

5 Market Competition

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I Market Competition and Mechanism

The concept of competition is crucial in analysing market structure. It acts as a driving force to make the market operate.

In any market, the buyers may find it difficult to know about the number and detail of all transactions. This type of information needs a process of collection of data, which incurs cost in turn -- transaction or information cost. By price-taking or perfect competition, the word means that competition in a market allows price to tell and reflect the real production and consumption of human behaviour. The market equilibrium price represents the maximum willingness to buy and sell. Competition becomes perfect, i.e. all participants are accepting the price provided through the market -- the participants are **all** accepting the price-- the so-called **price-takers**.

It is also under this form of competition that an equilibrium with the highest level of efficiency can be guaranteed -- the dream of economists !

II Price-taking (Perfect Competition) Market and Its Equilibrium

1 Assumptions and Its Implications

The assumptions of a price-taking market are used as the tools of analysis rather than a true description of the reality. They are not realistic assumptions.

- * There are so many buyers and sellers that none of them can affect the market price which is determined by the interaction of demand and supply. They are all **price-takers**.
- * Goods are **homogeneous**, at least in the eyes of the consumers. Any one good is a perfect substitute of any other so that buyers are indifferent to any one of them.
- * **Perfect information** exists in the market so that buyers and sellers know well about the price, quantity demanded and supplied, quality of goods etc. In addition, all factors of production are **perfectly divisible** and **perfectly mobile**, i.e. zero transportation cost.
- * There are **free entry and exit** of firms so that anyone can start its business at its wish.

Recently, some economists argue that two more assumptions are of vital importance.

- * Transaction costs are zero so that we can concentrate on the analysis of the market mechanism.
- * Property rights are in private hands and well-defined.

2 The Principle of Wealth Maximization : Marginal Benefit = Marginal Cost

Suppliers are rational maximizers in their wealth. Traditionally, we talk about **profit** but because profit is

something unexpected. It becomes logically misleading to maximize anything unexpected. Wealth is a stock concept and can be calculated so that it is a more precise concept.

3 Derivation of The Supply curve of A Price-taking Firm

Based on the maximization principle above, a firm will supply at any output level so long as its marginal revenue (MR) is equal to marginal cost (MC). If price is at or lower than the minimum point of the average variable cost curve (AVC), the firm will shut down.

The supply curve of a price-taking firm is its marginal cost curve starting from the minimum point of its AVC curve.

4 Constant / Increasing / Decreasing Cost Industries

In the short run any firm may earn an excess over its total cost or a loss. With free entry and exit, over the long run, every firm is in an optimal state : **Price = MC = Minimum AC**

A firm producing at an output level of $P = \text{minimum AC}$ is said to be in **optimal scale** of production. The plant size is the most efficient one with the existing level of technology.

On the other hand, the main criticism of the price-taking model is on its assumption of wealth maximization. Whether the firm is really maximizing or not in reality is **not** important to economists. What matters is that the firms in acting as if they do maximize, could survive in the long run.

Constant Cost Industry

In the long run, any increase in the market demand will induce a corresponding increase in the market supply with free entry of other firms into the industry.

If the output of the whole industry expands without any change in its factor prices, the long run market supply curve is horizontal, i.e. a constant cost industry.

Increasing / Decreasing Cost Industry

In general, the expansion of output by a firm requires more factors of production. If this situation prevails among other firms, the increase in demand for this factor of production will bid up the factor price. The long run supply curve is upward-sloping.

The change in factor prices is an **external effect** to the firm and the change in costs within a firm is called the **internal effect**.

5 Concept of Economic Profit

It is a part of revenue or payment to the firm in excess of the total cost in the short run. It will disappear in the long run through competition. Besides, profit is unexpected so economists abandon the term.

6 Marginal Firm

When a firm is just covering its total costs, it is on the margin of leaving or entering the industry.

If the market price falls later, the firm is the first one to leave and shut down - so-called marginal firm.

