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Introduction to Economics

ECONOMICS
Chapter 4

Commodity Markets and Competition

contents

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4.1 Market Structure

- competition in the market occur in various forms
- the state of resource allocation differs depending on the type of competition
- types of market structure

  (1) perfect competition

  (2) monopoly

  (3) oligopoly

  (4) monopolistic competition

Characteristics of Market Structure

(1) number of sellers

- perfect competition : many sellers
- monopoly : one seller
- oligopoly : a few sellers
- monopolistic competition : many sellers (similar to perfect competition)

- In general, we assume there are many buyers
- an exceptional case where there is only one buyer → monopsony

Characteristics of Market Structure

(2) individual firm's influence on price

- perfect competition
  - no influence at all
- monopoly
  - substantial influence

Characteristics of Market Structure

(3) homogeneity of commodities

- perfect competition
  - perfectly homogeneous
- monopolistic competition
  - differentiated products

Characteristics of Market Structure

(4) existence of entry barrier

- entry barriers prevent potential entrants from entering the market
  - natural entry barriers due to technological reasons
  - artificial entry barriers due to government regulations
- perfect competition, monopolistic competition
  - no entry barrier
- monopoly
  - almost absolute entry barrier
- oligopoly
  - fairly effective entry barrier

4.2 Perfect Competition

- **conditions for perfect competition**

(1) many sellers and buyers, individual sellers and buyers are price-takers

(2) all commodities are homogeneous

(3) perfect mobility of resources

- free entry and exit

(4) perfect information

- **perfectly competitive markets are very rare in reality**

- plays the role of a benchmark

4.2 Perfect Competition

Profit Maximization of Individual Firms and Supply Curve

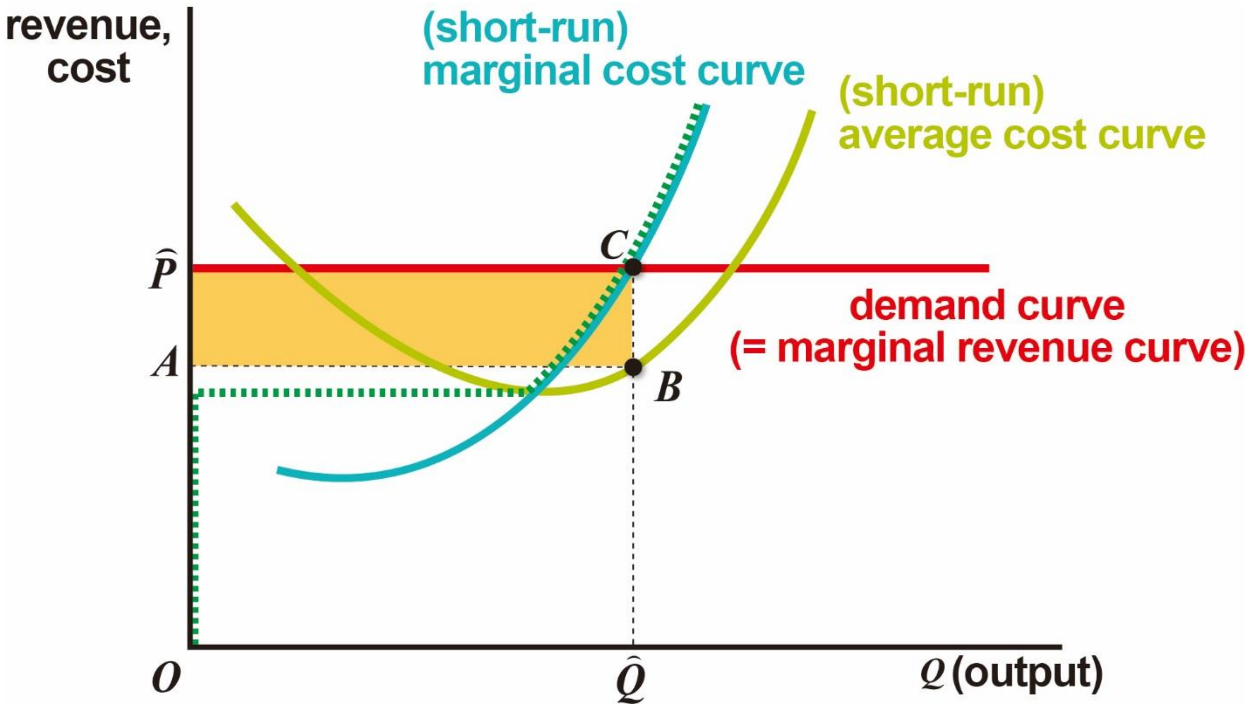
profit maximization of individual firms

- demand curve faced by an individual firm is a horizontal line
  - an individual firm must take the price determined in the market → the horizontal line at that price is the demand curve faced by an individual firm
  - demand curve in the market is downward sloping
  - the horizontal line is also the marginal revenue(MR) curve
- conditions for profit maximization
  - $MR = MC$

  (for all types of market structure)

4.2 Perfect Competition

Profit Maximization



Possibility of a Shutdown

when the price is too low

- price $<$ minimum point of the average cost curve $\rightarrow$ firm incurs a loss
