**Essay Question 14**

**(a) Explain how barriers to entry affect price and output determination of firms. [10]**

Introduction

* Barriers to entry (BTE) are obstacles that hinder the entry of new firms into an industry and limit the amount of competition faced by existing firms.
* BTE can be artificially created (e.g. government licenses) or natural (e.g. high capital outlay required). There are high barriers to entry in the market structures of monopoly and oligopoly.
* On the other hand, low barriers to entry exist in monopolistic competition and there are no barriers to entry or freedom of entry and exit in perfect competition. The degree of BTE is an important determinant in firms’ pricing decision because it affects the number of firms in the industry. In turn, this plays a part in determining how much market power a firm has in terms of setting its prices or output.

Main Body

**1) Market structure with high BTE: Monopoly/Oligopoly**

The existence of high BTE gives rise to monopoly power.

Monopoly is a market structure in which a single firm dominates the market and produces a product which has no close substitutes. For a firm to maintain this monopoly position, there must be high barriers to entry e.g. legislation by government, patent rights and copyrights, secrecy, economies of scale, high transport costs or tariffs, control of essential resources, network effects etc.

The degree of monopoly power depends on the ability of these BTE in preventing new firms from entering the industry. Monopoly power implies that the demand curve of the firm is downward sloping and relatively price inelastic due to a lack of close substitutes, and the **firm has the ability to set a relatively higher price** to increase revenue and thus profits.

Q1

P1

A

Output

Revenue/Cost

MC

O

AC

MR

D=AR

Figure 1

B

C

As seen from Figure 1, equilibrium output of a monopolist is attained at profit-maximising output OQ1 where MR = MC. The monopolist is able to restrict output at OQ1 and charge price OP1 above marginal costs.

With prices charged being above average costs, the monopolist earns supernormal profit of area CP1AB (total revenue of O P1AQ1 and total cost of OCBQ1). The monopolist can restrict output at OQ1 to maintain the relatively high price of its goods at OP1 above average costs to earn supernormal profits in both the short and long run – this is because it does not fear the entry of new firms to compete away these supernormal profits in the long run given the high BTE.

**2) Market structure with low BTE: Monopolistic Competition**

Monopolistic competitive (MPC) firms represent firms facing low BTE.

Monopolistic competition is a market structure in which many small firms sell slightly differentiated products that are close substitutes of each other. As a result, a firm that raises its price will not lose all its sales and firms have some market power. Thus, each firm has some control over price and faces a downward sloping demand curve. However the firm’s demand curve is relatively price elastic as each firm faces competition from a large number of close substitutes. A relatively small increase in the price of that product will lead many consumers to switch to one of the many close substitutes.

MR1

E2

Pe

D2 =AR2

MR2

Output

O

LRMC

D1 =AR1

P1

Qe  Q1

LRAC

Revenue/Costs ($)

•

E1

•

B

A

Figure 2

As seen from Figure 2, the MPC firm faces a demand curve D1, and is maximising profit by producing at output OQ1 where MR1 = MC, and uses its market power to set price at OP1 above marginal costs. The price OP1 is higher than average costs OA and thus, the firm earns supernormal profits represented by the area E1P1AB.

In the long run, new firms will be attracted to enter the industry with low barriers to entry. As more firms enter, the existing firm will have more competitors, so demand for its products decreases and becomes more price elastic due to the greater availability of substitute products. This process continues until the demand falls to D2 and the firm maximises profit by producing at Qe where MC = MR2 and the lower price OPe is just sufficient to cover average cost. Consequently, the MPC firm earns only normal profits in the long run.

Hence, although MPC firms can set prices, lower market power compared to a monopolist due to the presence of substitutes ensures that the extent to which prices are above marginal costs is smaller. Also, low BTE ensures that price charged is equal to the firm’s average costs in the long run – short run demand that is consistent with higher prices will lead to other firms entering the industry and the firm’s demand to fall, leading to a fall in price (from P1 to Pe here) and a fall in output (from Q1 to Qe here).

**3) Market structure with no BTE: Perfect Competition**

Perfectly competitive (PC) firms represent firms in industries with no BTE.

With the absence of BTE is likely to lead to a situation where there are many firms in the industry. In addition, PC markets have homogeneous products, existence of perfect knowledge and perfect factor mobility. As a result, each seller produces a very insignificant amount of the entire market supply and thus **act as price takers** in the market.

