Monopoly, perfect competition, imperfect competition

Entertainment, Games

NATIONAL QUALIFICATIONS CURRICULUM SUPPORT Economics Microeconomics The Theories of the Firm [ADVANCED HIGHER] ???

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 INTRODUCTION There are basically two types of market situation: (a)Perfect competition – in this market, firms have no influence; they are price takers. (b)Imperfect competition – this market includes monopoly, oligopoly and monopolistic competition; firms are price makers and can influence the market place. Every firm must obey three rules in order to survive: To maximise profits, firms will produce at that output where MC= MR and at the same time MC must be rising. •A firm will continue to produce in the short run as long as it can cover its variable costs. •In the long run a firm must cover its total costs. SECTION 1 In order to build a model against which we can compare other market situations, certain characteristics have to be assumed: •There are a large number of buyers and sellers in the market. •Buyers and sellers have perfect knowledge of goods and prices in the market. •All firms produce a homogeneous product.

Products are identical. •There is freedom of exit and entry to the industry. There is perfect mobility of the factors of production. In the real world it is almost impossible for all of these conditions to exist at the same time. Foreign exchange and agriculture are markets that have some of the above characteristics: currency is a homogeneous product and in agriculture there are a large number of farmers supplying the market without influencing the price. Can you identify other types of markets that are almost perfectly competitive? The demand curve No one firm can alter output enough to influence price. Therefore each firm faces a perfectly elastic demand curve.

Each firm sells at a given market price and this price coincides with the firm’s AR and MR. The firm can sell as much as it wants at this price, however if it charged above this price, demand would fall to zero. [pic] The supply curve The short run supply curve of the firm in perfect competition will be that part of its marginal cost curve that lies above its average variable cost curve. MC is the lowest price at which a firm would sell an extra unit, and when we remember the second rule above that the firm must obey to maximise profit, we have correctly identified the firm’s short run supply curve. pic] The equilibrium of the firm The firm is in equilibrium when MR= MC. This is where profits are maximised or losses minimised. For the perfectly competitive firm the only decision to be made is how much to produce to maximise profits. Firms cannot influence price because their output is a very small part of market output. Equilibrium of the Firm – Perfect Competition [pic] Short run In the short run, firms earning supernormal profits will attract other firms into the market looking for higher than normal

rewards. Remember that normal profit is just enough to keep the entrepreneur in business.

Perfect Competition – Short Run [pic] Long run In the long run, as new firms enter the industry, established firms will expand their output to get more of the supernormal profits. Eventually, all firms earn normal profits as the supernormal profits are competed away. Long run equilibrium of the firm We saw how supernormal profits attracted new firms into the industry. After a time, the existence of subnormal profits would cause firms to leave the industry. Supply would fall and prices rise. Hence long run equilibrium is one of normal profits only. Perfect Competition – Long Run pic] Advantages of perfect competition •Because firms produce where MC= MR= Price, allocative efficiency is achieved. •Productive efficiency is also achieved because the firm produces at the lowest point of the AC curve. •Prices are lower because of increased competition. •Because of perfect knowledge firms must keep up to date and innovate or they will be forced to leave the industry. •In the long run all firms will earn normal profits. •Cartels and other restrictive agreements cannot emerge to exploit consumers. •Perfect competition can be used as a model in economic analysis.

Disadvantages of perfect competition •Firms have little time to benefit from inventions because they quickly enter the public domain. •Since firms make only normal profits they might not have the funds to undertake expensive research that often yields the most outstanding discoveries. •Firms might not benefit from economies of large-scale production. •In order to prevent abuse of the consumer, some industries are best run by the state as natural

monopolies and so perfect competition would be inappropriate. •Perfect competition is a goal that cannot be reached in the real world.

Student exercises/activities 1. To what extent does agriculture approximate to being a perfect market? (10 marks) 2. Study the diagram below and answer the following questions: [pic] (a)Why does the short run supply curve of the firm begin at S1? (2 marks) (b)At S2 the firm breaks even. Explain what this means. (2 marks) (c)At S2 the firm also earns normal profits. Explain why they are sometimes called the entrepreneur's transfer earnings or the opportunity cost of capital. (2 marks) (d)Is normal profit the same for each entrepreneur?

