TheRevisionGuide.com

Accelerating your potential…

Economics Revision Short Notes

A2 Economics Unit 3

Revision Short Notes

Worksheets by: Apsara Sumanasiri

Student Name : .....

Date: .....

TheRevisionGuide® (www.TheRevisionGuide.com) is a free online resource for Economics and Business Studies.

Don't forget to visit our website as part of your revision.

Revision Short Notes

Motives of a Firm

What motivates a firm?

Who are the main participants in a firm's daily decision-making process?

a) **Directors and Managers:** Shareholders in a PLC will elect directors to look after their interests in the company for them. Directors in turn appoint managers to manage and run the company. The only way owners can influence decisions is through the AGM.
b) **The workers:** don't have the power to run the company, but collectively may be able to influence decisions. Trade Unions may exert influence over wages (and therefore costs), job losses and health and safety.
c) **The consumers:** can influence the work of businesses through their demand patterns. If a firm fails to provide goods that consumers demand they will eventually cease trading as in the case of Rover Cars in 2005.

Short-run profit maximisation

Shareholders will be motivated by maximising their profits from the company, in other words — dividends. Thus it is assumed that the firm will want to maximise its profits. However not all firms are able to operate at a profit. Some will be faced with making a loss.

Long-run profit maximisation

Keynesian economists believe that firms will seek to maximise their long run rather than their short-run profits. This is based upon the belief that firms will use cost plus pricing. In other words, the price of the product is worked out by calculating the average cost, when the firm is operating at full capacity and adding a mark-up.

Short-run profit maximisation suggests that firms adjust price and output in response to changes in market conditions. However, most economists agree that rapid price changes may affect a firm's position in the market. Consumers dislike rapid price adjustments, and often view price cuts as signs of desperation and distress.

This theory suggests that a firm might continue to operate in the short run even if it were making a loss. The management would hope to be able to turn the business around and make profits in the long run.

Managerial theories

Some managers would seek to maximise sales rather than profits. It is often the case that increased sales go hand in hand with increased salaries for top executives.

Other managers are said to be motivated by factors, such as high salaries, the number of people under their control, the power they can yield over investment decisions and the availability of fringe benefits. This idea originates from the concept that managers in large firms will have enough discretion to pursue policies giving them personally most satisfaction.

However, profit remains a shareholder's best measure of success. Managers and directors are prone to shareholder revolts, and may even get voted out of office. Managers will therefore **profit satisfice**, in other words, satisfy the demands of shareholders. Once those demands have been met, managers would be free to maximise their own rewards from the company.

Introduction to market structures

Market structure

Market structures are based on the characteristics of a market. Economists identify a number of characteristics which determine the market structure a firm is said to operate in:

- the **size** and **number of firms** in the market
- the **ease** or **difficulty** with which these new firms might enter the market (barriers to entry and exit)
- the extent to which goods in the market are similar (**homogeneity**)
- the extent of **knowledge** shared by firms in the market
- the extent to which the actions of one firm will affect another fi rm (**interdependence**).

The number of firms in an industry

The number of firms in an industry may vary from one to many. For example, Thames Water is the sole supplier of water in the London area, i.e. a monopoly. In agriculture, on the other hand, there are tens of thousands of farms supplying eggs to the market.

1. ***Monopoly*** is said to exist where there is only one supplier in the market.
2. ***Oligopoly*** is said to exist in a market dominated by a few large producers alongside a large number of small and relatively unimportant firms.
3. ***Perfect Competition or Monopolistic Competition***. In this market structure there are a large number of small firms, none of which are large enough to influence price.

Barriers to entry

Market structures are also affected by the ease with which new entrants can access the market.

Firms that are in an industry, which is unlikely to experience many new entrants, may behave differently to those operating in an industry which has low barriers to entry.

Barriers to entry are factors which deter competitors from entering a market where existing firms enjoy supernormal profits. Barriers to entry include

- Patents and copyrights
- Government legislation creating/protecting a monopoly
- A natural monopoly (economies of scale)

- The high costs of getting established in the market (entry costs)
- In the short run, the threat of price cuts and a price war (predatory pricing)

Product homogeneity and branding

In some industries, such as gas and oil extraction and agriculture, the product is essentially the same whoever produces it. These identical goods are known as homogenous goods. This means that no producer has a monopoly over production.

Firms find it much easier to maximise profits if they are able to differentiate their product by creating brand loyalty and reducing the elasticity of demand for the good. This also creates barriers to entry reducing the competitiveness of the market.

Knowledge

Buyers and sellers are said to have perfect knowledge if they are fully informed about price and output. Therefore, if one producer puts its prices up, then that producer will lose all its customers because they will buy the good from elsewhere in the industry.

