Question 3

A firm's decisions and strategies are influenced by the level of competition in the industry. Its decisions and strategies might also be affected by consumers' cognitive biases and concerns about the environment.

(a) Explain why a firm considers the level of competition in the industry when making decisions about the price and output level of its product. [10]

(b) If markets fail due to lack of competition, discuss whether consumers will be disadvantaged and what might be the most appropriate form of government intervention. [15]

Suggested answers to (a)

Introduction

There are various factors that would affect a firm's decision about the price and output level of its product, and one of it would be the level of competition. This is because the differing levels of competition would affect the firm's market power and thus, its ability to set prices above its marginal cost.

Development

Requirement 1: Explain how firms in industries with high levels of competition make decisions about the price and output level of its product both in the SR & LR (perfectly competitive markets)

In markets with low/ no barriers to entry, firms will be faced with high levels of competition. An example would be the case of perfectly competitive markets such as agricultural products. In such cases, where there are many firms in the market, each firm holds on to insignificant amount of market share and thus market power. In this case, the firms are price takers, with no ability to influence the price. As such, the firm will charge the market price, which in turn is determined by the market demand and supply of the good. Thus, the firm faces a perfectly elastic demand curve, as seen in the diagram below.

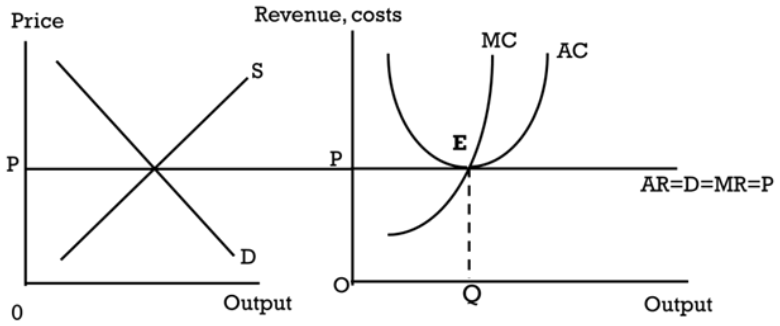

Figure 1: PC Industry and Firm

© TAMPINES MERIDIAN JUNIOR COLLEGE

As seen above, the firm's output will be determined by the profit maximising condition. Assuming the firm seeks to maximise profits, it will be producing at the output where MC=MR.

If the firm produces at an output level where MR > MC, then producing the last unit of output adds more to revenue than to cost. i.e. total profit will increase. Hence, as long as MR exceeds MC, profits can be increased by increasing production.

OR If the firm produces at an output level where MR < MC, then producing the last unit of output adds more to cost than to revenue. This implies that the firm should reduce its output to increase profits.

The firm's profits are maximised when the firm produces at an output level where MC = MR, and MC cuts MR from below.

However, the perfectly competitive firm's price and output would change in the long run. Assuming the firm is earning supernormal profits in the short run, this would attract new firms in the market. Since there is no BTE, firms can enter and exit the market easily. The entry of new firms in the market would increase market supply and thus lower market price. This in turn would lower the firm's AR & MR curve. The shift in the firm's demand's curve would also lower the firm's price and output level. Thus, the perfectly competitive firm will be charging a lower price and output in the long run.

Requirement 2: Explain how firms in industries with low levels of competition make decisions about the price and output level of its product both in the SR & LR (imperfectly competitive markets)

On the other hand, a firm facing low levels of competition due to strong barriers to entry would enjoy significant market share and thus market power. This is likely to be the case in imperfectly competitive markets such as the airline industry. The firm will have the ability to set prices and thus faces a downward sloping demand curve. If the airline firm wishes to sell more, he will have to lower the price; if he wishes to sell at a higher price, he must be prepared to sell less. The airline firm can thus determine the price or the output, but not both price and quantity. Moreover, the price elasticity of demand for the airline company is likely to be less than one given the lack of close substitutes available.

Assuming that the aim of airline companies is also to maximise profits, the profit maximising price, Pm and output, Qm, will be determined where MC=MR as shown in the diagram below.

