

## Perfect Competition

- ✚ To look at the different market structures that exist.
- ✚ To look at the features of a perfectly competitive market
- ✚ To look at the revenue and cost curves of a firm operating in a perfectly competitive market.
- ✚ Look at the profitability of firms operating under conditions of perfect competition in the short-term and the long-term.

1. What is a market structure?

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2. On the line below identify the different types of market structure.

Many Firms

One firm



3. In order to get a better understanding of the Perfect Competition market structure we need to look at the market for taxis.

- ✚ In the table below you need to identify the taxi company and the price that they charge for a journey from Geneva Airport to the U.N.



Firm	Price
1.	
2.	
3.	
4.	

5. In what way does the market for taxis **resemble** that of a perfectly competitive market?

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6. In what way does the market for taxis **not resemble** that of a perfectly competitive market?

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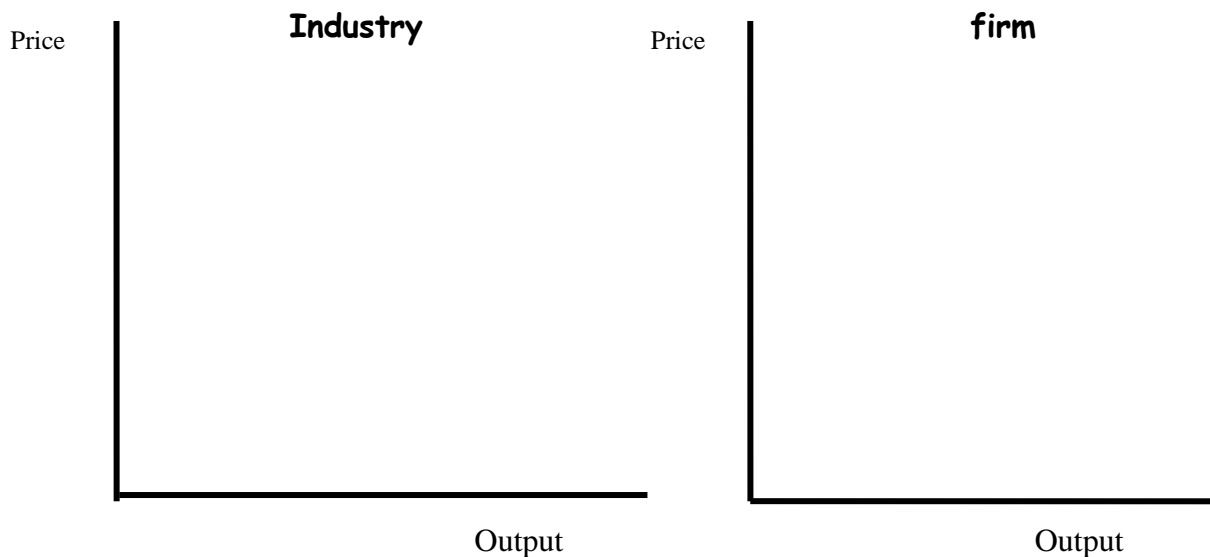
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7. If we firstly look at the market situation in a perfectly competitive industry. The market price and the output of the industry are determined by:-

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8. The individual firm in the perfectly competitive industry will take the market price as dictated by the forces of \_\_\_\_\_ and charge that price. These firms are known as \_\_\_\_\_.

9. Complete the diagram below to illustrate how prices and output are determined in a perfectly competitive market. (This is the situation in the short-run)



10. Firms operating under conditions of perfect competition are faced with what type of demand curve?

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11. Explain why firms operating under conditions of perfect competition are unlikely to charge a different price to that of the market.

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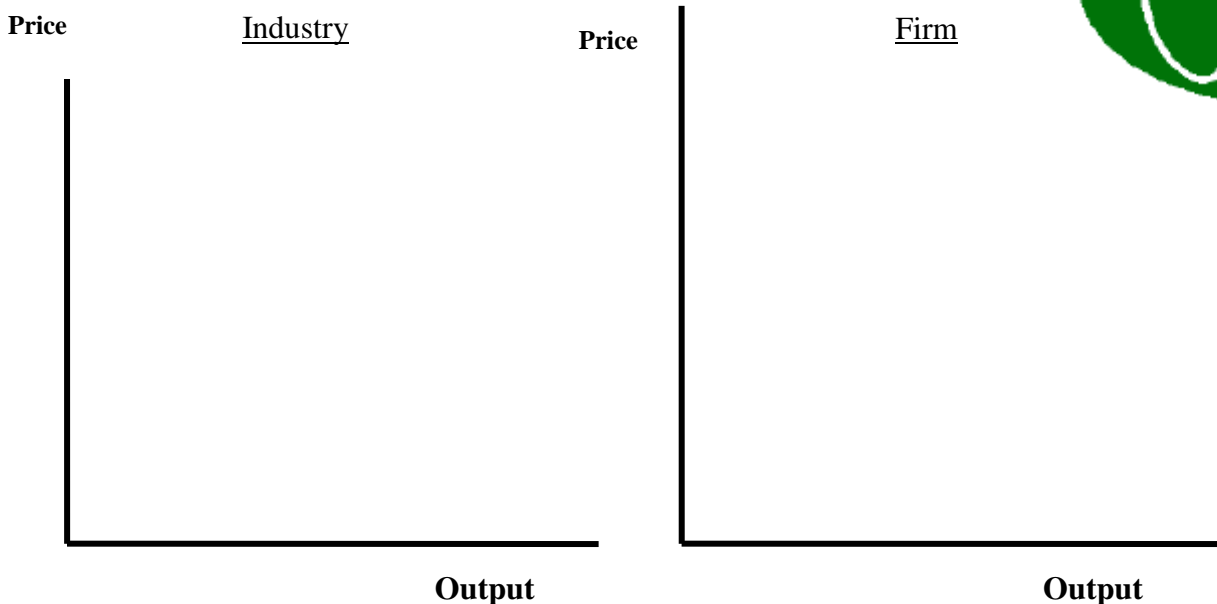
12. What types of profits are made in the short-run in perfect competition?

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13. The above situation is one that arises in the short-term. In the long-term other firms see that \_\_\_\_\_ profits are being made and therefore \_\_\_\_\_

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14. Illustrate the impact of this move on the diagram below. (The long-term situation in perfect competition)



15. What type of profits are made in the long-run and why?

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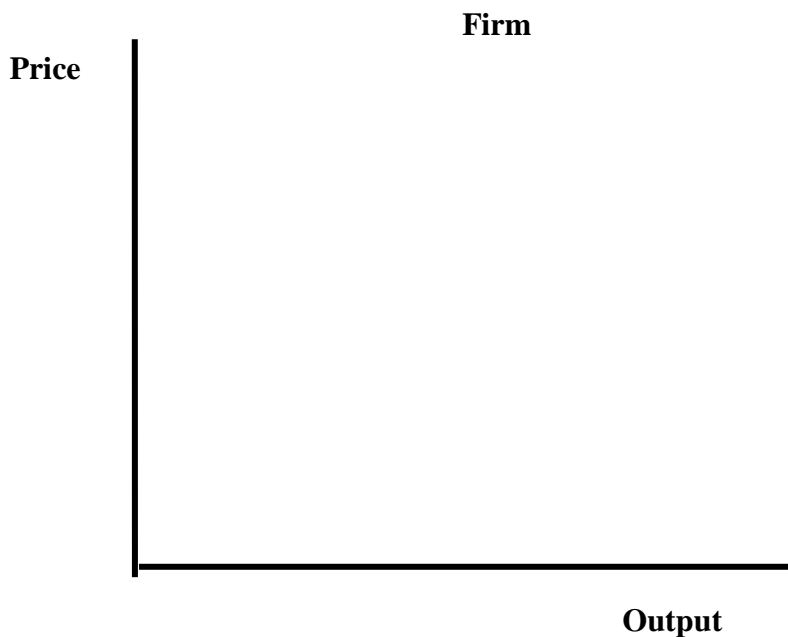
16. Moreover when a firm is operating under conditions of perfect competition the demand curve is perfectly \_\_\_\_\_ and dictated by the \_\_\_\_\_ and the supply curve is the portion of the marginal cost curve that is above the \_\_\_\_\_.

17. This is the case because the firm can only survive if

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18. Illustrate the demand and supply curve for the firm in the perfectly competitive industry on the diagram below.



## Perfect Competition 2

- To look at the conditions under which a firm operating in a perfectly competitive market would be forced to shut-down in the short-run.
- Study some applied examples of firms operating under conditions of perfect competition and observe how well they match the theory.

1. In the short-run firms only need to cover what type of costs?

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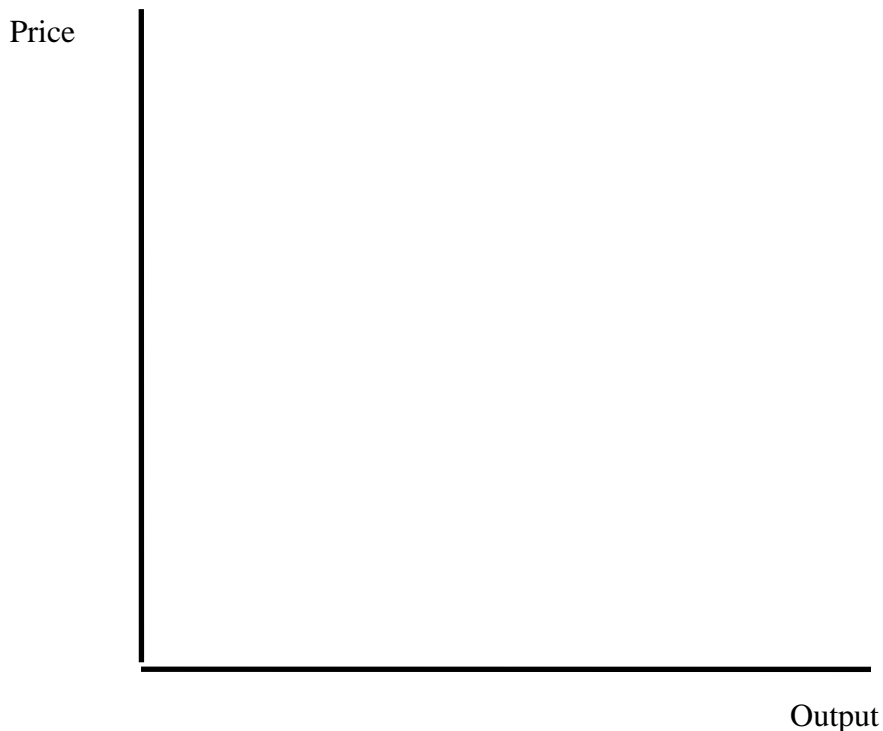