Perfect knowledge does not mean that all firms or consumers possess all the knowledge, but instead that this information is freely available; it is up to firms and consumers to access this.

Imperfect knowledge exists where there are patents protecting a particular process, such as the recipe for Coca Cola. Individual firms may not be aware of all the new innovations to be introduced.

A lack of information acts as a barrier to entry, preventing or discouraging new firms from entering the market.

Interrelationships within markets

Firms may be independent of each other, in other words the actions of one firm will have no significant impact on any other firm in the industry.

If firms are interdependent then the actions of one firm will have an impact on others. For example, when one firm advertises it is hoping to take consumers away from their current purchases. This will necessarily have an impact on other producer's level of demand.

Equilibrium

Equilibrium is reached when there is nothing creating a force for change. Equilibrium changes when circumstances change – eg. A shift in market demand or supply.

- A firms is in equilibrium when it is maximising its profits, and can't make bigger profits by altering the price and output level for its product or service.
- An industry is in equilibrium when
    - Supply and demand is equal at a certain price and output level
    - There are no firms trying to get into the market
    - There are no firms trying to get out of the market

Perfect competition

The model of perfect competition describes a market where there is a high degree of competition.

Assumptions

A perfectly competitive market must possess four characteristics.

1. There must be **many buyers and sellers** in the market, none of whom is large enough to influence price. Buyers and sellers are said to be price takers.
2. There is **freedom of entry and exit** to the industry. Firms must be able to establish themselves in the industry quickly.
3. Buyers and sellers possess **perfect knowledge** of prices. Thus if one producer charges higher prices than its competitors for a good, consumers will buy from elsewhere in the market and demand will fall to zero.
4. Firms produce a **homogenous product**. There is no branding of products.

There are only a few industries in the world which approximate to this model. However the foreign exchange market is a close approximation. There are a large number of foreign exchange dealers supplying the market, none of whom is large enough to influence the exchange rate. It is relatively easy to establish a bureau-de-change and thus enter the industry, and equally easy to leave. A foreign exchange dealer will know the market determined exchange rate. Currencies are homogenous — US dollars are indistinguishable from other US dollars sold by another bureau-de-change.

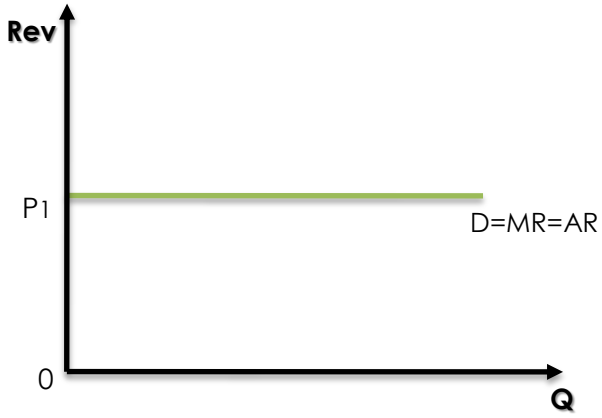
Demand and revenue

The model of perfect competition assumes that there are a large number of suppliers in the market.

A firm in perfect competition can expand output or reduce output without influencing price. In other words a bureau de change cannot put up the exchange rate for US dollars and expect to sell anything. It may decide to lower the exchange rate, but there is no gain by doing this, as the foreign exchange dealer may sell all his output at the original higher price.

As can be seen in Figure 1, the demand curve for the foreign exchange dealer is horizontal, in other words perfectly elastic.

Figure 1: The perfectly competitive firm's demand curve



The horizontal demand curve as depicted in Figure 1 is also the firm's average and marginal revenue curves. If a firm sells all its output at the market price, then this price must be the average price or revenue. In addition if a firm sells an extra ie marginal unit, it will receive the same price for each additional unit as it did for each preceding unit sold, and therefore marginal revenue will be the same as average revenue.

Total Revenue = Price x Quantity

therefore,

$$\text{Average Revenue} = \frac{\text{Total Revenue}}{\text{Quantity}} = \frac{\text{Price x Quantity}}{\text{Quantity}}$$

if the quantity cancel each other $\frac{\text{Price x } \cancel{\text{Quantity}}}{\cancel{\text{Quantity}}}$ therefore, AR = Price

Cost and supply curves

In the perfectly competitive market, the supply curve of the firm is the marginal cost curve above the average variable cost in the short run and the average total cost in the long run.

The marginal cost of production i.e. the change in total cost resulting from the sale of one more unit, represents the lowest price a firm would be prepared to supply an extra unit of output for.

If the price of a good was £8, and the marginal cost £5, then the firm would produce the good and gain £3 super normal profit. If the price was £5 and marginal cost £5, then the firm would still produce the product, as the revenue gained will contain an element of normal profit. If the price fell to £4, and marginal cost remained at £5,

then the firm would make a loss of £1 per unit. The firm would not supply the good in this case.

