

Firms make decisions based on various considerations such as barriers to entry as well as the business risks and uncertainty associated with each possible option.

a) Explain how barriers to entry can cause firms to make differing pricing and output decisions. [10]

b) "Periods of falling income expose firms to higher risks of business closures."

During periods of falling income, discuss how the performance of firms can be affected by both the nature of the goods they sell and the types of markets within which they operate. [15]

Part a

Barriers to entry refer to any impediment that prevents new firms from competing on an equal basis with existing firms in an industry. Barriers to entry can be classified into two categories, namely natural barriers to entry and artificial barriers to entry. Barriers to entry determine the degree of competition faced by firms in an industry and hence the degree to which they can influence price and output decisions.

Body: Explain how low barriers to entry affect firms' pricing and output decisions

In a perfectly competitive market, there are no barriers to entry and existing firms are unable to stop new firms from entering the market. There are also no restrictions on existing firms leaving the market. Because of this ease in entering and exiting the market, no single firm has the market power to influence the market price of the product by changing its output. Thus, each firm is a price taker.

Figure 1a below shows how the equilibrium price, P_0 , and output, Q_0 , is determined in a perfectly competitive market, i.e. by the intersection between the market demand and supply curves. Each firm in the perfectly competitive market will then take the market price, P_0 , as given. Since each firm in the perfectly competitive market is a price taker, the demand curve faced by each firm is perfectly price elastic as shown in Figure 1b. Each firm will then produce at its profit-maximising output, Q_0 , where marginal revenue (MR_0) is equal to marginal cost (MC). In this case, the perfectly competitive firm is initially earning supernormal profits shown by area P_0ABC .

In the long run, since there is free entry and exit into the perfectly competitive market, firms outside the market will be attracted to reallocate their resources to this market so that they can enjoy the high profits. The entry of new firms will increase the market supply and the equilibrium price will fall. Eventually, when the market supply increases from S_0 to S_1 in Figure 1a and demand remains unchanged, the market equilibrium price will fall from P_0 to P_1 and this will erode away any supernormal profits earned by firms. As all firms in the market are price takers, each firm in the market will sell its product at P_1 and determine its output where its MC is equal to MR_1 , which is shown by Q_1 in Figure 1b, earning normal profits in the long run.

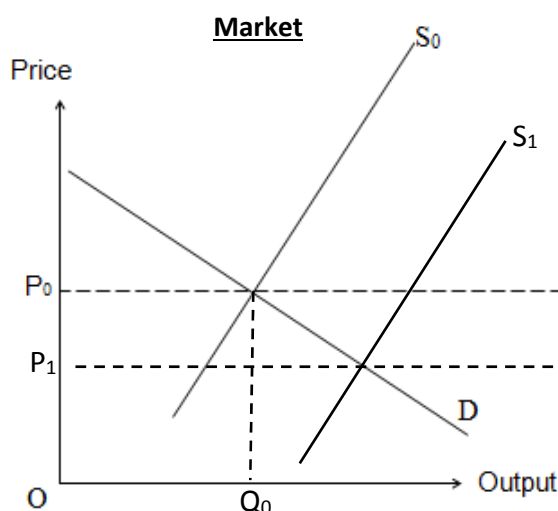


Figure 1a: PC Market

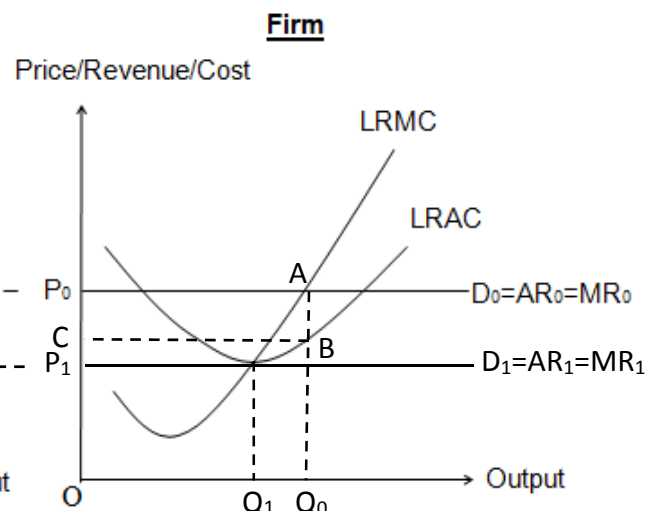


Figure 1b: PC Firm

Body: Explain how high barriers to entry affect firms' pricing and output decisions

On the other end of the spectrum, there are high barriers to entry in a monopoly. A monopoly is one in which there exists only a single firm in the market.

As the monopolist is the only producer of a good, it is the industry. Thus, the monopolist's demand curve is also the market demand curve. The monopolist's demand curve is relatively price inelastic since it is the sole seller of a good with no close substitutes.

