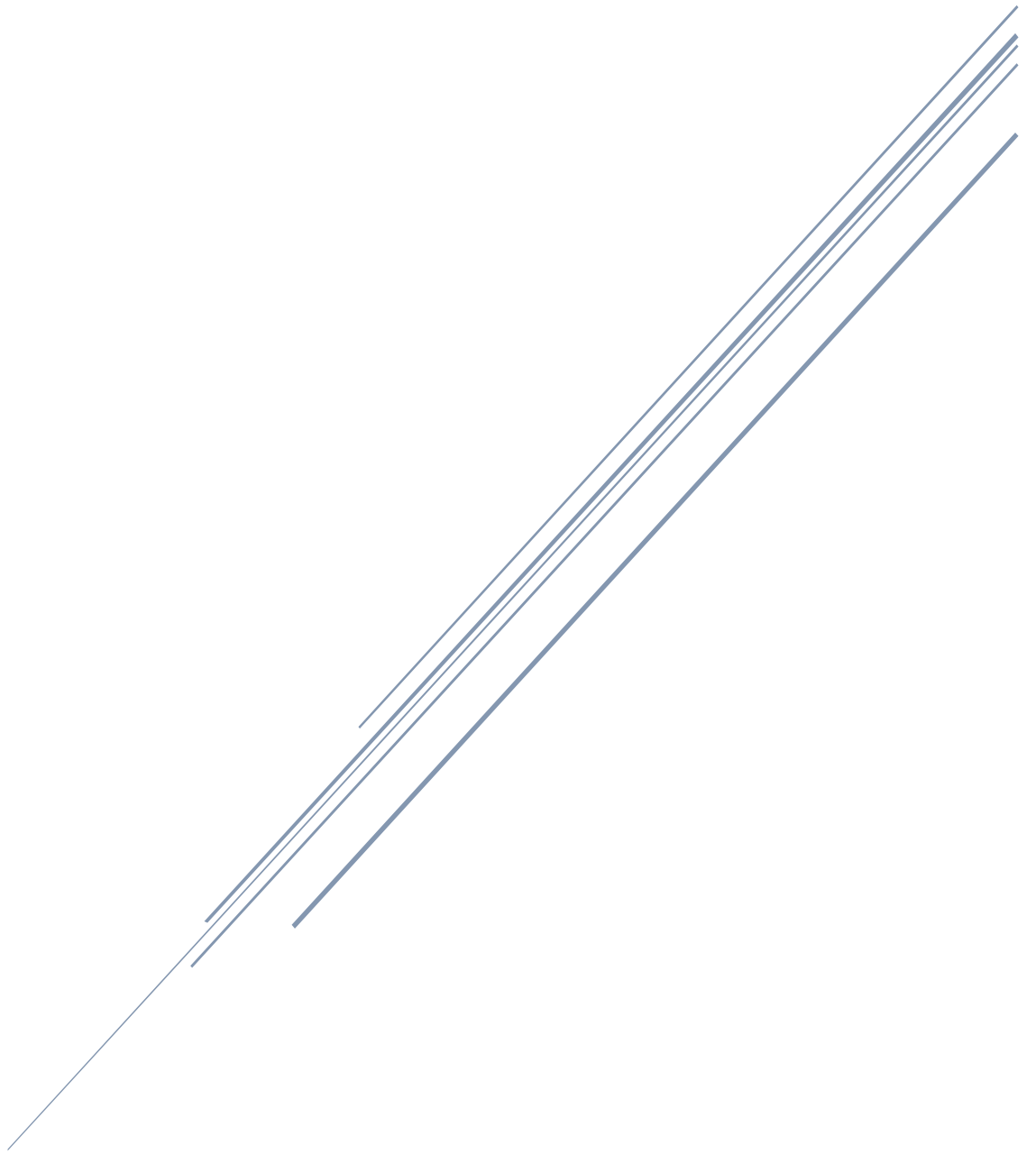


H2 ECONOMICS (MICRO)

TIAN XIAO



Chapter 1

The Market System: Scarcity, Choice & Opportunity Cost

1 Scarcity, Choice & Opportunity Cost

1.1 WHAT IS ECONOMICS

Definition 1.1.1

Scarcity is the problem arising from limited resources and unlimited wants.

Wants refer to all goods and services people would consume if they had unlimited incomes. Comparatively, needs refer to all basic necessities for survival.

Resources are inputs used to produce goods and services. There are four types of resources (CELL).

Capital	Entrepreneurship	Land	Labour
Factories and machinery	Managerial ability	Natural resources	Human effort

1.2 SCARCITY, CHOICE & RESOURCE ALLOCATION

Definition 1.2.1

Opportunity costs is the value of the next best alternative forgone when a choice is made.

Choice is the act of selecting among alternatives. **Scarcity necessitates choice** and **choice involves opportunity cost**.

2 Rational Decision-Making

2.1 HOW RATIONAL DECISION MAKING IS USED

Definition 2.1.1

Marginal benefit refers to the additional benefit gained from consuming or producing one more unit of the good/service.

Marginal cost refers to the additional cost incurred from consuming or producing one more unit of the good/service.

2.2 CONCEPTS OF EFFICIENCY

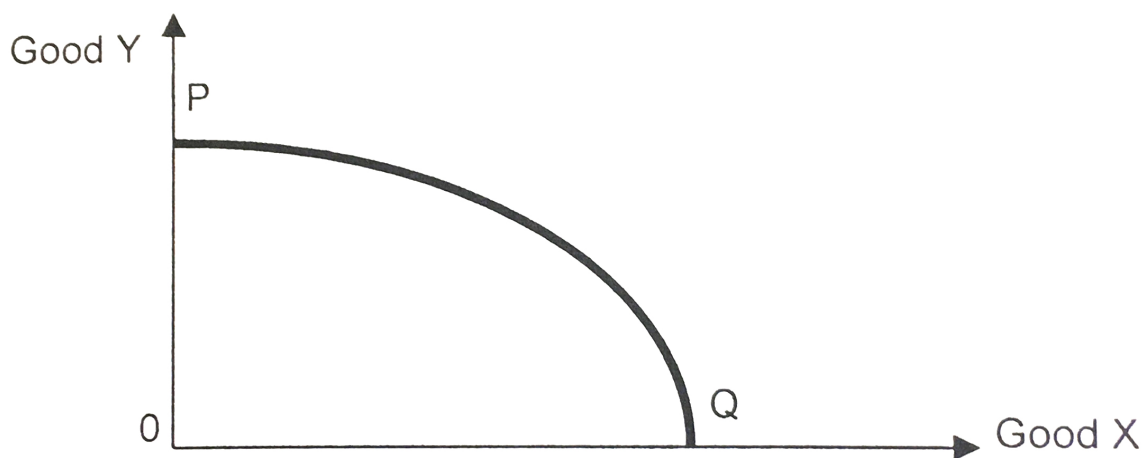
Economic efficiency is a situation where each good is produced at the minimum cost and where individual people and firms get the maximum benefit from their resources. There are 2 basic concepts of efficiency- productive efficiency and allocative efficiency. **Productive efficiency** is

achieved when all the available resources are fully employed to achieve the maximum output possible. **Allocative efficiency** is achieved when the current combination of goods and services produced and consumed allows the society to attain the greatest level of satisfaction.