III Price-searching (Imperfect Competition) Market

When the assumptions required by a price-taking market no longer hold, the market is said to be a price-searching market. The reasons for a price-searching market to exist may be :

- 1 There are barriers to entry into the industry with a result that sellers remain a few, or even one. It follows that each price-searcher has some degree of market power to affect the market price because a few of them dominate the market. They face with a downward-sloping demand curve with the price greater than its marginal revenue.
- 2 Products are heterogeneous or differentiated. They are different in quality, the terms of sales, services provided, availability and location etc.
Each supplier may have their own consumers and therefore, they face with their own demand curve.
- 3 Information is **not** perfect but bears **cost** !

Consumers bear costs in collecting pre-purchase information on goods and sellers. One example of pre-purchase information is the familiar brand name which is to give reliable quality, consumer confidence and taste.

Consumers are willing to pay more because the extra payment is approximately equal to the information cost saved as a result.

Open Market Price-searchers

Open market refers to the market being open to all potential sellers to enter.

Oligopoly

- * A pure oligopolist sells homogeneous products whereas a differentiated oligopolist sells differentiated products.
- * As there are only a few suppliers, each is affected by the acts and strategy of others. On the one hand, they are mutual dependent among them and on the other hand, they rely on non-price competition like advertising.
- * There may still barriers to entry by - economies of size ; by franchise or patent ; or by secrecy like the Coca-cola company.

Monopolistic Competition

- * It is a market similar to a price-taking market - they are also price-takers with free entry and exit.
- * Product differentiation, at least in the eye of consumers, exists with an elastic demand curve and a high degree of competition.
- * The suppliers also use non-price competition like advertising to differentiate their products to enlarge their market share. In H. K., most markets are in the form of monopolistic competition.

Closed Market Price-searcher : Monopolist

Closed market refers to the market with the barriers to entry. The market is dominated by one single seller or price-searcher - the monopolist.

IV Monopoly and Price Discrimination

1 Characteristics

- * a single seller with **no close** substitutes ;
- * the only seller to face the market demand (downward-sloping demand curve) ;
- * the monopolist is still a rational wealth-maximizer ;
- * there is competition also - competition for the monopoly right as well as competition with suppliers of similar substitutes.

2 Causes and Types of Monopoly

- * It exists because of legal measures, e.g. patent, franchise, and copyright.
- * A single firm may control the supply of key raw materials.
- * A natural monopoly refers to a firm with its efficient plant size being relatively large to the market size so that one firm is already sufficient and efficient. Examples like electricity and gas supply.

3 Supply and Cost Condition

- * It faces a downward-sloping demand curve so that price is greater than marginal revenue.
- * The condition of supply and equilibrium is still based on the equi-marginal principle of $MR = MC$. As there is no entry of any kind, the market equilibrium price is set by the monopolist. It is a typical price-searcher and there is **no** supply curve for the monopolist.
- * It is obvious that the MC curve meets the MR curve at its positive range so that the output of a monopolist must be on the elastic portion of the market demand curve.
- * In general, at $MR = MC$, the monopolist gains an amount from total revenue in excess of total cost. It is not treated as profit because profit is an unexpected gain in income but this gain is expected. Otherwise the supplier would not be willing to compete for the monopoly right. This amount is in fact the return of anyone holding the monopoly right. A monopolist can simply sell the business and thus the monopoly right to someone else. Therefore he incurs an opportunity cost of the foregone income if the right is sold. This amount is in fact **a cost**.

If the monopolist remains in the industry, he gives up the opportunity to receive an amount by selling out the monopoly right. The monopoly right becomes a type of fixed factor of production, similar to a fixed piece of land. This amount is termed “ **monopoly rent** “.