2. Is this also true for the long-run? Explain your answer.

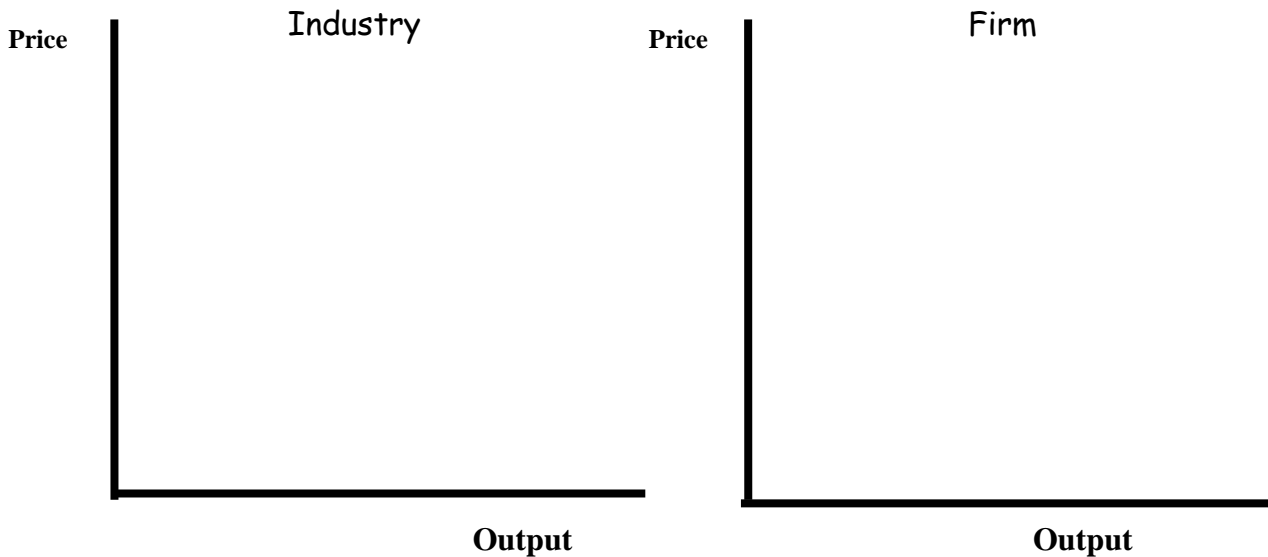
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1. On the diagram below illustrate the short-run and long-run **shut-down conditions** for a firm in a perfectly competitive market.



2. On the diagram below illustrate a firm in a perfectly competitive market and explain how this situation has arisen.



5. Now read the article relating to the road haulage industry and answer the following questions.



1. What does the article suggest about the level of profits in the industry?

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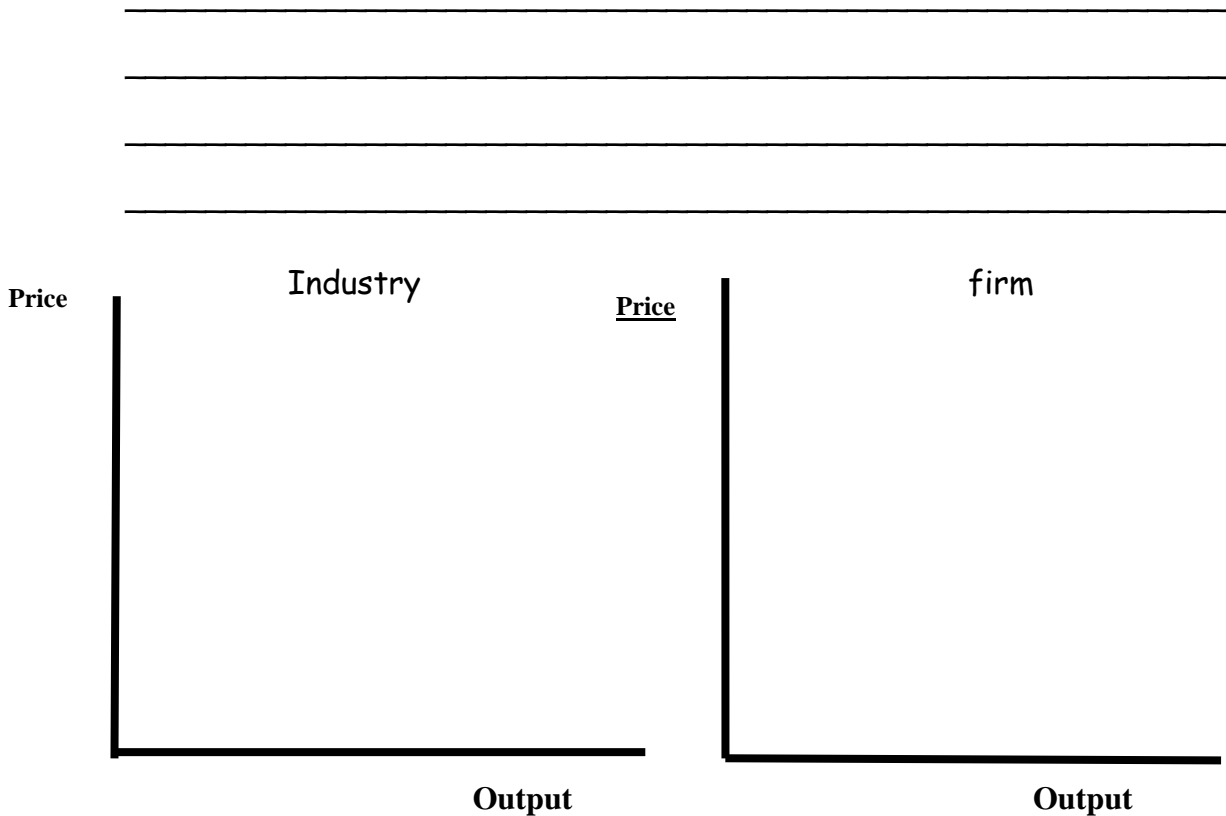
2. Illustrate the impact on the firm if the government decided to go ahead and cut road tax.

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3. Using the theory and a diagram illustrate the likely impact of a reduction in fuel tax on the industry as a whole. You should mention barriers to entry in your answer.



4. Do firms in the road haulage industry have the ability to brand their products? If so does this mean that the industry is actually monopolistically competitive?

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5. Are the haulage firms price-takers or price-makers? Explain your answer.

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6. Explain and illustrate the impact on the industry if firms are not able to cover their costs in the long-term.

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7. To what extent would you regard the road haulage industry as perfectly competitive?

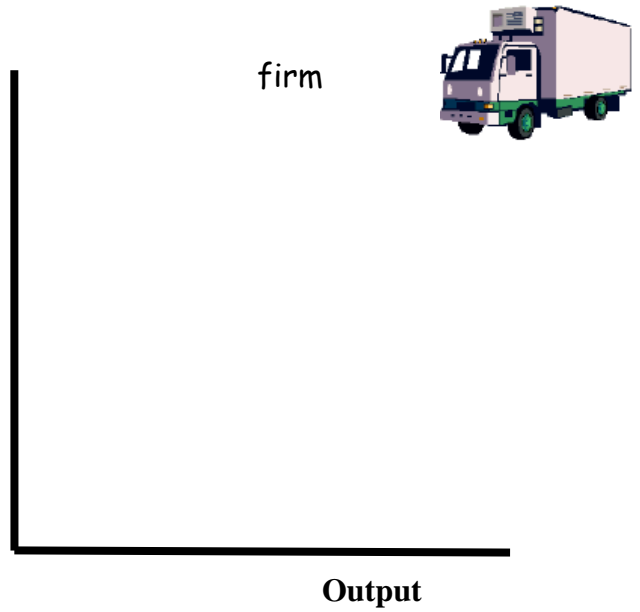
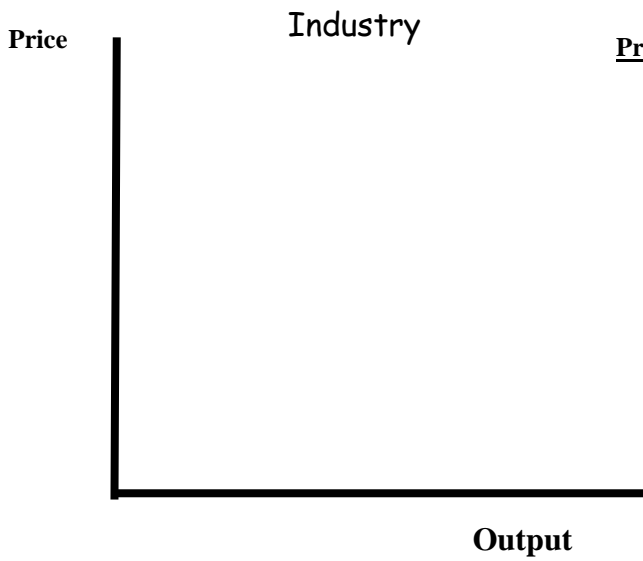
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## Monopoly

- ✚ To look at what is meant by the term monopoly.
- ✚ To be aware of global monopolies.
- ✚ To study the pricing and output decisions of monopolies and how that differs from those of a firm operating under conditions of perfect competition.

- ✚ The monopoly market structure is the **polar opposite** from that of perfect competition. Answer the following questions

### Task One

1. How many firms exist in the market with a pure monopoly

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2. How does this differ to many government's definition of a monopoly? Give an example.

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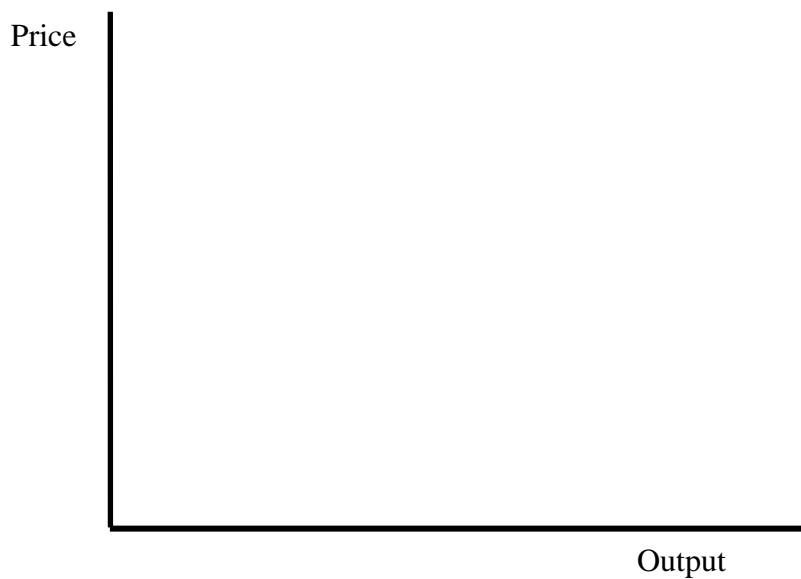
3. Name companies that you can think of which have a monopoly in its market in the **pure/literal** sense of the word (present or recent past) and those that would be regarded as a monopoly in the **everyday sense**.

