Chapter 8: The market mechanism, market failure and government intervention in markets

Application of economics in the real world

Application of economics in the real world 8.1: The Seattle stomp

1 Local authorities have a legal duty under the Environmental Protection Act 1990 to collect household waste without charging a price. Most councils charge for the removal of large items such as furniture and wooden units, and they also charge for business waste. Bulky waste is furniture, household electrical items like televisions, and white goods including fridges and freezers — essentially all the things from your house that you no longer need and cannot fit into a bin.

2 Most councils charge a price because it requires additional equipment, such as bins designed to transport bulky waste. Quite often, specialist vehicles will collect green waste and take the waste to special composting sites. Councils are not obliged to collect garden waste, so the charge helps to cover their additional costs.

3 There are two main reasons why prices should be charged for emptying dustbins. The first reason is to raise revenue to finance the provision of a service which has a significant cost of supply. In the UK, local authorities provide the service but do not charge households a price for most of the refuse collection services that households use. If councils were to charge prices for all their refuse removal services, they would have more money to spend on other useful services, such as care homes for the elderly, which, due to lack of money, they currently underprovide.

The second reason why prices should be charged for emptying dustbins is that it would create an incentive for households to economise on the amount of waste they create. To take the example of clothing, households might give perfectly wearable 'old' clothes to charity shops rather than throwing them into their dustbins.

However, as we suggest in our answer to question 4, some households might avoid paying the price for getting a dustbin legally emptied, by fly-tipping. This can cause serious problems in some neighbourhoods, when sofas and mattresses are dumped in the street in order to avoid the prices being charged by councils for their collection.

Our own view is that for most rubbish items, up to a certain limit, prices should not be charged. There might, however, be a case for charging a price if households have more than three dustbins per property. Prices can also be justified if people are caught fly-tipping.

4 Fly-tipping, also called fly-dumping, is the dumping of waste illegally instead of using an authorised method such as kerbside collection or an authorised rubbish dump. It is the illegal deposit of any waste onto land, including waste dumped or tipped on a site with no licence to accept waste.

5 A behavioural economist might recommend the locating of street signs in a public park which show young children injuring themselves as a result of treading barefoot on a dumped piece of metal or through drinking dumped toxic waste. A second policy might be to publish notices of good citizen awards given to households whose neighbours have recommended them as 'model citizens'.

Application of economics in the real world 8.2: Twenty years of the London congestion charge

1 The main reason is the political unpopularity that results from making a decision to charge motorists for congestion. Also, in the years after the congestion charge was first levied in 2003, there were considerable doubts about its effectiveness. According to David Hill, writing in *the thirdpoll.net* in 2016:

When London mayor Ken Livingstone introduced congestion charging to the British capital in February 2003, his arguments for it were economic. 'Red Ken', as he'd become known for his left-wing politics, was concerned that traffic jams were bad for capitalism.

His aims were to reduce valuable time lost as a result of traffic jams and create a more hospitable atmosphere for pedestrians — shoppers, workers and visitors — by relieving motorists of £5 each time they entered a central charging zone covering the Square Mile financial district and the West End shopping and tourist areas.

Despite dire predictions, in terms of reducing traffic, the system worked in the early years of its operation. Livingstone joked that he'd got the idea from Milton Friedman, the 'Chicago School' free market economist admired by Margaret Thatcher.

In 2003, TFL's first annual assessment of its impacts as a whole anticipated only 'minimal' effects on visual, noise or atmospheric pollution within the charging zone and noted some concern that pollution might increase around its boundaries.

The sixth and final annual report, published in July 2008, said that a reduced volume of traffic circulating more efficiently in the charging zone had directly produced an estimated 8% reduction in oxides of nitrogen (NO_2), a 7% fall in fine particulate matter (PM10) and a 16% drop in CO_2 emissions.

You can read the whole of this article at: https://www.thethirdpole.net/en/2016/04/04/what-other-cities-can-learn-from-londons-flawed-congestion-charge/.

2 Delhi in India has experimented with an 'odd/even policy' in which cars with number plates starting in odd numbers are allowed to drive on, say, Mondays and cars with number plates starting in even numbers are allowed to drive on Tuesdays, and so on. To encourage car sharing, many American cities such as Los Angeles only allow cars with at least two occupants to drive on certain roads into the city.

Other policies are: optimise traffic-light management; use CCTV to monitor road conditions; enforce existing road traffic laws; improve bus travel; extend residents' parking zones; charge for workplace parking; and improve cycling infrastructure.

3 In January 2015, the Institute of Economic Affairs (IEA) published an article by Philip Booth titled 'Pricing roads — why are we waiting?', which argued:

The dynamic effects of road pricing would be enormously beneficial. Just as happens with train services, those who are relatively indifferent to when they travel could change their journey times to take advantage of cheaper prices. This would reduce overall congestion and raise traffic speeds. It would also ensure that the roads were used at the most congested times by people who valued travelling at that time the most. Some people could move onto mass transit which would become relatively cheaper. Perhaps most importantly, if the road system were also privately owned (something which is an essential complementary reform) there would be incentives to invest in new roads, road improvements and traffic management schemes to increase traffic flows. The building of a new road would enable the owner to benefit from additional revenue sources in congested areas. Improvements in management and infrastructure would increase traffic flow and revenue to the road owner.

You can access the whole of the article at: https://iea.org.uk/blog/pricing-roads---why-are-we-waiting.

4 When first introduced in 2003, as its name indicates, the London congestion charge was aimed at reducing traffic congestion in central London. Since then, however, the many exemptions which have been introduced have focused on reducing environmental pollution rather than on reducing congestion. To find out more, access and read: https://eprints.lancs.ac.uk/id/eprint/124744/1/LancasterWP2018_007.pdf.

Application of economics in the real world 8.3: Has the fishing industry fallen victim to the tragedy of the commons?