4 Price Discrimination

It refers to the practice of any price-searcher by which :

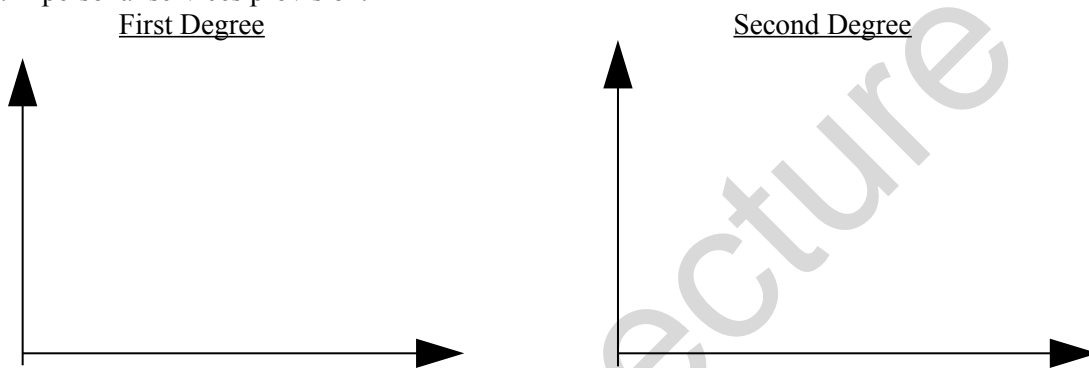
- * **different** consumers paying **different** prices but are given the **same** goods or services produced at the **same** cost ; OR
- * the **same** consumer paying **different** prices for **different** amount of the **same** goods or services produced at the **same** cost.

This practice by the price-searchers aims at the extraction / capture of the consumer’s surplus.

Types of Price Discrimination

First Degree Price Discrimination : To Capture All Consumer’s Surplus

This practice also called perfect price discrimination, aims at capturing the entire consumer’s surplus, e.g. personal services provision.



Second Degree

This practice also called block pricing or multi-part pricing, allows the monopolist to capture only a part of the consumer’s surplus, e.g. gas, electricity and water supply.

It is also used by other types of price-searchers in reality, e.g. department stores, boutiques.

Some economists argue that at different levels of quantities supplied, like Q_1 and Q_2 , the per unit cost of supplying the goods may likely be different so that charging different prices are not typical examples of price discrimination.

Third Degree

This practice is to distinguish the consumers into 2 groups : the inelastic and elastic demand. If the practice involves a relatively low cost, then it is possible to increase the revenue by :

- * charging a higher price to the consumers with an inelastic demand (Note : the original equilibrium position of the monopolist is on the elastic portion of the demand curve) ;
- * charging a lower price to the consumers with an elastic demand.

So long as the extra revenue earned by this practice is greater than the cost in implementing the practice, the net revenue is increased, i.e. a part of the consumer’s surplus is captured as a result.

A standard example is the fares charged on adults and students (also aged and tourists) by the Mass Transit Railway Corporation (MTRC) in Hong Kong.

Price Discrimination Or Not : Some Misconceptions

The following cases seem to be examples of price discrimination but actually they are not.

- * 1st round (run) and 2nd round (run) movie charges ;
- * 1st class and economy class airline tickets ;
- * tuition fee to students and scholarship to some bright students (?) ;
- * discounts on hotel rooms for frequent travellers ;
- * discounts given to wholesalers ;
- * interest rates charged on loans regardless of the credit of the borrowers ;
- * some goods and services served in hotels and in street-stalls ;

- * peak-hour pricing : by MTRC, telephone company, electricity company ;
- * medical care being a controversial case ;
- * parallel goods and final goods.

In the provision of goods to customers, most firms provide services and if the services provided are **different** in costs, it is **not** an example of price discrimination.

Conditions of Practising Price Discrimination

Traditional View

- * The market has to be distinguished/separated between different elasticities of demand by the price-searchers.
- * The sellers as price-searchers maintain a certain degree of monopoly power on sale. In addition, the buyers need to be very difficult or impossible to resell the goods or services to others.

Modern View

- * The price-searchers have a certain degree of monopoly power on sale. As a result, it faces a downward-sloping demand curve.
- * The market, more precisely, the consumers, can be separated so that resale is not possible. (Whenever the transaction costs of separating consumers and policing procedures to prevent resale are greater than the extra revenue earned from price discrimination, the practice will not be used.)