To maximise profit or minimise losses, the monopolist will produce at the output where $MR = MC$ (and MC curve cuts MR curve from below). In the short run, the monopolist can be in equilibrium earning supernormal profits, normal profits or subnormal profits. Figure 2 shows a monopolist making supernormal profits. The monopolist will produce at the profit-maximising output where $MR=MC$, such that output is at Q_1 and price is at P_1 . Thus, the supernormal profits is indicated by area P_1ABC .

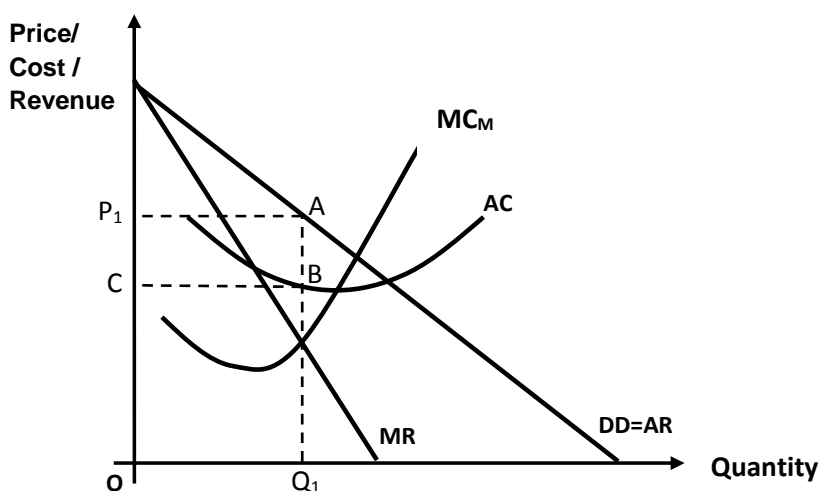


Figure 2 Monopolist earning supernormal profits

Since there are high barriers to entry for new firms, a monopolist's short-run profits will not be competed away in the long run. Hence, unlike a perfectly competitive firm, the monopolist can continue to sell Q_1 at price P_1 and retain/ continue to earn supernormal profits even in the long run.

Conclusion

The high barriers to entry allow monopolist to maintain its price and output so as to continue earning supernormal profits. On the other hand, firms in a perfectly competitive market that are earning supernormal profits will face a lower price and a smaller output as more firms join the market due to freedom of entry and exit.

Level	Descriptors	Marks
L3	Developed explanation of how barriers to entry can cause firms to make differing pricing and output decisions.	8-10
L2	Undeveloped explanation of how barriers to entry can cause firms to make differing pricing and output decisions.	4-7
L1	A smattering of valid points.	1-3

Part b

Overall analysis

A wide range of answers is to be expected, with a single exogenous factor – recession – and analyzing its impact on a wide range of criteria – price and output, allocative and productive efficiency, consumer choice, etc, due to actions taken by consumers, producers and the government, in the long run and short run. A comprehensive answer combining several aspects of each of the analysis would score very well.

1. **Recession: Falling income, GPL, AD shifts to the left**
 - a. **Responses by Consumers:** Substitution by consumers from normal goods to inferior goods
 - b. **Responses by Producers:** Change in profit-maximising output/quantity, shutdown, product differentiation and innovation
 - c. **Responses by Government:** Fiscal policies (subsidies, grants), protectionism
2. **Criteria:**
 - a. Ability to withstand period of lower revenue
 - b. Productive/Allocative efficiency
 - c. Consumer choice
 - d. Equity

Introduction

During a recession, economic activities slow down and consumers' income falls as a result, causing them to adjust their demand for goods and services. This could affect firms' revenue and profit in different ways, depending on what they produce and the market structure in which they operate. Over time, the market structures in various industries may even change, impacting allocative and productive efficiency.

Nature of good – inferior goods

The nature of good produced by a firm determines its income elasticity of demand (YED), which measures the degree of responsiveness of its demand to a change in consumers' income, ceteris paribus. Inferior goods such as hawker food and public bus rides have negative YEDs, meaning a fall in consumers' income during a recession will lead to an increase in demand for such goods as consumers switch away from the more expensive, better quality alternatives (e.g., restaurant food, private transport) to the cheaper and lower quality ones. Therefore, during a recession, firms that produce inferior goods such as hawker food stalls and public bus companies could possibly enjoy higher revenues and profits as the demand for their products increases.

Assessment: These firms would experience greater profitability and will withstand the impact of the recession. Firms in **less competitive** industries (oligopolistic/monopolistic industries, such as public transport) may also have a greater ability to conduct R&D, which would improve consumer choice. However, at the same time, these firms may gain greater market power, leading to a decrease in allocative efficiency and lead them to behave in a less productively efficient manner.

