

Question 3

Advancements in technology may help to open up markets, leading to greater competition and free flow of goods, services, capital and knowledge.

(a) Explain the differences between internal and external economies of scale. [10]

(b) Discuss how technological advancements might enable firms to reap economies of scale and practice price discrimination. [15]

Suggested answer outline:

(a) Explain the differences between internal and external economies of scale. [10]

	iEOS	eEOS
different sources of cost savings	cost savings due to large scale production by a firm in the long run → result in the reduction of average cost of production (eg: when a firm increases its output, bulk purchases of raw material will allow it to enjoy cost savings i.e. lower per unit cost)	arises from the expansion of the industry to which the firm belongs and this also result in the reduction of its average cost of production (eg: an oil refinery company such as Shell in Jurong Island gets to enjoy better infrastructure support due to the expansion of the oil refinery industry. Therefore, unlike internal EOS, external EOS can be reaped by both small and large firms.
Illustration on LRAC curve	<p><u>Movement along LRAC curve</u> firms expand in size → average costs fall, and this is shown where average costs fall from 10 to 5 (See Fig 1) when the firm expands and increases output from Q_1 to Q_2. The firms moves along the long run average cost (LRAC) curve through expanding its firm size and now operates on $SRAC_B$</p> <p>Fig 1</p> <p>occur along the downward sloping part of the LRAC curve - average costs are falling as output and scale of production rises</p>	<p><u>Downward shift of LRAC curve</u> external EOS occur when the industry expands, average cost falls regardless of the size or scale of production of the firm. These cost savings are illustrated by a downward shift of the entire LRAC curve from $LRAC_0$ to $LRAC_1$ where a firm producing at Q_1 experiences a fall in average costs from C_0 to C_1 as shown in Fig 2</p> <p>Fig 2</p>
types of internal and external EOS	<p>internal EOS: sources of cost savings are derived from the technical EOS, managerial EOS, marketing EOS, financial EOS, risk bearing EOS.</p> <p><u>CHOOSE 2 out of the various examples shown.</u> technical EOS: cost savings gained directly from the production process by increasing the size of the production unit to increase productivity and efficiency. As output</p>	<p>external EOS: sources of cost savings are derived from the economies of concentration and the economies of information.</p> <p><u>Just need explain 1 form of External EOS</u> the economies of concentration will arise when a firm experiences cost savings due to firms carrying out similar or related activities are concentrated in one area.</p>

	<p>increases, bigger and better machinery may be purchased, increasing productivity and hence output and lowering the average cost of production. For example, as a laundry plant expands, it can purchase a much larger washing machine to increase its washing load without requiring additional staff to man it.</p> <p>Managerial EOS: when a firm expands and specialised departments are set up and professionals are hired to man each department. With professional personnel handling each aspect of the job, it will lead to higher productivity and greater efficiency with output increasing faster than cost and thus reducing unit cost.</p> <p>Marketing EOS: bulk buying or advertising. Large firms that purchase raw materials in large quantities are able to enjoy larger discounts and better services from the supplier. Furthermore, large firms can advertise aggressively and yet the advertising cost per unit will be lower than that of small firms. For example, MacDonald may have a large advertising expenditure, but the total cost of advertising divided by the total number of units sold (hamburgers, fries et cetera) is very low.</p> <p>Financial EOS: large firms are able to get bank loans at lower rate of interest and with better conditions than small firms. Larger firms can also raise funds more easily and cheaply compared to small firms. Hence, saving costs for the firms.</p> <p>Risk bearing EOS: when a firm diversifies its production, businesses and markets. This helps to improve a firm's strength and make it less vulnerable to changes in consumers' preferences. Hence it is able to spread its total cost over a larger and more stable output, hence lowering its LRAC.</p>	<p>When these firms are operating in the same area, they can take advantage of a ready pool of skilled personnel, the provision of better transportation, storage and banking facilities. These will lead to cost savings in terms of lower transaction, transportation and delivery costs.</p> <p>An example will be the oil refinery company located in Jurong Island in Singapore. The refinery company reaps internal economies of scale (technical economies of scale) by expanding its multi-stage production to encompass more stages so that crude oil can be refined into different kinds of products in a single location. This helps the company to save on the costs and time of transportation.</p> <p>On the other hand, being located with the other refinery companies (SRC, ExxonMobile, Shell etc) on the same island also helps the company to reduce its costs (external economies of scale). Better supporting infrastructure (e.g a highway bridging the island and mainland Singapore) reduces the cost of transporting the finished products out of the island.</p> <p>Economies of information can also be attained when firms engaged in the same or related activities derive benefits from the publication of trade, business and technical journals, enabling the firms' access to information and latest trend and development at a lower cost.</p>
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Advancements in technology may help to open up markets, leading to greater competition and free flow of goods, services, capital and knowledge.