- in this case, $MR = MC$ is a condition for loss minimization
- if there is no sunk cost, the firm decides to shutdown when it expects to incur a loss
  - shutdown could reduce the loss to 0
  - shutdown price : the price at which the firm decides to shutdown

Derivation of Supply Curve

- **individual firm's supply curve**
  - price < minimum point of the average cost curve
    - if production continues, the firm will incur a loss → production will be stopped → the amount of supply = 0
  - price > minimum point of the average cost curve
    - the firm will choose the output level where the horizontal line intersects with marginal cost curve (since $MR=MC$ holds at this output level)
    - therefore, the marginal cost curve becomes the supply curve of the firm

- by summing up individual firms' supply curves, we can derive the market supply curve

Long-run Adjustment and Long-run Equilibrium

- long-run adjustment
  - firms in a competitive market earn positive profits
    - new firms enter the market → increase in supply → price goes down
  - firms in a competitive market earn negative profits
    - marginal firms exit → decrease in supply → price goes up
  - this long-run adjustment continues till the market reaches a long-run equilibrium

- long-run equilibrium

  - all the firms in the market earn zero profit → no more entry or exit

Why Is a Perfectly Competitive Market Desirable?

- efficient allocation of resources achieved
  - competitive pressure make firms do their best
  - $P = MC$ $\rightarrow$ this means $MB = MC$ holds

- limits of a perfectly competitive market
  - difficult to satisfy the conditions for perfect competition
  - cannot guarantee equitable distribution of income
    - the merits of a competitive market are limited to the aspect of efficiency

4.3 Imperfectly Competitive Market

reasons for imperfect competition

(1) economies of scale

- economies of scale means that the average cost goes down as the level of output increases
- substantial degree of the economies of scale
  → a single firm comes to monopolize the whole market → natural monopoly

4.3 Imperfectly Competitive Market

reasons for imperfect competition

(2) government policies

- provision of patent rights to boost invention
- provision of monopoly rights

(3) competitive strategies

- aggressive advertisements
- differentiated products
- predatory pricing
    - lowering price temporarily to drive out the competitors from the market

4.4 Monopoly

- **only one supplier**
- **equilibrium in a monopoly market**

  - demand curve has a downward sloping shape (firm = industry)

