

Data Response Case Studies

For AS/A level Edexcel Economics A
Theme 1: Introduction to markets
and market failure

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Teacher's Introduction

This resource is designed to be used for teaching Edexcel AS/A Level Economics Theme 1: Introduction to markets and market failure. The resource consists of 12 Data Response Case Studies intended for students to complete as homework tasks.

The case studies are presented in specification order, collectively covering each topic in the AS/A Level specification. Each case study contains detailed information (including diagrams and data), and tasks and questions.

The 'Use the data' tasks focus particularly on quantitative skills, and the 'Test your knowledge' mainly on AO1/2 knowledge and application skills. The extended-response questions are an opportunity for students to practise higher-level analysis and evaluation skills. Most of the questions given are in exam style, although we have not limited questions to this style except in the case of the extended-response questions. Detailed answers are provided for all tasks and questions.

Reading through each study and answering the questions is expected to take 20–30 minutes, not including the extended-response questions at the end of each case study. One option for using these is to work through a case study in class and set the exam-style evaluation question as homework.

This resource will help prepare students for the Paper 1 component of the AS and A Level exams, but also stimulate an interest in the real-world applications of microeconomics. Each case study uses real data, introducing the student to a fascinating array of contemporary microeconomic issues.

I hope this resource helps you to bring economics to life for your students.

Case Study	Spec reference
1. Innovation at Ford	1.1 Nature of economics (specialisation, PPFs)
2. Black gold	1.2 How markets work (price determination)
3. The UK dairy market in decline	1.2 How markets work (price mechanism, demand and supply, consumer and producer surplus)
4. Football ticket prices	1.2 How markets work (price determination, price elasticity of demand)
5. Organic food vs Poundland	1.2 How markets work (income elasticity of demand)
6. Online news vs print news	1.2 How markets work (cross elasticity of demand)
7. The UK housing market: pulling up the ladder?	1.1 Nature of economics (normative and positive statements) 1.3 Market failure (externalities)
8. Quasi-public goods	1.3 Market failure (public goods)
9. Should the government tax sugar?	1.4 Government intervention (indirect taxation)
10. Solar panel subsidies	1.4 Government intervention (subsidies)
11. A minimum price for alcohol?	1.4 Government intervention (minimum prices)
12. Reforming the NHS	1.4 Government intervention (government failure)

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Innovation at Ford

This case study requires knowledge of Section 1.1 – nature of economics and business

In the early twentieth century, the automobile manufacturer Ford was widely known for the increase in Ford's profits over time, compared to modern-day equivalents.

Figure 1: net profit (pre-tax)

	Ford (\$million, 1910)		Volkswagen (€billion)
1910	4.2	2010	7
1911	7.4	2011	11.3
1912	13.1	2012	11.5
1913	26.5	2013	11.8
1914	30.4	2014	12.7
1915	36.9	2015	-1.7*

*Third quarter only

Source (Ford 1910): 'Did Henry Ford Pay Efficiency Wages?'

Of course, the figures are not directly comparable but the percentage change in the period 1910–1915 far exceeds that of most modern-day companies. As the automobile market was booming, there are two main explanations for Ford's success: the production process and so-called 'efficiency wages'.

Improvements in technology meant that Ford's workers could operate on a specialised pin factory idea, allowing for greater productivity and cost reduction (see Smith's pin factory idea). Ford's competitors were also able to benefit from the reason that Ford was able to excel above its competitors was through productivity.

Standard economic theory would suggest that a firm would only increase its wages if it sought to attract higher-skilled workers, but in this case that doesn't seem to hold true. Although increasing the wage (to around twice the market rate) did increase Ford's costs, this was more than offset by improvements in productivity. Between 1913 and 1914, production increased by 15%, despite reducing the number of workers by 14% and cutting the number of working hours in a day (although part of this may be due to improvements in technology / production methods).



One of the big problems Ford had in the year prior to the wage change was absenteeism (around 10%), perhaps because working in a car factory was so unpleasant. After the wage change, absentee rates fell to only 2.5%, and the number of discharges (firing of workers) were so keen to keep their jobs.

Ford saved a lot of money at the time by dramatically reducing their turnover. However, as can partially be explained by an economic downturn at the time, there does

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that paying a higher wage incentivised workers to stay with Ford and increase productivity. This was particularly important for Ford, since on an assembly line the efficiency depends on the speed of every part of the line.

Some have argued that Ford's experience provides evidence for raising the minimum wage by introducing a living wage. This is not necessarily the case, however, since Ford's policy was that their wages were high *relative to their competitors*. If everyone had a minimum wage, the incentive effects for workers probably wouldn't be as strong.

Use the data

- Calculate the percentage change in profit for Ford between 1912 and 1913.
 - Calculate the percentage change in profit for Volkswagen between 2014 and 2015.
- Why did Volkswagen's profit fall so much in 2015? (If you don't know – look it up.)
- Name one disadvantage of specialisation in the automobile industry, and explain it.

Test your knowledge...

- Show the effect of specialisation in the automobile industry using a PPF with number of cars on the x-axis (horizontal axis) and number of other goods on the y-axis (vertical axis). Assume that other industries remains the same.
- Show the effect of high worker productivity on a demand and supply diagram.

Extended-response question

- Assess the pros and cons of specialisation in the teaching profession (e.g. with a range of subjects rather than a range of subjects).

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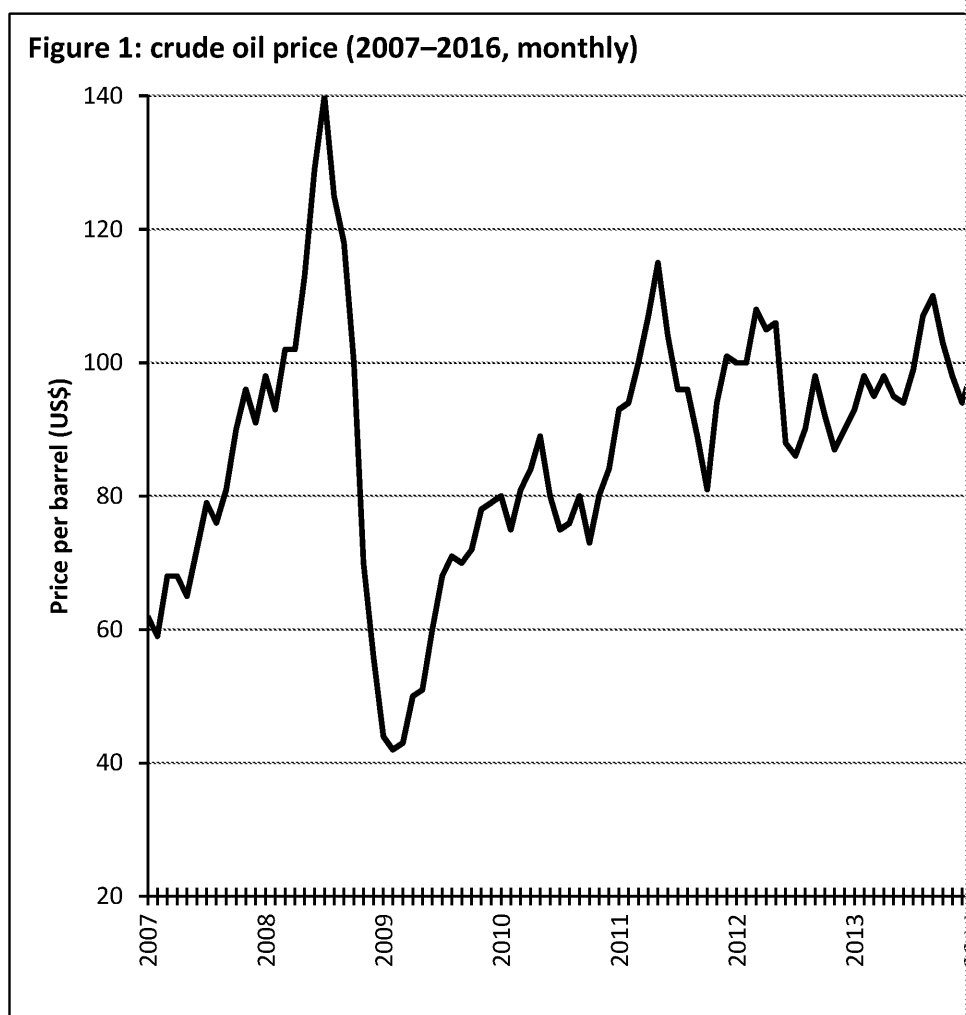
Black gold

This case study requires knowledge of Section 1.2 – how markets work

Investing in commodities is a big business. Speculators vie to predict price movements in all sorts of commodities such as gold, meat and coffee – but prices are often very difficult to predict. The price of the most valuable commodity of them all, oil, is notoriously unpredictable.

Swings in crude oil prices not only decide the fate of investors and oil companies, they can also have a huge impact on whole economies, particularly those that rely on oil production as a main source of income. Figure 1 shows the world price of oil since 2007:

Figure 1: crude oil price (2007–2016, monthly)



The volatility in the oil price can be explained through simple demand and supply. Following the 2008 global financial crisis, a fall in demand was the key reason for the price drop. Since then, global demand is still somewhat weak, and there is a growing interest in alternative energy sources. The main explanation for the more recent price drop (2015 onwards) is that supply has increased significantly.

Advances in technology have allowed production of shale oil in the US to increase. The relaxing of economic sanctions in Iran has also enabled them to increase production. In addition to this, oil production by OPEC members (Organization of the Petroleum Exporting Countries) such as Saudi Arabia has remained high. Some argue that since OPEC countries have low production costs, they are trying to force their competitors out of the market by deliberately increasing supply.

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If this is the case, they may well be succeeding. British Petroleum (BP) is one of its total employees), and many other large oil companies are cancelling Russian and Venezuelan economies, which are heavily dependent on oil exports.

Obtaining estimates of the price and elasticities of demand and supply for oil is generally accepted that the demand for oil is price inelastic (particularly in the short run). Supply has become less price inelastic as the number of different methods of production has expanded.

Use the data

1. Using Figure 1, estimate the percentage decrease in the oil price from the start of 2014 to the start of 2016.
2. Why is the price elasticity of demand for oil expected to be lower in the short run than in the long run?

Test your knowledge...

1. Explain how a growing interest in the renewable energy sector would be expected to affect the demand for oil.
2. Based on the information in the article, use demand and supply diagrams to show the effect on the oil market:
 - (a) During the financial crisis
 - (b) After 2015

Extended-response question

1. Suppose that a technological breakthrough made a particular type of renewable energy source more cost-effective. Using a diagram, evaluate the effect of this development on the market for oil.