Justify your answer. (2 marks) (e)Economic profits and losses are signals to owners of factors of production. Explain why this statement holds true only in the short run in a perfectly competitive market. (4 marks) (f)If the long run supply curve of a perfectly competitive firm is a horizontal line, what assumption can we make about the firm's costs? 3. Read through the notes on perfect competition and write down each new economic term you have encountered (perhaps terms such as normal profits, economic profits, transfer earnings).

Then make precise definitions of these terms from an economics dictionary or textbook. Section 2 A monopoly market structure is assumed to have the following characteristics: •In theory the monopolist is the only firm in the industry. However, under UK law any firm controlling more than a 25% share of the market is liable for investigation as a monopoly. •The monopolist is a price maker. •The monopolist is shielded from competition because barriers

to entry prevent new firms from entering the market. Barriers to entry To exist, monopolies must have high barriers to entry. The main barriers are: government restrictions like a licence, permit or certificate to enter an industry •patents that make it illegal for others to use an inventor’s ideas for a number of years •ownership of factors of production that do not have close substitutes •difficulty in raising the necessary capital •economies of scale particularly in the case of a natural monopoly. Monopoly equilibrium The monopolist can stop new firms entering the industry through technical or statutory barriers. If the monopolist is making supernormal profits in the short run, they are likely to continue into the long run.

Note that the monopolist will not always make supernormal profits, as they will depend on the relationship between consumer demand and production costs. Monopolistic Competition – Short Run [pic] Pay particular attention to the following points illustrated above: •There is no supply curve in monopoly. Supply and demand are dependent on one another. •There is no distinction between short run and long run because of the barriers to entry. •Profit maximising output is OQ where MC= MR. •The price charged in the market is OP and is determined by the demand curve. •Supernormal profits are shown by the rectangle PXYZ enclosed by AR and AC.

Price is OP and cost is OZ. •MR falls at twice the rate of AR and becomes zero when total revenue is maximised. Advantages •An industry with a flat-bottomed average cost curve benefits from economies of scale. This type of industry requires a large amount of capital equipment. Examples include the car and chemical industries. Hence the public benefits if the LRAC remains

constant as output expands because more cars or chemicals are produced at cheap prices. •If a monopolist invests in research and development the public can benefit from product development. Disadvantages Monopoly can lead to greater inequality in the distribution of income because the monopolist charges a price higher than MC. •Again because the monopolist charges above MC it is allocatively inefficient. Underproduction of the product occurs and not enough of the nation’s resources are allocated to its production. PricediscriminationThe monopolist can discriminate in two different ways: •It can discriminate between units sold to the same buyer as in the case of gas or electricity. •It can discriminate between different buyers, for example when it charges children and OAPs rates different to that for adults.

The monopolist charges consumers different prices in separate markets and, because the costs of production are the same in each market, it is able to increase its profits. [pic] Profit is maximised where MR= MC. In Market A, the demand is less elastic compared to Market B that has a more elastic demand. When the monopolist splits the market and charges a different price in each, it will earn more profits than if it charged one uniform price to all. The monopolist can discriminate in a number of ways: •It can charge a different price at different times of the day (like a gas company) or at different times of the week (like a rail company). It can charge different rates to different income groups. Students, the unemployed and OAPs can often get into a football match or a race meeting at a reduced rate. •It can charge different prices in different parts of the country. The same house built by a national builder will cost more in the south-east of England than it will in the

north-east of England. What enables a monopolist to discriminate effectively? •Different buyers in the market must have different elasticities of demand. •The market must be able to be sub-divided into separate divisions according to time, place or income. The monopolist must be able to keep markets separate without great difficulty. Points to note about monopoly: •A monopolist will only produce where the demand curve is elastic. MR has to be positive for MC and MR to be equal. •The only distinction between short run and long run is in the changes in cost structure of the industry. Barriers to entry prevent us from making the kind of distinctions we can make between short and long run equilibrium in perfect competition. •There is no supply curve in monopoly because there is no linear relationship between demand and supply.