2.3 THE PRODUCTION POSSIBILITY CURVE

Definition 2.3.1

The **Production Possibility Curve (PPC)** shows the maximum attainable combinations of two goods and services that can be produced in an economy, when all the available resources are used fully and efficiently, at a given state of technology.



- Scarcity is illustrated by the unattainable combinations outside the PPC.
- Productive efficiency is illustrated by points on the PPC, where all the available resources are fully employed to achieve the maximum output possible.
- Points inside the PPC are inefficient because resources are either unemployed or underemployed so the economy is not producing the maximum output possible with the given resources.
 - **Unemployment** is the situation in which not all the available resources are used in the production of goods and services.
 - **Underemployment** refers to the case in which resources are engaged in production but are operating below their potential capacity. (i.e. low efficiency)

There are 2 concepts of economic growth- actual economic growth and potential economic growth. **Actual economic growth** (movement of a point within a PPC to a point on the PPC) is the increase in actual output in a given period of time in a short term, while **potential economic growth** (outward shift of a PPC) is an increase in productive capacity in the long term.

There are 3 factors that can lead to an outward shift of a PPC- **increases in the quantity of resources**, **increases in the quality of resources**, and **technological advancements**. The shift can be either parallel (when the resource is perfectly adaptable to the production of both goods), or skewed (when the resource is better suited to the production of one good).

Typical Essay Question

How It Would Affect the Market / Total Revenue¹

Essay Structure

INTRODUCTION

- Listing all factors
- Definition of market equilibrium point
- Definition of total revenue (TR)

BODY PARAGRAPH

- SS Factor + Explanation > Extent of shift of price & quantity (PED Value + Justification) + Graph (to show the change of equilibrium price & quantity / TR).

Example

The government announced a release of 17,000 new HDB flats in 2018. This would increase in the supply of new 5-room HDB flats, illustrated by a rightward shift of the supply curve from S_0 to S_1 in Figure 1. Equilibrium price will decrease from P_0 to P_1 while equilibrium quantity will increase from Q_0 to Q_1 .

Demand for new 5-room HDB flats is relatively price elastic due to the availability of substitutes such as new 4-room HDB flats and resale HDB flats which provide the same needs for accommodation. Hence, given an decrease in price of new 5-room HDB flats (due to an increase in supply), the quantity demanded will increase by more than proportionately.

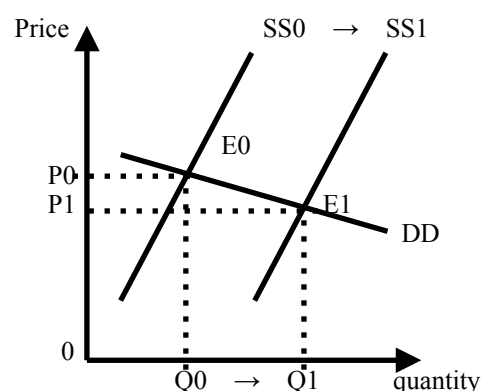


Figure 1. Market for 5-room HDB Flats

(If needed) In this way, gain in total revenue (refer to the graph) due to increase in quantity demanded is greater than loss in total revenue (refer to graph) due to decrease in price. Thus, total revenue will increase.

¹ Market → Equilibrium Price & Quantity; Total Revenue → TR.

- DD Factor + Explanation² > Extent of shift of price & quantity (PES Value + Justification) + Graph (to show the change of equilibrium price & quantity / TR).
- Overall Effect - Extent of Shift + Justification (with graph)
- Price Mechanism
- DD/SS Factor of Related Market + Explanation (mention XED concept)
- Overall Effect - Extent of Shift + Justification (with graph)

Conclusion / Evaluation

- Ceteris paribus assumption basis
- Lack of specific DD/SS factor for the related market
- Government policies
- Nature of goods
- Nature of markets

² When one of the factors is increase in income, mention YED concept.

Chapter 3

Firms

TIAN XIAO

3.1 - Profit Maximisation Objective

The traditional objective of firms is profit maximisation. Profit is the difference between total revenue (TR) and total cost (TC) of production (i.e. $\pi = TR - TC$). There are normal profit, supernormal profit and subnormal profit.

To achieve profit maximisation, the marginalise principle must be fulfilled: $MR = MC$.

3.2 - Cost of Production in the Short Run

In the short run, the level of output can only be varied by changing the quantities of variable factors, with the amount of fixed factors remaining constant.

The **Law of Diminishing Returns** states that when increasing amounts of a variable factor are used with a given amount of fixed factor, there will come a point when each extra unit of the variable factor will produce less extra output than the previous unit; and may eventually reduce total output produced. Diminishing returns set in due to inefficient factor combination and not due to less efficient variable factor.

Cost is the sum of fixed cost and variable cost. Average fixed cost (AFC) continues to decline as output increases as fixed cost gets spread over larger and larger. Figure 3.2a shows the short run cost curves for a typical firm.

