

5 The market mechanism, market failure and government intervention in markets — answers

Test yourself

Test yourself 5.1

Statement **D** is actually a definition of non-rivalry, so it provides the correct answer to the question. Because a pure monopoly has no rivals within a market, statement **A** might lure you into thinking that it is the correct answer. However, this has nothing to do with public goods. Statement **B** is wrong because scarce resources are indeed used in the *production* of a public good such as national defence. Statement **C** relates to the first property of a public good, *non-excludability*, rather than to the second property, *non-rivalry*. The statement does not explain the word ‘non-rival’, which is in the stem of the question.

Test yourself 5.2

The correct answer is **B**. A tax imposed on polluting firms raises the costs the firms incur. On the assumption that the more firms pollute, the more tax they pay, a pollution tax creates an incentive for firms to reduce the pollution they emit. By contrast, statements **C** and **D** would encourage more pollution. For statement **A** to provide the correct answer, firms would have to be ethically driven. Feeling guilty at generating more negative externalities, ethically driven firms would look at ways of reducing the pollution they emit. However, statement **B** provides a more all-encompassing answer which is consistent with the assumption that all firms are motivated by self-interest.

Test yourself 5.3

Merit goods, like all private goods, possess the characteristic of rivalry. By contrast, public goods possess the opposite characteristic of non-rivalry. This is why consumption of a merit good such as health care reduces the amount of the good available to others, whereas an individual’s consumption of a public good such as listening to the radio leaves unaffected the amount available to others. Statement **C** therefore provides the correct answer. In statement **A**, the ‘weasel word’ *always* provides a clue as to why this is not the correct answer. Merit and public goods can be provided by both the private sector and government. Statement **B** is incorrect because both merit goods and public goods have costs of production. For a related reason, statement **D** is also wrong. Scarce resources are used up in the provision of both merit goods and public goods. Public goods are not ‘free goods’, which are goods available in unlimited quantities at zero cost of production.

Case studies

Case study 5.1

- 1 The rubbish or waste which households put into dustbins is an example of an economic ‘bad’ (or nuisance good). Economic ‘bads’ yield disutility to those who ‘consume’ them. Instead of being willing to pay a price to get the benefits of a ‘good’, members of households are prepared to pay in order to have ‘bads’ taken away. However, they also have an incentive to free-ride, which, in the case of rubbish, involves dumping the garbage in a public place or on

somebody else's land so as to avoid payment. To prevent free-riding, local councils empty dustbins without charging a price for the service.

- 2 Emptying dustbins for free costs local councils money, which local taxpayers have to pay and which has an opportunity cost in terms of other goods and services on which the money could be spent. This provides the case for prices being charged for the removal of household waste. However, as we have explained in the answer to question 1, charging prices may lead to too many households free-riding and dumping their rubbish on others. Fly-tipping of rubbish would increase, leading to eyesores and possible public health problems, and to landowners as well as local councils having to bear the cost of clearing up the mess.

Policies other than charging prices for each dustbin emptied can also be used. The policies include rewarding households and businesses for transporting their rubbish to a communal dump, and reducing the emptying of dustbins to fortnightly rather than weekly collections. However, although both these policies would save the councils money, they may also lead to some fly-tipping. Another possibility, which is used for restaurant rubbish, is to charge a tax collected along with council tax, which is independent of the number of dustbins emptied.

Case study 5.2

- 1 The main reason is the politically unpopular nature of a congestion charge. In the UK, motoring lobby groups such as the AA are powerful and capable of persuading motorists to vote out of office any political party that wants to introduce a congestion charge. Whereas people are quite prepared to pay for commodities such as electricity and gas, they are not prepared to pay for the use of the road.
- 2 Most economists who believe in the virtues of market forces support the introduction of some form of road pricing. The issue centres largely on road *congestion*, rather than on pollution, because fuel taxes are a better way of reducing the environmental pollution caused by vehicles burning fossil fuels. Electronic pricing has become technically possible and is likely *eventually* to be used in future road charging schemes. However, as the answer to the previous question indicated, in the short term, the power of the motoring lobby, which argues that motorists should enjoy the freedom to use of the public highway without charge, is likely to delay the widespread introduction of road pricing, at least in the UK.