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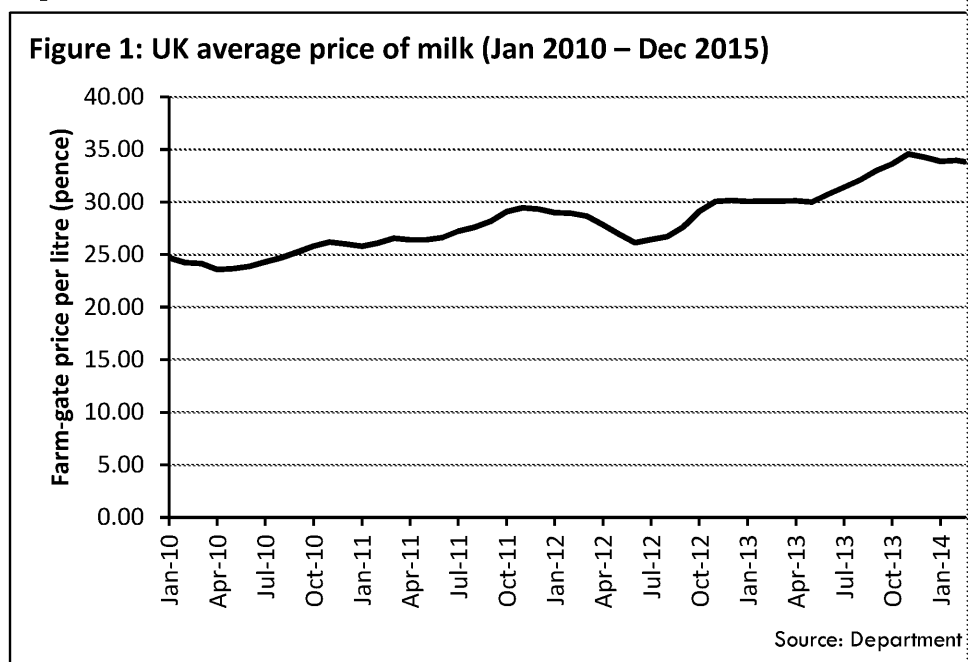
The UK dairy market in decline

This case study requires knowledge of Section 1.2 – how markets work

Dairy farmers in the UK had a very rough year in 2015. In January, First Milk, a large dairy processor that farmers sell their milk to, ran into financial problems, resulting in a two-week delay in payments to farmers. Following this, throughout the year various factors have combined to reduce the price of milk. This has meant that many farmers now operate at or below their costs of production.



Figure 1 shows UK milk prices over time. This is the 'farm-gate price' – the price at which farmers sell milk to dairies (who then process the milk and pass it on to retailers). As such, the farm-gate price is typically lower than the price at which milk is sold in a supermarket:



One of the reasons why prices are so low is that there is an excess supply of milk, partly due to good weather conditions (farmers were affected by few droughts and there was a bumper grass harvest).

The fall in supply has been coupled with a fall in global demand: the slow economic recovery has reduced their demand for all sorts of goods including milk, and economic sanctions have prevented them from importing milk from UK producers. Domestic demand for milk in the UK has fallen by 18% over the last 20 years.

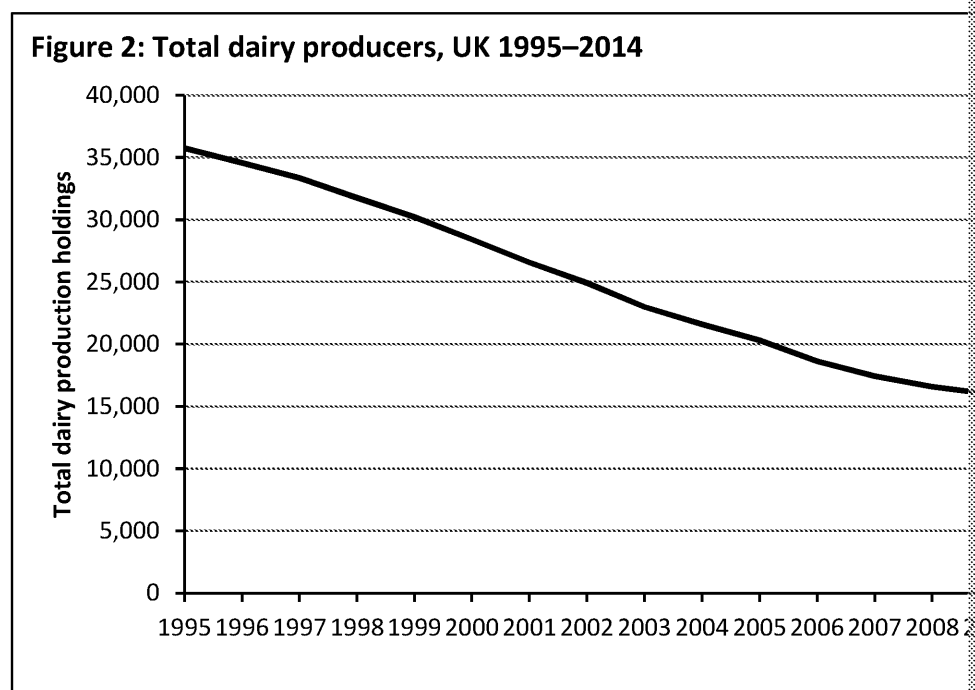
Other factors hurting UK producers have been price wars in UK supermarkets. Some supermarkets price milk very cheaply to attract people into the shop to buy higher value items (in some cases, milk has been cheaper than water). This has also hurt farmers.

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These factors forced some UK dairy farmers out of the market in 2015. The industry, as Figure 2 shows:



Another reason for the decline in the fortunes of dairy farmers could be changes in consumer preferences. Between 2013 and 2015, the market value of nut- and seed-based milk alternatives increased by 177%. Consumers are willing to pay more for these alternatives.

Some commentators argue that milk has been homogenised and treated so that consumers are no longer aware that there can be a great variety of different tastes between natural and processed milk (the bacteria in milk by heat treatment) started as a wartime necessity for protection against disease. Nowadays milk still tends to be produced as cheaply as possible with little regard for quality. Perhaps this matters less in the UK where milk is usually added to tea, coffee, etc., but the lack of interest in the product may be another reason why the industry is in decline.

Use the data

1. State the three functions of the price mechanism.
2. Look at Figure 1. Estimate the percentage change in price between the peak in 2015.
3. 'If the number of dairy producers in the UK is falling, the price of milk will rise.'

Test your knowledge...

1. (a) Define the term 'consumer surplus'.
(b) Define the term 'producer surplus'.
(c) Draw a demand and supply diagram for the milk market, labelling producer surplus.
2. Show the effect of a fall in demand and an increase in supply on the market for milk.

Extended-response question

1. Evaluate whether the rise of milk alternatives, which sell for much higher prices, is good or bad for milk producers.

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Football ticket prices

This case study requires knowledge of Section 1.2 – how markets work

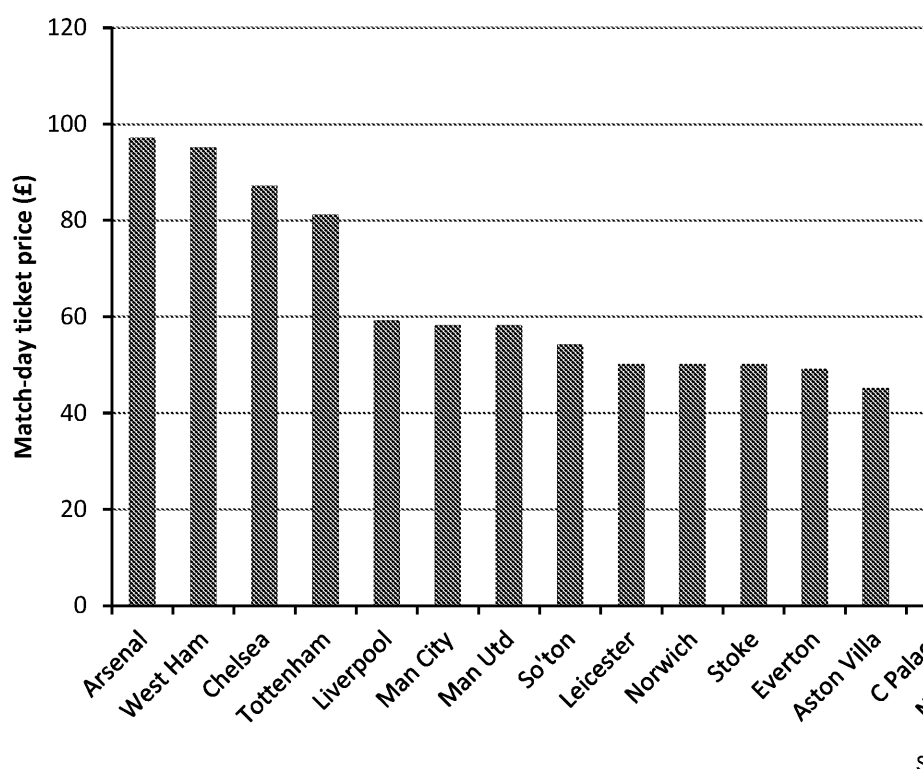
Football is the world's most popular sport. Consequently, there is an awful lot of money involved.

When it comes to pricing match-day tickets, football clubs have something of a dilemma. On the one hand, seats for Premier League matches are rarely left empty, so increasing the prices should be a guaranteed way to increase revenues (and revenue is very important for staying competitive, particularly for attracting and retaining top players and managers). However, raising prices too much for football can be a fundamental part of their lives. For many fans, watching a match is a substitute for attending the game in person.



Liverpool experienced this first hand in February 2016, when they increased the price of their most expensive tickets from £50 to £77. Over 10,000 Liverpool fans walked out in protest – so Liverpool's owners reversed the decision.

Figure 1: Match-day ticket prices (Premier League clubs)



The proportion of a club's revenue that comes from ticket sales varies: Liverpool's is around 10% (increasing the price of tickets seems like a guaranteed way of increasing revenue, but it also means more seats left unsold for Premier League clubs). Although this figure is often lower for other clubs (Manchester City's is around 7%), it still represents a valuable source of finance.

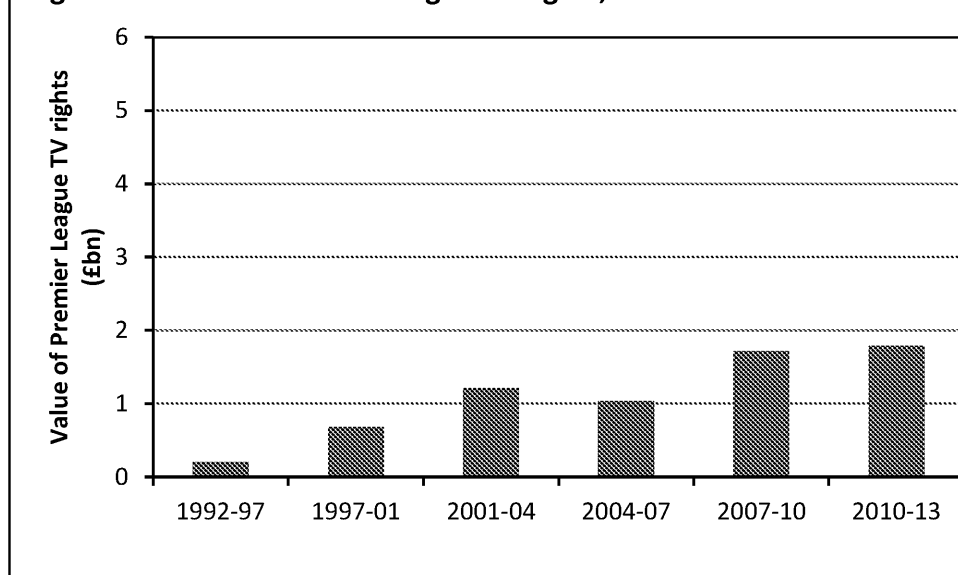
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However, fans have argued that since revenues from TV deals are increasing, Figure 2 shows that the value of televised football has increased significantly.