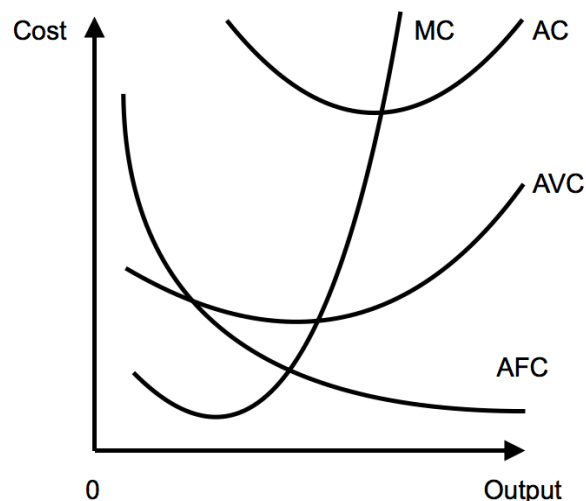


Figure 3.2a: Short run cost curves for a typical firm

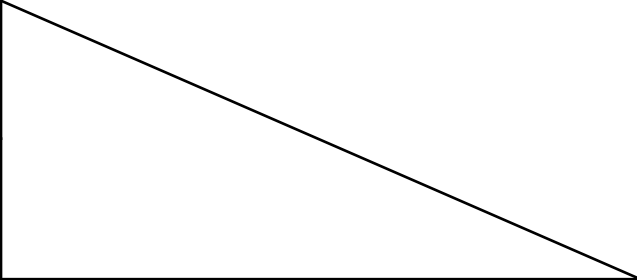
The shape of AC is dependent on the shape of MC. The MC curve intersects AC curve at its minimum point.

3.3 - Cost of Production in the Long Run

In the long run, all factors of production are variable. To minimum costs, the producer will choose to achieve productive efficiency.

Economies of scale (EOS) are experienced if long run average costs (LRAC) fall as the firm's output increases. There are internal EOS (i.e. LRAC falls as the firm's scale of production increases) and external EOS (i.e. LRAC falls as the size of the whole industry grows). In the same way, there are also internal and external diseconomies of scale (dEOS).

Internal EOS	Internal dEOS
<p style="text-align: center;">Technical EOS</p> <p>When a firm expands its plant size, there will be specialisation and division of labour which breaks down production process into simpler processes, and indivisibilities which make full use of previously underemployed equipment, which decreases AC.</p>	<p style="text-align: center;">Loss of Control</p> <p>It is difficult to ensure everyone is happy, which will lead to lower productivity and thus increases AC.</p>
<p style="text-align: center;">Marketing EOS</p> <p>Buying raw materials in bulk at more favourable rates decreases AC.</p>	<p style="text-align: center;">Lack of Coordination and Communication</p> <p>Large firms are subdivided into many decentralised departments. There may be communication breakdown, leading to inefficiency, which increases AC.</p>
<p style="text-align: center;">Financial EOS</p> <p>With higher credit standings, a large firm can obtain finance more easily and on more favourable terms, which decreases AC.</p>	
<p style="text-align: center;">Organisational EOS</p> <p>Centralised administration decreases AC.</p>	
<p style="text-align: center;">Managerial EOS</p> <p>Improved management system and specialisation of particular tasks decreases AC.</p>	
<p style="text-align: center;">Risk-bearing EOS</p> <p>Efficient diversification of risks decreases AC.</p>	

External EOS	External dEOS
<p align="center">Economies of Concentration</p> <p>Firms in a particular industry are concentrated together. There will be a shared pool of skilled workers and better industry infrastructure.</p>	<p align="center">Increased Strain on Infrastructure</p> <p>Increased congestion due to concentration and expansion of industry may result in rising transportation costs.</p>
<p align="center">Economies of Information</p> <p>There will be common information services provided for the industry as a whole.</p>	
<p align="center">Economies of Disintegration</p> <p>Firms in an industry can split up the production process into a single process.</p>	

3.4 - Alternative Objectives of a Firm

Besides profit-maximising objective in the long run, in reality, firms may have many other objectives to pursue in the short run, which may conflict with the aim of maximising profit.

Market share dominance may be pursued through some decisions in order to increase profit in the long run. For example, they may engage in predatory pricing in order to clear out competitors and increase market share and market power.

Additionally, alternative objectives include revenue maximisation, growth maximisation, profit satisficing behaviour, entry deterrence and managerial utility maximisation.

3.5 - Perfect Competition

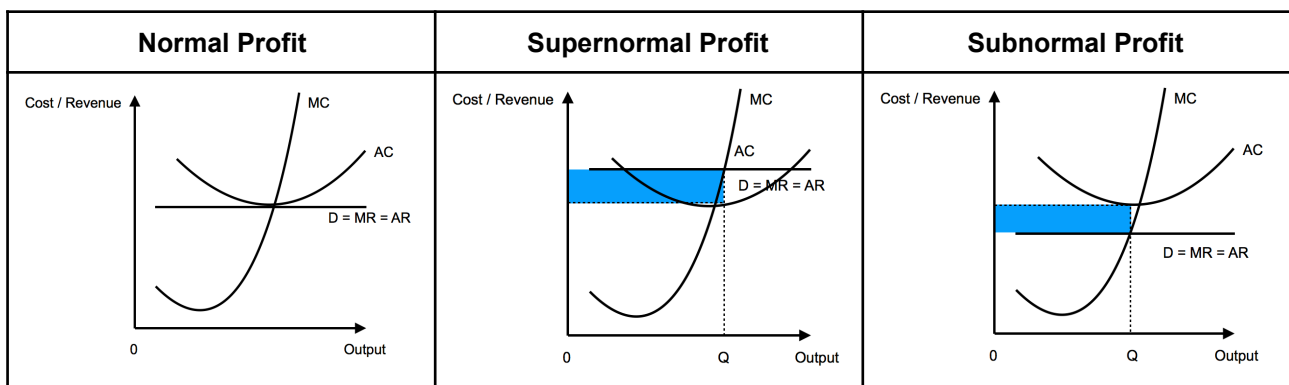
In a perfectly competitive market, there are a **very large number of buyers and sellers** in the industry. Firms have no power to affect the price of the product. Hence, they have no market power. They are price-takers.

There is **no barrier to entry**. Existing firms are unable to stop new firms from setting up shops.

Products are homogenous. Firms do not undertake branding or advertising.

Producers and consumers have **perfect knowledge** of the market. One example is the primary agricultural commodity market.

In short-run equilibrium, there are three possible profit positions for a firm in a perfectly competitive market, as shown below:



Here, when a firm is making loss in the short run, it faces shut-down condition. The firm will make decisions based on whether it can cover its variable costs. If $AR > AVC$, the firm will continue to produce since its loss is only part of the fixed cost. If $AR = AVC$, there is no difference whether the firm continues to produce or not as its loss is equal to TVC in both cases. If $AR < AVC$, the firm will cease production and shut immediately.