© TAMPINES MERIDIAN JUNIOR COLLEGE

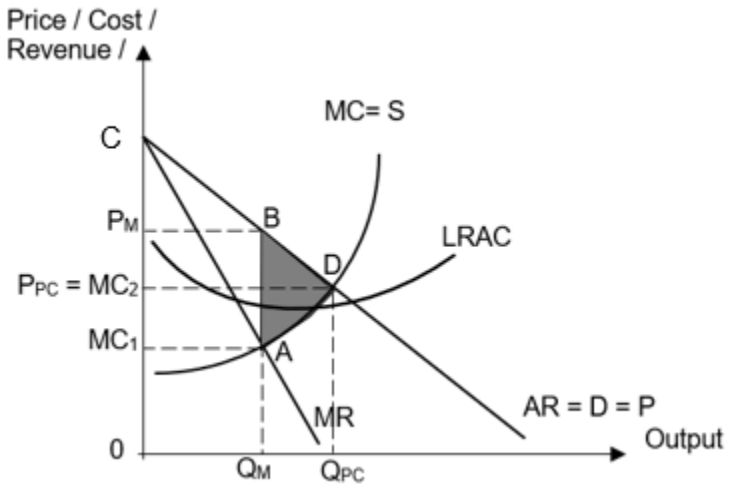

Figure 2: Firm in imperfectly competitive market

In the long run, the imperfectly competitive firm will still be charging the same price and output despite making supernormal profits in the short run. This is because the presence of BTE prevents new firms from entering the market enabling the airline company to retain its supernormal profits earned.

Conclusion

The differing levels of competition would affect the firm's market power and thus ability to set prices. Firms facing high levels of competition will have lesser market power and thus will be setting lower price and output as compared to firms facing low levels of competition. In addition, the strong BTE that results in low levels of competition would also imply that the firm's price and output remain unchanged in the long run.

Mark Scheme		
Level	**Descriptors**	**Marks**
L3	For a response which shows strong economic analysis and application in terms of how the differing levels of competition would affect the firm's price and output decision.	8 – 10
L2	For an under-developed explanation. Appropriate economic concepts and analysis is used but application is lacking.	5 – 7
L1	For an undeveloped answer with a listing of points	1 – 4

© TAMPINES MERIDIAN JUNIOR COLLEGE

Suggested ans (b)

If markets fail due to lack of competition, discuss whether consumers will be disadvantaged and what might be the most appropriate form of government intervention. [15]

Introduction

The lack of competition would imply that the firm has significant market power. In such cases, markets would fail due to allocative inefficiency whereby the right amount of the right type of goods is not produced. In such cases, the government would intervene to improve society's welfare.

Development

Requirement 1a: Explain how markets fail due to lack of competition and why consumers would be disadvantaged

A profit-maximising imperfectly competitive firm will produce its output up to the level where MC=MR as explained in (a). As shown in the diagram in (a), the firm will be selling output Qm at price Pm. However, at this output level, price is greater than marginal cost (P>MC). Since consumers value the last unit of the good more than it costs the firm to produce, consumers are disadvantaged as they are paying higher prices, and would experience a fall in consumer surplus from $CP_{PC}D$ to CP_MB. The good is under-produced and thus, increasing the output can increase the welfare of the consumers. The underproduction of the good has led to the loss in welfare for the society, where welfare loss is measured by the area BDA. There is allocative inefficiency. Society's welfare is maximised at output Q_{PC} where P=MC.

Possible EV: The extent of market failure would be dependent on the extent of abuse of market power by the firm. With greater market share and thus power, the firms have higher ability to set even higher prices.

Alternative EV:
[E/Opinion] However, consumers may not necessarily be disadvantaged when there is a lack of competition and may benefit instead.

[E/Criterion] This would depend on firms' willingness and ability to pass on the benefits from their excess profits to consumers.

[E/Reasoning] Due to the lack of competition, firms can earn and retain their supernormal profits in the long run. As seen in Fig 2 above, the firm is earning supernormal profits of area PmBAMC1. This gives the firms the ability to invest in R&D and conduct product development as it strives to maintain its market power. When firms are dynamic efficient, it benefits consumers as consumers can now enjoy new and higher quality products and perhaps at lower prices should the lower unit cost of

© TAMPINES MERIDIAN JUNIOR COLLEGE

production due to increase in efficiency in production is passed on to them via lower prices charged.

Requirement 1b: Discuss whether consumers will be disadvantaged due to the lack of competition

Consumers will be disadvantaged as they are charged a higher price of Qm instead of Qpc. In addition, they will enjoy lower level of output at Qm instead of Qpc. This reduces consumers' welfare.