Figure 2: Value of Premier League TV rights, 1992–2019



For 2016–19, Sky and BT both increased their bids for the TV rights significantly in the years to claim the market.

Given this windfall for clubs, some argue that it is only fair that this translates into lower ticket prices. But from a purely economic motive, clubs might be tempted to stick with high ticket prices. Demand for tickets will stay strong, and that it could give them a competitive edge.

Use the data

- According to standard economic theory, are Premier League tickets priced at the equilibrium market price?
 - In this case, which of these are true?
 - There is an excess of supply over demand
 - There is an excess of demand over supply
- Why do you think ticket prices are so much higher for Arsenal, West Ham, Chelsea and other clubs? (Hint: you need to know where these clubs are located to answer this question.)
- In economics we usually assume that firms aim to maximise profits. Do you think football clubs do?

Test your knowledge...

- Suppose a football club increased its ticket prices by 20%, and demand for tickets fell by 10%.
 - Calculate the price elasticity of demand.
 - What does this value suggest about the elasticity of demand for football tickets?
- Draw the market for football tickets using a demand and supply diagram. Assume that supply is perfectly inelastic and demand is relatively inelastic.
 - Using your diagram from part (a), show the effect of an expansion in the market for tickets.

Extended-response question

- Discuss the argument that clubs should increase prices to the market equilibrium level.

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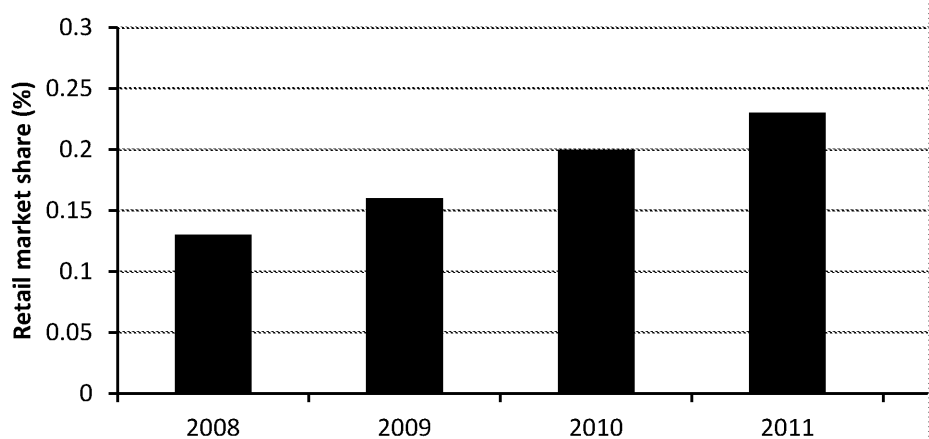


Organic food vs Poundland

This case study requires knowledge of Section 1.2 – how markets work. The focus

The global financial crisis of 2008 caused a recession in the UK. People's income fell, leading to a drop in consumer spending. This created winners and losers in the business world. One of the winners was the discount retail market, as people adjusted their shopping habits to focus on value. Poundland is a prime example: between 2008 and 2013, its total sales jumped from £1.1bn to £3.6bn. Figure 1 shows Poundland's changing share of the total retail market over this period. The total retail market was worth £360bn):

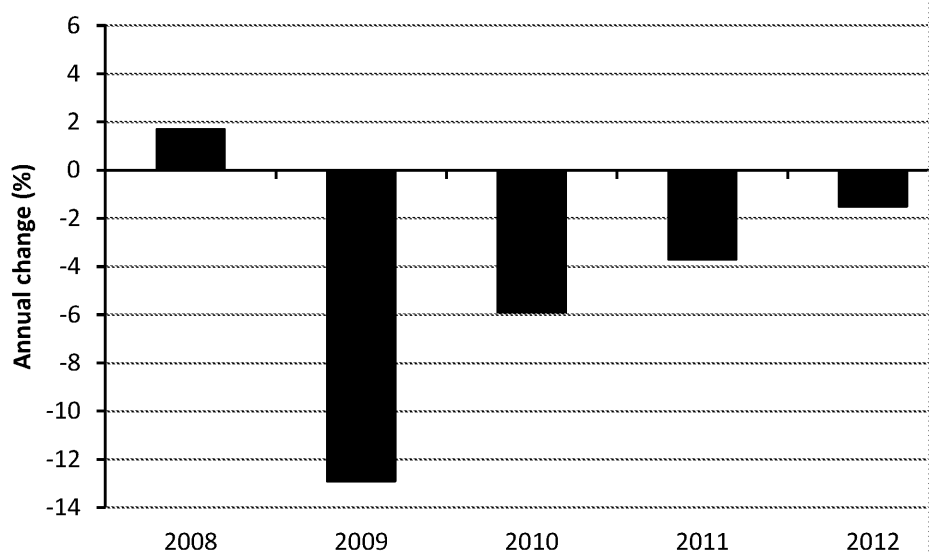
Figure 1: Poundland's market share (2008–2013)



Interestingly, the performance of Poundland (and other discounters such as Aldi and Lidl) has stayed strong long after the economic recovery. This could indicate a shift in consumer behavior, perhaps a feeling among households that incomes haven't recovered sufficiently.

In contrast to the discount retailers, purveyors of pricier products have had a harder time. Figure 2 shows the changes in total sales of organic produce in the UK between 2008 and 2012. Total sales in 2014 were £1.86bn, on par with 2009 levels):

Figure 2: UK organic market, total sales



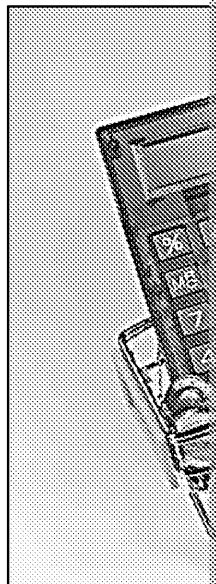
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The UK organic market was hit hard by the recession, recording four consecutive years of negative sales growth. That trend does seem to be reversing now though, and many analysts are confident of strong growth in the coming years.

Notably, the organic markets in some other countries were not as badly affected: Germany and France saw consistent growth in the organic market, despite the global recession. This is partly due to different consumer tastes (in France, almost 9 out of 10 people consume some organic products), but also due to larger- scale production in these countries. In the UK, rising demand for organic products has yet to be met with increased domestic supply.



Use the data

1. Using the information in the article, calculate Poundland's share of the retail market.
2. What would you expect the income elasticity of demand for Poundland's products to be?
3. Why might consumers be happy to continue shopping at discount retailers during a recession?

Test your knowledge...

1. (a) Suppose consumer incomes fell by 5% in 2009. Using Figure 2, calculate the income elasticity of demand for organic produce.
(b) Explain whether your answer to part (a) is also true for France.

Extended-response question

1. Assess the likely impact of a significant rise in consumer income on the market for organic goods.

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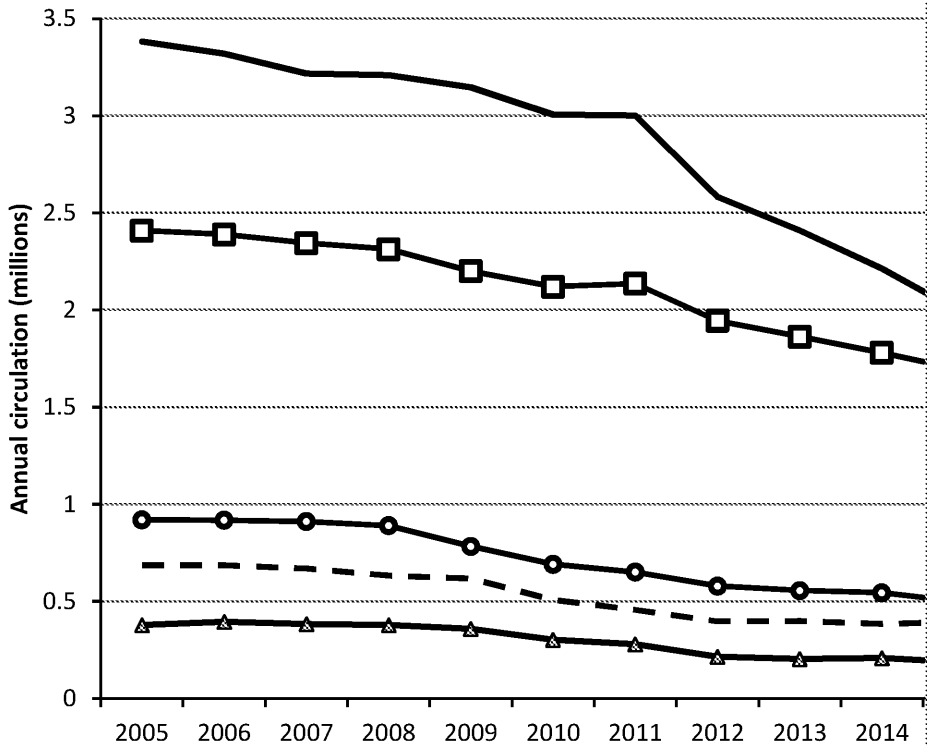


Online news vs print news

This case study requires knowledge of Section 1.2 – how markets work. The focus

The news market has been reshaped dramatically in the past few decades by new news services. As online news has grown, newspaper circulation in the UK has fallen. Figure 1:

Figure 1: UK newspaper circulation 2005–2015 (selected papers)



All of these papers offer online news as well as print news. Some of them require a subscription to access the rest (*Daily Telegraph*, *The Times*). This was successfully done by *The New York Times* in the US. Others post their content for free, using advertising revenues to fund it (*Daily Mail*, *The Guardian*, *The Sun*). The former, as Andrew Miller, explained in 2013 that they would not be implementing a digital-only service until they had built up a digital audience first.

So if free digital news is so abundant (particularly with the BBC, which is government funded), why has paper circulation not evaporated completely? There are some arguments to suggest that online news and print newspapers are not perfect substitutes.

Firstly, some content is quite exclusive or technical (e.g. *Financial Times*, *The Economist*) and cannot be easily accessed for free – so it would make sense that the print versions (or the paid online services) of these types of publications have been protected. Also, some consumers do not have access to the Internet and cannot swap their paper newspapers for online services.

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There is also some evidence that readers who use actual newspapers retain more information than those who use online news. For one thing, in paper newspapers it is easier to find important news stories (i.e. more important news stories come nearer the front of the paper). In online news, since most news items are stand-alone, it is harder to determine their relative importance. Also, online news services are more likely to break up their articles with advertisements, which is another page – both of these could weaken the reader's concentration.

Ultimately, some readers just prefer reading something on paper than reading online. Just as some people who prefer hard copies of books to digital versions. As such, the print news industry is likely to remain alive and well for the foreseeable future.

Use the data

1. State two goods that you think are stronger substitutes than online news and print newspapers.
2. Look at Figure 1. Which type of newspaper has declined more in recent years, print newspapers or broadsheets?
3. Using Figure 1, estimate the decrease in the total circulation of the five newspapers between 2010 and 2015.
4. Based on the article, why might some publications be better off using a paywall?

Test your knowledge...

1. (a) State the formula for cross elasticity of demand.
(b) Suppose the cross elasticity of demand between online news and print newspapers increased by 6%, calculate the change in demand for print newspapers.
2. Using the article, explain two reasons why the online news and print newspaper market is not perfectly competitive.