In the long run, perfectly competitive firms produce where $P = MC = LRAC = LRMC$ and earn normal profit. For example, if existing firms are earning supernormal profits, new firms will be attracted to the industry. The market supply curve will be shifted to the right and market price will be lowered. Thus, each firm's AR curve will shift downwards until it earns normal profit.

3.6 - Monopoly

A monopoly has the following characteristics:

- Sole seller. The firm is the industry. It is a price setter and has high market power.
- High barriers to entry and exit (BTE).
- Unique product. This results in a relatively price inelastic demand curve.
- Imperfect knowledge.

A natural monopoly occurs when a single firm can supply a good to the entire market at a lower average cost than two or more firms can.

In the short run, a monopolist may also have three possible profit positions. However, in the long run, as there are extremely high barriers to entry, a monopolist will earn supernormal profit in the long run.

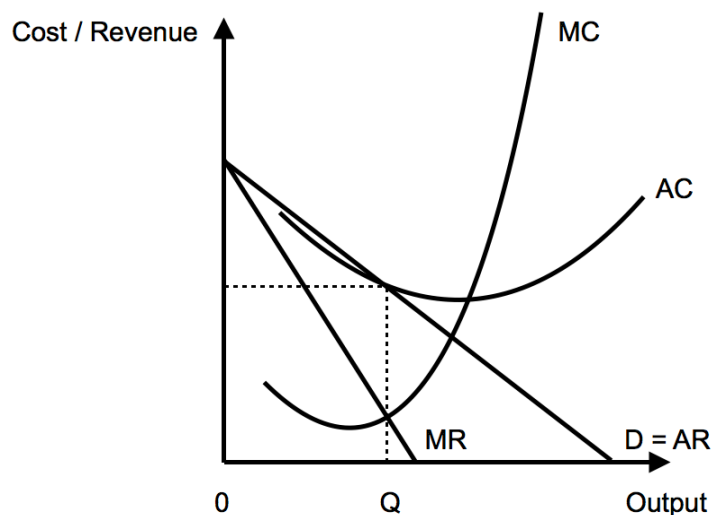


Figure 3.6a: A monopoly that is earning normal profit in the short run

3.7 - Monopolistic Competition (MC)

A monopolistic competition has the following characteristics:

- A large number of buyers and sellers. Each firm produces a small market share of the total market output. Thus, each firm has limited influence over the market price.
- Low barriers to entry and exit (BTE).
- Differentiated product. Hence, firms have some degree of market power and have the incentive to engage in non-price competition to increase market share.
- Imperfect knowledge.

In the short run, a monopolist may also have three possible profit positions. In the long run, as there are low barriers to entry, the demand curve will fall and become more price elastic. Supernormal profit is competed away and finally all the firms will earn normal profit.

3.8 - Oligopoly

A oligopolistic competition has the following characteristics:

- A few large dominant sellers. Each firm produces a significant market share of the total market output. Thus, each firm has considerable influence over the market price.
- High barriers to entry and exit (BTE). This implies supernormal profit in the long run.
- Either homogenous or differentiated product. When product is homogenous, firms have the incentive to engage in mergers and collusion; When product is differentiated, firms have the incentive to engage in non-price competition to increase market share.
- Imperfect knowledge.

Oligopolistic firms have a unique characteristic - mutual interdependence. Mutual interdependence means that each firm is affected by its rival's decisions. Likewise, its decisions will affect its rivals.

Oligopolies may be non-collusive or collusive.

Non-collusive Oligopoly	Collusive Oligopoly
<p style="text-align: center;">Price Rigidity</p> <p>Prices of goods sold by non-collusive oligopolistic firms are often rigid. This behaviour can be explained by a kinked demand curve.</p> <p>If a firm lowers its price, other firms will follow for fear of losing market share. Thus the demand curve facing the firm if it lowers the price is relatively price inelastic. On the other hand, if a firm raises its price, no firm will follow, so it will lose market share. The demand curve facing the firm if it raises its price is relatively price elastic.</p> <p>Both of these price changes will result in fall in total revenue for the firm thus profit will fall, which deviates from the price-maximising objective of the firm. Thus, there is a situation of price rigidity.</p>	<p style="text-align: center;">Collusion</p> <p>Collusion occurs when oligopolistic firms agree to limit competition amongst themselves. They may agree on prices, market share, advertising expenditure, etc. Collusion is usually illegal, and may be explicit (formal) or tacit (informal). A formal and contractual collusive agreement is called a cartel, while tacit and informal collusion can occur in the form of price leadership (as oligopolistic firms follow the pricing behaviour of a dominant firm without any formal agreement) or informal price fixing (which may be illegal).</p>

<p style="text-align: center;">Non-price Competition</p> <p>Non-collusive oligopolies often engage in intensive non-price competitions. Non-price competitions take the form of product differentiation, which includes advertising, branding, product innovation and product development. Such non-price competition is intended to capture market share as well as making the demand less price elastic.</p> <p>Non-price competition increases costs, meanwhile.</p>	<p style="text-align: center;">Mergers and Acquisitions</p> <p>A merger is when one and more firms legally combine to form a new larger firm, while acquisition occurs when one firm buys over or gains control of another firm. This results in larger and fewer firms in the industry, thus increasing their market share.</p>
<p style="text-align: center;">Price Competition</p> <p>Price wars happen because a firm wants to increase its market share and thereby gain greater market power. The firm is sacrificing short-term profit-maximisation for long-term profit-maximisation and may calculate that it will be able to maintain lower prices for a longer period of time than its rivals.</p> <p>Predatory pricing is another form of price competition. The dominant oligopolistic firms may deliberately lower its price below the short run variable cost in order to drive out its competitors. This happens when the dominant firms has certain cost advantages over the smaller firms.</p>	<p style="text-align: center;">Non-price / Price Competition</p> <p>These are similar to non-collusive oligopolies.</p>

3.9 - Price Discrimination

Price discrimination occurs when a producer sells a specific commodity to different buyers at two or more different prices for reasons not associated with differences in costs. A firm may be able to increase total profit by selling each unit of the good separately, at a price each individual consumer is willing to pay.

For price discrimination to be possible, three conditions must be fulfilled: (i) The seller must be able to set its price (i.e. the seller has some market power and has some control over the price). (ii) The seller must be able to separate the market. The seller must be able to prevent those who pay the lower price from reselling the product to those who pay the higher price. (iii) The seller faces different price elasticity of demand from separate groups of buyers, and / or from different qualities of good purchased.