Student exercises/activities 1. Explain why, for the monopolist, price is always greater than MR. (2 marks) 2. What does the price elasticity of demand facing the monopolist depend upon? (3 marks) 3. Are monopolies always profitable? Justify your answer. (3 marks) 4. State the three conditions that must exist for a monopolist to be able to price discriminate. (3 marks) 5. Draw two diagrams, side by side, to show long run equilibrium under perfect competition and under monopoly equilibrium. Study the diagrams and answer the questions that follow: (a)Prove that the monopolist wastes resources. 2 marks) (b)State why the perfectly competitive firm is allocatively efficient. (2 marks) (c)Explain why the perfectly competitive firm is productively efficient. (d)Describe how profit is shown in the monopolist’s diagram and explain what kind of profit it is. (4 marks) (e)The perfectly competitive firm appears to be making no profit. Is this true? Explain your

answer. (3 marks) (f)At what output do both maximise their profits? (1 mark) (g)Identify the supply curve for the perfectly competitive firm and explain why there is no supply curve for the monopolist. 4 marks) (h)Explain how government decides whether or not a monopoly should be allowed to continue. (2 marks) (i)Suggest an action government can take to regulate a monopoly and explain how it might be expected to work. (3 marks) 6. Make definitions of the new terms you have encountered. SECTION 3 Perfect competition and monopoly are two extreme theories of the firm. Remember that earlier we classified all theories other than perfect competition as imperfect. Hence monopoly, oligopoly and monopolistic competition can be described as imperfect competition.

Some textbooks describe all theories that exist between the two extremes as imperfect. This classification is also accepted by examiners. What distinguishes oligopoly from monopolistic competition is the number of firms in the industry. An oligopoly has few sellers, whereas in monopolistic competition there are a large number of sellers. Monopolistic competition The theory of monopolistic competition assumes the following characteristics: •There is free entry and exit in the industry. •The industry is made up of a large number of buyers and sellers. •Firms produce differentiated goods. Each firm faces a downward-sloping demand curve because products are not homogeneous. •Firms maximise profits in the short run. •There is perfect knowledge in the market. Because firms produce slightly different products under different brand names, each firm has a certain amount of market power. Hence a price rise will not result in it losing all its customers. However, because there are a large number of firms

producing acceptable substitutes, market power is weak. The more differentiated the product, the greater the market power and so the less elastic the demand curve will be.

Equilibrium for a monopolistically competitive firm Short RunLong Run Monopolistic Competition – Short RunMonopolistic Competition – Long Run [pic] In the short run monopolistic competitors earn supernormal profits and will attract new firms into the industry. As in perfect competition these profits will be competed away until in the long run all firms are earning normal profits. The rectangle PXYZ will gradually disappear as each firm's share of demand falls and its demand curve moves to the left. In the long run the demand curve is a tangent to AC but, unlike perfect competition, it is at a point where AC is falling.

How much supernormal profit a firm earns in the short run will depend on its ability to differentiate products by using brand names and advertising. Look how important to consumers designer labels and certain brand names are today! Note that in both diagrams price is greater than MC and so the firm is allocatively inefficient. Again the firm in each diagram does not produce at the lowest point on the AC curve making it productively inefficient. The firm has excess capacity. In the long run two rules hold: •AC= AR because freedom of entry ensures that a firm cannot earn supernormal profit; •MC= MR because the firm wants to maximise profit.

Oligopoly Oligopoly is often described as competition among the few. A few interdependent suppliers control most industries in our country and so these industries are imperfectly competitive and oligopolistic. What causes an

industry that started as competitive to develop in this way? The main reason is to take advantage of economies of scale and in industries like the car industry this has been made possible through technical progress. Barriers to entry and mergers have also played their part in the formation of oligopolies. Oligopoly is difficult to analyse because one firm’s behaviour can cause retaliation from another.

Firms continually have to devise strategies to keep them ahead of their competitors. Oligopoly has the following assumed characteristics: •A small number of suppliers control most of the market. •Barriers to entry are likely to exist, although in some industries they can be low. •Firms are interdependent, unlike in perfect competition where firms ignore changes in the behaviour of their competitors. •Prices are controlled by the supplier not the consumer. •A kinked demand curve for the firm is likely to exist, although the demand curve for the industry is normal. The majority of oligopolistic markets tend to have: collusion in some form, although restrictive trade practices have been illegal since 1956; •non-price competition in the form of branding, advertising, free offers and after sales services; •price rigidity – prices often remain fairly constant despite changes in costs of production, unlike in perfect competition where prices continually fluctuate to monitor such changes; •average cost curves tend to be flat-bottomed allowing the firm to take advantage of economies of scale. Oligopoly: the kinked demand curve [pic] The kinked demand curve helps to explain price rigidity that tends to occur under oligopoly.