Revenue/Cost

S1

Revenue/Cost

MC

A

S2

LRAC

P1

P2

P1

P2

C

B

AR2=MR2

AR1=MR1

D1

O

O q2 q1 Output

Output

Figure 3a

Figure 3b

As seen from Figure 3b, the market demand and market supply curve in a PC market determine the market price OP1 initially. Each profit-maximising PC firm will take this market price as given, producing output at MR=MC e.g. at Oq1 and earn supernormal profit as shown by area CP1AB in the short run, illustrated by Figure 3a.

In the long run, due to the absence of BTE, new firms will be attracted to join the industry as the supernormal profit indicates that the returns from this industry are higher than other industries. Existing firms will also expand output but they can use bigger plants in the long run.

As long as PC firms make supernormal profits, more firms will enter the industry and the market supply curve will keep increasing, shifting to the right. This causes market price to keep falling, reducing the supernormal profits earned by firms. Eventually, when the market supply curve shifts from S1 to S2, reducing the market price to OP2, all existing firms earn only normal profits and produce at minimum efficient scale of production (Figures 3a & 3b). Thus, each profit maximizing PC firm will price its goods such that price equals marginal costs and average costs, earning only normal profits in the long run due to the absence of BTE. At this price, they can choose to sell the quantity they desire, e.g. Oq2 as determined by MC=MR in Figure 3a.

[Contrast between two market structures expected e.g. monopoly/oligopoly vs MPC or monopoly/oligopoly vs PC]

Conclusion

In conclusion, BTE is an important factor affecting a firm’s pricing and output decision in different market structures. For industries with high and low BTE, firms have the ability to set prices above marginal costs (though the extent of this varies with the level of BTE, e.g. MPC only being able to set prices equal AC in the long run). For industries with no BTE, firms are price takers and are unable to set prices above marginal and average costs in the long run.

**Essay Question 6**

**(b) Assess the extent to which market dominance reduces the negative impact of a recession on firms. [15]**

**decrease in dd / decrease total revenue / erosion of profit / cut down manpower / reduce market share**

Introduction

* A recession, i.e. two consecutive quarters of gross domestic product (GDP) contractions, imply a fall in national income, output and employment.
* Average consumers face a fall in incomes, and this has a significant bearing on firms’ profitability, depending not only on the degree of market dominance but also on the types of good they produce and possible responses by firms in response to the recession.

Main Body

**Thesis: Degree of market dominance reduces negative impact of recession**

**1) Market dominance affects firm’s ability to withstand decreases in demand and price and avoid closure**

Less dominant firms in competitive industries are more susceptible to closure. The greater the degree of market power and market dominance with higher BTE, the greater the ability of the firm to maintain prices above average total costs (ATC) and preserve short run supernormal profits into the long run, which could mean that firms are more resilient to closure with a fall in demand and prices given a recession.

For example, given the low BTE, monopolistically competitive (MPC) firms at long run equilibrium only earn normal profits. Any supernormal profit attracts rival firms to enter the industry, which reduces the demand for the products of incumbent firms and makes the demand more price elastic due to the greater availability of substitutes.

With reference to Figure 2 in part (a), the profit-maximising price at OPe will be where P= ATC in the long run. Given a recession, and assuming that the MPC firms produce normal goods, demand for goods sold by the firm falls and equilibrium prices fall as well. Since prices fall below ATC, firms then incur subnormal profit. In addition, if the price falls below average variable costs (AVC), then the MPC firm shuts down in the short run.

Continued subnormal profit in the long run will lead to the MPC firms exiting the industry until the subsequent increase in demand for each of the other firms left in the industry causes the price of the good to rise back to equal ATC and restoring normal profits to firms again.

On the other hand, monopolies and firms operating in oligopolistic industries may not face the prospect of subnormal profits and firm exit given a recession. For example, given the high BTE, monopolies can set prices above ATC and earn supernormal profits in the long run. When demand for the (normal) good falls in a recession, the price of the good will fall. However, this fall in demand and prices must be large enough to cause prices to fall from a level above ATC (P>ATC) to one below ATC (P<ATC) for firms to exit in the long run – if the fall in price is minimal or if the monopoly is pricing far above ATC (P>>ATC) to earn large supernormal profits, the monopolist only incurs a decrease in supernormal profits and does not have to exit the industry in the long run.

Thus, firms that are less dominant e.g. MPC firms are more vulnerable to closure in a recession than firms that are more dominant e.g. monopolies, given differences in their ability to maintain prices above ATC and earn supernormal profit in the long run. Greater market dominance can thus reduce the negative impact of a recession.

**2) Market dominance affects firm’s ability to conduct R&D**

In addition, the long run supernormal profits earned by oligopolistic and monopolistic firms that are more dominant can be drawn upon to conduct research and development (R&D) during a recession.