There are three types of price discrimination. First-degree price discrimination is where the firm charges each consumer the maximum price he is prepared to pay for each unit of the good. This is seldom possible as it is difficult to accurately identify the individual consumer's demand curve. Second-degree price discrimination is where the firm charges customers different prices for particular blocks of the same service, according to how much they purchase. Third-degree price discrimination is where consumers are grouped into two or more independent markets and a separate price is charged in each market. Then profit-maximising price is charged in each market.

Effects of Price Discrimination		
	Positive Effects	Negative Effects
Producers	The firm can earn higher profit which may be reinvested and lead to lower cost in the future.	
Consumers	With possibility of cross subsidisation, those paying lower prices may be able to afford a good which they cannot afford previously (e.g. bus fare for the elderly).	
Society	Allocative efficiency may be achieved; Production will be increased; Previously unprofitable goods can be produced.	There will be equity issues: Monopoly profits are increased at the expense of consumers.

3.10 - Contestable Market

The theory of contestable markets argues that what is crucial in determining a firm's behaviour, is not whether an industry is actually a monopoly or competitive, but whether there is the real threat of competition.

Factors Affecting the Contestability of Markets		
Lower BTE. → Higher contestability.	No sunk cost. → Higher contestability.	Access to the same technology. → Higher contestability.

A market that meets all the above conditions is called a perfectly contestable market.

3.11 - Efficiency

Allocative efficiency is achieved when the price of the good is exactly equal to the marginal cost of producing the good (i.e. $P = MC$).

Productive efficiency is achieved when firms produce the maximum output for the given amount of input. Monopoly and oligopolies tend to be productively inefficient as they do not face competition and are lax about cost control.

Dynamic efficiency is achieved if a firm invests in process innovation and develops new and more efficient ways to produce goods.

3.12 - Government Interventions to Imperfect Markets

Government may decide to take certain actions in order to prevent firms becoming too dominant in an industry or to restrict the behaviour of already dominant firms, as this would give them the market power to gain at the expense of consumers by charging higher prices and supplying less to the market.

- A. Anti-trust policies. This refers to regulatory procedures or actions designed to prevent the deliberate creation of monopolies, and to prevent dominant firms from engaging in anti-competitive practices.
- B. Regulation through taxes. A lump-sum tax is used to reduce the excessive monopolistic profit.
- C. Regulation using pricing policies. These include MC pricing (for allocative efficiency) and AC pricing (for normal profit).

Nationalisation is the process whereby a firm is taken over by the state such that its assets are transferred from the private sector to the national government, in order to tackle monopoly power, while privatisation is the transfer of ownership and control of a government-run firm to the private sector as state-run companies are often highly inefficient.

Chapter 4

Market Failure and Government Intervention

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1. Public Goods
2. Externalities and Merit / Demerit Goods
3. Imperfect Markets
 - Market Dominance
 - Asymmetric Information
 - Factor Immobility

Failed Market + Government Intervention = Allocative Efficiency

4.1 - Market Failure

Market failure exists when the free market fails to allocate resources in an optimum and efficient manner.

Government also has a microeconomic goal of **equity** which can be defined as fairness in the distribution of economic welfare. Allocative efficiency may not result in equity.

4.2 - Public Goods

Public goods are goods or services that have the features of **non-excludability** and **non-rivalry** and as a result would not be provided by the free market. One example is **national defence**.

Non-excludability means that when a good is provided to only one person, it is also available for others to enjoy. Since it is prohibitively expensive if not impossible to exclude others from consuming the goods once it has been provided, this gives rise to the **free-rider problem**, where it is possible for a person to consume a public good without having to pay for it. This weakens the incentive for consumers to offer to pay for public goods, so no consumer will reveal his demand for public goods. Since so, it is impossible to charge a market price for public goods. If left to private firms, they would not be provided at all. Thus, there is a **missing market**. The market fails because no resource will be allocated to their production. One example is **national defence**.

Non rivalry means that the consumption of a good by one person does not deplete the benefits available to others to enjoy. The marginal cost is zero. Since so, at socially optimum output ($MSB = MSC$), the socially optimal price will be zero. But private firms have to charge a price in order to produce the good and hence will not accept zero as a price. Thus, allocative efficiency cannot be achieved.

Government directly provides public goods because the private firms will not provide them.

4.3 - Externalities

Allocative efficiency is achieved when **MSB = MSC**.

Negative externalities occur when private production / consumption creates an external cost to society that affects third parties as a 'spill-over effect' that is not internalised by private households / firms.

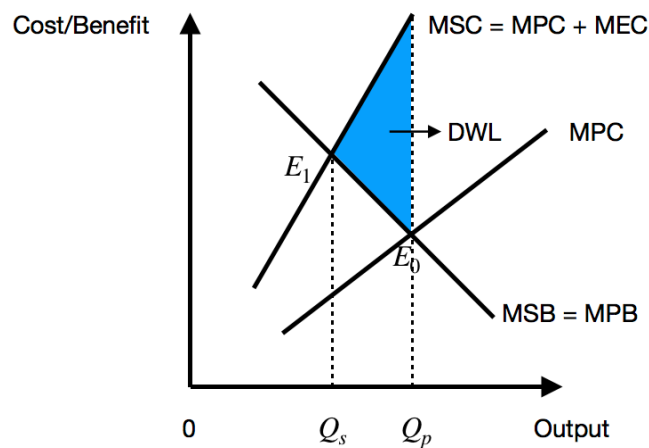
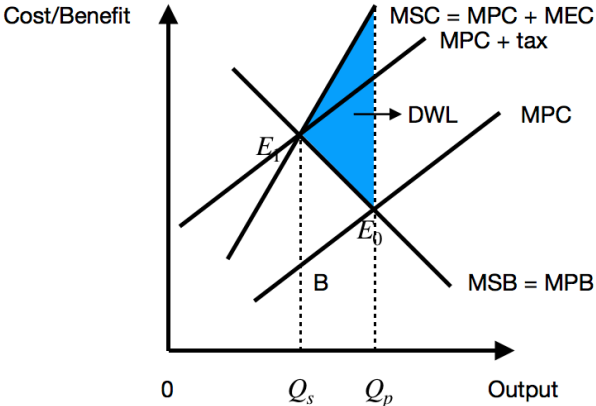


Figure 4.3a: Negative externalities causing allocative inefficiency

Steps to explain negative externality:

- Explain MPB and MPC in context.
- Explain MEC in context.
- Producers produce / Consumers consume at $MPB = MPC$.
- $MSC = MPC + MEC$, resulting in a divergence between MSC and MPC .
- When left to free market, producers produce / consumers consume at Q_p , where $MPB = MPC$; However, the socially optimum output is at Q_s , where $MSB = MSC$. Since $Q_p > Q_s$, there is an over-production / consumption of $Q_s Q_p$ units.
- This results in allocative inefficiency and deadweight loss to society of area $A E_1 E_0$ since the additional cost is higher than the additional benefit.