The case for and against road pricing brings together issues concerning both public goods and negative externalities. Roads are a good example of a quasi-public good, since toll booths and electronic pricing can be used to exclude free-riders. Road use also results in the discharge of negative externalities. The extent to which negative externalities are produced depends in part upon whether the road is congested or uncongested. Arguably, motorists should not be charged for driving on uncongested roads. But as soon as roads become congested, to deter unnecessary driving, road use should be priced.

Case study 5.3

- 1 There are two ways of defining a merit good: first, in terms of the positive consumption externalities generated, which benefit the wider community, when the good is consumed; and second, in terms of the long-term private benefits which the consumer eventually enjoys. Arguably, museums display both these properties, though in a fairly weak way. Visiting museums makes a person more learned and civilised, with the result that other people benefit from their company. Again arguably, a person who regularly visits museums becomes a happy person who will benefit from good health in the future. However, these arguments are very tenuous.
- 2 We recently visited the National Gallery in London, paying to see an exhibition of impressionist art. All the other visitors were clearly enjoying the experience and there was a calm and orderly feel to the exhibition. After leaving the exhibition hall, we decided to walk

round other parts of the gallery, including the permanent display of impressionist painting, which could be viewed without paying when visiting the galleries. This was a very different experience. The freely accessible galleries were crowded and full of parties of school children who took very little interest in the art. Being a wet and freezing day, there were even some tramps there, whose only reason for visiting the National Gallery seemed to be to keep out of the cold. Both these groups of visitors seemed not to value what the gallery had to offer.

Case study 5.4

- 1 Tobacco and cigarettes are the most often quoted examples of demerit goods. This is because smoking generates negative externalities (via passive smoking) which harm other people, and because the long-term private costs of smoking, e.g. the costs of lung cancer and blood clots, are greater for the smoker than the short-term private costs, e.g. the cost of cigarettes themselves and higher dry cleaning bills. Tobacco thus displays the two standard characteristics of a demerit good.
- 2 By associating tobacco smoking with activities such as weight loss (an aid to slimming) and medical approval, such adverts encourage rather than discourage consumption of a demerit good.

Case study 5.5

- 1 Many experts believe that self-regulation is an ineffective way of regulating consumption of a demerit good such as tobacco and alcohol. This is because the regulators are often dependent on financial support and facilities provided by the firms whose activities they are trying to regulate. As a result, they do not wish to ‘rock the boat’ they co-share with the firms responsible for paying their wages.

Case study 5.6

- 1 The traditional black cab trade uses restrictive practices such as, in London, a requirement to learn ‘the knowledge’. These are used to restrict the supply of black cab drivers so as to force up cab drivers’ earnings. By contrast, Uber places relatively few restrictions on who can drive an Uber cab, most of which are ordinary private cars owned by the Uber drivers themselves.
- 2 Smartphones are increasingly being used by casual workers, be they cleaners at the bottom end of the labour market or emergency GPs located toward the upper end of the labour market, to put them in touch with an unexpected need for more cleaners or for doctors to offer their services to patients outside of regular GP hours.

Case study 5.7

- 1 Fly-tipping, usually undertaken by building contractors wishing to evade costs, involves tipping or dumping rubbish such as building debris on other people’s land or in public places such as roads and parks. It provides a classic example of negative externalities being dumped on third parties.
- 2 Landfill is perhaps the most common way of getting rid of rubbish, though other methods such as recycling and incineration can be used. When used wisely, landfill can be used to create physical barriers to protect low-lying land from flooding and indeed to create new areas of land by extending coast lines. These examples represent neither market failure nor government failure. However, if private enterprise companies market landfill facilities in the full knowledge that pollutants that are dumped will seep into and contaminate the water supply, market failure results. Likewise, if government provision of landfill sites leads to the same outcome, government failure results.



Questions

- 1 Government policies which aim to correct market failure may on occasion be completely successful in eliminating the market failure. More often, however, by reducing rather than eliminating market failure, interventionist policies will be partially successful. On other occasions they may have no effect at all; and in some instances, they may also have the unintended consequence of worsening the market failure and/or causing government failures which are worse than the market failures that government intervention in markets is designed to correct. It follows that government policies which aim to correct market failure are *not* always successful.
- 2 Just as the word *always* in the previous question is a ‘weasel word’, so in this question the words *in all circumstances* have the similar role of trying to get you either to agree wholeheartedly or to disagree with the assertion in the question. An ‘it all depends’ strategy is the best approach to take when answering questions such as this one.