Monopoly
✚
✚
✚
✚

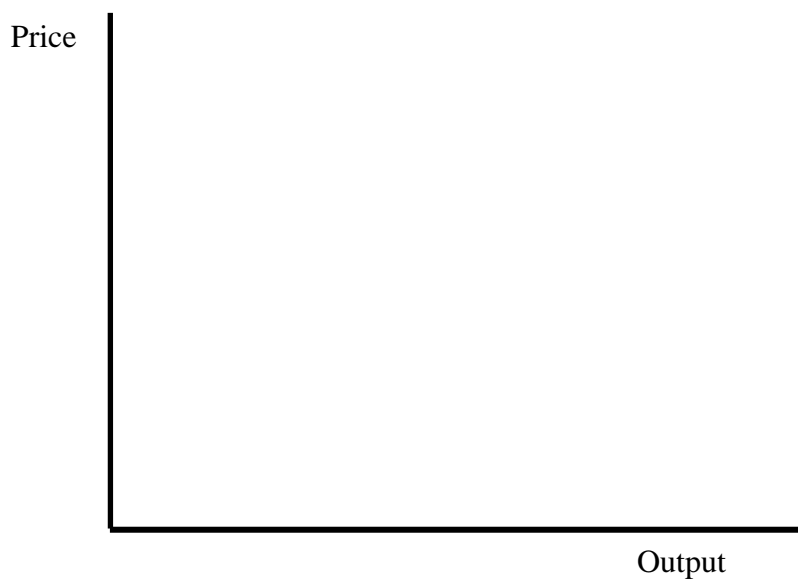
5. If a monopolist is a \_\_\_\_\_ then it will have some flexibility when it comes to altering prices.

✚ On the diagram below illustrate the marginal and average revenue curves for a monopolist.

✚ This is both the short-run and the long-run position for the monopoly.



✚ Now on the diagram below show the average and marginal revenue curves for a monopoly and the average and marginal cost curves.



✚ Why is a monopolist faced with a **downward sloping demand** curve as opposed to **perfectly price inelastic** demand curve?

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✚ How is the output level of the monopolist determined?

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✚ How can we illustrate on the diagram that profits are maximized at this point? Explain and illustrate.

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6) - What **barriers to entry** allow monopolists to earn abnormal profits in the long run?

✚ \_\_\_\_\_

✚ \_\_\_\_\_

✚ \_\_\_\_\_

✚ \_\_\_\_\_

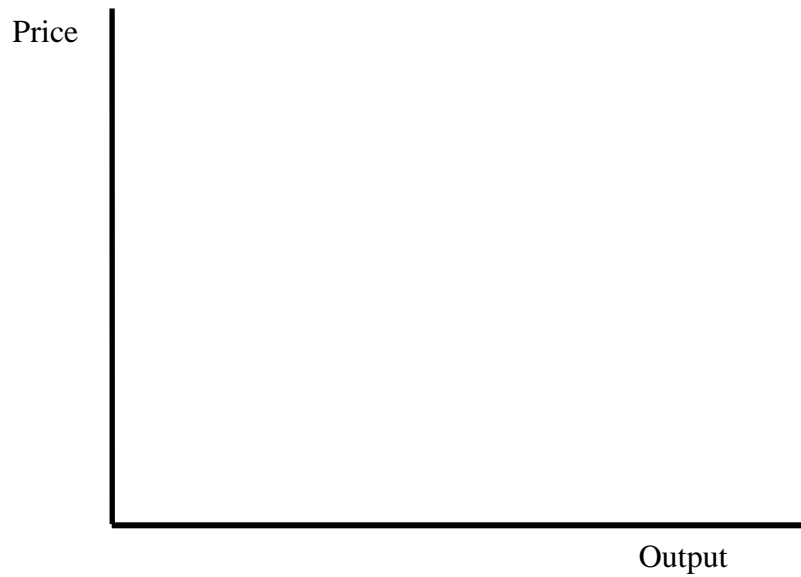


7) - Why might a monopolist seek to maximise revenue rather than profit?

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8) - On the diagram below indicate the equilibrium position for a monopolist that seeks to i) **profit maximise** or ii) **revenue maximise**.



9) - Using the table of figures below, calculate the profit and revenue maximizing level of output for a monopolist

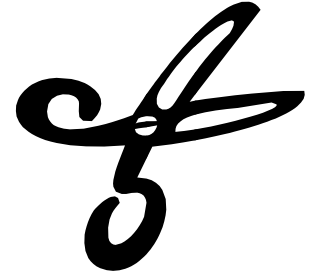
Sales	Price	Total Revenue	Marginal Revenue	Total Cost	Marginal Cost	Profit
0		0		20		
1	20	20		26		
2	18	36		31		
3	16	48		35		
4	14	56		40		
5	12	60		46		
6	10	60		54		
7	8	56		66		
8	6	48		84		
9	4	36		110		
10	2	20		150		

**Monopolistic Competition**

So far we have looked at the **two extreme** types of market structures:-

1. Perfect Comp
2. Monopoly

✚ We will now look at a type of market structure that is known as **Monopolistic Competition**.

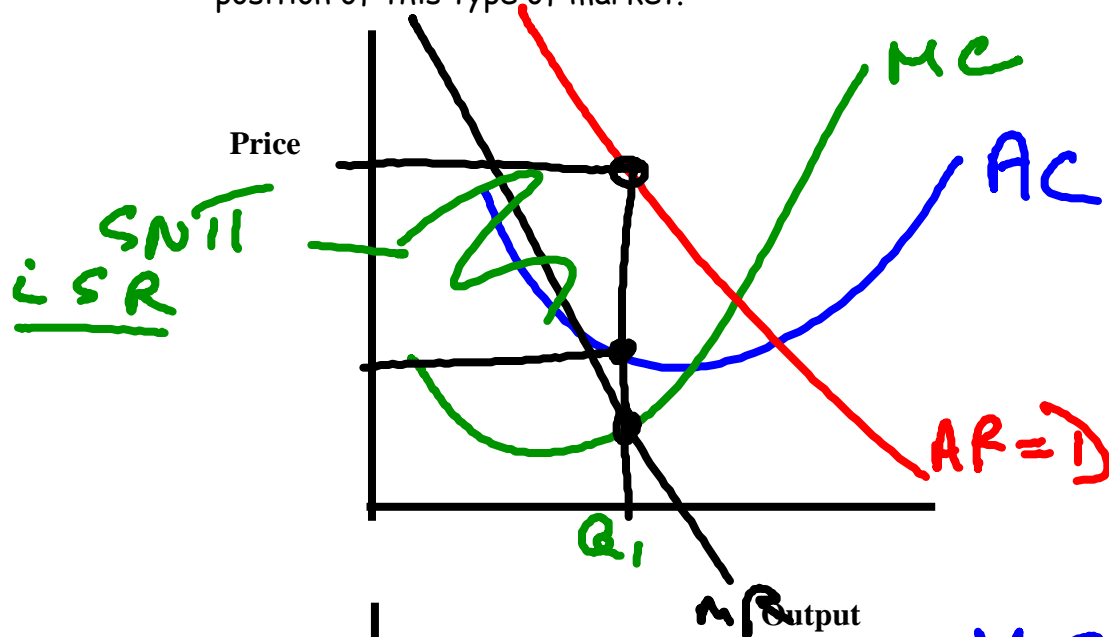


1. Consider the **Hairdressing Market**. This is one type of market that can be classified as monopolistically competitive.

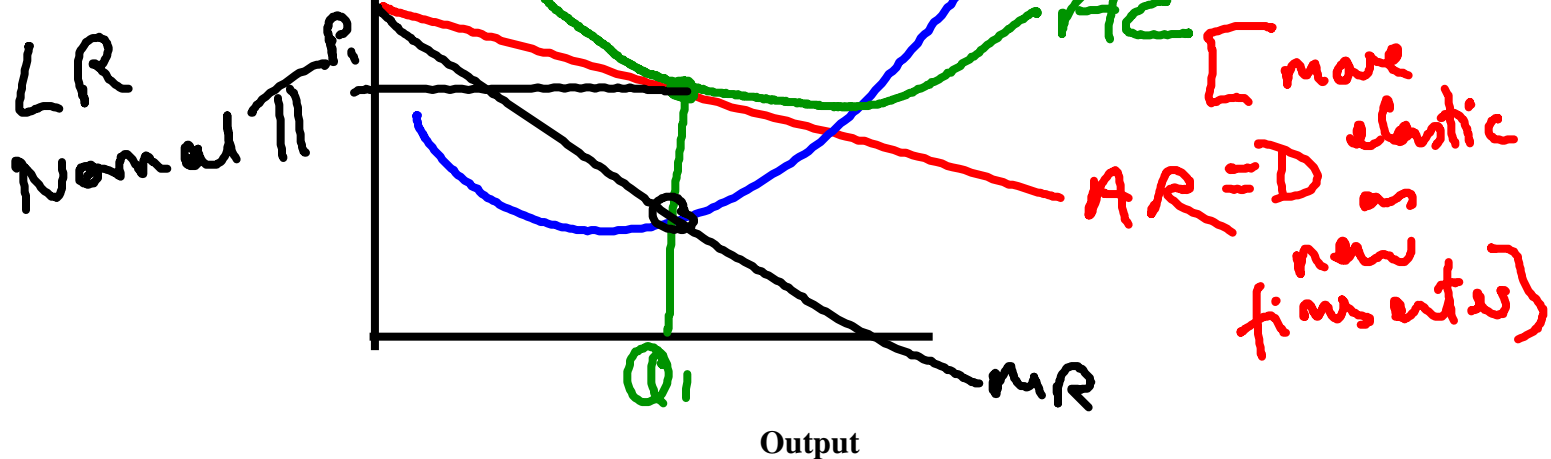
Differentiated Products many times

Level of Service	Varies eg. standard, → coloured highlights
Price	CHF 18 - CHF 200!
Range of Services	Coffee, massage, wash/dry
Market Power	Ltd ; special skills Location
Barriers to Entry <u>Low</u>	Customer loyalty; Rent; qualifications
Advertising/Promotion	Location, "word of mouth"

2. Complete the diagram below to illustrate the short-run and the long-run position of this type of market.



3. Price



4. Describe the short-run and the long-run position of this market below.

Short-Run  
 SNTT  
 PED inelastic  
 Market power  
 Different Product

eg first but point per

Long-Run  
 N  $\pi$   
 PED more elastic  
 Little mkt power  
 Differentiated product

5. In what way is a Monopolistically Competitive Market similar to a Perfectly Competitive Market?

SR Many firms  
 No/low barriers to entry (free entry/exit)  
 SNIT, LR Normal  $\pi$