Government solutions include market-based solutions and non-market-based solutions.

Solution	Limitation
<p>Taxation is a market-based solution, which is the payment of money to the government by a household / firm, for which it receives no good or service in return. An example is Electronic Road Pricing (ERP) in Singapore, which is a pay-as-you-use basis.</p> <p>Through the indirect taxes, the government will be able to increase MPC and hence lower the production / consumption of the good to the socially optimum level. A tax of E_1B is given to discourage producers / consumers to produce / consume the good, for them to <u>internalise the external cost</u> fully. Allocative efficiency is thus obtained with taxes by shifting MPC upwards to coincide with the socially optimum output level. Hence, deadweight loss is removed and allocative efficiency is achieved.</p> 	<p>It is difficult to measure the exact size of MEC and hence the exact amount of tax to correct market failure. Government failure may arise from over-taxation or under-taxation.</p> <p>Administrative costs of collecting taxes may be very high. Firms may also have the incentive to evade such taxes.</p> <p>If the good is price inelastic in demand, even with the tax, there will be a less than proportionate decrease in consuming the goods. Thus, it may be ineffective and even increase expenditure of low-income groups.</p>
<p>Tradable permit is a market-based solution. It means that each firm is given a permit to produce a given level of externalities.</p>	<p>Firms which find that the costs of permits is lower than their abatement costs will buy more permits to pollute.</p> <p>Administrative costs may also be high.</p>
<p>Legislation or government regulation is a form of non-market-based-solution. The government can pass legislation to prohibit or regulate behaviour that imposes external cost. This forces firms to reduce their output to the socially optimum level of production, thus reducing pollution.</p> <p>One example is the Certificate of Entitlement (COE) in Singapore. COE is a system which dictates that car buyers must purchase COE before buying the vehicle. It is a form of quota to set the car ownership to the socially optimum output.</p>	<p>It is difficult and expensive to enforce such legislations.</p> <p>Due to COE, car owners tend to use cars excessively and pollute more. Equity issues may also arise. It is difficult to ensure the consumption is at socially optimum level as COE controls the ownership instead of the usage.</p>
<p>Nationalisation is a form of non-market-based solution when the state <u>takes over</u> the ownership and production of goods and services previously produced by private firms. The government can then produce at socially optimum level of output as it is not profit-driven.</p>	<p>Bureaucracy and less competition makes the government firms less efficient.</p> <p>Lack of profit motive leads to productive inefficiency.</p>

Educations, campaigns and advertisements is a form of non-market-based solution which allows the negative external cost to be made known to the individuals. As a result, consumption for these goods will decrease due to a change in tastes and preferences of consumers and producers. The change in tastes and preferences will shift MPB to coincide with MSC at the socially optimum output level.

These are effective only in the long run but ineffective in the short run.

Positive externalities occur when private production / consumption creates an external benefit to society that affects third parties as a 'spill-over effect' that is not internalised by private households / firms (e.g. immunisation).

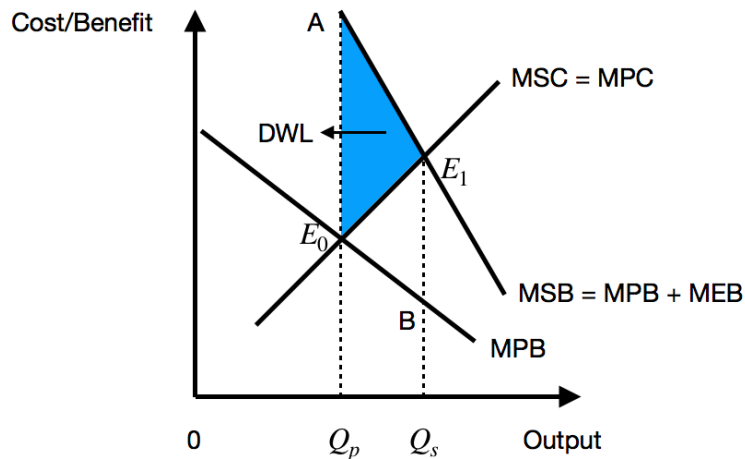
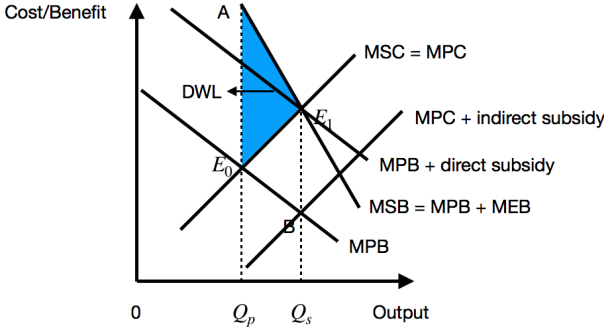