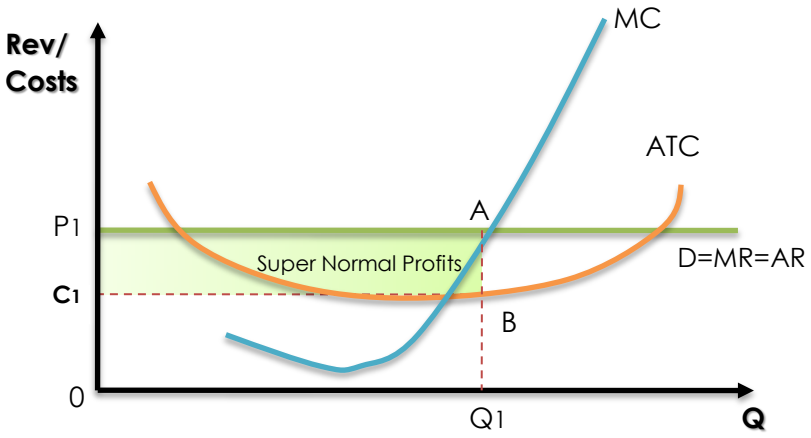
In the short run a firm will not necessarily shut down if it is making a loss. It will remain open as long as it covers the average variable cost. The firm will only stop supplying if average revenue or price is less than average variable cost.

Perfect competition equilibrium

Short-run equilibrium

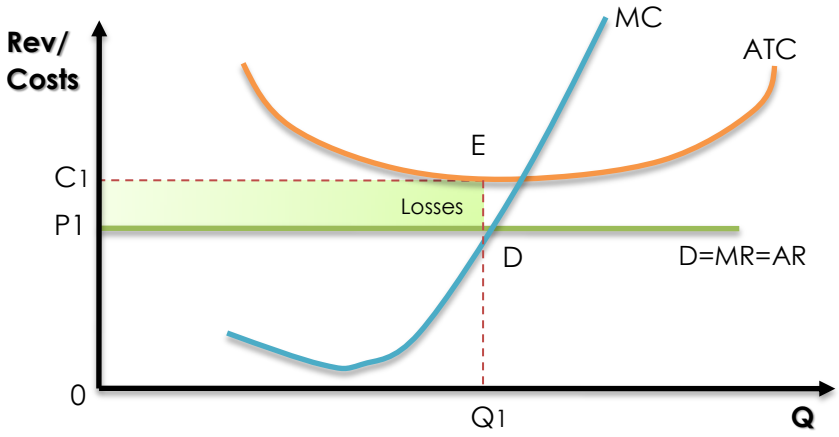
In perfect competition firms are assumed to be profit maximisers. Firms will therefore produce where marginal cost is equal to marginal revenue (MC=MR). The price the firm charge is determined by the market because the individual firm is too small to influence price and is therefore a price-taker.

Figure 1: Short-run profit maximization



Perfectly competitive firms can make super-normal profits in the short-run as shown in Figure 1. In this diagram the horizontal average revenue curve is shown to be above the average total cost at the point where MC=MR (point A). At Q1 the firm charges P1, but faces only average costs of C1, therefore it makes super-normal profit as indicated by the shaded area (P1, P2, A, B).

