive Effects of Advertising**
- **Effects of Advertising**
- **Brand Development**

OLIGOPOLY AND EFFICIENCY

Productive Efficiency

$$P = Minimum\ ATC$$

Oligopoly: No Productive Efficiency

Allocative Efficiency

$$P = MC$$

Oligopoly: No Allocative Efficiency

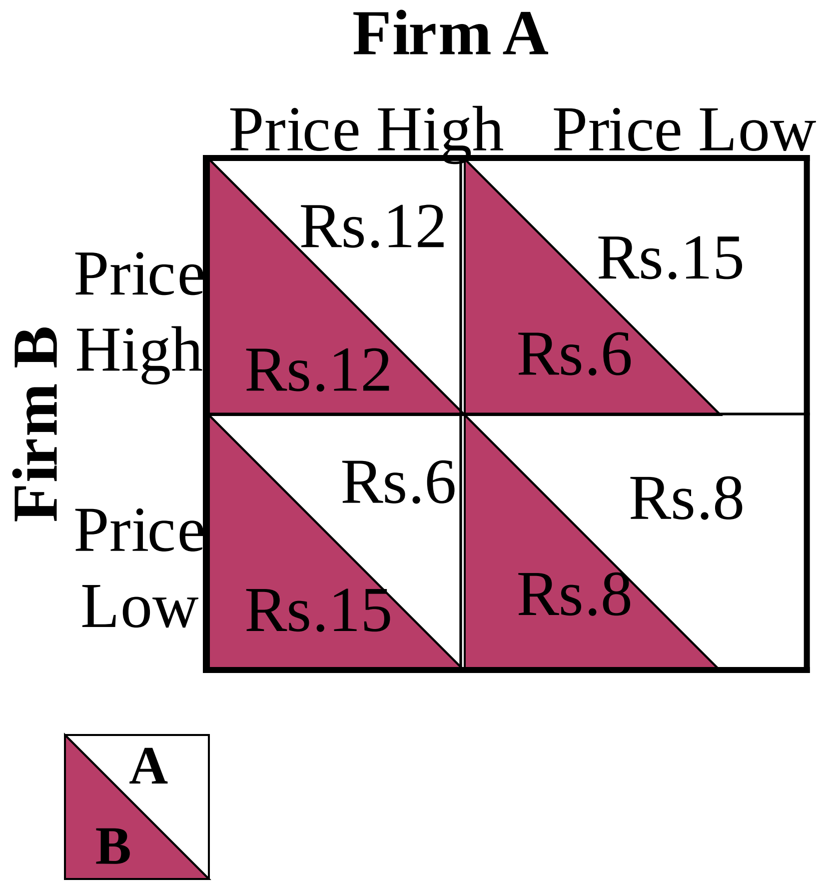
Qualifications

Oligopoly Behavior: A Game-Theory

- **Game theory** is the study of how people or firms behave in strategic situations.
  - It can be used to analyze the pricing behavior of oligopolists.
  - Suppose in a two-firm oligopoly (a duopoly), each firm must chose a pricing strategy, high or low.
  - A *payoff matrix* can be constructed to show payoffs (profit) to each firm that result from each combination of strategies.

Game Theory Example

- Two firms, A and B, must decide on a pricing strategy: price high or price low.
  - Although firms A and B are mutually interdependent, both can benefit from collusion. However, there may be incentive to cheat.



Mutual Interdependence

- Each firm's profit depends on its own pricing strategy and that of its competitor/rival.
- In the example, if both firms adopt a high-price strategy, each firm will earn Rs.12 million; if both adopt a low-price strategy, each will earn Rs.8 million.
- If one firm adopts a low-price strategy while the other adopts a high-price strategy, the low-price firm will earn Rs.15 million while the other firm earns Rs.6 million.

Collusive Tendencies

- Oligopolists can often benefit from cooperation, or collusion.
- **Collusion** is a situation in which firms act together and in agreement to fix prices, divide markets, or otherwise restrict competition.
  - In the example, firms A and B can agree to establish and maintain a high-price strategy so each can earn Rs.12 million.

Incentive to Cheat

- Oligopolists might have an incentive to cheat on a collusive agreement if they can benefit from such action.
  - In the example, suppose firms A and B agree to establish and maintain a high-price strategy. Either firm can cheat and lower its price in order to increase profit to Rs.15 million (a Rs.3 million increase).

Incentive to Cheat

- Because of possible incentives to cheat, independent action by oligopolists may lead to mutually “competitive” low-price strategies, which benefit consumers but not the oligopolists.
  – In the example, firms A and B will choose a low-price strategy and earn Rs.8 million each.

THANK YOU