

## Question 1 page 3

Explain which are the positive statements and which are the normative statements in this passage.

A positive statement is a statement that can be supported or refuted by evidence. In contrast, normative statements are value judgements that cannot be proven to be true or false.

In the passage, there is a number of positive statements. Whether or not Britain's Minister of State for Crime Prevention did or did not question if police should respond to calls from petrol retailers, for example, can be supported or disproved from evidence, such as reports in newspapers or from eyewitnesses. So too can other statements made, such as his suggestion that petrol stations refuse to insist on prepayment at pumps because they want customers to come into their shops.

Another positive statement is that one of the fastest-growing offences is motorists filling their cars with petrol and driving off without paying. The passage gives one piece of evidence to support this statement, which is that the practice increased nearly sevenfold between 2010 and 2012. This piece of evidence, in itself, is a positive statement.

The second paragraph contains a number of positive statements about what Brian Madderson, Chair of the Petrol Retailers' Association, and Neil Saunders, Managing Director at research group Conlumino, are purported to have said. Again, evidence can be gained from reports in newspapers or eyewitnesses as to whether or not these reports are factually accurate. Facts within the statements, such as 'the (profit) margin on fuel has almost disappeared' and 'retailers spend millions each year to try and combat shoplifting', can be supported or refuted by evidence.

Whether or not the content of the statements in the first paragraph by Britain's Minister of State for Crime Prevention are positive or normative is debatable. On the one hand, it might be suggested that the two arguments – that petrol station owners encourage motorists to pay in the station shop in order to increase sales of other goods and that paying in the shop rather than prepayment at the pump encourages crime – are positive statements. For example, petrol station owners could be surveyed to see whether sales of goods other than petrol increase if payment is made in the shop. Statistical evidence could be found comparing the incidence of petrol thefts from petrol stations that only offer prepayment with petrol stations that do not. On the other hand, no amount of evidence could properly support or refute these two arguments and therefore Britain's Minister of State for

Crime Prevention is putting forward his own opinion. They would then be normative statements.

In the second paragraph, the views expressed in the statements are, for the most part, normative. The phrases 'the police have no right', 'wholly ignorant' and turning petrol station stores into 'prison camps' are all normative statements because they are value judgements on the part of the person who made these statements.

## Data response question page 5

**I. Explain the difference between positive and normative statements. Illustrate your answer with at least two examples of positive statements from the data and two examples of normative statements.**

A positive statement is a statement that can be supported or refuted by evidence. In contrast, normative statements are value judgements that cannot be proven to be true or false. For example, in the first sentence, it states that '2014 figures showed that net migration in the UK... (increased) by more than a third to 212 000 in the year to September'. This is a positive statement because it can be supported or refuted by underlying data from immigration statistics. There is a number of other positive statements in the data.

- David Cameron's hope that he would reach his target of 'tens of thousands' by May 2015.
- 'The 58 000 rise in immigrants was largely due to an increase in arrivals from within the European Union.'
- There were 60 000 more immigrants arriving in the UK from countries such as Spain, Portugal, Italy and Poland than in the previous 12 months.
- 'Non-EU immigration was down by 25 000.'
- There were '25 000 fewer immigrants from New Commonwealth countries, particularly India and Pakistan, coming to study in the UK'.
- Foreign students 'pay higher than average fees'.
- James Brokenshire, Minister for Security and Immigration, making a statement about the data, saying that the immigration system was 'fair to British citizens and legitimate migrants', whilst being 'tough on those who abuse the system or flout the law'.

The data also contain a number of normative statements. These contain value judgements or matters of opinion. For example, in the first paragraph the figures are said to have 'soared', an evaluative comment, which is a value judgement. Equally, it states that David Cameron's hopes were 'dealt a blow'.

In the second paragraph, it says that arrivals from the European Union 'surged'. In the last paragraph, the statements from James Brokenshire about the immigration system being 'fair' and 'tough' are value judgements. So too are the views by Yvette Copper about the net migration figure being 'in tatters' and Nigel Farage's comment that the figures showed 'what a failure the government has been' at controlling immigration.

