MICROECONOMICS II
UNIT 1
Pricing under Imperfect Competition

Oligopoly

- An oligopoly is a type of market structure in which a small number of firms control the market. Where oligopolies exists, producers can indirectly or directly restrict output or prices to achieve higher returns. A key characteristic of an oligopoly is that no one firm can keep the others from having significant influence over the market. An oligopoly differs from a monopoly, in which one firm dominates a market.

Characteristics of an Oligopoly:

- **Interdependence**: Firms in an oligopoly are interdependent, meaning they can't act independently of each other. When making decisions, firms must consider how their closest rivals will react.
- **High barriers to entry**: It's difficult for new firms to enter an oligopoly market.
- **Price rigidity**: Firms in an oligopoly tend to stick to their prices. If one firm lowers its price, the others will likely retaliate by lowering their prices even more, which can lead to a price war.
- **Advertising**: Oligopolists often use advertising to gain market share.
- **Kinked demand curve**: The demand curve in an oligopoly is kinked because rival firms are assumed to follow price cuts but not price increases.
- **Collusion**: Firms in an oligopoly can collude to restrict supply and increase prices to become more profitable.
- **Uncertainty**: The environment of uncertainty in an oligopoly makes it difficult to make forecasts and optimal decisions.

Non-Collusive Oligopoly

- A non-collusive oligopoly is a market structure where a few firms compete with each other instead of cooperating to set prices and output. In a non-collusive oligopoly, firms are independently trying to increase their market share through competitive practices.
- Characteristics of a non-collusive oligopoly:
  - **Competition**
  - **Mutual interdependence**
  - **Profit maximization**
  - **Non-price competition**
  - **Legality**

Cournot, **Bertrand**, **Edgeworth**, and **Chamberlin** models:

Aspect	Cournot	Bertrand	Edgeworth	Chamberlin
Focus	Quantity competition	Price competition	Price with capacity constraints	Product differentiation
Decision Variable	Output	Price	Price with limited output	Price & product characteristics
Assumptions	- Homogeneous goods - Simultaneous output decisions	- Homogeneous goods - Perfect info - No capacity constraints	- Homogeneous goods - Capacity limits	- Differentiated goods - Free entry/exit
Market Power	Moderate (output interdependence)	Minimal (price war to marginal cost)	Fluctuates with capacity limits	Exists due to product differentiation
Equilibrium	Price/quantity between monopoly and perfect competition	Price = Marginal Cost (Bertrand Paradox)	No stable price equilibrium	Long-run: Normal profits with excess capacity
Outcome	Positive profits, moderate output	Zero profits, perfect competition pricing	Cyclical price wars	Excess capacity, price > MC
Real-World Examples	Telecom (user base competition)	Ride-sharing platforms (e.g., Uber)	Airline pricing during peak demand	Smartphones (Apple vs. Samsung)

KINKED DEMAND CURVE

- The kinked demand curve is an economic theory that explains price rigidity in oligopoly markets. It describes a demand curve that is not a straight line, but has a bend, or kink, at the current market price. The kinked demand curve is based on the idea that rival firms will react differently to price increases and decreases.
- **Developed by:** Paul Sweezy (1939).

Key features of the kinked demand curve

- **Price rigidity**

  The kinked demand curve explains why prices in oligopoly markets are stable and firms are reluctant to engage in price competition.
- **Asymmetric price adjustment**

  Firms are more likely to maintain their prices if a rival raises theirs, but are more likely to lower their prices if a rival lowers theirs.
- **Elasticity**

  The demand curve has different values of price elasticity of demand above and below the kink.

  The portion of the demand curve above the current price is elastic, while the portion below the curve is inelastic.
- **Theoretical dilemma**

  The kinked demand curve model is a theoretical dilemma that has been debated in the social sciences.

Collusive Oligopoly (Cartels and Mergers)

Cartels:

Definition: A formal agreement between firms to fix prices, limit production, or allocate markets to avoid competition.

Characteristics:

•Acts like a monopoly.

•Firms agree to restrict output and set higher prices.

•Can be illegal in many countries due to anti-competition laws.

Challenges:

•Risk of firms "cheating" and producing more than agreed upon.

•Difficult to enforce, as firms have incentives to deviate for individual profit.

Example: OPEC (Organization of Petroleum Exporting Countries) controlling oil production.

Mergers:

Definition: The combination of two or more firms into a single entity to reduce competition and increase market power.