The rivalfirms tend to agree a market price at X. Demand is elastic above this point and so any rise in price will cause a fall in revenue as consumers buy rival products. Below X demand is inelastic and a fall in price will cause a fall in revenue and a price war would break out. Hence firms will use non-price competition to maintain or increase their market share. Examples of this include free gifts or coupons when petrol is purchased. This model of oligopoly has its critics. It implies knowledge of MC and MR that firms just do not have. The model does not explain how price was determined or what happens when price is eventually changed.

Other firms could react in a number of ways to a change in the price of a competitor’s product not just in the one way that this model assumes. However, it does help to explain why price rigidity occurs and why firms use non-price strategies to maintain market share. Collusion The kinked demand curve model assumes that competitors would react in a particular way. But they could, of course, react in other ways. This uncertainty is a characteristic of oligopoly and it arises because firms in the industry are interdependent. Interdependence means that the oligopolists are always unsure how competitors will react to any action they take.

One firm’s actions have consequences for all. Consequently entrepreneurs try to reduce risks by colluding. Collusion takes place in a cartel – for example, OPEC can fix the price or quantity of oil to be offered for sale. Remember such actions are illegal in the UK. The purpose of the cartel is to earn supernormal profits. PriceleadershipOften in an oligopolistic market one firm will make the first move to change price, usually because costs have

risen and profits are falling. Competitors may be in the same position and so are willing to accept the change.

This price leader is often the largest firm in the industry and so smaller firms do not challenge its actions. This almost simultaneous change in price is called parallel pricing and of course it makes the kinked demand curve irrelevant. Student exercises/activities 1. Construct a table to compare the four market structures we have studied using the following headings: Market structure, Number of sellers, Restricted entry and exit, Long run supernormal profits and product differentiation. Place these headings horizontally and the four market structures vertically. 2.

Suggest reasons why some firms tend towards oligopoly while others tend towards monopolistic competition. (4 marks) 3. Explain why some firms use different methods of non-price competition to increase their market share. (3 marks) 4. Profit maximisation always occurs where marginal revenue is equal to marginal cost. Why is this so? (2 marks) 5. Behaviour in three of the markets we have studied is predictable. Explain why this is so. (4 marks) 6. Using diagrams contrast price and output determination in perfect competition and monopolistic competition in both the short run and the long run. 7.

Is price leadership a form of collusion? Discuss. (4 marks) 8. Make definitions of new economic terms. SECTION 4 We have seen how resources are allocated by prices determined by the forces of demand and supply in the market place. We have also seen that some market structures are more efficient than others when it comes to resource allocation. Allocative

efficiency is present if the marginal cost of production equals price in all industries. If Price= MC in all industries in an economy, it would be impossible to make any one better off without making another worse off. This allocation of resources is said to be Pareto efficient.

Again allocative efficiency exists when an economy uses its resources to produce the goods and services consumers want. Hence one of the main macroeconomic aims of government is to achieve the optimal allocation of resources and that is when resources are efficiently used in such a way as to maximise the welfare of consumers. We saw earlier that only the perfectly competitive market is both productively and allocatively efficient. No real economy is like this. Imperfections exist in all real economies and they prevent the efficient allocation of resources through the market mechanism.

Instead an under-or over-allocation of resources to a certain economic activity takes place. Marketfailureresults. There are four main types of market failure: 1. Externalities. They exist when the action of producers and consumers, other than through the normal workings of the price mechanism, affect not only themselves but also third parties. They can be negative likepollutionand congestion. Each is a cost to society. Externalities can be positive, like the benefits society gains from bettereducationand improved medical practice.

Negative externalities result in over-production; positive externalities result in under-production. Sometimes prices and profits are not good indicators of the real cost to society of an economic activity and so externalities emerge. Hence alternative systems of allocation need to be considered to obtain a

more desired allocation of resources. 2. Imperfect competition. In imperfect markets consumers are often at the mercy of oligopolies and monopolies. Governments and trade unions can also influence demand and supply in a market and this leads to inefficiency.