Figure 4.3b: Positive externalities causing allocative inefficiency

Solution	Limitation
<p>Direct / Indirect subsidies are the payment of money to a household / firm by the government for which it receives no good or service in return.</p> <p>Direct subsidy stimulates MPB and hence higher consumption, while indirect subsidy lowers MPC.</p> 	<p>It is difficult to measure the exact size of MEB and hence the exact amount of subsidy to correct market failure. Government failure may arise from over-subsidisation.</p> <p>Also, subsidising has opportunity costs which require a reliable cost-benefit analysis.</p>
<p>Legislation or government regulation to ensure or increase behaviour that has external benefits, such as compulsory education.</p>	<p>High cost may incur for enforcement.</p>
<p>Nationalisation is a form of non-market-based solution when the state <u>takes over</u> the ownership and production of goods and services previously produced by private firms. The government can then produce at socially optimum level of output as it is not profit-driven.</p>	<p>Bureaucracy and less competition makes the government firms less efficient.</p> <p>Lack of profit motive leads to productive inefficiency.</p>
<p>Joint provision is a form of private-public partnership (PPP) when the government owns the assets and builds the infrastructure and private firms will bid for the contract to run the services. Examples include Land Transport Authority (LTA). In this way, government can monitor and control the price and quality so that the firms produce at the socially optimum output level. The firms are more incentivised to be efficient than government itself.</p>	<p>It is difficult and expensive to monitor.</p> <p>It is funded from taxing or borrowing thus has high opportunity costs.</p>
<p>Educations, campaigns and advertisements is a form of non-market-based solution which allows the external benefit to be made known to the individuals. As a result, consumption for these goods will increase due to a change in tastes and preferences of consumers and producers.</p>	<p>These are effective only in the long run but ineffective in the short run. Also, they are on a purely voluntary basis, and it is difficult to change people's mindsets and habits.</p>

4.4 - Demerit and Merit Goods

Demerit goods are goods which consumption is considered to be **socially undesirable**, usually possess **negative externalities** and that the government feels people will **over-consume**, possibly due to **imperfect information** on the true costs the good imposes. Examples are cigarettes, gambling and drugs.

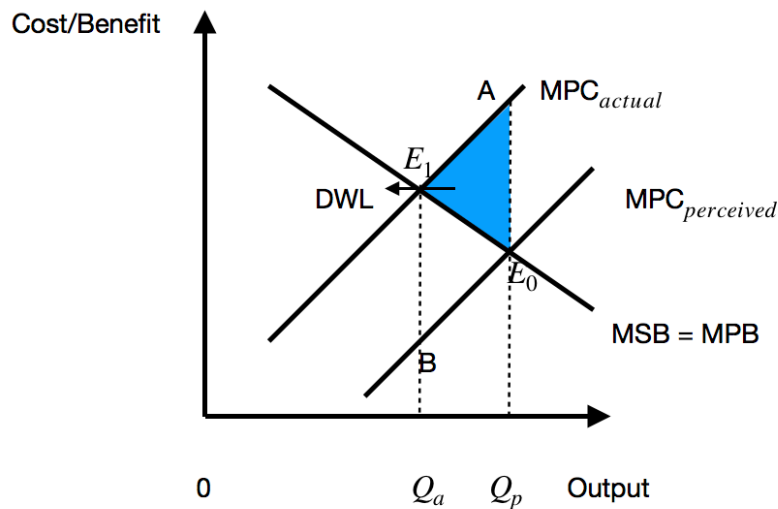


Figure 4.4a: Imperfect information in demerit good resulting in allocative inefficiency

If left to free market, consumers will tend to over-consume as they do not understand the costs to themselves. The perceived MPC is lower than the actual MPC. Since consumers consume at Q_p where $MPC = MPB$, and the socially optimum output level is at Q_a where $MSC = MSB$, there is an over-consumption. A deadweight loss of area AE_1E_0 is occurs and thus there is allocative inefficiency.

When explaining demerit goods:

- Explain negative externality.
- Explain imperfect information.

Merit goods are goods which consumption is considered to be **socially desirable**, usually possess **positive externalities** and that the government feels people will **under-consume**, possibly due to **imperfect information** on the true benefits the good has. Examples are primary education and preventive healthcare of vaccination.

Solution	Limitation
Public education is conducted to educate people the true cost / benefit of a demerit / merit goods so that the perceived MPC / MPB coincides with the actual MPC / MPB. Advantages include less distortions to price signals and low cost.	It is difficult to change people's mindsets and behaviours and it is only effective in the long run.
Government regulation can also be made such as compulsory consumption of merit goods and banning of demerit goods. It also regulates the flow of information that may influence people's mindsets.	Enforcement is costly.

Evaluation points for policies:

- Combination of policies.
- Long run effect.
- Dependence on the receptiveness of consumers.

4.5 - Asymmetric Information

Asymmetric information is a case where one party in the market has more information about the product than the other resulting in a distortion of incentives and inefficient market outcomes. There are two types of asymmetric information, namely adverse selection and moral hazard.

Adverse selection occurs when due to asymmetric information, bad products or bad customers are more likely to be chosen. For instance, this happens in the used car market.

Moral hazard exists when one party to a transaction has the ability to shift costs onto the other party and thus engage in more risky activities. An example is insurance contracts.

4.6 - Factor Immobility

Factor immobility refers to the inability of a factor of production to shift from one user to another, even in response to large changes in remuneration. This includes occupational immobility and geographical immobility, where labour remains structurally or regionally unemployed.

Solutions include improving the information flow and training of workers (e.g. SkillsFuture Singapore, Continuing Education and Training (CET), Workforce Training Support Scheme).

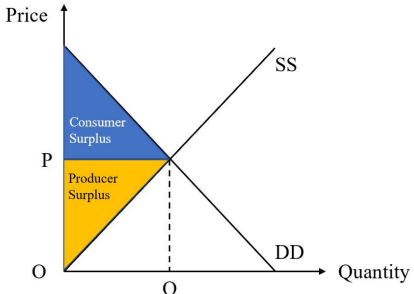
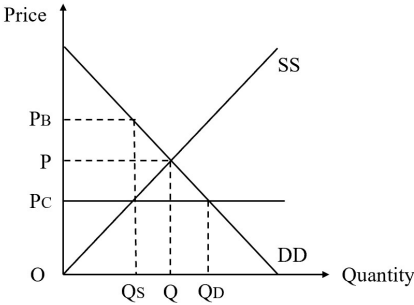
4.7 - Government Failure

Government failure happens when the problems created by intervention worsen the situation of market failure.

Factors causing inefficiencies due to government intervention include imperfect information, bureaucracy, lack of market incentives, uncertainty in the market caused by shifts in government policy, myopic decision-making (short-term rather than long-term) and pursuit of self-interest.