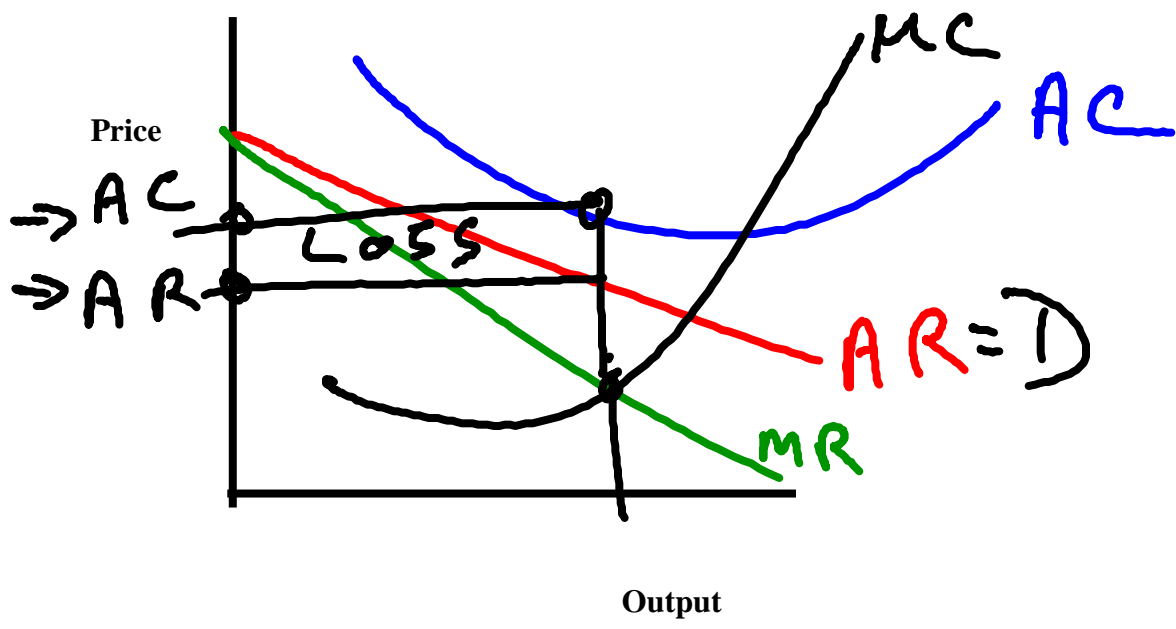
6. In what way is a Monopolistically Competitive market different from a Perfectly Competitive Market?

Perf comp  $AR = MR$  (horizontal demand) & prod allocative efficient.  
 Differentiated products (eg bull paint pens)  
 Monopolistic comp  $AR > MR$  Downward sloping curve not horizontal

7. Can you think of any other markets that you would describe as Monopolistically Competitive?

- + Restaurants, Cafés
- + Live music
- + Boutiques, tobacco

8. On the diagram below can you illustrate a firm operating in a monopolistically competitive market that is actually making a loss.



9. Why might the firm above be making a loss?

Too much competition,  
Inefficient (not minimizing costs)  
↓ Demand (eg trends)



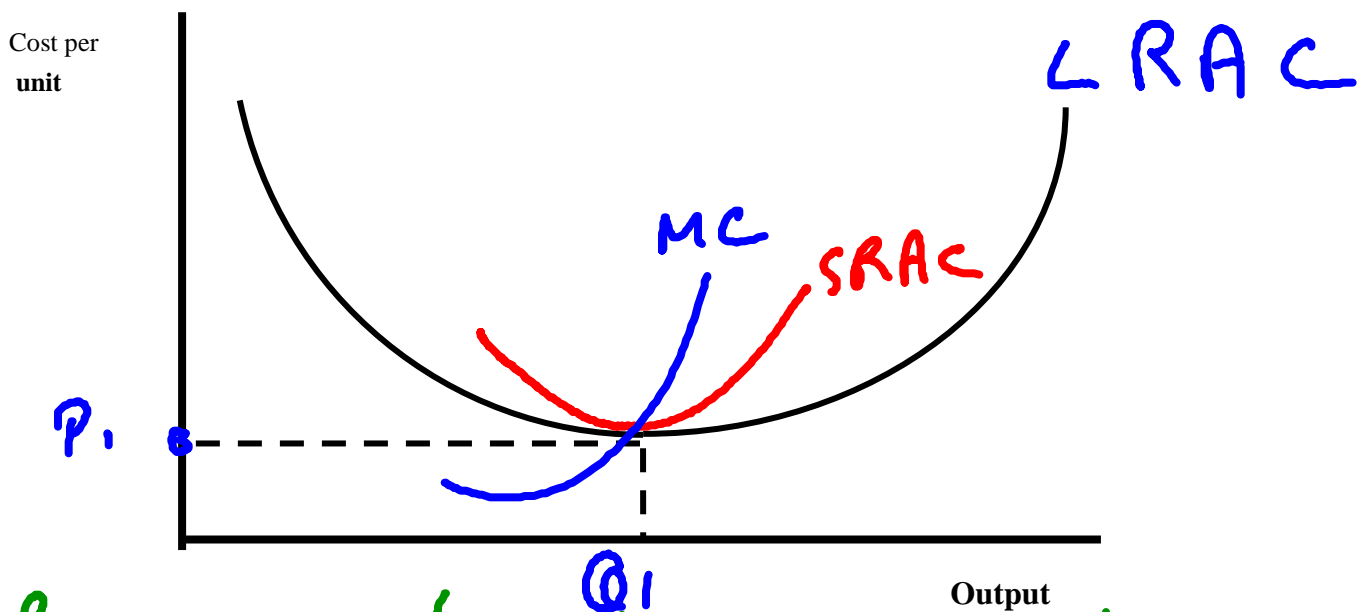
## Efficiency

- ✚ What we mean by efficiency in **Economics**.
- ✚ The different types of efficiency.
- ✚ The level of efficiency in different market structures.



## Productive Efficiency

1. Using the diagram below explain what is meant by the term 'Productive Efficiency'



Producing at lowest average cost,  
where  $MC = AC$

2. Why might 'Productive Efficiency' be linked with Economies of Scale?

LR productive efficiency at lowest point of LRAC and SRAC

3. How might a firm achieve productive efficiency? Try to think of at least 4 methods that they could use.

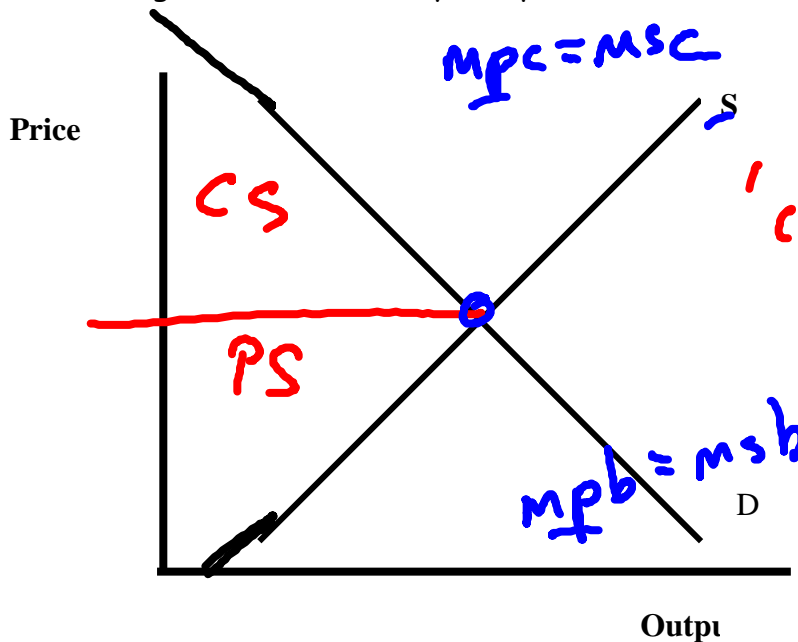
- ✦ ↑ output (economies of scale, ↓LAC)
- ✦ Outsourcing (eg made in China)
- ✦ Automation (labour saving machines)
- ✦ Mergers ('horizontal/vertical') & ATMs

### Allocative Efficiency

4. What do you understand by the term 'Allocative Efficiency?'

What is best for society  
 $AR = MC$   
 $MSB = MSC$

5. On the diagram below identify the point that is allocatively efficient.



maximizing  
 'community surplus'  
 (if no externalities)

6. How could we describe the concept of allocative efficiency in simple terms?

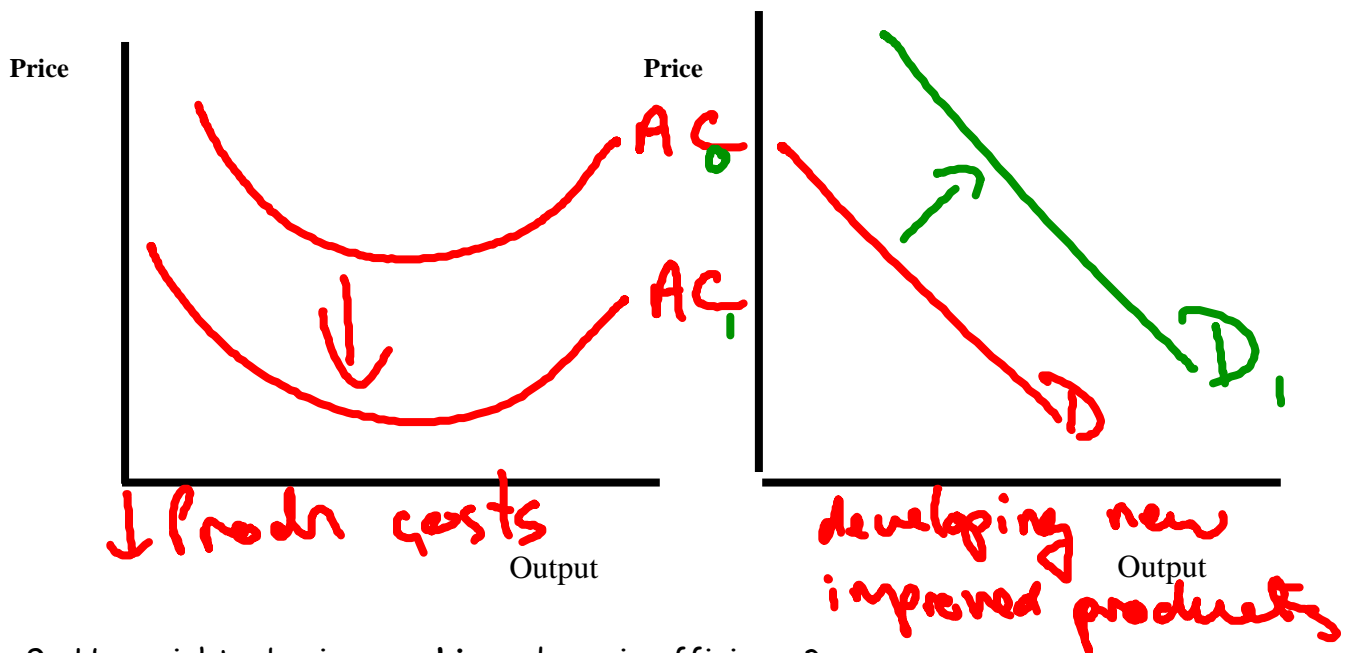
Output which results in "optimum allocation of resources": i.e. we produce what society values most.