(b) Discuss how technological advancements might enable firms to reap economies of scale and practice price discrimination. [15]

Reap EOS	
Thesis	Anti-thesis
<p>(1) Internet advancement → easier access to information and easier access to consumers and producers worldwide, trading of goods and services becomes faster and cheaper* → firms gain access to larger market → scale of production expands → reap iEOS</p> <p><i>*technological advancements also make shipping of goods a lot cheaper than before</i></p> <p>(2) Technological advancements in terms of machineries and improvements in production methods can be costly → this serves as barriers to entry in <u>some industries</u> → existing firms continue to enjoy expansion of demands that follow from global economic growth → larger scale of production → reap iEOS</p>	<p>(1) 'Borderless' trade works in different ways for different types of businesses → eg: if domestic retailers lose price competitiveness to foreign retailers (which consumers can easily gain access to via the Internet) → demand for domestic retailers will fall → scale of production will fall → less able to reap iEOS</p> <p>(2) The Internet can sometimes lower barriers to entry as new entrants do not have to incur high start-up cost → only need to set up a website → lower costs than a brick-and-mortar shop → consumers have more substitutes with more sellers in the market and the incumbent's demand curve will fall → fall in scale of production → less able to reap iEOS (but expansion/growth of industry can reap eEOS)</p>
Price discrimination	
Thesis	Anti-thesis
<p>(1) Opportunity for firms to expand overseas → if there are fewer substitutes in the new overseas market or the good is of significantly better quality or a lot more popular than the domestic equivalent available → then the demand for the good may be relatively more price inelastic in the foreign market compared to domestically → firm can practice price discrimination if they now have 2 markets of different PEDs for their product</p> <p>Evaluation: With the extensive use of search engines and many more firms using the online platform to market their products, increased ease of access to information will have an increasingly significant impact on firm's pricing and how they may have to be more aware of their rival's strategies to remain competitive and hence will be more careful in price discriminating even across different countries</p> <p>(2) reduces menu costs - allows firms to easily adjust prices: due to imperfect information in the real world, firms are unable to identify the exact PED values for different groups of consumers → constant adjustment of prices as the firm try to achieve the profit-maximising price in different market segments would cause the firm to incur additional menu cost → hampers firms' willingness to change prices as there has to be substantially higher potential profits to justify</p>	<p>(1) Consumers have easier access to rival's products and information (substitutes can come from domestic or overseas markets) → harder for firms to have market segmentation from separation by geographical boundaries across borders/countries (which is an important condition in order for firms to practise PD) → also easier for consumers in one country to sell to another consumer in a different country → ability of the firm to prevent seepage and hence their ability to practice price discrimination may be weakened</p> <p>(2) Consumers have much easier access to information of rival companies and can much more easily compare prices and product details online rather than have to travel from shop to shop → knowledge is less imperfect and easier comparison of prices make it harder for the firm to price discriminate between different groups of consumers</p> <p>(3) From previous point about how internet advancements lower barriers to entry → when more firms enter the industry due to the relatively lower costs of setting up e-business → incumbent's demand curve will become more price elastic due to the availability of more substitutes & their market share will also fall → reducing their price setting ability</p>

changing prices in the real world as it is costly to create new catalogues, designing new advertisement, changing price tags, etc. → prices can be easily adjusted by updating the prices displayed on their website → reduces menu costs → firms are more likely to constantly adjust and experiment with different prices for different consumers to reap higher profits

(3) With technology, firms can harvest huge amount of personal information about their consumers at very little cost → “cookies” allow firms to track the internet user’s interaction with the website (providing info such as demographic data) → also records which links or advertisements the user clicks on & past buying patterns can also be recorded and analysed at a lower cost → allows firms to collect more information on every individual consumer for analysis at almost no cost. Hence, it can set a price closer to each individual’s willingness to pay and move towards perfect price discrimination.

Evaluation: Analysis above more applicable towards larger firms: for smaller firms such as firms in an MC market structure less applicable, also depends on whether firms sell goods or services/types of goods

Evaluation: As firms reap greater EOS as explained, they will have lower variable costs and higher output. They may then be able to expand their market share by selling more domestically too due to the now lower price and higher output. Hence firms can potentially gain more monopoly power better enabling them to practice price discrimination.

Evaluation: Depends on the types/nature of goods or services, some industries face less competition from the Internet as consumers will still prefer making purchases physically instead of over the cyberspace, for eg

- i. perishables
- ii. very bulky items like furnitures
- iii. legal constraints like cars
- iv. services (less able to ‘enjoy’ services across cyberspace)
- v.

Also, dependent on profiles of consumers – eg: older generation has greater doubts about making purchases online - worry about fraud and the inability to test the products before purchase, conservative view the security of the internet environment

Synthesis: Technological advancements allow many firms to enjoy greater iEOS and eEOS but the effects are dependent on the nature of products that the firms produce/sell. For a natural monopoly, the firm is protected by high capital costs and various barriers to entry, on top of that, services and goods such as petrol, hair cut, electricity, water, healthcare and many more cannot be transacted over the cyberspace.

Technological advancements also makes it easier for firms to set prices differently for different consumers, however, it also allows consumers to identify these differences easily. Hence, the impacts depend on the behaviour of consumers, such as how they make use of information available to change their decisions.