## 2. Discuss the possible impact on the UK economy of '25 000 fewer immigrants ... coming to study in the UK' per year.

One possible impact is on the number of jobs in the UK economy. Foreign students come to the UK to study. For example, below the age of 18 they come to study in private schools and post-18 they come for university education, as well as language education in specialised language schools. They have to pay fees to the different educational institutions, providing them with an income that helps to pay their fixed costs, such as maintaining buildings, and variable costs, such as teachers' and lecturers' salaries. One impact is, therefore, that they create employment in UK universities. Foreign students also have to live. This can generate income for UK landlords and lead to an increase in employment, for example, for those working in local shops and leisure industries. Overall, with fewer foreign students, there will therefore be fewer jobs in the UK: exactly how many is difficult to estimate without further information.

Another possible impact is on UK university finances. In the data, it states that 'foreign students are important for universities because they pay higher than average fees, subsidising UK students who pay lower fees'. UK universities are not-for-profit institutions. By charging foreign students higher fees than domestic students, universities can effectively charge lower fees to domestic students than if every student paid the same fee. One way of looking at this is to argue that foreign students therefore 'subsidise' domestic students. This is an advantage to domestic students, who have to pay less for their university education than they might otherwise have done. However, it could be a disadvantage to the broader UK economy if higher tuition fees discourage foreign students from coming to study and live in the UK in terms of lower income earned and less employment. The impact on total revenue earned from foreign students at different levels of student fees depends on the total change in numbers coming to the UK as the total fee per student changes (a calculation known as price elasticity of demand).

Having fewer foreign students is likely to impact on the balance of payments. When students pay for their studies in the UK with funds from abroad, this is classified as an invisible export for the UK. Fewer students will, therefore, lead to a deterioration in the current account position, although the impact will be relatively small.

Immigration can put pressure on both housing and the health service. Large increases in immigration, for example, with little increase in housing, will drive up both rents and house prices and increase the average occupancy of the existing housing stock. Immigrants will also need health services, ranging from GP services to hospital services. If there are 25 000 fewer immigrants per year, this will relieve pressures on housing and the health service. However, 25 000 is a relatively small number if spread across the UK. Students also place little demand on the health service. The heaviest users of the National Health Service (NHS) are children and the elderly.

Students who receive a university education increase their human capital. If the foreign students remain in the UK, that human capital can be used to increase UK output, increasing Gross Domestic product (GDP). Businesses can use those students to fill skills gaps and increase the pool of labour from which they can choose for their job vacancies. Equally, if students return to their home countries, they will retain memories of the life in the UK and possibly some contacts. This is likely to lead to at least some extra exports for the UK if they are running their own businesses, as they look favourably on buying British-made goods and services. When it comes to educating their own children, these students may, in the future, want to send them to UK schools and universities, increasing the UK's invisible exports.

UKIP and its leader Nigel Farage believe that most immigration is bad for the UK. They might argue that the pressures put on housing, health services and the job market by immigration outweigh any other benefits. However, students coming to study in the UK do not necessarily stay in the UK once their studies are completed. Whilst studying, they almost certainly make a net contribution to the UK economy and in particular to the education sector. If they do stay, they are likely to make a positive contribution to the UK economy because they have above-average skills. The 25 000 figure is also relatively small in relation to other immigration: net migration (immigration minus emigration) was 212 000 in 2014. Cutting immigration by limiting foreign student numbers is arguably one of the most damaging ways to the UK economy of trying to reduce immigration. Overall, whilst the impact of reducing foreign students by 25 000 is relatively small, it is likely to have a negative impact on the UK economy.

## Question 1 page 6

(a) Explain why the estimates of GDP in 2013 using the 1990 method of calculation were unreliable.