It also leads to an unequal distribution of income and wealth. Imperfect markets fail to be efficient and equitable. 3. Market forces cannot provide public goods and often do not do a good job of providing certain merit goods. Again the market has failed to produce what every society needs. 4. Market economies tend to experience sudden business fluctuations. The UK went into recession in 1990–2. Japan has still not recovered from a current recession. Governments are trying to devise tighter monetary policies to avoid the worst extremes of trade cycles.

Whenever market failure occurs there has been a re-allocation of resources to some less desired point on the Production Possibility Curve. Consequently government steps in to try to redress the balance. Monopoly and government intervention A government can control a monopoly by using price controls. Look at Figure 1. A price control lowers the price to the consumer from P1 to P2 and at the same time increases output from OQ1 to OQ2. Society now benefits from an improvement in allocative efficiency. Figure 1 [pic] A government can impose fines or regulations to correct externality situations.

However, a major difficulty that immediately arises before this can be done is to calculate or estimate the value of externalities such as pollution and congestion. Look at Figure 2. If the polluter ignores the pollution then he will

produce at Q2 where demand equals supply. However, if the government insists that certain regulations must be complied with, such as installing filters, the supply curve will move to the left because costs have risen. The quantity being produced will now contract to Q1. Consumers are now paying a price that reflects the spill-over cost and over-production has been corrected.

There has been an improvement in resource allocation because the government has taken action against market failure. Figure 2 [pic] Markets can sometimes under-produce as in the case of medical or educational provision. Look at Figure 3. Without grants and subsidies Q1 places would be provided. With grants to students and subsidies to universities and colleges more places can be offered, and many students who have the necessary qualifications can now afford to take up a place. Q2 places are now available and society will eventually benefit from the increased number of educated people.

Again government has taken action to correct market failure. Thus we have seen that externalities can be positive or negative and they accrue to a third party. We saw in the case of the chemical firm that negative externalities arose because the firm was concerned only with marginal private costs and ignored marginal social costs. Hence they could produce at a higher output and so create more pollution and possibly congestion. Market failure occurred and the government intervened to force the firm to address the social cost it caused. In our example the government legally restricted the activity.

It could have forced the firm to internalise the spillover or it could have taken over the firm. Again firms consider only marginal private benefit, the benefit that the firm receives. They ignore the spillover benefit that society gains from consuming this good or service, the marginal social benefit. It gave grants and subsidies. It could have given tax incentives or even taken over the service and provided it free. Consequently government steps in to increase this under-production and remove the welfare loss that results from free market equilibrium. See Figure 3. Figure 3 [pic]

Student exercises/activities 1. Explain how the actions of large corporations and trade unions can influence demand and lead to non-optimal allocation of resources. (3 marks) 2. Examine the case for providing a) public goods, and b) merit goods free to the consumer. (6 marks) 3. Why might some economists argue against providing products free to the consumer? (3 marks) 4. Why does free market equilibrium not always represent the true cost of production? (3 marks) 5. At what point is the optimum level of production of a public good reached? (2 marks) 6. Make definitions of new economic terms.

SECTION 5 Guideline answers (Perfect competition) 1. There are four basic assumptions underpinning the theory of perfect competition. Do they hold for the agriculture industry? In the UK there are a large number of farmers supplying the market. No farm is large enough to influence price, so this characteristic holds. Farms are relatively easy to buy, especially today because of falling profit margins. Hence exit and entry in the industry are

unrestricted. Knowledge of prices and market conditions are good because of constant updating by the farming press using moderntechnology.

Hence knowledge is as perfect as it can be. Products are fairly homogeneous. Bramley apples from one orchard are almost identical to Bramley apples from another, although you could argue that quality/grade of products does vary. Hence there is a fairly strong case to support the statement. 2. (a)Because only above S1 is revenue greater than AVC and only then will the firm be able to make some contribution to fixed costs. (b)At this price the firm makes zero short run economic profit. At this point MR= MC= ATC. The break-even price is the one that yields zero short run profit or loss. c)The opportunity cost of keeping capital in the firm is moving it to the next best earning alternative. Normal profits are just enough to make it worthwhile to keep the capital in the firm. Consequently it is the amount an entrepreneur would earn in an alternative occupation and so is transfer earnings. (d)No. The amount necessary to keep capital in a firm in one area is not the amount necessary to keep capital in a similar industry in another area. Costs could be different. (e)Economic profits or losses are signals to owners of capital elsewhere in the economy that they too should enter the industry.