OR

* Imperfect Information (Versus Demand Elasticities)

In reality, imperfect information always exists, i.e. the consumers may not even know that they are charged differently. In this case, the conditions required by the traditional view are **not** necessary conditions to practise price discrimination. That is to say, a **same** group of consumers with the **same** elasticity of demand may still be charged **differently** within the **same** market, provided that they are not aware of this.

Other Pricing Tactics Used By Price-searchers

All-or-nothing Pricing

It is a pricing tactics used to capture all the consumer's surplus by charging a price such that the consumers can only choose a fixed quantity or nothing at all.

In theory, the consumers will pay a marginal amount (MR to the seller) equal to the marginal use value of the consumers.

The total revenue earned is equal to the total use value as a result.

It maximizes at a point with : $MR = MC = MUV$.
As all consumers pay the same price, there is **no** price discrimination.

Two-part Tariff or Licensing

There is a minimum charge together with a per unit price on the goods provided.

For example, the minimum charge on some discos and lounges plus a charge on menu ; the membership of country clubs ; public utility charges.

Tie-in Contract

It is an offer to sell a good or service on the condition that the buyers had to buy another good or service at a price at the same time.

But for services, the provision involves a wide variety of services and is very difficult to distinguish each form of services clearly, e.g. the services provided by a teacher, taxi-driver, salesmen, a developer of large housing estates.

Examples include the computer hardware and software ; the components of equipment like cars ; the restaurant snacks before a meal (a "tax" on mere seating).

In 1934, an anti-trust law was passed to forbid I. B. M. on monopolising punched cards. Similarly, the Hong Kong government declared that the Hong Kong Telephone Co. had no monopoly power on the supply of wireless phones.

5 Efficiency & Welfare Cost of Monopoly
Traditional (Neo-classical) View

This view suggests that a price-searcher will lead to inefficiency or a misallocation of resources.

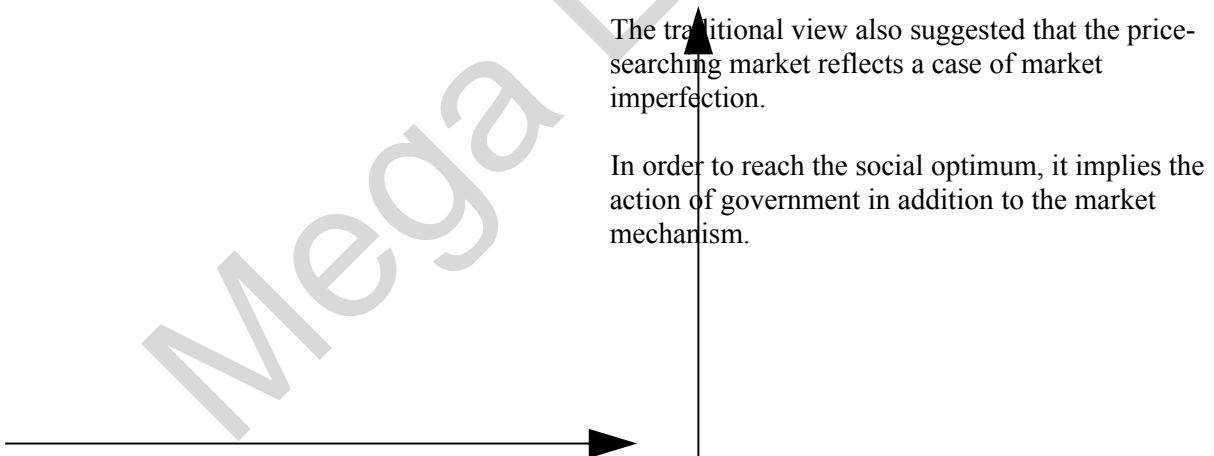
A price-searcher equates its marginal revenue with marginal cost in determining its wealth-maximizing level of output. At that output (Q_M), the market price is greater than its marginal cost. At a marginal unit beyond Q_M the consumers' maximum willingness to pay (shown by the demand curve, i.e. their MUV) is greater than the sacrifice of resources of the economy in producing that marginal unit (shown by the MC curve).