Figure 2: Short-run firm making losses

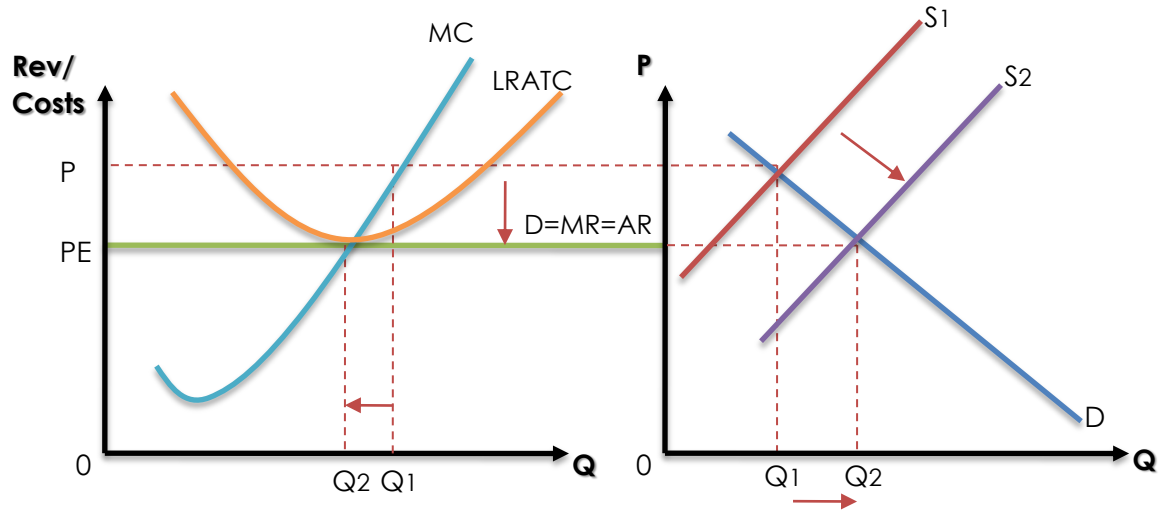


In Figure 2 the firm is making a loss at its equilibrium, profit maximising or loss minimising output, where MC=MR. The price charged per unit of output C1 is lower than average total cost, P1 and hence the firm makes a loss of P1C1ED.

Long-run equilibrium

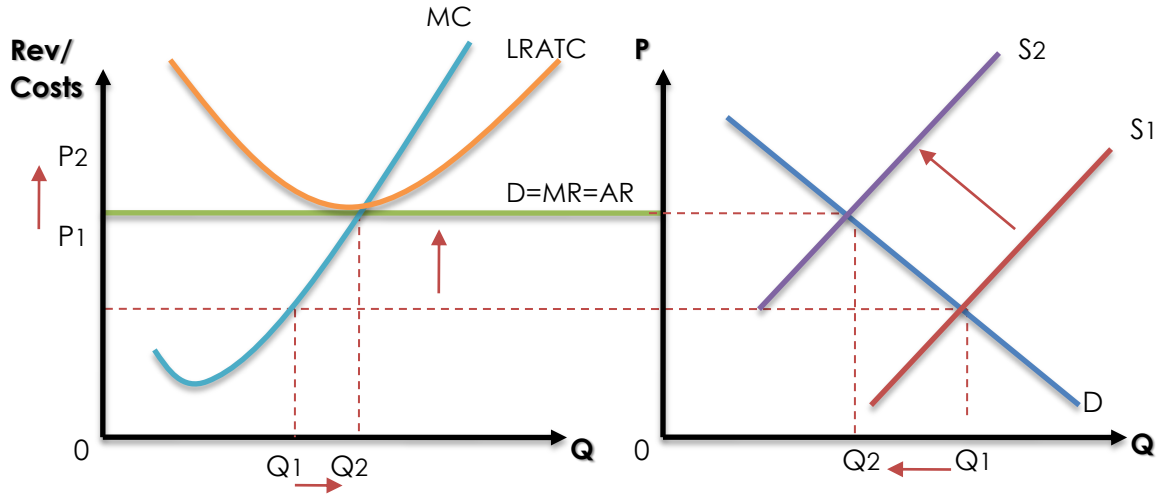
If a firm were making super normal profits in the short-run, other firms would enter the industry eager to share these high profits. They would be able to do this as there are no barriers to entry in perfect competition. The entry of new firms stimulates an increase in supply from S1 to S2 establishing a price just low enough for firms to make normal profits.

Figure 3: Long-run equilibrium position of a firm in an industry facing short-term super normal profits



If a firm were making losses, in the long-run, some firms would leave the industry as there are no barriers to exit. As a result of these departures total supply would fall from S1 to S2. Firms would continue to leave the industry until the whole industry returns to profitability. This can be seen in Figure 4. When the supply curve is at S1 the firm is making a loss. At S2 the supply curve is high enough to make normal profits.

Figure 4: Long-run equilibrium position of a firm in an industry facing short term Losses



In the long-run, competition ensures equilibrium occurs where the firm neither makes super-normal profits or losses. This means in equilibrium average cost equals average revenue.

Monopoly

Assumptions

A monopoly is assumed to:

- be the **only** firm in the industry
- have **high barriers to entry** preventing new firms from entering the market
- be a **short-run profit maximiser**.

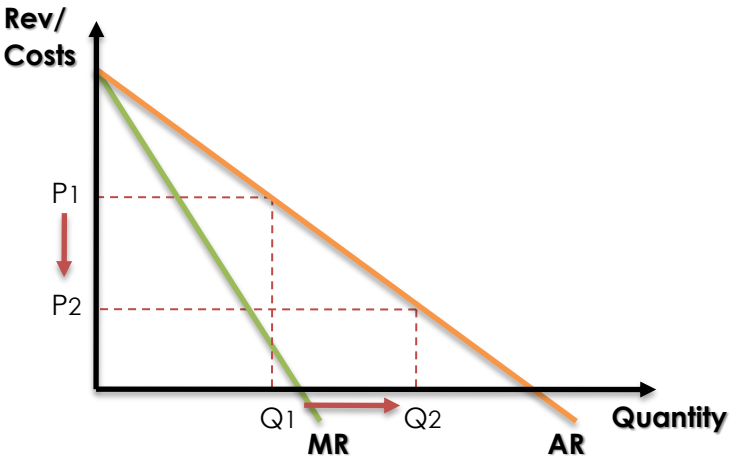
In the UK gas, electricity and water supply, telecommunications and the railway track are all monopolies. These industries are often referred to as natural monopolies because economies of scale are so large that any new entrant would find it impossible to match the costs and prices of the established firm. There are many industries in the world economy which possess most if not all of the characteristics identified.