1 It certainly was. Back in 2001 Daniel K. Benjamin wrote an article 'Fisheries are classic example of the "tragedy of the commons"', in which he set out the reasoning. You can access Benjamin's article at: https://www.perc.org/2001/03/01/fisheries-are-classic-example-of-the-tragedy-of-the-commons/.

2 You should read the latest advice to governments provided by the International Council for the Exploration of the Sea (ICES). In its latest report (at the time of writing) in December 2019, ICES wrote: 'From an all-time high in the late 1960s, the North Sea cod stock declined to its lowest level in 2006 to a biomass of 40,000 tonnes. Following a range of management measures (including significant reductions to the total allowable catch (TAC)) the biomass recovered to 118,000 tonnes in 2015. However, the 2019 assessment results indicate that the stock has once again declined, with a biomass estimate of 81,224 tonnes.'

On 25 September 2019, the *Daily Mail* published an article headlined 'Cod's had its chips: fish from the North Sea is "no longer sustainable" due to dramatic decline in numbers'.

3 Given that EU cod fish stocks have been in decline, the evidence seems to indicate that with regard to cod, the EU's Common Fisheries Policy has not been successful. For the counter-argument read 'Success story for European fisheries and policies', accessible at: http://europeche.chil.me/attachment/03ea1b9d-21c5-4bc3-b930-73766520d27d.

4 Earth's atmosphere is a resource that everyone on the planet uses and abuses. Air pollution and greenhouse gases from various industries and transportation increasingly damage this valuable, shared resource.

Thousands of farms are located along the Mississippi river and its tributaries through the central USA. As water washes into the river after heavy rain, it brings with it nutrients from fertilisers added to farmland. These materials flow downriver and eventually enter the Gulf of Mexico, where they create conditions for a dead zone — a region of the ecosystem that cannot support any living creatures. The Gulf of Mexico has a dead zone because everyone along the Mississippi river shares the waterway without considering how each small contribution of nutrient and chemical pollution adds up to have dramatic results.

These examples have been provided by Dummies, accessible at: https://www.dummies.com/education/science/environmental-science/ten-real-life-examples-of-the-tragedy-of-the-commons/.

Application of economics in the real world 8.4: The Green Deal

1 The 'traditional economic policies' mentioned in the case study are subsidies on green products such as energy-saving light bulbs and loft installation. The author argues that such policies have had limited success in persuading households to invest in expensive energy-saving hardware because they are unwilling to pay large upfront costs today for benefits which will arrive in small instalments spread over many years.

2 The Department of Energy and Climate Change said it was ceasing to finance the Green Deal Finance Company which issues the loans, and was bailed out by the government in November 2014 with a £34 million loan. This move was expected to lead to the Green Deal Finance

Company immediately halting the issuing of new loans, although existing ones or loans in progress — known as 'green deal plans' — would not be affected. The government also said it was ditching another element of the scheme, known as the green deal home improvement fund, which saw cashback paid to householders who installed measures such as a new boiler or cavity and solid wall insulation.

Julie Hirigoyen, chief executive of the UK Green Building Council, said: 'With each passing day, this government puts an end to another green policy. The government's strategy on dealing with high energy bills through home energy efficiency is now dead in the water.'

Daisy Sands, Greenpeace UK head of energy, said: 'The green deal was far from being a success, but coming right after the scrapping of the zero-carbon homes target, this latest move suggests ministers are giving up on efficiency. This would be a false economy. Fixing our heat-leaking homes is a triple-win policy that can bring down bills, cut carbon emissions, and reduce our dependence on energy imports.'

3 In 2017, the UK government sold the Green Deal to private sector investors Greenstone Finance and Aurium Capital Markets, with the aim of revamping and relaunching the scheme. The 'think tank' Policy Exchange suggested a number of ways to address the shortcomings of the earlier scheme:

1 ***Simplify the Route to Market:*** *There is significant scope to streamline the process of obtaining a Green Deal loan. It previously took weeks to get approval for a Green Deal loan, compared to minutes for alternative forms of finance such as an unsecured loan. The newly acquired Green Deal Finance Company is looking to streamline the process for approval of Green Deal loans to less than a day.*

2 ***Improve the Customer Proposition:*** *one of the flaws with the original Green Deal was that it was marketed almost entirely on the basis of energy bill savings. Some households may invest in energy efficiency based on the identified energy savings alone, but the reality is that this is not an attractive proposition to many households, due to the non-financial barriers identified above. Households are more likely to invest in energy efficiency if they can see that this will improve the warmth or comfort of their home, and/or increase its value. There is an opportunity for the new Green Deal Finance Company to improve its customer proposition to improve its appeal.*

3 ***Address Information Asymmetry:*** *one of the major barriers to investment in energy efficiency is a lack of information available to end consumers on whether it represents good value for money. This reflects a general lack of reliable benchmark prices for energy efficiency products (such as insulation and new boilers) and a level of mistrust about whether energy savings will actually be realised in practice (which reflects concerns over the quality of installations and relative performance of specific products). The new Green Deal Finance Company is seeking to address these issues to improve the consumer experience. They plan to provide price benchmarks for a range of products to ensure that households taking out a loan are getting a good deal. They will address the concerns regarding quality by performing random checks on a sample of installations, putting in place stringent requirements for prospective installers and only working with approved quality installers.*

4 ***Reduce Complexity:*** *as identified above, one of the problems with the original Green Deal scheme was the complexity and bureaucracy associated with the 'Golden Rule'. The Golden Rule has merits in that it provides a degree of customer protection; but it also had downsides as it prevented some energy efficiency projects from being financed. The new owners of the Green Deal Finance Company plan to address this by developing additional loan products alongside the original Green Deal model. This could mean that the 'Golden Rule' becomes an 'opt out' rule — in line with one of the key*

recommendations from our report The Customer is Always Right. *Loans would still be subject to consumer credit rules to prevent mis-selling.*

Provided these points are addressed, the revamped Green Deal has the right ingredients to be a success going forward and to deliver energy efficiency improvements to a large number of households and businesses around the UK. The Green Deal provides a mechanism for households to invest in the efficiency of their home, at no cost to the taxpayer. It is not a silver bullet, but should be seen as part of a wider package of mechanisms to improve energy efficiency.