  - condition for profit maximization : $MR = MC$

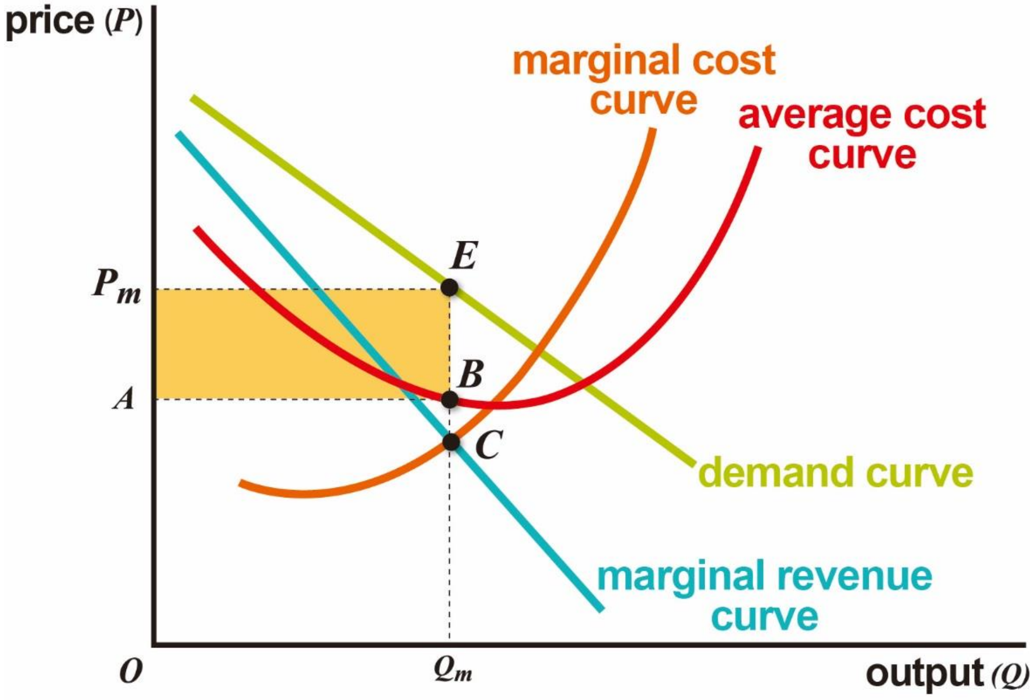
    - produces Q_m and sells at the price of P_m
    - at equilibrium, P > MC holds