Some monopolies, such as the water companies have considerable monopoly power because there are no good substitutes for their product. BP does not possess a monopoly in oil production or supply but might be said to possess a local monopoly if it had the only petrol station in a village.

A monopoly is able to maintain its position as the sole supplier of a good or service because it is able to establish high barriers to entry. Barriers to entry include legal barriers such as patents, marketing barriers such as advertising, restrictive practices and access to specific technology or raw materials.

Revenue curves

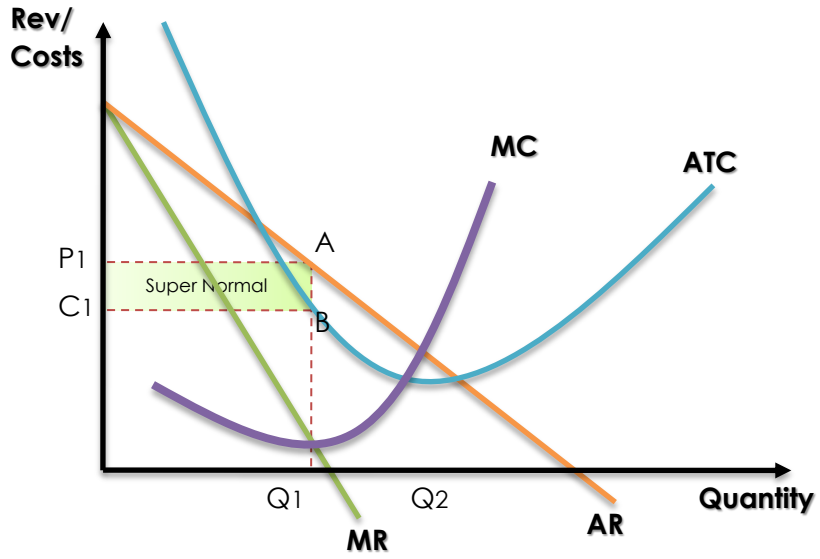
Figure 1: The monopolist's average revenue and marginal revenue curves



A monopoly firm is the same as the industry as it is the only firm that is operational in the industry. The industry faces a downward sloping demand curve, meaning the monopolist also faces a downward sloping demand curve. The monopolist can therefore only set the level of price or output. If it wishes to sell more units it must lower price or if it wishes to increase price then it must reduce output as shown in Figure 1.

Equilibrium output

Figure 2: Profit-maximising monopolist



A monopolist is assumed to profit maximise, in other words, aims to achieve an output equal to the point where MC=MR. Figure 2 shows:

- the equilibrium profit maximising level of output at Q1, where MC=MR
- the monopolist is able to supply Q1 at a price of P1
- super-normal profits of P1C1BA will be made. The super-normal profit per unit (AB) is the difference between the average revenue received (P1) and average cost of C1.

The price is determined by establishing the output level where MC = MR and then identifying the average revenue for this — i.e. the monopolist sets price using the AR or demand curve.

Figure 3: Loss-making monopolist

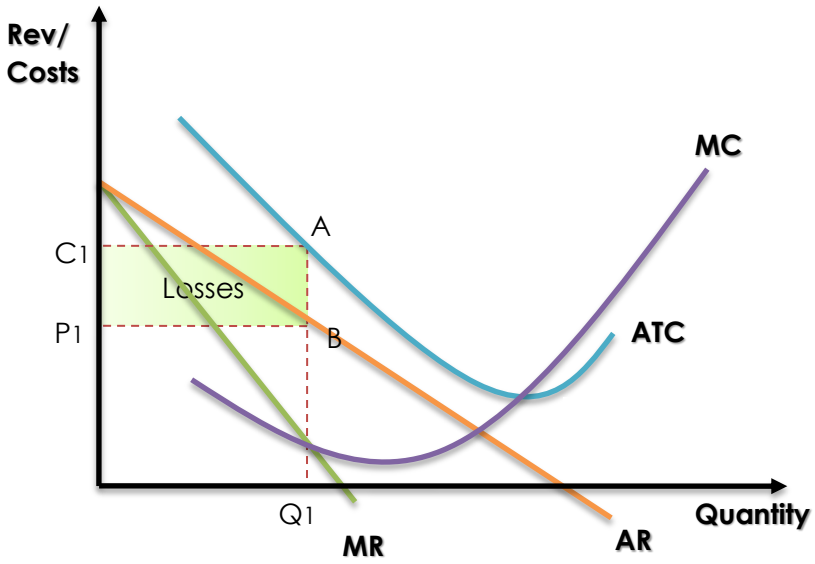


Figure 3 shows a loss making monopolist. A monopolist may decide to remain operational whilst it makes a loss in the short-run as long as it is covering its variable costs and therefore making a contribution to its fixed costs. The monopolist may feel that in the long run super-normal profits might be achieved.