4 Trials of smart metering devices have been taking place in the UK, which may reveal whether householders are willing to use them and if increased awareness of energy consumption motivates behavioural changes. Smart meters display more detailed information about energy consumption than standard meters — for example, different levels of usage at specific times of the day. They can help reveal which appliances and which members of the household are consuming the most energy. However, it may be the case that householders still feel unable to conserve energy; factors such as limited availability and the high cost of efficient appliances will over-ride most psychological motivations.

Application of economics in the real world 8.5: The great smog of 1952

1 The Clean Growth Strategy published by the UK government in 2017 set out measures which will reduce both CO_2 emissions and air pollutant emissions from the transport sector. These include supporting a move to lower-emission road vehicles and more active forms of travel (walking and cycling); and accelerating the shift of freight from road to rail. So far, there has been little success in shifting goods transport from road to rail and the transport of groceries by home delivery vans has continued to grow.

Aircraft contribute to air pollution while in the air, during take-off and on the ground. The biggest domestic impact of aircraft is during take-off and landing (1% of total NOx and SO_2 national emissions). In addition, airports are large, complex sites with a range of emission sources and so can be of concern for local air quality. They also generate significant land journeys by passengers, workers and freight transport.

The UK government works to improve international standards on emissions from aircraft and to challenge airports and local authorities to improve local air quality. The industry is taking action to cut airport-related emissions by operating aircraft more efficiently, introducing new lower-emission technologies and practices, reducing vehicle emissions within the airport boundary, and improving public transport links to airports. The government published a consultation on a new aviation strategy, Aviation 2050, on 17 December 2018 which includes consideration of air pollutant emissions from flight and non-flight sources associated with airport operations and passenger travel, and contains a separate section on surface access to airports and reducing car travel.

In addition, the aviation strategy considers action on a broad range of air quality issues including:

- how air quality information is communicated to residents dwelling near major airports
- potential requirements and guidance for airports to produce air quality plans
- what sort of oversight major airports might need for air quality issues
- how to support the development and deployment of cleaner fuel technologies for aviation

2 Access the following articles:

https://www.theguardian.com/environment/2018/feb/01/pollutionwatch-wood-burning-worsening-uk-air-quality

https://www.theguardian.com/environment/2020/jan/27/one-in-19-deaths-uk-cities-air-pollution

https://www.independent.co.uk/environment/air-pollution-fuel-wood-burning-stoves-open-fires-phased-out-defra-a9348741.html

3 British towns and cities have not been built to separate road traffic from housing areas and schools. This not only leads to many more deaths and injuries than would be the case if transport routes were separated from pedestrians and cycle routes, but also leads to vehicle pollution being unwittingly consumed by people living or being educated near transport routes.

There is a case for banning vehicles currently using such routes, but only if alternative new routes can be constructed. As this may simply pass on the problem to previously unaffected people, a better strategy may be to allow vehicles to travel along existing routes while imposing pollution and speed controls backed up by high fines, and speeding up the move towards electric-powered road vehicles.

4 Read the following articles from *Fortune* magazine and the *Guardian*:
https://fortune.com/2018/02/06/volkswagen-vw-emissions-scandal-penalties/

https://www.theguardian.com/business/2018/jun/13/vw-fined-1bn-german-court-diesel-scandal

Application of economics in the real world 8.6: Road pricing

1 The socially optimal level of consumption of any good or service, including the use of roads, occurs where the benefit to the user of the last unit consumed (the *MPB*) is no more and no less than the total cost borne by society when that unit is consumed (the *MSC*).

2 In September 2012, T&E director, Jos Dings, wrote an article titled 'Why increasing fuel taxes is a sensible choice'. Dings argued:

I will try to explain why we think fuel taxes should be increased, not lowered, even in times when oil prices are rising: we don't like fuel taxes because we like high taxes in general. We like them because fuel taxes are about the smartest tools you can find to pay for things countries need to pay for, be it hospitals, schools, social spending, or even the army.

A fuel tax stimulates a more efficient use of oil: this is good for the planet and for almost everyone else, except oil exporters maybe. It encourages carmakers to develop and sell low-carbon technologies. It helps boost the share of public transport, walking and cycling, including the emerging use of e-bikes, and even electric cars. And it can even create jobs — by using its proceeds to lower taxes on labour. Every billion of tax revenue shifted from labour onto fuel can be estimated to create some 11,000 jobs.

There's a very simple lesson to learn here: by increasing fuel taxes Europe can be social and green at the same time.

You can access Ding's full article at:
https://www.transportenvironment.org/newsroom/blog/why-increasing-fuel-taxes-sensible-choice.

3 The following road-pricing schemes have been implemented in the UK: the Durham congestion charge (2002); the London congestion charge (2003); the London low emission zone introduced between 2008 and 2012 for commercial vehicles with older or less clean

engines; and the Dartford Crossing, which was converted from a traditional toll to a congestion charge in 2003.

There are also the following traditional toll roads in operation in Great Britain: M6 Toll, Clifton Suspension Bridge, Humber Bridge, Mersey Tunnels, Severn Bridge, Tyne Tunnel and a few others on more minor roads.

Road-pricing schemes are popular in the pages of economics textbooks, but unpopular among motorists who would have to pay for the use of the roads. The political strength of the motoring lobby voiced in newspapers such as the *Daily Mail*, *Daily Express* and *Sun* helps to explain why UK governments have been reluctant to introduce road-pricing schemes.