Types of Mergers:
Horizontal Merger: Between firms in the same industry (e.g., two airlines).
Vertical Merger: Between firms at different production stages (e.g., a car manufacturer acquiring a parts supplier).
Conglomerate Merger: Between unrelated businesses.
Benefits:
•Reduced competition, which may lead to higher prices.
•Economies of scale (lower production costs due to larger operations).
•Enhanced pricing power and market control.
Criticism:
•May lead to monopolistic behavior, harming consumers.
•Can face regulatory challenges (e.g., antitrust laws) to prevent reduced market competition.

Oligopoly Regulation (Jean Tirole, NP 2014)

- **Key Insights from Tirole's Work on Oligopoly Regulation**
- **Market Failures in Oligopolies:**
  - Oligopolies often lead to market failures due to **lack of competition**, which can result in **higher prices** and **reduced output**.
  - Firms in oligopolistic markets have incentives to engage in anti-competitive practices like **collusion** or tacit agreements.
- **Regulation Challenges:**
  - Regulatory authorities face **difficulties** in preventing anti-competitive behavior and ensuring fair competition.
  - Traditional regulation often fails because it cannot address the complexities of strategic behavior in oligopolistic markets.

- Jean Tirole's framework for regulating oligopolies in his 2014 work emphasizes the need for **incentive-based, dynamic regulation** that encourages firms to act competitively while preventing anti-competitive behavior. It highlights the complexity of managing oligopolistic markets and stresses the importance of **monitoring**, **enforcement of competition laws**, and **independent regulators** in ensuring fair market outcomes. Through his work, Tirole has contributed to the understanding of how regulators can balance competition with the potential benefits of firm cooperation in oligopolies.

Price Leadership in Oligopoly

- **Key Features of Price Leadership:**

1. **Dominant Firm**:
    1. One firm (the **leader**) has a significant market share and can influence market prices.
    2. Smaller firms (the **followers**) tend to follow the price set by the leader rather than compete independently.
2. **Price Setting Mechanism**:
    1. The leader sets a price that is typically higher than the marginal cost, but not so high that it drives competitors out of the market.
    2. The followers accept the price without significant changes, creating a stable pricing environment.
3. **Types of Price Leadership**:
    1. **Dominant Firm Price Leadership**: The leader firm sets the price, and others adjust their prices accordingly.
    2. **Barometric Price Leadership**: The firm with the best information about market conditions sets the price, often in response to external changes (e.g., cost increases).
    3. **Collusive Price Leadership**: Firms may engage in informal collusion, with the leader setting prices that others tacitly accept.
4. **Conditions for Price Leadership**:
    1. A **dominant firm** with significant market power.
    2. **Few firms** in the market (oligopoly).
    3. **Market stability**: Firms believe that following the leader's price is in their best interest to avoid price wars.

- **Benefits of Price Leadership:**

1. **Price Stability:**
    1. Reduces price fluctuations in the market, as firms follow the leader's price to avoid competition-driven price cuts.
2. **Avoidance of Price Wars:**
    1. By following a leader, firms avoid the destructive nature of price wars, where firms continuously undercut each other’s prices.
3. **Reduced Uncertainty:**
    1. Smaller firms can more easily plan their strategies, as they rely on the leader to set the market price.

Base Point Price System

- The **Base Point Price System** is a pricing mechanism used in oligopolistic markets, particularly in industries with few firms, such as steel or cement production. It is a **pricing strategy** where the price of a product is set based on a **base point** or reference location, regardless of where the product is actually produced or sold.

Key Features of the Base Point Price System

1. **Base Point:**
    1. A specific location (often a city or plant) is designated as the **base point**.
    2. Prices for the product are set as though the goods are being shipped from this base point, even if they originate from another location.
2. **Freight Charges:**
    1. The price from the base point includes **freight charges** to the customer's location.
    2. These freight charges are added to the base price depending on the distance from the base point to the customer's location.
3. **Uniform Pricing:**
    1. All customers are charged the same base price for a product, and the only variation in price comes from the freight charges based on distance.
    2. This system simplifies pricing for firms and consumers, as prices are relatively predictable.

- **Advantages of the Base Point Price System:**

1. **Simplicity:**
    1. It simplifies the pricing structure by allowing firms to set uniform prices and only adjust for shipping costs, making it easier for both consumers and businesses to understand.
2. **Reduced Competition:**
    1. This system can reduce price competition between firms because customers are generally charged similar prices, whether they are purchasing from a local producer or one far from their location.
3. **Predictability:**
    1. Firms and customers can easily predict prices and plan purchases, as the freight charges are consistent and based on the distance from the base point.