GDP is a measure of the national income of an economy. Between 1990 and 2013, the Nigerian economy grew in size. However, the 1990 method of calculation failed to capture part of that growth. For example, by 2013, it significantly underestimated the size of both the telecoms industry and the film industry. Under the 1990 measure, the film industry was 'not even measured', i.e. it was given a value of zero per cent. However, under the new 2013 estimate, it was measured as 1.4 per cent of GDP. With telecoms, including mobile phones, the 1990 measure calculated that the industry accounted for 0.8 per cent of GDP. The 2013 estimate suggested it was actually 8.6 per cent of GDP. Hence, the 1990 measure underestimated the actual size of the economy in 2013 and was therefore an unreliable measure in 2013.

(b) Suggest why a European company might be more prepared to invest in new facilities in Nigeria rather than South Africa in 2014 compared to 2012.

A European company investing in new facilities in Nigeria is likely to be attracted either by low costs of production or access to the domestic market for the goods or services produced, or some combination of both. A larger economy will not necessarily have low costs of production for its firms. However, the larger the economy, the larger is likely to be the potential domestic market and hence the larger the likely sales from a production facility. By adjusting its GDP figures by 89 per cent for 2013, the Nigerian government has signalled to potential investors that the size of the domestic economy is much larger than previously estimated. Hence, it is likely to be more attractive to outside investors, such as a European company. Using the 1990 method, the South African economy was larger than the Nigerian economy in 2013. Hence, this would give the South African economy a competitive advantage in attracting inward investment from European companies looking to sell into the domestic market. However, using the 2013 method, the Nigerian economy is significantly larger than the South African economy. Hence, Nigeria is

more attractive on potential sales criteria than South Africa. The value of potential sales is only one of many factors that will influence a European firm's investment decisions. Firms may have already estimated that Nigeria's GDP was considerably larger than official 1990 figures suggested. However, all other things being equal, the upward revaluation of Nigeria's GDP figures is likely to make Nigeria a more attractive country in which to invest.

## Question 2 page 7

Using a calculator or a spreadsheet, work out for the period 2010-2013 (a) at constant 2010 prices and (b) at constant 2013 prices the values of:

- (i) households' expenditure;
- (ii) government expenditure;
- (iii) fixed investment.

Present your calculations in the form of two tables, one for 2010 prices and the other for 2013 prices.

**Table 1**

	Index of prices		£ billion <sup>1</sup> at 2010 prices		
	2010=100		Households' expenditure	Government expenditure	Fixed investment
2010	100.0		953.3	336.6	250.2
2011	104.5		943.3	322.8	249.6
2012	107.4		951.7	320.2	250.3
2013	110.1		961.9	315.0	255.7

**Table 2**

	Index of prices		£ billion <sup>1</sup> at 2013 prices		
	2010=100		Households' expenditure	Government expenditure	Fixed investment
2010	100.0		1 049.6	370.6	275.5
2011	104.5		1 038.6	355.4	274.8
2012	107.4		1 047.8	352.5	275.6
2013	110.1		1 059.1	346.8	281.5

1. Figures have been rounded to one decimal place for convenience.

To calculate the values, the expenditure at current prices needs to be adjusted for changes in the index of prices. For example, to calculate 'Fixed investment at 2010 prices for 2011', it is necessary to multiply the 2011 value at current prices by the ratio of prices in 2010 to 2011. So the calculation is £260.8 billion  $\times$  (100.0  $\div$  104.5) which is £249.6 billion to one decimal place.

### Question 3 page 8

Using a calculator or a spreadsheet, convert each category of expenditure into index number form using as the base year: (a) 2010 and (b) 2013.

Present your calculations in the form of two tables, one for each base year.

**Table 3**

	2010=100 <sup>1</sup>		
	Food & drink	Clothing & footwear	Restaurants & hotels
2010	100.0	100.0	100.0
2011	104.3	107.1	107.2
2012	109.8	110.0	111.6
2013	115.0	117.1	116.3

**Table 4**

	2013=100 <sup>1</sup>		
	Food & drink	Clothing & footwear	Restaurants & hotels
2010	87.0	85.4	86.0
2011	90.8	91.5	92.2
2012	95.5	94.0	96.0
2013	100.0	100.0	100.0

1. Figures have been rounded to one decimal place for convenience.

To calculate the index values, expenditure at current prices needs to be compared to the value in a base period. For example, to calculate 'Food & drink in 2011' using 2010 as a base year, the 2011 number must be divided by the 2010 number and then multiplied by 100 to convert the ratio into index number form. So it is  $(86.4 \div 82.8) \times 100$  which is 104.3 to one decimal place.