### Dynamic Efficiency

7. 'Dynamic Efficiency' can be defined as what?

Includes future changes eg encourage research and development of new products

8. Illustrate the concept of dynamic efficiency on the diagrams below.

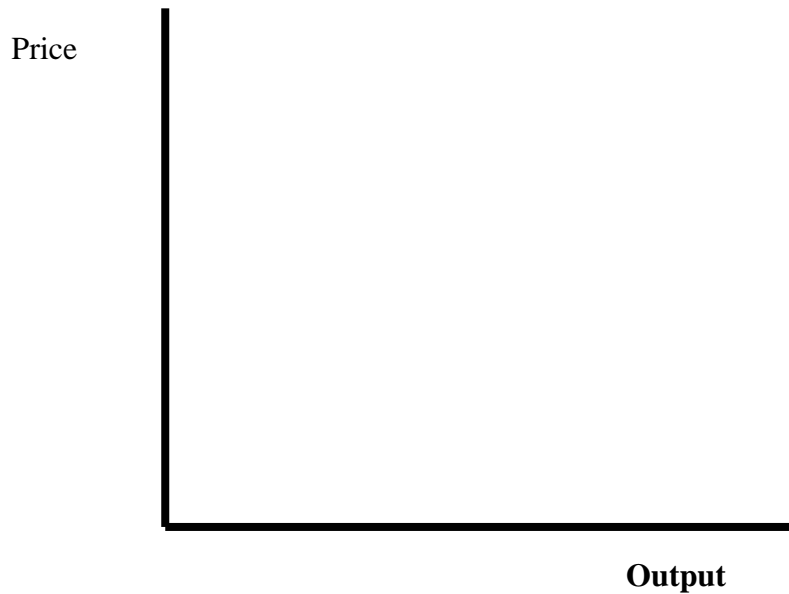


9. How might a business achieve dynamic efficiency?

"Creative destruction" Joseph Schumpeter  
Monopoly Profits provide incentive to firms to produce better products.  
Patents / copyright protect firms' monopoly power for a period.

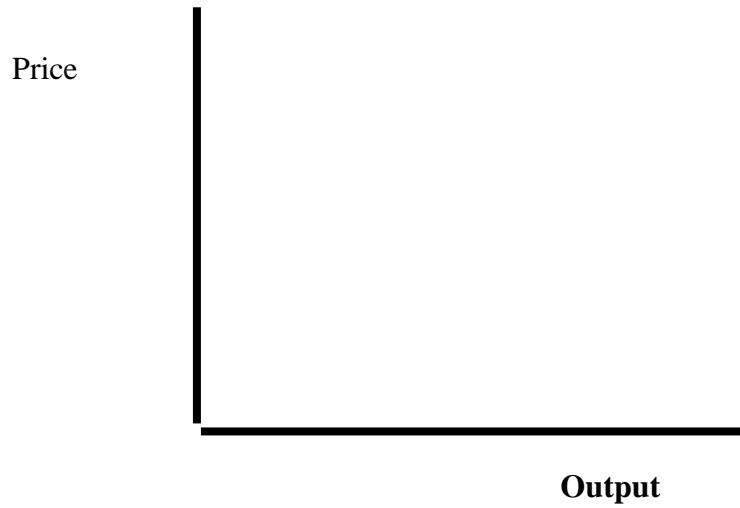
## Efficiency in a Perfectly Competitive Market

10. Draw the perfect competition diagram (long-run) and identify whether firms operating in this market structure are dynamically, productively or allocatively efficient.



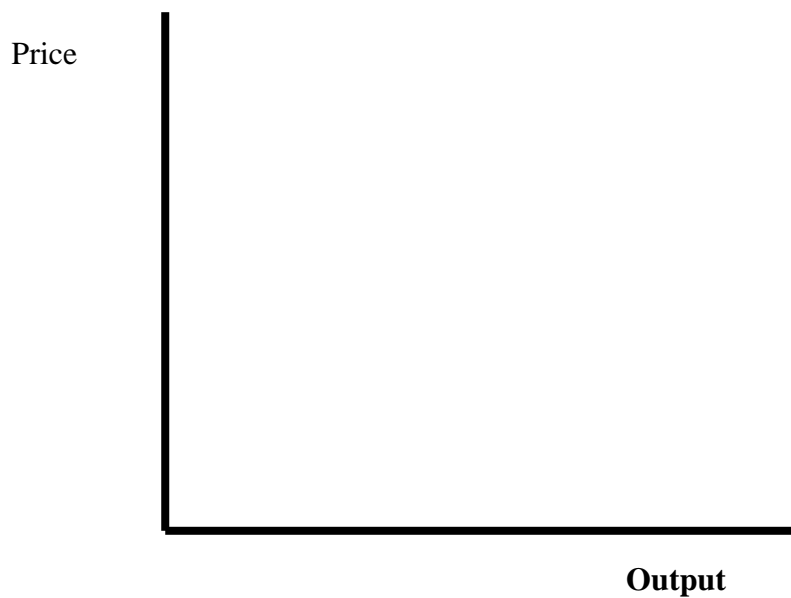
Perfect Competition	
⇒ Productive Efficiency	
⇒ Allocative Efficiency	
⇒ Dynamic Efficiency	

11. Draw the Monopolistic Competition diagram below (**long-run**) and identify whether or not the firms that operate in this type of market are efficient.



Monopolistic Competition	
⇒ Productive Efficiency	
⇒ Allocative Efficiency	
⇒ Dynamic Efficiency	

12. Finally let us consider a **Monopoly** and look at whether it might be regarded as efficient.



Monopolistic Competition	
⇒ Productive Efficiency	
⇒ Allocative Efficiency	
⇒ Dynamic Efficiency	

13. Why is it often argued that Monopolists are more likely to be dynamically efficient than smaller firms ?



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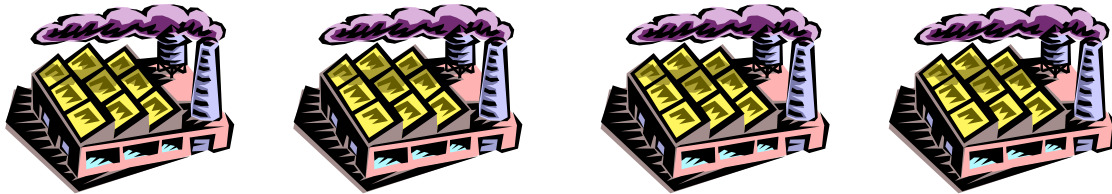
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## Oligopoly

### Features of an Oligopoly

#### 1. Number of Firms



✚ Give an example of this.

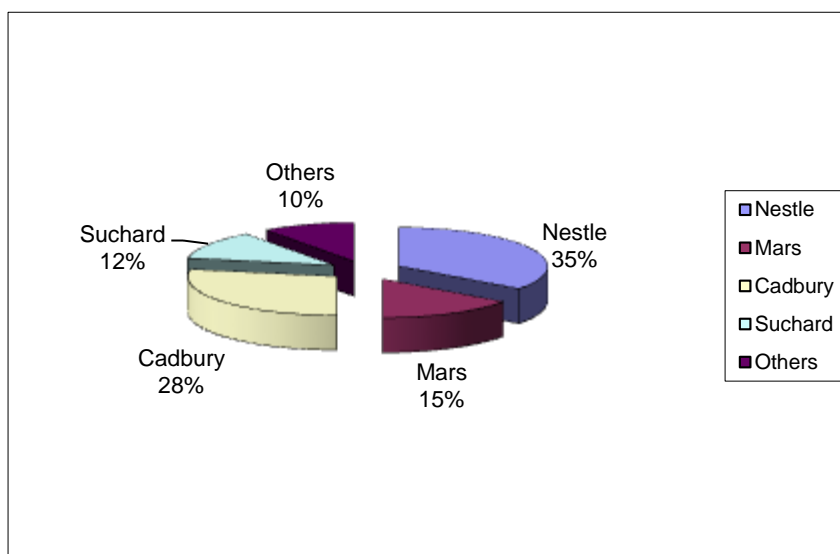
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#### 2. Market Power (Concentration Ratio)

✚ What degree of market power do the leading firms enjoy in an Oligopoly ?



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3. What is the 3-firm concentration ratio in this market?

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4. What do you understand by the term '**Concentration Ratio**'?

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### Prices in an Oligopoly



5. How would you describe **prices** (prices of the different related brands) in an oligopoly?

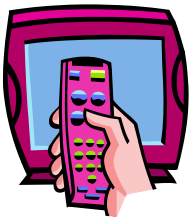
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### Nature of Competition

6. How do firms compete in an Oligopoly?



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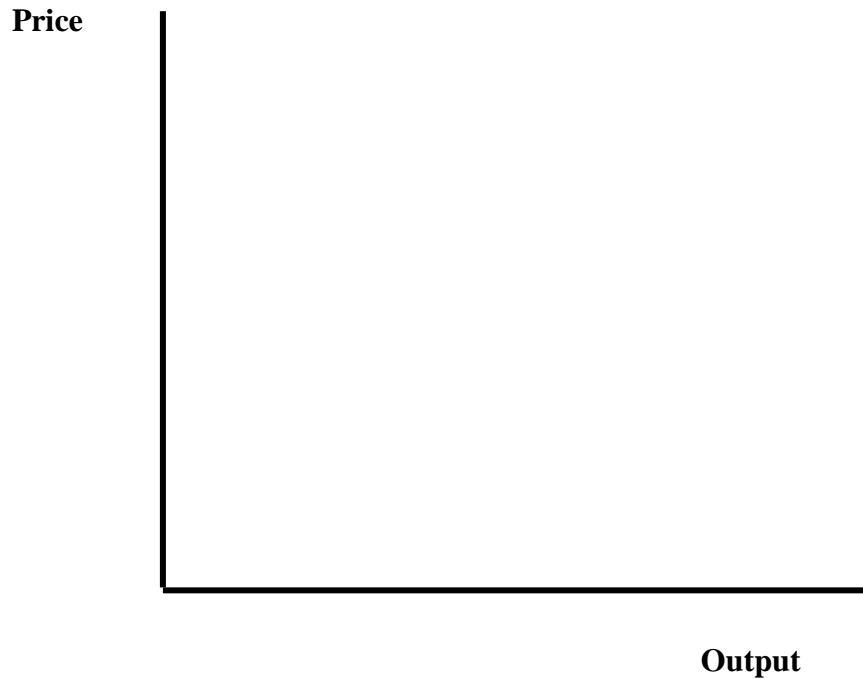
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**The Non-Collusive Oligopoly - The Kinked Demand Curve**

- ✚ The stable prices and non-price competition in an Oligopoly can be explained by the **kinked demand curve** that is shown below.