4 Environmental pollution caused by road traffic could be reduced by closing roads to motor vehicles and by forcing car manufacturers to replace petrol- and diesel-powered vehicles with electrically powered vehicles. The UK government will ban the sale of new petrol, diesel and hybrid cars from 2035, five years earlier than planned, in an attempt to reduce air pollution that could herald the end of over a century of reliance on the internal combustion engine. Although the ban will not come into force for another 12 years (at the time of writing), the change will affect decision making sooner because carmakers decide on investments long before a vehicle first rolls off a production line and the model life cycle typically lasts around seven years.

Application of economics in the real world 8.7: Allocative efficiency and rail fares

1 Marginal social cost is marginal private cost plus marginal external cost ($MSC = MPC + MEC$).

2 Consider a situation in which road transport generates pollution externalities but rail transport generates no negative externalities. However, the government is reluctant to tax road transport for the pollution it causes because of the political unpopularity of such a tax. This means that because $P < MSC$ for road travel, but $P = MSC$ for rail travel, rail travel is artificially expensive, compared to road travel. Too many people will travel by road and too few by rail. The best solution is to tax motorists for the negative externalities they cause. The second-best solution, given the political unpopularity of road taxes, is to subsidise rail travel, so as to get the correct alignment between road and rail prices.

3 If $P < MSC$, the good is too cheap, leading to over-consumption of the good. Conversely, if $P > MSC$, the good is too expensive, leading to under-consumption of the good. Only when $P = MSC$ does the allocatively efficient level of consumption occur.

4 The case against subsidising rail fares is based on a number of arguments:

- The monetary cost of the subsidy would be better spent on alternative items of public expenditure, or on lower taxes for taxpayers.
- The government would get the level of subsidy wrong by setting the subsidy too high or too low.
- The subsidy would lead to creeping growth in the size of the state and to 'crowding out'.
- A better policy is to tax road use to avoid the need for rail subsidy.

Application of economics in the real world 8.8: Museums as merit goods

1 There are two ways of defining a merit good. First, when a person consumes the services of a merit good, he or she generates positive externalities which benefit other people. In essence, a visitor to a museum becomes a more civilised person, who improves the behaviour of other

people. Second, by becoming a nicer person, the long-term private benefits the museum visitor enjoys, through being more educated and civilised, exceed the short-term private benefits incurred by the 'museum experience' on the day of the visit.

2 On balance, visitors who are willing to pay to visit a museum will value the experience. Besides enjoying seeing the exhibits, they will also gain pleasure from the fact that they do not suffer disutility from the antics of people who are in the gallery just to keep out of the cold (see next question). They might also experience 'value for money'.

3 Believers in the virtues of a free market would agree that entry prices should be used as a rationing device so that only people who genuinely want to see what a museum has to offer are admitted. Arguably, however, this will benefit people with high incomes for whom the entry price is easily affordable. Low-income people will be put off visiting the museum, unless concessionary prices or free entry is available for visitors such as the unemployed and pensioners — though many pensioners are actually quite well off.

4 The difference between the funding of American and British museums and art galleries results in large part from differences in personal wealth and culture in the two countries. There are significantly more very rich individuals in the USA and there is a much greater culture of personal philanthropy than in the UK. The US tax system allows wealthy donors to benefit from more generous tax avoidance schemes and there is a widely held belief that the rich should be allowed to do what they want with their own money. State sponsorship of the arts is viewed with suspicion and as a form of socialism, which in the USA is to be avoided at all cost.

Application of economics in the real world 8.9: Smoking yourself 'fit'

1 Tobacco meets both of the ways of defining a demerit good. In the first place, when a person smokes, he or she emits negative externalities which harm other people who, as passive smokers, become unwilling free riders. And in the second place, in the long term, smokers suffer from illnesses such as bronchitis and lung cancer. The long-term private costs of smoking exceed the short-term private costs.

2 Advertisements like those in the textbook carry the message that smoking is good for the smoker's health. Reputable scientific studies have shown that this is not the case and that smoking is harmful, both for the smoker and for passive smokers. Virtually all people in the population, including smokers, believe that such advertisements should be banned. Public opinion has changed over the years.

3 To answer this question, read 'Fit for purpose? An analysis of the role of the Portman Group', accessible at: https://alcoholchange.org.uk/publication/fit-for-purpose-an-analysis-of-the-role-of-the-portman-group-in-alcohol-industry-self-regulation.

4 To answer this question, read 'E-cigarettes are more addictive than traditional cigarettes — a study in highly educated young people', accessible at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6651627/ and 'E-cigarettes: facts, stats and regulations', which you can access at: https://truthinitiative.org/research-resources/emerging-tobacco-products/e-cigarettes-facts-stats-and-regulations.

Application of economics in the real world 8.10: Taxi wars

1 Before the entry of Uber into the cab market, black cabs faced competition from mini-cabs. However, mini-cabs were not allowed to pick up passengers by trawling the streets and picking up anybody who hailed them. The cabs had to be pre-booked. Also, entry to the London black-cab market was restricted by rules and regulations, such as a driver's need to

have passed the 'knowledge' test which required them to have detailed knowledge of all the roads in central London. This limited the supply of labour to the black-cab market.

2 The Uber app, accessible at https://www.uber.com/gb/en/drive/requirements/, shows how a person can become an Uber driver.

On 15 August 2018, the *Guardian* reported: 'The number of licensed private hire drivers in London has almost doubled in less than a decade, from 59,000 in 2009/10 to 114,000 in 2017/18, while the number of black-cab drivers has fallen from 25,000 to just under 24,000. About 45,000 drivers work for Uber in London, according to the company.'

The data suggest that because it is easy to become an Uber driver, labour mobility within the cab trade has greatly increased.

3 Transport for London said it was compelled to act after uncovering a 'pattern of failures by the company, including several breaches that placed passengers and their safety at risk'. TfL first refused to renew the company's licence in September 2017 amid safety concerns. After the firm appealed against the decision, it was handed a 15-month licence by a judge in June 2018. When this expired in September 2019, it was granted a 2-month licence by TfL.