Extended-response question

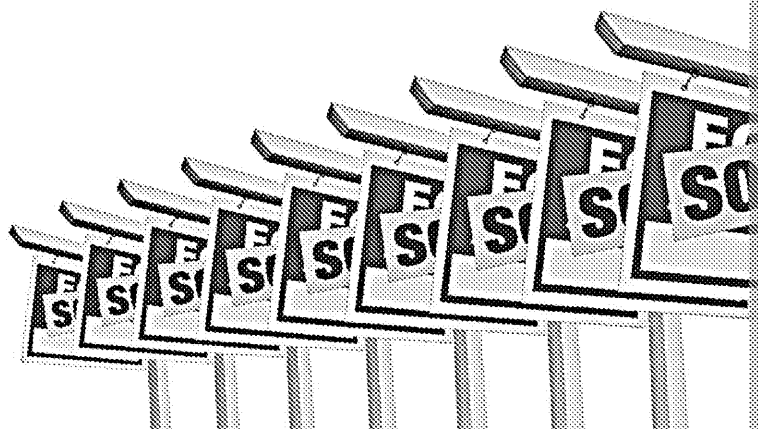
1. Assess the extent to which a fall in the price of tablets/e-readers would affect the demand for online news.

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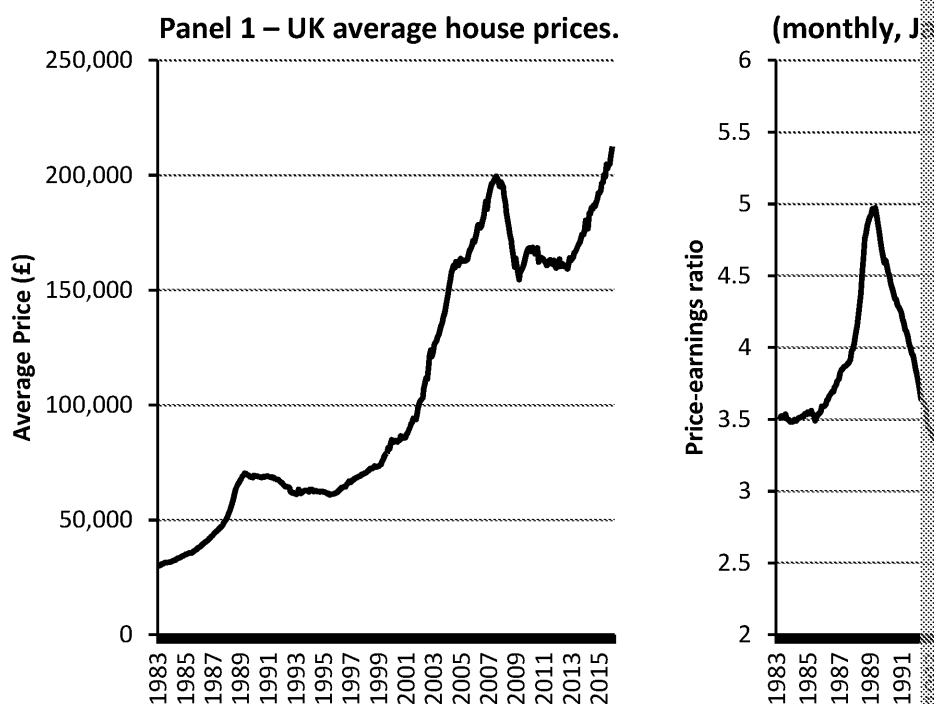
The UK housing market: pulling up t

This case study requires knowledge of Section 1.1 – nature of economics and



Why are house prices in the UK so high? In popular areas such as London, the price range of those on average salaries. Ceteris paribus (other things being equal) is rising naturally due to changes in the population: via ageing and immigration of people living alone. However, the main cause of the soaring prices is a shortage of new housing. In a speech in November 2015, George Osborne (the Chancellor) described housing as one of 'the great social failures of our age'.

Figure 1:



Note: price earnings ratio = price ÷ earnings, where earnings = average earnings for men in full-time employment.

One problem is the lack of skilled workers in the housing industry. Although the government has contributed strongly to the construction sector, there is an acute shortage of skilled workers, such as plasterers, bricklayers and electricians. This has been blamed on a culture where these and vocational training in general are seen as second-rate, even though

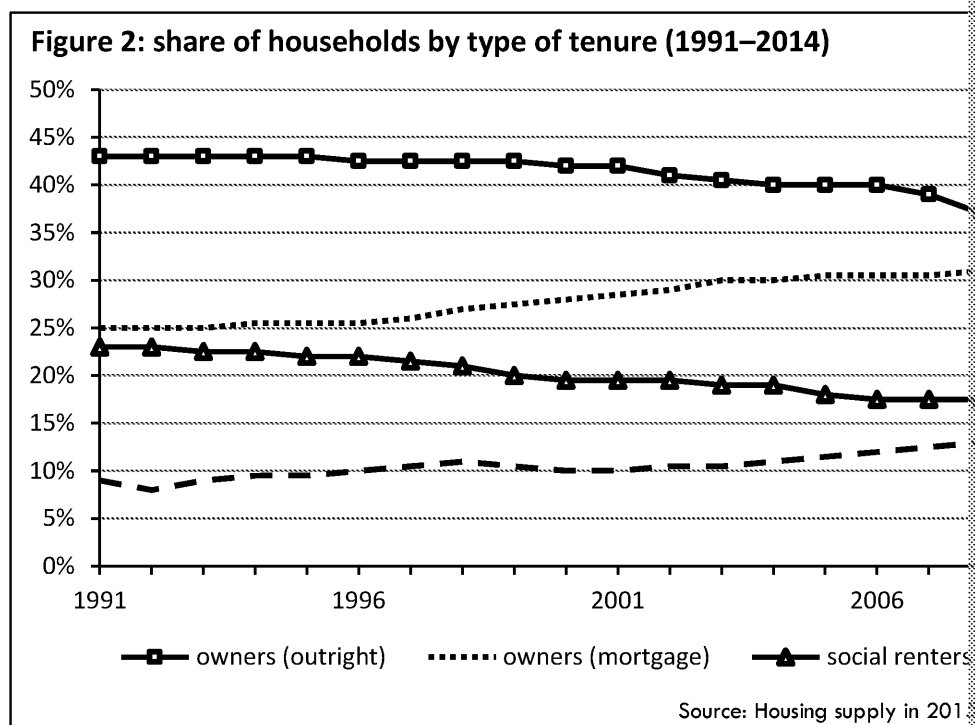
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rewarding and valuable for the economy. A second barrier to expanding the 'belt' system that protects the countryside from urbanisation: this is highly

The excess of demand over supply has made it much harder for young people to get on the housing ladder. More young people in their 20s are staying with their parents or renting. This has led to a change in the composition of housing tenures over time:



As social rent housing and outright home ownership have declined, private home ownership (via a mortgage) has increased.

Government policy on this issue has included the 'help to buy' scheme, which provides financial assistance from the government, in the form of a loan. The government has also relaxed planning rules, allowing 200,000 homes for new buyers to be built by 2020 (with capped prices to make them more affordable). Since homes are by far the most expensive thing most people will make in the UK, making these policies work is of paramount importance.

Use the data

- Look at Figure 2. By how much did private renting change between 2001 and 2014?
- The two panels in Figure 1 show that both the average price of a home and the average earnings have increased in the last few years. What can you infer about average earnings?

Test your knowledge...

- Is George Osborne's statement in the first paragraph positive or normative?
- Explain what is meant by a negative externality.
 - How could negative externalities arise from the building of new houses?
 - Show this using a diagram.

Extended-response question

- Discuss whether the government's policy to relax planning rules and build new homes is a good idea for the UK.

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Quasi-public goods

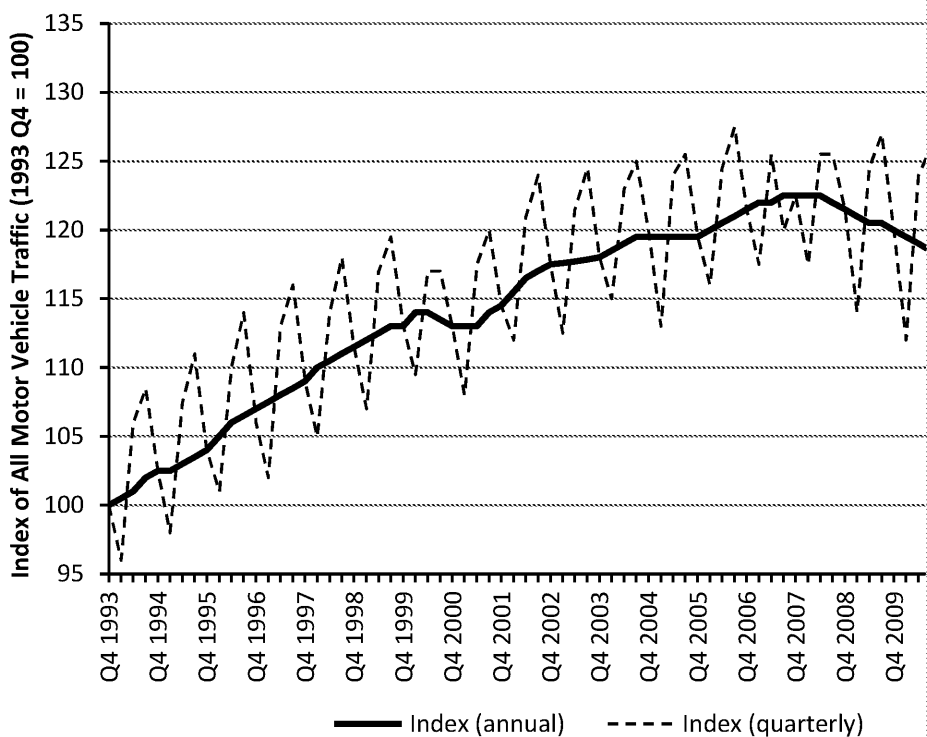
This case study requires knowledge of Section 1.3.3 – public goods
One of the graphs also requires interpretation of index numbers

Public goods are usually provided by the government rather than the free market: a typical example is national defence. Some goods are not quite as pure-public in the same way as national defence: these are known as 'quasi-public goods'. In the UK, some quasi-public goods provided by the government have been under increasing strain over the past few years.



Roads

Figure 1: Annual and quarterly road traffic index (Great Britain)



Note: traffic is measured by vehicle miles travelled. Q1 = Jan, Feb, March; Q2 = Apr, May, Jun; Q3 = Jul, Aug, Sep; Q4 = Oct, Nov, Dec.

Road traffic was at its highest level ever in 2015, due to a growing economy. Van (or light commercial vehicle) traffic in particular rose significantly, peaking in 2015 due to online shopping and delivery.

Excessive congestion can be very damaging for the economy, in terms of business and time wasted. It has been casually observed that traffic in busy cities has been worsening, and the statistics in Figure 1 would seem to support this.

It would be costly for the government to improve the road system: perhaps it could be improved when technology for driverless cars advances.

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Police force

Figure 2: changes in total government spending on the police

	Average annual percentage change		
	1995–96 to 2000–01	2000–01 to 2005–06	2005–06 to 2010–11
Total spending	1.4%	4.1%	1.4%

Figures are in real terms (adjusted for inflation).

As part of the coalition government's austerity policies to balance the budget, there was a total of 14% between 2010–11 and 2014–15. The formula for allocating government spending across different areas is very complex, so some police forces were cut more severely than others.