The advantages and disadvantages of monopoly

Disadvantages of monopoly power	Advantages of monopoly power
Abnormal profit means: • less incentive to be efficient and to develop new products. • efforts are directed to protect market dominance.	Abnormal profit means: • finance for investment to maintain competitive edge. • reserves to overcome short-term difficulties and provide funds for research and development.
Monopoly power means: • higher prices and lower output for domestic consumers.	Monopoly power means: • powers to match large overseas organisations
Monopolies may waste resources by undertaking cross-subsidisation, using profits from one sector to finance losses in another sector.	Cross-subsidisation may lead to an increased range of goods or services available to the consumer.
Monopolists may undertake price discrimination to raise producer surplus and reduce consumer surplus.	Price discrimination may raise total revenue to a point, which allows survival of a product or service. It is often said that economy class flights are funded by those flying business and first class.
Monopolists do not produce at the most efficient point of output (i.e. at the lowest point of the average cost curve.)	Monopolists can take advantage of economies of scale, which means that average costs may still be lower than the most efficient average of a small competitive firm.
Monopolists can be complacent and develop inefficiencies.	There are few permanent monopolies. Super-normal profits act as an incentive to break down the monopoly through a process of creative destruction i.e. undermining the monopoly through product development and innovation.
Monopolies lead to a misallocation of resources by setting prices above	Monopolists avoid undesirable duplication of services and

marginal cost, so that price is above the opportunity cost of providing the good.	therefore a misallocation of resources.

Oligopoly and game theory

Oligopoly

Firms operating in oligopoly industries tend to keep prices stable. They know that the actions of one firm will impact on the other firms in the industry, in other words they are interdependent. If one firm were to raise its prices then others would not follow and because the goods traded are similar, customers will move to the lower cost option. If a firm were to lower prices then other firms would follow suit and a price war would result, with no real gain for any of the firms in the industry.

Instead, oligopoly firms will tend to work together through collusive agreements, whether they are tacit or overt or engage in non-price competition. Non-price competition can take the form of advertising, issuing of loyalty cards, branding, packaging and other measures to reduce the closeness of substitutes.

Game theory

Game Theory can be used by economists to predict how firms will react in a number of given scenarios. It is used mainly when dealing with oligopoly to explain why firms may collude and furthermore why they may later decide to abandon any agreement to collude. The prisoner's dilemma can explain the way that game theory can be used by firms.

Prisoner's dilemma

Assumptions

- The model assumes a zero sum game — there will be a winner and loser.
- The prisoners have been kept separate and so do not know what each is doing, but they do know the outcome of each action.

		RIXY	
		Not Confess	***Confess***
FRANKY	***Not Confess***	A Each get 1 year	C Farnky gets 10 years Rixy gets 3 months
	Confess	B Farnky gets 3 months Rixy gets 10 years	D Each get 3 years

What should they do?

Confess — If one of them was to confess then they should get a 3 month prison sentence, but as they cannot trust each other, and cannot be sure that the other party has not also confessed (which would result in a 10 year sentence for the prisoner who did not confess), they will act selfishly therefore both confessing to get the best solution for themselves. Thus they will tend to D, where both confess.

Not Confess — if they could trust each other and be sure of each other's response this would be the best option. By not confessing both prisoners would get one year each — i.e. option A.

Maximax — maximising the maximum benefit for the individual, i.e. B and C which would mean that Rixy should confess and would get 3 months, but only if Franky could be trusted not to confess, otherwise both will get 3 years.

Maximin — minimum benefit, i.e. D, which is where the prisoners will tend to be because they cannot trust each other.

Game theory suggests that firms don't trust each other and although they know that it is mutually beneficial for them to collude to set the price at £2, they will tend to an option where they will both set price at £1.80 as neither firm can be trusted to keep to any agreement.

Dominant strategy — in this case the same policy is suggested by different strategies. This is a dominant strategy game because both strategies encourage a cut in price, i.e. Maximax (where each firm in isolation would set the price at £1.80 hoping that the other firm has gone for £2) and Maximin (where both firms will eventually end up at because they have set price at £1.80).