  - profit is equal to the area of triangle $P_m ABE$

  - supply curve does not exist

4.4 Monopoly

Equilibrium of the monopolistic market

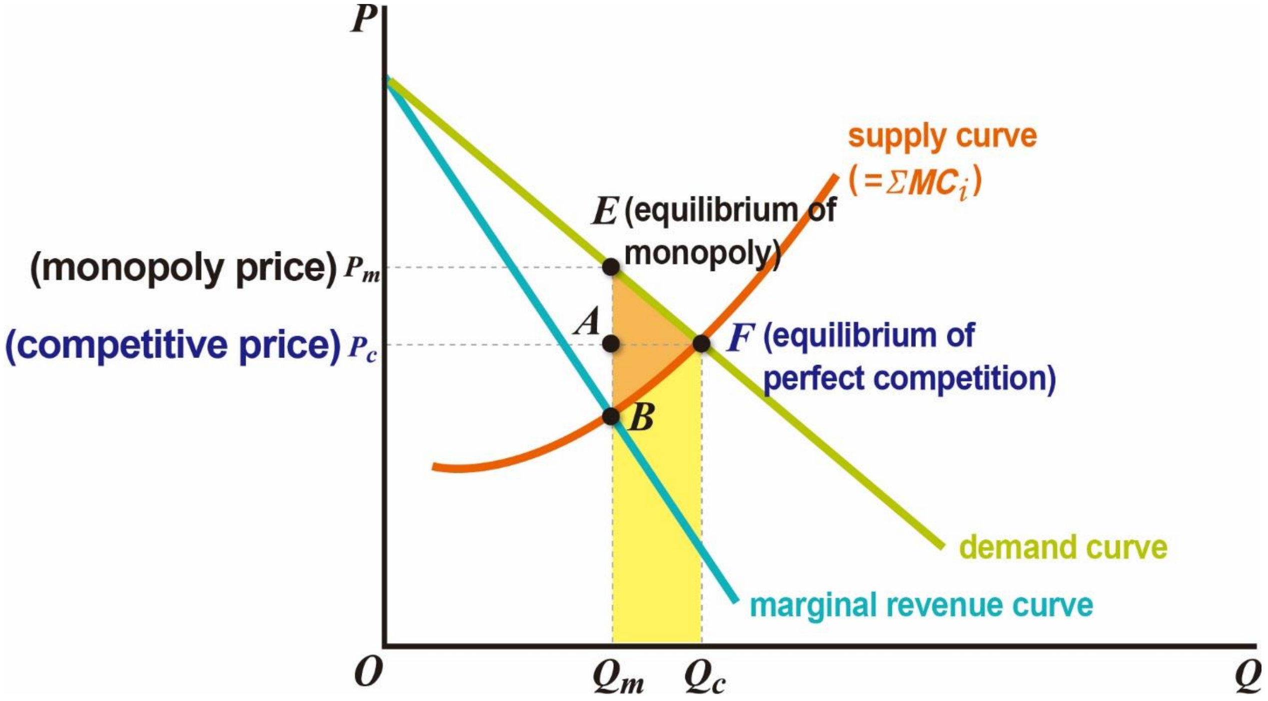


Economic Effects of Monopoly

inefficient allocation of resources

- perfect competition
  - marginal cost curve is identical to supply curve
  - equilibrium is reached at the intersection point(F) between marginal cost curve and demand curve
- monopoly
  - compared to perfect competition, the level of output(Q_m) lower and price(P_m) higher
  - price is higher than marginal cost
    → inefficient resource allocation

Perfect Competition vs Monopoly



Inefficient Resource Allocation

welfare triangle

- the loss in social welfare due to monopoly can be represented by the area of triangle EBF
- deadweight loss
  - the loss in social welfare caused by monopoly or some other reasons

Other Causes of Inefficiency

(1) no incentive to seek efficiency

(2) cost of maintaining entry barriers

- expenses for advertisements or lobbying

(3) efficiency in a dynamic sense

- J. Schumpeter : monopoly is favorable to innovation
- but firms which already monopolize the markets may be hostile to innovation
- both positive and negative aspects

Government Policies toward Monopoly

(1) nationalization

- considering the inefficiency of public enterprises, not a good policy

(2) price regulation

- limiting the exercise of monopoly power

(3) encouraging competition

- dividing a monopolistic firm into several independent firms and make them compete with each other

Price Discriminating Monopolist

- **price discrimination:**

  charging different prices for the same commodity to increase profit

  - different prices for different types of consumers
    - higher willingness to pay → higher price

Price Discriminating Monopolist

- **conditions for price discrimination**

(1) can divide consumers into several groups depending upon their characteristics
(2) easy to recognize the characteristics of consumers
(3) resale of the commodity impossible

- **examples of price discrimination**

- sale of a department store, coupons, discounts for local residents

4.5 Oligopoly

characteristics of oligopoly market

- only a few firms exist in the market
- each firm should pay close attention to the responses of rival firms
- strategic situation
  - results of an action differ depending upon the responses of rival firms
  - attempts are made to analyze the oligopoly market using game theory

Three Categories of Oligopoly

Dose collusion exist?

(1) models of independent actions (no collusion)

ex) Cournot model, Bertrand model, kinked demand curve model

- each firm make a guess about the rival firms' responses and take some action based on such a guess

(2) implicit collusion

ex) price leadership model

(3) perfect collusion

ex) cartel model

4.6 Monopolistic Competition

- difficult to see either perfect competition or monopoly in reality
- markets where competition is imperfect are most common
- The revolution of imperfect competition in the 1930s
    - J. Robinson → general case of imperfect competition
    - E. Chamberlin → a special case of monopolistic competition

4.6 Monopolistic Competition

- characteristics of both monopoly and perfect competition
- many suppliers, free entry and exit
  - similar to perfect competition
- product differentiation is an essential characteristic
  - each firm produces differentiated products

    ex) physical characteristics, warranty, after service etc.
  - a firm which produces differentiated products has some degree of monopoly power

Equilibrium in a Monopolistically Competitive Market

- demand curve faced by an individual firm has a downward sloping shape
  (since differentiated products generate some degree of monopoly power)
- so equilibrium in a monopolistically competitive market similar to that in a monopolistic market
- in the long-run, however, profit of each firm is 0
  → similar to perfect competition

4.6 Monopolistic Competition

Characteristics of Resource Allocation

- non-price competition
  - in the presence of product differentiation, competitive means other than price are more frequently used
  - development of differentiated products, advertisements
- product differentiation and consumer welfare
  - positive in the sense that various kinds of consumer preferences could be met
  - slight differences in products might be meaningless

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THANK YOU