However, on the other hand, the lack of competition could also bring about benefits to the consumers. In this case, the firm is earning supernormal profits as shown by area PmBAMC1. This gives the firms the ability to invest in R&D and conduct product development as it strives to maintain its market power. When firms are dynamic efficient, it benefits the consumers as consumers can now enjoy new and higher quality products and perhaps at lower prices should the lower unit cost of production due to increase in efficiency in production is passed on to them via lower prices charged.

Possible EV: Whether the consumers benefit from the lack of competition would be dependent on the firm's incentive to invest in R&D. The lack of competition could also lead to the firms being complacent and inefficient, simply enjoying the supernormal profits they can earn from existing technology. This reduces the firm's incentive to innovate and thus consumers do not get to enjoy the benefits stated above. This is especially so when the firm is *protected by state created barriers such as licenses.* Hence a firm could have the ability to innovate but may not be willing to do so especially when the market is not contestable.

Requirement 2: Explain at least 2 policies of government intervention

The government would intervene in such cases to maximise society's welfare.

Policy 1: Deregulation to increase the level of competition in markets

One policy that governments can implement would be deregulation, to open markets to greater competition. With this, more firms will be allowed in the industry and the level of competition increases, widening the range of choices available to consumers. Competition should also lead to greater cost efficiency from producers who are keen to hold on to their existing market share and promote innovation, which should again, benefit consumers.

[How it works] As there are more firms selling similar products, there is greater availability of substitutes, and the incumbent firm may lose some of its market share. The incumbent firm's demand curve will be lower (AR falls from AR to AR2), and more price elastic compared to before deregulation of the market. Firms have a lower ability to charge high prices by restricting output. Assuming the firm aims to maximise profit,

© TAMPINES MERIDIAN JUNIOR COLLEGE

it will now sell output Q2 where MC=MR and where MC cuts MR from below, and the price will be lower compared to before. The firm is likely to be less allocative inefficient as the difference between P and MC is smaller though P is still greater than MC (P2>MC2).

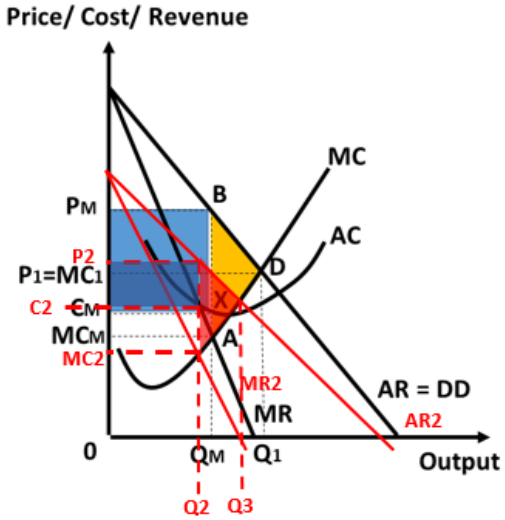

Figure 3: Impact of deregulation

In addition, the welfare loss **falls** from area BDA to the smaller red area. The **extent of underproduction also falls** from QmQ1 to Q2Q3, thus suggesting that the firm is **less allocative inefficient.**

Since prices are now lower and the amount of welfare loss is lower too, consumers thus benefit.

Possible EV:
[E/Opinion] However, competition may not always be desirable for consumers. **[E/Criterion: Type of industry]** This is especially so when the market is too small to support more than one cost-efficient firm.

[E/Reasoning] With only 1 firm in the market, that firm can produce a large quantity of goods, and hence enjoy internal economies of scale (iEOS) and lower unit costs. Consumers could benefit from lower prices if firms reap iEOS and pass on the cost savings to consumers. However, by having more firms in the market, each firm will not be able to produce as large an output (as the market has to be shared) and hence will be less able to enjoy these lower average costs from large-scale production.

In addition, with more firms in the market, the firms may lose the incentive to innovate, as their products can be easily imitated by rivals. This would mean that consumers would be less able to benefit from better quality products or even a wider variety of products.

© TAMPINES MERIDIAN JUNIOR COLLEGE

Policy 2: Anti-trust laws/ competition policies

Secondly, the government could implement Anti-trust laws/ competition policies. Legislations are rules and regulations for compliance. The government will conduct enforcement with punitive measures established for violators.

[How it works] For example, the government could set up a Competition Committee to prevent firms from exploiting their market power. The regulatory body will make recommendations based on in-depth inquiries conducted into possible cases of abuse of monopoly power, administer and enforce regulations set by the government, such as the Competition Act in Singapore.