		FIRM X	
		£2.00	***£1.80***
FIRM Y	***£2.00***	A Each get *£10m*	C Firm Y *£5m* **Firm X *£12m***

£1.80

B **Firm Y *£12m*** Firm X *£5m*	D Each get *£8m*

A Collude

B Firm X } Maximax

C Firm Y }

D Nash Equilibrium i.e. Maximin

Both strategies suggest a Nash Equilibrium

Nash Equilibrium — is the position resulting from everyone making their optimal decision, i.e. setting price at £1.80, by attempting, independently, to choose the best strategy for whatever the other is likely to do, ending up in a worse position than if they had colluded to set price at £2.

Monopolistic competition

Imperfect competition

Perfect competition assumes that there are many small firms and all goods are homogenous, and in monopoly it is assumed there is only one supplier. However in reality neither of these conditions is exactly met and therefore often industries fall in between these two extremes.

In most industries some competition exists because there are at least two firms, but competition is imperfect because firms sell products which are not homogenous.

Assumptions

The assumptions made for monopolistic competition are almost the same as perfect competition minus one important assumption. Goods don't have to be homogenous. The assumptions made are:

1. There are a large number of small firms
2. There are low barriers to entry or exit.
3. Firms produce similar but differentiated products.

What is meant here is that the products are similar but differentiated in terms of packaging, colour, design, specification, marketing or price from rival products.

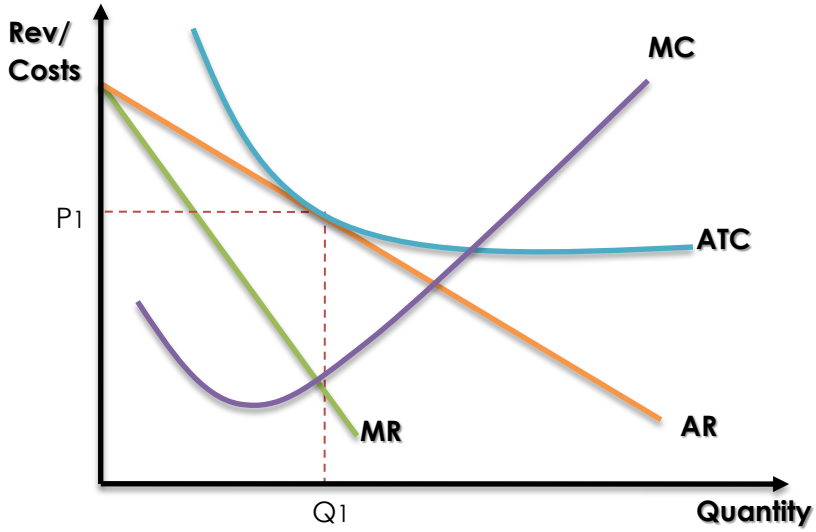
The downward sloping demand curve

Firms producing a product which is slightly different from their rivals will have a certain amount of market power. They will, for instance, be able to raise price without losing all of their customers to those firms who have maintained stable prices. Therefore the firm's demand curve is downward sloping.

It is not a price-taker like a firm operating in a perfectly competitive environment. Yet because there are a large number of firms producing close substitutes, its market power is likely to be relatively weak.

If one examines the case of Chinese restaurants operating in Chinatown in London, because the consumer has a great deal of choice the prices which are set by the individual restaurants will be similar. If one restaurant were to drastically raise prices then it is likely they would lose many customers unless they were able to brand their product in such a way as to differentiate it from the rivals.

Figure 1: The monopolistically competitive fi rm in long-run equilibrium



Long-run equilibrium

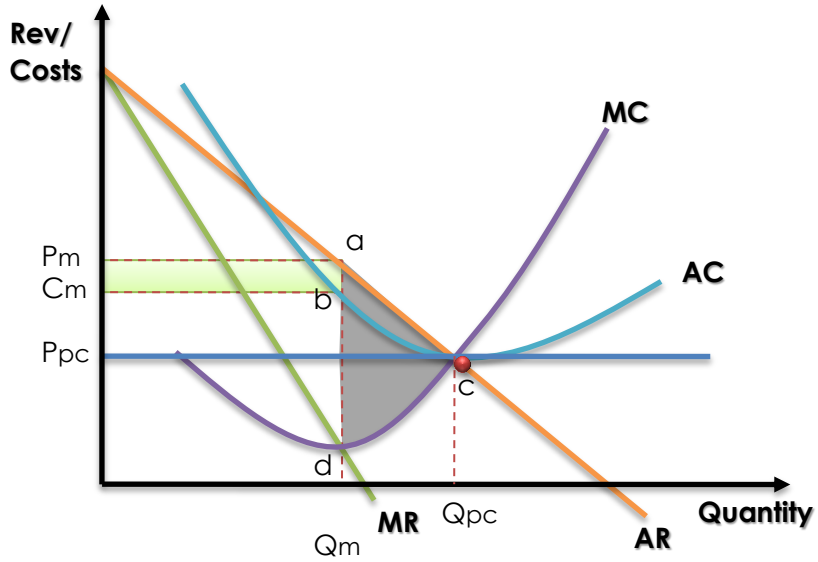
The firm will produce where MC=MR so as to profit maximise. In Figure 1, this means that it will produce at an output level of Q1. It will charge a price based on its demand or average revenue curve, in this case P1.