If some firms are making losses, this is a signal to entrepreneurs to stay out of the industry. It also signals to existing firms to be cautious about re-investing. However, in the long run in a perfectly competitive market only normal profits can be earned and so no such signals are given. (f)They must be constant. Guideline answers (Monopoly) 1. Profit maximisation takes

place where MC= MR but not where they intersect. The price is fixed on the demand curve and so price must be greater than MR. 2. It depends on the number and closeness of the substitutes.

The more numerous and closer the substitutes, the greater the price elasticity of demand and vice versa. 3. No. In the UK, the former British Rail turned in poor figures for many years. If the ATC curve is everywhere above the demand curve, losses will result and so it will not be profitable to produce. 4. Firms must have some market power – it is a price maker. Firms must keep markets separate. The buyers in each market must have different elasticities of demand. 5. (a)The monopolist does not need to minimise costs to stay in business. Consequently it is productively inefficient and so wastes resources. b)It produces at a point where Price= MC. (c)A perfectly competitive firm produces at the lowest point of the AC curve and so is efficient. (d)Profit is shown by the rectangle sitting above the AC curve bounded by price and output. It is supernormal or economic profit. (e)No. It makes normal profit that is included in ATC. (f)Where MC= MR. (g)In the short run the supply curve of the firm is the MC curve above the point where Price= AVC. In monopoly there is no supply curve that is independent of demand. (h)The Monopolies and Mergers Commission investigates potential monopoly situations.

It could force a monopoly to disband if they considered it to be against the public interest. The criterion is rather vague. (i)It could control prices or force it to work under a licence. Controlled prices would curb monopoly power of fixing too high a price and a limited quantity of production that would both

exploit consumers. Again the government would not renew the licence unless the monopoly had performed within the given controls. Guideline answers (Imperfect competition) 1. Construct table from textbook. 2. It depends on the number of firms in the industry and on the strength of market power. 3.

A price war can be very damaging for firms in an oligopolistic market. Instead they tend to restrict competition rather than attempt to drive main competitors out of the industry by reducing price. Advertising and branding is used to restrict competition. 4. At that output there is the greatest difference between total revenue and total cost and so profit is maximised. 5. Markets of perfect competition, monopoly and monopolistic competition are predictable because in them firms act independently. However, this is not so in an oligopolistic market. Firms are independent – one firm’s actions affect competitors.

This leads to uncertainty. 6. Draw diagram, then list main differences: Perfect competitionMonopolistic competition Short runShort run Supernormal profits and lossesSupernormal profits and losses Demand curve slopingDemand curve horizontal Long runLong run Normal profitsNormal profits Produces at the lowest point Does not produce at the lowest of the AC curvepoint of the AC curve Price= MCPrice does not equal MC 7. Price leadership occurs often in an oligopolistic market. It could appear to be collusive because, after a dominant firm raises price, others soon follow. However it is not planned.

The dominant firm is acting as a barometer for the rest of the industry that is experiencing the same pressures that caused the leader to alter price in the first place. The firms have not colluded. Guideline answers (Resource allocation) 1. Large corporations can manipulate by spending large sums on advertising and that allows them to sell what they produce rather than what consumers want to buy. Strong trade unions, through industrial action and lobbying, can often get restrictions on imports and subsidies for industries such as coal mining and agriculture. Demand is influenced and so resources are not allocated in the best way. 2.

Public goods like defence and law and order are demanded collectively and not individually because they are non-excludable. Hence most people think that they should be paid for out of public taxation and be free to the consumer. However, merit goods likehealthand education are private goods that can be bought and sold in the market place. They are usually under-consumed when externalities are taken into account and so the argument is that the government should intervene because of the external benefits more consumption would bring to society. Hence the case for providing merit goods is not as strong as the case for providing public goods. . They would argue that it would lead to the misallocation of resources. If the good were free to consumers, they would consume up to the point where marginal utility is zero. Here the marginal cost of producing the last unit will be high and inefficiency will result. Consequently goods should not be provided free at the point of consumption. 4. Because social costs and social benefits must be added to private costs to represent true cost. 5. It occurs at the point

where there is the greatest excess of total social benefit over total social cost, or where marginal social benefit is equal to marginal social cost.