6. Explain why any **one firm** is unlikely to raise prices.

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7. Explain why any **one firm** is unlikely to reduce prices.

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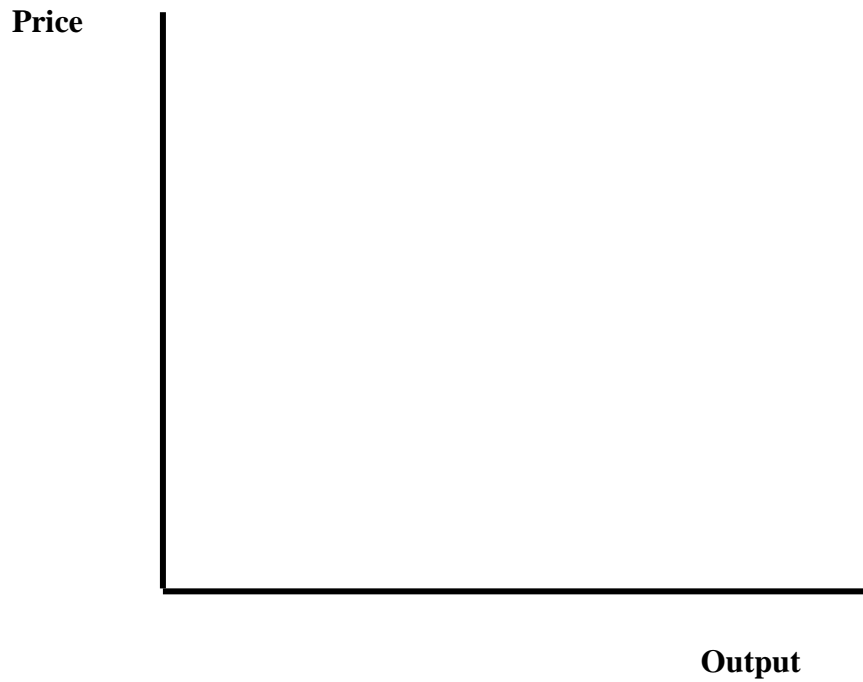
8. **When** might one witness price changes in an Oligopoly?

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9. Draw the kinked demand curve again but add the marginal revenue and cost curves.



10. What kind of **profits** would be earned in an Oligopoly?

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11. How might one describe barriers to entry in this type of industry?

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12. Give examples of different barriers to entry.





## The Collusive Oligopoly

1. What is the difference between a non-collusive oligopoly and a collusive oligopoly?

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2. Examples of how firms might collude.



If the collusive oligopoly is formal, then it is known as a **cartel**<sup>1</sup>. In many economies, cartels are illegal as they are considered not to be in the public interest. Where this is the case, firms often collude illegally, agreeing prices in private. If they do not do this, they often simply keep an eye on each other's prices and charge the same. Firms often agree to avoid competition and to stay away from price-wars.

A common form of unwritten collusion is **price leadership**. Usually, this is where firms charge the same price as that set by the largest firm, which dominates the industry. This is known as **dominant firm price leadership**. In some cases, the firm that is followed is not actually the largest, but is the one that has been the most dependable over time. This form is known as **barometric firm price leadership**.

3. What is the name given to a formal collusive oligopoly?

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4. Why are cartels illegal in many countries?

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5. How might firms collude illegally?

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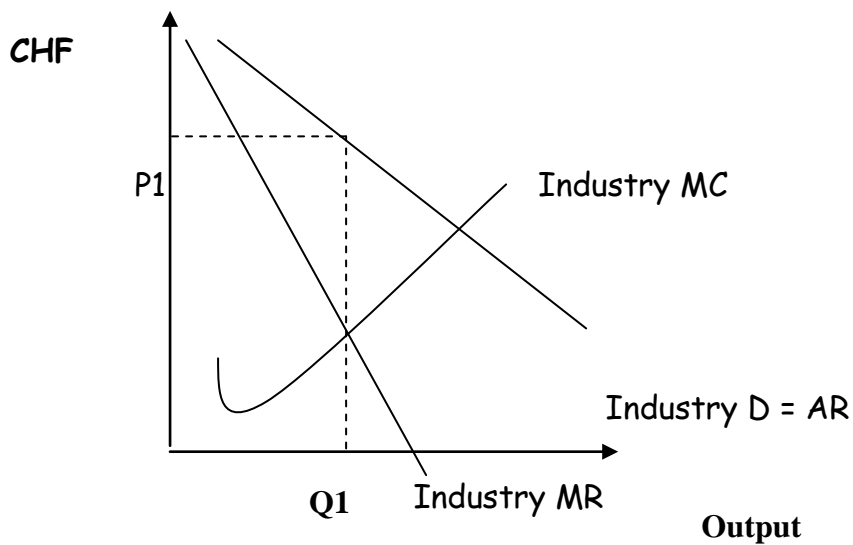


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6. What is a common form of unwritten collusion?



7. The above diagram shows the situation when a cartel is formed and it acts like a \_\_\_\_\_. Profits are maximised at  $Q_1$ , where  $MC = MR$ . The cartel will therefore set a price of \_\_\_\_\_

8. Once the cartel has agreed the price, there are two options:





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### Problems with collusion

9. Collusion will be more likely to be successful if:



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10. How might colluding firms cheat?

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11. What might happen as result?

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When considering whether to cheat, there are two main questions: How much can we get away with without inviting retaliation and if a price war does result, will we be the winners? The firm will consider different strategies and attempt to find the one that will best succeed in outwitting its opponents. The strategy that a firm adopts will be concerned not just with price, but also with advertising and product development. Economists use **game theory**<sup>2</sup> to examine these strategies.

## Game Theory

1. In order to understand how firms may behave in a collusive and non-collusive oligopoly we can look at a concept known as '**Game Theory**'



Consider the '**Prisoner's Dilemma**' Exercise below.

2. Louis and Marcus have both been arrested for the same crime (burglary), but are been interviewed separately. They face the following alternatives.

- ✚ If they both stay quiet and say nothing the court has enough evidence to convict them for two years each.
- ✚ If one of them confesses and the other one doesn't, the one who confesses will get five months and the one who doesn't will get ten years.
- ✚ If they both confess they will both get four years.



3. Complete the table on the next page with the different outcomes. We assume that there is **no collusion** between the two prisoners.

Marcus's Options

*Not Confess*

*Confess*

Louis's  
Options

*Not Confess*

*Confess*


4. What is the **best** strategy to adopt if there is **no collusion**?

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5. What is the best strategy if there is **collusion** amongst the two prisoners?

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6. We will do a similar exercise, but this time with two firms operating in an oligopoly who are considering whether to charge a high price or a low price.

✚ Look at the diagram on the following page and answer the questions.

✚ The figures in the table represent the profits that can be made if Firm A and Firm B charge a certain price.

		Firm B	
		<i>Low Price</i>	<i>High Price</i>
<u>Firm A</u>	<b>Low Price</b>	<b>8m/8m</b>	<b>15m/5m</b>
	<b>High Price</b>	<b>5m/15m</b>	<b>12m/12m</b>

7. What is the best possible strategy for Firm A?

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8. What is the risk associated with adopting this strategy?

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9. What is the best strategy for Firm A to adopt which allow it to maximize its minimum possible profit? (i.e. what is the safest strategy to adopt?)

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10. If Firm A and Firm B were to collude, what would be the best strategy and therefore the equilibrium position?

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11. According to the Neo-Classical Theory if Oligopoly there is **no collusion**.  
**What situation arises because of this?**

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12. What might happen in an oligopoly therefore if there is collusion?

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*Beautiful Mind*

13. What the scene from a 'Beautiful Mind' and see if you can apply game theory to explain what is taking place.

4 Other College Students

		<i>1 Blond</i>	<i>5 Brunettes</i>
<u>John</u>	<b>1 Blond</b>		
	<b>5 Brunettes</b>		

14. What is the best strategy to adopt for John and the College Students to adopt if there is no collusion between them and why?

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18 Why is it risky for either John or the other students to go for the blond?

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## Price Discrimination

1. What is price discrimination ?
2. How are firms able to price discriminate?
3. What conditions must be necessary for a firm to price discriminate?



1. Look at the situations below and identify when firms would charge a higher price and when they would charge a lower price.

✚ Train travel during rush hour and train travel during the middle of the day.

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✚ Phone calls Monday to Friday 9-5pm and phone calls at the weekend.

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✚ Drinks in a bar between 5-7pm and drinks in a bar after 10pm at night in a city centre on a Friday night.

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✚ Flights on Tuesday in February to Madrid and flights in August at the weekend.

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✚ Bus travel for students and old people and bus travel for people with full time jobs.

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2. Why are firms able to charge a different price for the same service?

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3. Therefore can you give a definition of **Price Discrimination** below.

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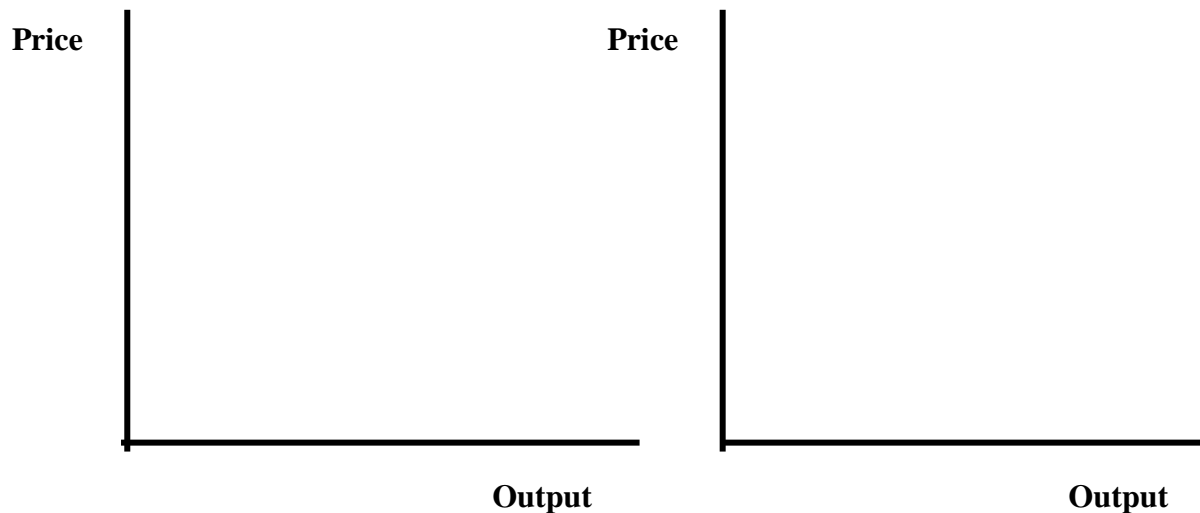


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4. There are three main types of price discrimination :-

Type	Definition	Example
• First degree		
• Second degree		
• Third Degree		

5. Complete the diagram below to illustrate how price discrimination is possible



6. Why would firms not be able to price discriminate if the price elasticities of demand were the **same in the two markets**? (Use train travel as an example)

No extra revenue from price discrimination

7. Why would price discrimination not be possible if customers could buy **cheap tickets** and then **sell them on** in the higher priced market?