There is a strong case for governments providing a public good which increases economic welfare if, without such provision, a desirable good or service would fail to be provided at all. However, alternative provision, for example by a charity or a non-governmental organisation (NGO), might also be possible. And if the good is a quasi-public good (or non-pure public good), the good could be provided through the market, though it can be argued that markets under-provide quasi-public goods. (Provided that a public good is being provided, the extra cost incurred when an additional person enjoys the benefits of the public good is zero. This means that the socially optimal level of consumption is the amount demanded when the good is available at zero price. However, without government subsidy, firms operating in markets are unwilling to provide goods at zero price because they still have to pay the initial cost of providing the public good.)

- 3 Three forms of government intervention that attempt to deal with the problems caused by negative production externalities are: taxation, regulation and the creation of markets in pollution permits. In the case of negative production externalities, such as pollution emitted in the course of production, a pollution tax, reflecting the ‘polluter must pay’ principle, creates an incentive for the firms on which the tax is imposed to pollute less. However, if the firms initially make large profits, they may simply absorb the tax, being content with somewhat smaller profits without raising the prices charged to consumers. Also, the government imposing the tax has to guess the correct level at which to set the tax. If the tax is set too low, too many negative externalities will still be generated; if it is set too high, it will lead to under-production of the good in the production of which negative externalities are emitted.

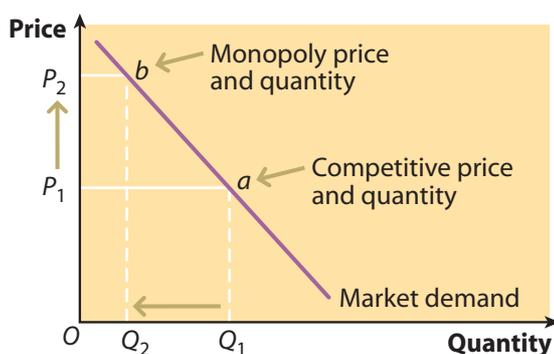
In the case of regulation, the adoption of a ‘thou shall not pollute’ approach means that production of a useful good may in effect be banned, as well as the emission of pollution. Firms may get round regulations by illegally dumping pollution, for example at dead of night. Lesser regulations, such as the requirement for cars to include catalytic convertors, which prevent polluting gases being emitted through car exhausts, may be a better compromise.

A permits-to-pollute scheme still involves regulation: for example, the imposition of maximum limits on the amount of pollution that coal-burning power stations are allowed to emit, followed by a steady reduction in these ceilings in each subsequent year (say, by 10%). But once this regulatory framework has been established, a market in traded pollution permits takes over, creating market-orientated incentives for the power station companies to reduce pollution because they can make money out of it.

As Chapter 5 explains, a tradable market in permits to pollute works in the following way. Energy companies able to reduce pollution by more than the law requires sell their spare

permits to other power stations that, for technical or other reasons, decide not to, or cannot, reduce pollution below the maximum limit. The latter still comply with the law, even when exceeding the maximum emission limit, because they buy the spare permits sold by the first group of power stations. But in the long run, even power stations that find it difficult to comply with the law have an incentive to reduce pollution, so as to avoid the extra cost of production created by the need to buy pollution permits. However, as with pollution taxes, the creation of a market in permits to pollute can fail. For example, if the market organisers issue too many permits, permit prices end up being too low, with the consequence that they have little effect on total pollution emitted.

- 4 If merit goods are available at zero price, too many of them may be demanded. And if supply is unable to keep up with demand, shortages result, e.g. in hospital beds and school places, which result in patients not being treated and children not finding places in schools. These examples show that with free provision, the socially optimal level of consumption is not necessarily achieved. Also, when goods are free, consumers may undervalue them. Children may not bother to turn up for lessons, and likewise people who have made appointments to see their GPs may not bother to turn up.
- 5 The diagram below, which is the same as Figure 4.6 in Chapter 4, shows that the formation of a monopoly through the merger of a large number of previously competitive firms leads to market failure.



