Economics Workshop

Topic 8: Imperfect Competition

PART 1

Follow the steps for drawing equilibrium diagrams for monopolistic competition and oligopoly:

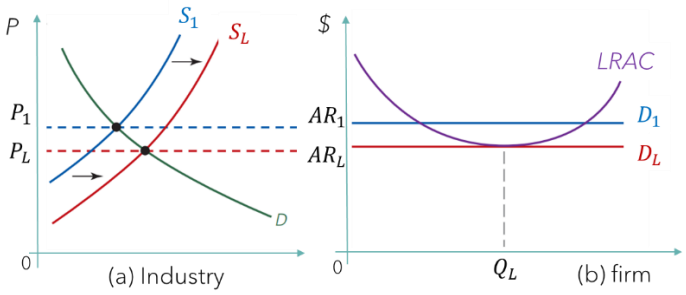
1. Draw the demand curve ($D = AR$).
   - For monopolistic competition, each firm faces a (relatively elastic) downward-sloping demand curve.
   - For oligopoly, the demand curve will depend on the model used; usually it will be kinked.
2. Draw the marginal revenue curve (*MR*).
   - For both market structures, *MR* is downward-sloping and below the demand curve.
3. Draw in the usual marginal cost curve (*MC*).
   - For oligopoly, under the kinked demand curve model, it must cut the *MR* curve through the discontinuity.
4. Find the profit-maximising output by choosing the output level Q^* where *MC* equals *MR*.
   - For oligopoly, under the kinked demand curve model, this will be at the kink.
5. Find the price P^* charged for this level of output. The demand curve (*AR*) tells us the price.
   - For both market structures, the price will depend on the level of output.
6. Draw the average cost curve (*AC*) so that the marginal cost cuts through the minimum point on the average cost curve. The vertical position of the average cost curve will depend on whether we want to show the firm earning normal profit, supernormal profit or losses. In the long run,
   - monopolistically competitive firms will be making zero profits, where their demand curves are tangential to their LRAC indicating no further incentive could be gained for new firms.
   - Oligopolists are likely to be making profits.
7. Find the average cost of making Q^*. Mark it on the diagram AC*
8. Find the level of profit. If price exceeds average cost, then the firm is making supernormal profit per unit of $P^* - AC^*$. Total supernormal profit is $(P^* - AC^*)\ Q^*$.

PART 2

1. Explain why under **perfect competition** the price charged to customers is equal to the marginal cost? Draw a diagram representing the long-run equilibrium under perfect competition.

   In the long run, if typical firms are making profits, new firms will be attracted into the industry. Likewise, if existing firms can make profits by increasing the scale of their operations, they will do so, since all factors of production are variable in the long run.

   The effect of the entry of new firms and/or the expansion of existing firms is to increase industry supply, meaning that at every price level the quantity produced would be higher. The industry supply curve shifts to the right. This in turn leads to a fall in price. Supply will go on increasing, and price falling, until firms price has fallen to the point where the demand 'curve' for the firm just touches the bottom of its long-run average cost curve.



2. Explain how the following factors affects the degree of market power and competition enjoyed by the firm:
   (a) Number of firms in the industry

   The more firms there are in the industry, the more competitive the market is likely to be.

   (b) Freedom of entry (or exit) the industry

   The more freedom of entry (or exit) there is in the industry, the more competitive the market is likely to be. This factor also influences the number of firms in the industry.

   (c) Nature of product

   The more differentiated the products are, the less competitive the market is. Likewise, if all firms produce an identical product, the more competitive the market is, as there is little a firm can do to gain an advantage over its rival.

   (d) Degree of control the firm has over the price (shape of demand curve)

   If all firms are price takers (with infinitely elastic demand curve), they have no controls over price; thus, the market is more competitive. If all firms are price makers (with vertical demand curve), they can change lower the price to deter new firms from entering the market, thus, the market is less competitive.

   (e) Producers and consumers knowledge to the market

   The more knowledge the producers have about prices, costs, technology, and opportunities in the market, the more competitive the market is. Also, the more knowledge the consumers have about prices, quality and availability of products, the more competitive the market is.

3. What is the key feature which distinguishes monopolistic competition from perfect competition?
    a. Unrestricted entry
    b. Unique product
    c. Elastic demand curve
    d. Degree of control the firm has over the price

4. What is the key feature which distinguishes oligopoly from monopoly?
    a. Restricted entry
    b. Unique product
    c. Inelastic demand curve
    d. Perfect knowledge

5. Clams Pty Ltd and Nest Pty Ltd operate in a duopolistic market. Each company has fixed costs of $0.5m and variable costs of $1 per unit. The product is sold for $1.5 per unit. They are considering the amount they should spend on advertising, $1m or $4m. If:
    - Each spends the low amount on advertising (i.e. $1m each), the total market of 10m units will be shared equally between them.
    - Each spend a higher amount on advertising (i.e. $4m each), the total market of 20m units will be shared between them.
    - One firm spends a low amount and the other a high amount, the total market of 15m units will be shared in the ratio 1:4 respectively.

    (a) Complete the payoff table below to show the profit received by each company for each combination of strategies

		Nest Pty Ltd	
		High	Low
Clams Pty Ltd	High	(0.5m, 0.5m)	(1.5m, 0)
	Low	(0, 1.5m)	(1m, 1m)

    (b) State the maximin and the maximax strategies for each firm and explain whether a dominant strategy exists for Clams Ltd or Nest Ltd

    For both firms,
    - The **maximin** strategy for both firms is **high**, since the minimum each firm could end up with if it goes high is $0.5m, which is greater than the minimum if it goes low ($0).
    - The **maximax** strategy for both firms is **high**, since the maximum each firm could end up if it goes high is $1.5m, which is greater than the maximum if it goes low ($1m).

    The dominant strategy for both firms is to go **high**.

    (c) Discuss the outcome

    Since neither firm can improve its payoff given the other firm's strategy, so there is no incentive for any firm to change its position. This position is called a Nash equilibrium. Also, the Nash equilibrium in this question is NOT the most optimal strategy, but an example of the prisoners' dilemma.