There were plans to cut the police budget further from 2015–2020, but the government made an unexpected U-turn in November 2015 (during the Autumn Statement). Following the terrorist attacks in Paris and a rise in domestic cyber-crime, the Chancellor decided to reverse the cuts. This may also have been influenced by the strong economic recovery at the time.

Hopefully this change in policy will allow the police service to continue to provide a high level of service to the public.

Use the data

- Look at Figure 1:
 - Explain why the quarterly road traffic figures follow a 'saw-tooth' pattern.
 - Explain why annual road traffic might have fallen after around Q4 2007.
 - If total vehicle miles was 300 billion in Q4 1993, roughly how many miles were driven in Q4 2007?

Test your knowledge...

- Explain the two main characteristics of public goods.
- Are roads an example of a pure-public good? Explain why or why not.
 - Is policing an example of a pure-public good? Explain why or why not.

Extended-response question

- Examine why public goods such as roads and the police force are unlikely to be provided by the market.

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Should the government tax sugar?

This case study requires knowledge of Section 1.4 – government intervention.

The government taxes certain products because they are deemed damaging. Examples in the UK include tobacco and alcohol, which have well-known health effects when consumed in excess.

Figure 1: Current UK tax rates on tobacco and alcohol (not including VAT)

Tobacco		
Cigarettes (pack of 20)	16.5% of retail price plus £3.79	Beer (2.8%–7.5% ABV)
Hand-rolling tobacco	£4.64 on a 25g packet	Wine (still 5.5%–15% ABV)
		Spirits

Source: <https://www.gov.uk/government/statistics/tax-rates-on-tobacco-and-alcohol>

In 2014–2015, the government raised £10.5 billion from alcohol and £9.6 billion from tobacco – together these account for around 4% of total government tax revenue (almost as much as taxes on fuel). Taxes on these sorts of products serve a dual purpose: firstly to reduce consumption, and secondly to generate tax revenue.

The government is reviewing whether to add sugar to the list of goods it taxes. The argument is that excessive consumption of sugar leads to greater strain on the NHS, particularly through conditions such as diabetes (which is estimated to eat up a whopping 10% of total NHS spending). With an ageing population, NHS spending is only one action to reduce sugar-related illnesses could be important. Providing information about eating too much sugar may not be enough – people may need a monetary incentive to change their habits.

However, this would almost certainly be an unpopular measure since – rightly or wrongly – sugar is such a large part of many people's diets. The government would think twice about introducing a sugar tax, as they risk being seen as running a 'nanny state' and potentially a possible compromise would be to tighten the requirements on the amount of sugar sugary drinks can contain.

The real question economists have to answer is how effective different measures are at reducing sugar consumption.



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Use the data

1. Suppose the price of a pack of 20 cigarettes is £8. Calculate the proportion (assuming no VAT).
2. Are there any dangers of having high rates of tax on cigarettes?
3. How much tax would you pay for half a litre of 4% ABV strength beer?

Test your knowledge...

1. What kind of market failure do goods such as tobacco and alcohol create?
2. Suppose that a higher tax rate increases the price of alcohol by 5%, and demand is elastic.
 - (a) Calculate the price elasticity of demand.
 - (b) Is this elastic or inelastic?

Extended-response question

1. Discuss the effectiveness of introducing a tax to reduce consumption of sugary drinks.

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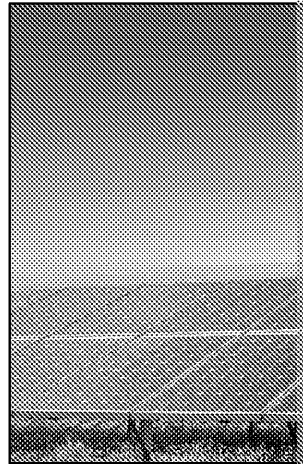


Solar panel subsidies

This case study requires knowledge of Section 1.4 – government intervention

One of the ways a government can intervene in markets is through subsidies. The idea is usually to help nurture an industry of strategic importance, or to ensure the supply of certain goods and services.

Recently there has been controversy over cuts to solar panel subsidies in the UK. In December 2015, the government announced that it would cut the FIT (feed-in tariff) scheme by almost two-thirds, and introduce a cap of £100m a year. The FIT scheme is an unusual form of subsidy: it pays households (via energy suppliers) for electricity generated by solar panels. The rate was originally 5.49p per kilowatt hour (kWh). Following the cut, this has fallen to 4.39p per kWh: it was intended to be even higher at 84%, but it was changed following criticism. People who installed panels before the cut will still benefit from the higher rates.



The government's argument was that subsidising the scheme was costing too much (estimated at £7 per household each year), since improvements in technology had led to the cost of installing a solar panel system to drop significantly over the past few years (from £5,000–8,000). The government acknowledges that cuts to the system are likely to reduce the number of installations in the industry: between 9,700 and 18,700.

The announcement has been met with fierce criticism by environmental groups (the announcement coincided with the Climate Summit in Paris) and others. They argue that solar panels are now cheap enough to operate without support, and point out that fossil fuel industries receive much larger subsidies.

In the UK, subsidies for fossil fuel producers (often in the form of tax breaks) have averaged \$9bn (roughly £6bn) in 2013 and 2014 according to the Overseas Development Institute. The bulk of these subsidies come in the form of tax relief for the costs of decommissioning oil rigs. Subsidies are set to increase, the idea being that it will encourage more production for consumers.

There are concerns about the UK's ability to meet its environmental targets. The UK's aviation industry also benefits from an estimated £10bn a year in fuel subsidies, with aviation being widely regarded as the most polluting form of transport.

Fossil fuel subsidies are considered particularly harmful in developing countries, where consumers see little or no benefit (since so few own cars or home appliances). China and Indonesia are scaling back these types of subsidies.

Figure 1: Subsidies for fossil fuel industries, G7 countries

Country	Canada	France	Germany
National Subsidies (annual average, \$bn)	2.7	0.125	2.8

Note: recent changes to UK policy (increases in subsidies) are not captured here.

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Use the data

1. Assuming that there are 25 million households in the UK, calculate the following in the article:
 - (a) Find out the estimated total cost of the subsidy per year (before the cut)
 - (b) How much more is this than the new cap on spending?
2. Look at Figure 1. How do the UK's fossil fuel subsidies compare with the other countries?
3. Using the information in the article, what would be the value of the solar panel subsidy if the original 84% planned cut had gone through?

Test your knowledge...

1. Explain two disadvantages of using subsidies.
2. Name one way other than subsidies in which the government could encourage renewable energy.

Extended-response question

1. Evaluate the case for increasing subsidies on solar panels.

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A minimum price for alcohol

This case study requires knowledge of Section 1.4 – government intervention.

Consumption of alcohol has negative externalities (it is a demerit good). The marginal benefit of alcohol consumption is less than the current level of alcohol consumption.

Alcohol is already taxed (see Figure 1 in Sugar case study), but the Scottish Government want to go further and introduce a minimum price for alcohol to curb excessive consumption.

In 2012, the Scottish Parliament passed legislation that would impose a minimum price on alcohol. This would mean, for example, that a two-unit pint of cider or beer would have to cost at least £1 and a litre bottle of vodka at 40% ABV would have to cost at least £1.50 since proposed a 50p tax rates as well. The idea is that this would reduce consumption by the heaviest drinkers (who are likely to choose very cheap alcohol).

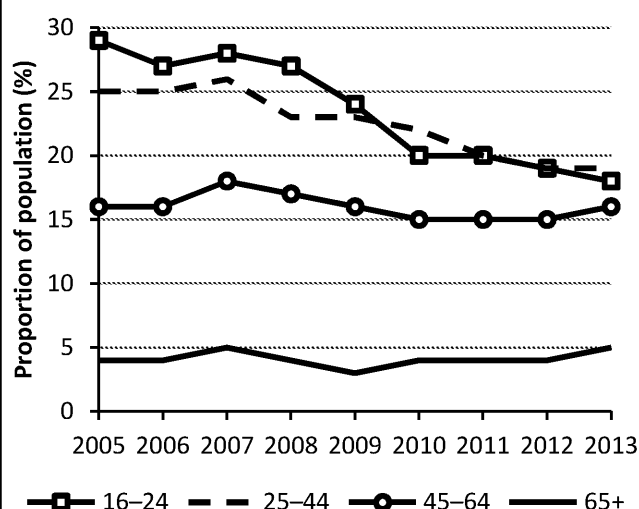
In England, David Cameron considered the idea of a 40p minimum price, but on legal grounds that there wasn't enough evidence that it would reduce consumption. The policy in Scotland have gone further: the Scotch Whisky Association (SWA) has taken legal grounds, arguing that it would restrict competition between producers and consumers.

After some deliberation, the European Court of Justice (ECJ) argued that there were other measures that could achieve the same result without restricting trade. The matter is not yet completely settled, it has returned to the Scottish courts to be successfully argued that the policy is the best way to target heavy drinkers (possibly in conjunction with higher existing taxes).

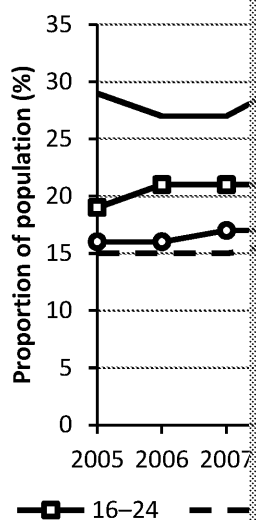
The statistics in Figure 1 suggest that people in the UK are gradually moderating their drinking. The average number of people who drink no alcohol at all (teetotalers) increased between 2005 and 2013, while the average number of binge drinkers fell from 2005 to 2013.

Figure 1:

Panel 1 - UK binge drinking rates by age group (2005–2013)



Panel 2 - UK teetotalers (2005–2013)



Participants were asked about their drinking habits in the past week. Binge drinking is counted as five or six units (for women) on a single day. Men tend to binge drink more than women (18% of men vs 15% of women).

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Nevertheless, since alcohol contributes so much to health problems in the UK (in Scotland the cost has been estimated at around £900 per adult), there may well still be a case for introducing a minimum price. The economic arguments around this issue are important. If economists could accurately predict how different government policies on alcohol would affect consumer behaviour, it would be much clearer whether the policies would be good ideas or not.

Use the data

1. The passage states that with a minimum price of 50p per unit, a one-litre bottle would cost at least £20. With a minimum price of 40p per unit, what would a bottle of 44% strength whisky cost?
2. In your opinion, does Figure 1 suggest that we should be concerned about health?
3. Look at Figure 2. Which age group recorded the greatest increase in teetotalism?

Test your knowledge...