(Parallel mkt) if mkts can not be kept separate  
(phone company)

8. Why is it important for communications companies to be aware of the different kinds of customers in the business and domestic markets?

Businesses inelastic D

9. Therefore what **conditions** are necessary in the market for firms to price discriminate?

- + Keep mkts separate
- + Different PED
- + Stop people re-selling product
- Some market power (as monopoly)

## CASE STUDY 1

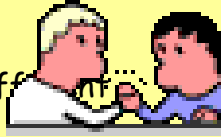
### What's the train fare to London?

Ask the question, "What's the fare to London?" at ticket enquiries, and you may receive any of the following replies:

- product differentiation*
- ~~X~~ Do you want 1<sup>st</sup> or standard class? ✓
  - ~~X~~ Do you want single or return? ✓
  - How old are you? ✓
  - Do you have a railcard (family, young person's, student, senior citizen's)? ✓
  - Do you want a day return, a 'saver' or a period return? ?
  - Will you be travelling back on a Friday? ✓
  - Will you be travelling out before 10 a.m.? ✓
  - Will you be leaving London between 4 p.m. and 6 p.m.? ✓
  - Do you want an 'APEX' ticket (one booked in advance)? ✓
  - Do you want to take advantage of our special low-priced winter Saturday fare? ✓

1. Look at each of the above questions. In each case, decide whether price discrimination is being practised. If it is, is it sensible for train operators to do so? Is it discriminating

## Natural Monopoly

1. To define the term 'Monopoly' and 'Natural Monopoly'
2. To explain what is meant by the concept of the Minimum Efficient Scale' 
3. To draw a graph to show why natural monopolies exist.
4. To reach a conclusion as to whether Natural Monopolies are beneficial for the consumer or not.

1. What is the pure economist's definition of a monopoly?

Absolute monopoly; one firm 100% of sales

2. When one company has a monopoly, how are other firms prevented from entering the market?

Barriers to entry (eg. Patent)

3. However some monopolists can be described as 'Natural Monopolists'. This occurs when even a single firm cannot produce enough output to reduce their average costs to a the minimum level

4. Look at the diagram on the top of the next page and answer the questions

- a) What is the Minimum Efficient Scale? (Output level required to minimize average costs)

1000 units.

- b) How many firms would be able to operate efficiently in the market if the total industry output was :-

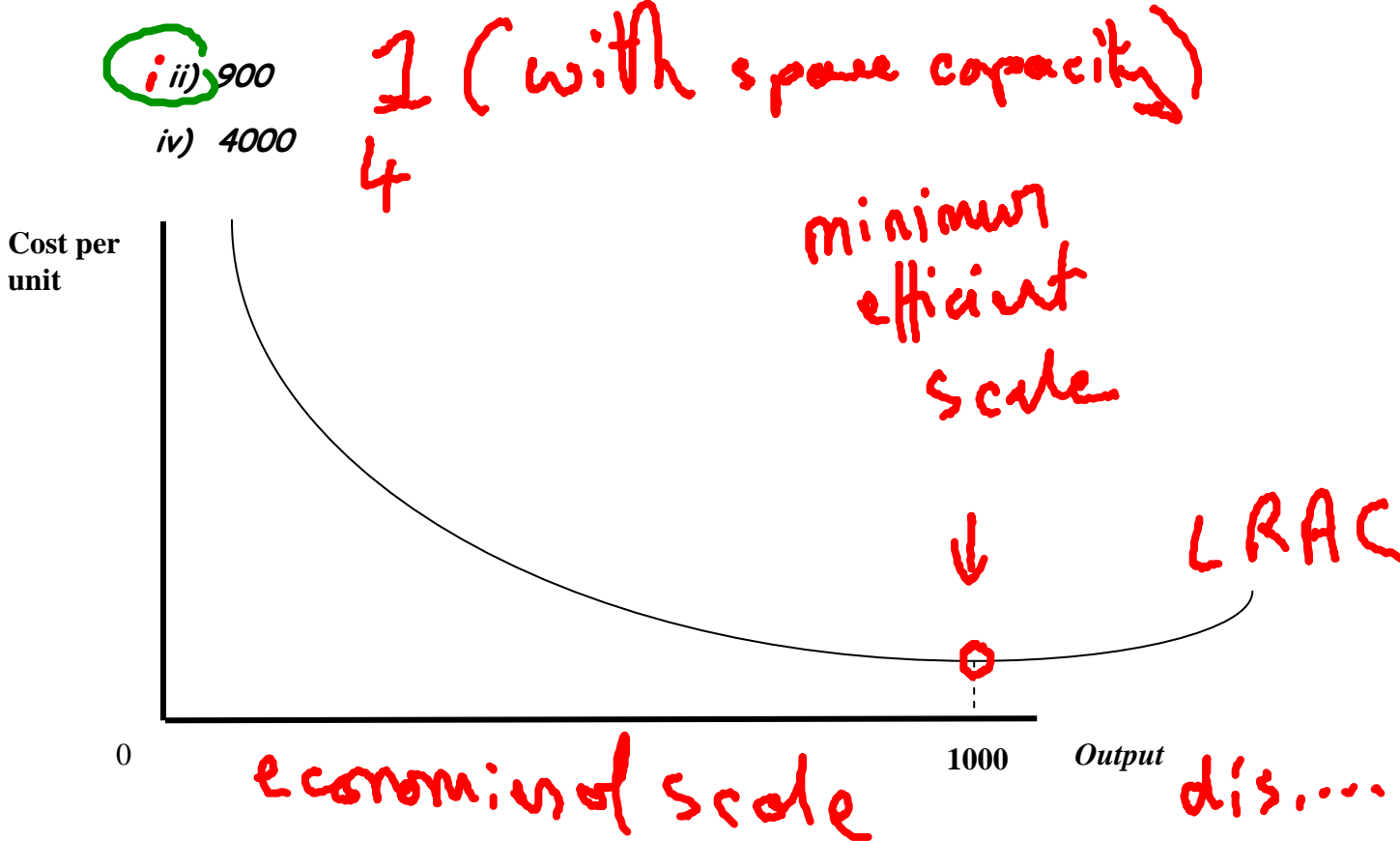
i) 2000

2

ii) 1000

1

Natural monopoly







5. Using the term 'Minimum Efficient Scale' define a natural monopoly.

A natural monopoly occurs when the market is only big enough for one firm to operate at the minimum efficient scale.

6. Look at the pictures below that represent different markets and state whether or not you believe that they are likely to be natural monopolies and why.

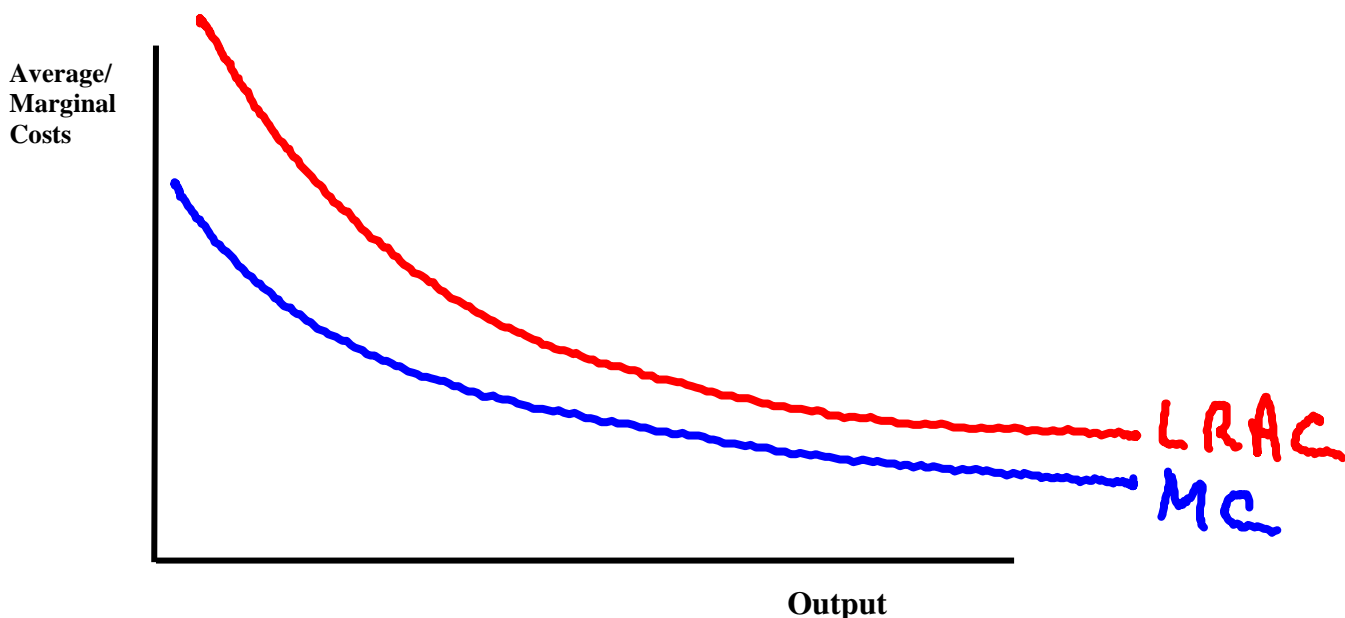
Market	Natural Monopoly	Reason
Railway	✓	High fixed cost. avoids 'wasteful duplication'
		spare capacity

	<p>X</p>	<p>Variation, brand loyalty mkt large enough for company</p>
 <p>GAS</p>	<p>✓</p>	<p>avoid wasteful duplication</p>
	<p>X</p>	<p>choice diff customer</p>
	<p>electricity from HEP</p> <p>✓</p>	<p>High fixed cost</p>