Following a subsequent legal battle lasting two years, Uber was granted a 30-month licence to operate in London from March 2022.

4 In poor developing economies, labour market mobility used to be limited by the poor state of development of landline phones. The emergence of mobile phones, and in particular smartphones, has greatly improved people's ability to communicate. Workers are now able to find out quickly and easily about job opportunities and rates of pay in nearby towns and also in more distant locations within the country.

Application of economics in the real world 8.11: European Competition Commissioner fines Google €4.3 billion

1 To answer this question, please access https://interestingengineering.com/almost-everything-you-need-to-know-about-googles-history/.

2 **Network effect:** Occurs when present users of a product or service benefit in some way when the product or service is adopted by additional users. This effect is created by many users when value is added to their use of the product. Suppose that just one person in the world owned a telephone.

Cross-subsidy: Cross-subsidies occur in a wide range of markets, when a firm charges lower prices to one group of consumers, who are then subsidised by the higher prices charged to another group. Examples include student discounts, lower prices charged for new customers, and loss-leader products in supermarkets.

3 In 2016, in the *New York Times* Opinion Page, Ryan Radia of the Competitive Enterprise Institute debated with Dietrich Vollrath of the University of Houston as to whether Google is a harmful monopoly. Here is the link to Ryan's article:

www.nytimes.com/roomfordebate/2016/04/28/is-google-a-harmful-monopoly/monopolies-like-google-are-innovators-which-is-good-for-consumers

And here's the link to Dietrich Vollrath's reply:

www.nytimes.com/roomfordebate/2016/04/28/is-google-a-harmful-monopoly/theres-no-limit-to-googles-market-power

Both authors attempt to justify their reasoning. You, as the reader, must choose between the two, and justify your answer.

Application of economics in the real world 8.12: East Coast Rail returns to private hands, before being renationalised again

1 Virgin Trains East Coast was a train operating company in the UK that operated the InterCity East Coast franchise on the East Coast main line between London, Yorkshire, the Northeast and Scotland. The company, which was a subsidiary of the Stagecoach Group, operated the franchise from 1 March 2015 until it was effectively nationalised on 23 June 2018.

2 The East Coast main line franchise was taken into public ownership in 2009 after being run by National Express.

It was reprivatised when Stagecoach and Virgin signed a deal to run the East Coast line from 2015 to 2023, promising to pay the government £3.3 billion to run the service. The Conservative government wrongly believed that Stagecoach and Virgin would succeed in running the East Coast line commercially and make a profit.

3 The government said the government said that the operator had 'got its numbers wrong' and that the company would have to be renationalised.

4 Read the article 'Trains on UK railways now almost entirely state-owned — by foreign countries', which you can access at: https://www.independent.co.uk/news/uk/home-news/trains-uk-railways-renationalise-countries-operators-companies-a9058961.html. See also 'Should the UK renationalise the railways?', accessible at: https://www.bbc.co.uk/news/business-43158919.

Application of economics in the real world 8.13: The landfill tax and government failure

1 'Fly-tipping' refers to the practice of dumping waste illegally. Rather than using tips, skips or waste disposal companies, fly-tippers simply dump their rubbish in a place where they hope they will not be spotted. This might be in a neighbour's yard, on the street or frequently out in the countryside. In the language of economics, fly-tipping leads to the dumping of negative externalities on third parties.

2 As noted in the previous answer, flying-tipping leads to the production of the negative externality of illegal dumping. However, if charges are imposed on households and businesses for legally getting rid of their waste, even more waste may be illegally dumped as people try to evade the charges. This is an example of government failure. According to an article published in the *Daily Telegraph* on 4 January 2020:

Paltry fly-tipping fines of under £50 are failing to deter criminals from dumping waste, the Local Government Association (LGA) has warned. Only five per cent of court-imposed fines for fly-tipping offences in England in the past six years were above £1,000, and only a sixth of them above £500, the LGA has revealed. This is despite fly-tipping incidents soaring by 50 per cent over the same period, up from 714,637 in 2012/13 to 1,072,431 in 2018/19. The LGA, which represents councils in England and Wales, says tougher sentences are needed to deter fly-tipping, which latest figures show costs councils £58 million a year to clear up.

3 According to the *Daily Telegraph* article quoted in the previous answer:

Only two people have been given the maximum £50,000 fine by the courts for fly-tipping since the Government introduced new guidelines in 2014.

The LGA put the meagre fines down to cash-strapped councils, as the demand on their legal duties, such as caring for elderly and disabled people, protecting children and providing homelessness support, meant there is less money available for discretionary powers — like issuing penalty notices for fly-tipping.

We believe that much larger fines are indeed needed, but they must be seen to be enforced by local authorities.

4 According to Zero Waste Scotland, in 2011 in Copenhagen, nudge theory was used to encourage better use of street litter bins. Footprints were painted on the ground leading up to the bins and the bins were 'wrapped' in a bright colour. An experiment was designed to test the effect of the nudge, which involved distributing free sweets before and after the footprints and wraps had been applied. The experiment counted how many of the wrappers ended up correctly in the bins.

A 46% decrease was reported in the proportion of wrappers which ended up on the street. The experiment team claimed that the nudge worked in two ways:

- first, it made it easier for people to find the bins because they were more visible;
- second, the footprints prompted them to infer the intended, correct action — that is, to use the bin.

The same technique has since been used by many UK local authorities, for example Kingston upon Thames, as a method of nudging pedestrians to use the council's litter bins.

End-of-chapter questions

1 No, they are not always successful. For example, when setting a tax to reduce production of a negative externality, lack of information may cause the tax to be set too low with the result that the externality is still produced. In the extreme, the attempt to correct market failure may lead to a new problem of government failure, which occurs when government intervention reduces economic welfare, leading to an allocation of resources that is worse than the free-market outcome.