1. Show the effect of imposing a minimum price on alcohol using a demand and supply diagram.

Extended-response question

1. Evaluate the effectiveness of imposing a minimum price on alcohol to reduce alcohol-related health problems.

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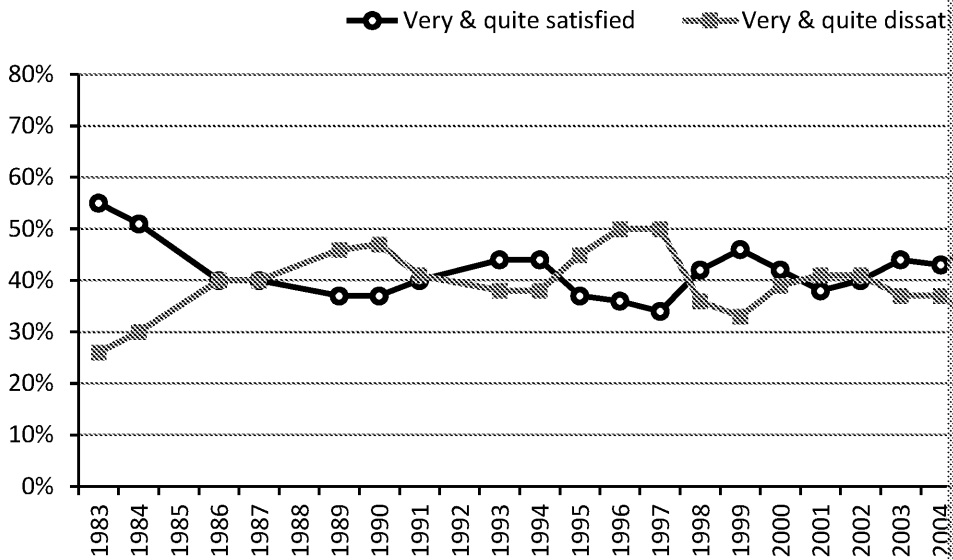


Reforming the NHS

This case study requires knowledge of Section 1.4 – government intervention. The

In the UK, if any of our institutions is a sacred cow, it is the NHS. The vast principle that healthcare should be free at the point of use.

Figure 1: satisfaction with the NHS 1983–2014

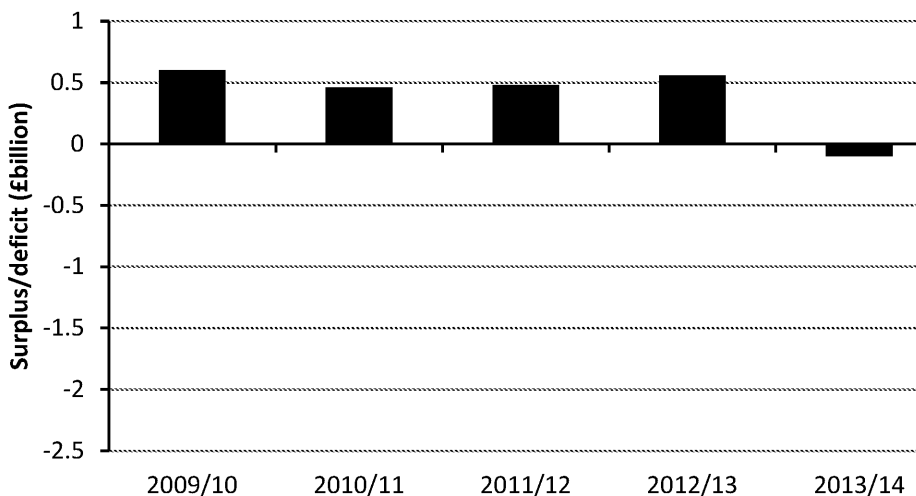


(Note: numbers don't add up to 100% because the remainder are undecided. Question not asked in 1983. Question asked: 'All in all, how satisfied or dissatisfied would you say you are with the way in which the NHS is run nowadays?')

Despite this, there are concerns about the sustainability of the NHS in its current form. Each year, government spending each year goes towards the NHS, and with the ageing population and rising rates of obesity in the UK (already the highest in Western Europe), the NHS is likely to rise unless economic growth increases just as rapidly or government policy changes.

Figure 2 shows how well (or poorly) the NHS has met its budget requirements. The figure for 2015/16 is somewhat alarming (especially since it is a relative deficit of £0.93bn was recorded for April–June 2015 alone).

Figure 2: NHS trusts end-of-year financial results



*Predicted

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This could be partially explained by a slowdown in government spending on the NHS (which has risen in real terms every year since 2011, but only very slightly), as part of the more general cuts to public spending. Another explanation is the difficulty of recruiting staff, meaning that more had to be spent on agency workers to plug the gap. However, many commentators are beginning to think that the underlying model is unsustainable.



This deterioration in the NHS's finances has coincided with the ongoing row about junior doctors' contracts. If an agreement can't be reached, the NHS may struggle even more to maintain sufficient staff levels and keep up regular services.

So what potential reforms could be introduced to combat these problems, and what are the obvious reforms (e.g. clearing out superfluous layers of management) have already been implemented?

One option could be to introduce a small charge for visits to the GP. This would generate revenue and reduce missed appointments (the average person has about five GP visits per year). Another possibility could be to cut down the care services for people with chronic problems are deemed to be their own fault, e.g. smokers. This would save money and avoid moral objections to this course of action. Another idea is to integrate primary care services with care services for the elderly or disabled, which are currently separate. Streamlining the interactions between these two services could lead to big savings.

Alternatively, the government could simply raise taxes. If the public wishes to maintain the current standards of service, this may be inevitable, given the increasing costs of healthcare.

Use the data

- Suppose total government spending in 2015/16 was £750 billion. Using the data in Figure 1 and Figure 2, calculate the size of the NHS's deficit as a percentage of its total government spending.
- The article states that the NHS recorded a deficit of £0.93bn in April–June 2016. Is this likely to be higher or lower than this for Jan–March 2016?
 - Given this, does the prediction of a £2.2bn deficit for 2015/16 seem like an overestimate or underestimate?

Test your knowledge...

- Using Figure 1, describe the trends in NHS satisfaction between 2000 and 2016.
- Define the term 'government failure'.

Extended-response question

- Discuss the effectiveness of introducing a £5 charge for visits to the GP, using the data in Figure 1 and Figure 2. Consider the potential for government failure.

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Answers

Mark scheme: extended-response questions

10 marks

Knowledge (2), application (2) and analysis (2)		
	0	No relevant answer given.
Level 1	1–2	A few concepts may be identified correctly, but inconsistently, and with little or no reasoning behind the causes and effects.
Level 2	3–4	Some knowledge of economic concepts is shown, partially linked to the question, but may focus too much on one side of an argument.
Level 3	5–6	Knowledge of the economic concepts is very accurate. Links to the question are made with relevant examples. Analysis is well reasoned and logical, and appropriate for the question.
Evaluation (4)		
	0	No evaluation.
Level 1	1–2	Limited attempt at evaluation – may be only loosely related to the question and poor reasoning.
Level 2	3–4	Accurate, balanced evaluative comments are made, supporting a rounded conclusion directly to the question.

15 marks

Knowledge (3), application (3) and analysis (3)		
	0	No relevant answer given.
Level 1	1–3	A few concepts may be identified correctly, but inconsistently, and with little or no reasoning behind the causes and effects.
Level 2	4–6	Some knowledge of economic concepts is shown, partially linked to the question, but may focus too much on one side of an argument.
Level 3	7–9	Knowledge of the economic concepts is very accurate. Links to the question are made with relevant examples. Analysis is well reasoned and logical, and appropriate for the question.
Evaluation (6)		
	0	No evaluation.
Level 1	1–2	Limited attempt at evaluation – may be only loosely related to the question and poor reasoning.
Level 2	3–4	Clear evidence of evaluative comments, though they may be unfairly weighted, supporting a rounded conclusion. Reasoning / supporting evidence is provided but may be inconsistent.
Level 3	5–6	Accurate, balanced evaluative comments are made, supporting a rounded conclusion directly to the question.

20 marks

Knowledge (4), application (4) and analysis (6)		
	0	No relevant answer given.
Level 1	1–3	A few concepts may be identified correctly, but inconsistently, and with little or no reasoning behind the causes and effects.
Level 2	4–6	Some knowledge of economic concepts is shown, partially linked to the question, but may focus too much on one side of an argument.
Level 3	7–10	Good knowledge of the relevant economic concepts is displayed, linked to the question with relevant evidence to support the main arguments. Analysis is well developed, and appropriate for the question.
Level 4	11–14	Knowledge of the economic concepts is very accurate. Links to the question are made with relevant examples. Analysis is well reasoned and logical, and appropriate for the question.
Evaluation (6)		
	0	No evaluation.
Level 1	1–2	Limited attempt at evaluation – may be only loosely related to the question and poor reasoning.
Level 2	3–4	Clear evidence of evaluative comments, though they may be unfairly weighted, supporting a rounded conclusion. Reasoning / supporting evidence is provided but may be inconsistent.
Level 3	5–6	Accurate, balanced evaluative comments are made, supporting a rounded conclusion directly to the question.

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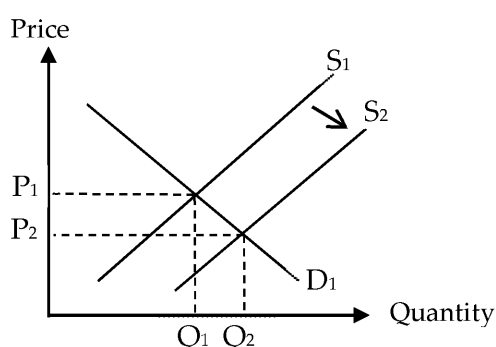
Case Study 1 – Innovation at Ford

Data response questions

- 102.29%
 - 61.4%
- VW's profit fell massively as a result of the emissions tests scandal in September 2015.
- One of the big disadvantages of specialisation is that workers get fatigued / bored of doing the same thing over and over again. Ford tackled this by offering very high wages, encouraging them to work faster. (Note that there are other disadvantages of specialisation, but this is the one that Ford tackled.)

Test your knowledge...

- Your PPF should show a pivot outwards of the PPF as shown. 1 mark for labelling axes correctly, 1 mark for showing initial PPF, 2 marks for showing pivot out (1 mark if you showed a parallel shift out – right idea but not quite correct, as the question assumes production increases only in the automobile industry).



- You should show a shift to the right of the supply curve. 1 mark for showing the shift, 1 mark for labelling, 1 mark for showing the initial equilibrium and one mark for showing the new equilibrium.

Extended-response question

- In this case, one advantage of specialisation is that teachers should become experts in their subject, teaching it all the time. After several years of teaching, a teacher should be familiar with the subject and be better able to tackle them than if they covered a wide range of subjects. However, it could be argued that teachers may lack a certain breadth of knowledge for them to make important links between subjects (after all, different subjects are often linked). Furthermore, it is possible that specialisation would make a teacher tired of their subject, doing the same things year on year. It is also possible that teachers may get overly attached to their subject (e.g. in economics, new developments occur regularly) – but this could also be true of any subject. Another disadvantage of not specialising teachers is that it might be hard to recruit teachers to less-preferred subjects: teaching could be of a lower standard in a teacher's less-preferred subjects.

Case Study 2 – Black gold

Data response questions

- At the start of 2014 the price was just under \$100 a barrel (say \$98), and at the start of 2015 the price was just under \$40 a barrel (around \$37). This is a fall of around 62% $[(98 - 37) \div 98]$. 55–70%
- In the short run, we assume that consumers can't change their habits quickly (e.g. the cost of transport from a car to something else), so they don't respond to changes in oil price (inelastic). In the long run, consumers can change their behaviour more, but oil has few good substitutes.