### Question 4 page 9

Consider each graph in turn.

(a) What does each show?

Both graphs show the unemployment rate over a period of time. Figure 3 gives annual data and shows that over the

whole period 1971 to 2013, the unemployment rate rose from 4.0 per cent to 8.5 per cent. Within this period, there were five identifiable peaks in 1972, 1977, 1984, 1993 and 2011, reflecting the cyclical nature of unemployment. The highest level of unemployment was experienced in 1984 when the unemployment rate reached 11.8 per cent. Figure 4 shows quarterly unemployment rates for 2010 and 2011. Over the whole period, unemployment increased from 8.0 per cent in the first quarter of 2010 to 8.4 per cent in the last quarter of 2011, although within this unemployment at first fell before rising again.

(b) Explain why each seems to give a different picture of unemployment in the UK for the period 2010-2011.

Figure 3 shows annual data for unemployment over a long period of 43 years. As part of this, the increase in the annual unemployment rate between 2010 and 2011 was relatively small. The annual unemployment rate in 2010 was 7.9 per cent compared to 8.1 per cent for 2011, a 0.2 per cent increase in total. Compared to other changes in unemployment over a two-year period, this was insignificant. For example, between 1980 and 1981, unemployment rose from 6.8 per cent to 9.6 per cent, a 2.8 per cent increase in total. It also shows that the increase in unemployment between 2010 and 2011 was the smaller part of a much larger increase in unemployment between 2007 and its peak in 2011.

In contrast, Figure 4 shows quarterly data for a small period of just two years. The increase in the unemployment rate looks relatively large for three reasons. One is that the vertical axis starts at 7.6 per cent rather than 0. Compressing the axis to accommodate the data makes changes seem much larger than if they were not compressed. Another is that the change occurs out of context of the period in which it occurs.

Figure 3 shows that the rise was insignificant in the context of the wider period 1971-2013. Lastly, using quarterly data will tend to give much larger fluctuations than using yearly data.

The range using yearly data for 2010-2011 was 0.2 per cent. The range using quarterly data for the same period was 0.7 per cent – the difference between 8.4 per cent in the last quarter of 2011 and 7.7 per cent in the third quarter of 2010. Annual data 'smooths out' the larger fluctuations that can be found in quarterly data.

*Note in Tables 9 and 10, there was a mistake in the first impression of the 6th edition. This has been corrected in reprints. In Table 9, last column, the 1995 figure for revenue per screen should read 296.7 and not 396.6. In Table 10, last column, the 1995 figure for revenue per screen should read 101.1 and not 101.8.*

### 1. Describe the main trends in cinema admissions shown in the data.

Certain trends can be identified from Tables 9 and 10. There was a 147.8 per cent increase in the number of cinema admissions over the period 1987 to 2013. The number of sites increased by 51.8 per cent and there was a 276.5 per cent increase in the number of screens. The much larger increase in the number of screens compared to sites reflects the growth of multi-screen cinemas over the period. Gross box office takings, revenue per admission and revenue per screen at current prices all rose over the period. At constant prices, stripping out inflation, the values of gross box office takings, and revenue per admission increased by 256.1 per cent and 28.6 per cent respectively over the period, but revenue per screen fell by 5.4 per cent.

### 2. Explain the advantages and disadvantages of using index numbers to present data. Illustrate your answer from the data.