2 The two main forms of government intervention used to deal with the problems caused by negative externalities are taxation and regulation. The answer to question 1 explained the main problem caused by using taxation to control the generation of negative externalities: namely, the creation of the new problem of government failure. In the extreme, the government failure may be much worse than the initial problem of market failure.

Regulations which ban certain activities that produce negative externalities or the consumption of demerit goods such as drugs may also have adverse unintended consequences. They may drive consumption underground and promote the growth of black markets.

Free-market economists argue that governments should not intervene to correct relatively minor market failures. They say that intervention makes matters worse and that the best option is to try and make markets work as freely as possible so that market failures do not arise in the first place. More interventionist economists believe this is a cop-out and that governments should use 'smart' intervention to try to correct market failures. Economists of both types have an area of agreement in supporting the view that the insights of behavioural economics can be used to 'nudge' people into choosing to consume merit goods rather than demerit goods. Such an approach is preferable to using regulations which force consumption patterns upon people.

3 A key word in the question is 'always'. If the question had included the word 'sometimes' rather than 'always', one could agree with its sentiment. If merit goods are provided free by the state, they may be overconsumed, in which case a price should be charged to limit consumption. The problem then is to know exactly what price is needed to achieve the socially optimal level of consumption.

4 Since $P > MC$ in monopoly, allocative inefficiency results, which leads to decreases in economic welfare for consumers. Compared to perfect competition, too little is produced and the price is too high. This means monopolies are often labelled as a market failure. Monopolies can lead to lack of choice for consumers, possibly less dynamic efficiency

(though this is arguable), lower motivation for the owners of the business, and exploitation of consumers.

5 Many demerit goods such as narcotic drugs are addictive, with users displaying a 'must have' attitude and craving for the product. This can mean that the demand curve for a demerit good is highly inelastic or nearly vertical. The imposition of a high tax on the demerit good leads to a less than proportionate fall in demand. It may also cause users to buy the demerit good elsewhere, perhaps abroad (remember the 'booze cruises' to Calais) or on a black market.

6

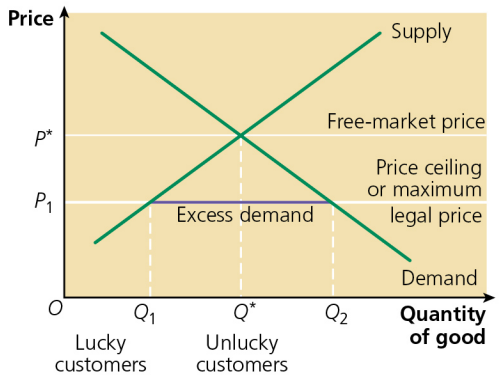


Figure A8.1 Effect of a maximum price control or price ceiling

Suppose that in a particular market — for example, the market for potatoes — the government imposes a price ceiling or maximum legal price of P_1 in Figure A8.1. Because the price ceiling has been imposed *below* the free-market equilibrium price of P^*, it creates excess demand, shown by the distance between Q_1 and Q_2.

In a free market, market forces would raise the price and eliminate the excess demand. But, because the price ceiling prevents this happening, there is no mechanism in the market for getting rid of excess demand. A black market may occur and households may also be rationed by quantity. Queues and waiting lists occur, and possibly bribery and corruption, through which favoured customers buy the good but others do not. Price ceilings also interfere with the incentive function of prices, in the sense that they prevent prices from rising to attract new suppliers into the market.

7 Monopoly and other forms of imperfect competition provide examples of market failure resulting from markets performing inefficiently. The wrong quantity is produced in monopoly, particularly when there are no economies of scale, and the wrong price is charged. Too little is produced and is sold at too high a price. Scarce resources are not utilised in the most efficient way, and a misallocation of resources results.

Other causes of market failure that result from inefficient functioning of markets are public goods, externalities, merit goods and demerit goods. Unregulated markets are unable to produce public goods such as a beam of light from a lighthouse, produce too little of positive externalities such as carbon absorption by trees, and of merit goods such as healthcare, and produce too much of negative externalities such as pollution and of demerit goods such as tobacco.

With regard to inequity, unregulated market forces tend to produce highly unequal distributions of income and wealth. Some economists, usually of a free-market persuasion, dispute whether this is a market failure. Some argue that people who end up being rich deserve to be rich, and that people who end up being poor deserve to be poor. According to this view, the market has not failed — it merely creates incentives which, if followed, cause people to generate more income and wealth.

However, most economists reject as too extreme the view that the market contains its own morality with regard to the distributions of income and wealth. They argue that markets are 'value-neutral' with regard to the social and ethical desirability or undesirability of the distributions of income and

wealth resulting from the way they function. Few economists now believe that markets should be replaced by the command mechanism. There is, however, much more agreement that, instead of replacing the market, governments should modify the market so that it operates in a more equitable way than would be the case without government intervention. Taxing the better-off and redistributing tax revenues as transfers to the less well-off is the obvious way of correcting the market failure to ensure an equitable distribution of income and wealth. (However, redistributive policies can promote new types of inefficiency and distortion within the economy.)

8 Environmental pollution is a negative externality. The unwilling free-riders who receive or consume external costs (or negative externalities), such as pollution and noise, cannot charge a price to the polluter for the bad they reluctantly consume. This is why the market fails. The polluter does not pay, instead 'dumping' the pollution generated on the general public. Taxation, based on the 'polluter must pay' principle, and/or regulation should be used to deal with the problem. However, it is sometimes possible to incorporate the market mechanism into government policy through a 'permits to pollute' scheme, which creates a surrogate market. First, the government imposes maximum pollution limits. Energy companies that are able to reduce pollution by more than the law requires can sell their 'spare' permits to other power stations which, 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 former 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.