In the long-run the firm will not be able to obtain super-normal profits, because new firms will enter the industry if they see profits to be made exploiting the lack of barriers to entry. The entry of new firms will increase supply, shifting the average revenue curve downwards to the point where average revenue is just equal to average cost, as in Figure 1.

If the firm were making a loss, firms would leave the industry, reducing supply and shifting the AR curve upwards again to a point where average revenue is equal to average cost.

Therefore in the long-run a monopolistically competitive firm can make neither super-normal profits nor losses.

Comparing the monopolist and perfect competition



If we assume that the perfectly competitive firm and the monopolist share the same cost curves (average cost and marginal cost) we can compare the output and efficiency levels of the two firms.

- The monopolist makes super-normal profit equal to the area PmCmba, by operating at the profit maximising point.
- The monopolist is not productively efficient as the profit maximising level of output (Qm) does not maximise economies of scale, which occur at the minimum point of the AC curve i.e. the point C.
- The monopolist is not allocatively efficient because P (AR) is not equal to MC (necessary condition for allocative efficiency). Note: AR is greater than MC at an output of Qm.
- Perfectly competitive firms operate where AC=AR and where MC=MR. This occurs on the AR curve marked for the perfectly competitive firm, (AR=MR=D for PC). At the point C the firm is profit maximising.
- A perfectly competitive firm is also allocatively efficient because P=MC.
- A perfectly competitive firm is also productively efficient, operating at the lowest point of its average cost curve.
- Consumer surplus is reduced by the monopolist. A perfectly competitive firm will have consumer surplus equal to Ppcfc whilst the monopolist by raising price is able to reduce consumer surplus to Pmfa.

- Under perfect competition output is greater at Qpc and price is lower at Ppc than if the firm were to operate as a monopoly (Qm & Pm), allowing them to make normal profits.
- Deadweight welfare loss from the firm operating as a monopolist is equal to adc.

Government intervention to promote competition

Office of Fair Trading and the Competition Commission

The Competition Commission replaced the Monopolies and Mergers Commission on 1 April 1999.

The Commission conducts in-depth inquiries into mergers, markets and the regulation of the major regulated industries such as water, electricity and gas. Every inquiry is undertaken in response to a request made by the Office of Fair Trading (OFT).

Mergers

The Enterprise Act 2002 introduced new regulations for assessing whether a merger should be allowed to proceed. In allowing most mergers the Commission must determine whether the merger will impact adversely on competition, in other words if it 'prevents, restricts or distorts competition' then the merger is likely to be blocked.

Cartels

The Enterprise Act identifies certain situations which would result in prosecutions for unlawful behaviour if the actions of at least two firms (A and B).

- directly or indirectly fix a price for the supply in the United Kingdom of a product or service by firms A and B
- limit or prevent supply in the United Kingdom of a product or service by both firms A and B
- limit or prevent production in the United Kingdom of a product or service by both firms A and B
- divide between firms A and B the supply in the United Kingdom of a product or service to a customer or customers
- divide between firms A and B customers for the supply in the United Kingdom of a product or service

- fix the terms of a bid in such a way that prevents the normal operation of the bidding process.

The punishment for the operation of a cartel can include imprisonment for up to a maximum of five years and/or a fine.

Europe and USA

In the European Union the European Competition Commission investigates anti-competitive behaviour issuing fines where appropriate.

Recent fines issued by the European Competition Commission include:

- April 2007 Dutch brewers: Heineken €219m, Grolsch €31.7m and Bavaria €22.9m for sharing prices
- February 2007 European escalator and lift manufacturers: Kone €142m, Otis €225m, Schindler €144m and Thyssen Krupp €480m for price fixing
- January 2007 manufacturers of gas insulators operating in the EU: Hitachi €52m, Toshiba €91m,Mitsubishi €119m, and Siemens €419m.

In the United States of America the Antitrust Commission seeks to promote competition in market places. Individuals who undertake anti-competitive behaviour in the United States can be fined up to $1m and jailed for a maximum of 10 years. In addition, firms may be fined up to $100 m for each violation.

In 1999, over $850 million in fines was imposed on members of the vitamins cartel, including a record $500 million fine imposed on Hoffmann-La Roche and a $225 million fine imposed on BASF AG. This was in addition to a number of top executives being sentenced to terms in jail.