These could be to diversify their range of products or to increase the quality of the product and better cater to the tastes and preferences of consumers so that demand for the product can be increased to increase total revenue, or to increase the efficiency of the production process so that average costs are reduced. Such R&D to increase the profits of these firms would mean that they are less affected by the fall in demand caused by the recession.

On the other hand, less dominant firms such as MPC firms only earn normal profits in the long run and thus lack the funds to conduct R&D. They thus lack the ability to improve their products or find innovate methods of production in order to boost profits and weather the recession.

**Anti-thesis: Degree of market dominance does not reduce the negative impact of recession**

However, market dominance may give rise to productive inefficiency resulting from X-inefficiency. Being sheltered by high BTE, oligopolistic and monopolistic firms can still make supernormal profits in the long run even if they are not using the most cost-efficient method of production. As a result of this lack of competitive pressure, X-inefficiency sets in. Complacency and organisational slack lead to overstaffing, spending on prestige buildings, lack of effort in scrapping old production plants etc. Higher average and marginal costs are incurred as a result of this productive inefficiency.

In such a situation, market dominance might actually lead to these inefficient firms still being more vulnerable to closure resulting from the fall in demand and price given a recession, since ATC is higher than they should be and it is more likely that prices fall below ATC to lead to firm exit of the industry in the long run.

**Anti-thesis: Other factors reduce negative impact of recession**

**1) Nature of good produced by firm – Income elasticity of demand**

However, firms only face a fall in the demand for their goods and a subsequent fall in price only if the goods they are producing are normal goods, i.e. those with positive income elasticity of demand (YED>0). If firms are producing inferior goods instead, i.e. those with negative income elasticity of demand (YED<0), then a recession would mean that they face an increase in demand, prices and total revenue.

Furthermore, amongst firms producing normal goods, firms producing necessities (goods with income inelastic demand i.e. 0<YED<1) would be less vulnerable to recession than firms producing luxuries (goods with income elastic demand i.e. YED>1) since they experience a less than proportionate fall in demand for their goods in a recession.

Hence, what is more relevant for the impact of a recession on firms might be the nature of the good produced rather than the market dominance enjoyed by the firms producing it. For example, if MPC firms produced inferior goods (such as lower quality home-brand products of supermarkets), they would benefit from the recession as demand for their goods increased – the lack of market dominance and ability to price above ATC in the long run is less relevant given this scenario.

Similarly, if monopolies sold luxury goods such as designer wear, then a fall in demand would be more than proportionate to the fall in income – this might imply a greater vulnerability of these firms, despite their market dominance, since the fall in demand and prices is likely to be significant.

**2) Small firms more nimble and able to adapt to changing demand conditions**

In addition, less dominant firms e.g. MPC firms tend to be smaller and hence might be more nimble and responsive to changes in market conditions e.g. the recession in this case. With closer contact to their customers, MPC firms might be better able to detect changes in demand conditions, and might hence possess the flexibility to quickly adjust resource inputs to minimise costs and maximise revenue e.g. by diversifying their product range to include inferior goods or switch to inferior goods entirely during the period of recession.

In contrast, market dominant firms such as those in oligopolies and monopolies tend to be large, and might need a longer time to detect and respond to the fall in demand caused by the recession, making them more vulnerable to its negative effects.

Other plausible factors that reduce the impact of a recession:

* Fall in factor input costs accompanying recession reduces negative impact of recession for firms
* Government intervention in recession especially for industries deemed essential e.g. banking sector
* Effects of demand management policies by the government in response to a recession etc.

Conclusion

* Overall, likely that market dominant firms that face less competition are much less vulnerable to closure than firms in more competitive industries as due to their ability to price above ATC and preserve supernormal profits into the long run, which then provides necessary resources to counter the recession e.g. with R&D.
* However, it is also important to look at the type of products sold by the firms to determine the impact on demand when a recession hits.
* Often, the behaviour and performance of firms under recession conditions do not rely only on their market dominance, but instead the impact depends significantly on firms’ adaptability and actions undertaken in response to the negative shock.

**(i) Duration and magnitude of recession**

* The duration and magnitude of the recession also matters in determining the extent to which firms experience a negative impact.
* If recession is mild and short-term, impact would be less damaging on firms operating in both competitive and less competitive industries.
* If recession is serious and prolonged, even the impact on firms with market dominance might also be detrimental and severe.

**(ii) Government intervention**

* The different possible responses of the government to the recession could also imply differences in the impact of the recession on firms.
* Industries deemed essential to the workings of the economy may be more likely to receive such government intervention.
* For example, government intervention to bail out the banking sector during the 2008 financial crisis meant that many of these market dominant banks that faced closure due to the large negative shock survived instead.