9 Some of the main advantages of privatisation are as follows:

- Privatisation generates financial resources for the government which can then finance investment or be used to lower taxes.
- Nationalised industries enjoy monopoly status, which results in inefficiency and possibly losses. Privatisation may create a competitive environment and lead to greater business efficiency.
- Privatisation reduces the fiscal burden on the state by relieving it of the losses of the public enterprise and reducing the size of the state bureaucracy.
- Privatisation may increase the number of workers and ordinary people who are shareholders. This could make the enterprises subject to more public vigilance.
- The process of privatisation reduces political interference in industry.
- The success of the private sector stems from the profit motive. Privatisation motivates managers to make efficiency improvements so that more profits can be made.

Some of the main disadvantages of privatisation are as follows:

- Privatisation faces political opposition from employees who may lose their jobs, from politicians who fear short-term unemployment consequences of privatisation, from bureaucrats who stand to lose patronage and from those sections of the public who fear that national assets are being sold to foreigners, the rich or a particular ethnic group.
- Opponents of privatisation have argued that, far from promoting competition and efficiency, privatisation increases monopoly abuse by transferring socially owned and accountable public monopolies into weakly regulated and less accountable private monopolies.
- Short-termism wins over long-termism. Many of the investments that need to be undertaken by the previously nationalised industries can only be profitable in the long term. There is a danger that under private ownership, such investments will not be made because company boards concentrate on the short-termism of delivering dividends to keep

shareholders and financial institutions happy. Under-investment in maintaining the rail track and in technically advanced trains by the privatised railway companies is said to provide an example. However, there is a counter-argument: that under public ownership, the government starved the nationalised industries of investment funds in order to keep government borrowing down.

- Selling the 'family silver'. Opponents of privatisation argue that if a private-sector business were to sell its capital assets simply in order to raise revenue to pay for current expenditure, it would rightly incur the wrath of its shareholders. The same should be true of the government and the sale of state-owned assets. Taxpayers should not sanction the sale of capital assets owned on their behalf by the UK government to raise revenue to finance current spending on items such as wages and salaries. In reply, supporters of the privatisation programme argue that, far from selling the family silver, privatisation merely returns the family's assets to the family: that is, from the custody of the state to direct ownership by private individuals.
- The free-lunch syndrome. Opponents of privatisation claim that state-owned assets have been sold too cheaply, encouraging the belief among first-time share buyers of previously nationalised businesses that there is such a thing as a free lunch.

Test yourself answers

TEST YOURSELF 8.1

There are two main types of market failure: markets performing inefficiently and markets functioning inequitably or unfairly, though some economists dispute the latter. However, if we accept the second definition, a highly unequal distribution in a market economy would be an example of market failure.

TEST YOURSELF 8.2

The word 'all' is the weasel word in this question. Many economists argue that governments should often provide public goods because markets fail to provide them, but this is not always the case. Some public goods are quasi-public goods, defined as goods for which it is possible to exclude free-riders. Methods do exist for getting rid of free-riders, for example in the case of road use, when electronic pricing can be used to exclude free-riders.

TEST YOURSELF 8.3

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 8.4

Public goods can be divided into pure public goods and quasi-public goods.

National defence and police are examples of pure public goods — defined as public goods for which it is impossible to exclude free-riders. However, most public goods (street lighting, roads, television and radio programmes, and also lighthouses) are really quasi-public goods (also known as non-pure public goods).

Methods can be devised for converting the goods into private goods by excluding free-riders.

TEST YOURSELF 8.5

The correct answer is B because 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 8.6

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 healthcare, 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.

TEST YOURSELF 8.7

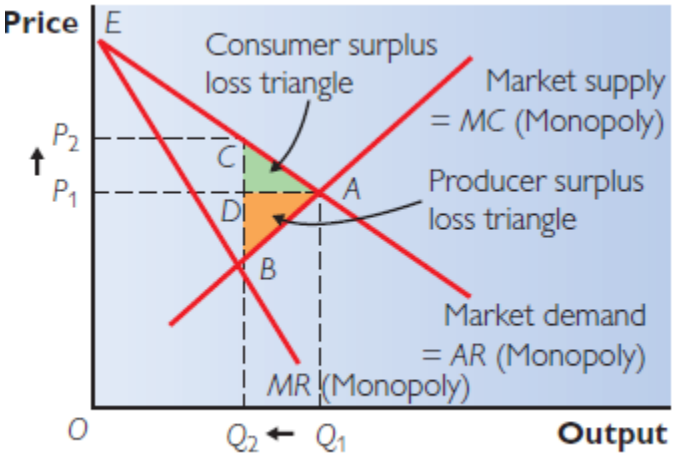
For product W, marginal private benefit plus marginal external benefit equals £500, and marginal private cost plus marginal external cost equals £580. As marginal benefit < marginal cost, there is a case for reducing output of product Y.

For product Z, marginal private benefit plus marginal external benefit equals £220, and marginal private cost plus marginal external cost equals £200. As marginal benefit > marginal cost, there is a case for increasing output of product Z.

TEST YOURSELF 8.8

A merit good is a good, such as healthcare, for which the social benefits of consumption exceed the private benefits. A public good is non-excludable and non-rival. A lighthouse, or rather the beam of light provided by a lighthouse, is an example of a public good.

TEST YOURSELF 8.9



The diagram illustrates what can happen when monopoly replaces perfect competition (assuming there are no economies of scale). Market equilibrium in perfect competition is determined at point *A*: output is Q_1 and price is P_1. Monopoly equilibrium, by contrast, is determined at point *B*, where *MR* = *MC*. (Note that the marginal cost curve in monopoly is the same curve as market supply in perfect competition.) The diagram illustrates the standard case against monopoly, namely that compared to perfect competition, monopoly restricts output (to Q_2) and raises price (to P_2).

TEST YOURSELF 8.10

A farm worker might find it very difficult to become an accountant because she lacks the skills and qualifications required to enter the accountancy profession. This is an example of occupational immobility of labour. A postal worker in the outer Hebrides might find it difficult to take up a similar job in London because he cannot afford the cost of London housing. This an example of geographical immobility of labour.