7. What general conditions tend to exist in the market where there is a natural monopolist?

high fixed costs ; substantial economies of scale

8. On the diagram below illustrate the costs curves for a natural monopolist.

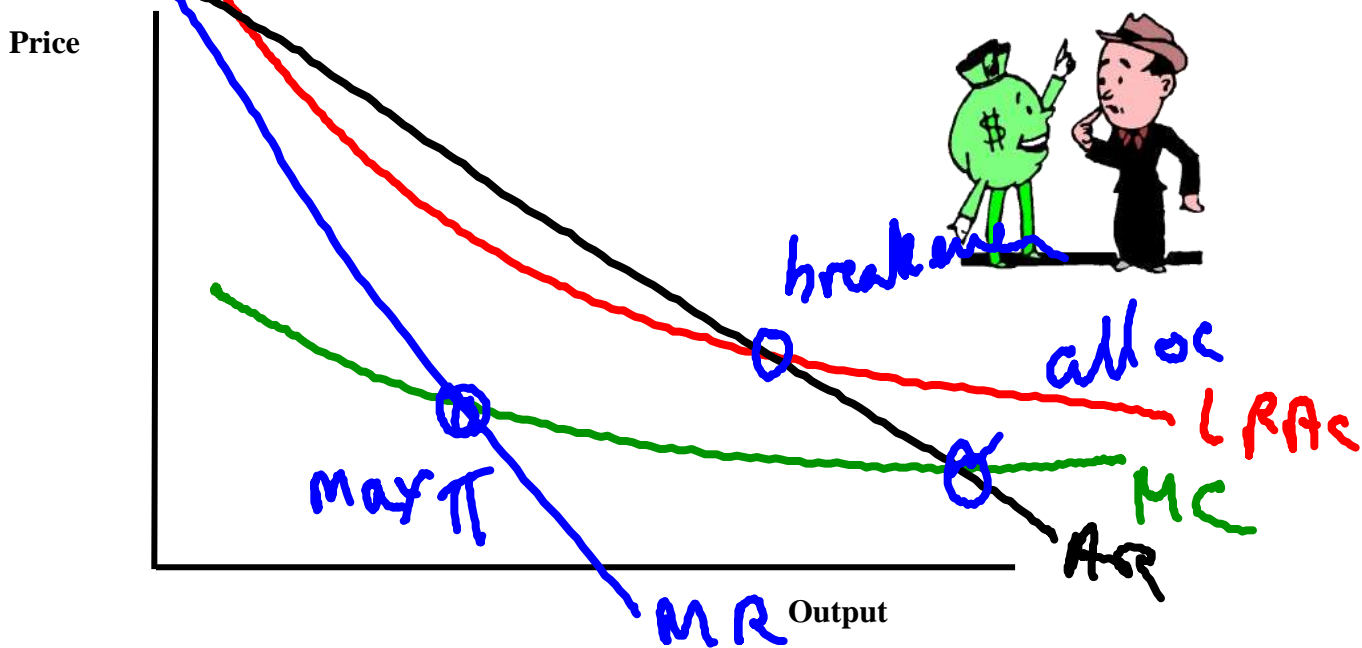




9. What do you notice about the average and marginal cost curves?

Falling continuously.  
 $AC > MC$

10. On the diagram below draw the cost and revenue curves for a natural monopolist.



11. Now answer the questions below

i) This point is the profit maximising point for a monopolist  $MC = MR$

ii) This level of output represents allocative efficiency.  $MC = AR$

iii) This level of output is the one chosen by many state owned natural monopolists and is where output is maximised and the firm is subsidised.  $[MC = AR]$   $[AR = \bar{AC} \text{ if no subsidy}]$  'break-even'

12. Illustrate on the next page the equilibrium for a loss-making monopolist that receives government assistance.

eg Maggie Thatcher  
eg. Czech Republic  
**PRIVATIZATION**

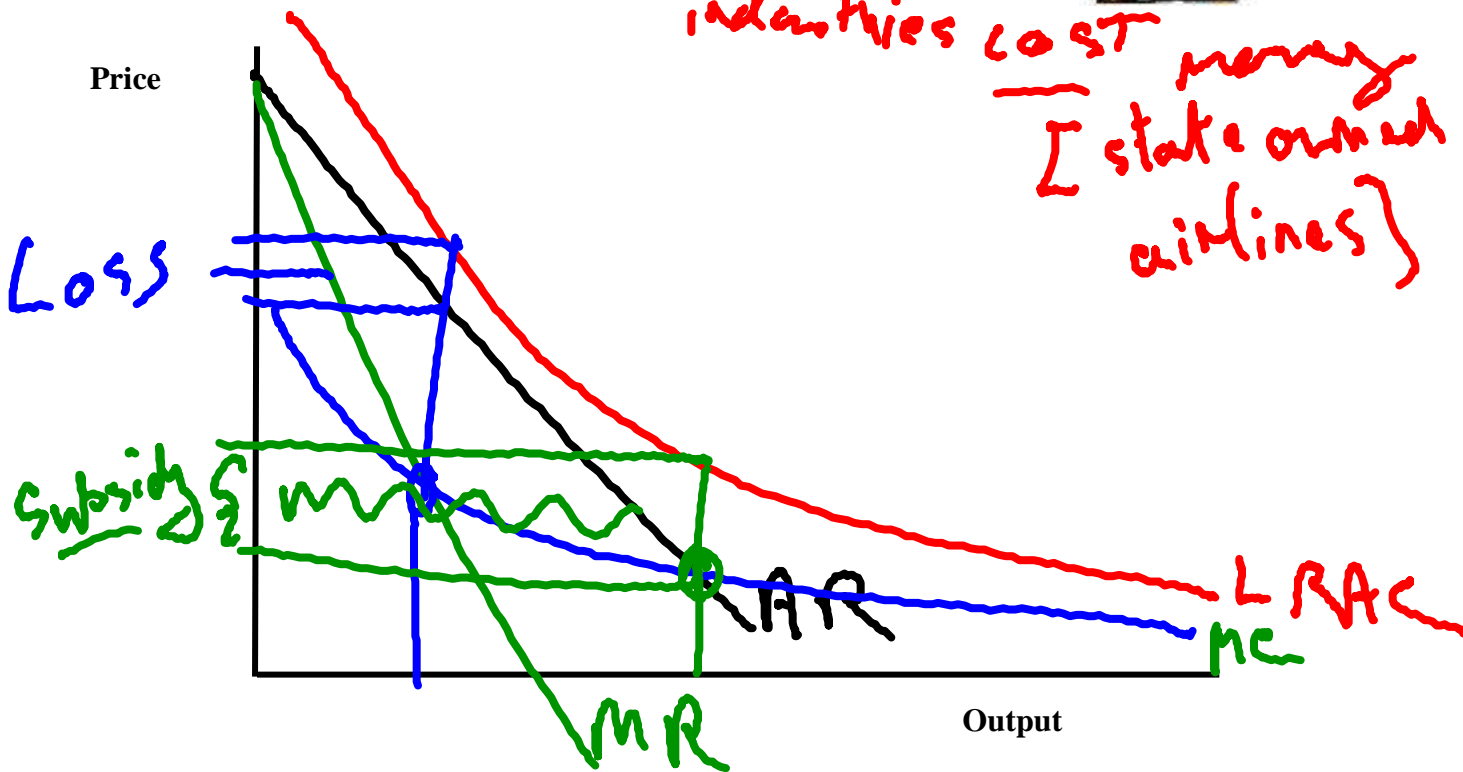
13. Many state natural monopolies have been sold to the private sector in recent years. This process is known as

Why do you think that the government is keen to relinquish control of these corporations?

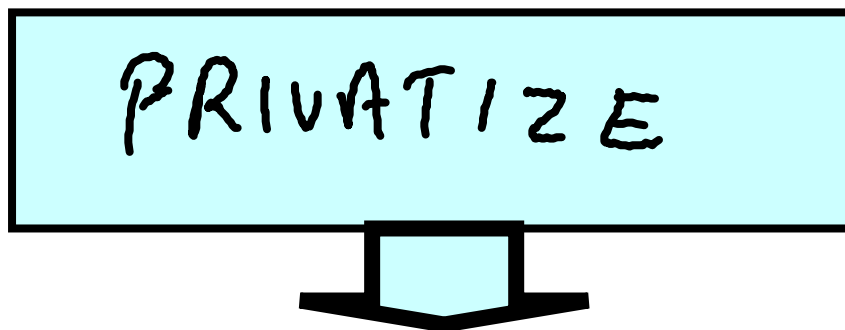
- ↑ Efficiency (↓ costs)
- ↓ Budget deficits — revenue from sales (privatize)

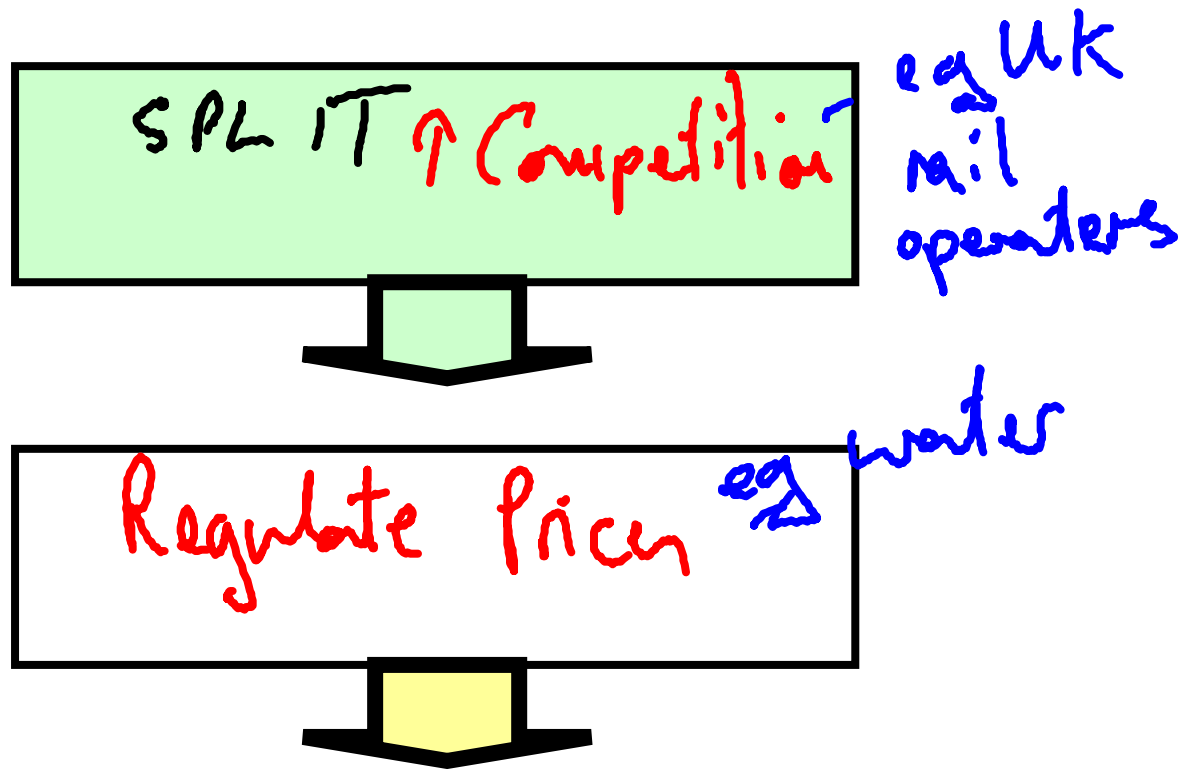


many nationalized industries cost money (state owned airlines)



14. The government has attempted to introduce competition in these markets by several steps. These can be outlined in the flowchart below.





15. Using the theory from the flowchart explain how the government is able to privatise and introduce competition into the railways.

eg Privatize British Rail.

Sell all regional licenses for trains (eg SW,

Virgin Trains

Scottish rail, 1st Great Western)