It is argued that index numbers make trends easier to identify from data. For example, it may be easier to see that the number of sites has increased less (as a proportion) than the number of screens and admissions when index numbers are compared with a value of 100, rather than comparing figures such as 1 035 screens with 3 897 screens. It is also perhaps easier to see the extent of changes by examining index figures. For example, the large increase in gross box office takings at current prices over the period 1987 to 2013 is more easily identifiable by comparing an index of 874.1 with 100 than by comparing £1 082.1 million with £123.8 million. However, index numbers do not allow an evaluation of the importance of particular aspects of expenditure. So, for example, gross box office takings may be broken down into age groups. Expenditure amongst those aged 16-21 may have increased by 20 per cent. If this group comprised 50 per cent of all filmgoers then the impact on total expenditure would be relatively great. It would not be possible to calculate these figures from index numbers. A further problem may be the choice of base year. The choice of a different base year leads to the calculation of different index numbers. For example, if 2013 were chosen as a base year rather than 1987, the index numbers for revenue per screen at constant 2013 prices would be 105.7 in 1987, 106.9 in 1995, 100.4 in 2006 and 100.0 in 2013 rather than 100 in 1987, 101.1 in 1995, 95.3 in 2006 and 94.6 in 2013. If a base year is chosen that is unrepresentative of the period studied, then the figures may be distorted and conclusions from the figures could be misleading.

### 3. 'Revenues per screen and the number of screens cannot carry on rising.'

#### (a) To what extent do the data support this statement for the period 1987-2013.

Over the period 1987-2013, the number of screens on offer to cinema viewers increased by 276.5 per cent, with each year given seeing an increase. This would tend to disprove the statement. At the same time the revenue per screen increased by £158 100 at current prices, but fell by £1 900 at constant 2013 prices. The evidence is therefore contradictory about the statement for the period 1987-2013.

#### (b) Discuss whether it is likely to be true in the future.

Revenues per screen depend on ticket prices, the numbers buying tickets and the number of screens. The number of screens cannot keep on rising. In 2013, there were 3 897 screens. If there were ten times this number, there would not be enough customers viewing them to keep them profitable. The data show that increasing the number of screens has already resulted in a fall in the number of admissions per screen: between 1987 and 2013, the number of screens increased by 276.5 per cent, whilst the number of admissions only went up 147.8 per cent. At some point, profit will begin to be hit and cinema chains will have to review their policy of opening more screens. There may be other limitations to opening screens. For instance, local authorities may refuse planning permission for new cinemas if they judge their local markets are saturated, or there may be a technological revolution which hits the cinema market and its profitability, such as a growth in the use of broadband Internet transmissions, digital television and pay-per-view television.

As for ticket prices, economic theory suggests that the number of cinema goers will fall from what it would otherwise be if ticket prices keep rising. However, the data show that rising ticket prices at current prices over the period shown have been associated with a rising number of admissions between 1987 and 2013. This has been due to a number of factors, including rising incomes, better facilities at cinemas, more screens, increases in film advertising, the arrival of videos and DVDs which encouraged consumers to see the film at the cinema first, and perhaps better films and changes in social attitudes to cinema. If ticket prices had not gone up at the same time, cinema admissions would have been even higher. A slightly different picture emerges if the data for ticket prices at constant 2013 prices is taken into consideration. Ticket prices increased between 1987 and 2006 but then fell to 2013, from £6.15 to £5.84. These trends almost certainly reflect competitive pressures arising from the prolonged recession, caused by the financial crisis of 2007-08. With lower average incomes, some customers cut back on their spending at the cinema. This shows the limits for cinemas of their ability to push up ticket prices. Combined with rising numbers of screens, it has led to falling revenues per screen in real terms since 1995, even if, at current prices, they have continued to rise. In the future, individual cinemas are likely to find it difficult to raise revenues per screen in real terms if there is continued competition from other local cinemas and from other forms of entertainment.

# 3 | The economic problem

## Question 1 page 12

**Explain whether roads are, in any sense, a 'free good' from an economic viewpoint.**

Nearly all resources are scarce and are called economic goods. A free good, in contrast, is one that is not scarce. Congestion is an indication that road space is scarce. There are too many cars on the road to allow motorists to proceed at a speed that they want. Equally, car exhaust pollution leads to problems such as acid rain and global warming. Both of these environmental problems lead to resources having to be allocated to counteract their effects. Roads also have to be built using scarce resources. If fewer roads were built, more could be spent on, say, the public-transport system. Hence, in these senses, roads are not a free good.