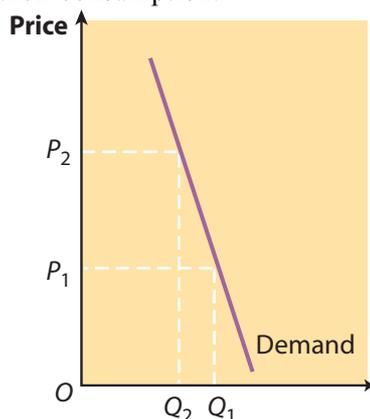
In a competitive market in which a large number of firms sell their output to an even larger number of consumers, market output is Q_1 and the ruling market price, which all firms charge, is P_1 . When the firms merge together, the monopoly which is formed restricts output to Q_2 and hikes up the price to P_2 . Market failure results. Consumers end up paying too high a price for too little output. The level of output (Q_2) produced and consumed is below the socially optimal level of output (Q_1).

- 6 Economists divide into pro-free market economists, who are against too much government intervention in markets, and pro-interventionist economists, who are often called Keynesian economists. Whereas pro-free market economists generally believe that, left to themselves, markets work well and that market failure either does not exist or is pretty inconsequential, as their name implies, pro-interventionist economists adopt the opposite approach. They believe that markets are prone to market failure, and that government intervention in markets can improve market performance.

An important area in which these two groups of economists have different views is the distribution of income. Extreme pro-free market economists argue that if free-market forces deliver an unequal distribution of income, intervention by governments through progressive taxation and transfers to the poor end up by making matters worse. For the better-off, incentives to work harder disappear. Why work harder or undertake entrepreneurial risk if the rewards for such activity end up being taxed away? Meanwhile, at the other end of the income spectrum, unemployed and low-waged people living on benefits have little or no incentive to get a job or to work harder if the end result of this is the loss of welfare benefits.

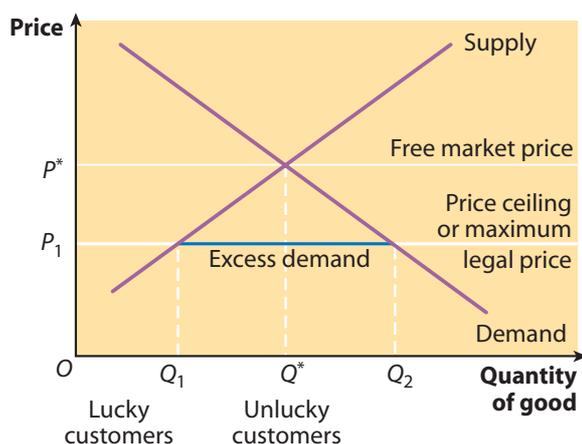
The two views we have just described underpin whether or not economists believe an unequal distribution of income to be a market failure. Pro-free market economists generally reject normative examples of market failure, which they say are riddled with value judgements that cannot be tested. For them, an unequal distribution of income is not a market failure. Indeed, unequal wage and salary rates improve the working of the incentive function of prices. By contrast, pro-interventionist economists take the opposite view, arguing that unequal distributions of income and wealth are the classic examples of market failure, defined in terms of the inequitable or unfair functioning of markets. Our own view inclines to the latter approach.

- 7 The graph below shows why taxing demerit goods may be relatively ineffective in reducing their consumption:



Before the tax is imposed, at a price of P_1 , Q_1 of the demerit good is demanded (and consumed). Following the imposition of the tax (which is not actually shown on the graph), the price rises significantly to P_2 , but there is only a slight fall in demand for the demerit good, from Q_1 to Q_2 .

- 8 The graph below, which is the same as Figure 5.10 in Chapter 5, shows how the imposition by the government of a maximum legal price (or price ceiling) may distort a market.



In an undistorted market, the price would be the free-market price P^* , determined at the intersection of the free-market demand curve and the free-market supply curve. The quantity bought and sold would be Q^* . However, the government imposes a maximum legal price of P_1 . Provided this price is enforced, the maximum consumers are prepared to buy at this price is Q_2 . But at this price, firms are only prepared to supply quantity Q_1 of the good. As the graph shows, there is excess demand at the maximum legal price, equal to Q_2 minus Q_1 . Some customers would like to buy at this price, but cannot, because there is insufficient supply. We can call these the ‘unlucky’ customers, in contrast to the lucky customers, shown by the distance from O to Q_1 , who have managed to get their hands on the good. In a free market, the price would rise to get rid of the excess demand, but the price ceiling, set below

the equilibrium price, prevents this from happening. The maximum legal price has prevented market forces from freely operating; it has distorted the market. A so-called 'black' market may then emerge to provide a mechanism for removing the market distortion. A 'black' market is a secondary market which comes into existence because the maximum legal price has distorted the primary market.