If output is further expanded beyond Q_M there is more gain from the social point of view.

All potential gains are enjoyed by the consumers when output reaches Q_I where price is equal to MC.

Under simple monopoly pricing, the price-searcher stays at Q_M so that it is criticized as **socially inefficient**. It brings a welfare loss equal to the area ABC.

Diagram On the Allocative Inefficiency of A Price-searching Market



Modern View : Transaction Cost

The modern view pointed out the logical problem of the argument of market imperfection and the imposition of government action.

If inefficiency implies the misallocation of resources by the price-searcher, it is logically inconsistent with the postulate of maximization under constraints. It is because rational maximizers, including the price-searchers, will go on capturing any potential gains whenever possible. If the idea of inefficiency is accepted, then the postulate should be rejected at the same time.

Diagram On The Capture Of Potential Gain

In theory, a price-searcher may use any pricing tactics to capture any existing potential gain of the economy.

The output level could easily be set at Q_1 with the potential gain (area ABC) captured.

In other words, the price-searcher can also act as efficiently as the critics requires with $MC = MUV$.

So, what is really inefficient ?

Argument of The Modern View

- * The economists argued that there are constraints prohibiting the price-searchers to use such pricing methods to capture any potential gain.
The constraints are the additional administration costs incurred in using the methods. There are transaction costs in practising the pricing methods.
- * If the transaction cost is zero, the allocation of resources is still socially optimal at Q_1 .
- * If the transaction cost is significantly high making the price-searcher to use simple monopoly pricing instead, he at least avoids the cost and the consumers enjoy their consumer's surplus.
The argument of welfare loss or market imperfection only implies the presence of transaction cost rather than a reason for government intervention of the market mechanism.
The situation of simple monopoly pricing is also **efficient** in resources allocation.

6 Government Regulation : Taxation & Price Control

Most of the criticism on a monopoly market is on the monopoly rent earned by the monopolist. The traditional view of government action is to drive out all or a part of this amount.

Lump-sum Tax

A government may charge a license fee in the form of a lump-sum tax on the monopolist. It aims at raising the total cost and lowering the monopoly rent without affecting the MC and output level.



The Hong Kong government had charged a license fee on some franchise companies like the two local television companies, the bus companies. (Such policy has changed from time to time.)
This form of tax is difficult to implement because the government had to know clearly about the production and market condition of the monopoly. In response, the monopolist may try hard to bargain to pay.

The **extent** of the amount permitted to earn by the monopolist is a controversial issue, not just a positive economy theory.

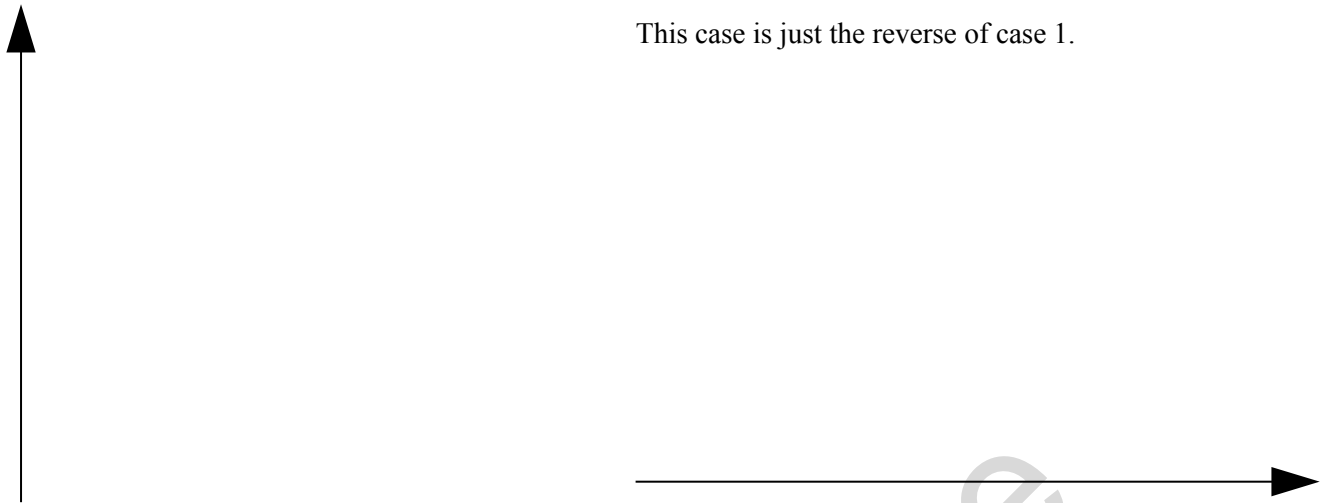
Price Control : AC Pricing Or MC Pricing (Optional)