However, there are times of the day on particular roads when motorists are not adversely affected by the presence of cars. When driving a car at 6 o'clock in the morning, perhaps down a country lane, there is arguably no cost to other drivers. So, in this sense, roads could be argued to be a 'free good'.

Most motorists implicitly assume that roads are free goods and fiercely defend their right to use roads at any time of the day without paying a toll. Hence, road tolls are deeply unpopular – the 'ultimate poll tax on wheels'. When discussing the issue, private motorists seem to put no value on time lost due to slower speeds or being stationary in a traffic jam. However, even if the time of private motorists is costless, that of commercial traffic, such as lorries and taxis, is not. Road congestion is therefore an economic issue involving economic goods rather than free goods.

## Question 2 page 13

**Draw up a list of minimum human needs for a teenager living in the UK today. How might this list differ from the needs of a teenager living in Ethiopia?**

Minimum human needs of a teenager in the UK today could include material goods, such as shelter, clothing and food and

drink, and psychological and emotional needs, such as love and self-esteem. The basic human needs of a teenager living in Ethiopia might be little different. However, the exact form of material need may be different. For example, the Ethiopian teenager may need to have a higher liquid intake in order to survive because of the hotter weather, whilst the person living in England may need a house designed for colder weather.

The ways in which the need is fulfilled will also differ. British teenagers may satisfy their need for entertainment by using Facebook or watching a film. In contrast, the Ethiopian teenager in the photograph may be more concerned with basic needs, such as collecting wood for burning for cooking.

## Question 3 page 13

**What might be the opportunity cost of the £50 000 in fees and living expenses:**

- (a) to parents if they pay them on behalf of their children;  
(b) to students if they have borrowed the money to pay them.

(a) Opportunity costs are the benefits lost from the next 'best' alternative when a choice is made. When a choice is made, people lose or miss out on the benefits from other courses of action. Therefore there is a cost associated with any choice. The opportunity cost to parents of spending £50 000 on fees and maintenance might be the benefits that could be gained from buying a digital television set, such as entertainment and relaxation. Alternatively, they could have invested the £50 000 and so the benefit lost might have been the interest or capital gain that could have been earned.

(b) If students borrowed £50 000 to pay for their fees and maintenance, there would come a point where they would have to pay the money back, some of it with interest. There is an opportunity cost to this. For example, the money might have been used instead to set up in business rather than finance three or more years at university. If the business were successful, the opportunity cost might be quite high. The student may also have used the money to travel. Typically, young people who travel also work whilst abroad. The whole experience of travel and work can build up experience that could be used to gain a better job in the future. The opportunity cost might be quite low, however, if the individual chose to spend the money on goods which yielded only short term benefits such as cars, holidays or drink.

## Question 4 page 14

Consider your household economy.

**(a) What is produced by your household (e.g. cooking services, cleaning services, accommodation, products outside the home)?**

A wide variety of goods and services is produced by households. For instance, many services are produced which are connected with eating. Shopping, storage of food, preparation of food, serving of food and washing up after a meal are examples. The household also provides accommodation services. Fixed capital, such as room space, furniture and appliances, yields services. So too does household labour, when beds are made or rooms are cleaned. The household economy may also provide transport services. The person who drives the household car is effectively acting as a DIY chauffeur. When parents collect children from a party or drive them to school they are acting as a taxi driver. All forms of DIY activity create goods or services for the household economy. The household is also likely to provide services to the wider economy, mainly in the form of the hire of labour to an outside employer.

**(b) How is production organised (e.g. who does the cooking, what equipment is used, where is the cooking done)?**

Any production must be the result of the use of one or more of the factors of production. When cleaning a room, labour is combined with capital in the form of dusters, mops, brooms or vacuum cleaners, for instance. In many households, more and more capital is now being combined with labour to provide services. Nearly all households have cookers, washing machines and refrigerators, and most have their own freezers, microwave ovens and dishwashers. Fifty years ago there tended to be a division of labour based on male and female

roles. The man provided services outside the home in return for a wage. He mowed the lawn, maintained the car and carried out DIY around the house. The woman brought up the children, did the cooking and cleaned the house. The children might have tidied their bedrooms, done some washing up and cleaned the car. This 'sexist' division of roles has been breaking down. There are now far greater similarities in the work roles of men and women. People living on their own would, of course, provide all services themselves.