Nature of good – normal goods

In contrast to inferior goods, normal goods such as healthcare and overseas vacations have positive YEDs, meaning a fall in consumers' income during a recession will lead to a fall in demand for such goods as consumers cut down on their consumption of such goods and/or switch to cheaper alternatives. In particular, luxury goods such as luxury cars and overseas vacations have YEDs greater than 1, meaning a fall in consumers' income during a recession will lead to a more than proportionate fall in demand for such goods as consumers can easily live without them and would rather spend the money on necessities / inferior goods in view of lower purchasing power. Hence firms

producing luxury goods (e.g., luxury car manufacturers, 5-star hotels) are likely to experience a sharp decline in their revenues and profits during a recession as the demand for their products falls significantly. On the other hand, necessities such as healthcare and rice have positive YEDs less than 1, meaning a fall in consumers' income during a recession will lead to a less than proportionate fall in demand for such goods as consumers cannot reduce their consumption of such goods significantly since the goods are considered essential for living and wellbeing. Hence firms producing necessities (e.g., hospitals, rice farms) will only experience a small fall in revenue and profit as the demand for their products only falls slightly during a recession.

Assessment: Both luxury and normal goods will experience a fall in profitability, with luxury goods experiencing a greater extent of a fall in profitability, which would make firms that produce them more vulnerable to business closures than firms that produce normal goods.

Market structure – normal goods

The effects of a recession on firms producing normal goods and their viability to remain in the industry also depend on the market structure they operate in. The market structure that the firms operate in would determine the level of barriers to entry and exit, which in turn would determine the level of financial reserves and ability of the firms to conduct R&D and innovation in response to the recession taking place.

Assessment: Firms producing normal goods would be forced to be more productive efficient to survive, and through the lowering of prices, increase allocative efficiency.

Firms operating in **more competitive** industries (MC and PC, such as hair salons) would experience certain business closure, as they would not have financial reserves from having previously earned normal profits, and would also have low barriers to exit the industry. These firms would also not be able to conduct R&D and innovation to boost demand to counteract the fall in demand.

Firms operating in **less competitive** industries (oligopolistic/monopolistic, such as petrol retailers and SingPower) would have to depend on their financial reserves that they have earned previously through high barriers of entry to survive business closure. In the event that the buffer is low, they may shutdown even with some barriers to exit. Such firms may choose to use their ability to conduct product differentiation and innovation to boost demand for their goods to survive, leading to improved consumer choice.

Response of firms (normal goods, oligopoly) by innovation

Also, during a recession, firms may undertake R&D projects to counteract the decrease in demand. This is likely to happen for firms producing normal goods (which would face a decrease in demand) that are operating in a market structure with high BTE (motivation to innovate). For example, Apple, which produces normal goods (some may even argue luxury goods) such as iPhone and iPad. During the 2008-2009 global recession, despite falling consumer income, the company posted record profits, thanks to its production promotion and development efforts. Although recession could have negative effects on firms producing normal goods, such firms could adopt strategies (like what Apple did) to increase the demand for their products nonetheless and enjoy higher profits as a result. At the same time, this would increase consumer choice, but at the expense of allocative efficiency as firms exploit market power to charge higher prices.

Government intervention – subsidies and protection

Lastly, not forgetting firms producing capital goods (e.g., construction), we often observe governments trying to stimulate the economy during a recession by increasing public investment (e.g., building of infrastructure). This could benefit firms involved despite a possible fall in private investment, and lead to lower prices for the consumers. Also, goods with strategic importance (military industries) or goods in sunrise/sunset industries may receive help from the

government through protectionist policies in a recession. This may erect artificial BTEs that would reduce competition in these markets and reduce allocative efficiency as well.

Conclusion

The sudden impact of the recession may result in higher profits for firms producing inferior goods, but result in the risk of business closure for firms producing normal goods. From there, the market structure of each firm would determine their viability to survive the recession. As we can see, these two factors determine the behavior of consumers and producers respectively, and thus they are crucial in determining the performance of the firms.

Marking Scheme

Knowledge, Application/Understanding and Analysis		
L3	A <u>developed</u> analysis of how a recession affects firms differently due to both the nature of the good as well as the market structure that the firm operates in and an explanation of how this impacts the <u>viability of survival and</u> performance of the firms.	9-11
L2	An <u>underdeveloped</u> , descriptive explanation of how a recession affects firms different due to both the nature of the good as well as the market structure that the firm operates in.	6-8
L1	An answer that shows unexplained, descriptive knowledge about a recession and its impact on firms.	1-5
Evaluation		
E2	An insightful evaluation that uses analysis to support a judgement on the relative importance of both factors in determining the performance of firms.	3-4
E1	An attempt at evaluation or conclusion about the importance of the factors in determining the performance of firms.	1-2