TEST YOURSELF 8.11

If the likely costs resulting from the reduction of competition exceed the benefits, monopoly should be prevented, but if the likely benefits exceed the costs, monopoly should be permitted.

TEST YOURSELF 8.12

When the whole of an industry is taken into public ownership, as happened with gas and electricity in the 1940s, state monopolies are created. However, when Northern Rock bank was taken into public ownership in 2008, the rescued bank continued to compete against other banks and was not a state monopoly. However, the Northern Rock nationalisation was essentially to rescue a failed bank with the intention to sell the bank back to the private sector when this became commercially viable.

TEST YOURSELF 8.13

Whereas regulation is the imposition of rules and other constraints which restrict freedom of economic action, deregulation is the removal of previously imposed regulations. Deregulation attempts to remove barriers to entry and government red tape and bureaucracy from the operation of markets.

Regulations for businesses exist at every level of government. Suppose you operate an art studio. Local rules might dictate when you're allowed to operate, whether you can serve food and alcohol at events, and what type of business licence you're required to have. Let's say your state government decides there are too many rules for art studios and removes some of the more stringent regulations; this would be an example of deregulation. The government is getting rid of rules to make it easier for you to run your business.

Privatisation has involved the sale of state-owned assets such as nationalised industries to private owners. This has often accompanied by marketisation (or commercialisation), whereby prices are charged for goods and services that the state previously provided free of charge.

During the coronavirus crisis in 2020, the Conservative government rented thousands of beds in the many private hospitals in the UK for an alleged £2.4 million per day.

TEST YOURSELF 8.14

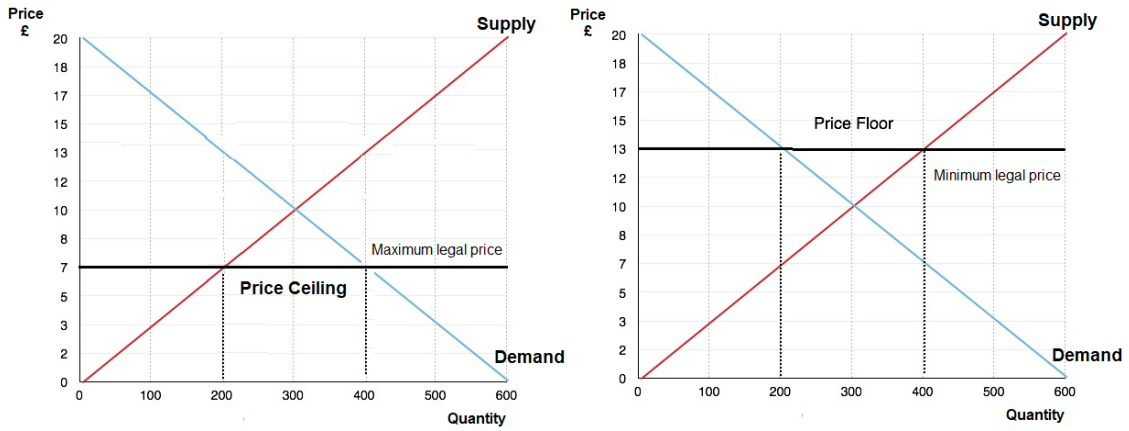
According to the *Concise Encyclopaedia of Business Ethics*, regulatory capture refers to the phenomenon of government agencies, created initially to serve the public interest, serving instead the interests of the companies and industries they regulate, as a result of deliberate efforts on the part of those companies and regulators to co-opt the agencies. For example, taxi regulations that are ostensibly aimed at protecting the riding public, but serve mainly to raise barriers to entry into

the taxi market, are sometimes alleged to evidence the 'capture' of municipal taxi commissions by incumbent taxi licence holders.

TEST YOURSELF 8.15

Regulatory agencies created by government can be 'captured' by the industries or firms they are intended to oversee and regulate. Following capture, the regulatory agencies begin to operate in the industry's interest rather than on behalf of the consumers whom they are supposed to protect. An example of regulatory capture is the UK tax authority HMRC enjoying an 'unduly cosy' relationship with major companies. HMRC's procedures allowed tax rules to be 'bent' so that up to £25 billion of tax was underpaid.

TEST YOURSELF 8.16



Suppose that in a particular market — say, the market for potatoes — the government imposes a price ceiling or maximum legal price, shown as £7 in the left-hand graph. Because the price ceiling has been imposed *below* the free-market equilibrium price of £10, it creates excess demand, shown by the distance between 200 and 400. In a free market, market forces would raise the price and eliminate the excess demand. But, because the price ceiling prevents this happening, there is no mechanism in the market for getting rid of excess demand. Rather than being rationed by price, households are rationed by quantity. The right-hand panel illustrates the effect of imposing a minimum legal price of £13 in the same market. Because it has been imposed *above* the free-market equilibrium price of £10, it creates excess supply, again shown by the distance between 200 and 400. In a free market, market forces would cause the price to fall, thereby eliminating the excess supply. But, because the minimum legal price prevents this happening, there is no mechanism in the market for getting rid of excess supply.

TEST YOURSELF 8.17

Government failure occurs when government intervention reduces economic welfare, leading to an allocation of resources that is worse than the free-market outcome. If government intervenes to increase the supply of healthcare, there is a potential government failure in the form of moral hazard. This means that individuals, knowing that they can get free and effective healthcare, fail to take steps to avoid the risks that the healthcare insures against.

Market failure occurs when the market mechanism leads to a misallocation of resources in the economy, either completely failing to provide a good or service or providing the wrong quantity. Traffic congestion is an example of market failure that incorporates both non-excludability and externality. Public roads are common resources that are available for the entire population's use (non-excludable), and act as a complement to cars (the more roads there are, the more useful cars become). Because there is very low cost but high benefit to individual drivers in using the roads, the roads become congested, decreasing their usefulness to society. Furthermore, driving can impose hidden costs on society through pollution, an externality.