H2 Economics Contents

<p>Market System</p>	<ul style="list-style-type: none"> • Scarcity is the problem arising from unlimited wants and limited resources. • 4 types of resources: land, capital, labour, entrepreneur. • Production-possibility curve: <div style="text-align: center;"> </div> <p>Productive efficiency – On the curve; Unemployment/Underemployment – Inside the curve; Actual growth – Movement from a point inside PPC to on PPC; Potential growth – Outwards shift of PPC.</p> <ul style="list-style-type: none"> • Factors leading to potential growth: QQT. • Decision-making Framework: <ul style="list-style-type: none"> - Costs - Benefits - Constraints: What are the existing government policies? - Unintended consequences - Information
<p>Demand and Supply</p>	<ul style="list-style-type: none"> • Price mechanism: <div style="text-align: center;"> </div> <p>When demand shifts from DD_0 to DD_1, at the previous price level P_0, quantity supplied is less than quantity demanded. Hence there is a shortage, which creates an upwards pressure for price to increase till P_1, where quantity supplied is equal to quantity demanded.</p> <ul style="list-style-type: none"> • Consumer surplus is the difference between how much consumers are prepared to pay and how much they actually pay. • Producer surplus is the difference between how much producers are prepared to sell and how much they actually sell.

	
<p style="text-align: center;">Elasticity</p>	<ul style="list-style-type: none"> • PED measures the degree of responsiveness of the quantity demanded of a good to a change in its price, ceteris paribus. $PED = \frac{\frac{\Delta Q}{Q}}{\frac{\Delta P}{P}} \times 100\%$ <ul style="list-style-type: none"> • PED determinants: availability of substitutes, degree of necessity, proportion of income. • YED measures the degree of responsiveness of the quantity demanded of a good at each price level to a change in income, c.p.. • Type of goods: inferior goods, necessities, luxuries. • XED measures the degree of responsiveness of the quantity demanded of a good at each price level to a change in price of its related goods, c.p.. • Substitutes – XED > 0; Complements – XED < 0. • PES measures the degree of responsiveness of the quantity supplied of a good at each price level to a change in its price, c.p.. • PES determinants: availability of stocks, length of production period, factor mobility, spare capacity. <p><u>Possible Evaluation Points</u></p> <ul style="list-style-type: none"> (i) Assumption of ceteris paribus may not hold. Other non-price factors may not be considered. (ii) Elasticity data may not be accurate due to the method of collection and/or the source of data.
<p style="text-align: center;">Market-based Policies</p>	<ul style="list-style-type: none"> • Price ceiling is the maximum legal price set by the government.  <p style="text-align: center;">It directly lowers the price and improves affordability and fairness.</p>

	<p>In a macroeconomic perspective, it is also an anti-inflationary policy.</p> <p>However, a shortage of $Q_S Q_D$ occurs and this results in allocative inefficiency. If the government does not intervene further, the shortage may lead to the following problems:</p> <ul style="list-style-type: none"> - Allocation of resources on a “first-come, first-served” basis, leading to queues developing or waiting lists. There may be fairness issues as the first in line may not be those who need most. - Emergence of black market. There are consumers who are willing to pay above the market price to obtain the goods. For example, a black market seller could sell a quantity of Q_S at P_B. Hence, the government’s objective of affordability and fairness is not met. • Quota is the legal limit of quantity of goods that can be transacted in a market. However, it may cause allocative inefficiency and deadweight loss. • Limitation of taxation: <ul style="list-style-type: none"> - Hard to decide the amount of tax. - Loss of societal welfare.
<p>Cost of Production</p>	<ul style="list-style-type: none"> • Internal EOS: <ul style="list-style-type: none"> - Technical: Specialisation and division of labour increase dexterity and productivity, decrease time waster in changing work and decrease training cost as the firm only needs to ensure that a work equips one skill instead of several skill. - Managerial: Better management system. - Marketing: Buying in bulk at a more favorable price. - Financial: Easier to obtain finance at more favorable terms due to high credits standing. - Organisational: Centralised administration. - Risk-bearing: Diversification of risks. • Internal dEOS: <ul style="list-style-type: none"> - Lack of communication and coordination: Large firms are subdivided into many decentralized departments. Communication breakdown between these departments may lead to inefficiencies and hence higher cost. - Loss of control: Difficult to monitor work performance. • External EOS: <ul style="list-style-type: none"> - Economies of concentration: Shared pool of skilled workers and better infrastructure. - Economies of disintegration: Firms can split up the production process (e.g. outsourcing). - Economies of information: Easier access to information. • External dEOS:

	<ul style="list-style-type: none"> - Increased strain on infrastructure: More congestion causes higher transportation cost. • Alternative objectives of firms: <ul style="list-style-type: none"> - Market share dominance: Higher profit in the long run. - Growth maximisation - Revenue maximisation 								
Firms	<ul style="list-style-type: none"> • Shut-down condition: Whether AR can cover AVC. • A natural monopoly occurs when a single firm can supply a good to the entire market at a lower average cost than two or more firms can. • Long-run profit position for MC is normal profit. Due to low BTE, a firm earning supernormal profit will attract more firms to come in. The demand curve will fall and become more price elastic. Supernormal profit will be competed away. • Strategies of oligopolies: <table border="1" data-bbox="512 779 1385 949" style="margin-left: 20px;"> <tr> <td style="text-align: center;">Non-collusive oligopolies</td> <td style="text-align: center;">Collusive oligopolies</td> </tr> <tr> <td style="text-align: center;">Price rigidity</td> <td style="text-align: center;">Cartel/Tacit (Price leadership)</td> </tr> <tr> <td style="text-align: center;">\</td> <td style="text-align: center;">Merger/Acquisition</td> </tr> <tr> <td colspan="2" style="text-align: center;">Non-pricing and pricing strategies</td> </tr> </table> • Price discrimination: Different in price not associated with difference in cost of production. <ul style="list-style-type: none"> (i) Price setter. (ii) Prevent reselling. (iii) Able to separate the market. • Contestability: Threat of potential competition. Contestable markets are those that are served by one or few firms and are kept operating at a competitive price and output levels due to threat from potential competitors. • Determinants of contestability: BTE, sunk cost, access to technology. • Performance of firms: PVICE. • Policies to improve competition: anti-trust policies, lump-sum tax, MC/AC pricing. 	Non-collusive oligopolies	Collusive oligopolies	Price rigidity	Cartel/Tacit (Price leadership)	\	Merger/Acquisition	Non-pricing and pricing strategies	
Non-collusive oligopolies	Collusive oligopolies								
Price rigidity	Cartel/Tacit (Price leadership)								
\	Merger/Acquisition								
Non-pricing and pricing strategies									
Market Failure	<ul style="list-style-type: none"> • Public goods are those with non-excludability and non-rivalry. • Asymmetric information includes adverse selection and moral hazard. 								