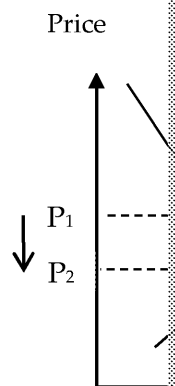
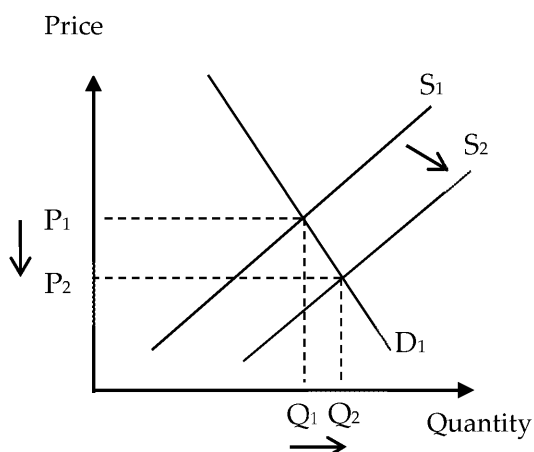
Test your knowledge...

- Renewable energy is a substitute for oil in many cases, so a growing interest in the environment is expected to reduce the demand for oil. (1)

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2. (a) This diagram should show a shift to the left in demand, resulting in a fall in price and quantity. 2 marks for correct labelling, 2 marks for showing shift correctly.



- (b) This diagram should show a shift to the right in supply, resulting in a fall in price. 2 marks for correct labelling, 2 marks for showing shift correctly.

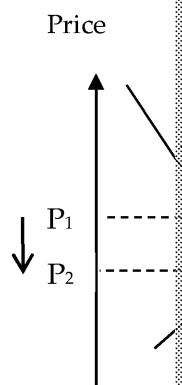
Note that in these diagrams demand is assumed to be inelastic, but this is not necessary.

Extended-response question

1. Renewable energy is an alternative source of energy to oil, so in economics terms we call it a substitute. Since the price of this substitute has fallen, demand for oil will shift to the left, as shown.

The shift in demand reduces the quantity and price of oil in the market. There are some additional points you could make for evaluation marks:

- There might be a time lag between the introduction of this new technology and a change in demand for oil; it takes time to switch between the two types of energy sources.
- Demand for oil might become more price elastic, since there is now another viable substitute good.
- The size of the change in demand depends on how cheap and clean the new technology is.



Case Study 3 – The UK dairy market in decline

Data response questions

- The three functions are: rationing, incentive and signalling.
- At its peak the price of milk was just under 35p per litre (say 34.5p). By Dec 2015, the price had fallen to 24p. The percentage change is: $((34.5 - 24 \div 34.5) * 100 = 30\%$ fall in price (accept 27–33%).
- This statement might be partially true, but the number of dairy producers is not the only factor. Examples of why this statement might not hold include:
 - The number of dairy farmers may be falling but if the remaining farmers increase production, total supply will not rise.
 - If people's demand for milk falls, this could offset the effect of a fall in the number of producers.
 - If supply from foreign milk producers remains high, prices may not increase.

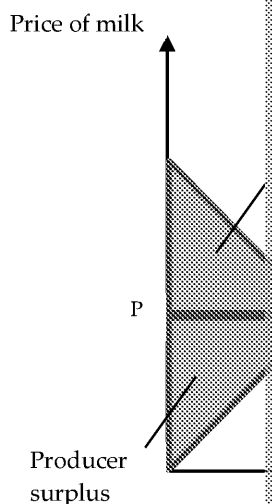
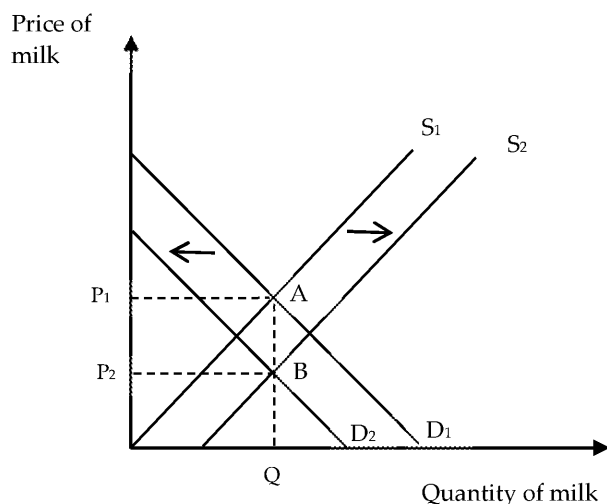
Test your knowledge...

- Consumer surplus is the difference between consumers' total willingness to pay and the price they actually pay for a good. (1)
 - Producer surplus is the difference between the amount producers would have been willing to accept and the price they actually receive. (1)

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- (c) Your diagram should look something like that on the right. (Note: your supply and demand curves do not have to reach the axes, but it makes it clearer to show consumer and producer surplus.)
- 1 mark for labelling axes, 1 mark for demand and supply diagram with equilibrium, 1 mark for correctly identifying consumer surplus, 1 mark for correctly identifying producer surplus.



2. Your diagram shows the left: price and quantity may have changed, as size of the shift answer you must equilibrium from 1 mark for label 1 mark for shift equilibrium.

Extended-response question

- There's no right answer to this. On the one hand, it might be bad for milk producers substitutes even when the price is higher – this could be an indication that our demand the other hand, it could indicate a gap in the market – if dairy farmers can create a your average milk (in terms of taste, quality, etc.) then consumers may be willing to answer should look at both sides of the argument.

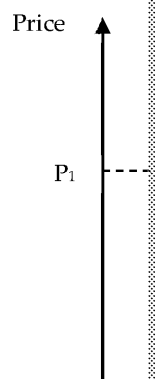
Case Study 4 – Football ticket prices

Data response questions

- The tickets are below the market price.
 - (ii)
- These clubs are based in London, where living costs are much higher than the rest of charge higher ticket prices.
- There is no right answer to this. If clubs were profit maximisers, we would expect to (although arguably they already are high). However, they may anticipate that charge fans, leading to lower profits in the long run, so perhaps keeping prices relatively low. Alternatively, some clubs may genuinely care more about the welfare of their fans than maximising their profit. It probably depends on the club in question.

Test your knowledge...

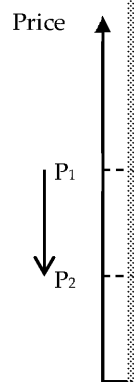
- $PED = \frac{\% \Delta QD}{\% \Delta P} = \frac{-4}{20} = -0.2$.
1 mark for method, 1 mark for answer.
 - Since the value is between 0 and -1, this indicates that demand is inelastic. (1)
- Your diagram should look something like this.
1 mark for labels, 1 mark for inelastic demand curve, 1 mark for perfectly inelastic supply curve, 1 mark for showing the equilibrium price and quantity.



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- (b) Your diagram should show a shift to the right in supply, resulting in a fall in price and an increase in quantity.



Extended-response question

1. The argument from the football clubs' perspective could be that increasing ticket prices will increase revenues, allowing the club to invest for the future (e.g. buy more players, expand youth programme, expand stadium size, etc.). Furthermore, at the market equilibrium level, all of the tickets should still be sold. In this case, then, the market would be economically efficient.

This argument seems sensible when applied to normal markets, but you could argue that it doesn't seem to work in this case: as Liverpool's experience shows. The price rise might lead to a backlash from fans, who might not buy tickets even if they could as a protest (higher ticket prices could be regressive, i.e. unaffordable to lower-income fans). The solidarity of fans is one way in which this differs from a normal market. We assume that each participant acts individually, and that they are not concerned with the welfare of others.

Case Study 5 – Organic food vs Poundland

Data response questions

- Figure 1 shows that Poundland had a 0.28% share of the retail market in 2013, and the value of the retail market in 2013 was £360bn. Therefore, Poundland's market share was £1.008bn (rounded). Answers from 0.95–1.05bn are acceptable.
- Poundland's products are likely to be inferior goods (i.e. after a fall in income, demand falls). The income elasticity of demand should be negative.
- There is no right answer to this: there are many possible explanations. One could be that discount retailers found that they were happy with the quality of these goods, and that this way. Another could be that the end of the recession hasn't seen incomes rise so much, so people have changed their habits.

Test your knowledge...

- (a) $YED = \frac{\% \Delta QD}{\% \Delta Y} = \frac{-12.9}{-5} = 2.58$ (1 mark for formula, 1 mark for answer – 1 mark for calculation). Since $2.58 > 1$, this means that organic produce is a luxury good (demand falls more than proportionally). (1)

(b) This is not true for France, since the article states that there was consistent growth in demand for organic food during the recession (i.e. demand increased despite a fall in income), so organic produce is not a luxury good in France.

Extended-response question

- Your answer should first note that demand for discount goods would be expected to fall and demand for organic goods would be expected to rise (since they are luxury goods). Then, you could evaluate this answer in two ways:
 - The passage states that discount retailers such as Poundland have continued to grow during the recession. This may indicate that consumers are favouring these discounters over organic food (change in tastes). However, you could also argue that a significant rise in income during the recession (change in income) could have led to a rise in demand for organic food.
 - The change in the market for organic food will also depend on people's tastes. If French consumers, for example, are not convinced that organic food is worth paying more for, then demand for organic food will not rise.
 - The answer depends on the size of the increase in income, and whether that increase is enough to convince consumers or not.

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1. There are any number of possible answers; for example, you might have: Pepsi and branded products (e.g. breakfast cereal), different brands of toothpaste, different
2. Tabloids (e.g. *The Sun*, *Daily Mail*) have declined more than the broadsheets (e.g. *The Times*) in relative terms. There are many possible reasons for this: perhaps online tabloid content, or perhaps the privacy/phone-hacking scandal surrounding *The News of the World* and the buying tabloids.
3. In 2005, the circulation of each newspaper (in descending order) was roughly: 3.4m, 2.7m, 2.2m, 1.7m, 1.5m, 1.2m, 0.9m, 0.7m, 0.5m, 0.4m, 0.3m, 0.2m, 0.1m. This sums to 7.8m in total. By 2015, the circulations were roughly 2m, 1.7m, 0.5m, 0.4m, 0.3m, 0.2m, 0.1m, 0.1m, 0.1m, 0.1m, 0.1m, 0.1m, 0.1m. This sums to 3.8m in total. This is a fall of around 4m copies, or a 51.3% fall (answers between 2.7m and 3.4m are acceptable).
4. Some news content is easier to access for free than others. Publications which offer premium content (e.g. *Financial Times*) are more likely to have customers willing to pay for a subscription, while others (e.g. *The Daily Mail*) offer more general news and information elsewhere. If *The Daily Mail* started charging for access to its website, it might not have as much success, since similar content can be found elsewhere for free.

Test your knowledge...

Test your knowledge...

- $$XED = \frac{\% \Delta QD \text{ of Good A}}{\% \Delta P \text{ of Good B}} \quad (1)$$

- (b) Change in demand for online news = $(0.7 \times 6) = (+) 4.2\%$
2. Possible reasons: reading print newspapers improves information retention, online with adverts, online newspapers may require readers to click to another page, some reading a paper copy of something to reading online.

Extended-response question

1. A fall in the price of tablets/e-readers would make online news more accessible to the 'price' of online news.

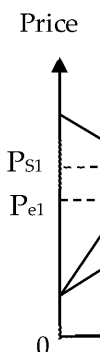
Based on this, we would expect that demand for online news would go up, and demand for print news would go down (since it is a substitute good). There are several factors which might influence the shift in demand for online news.

- The size of the price fall.
- The extent to which people switch to using tablets/e-readers (i.e. the price elasticity of demand for e-readers).
- Many people already have laptops or smartphones that they might use to read news, so the demand for news is not as much affected by this price change.
- Many people will simply prefer print news, regardless of the cost of devices to read news.