Case 1 : The Minimum Point of AC Curve Above the Demand Curve

To drive out the monopoly rent, the government may force the monopolist to charge at P_1 and produce at Q_1 with $P = AC$ and $TR = TC$. But P is still **greater** than MC so that the so-called potential gain is **not** captured.

If the government forces a price equal to MC and an output level of Q_2 , the potential gain could be enjoyed by the public but the monopolist bears a loss. It becomes difficult to expect the monopolist to continue the business in practice.

Case 2 : The Minimum Point of AC Curve Below the Demand Curve



Summary

- * It is seen that the pricing policies depend very much on the position of the AC curve. In case that the minimum point of the AC curve meets the demand curve as well as the MC curve, both methods of (AC & MC) pricing will give the desired result.
- * Even if the above cases appear, the monopolist may still try to lower its costs (in the long run) to make the policies ineffective.
- * In theory and practice, such policies have proved to be ineffective to regulate the monopoly market.

Subsidy on A Monopolist

Some economists argue that MC pricing is still useful because marginal gain of the society (= MUV of the consumers) is equal to the marginal sacrifice of resources (= MC). In case 1, the monopolist may be given a subsidy to make its $AR = AC$ whereas in case 2, a tax can be used to extract the monopoly rent.

The uses of taxes and subsidy lead to a question of equity and desirability because the taxpayers are likely to be the consumers also.

Price Ceiling

The use of price ceiling does not involve any taxes and subsidy but the government is difficult to determine a suitable level of price ceiling.

7 Monopoly & Price-taking : A Comparison

A monopoly market is traditionally criticized with the following reasons :

Efficiency

A price-taking market achieves efficiency with price (MUV) equal to the marginal cost but in a monopoly market, $MR = MC$ in case of simple monopoly pricing. With a downward-sloping demand curve, the situation of $MR = MC$ also implies that price (MUV) is greater than the marginal cost, i.e. marginal gain by the society (MUV of consumers) is greater than the marginal cost (of resources used in production).

There are some **potential gain** not yet captured !

Innovation

A monopoly market is protected by some forms of barriers to entry resulting in little **incentive** to innovate.

Allocation of Resources

As mentioned above, when price is greater than the marginal cost, the monopolist is said to be “ **under-produced** “ leading to a misallocation of resources, i.e. more resources should be used by the monopolist to increase its level of output.

The recent argument on monopoly mainly lies on a consideration of transaction cost as a constraint affecting the behaviour of both the consumers and the price-searcher.

The argument takes into consideration about the level of transaction costs in practising price discrimination and any means to extract consumer’s surplus in a world of competition.

In other words, a monopolist may well be efficient :

- * by using simple monopoly pricing if he finds that the **transaction costs** in policing price discrimination are significantly high ; or
- * with an **incentive** to take research and development (R & D) to lower its production cost in the long run ; or
- * with an optimal allocation of resources if producing at an output with $P = MC$ would lead to other forms of arrangement wasting even **more** resources.

The traditional comparison between price-taking and monopoly market is not meaningful in this context because **by definition** the monopoly pricing is bound to be inefficient. The analysis is criticized as not powerful enough.

A more powerful approach is to compare the price-searching market with the real world situation with transaction costs in exchange and production. The analysis becomes more convincing.

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