- **Disadvantages of the Base Point Price System:**

1. **Potential for Collusion:**
    1. It can lead to **price-fixing** or **collusive behavior**, as firms in the industry may cooperate to establish base points and set prices uniformly, reducing price competition.
2. **Market Manipulation:**
    1. Firms may manipulate the base point by strategically selecting a location that benefits them or results in higher prices for distant customers.
3. **Disadvantages to Distant Customers:**
    1. Customers located far from the base point end up paying higher prices due to the added freight charges, which could make the pricing system unfair to them.

Price and Output Determination Under Monopsony

- A **monopsony** occurs when there is **only one buyer** in a market, giving that buyer significant power over the prices and quantities of goods or services purchased. In a monopsonistic market, the firm (the single buyer) can dictate the terms of exchange, including price and output levels, in a way that is quite different from a competitive market.

- **Key Features of a Monopsony**

1. **Single Buyer:**

   The monopsony market has only one buyer, which gives that buyer the power to influence the price paid to sellers.

2. **Many Sellers:**

   There are multiple sellers (suppliers or producers), but they can only sell their goods or services to the single buyer, which limits their market power.

3. **Price Control:**

   The monopsonist determines the price at which they are willing to purchase from sellers, usually driving the price lower than it would be in a competitive market.

Price Determination in Monopsony

- The monopsonist faces the **supply curve** for the good or service they are buying.
- As the monopsonist buys more of the good, the price paid to sellers increases (typically represented by an upward-sloping supply curve).
- However, because the monopsonist is the **only buyer**, they can negotiate prices and push them lower, unlike in a competitive market where prices are determined by supply and demand.
- The monopsonist sets the **market price** lower than it would be in a competitive scenario, because sellers have limited options but to sell to the monopsonist.

- **Output Determination in Monopsony**
- **Quantity**: The monopsonist will decide how much of the good or service to purchase by considering the marginal cost of acquiring each additional unit and their desire to maximize profit.
- **Quantity Effect**: In a monopsony, the monopsonist will often purchase a **lower quantity** of goods than would be produced in a competitive market, as they control the purchasing decisions and can limit the amount they buy to further drive down prices.

Bilateral Monopoly and Duopoly

- **Bilateral Monopoly**

A **bilateral monopoly** occurs when there is a **single buyer** and a **single seller** in the market. This is a type of market structure where **both parties have significant market power** and negotiate the price and output jointly, rather than having one side (either buyer or seller) dominate.

- **Key Features:**

- **One Buyer & One Seller**: The market consists of a **monopoly on both sides**—the seller has control over the supply, while the buyer has control over the demand.
- **Negotiation Power**: Both the buyer and seller have power to influence price and output, so the transaction is negotiated rather than dictated by either side.
- **Price Determination**: The price is **negotiated** between the two parties. Since both sides have power, the final price depends on their bargaining power, the relative importance of the good to the buyer, and the seller's production cost.

- **Price and Output Determination:**
- The **price** and **quantity** exchanged are **jointly determined** through negotiation between the buyer and the seller, often leading to a contract.
- This is different from a monopsony (where the buyer has all the power) or a monopoly (where the seller has all the power).
- **Equilibrium Price**: The final price will be somewhere between the **marginal cost of the seller** and the **value the buyer places on the product**.

Duopoly

- A **duopoly** is a market structure where **two firms** dominate the market. These firms are the only significant competitors in the market, and their interactions directly affect pricing, output, and overall market performance. Duopoly is a form of **oligopoly**, but with just two firms.
- **Key Features:**

- **Two Firms**: There are only two firms in the market, each holding substantial market share.
- **Interdependence**: The actions of one firm directly affect the other's pricing and output decisions. Firms are highly interdependent in terms of strategy.
- **Competition and Cooperation**: Duopolists can either compete aggressively or collude (tacitly or explicitly). The structure can lead to various pricing strategies, from fierce price competition to price leadership.

- **Price and Output Determination:**
- **Cournot Model**: In the **Cournot model**, each firm chooses its output level assuming the other firm's output remains constant. Price is determined by the total market output, and firms adjust their output to maximize their own profits.
  - Example: If Firm A produces 100 units and Firm B produces 80 units, the market price will be determined by the total quantity (180 units) produced. Each firm adjusts its quantity based on the other's expected output.
- **Bertrand Model**: In the **Bertrand model**, firms compete by setting prices instead of quantities. If both firms produce identical products, they will lower their prices until the price equals marginal cost, leading to **perfect competition** outcomes, which can be detrimental to both firms' profits.
  - Example: If both firms set the price too low, they may end up offering a price that equals their marginal cost, which may not be profitable.
- **Collusion in Duopoly**: Firms may also engage in collusion, either through formal **cartels** or tacit agreements, to set prices above the competitive level and reduce output, thereby maximizing joint profits. This is akin to monopoly pricing but with the market split between two firms.