In such cases, the firms will be unable to charge too high a price, narrowing the gap between price and marginal cost. This reduces the extent of underproduction and thus the deadweight loss.

[How well it works]
However, for legislation to be an effective measure, the government needs regular checks to ensure adherence. This requires large amount of manpower to monitor and enforce, which involves opportunity cost due to the fixed government budget. This would imply the loss in society's welfare as the government cuts back on spending in other areas such as healthcare.

Possible EV: The extent of opportunity cost is likely to be large in cases whereby there is an urgent need for spending on healthcare such as in times of COVID-19 and/or considering an aging population. In these situations, the loss in society's welfare due to lesser healthcare spending is likely to be greater than the gain in society's welfare due to the reduction in market failure caused by the lack of competition.

Alternative Policy 2: MC Pricing
An alternative policy that governments can implement is MC pricing, where firms are required by law to charge a price which is equals to marginal cost (P=MC). With reference to Figure 3, this is where price P1 will be charged, and output produced will be Q1. The firm is now producing at the allocative efficient output level, and society's welfare is maximised. Consumers are better off as they pay lower prices (P1<Pm).

[E/Opinion] However, while consumers may enjoy lower prices, they may not necessarily enjoy better quality products. **[E/Criterion]** This would depend on the extent of the fall in supernormal profits that the firms are able to earn.

[E/Reasoning] Due to MC pricing, the profits earned by the firm will fall from PmBXCm to P1DEC2. With the smaller amount of profits earned, this will reduce the firm's ability to engage in innovation, hence it is likely to be less dynamic efficient. This would mean that consumers would be less able to benefit from better quality products or even a wider variety of products. Without process innovation, firms are also less likely able to

© TAMPINES MERIDIAN JUNIOR COLLEGE

enjoy lower unit costs and thus consumers are less likely to benefit from further cost savings.

Conclusion

Overall, the most appropriate form of government intervention would be dependent on the government's budget. Should the government face high levels of budget deficit, implementing MC pricing as a policy would be more appropriate the MC pricing strategy would be more appropriate than legislation given that its costly.

It could also be dependent on the severity of the problem and the ability to gather accurate data. Assuming that the government has close to perfect information on abuse of market power, then the most appropriate form of government intervention would be in terms of legislation. This is because legislation is considered to be a powerful tool as it is mandatory. Command-and-control methods are usually more straightforward to devise, easier to understand by firms and to implement too.

Alternative conclusion:
[E/Opinion, E/Criterion] In conclusion, the most appropriate form of government intervention would depend on the type of industry being considered. **[E/Reasoning]** If the industry is one where only one cost-efficient firm can exist (i.e. natural monopoly), then it would not be appropriate to introduce more competition via deregulation because this will make all the firms in the industry worse off. Consumers will also be made worse off as a result. **[E/Opinion]** In such a case, implementing legislations like MC pricing would be more appropriate.

© TAMPINES MERIDIAN JUNIOR COLLEGE

Mark Scheme		
Level	**Descriptors**	**Marks**
L3	For a response which shows strong economic analysis and application in (i) explaining how the market fail due to lack of competition (ii) discussing whether consumers will be disadvantaged and (iii) explaining what the most appropriate form of government intervention might be.	8 – 10
L2	For an under-developed explanation. Appropriate economic concepts and analysis is used but application is lacking.	5 – 7
L1	For an undeveloped answer with a listing of points	1 – 4

Evaluation marks		
A well-explained evaluative judgement about both requirements, that is, for an answer that builds on appropriate analysis to evaluate on the most effective policy to address the market failure due to the lack of competition. **PLUS** an overall summative conclusion leading to a well-explained evaluative judgement about which, in any, is the best outcome (so far as required by the question).	**E3**	**5**
A well-explained evaluative judgement about both requirements **OR** Lower end of E2 (3 marks) which is a well-explained evaluative judgement about one requirement **PLUS** a learned evaluative statement for the second **PLUS** a summative conclusion.	**E2**	**4**
A well-explained evaluative judgement about both one requirement **PLUS** a learned evaluative statement for the second.	**E2**	**3**
A 'learned" evaluative statement for the two requirements. **OR** A well-explained evaluative judgement about one requirement.	**E1**	**2**
A 'learned' evaluative statement for one requirement.	**E1**	**1**
No attempt at evaluation.	**E0**	**0**

© TAMPINES MERIDIAN JUNIOR COLLEGE