Case Study 7 – The UK housing market: pulling up the ladder?

Data response questions

1. In 2001, private renting only made up around 10% of tenures, and by 2014 this had increased to almost 20%. This is a doubling of the share of tenures (or a 10 percent point increase).
2. This suggests that average earnings have not changed much over the period (if average earnings had increased in line with house price increases, we would expect the price-earnings ratio to be flatter).



Test your knowledge...

1. This statement is normative, since it is a value judgment (even though many would agree with it!) (1)
2.
 - (a) A negative externality is the cost to third parties that is not reflected in the price of a good. (similar definition acceptable) (1)
 - (b) Negative externalities could arise from housebuilding via destruction of the natural environment, for example. (1 mark for each)
 - (c) 1 mark for correct axes, 1 mark for showing MSC and MPC (they do not have to be labeled), 1 mark for showing how the social equilibrium price and quantity are determined, 1 mark for showing welfare loss.

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Extended-response question

1. The benefits of this scheme would be that more new homebuyers would be able to afford homes, which should increase the standard of living of those affected, and it may boost economic growth by increasing the mobility of labour.

On the other hand, the fact that existing planning rules will have to be scrapped suggests there will be additional external costs to building these homes. This could negatively affect the quality of life in the area. It could be an opportunity cost to this scheme if the government subsidises the low price of the homes. In your conclusion, you could be either for or against the policy, so long as your arguments are clear.

Case Study 8 – Quasi-public goods*Data response questions*

1. (a) This pattern arises because traffic is higher in the summer months (Q2 and Q3) than in the winter months (Q4 and Q1).
(b) This was the period of the recession: road traffic might have fallen as people could walk/cycle rather than use cars. The number of vehicles used to transport goods would have fallen as the economy slowed down.
(c) The index for Q4 2015 is around 124, and the index for Q4 1993 is 100, so this represents an increase of 24%. 300 billion miles plus 24% = $(300 \times 1.24) = 372$ billion vehicle miles. This is an acceptable increase.

Test your knowledge...

1. Public goods are non-excludable (1). This means that one person's consumption of a good does not prevent another person (who hasn't paid for it) from consuming that good (1). Public goods are also non-rival (1), which means that one person's consumption of the good does not diminish another person's ability to consume it (1).
2. (a) Roads would seem to be non-excludable (1), since one cannot be prevented from using that road. However, they are not completely non-rival (1), since if too many cars use the road, it becomes congested. Therefore, roads aren't a pure-public good (1), they are a quasi-public good (1).
(b) As with roads, police services seem to be non-excludable (1), but they are also non-rival (1). There are only a finite number of police officers on the job at any one time, so if too many people call for services, they will not be able to help everyone. Therefore, policing isn't a pure-public good (1).

Extended-response question

1. At the start of your answer you could explain that public goods have the characteristic of non-excludability in consumption. Public goods have a high private cost but a relatively low social cost. If one person pays for all the roads in the UK, it will cost them a huge amount, but they will still get the benefits: everyone else will 'free ride'.

You could mention that individual roads could be private (or a small-scale 'police' force) but a road system as a whole would not be able to function effectively if it were private.

Case Study 9 – Should the government tax sugar?*Data response questions*

1. The tax is 16.5% of the retail price plus £3.79. 16.5% of £8 is £1.32, so the total amount of tax is £5.11. The total price (rounded to the nearest whole number) is £14.
2. Two of the main dangers are: (1) that if people are addicted to smoking, their income will fall, and (2) a rise in imported/smuggled cigarettes that avoid the tax.
3. At 4% ABV, total tax is $18.37 \times 4 = 73.48$ pence per litre. For half a litre, the tax would be 36.74 pence.

Test your knowledge...

1. These types of goods create negative externalities: this is when the social cost of consuming a good is greater than the private cost (sometimes these types of goods are called 'demerit goods').
2. (a) $PED = \frac{\% \Delta QD}{\% \Delta P} = \frac{-2}{+5} = -0.4$ (1 mark for method, 1 mark for answer)
(b) This indicates that demand for alcohol is inelastic (since $-1 < PED < 0$) (1)

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Extended-response question

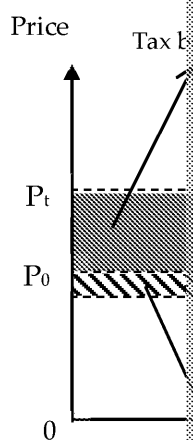
1. With this question the main point you should discuss is how the price elasticity of demand for sugar will affect the success of the policy. If demand is price inelastic, the diagram should look something like that on the right.

Since demand is price inelastic, the tax increases the price from P_0 to P_t , but quantity demanded only falls a small amount from Q_0 to Q_t , with much of the tax burden falling on the consumer. Since the whole purpose of the tax is to reduce consumption, in this case the tax is ineffective. It may have regressive effects on the incomes of those who consume a lot of sugar.

As an evaluative point, you could argue that the government could use the tax revenue to help fund greater NHS spending.

You should identify that if demand were elastic, then the result would be different: in this case, a tax would significantly decrease sugar consumption (which is the intended effect).

You may argue that a tax would be more effective if it were combined with other measures to reduce consumption, such as an information campaign on the dangers of excessive consumption or regulating the amount of sugar food producers are allowed to use in their food is a better alternative to the tax).



Case Study 10 – Solar panel subsidies

Data response questions

1. (a) According to the article, the subsidy costs households £7 each, so for 25 million households this is £175 million.
(b) The new cap is £100 million, so this is £75 million more.
2. The UK has significantly higher subsidies than all other G7 countries except for the USA, considering that the USA's GDP is several times larger than the UK's, so as a proportion of GDP the UK is the most out of these countries.
3. The original subsidy was 12.47p per kWh. A cut of 84% would mean that the new subsidy is 2.13p per kWh ($12.47 - (0.84 \times 12.47)$).

Test your knowledge...

1. One disadvantage is that it can encourage inefficiencies in firms (1), another is that it can lead to an increase in government spending (1).
2. Possible answers include: information provision, funding research into solar panel technology, increasing consumer income (1 mark for correct point).

Extended-response question

1. The main advantage of increasing subsidies is that it leads to more energy generation and can avoid most of the negative externalities associated with fossil fuel energy generation (1 mark for each negative externality from production diagram).

Another argument in favour would be that even if costs to the taxpayer are higher in the short term, lower prices in the long term once the benefits of renewable energy are realised.

You should explain the disadvantages of subsidies you stated in question 2: it may encourage inefficiency and an opportunity cost involved with the subsidy.

You could mention that the case for subsidising solar panels depends on whether the chosen energy source (you don't need to discuss any of the science behind this: you could say that solar power such as windpower may be more effective).

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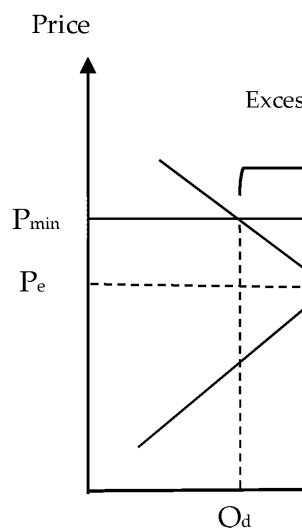
Case study 11 – A minimum price for alcohol?

Data response questions

1. This can be broken down into stages (which don't have to be done in this order): if the unit rather than 50p, then a litre of 40% spirit would have to be at least £16 ($\frac{4}{5}$ of 20). It would have to be at least £12 ($\frac{3}{4}$ of 16). Then if it were 44% strength, it would have to be 10 percent of 12). So the final answer is £13.20.
2. This question is very subjective, there's no right answer. You might think that the price is quite high, so we should be worried. You might think that the proportion isn't too high anyway (but we can't know for sure whether they will keep falling or not). Of course there may be some people who drink moderate amounts very regularly, which could be justified occasionally.
3. The 16–24 age group saw the greatest rise in teetotalism; an eight percentage point increase.

Test your knowledge...

1. Your diagram should show the minimum price imposed above the market equilibrium (1). This leads to an excess of supply over demand (between Q_d and Q_s) (1). 1 mark for correct axes, 1 mark for supply and demand curves. Note that for this question the elasticities of the curves don't matter.



Extended-response question

1. After discussing the effect of imposing a minimum price (see diagram in part 1), and the fact that alcohol is a good that has negative externalities, the key point you should discuss for this question is the price elasticity of demand for alcohol. Based on the diagram in part 1, if demand is highly inelastic then the minimum price will only lead to a small fall in quantity demanded. If this is the case, the policy is likely to be unsuccessful (more money from drinkers will go to the government; they will still consume more than the socially optimal amount).

On the other hand, if the price elasticity of demand is relatively elastic, then demand will be more successful.

Some other points you could mention in your answer include:

- In reality, it is likely that different groups of people will have different elasticities of demand.
- The effect of the policy will depend on how much higher the minimum price is. A higher price would change demand more, but it would also penalise occasional/moderate drinkers.
- You could mention the effect on businesses: it would be good for pubs (who pay the minimum) but bad for supermarkets (who probably charge prices below the minimum). This is the SWA's argument: businesses that provide cheap alcohol would have less room to operate, which is usually bad for consumers).
- You could include an externalities diagram, but it is not required.

Case Study 12 – Reforming the NHS

Data response questions

1. The passage states that roughly 18% of government spending goes towards the NHS. If the total was £750bn, this would be £135bn (0.18×750). The deficit was about £2.2bn, which is 1.6% of the budget ($2.2 \div 135 \times 100$). Any answer between 1.5 and 1.7% is acceptable.
2. (a) It would be expected that the deficit would be higher because Jan–March are the months with the most health problems (assuming that NHS budgets are not automatically adjusted for seasonal variations).
(b) Given this, the £2.2bn seems like an underestimate. If each three-month period adds up to £3.72bn for the year: way more than predicted, especially if the winter is particularly bad.

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Test your knowledge...

1. In this period the proportion of people saying they were quite or very satisfied increased from 70% in 2010, before falling slightly (1). On the other hand, the proportion of people saying they were not satisfied fell to a low of around 18% in 2010, before picking up again slightly (1). (You don't need to give marks: but you must mention whether the trends are going up or down.)
2. Government failure is where an intervention by the government results in a net welfare loss (i.e. where the intervention by the government creates inefficiencies / market failures).

Extended-response question

1. Some of the benefits of this policy are already mentioned in the article: it should decrease waiting times for appointments or missing their appointments, and it should raise revenue for the NHS by reducing pressure on GPs.

However, there are ways in which this policy could introduce government failure. For example, it could cause genuine health problems from going to the doctor, perhaps making their conditions worse in the long run (or causing unnecessary deaths).

You could evaluate this point by arguing that the charge could be means tested (i.e. based on incomes), so that everyone could afford to go to the doctor if they needed to.

Another potential problem would be administrative costs for implementing such a charge, which would reduce revenues. The administrative costs would probably be higher if the charge were means tested.

You could evaluate the policy by arguing that £5 is too high or too low (e.g. you could estimate the total cost by multiplying the price by the average number of visits and the size of the population: $5 \times 5 \times 65 \text{ million} = \text{£}1.6\text{bn}$, assuming that the number of visits does not change. Since there is a budget deficit, you may argue that this is not high enough, or you may argue that it is a good idea).

A good answer should discuss both the benefits and the costs of the policy, and evaluate the overall impact made.

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