**(c) For whom does production take place (e.g. for mother, for father)?**

Some services are usually provided for all family members. For instance, traditionally meals have been prepared for all family members to eat at the same time. The greater availability of convenience food, an increase in 'eating out', ordering via phone or email and home delivery of food and the variable nature of work and leisure activities means that this is less common today. Other services are provided for individuals. For instance, if you make your own bed or tidy your own room you are providing a service for yourself. Other services might be provided for groups of individuals. For instance, your mother might drive herself and your father to a restaurant.

**(d) Do you think your household economy should be organised in a different way? Justify your answer.**

Many answers are possible here. But you may feel, for instance, that your father should do more household chores or that your younger brother or sister should do more washing up. Equally, you may feel that your mother should provide a more frequent taxi service for your hectic social life. Changes which are made to the organisation of the household economy should, however, either be aimed at improving its efficiency or producing a more equitable allocation of work and resources.

### 1. Define the term 'opportunity cost'.

Opportunity cost is the benefits forgone of the next best alternative. For example, a student may have spent £20 on a pair of jeans. The opportunity cost of the jeans is the benefits that are lost from not having spent the £20 on other items that would have given the next highest benefit to the student.

### 2. Explain why the NHS has to make 'tough choices' about what it offers patients.

Consumers of the National Health Service (NHS) have unlimited wants. For example, they would like treatment in new hospitals, personal care from staff, the latest and best equipment and drugs and treatment at times that suits them. However, the NHS does not have an unlimited budget. It cannot spend as much as it would want on hospitals, staff and drugs. The fact that it has limited resources means that it faces a problem of scarcity. That scarcity means it has to make choices. Spending more on drugs means that less is available, for example, to employ staff or spend on equipment. The choices are 'tough' because they directly affect patients. For example, the drug Kadcyla® 'typically extends life by about six months at a cost of £90 000' for some breast cancer patients. Using the drug has an opportunity cost – the £90 000 worth of benefits that could be gained from the next best alternative. This could be more hip replacement procedures or more kidney transplants for example. If Kadcyla® was to be prescribed on the NHS, other patients would suffer because they could not have the treatments they need. Balancing up the relative needs of patients makes the NHS's decisions very tough and in many cases controversial.

### 3. Discuss, from an economic viewpoint, whether it should be a committee of cancer experts that decides which drugs should be offered on the NHS or an independent committee like NICE.

The NHS has a finite budget. In 2014, it was spending around £13 billion a year on pharmaceuticals. It cannot afford to prescribe all the drugs offered by pharmaceutical companies to its patients. With finite resources, but potentially infinite wants, it has to make choices. Each of those choices has an opportunity cost – the benefits foregone from the next best

alternative. As Sir Andrew Dillon pointed out, choosing to expand treatment in one area means that 'something else cannot be done'.

Choice implies that somebody will make that choice. Currently in the UK, NICE (the National Institute for Health and Care Excellence) is the body responsible for deciding 'which drugs are value for money and can be prescribed by the NHS and which drugs will not be available to NHS patients'. It has the difficult brief of weighing up the cost of medication against its benefits. If the cost is too high compared to the benefits, then it will refuse permission for medical practitioners to prescribe the drug free to patients on the NHS.

A committee of cancer experts is likely to come to the same conclusions as NICE if they shared the same methodology for approval of drugs. However, in practice, a committee of cancer experts is more likely to prioritise cancer treatments over other treatments. It is likely to value the benefits of treating cancer more than treating other problems, such as heart disease or respiratory problems. This will be a value judgement that the committee makes simply because those making the judgement are working in the field of cancer care. They will 'defend' their area of spending in the NHS against other competing demands made by other health professionals with different interests. A committee of cancer experts may also be more swayed by the pharmaceutical industry than an independent committee like NICE. For example, Roche (the Swiss pharmaceutical company that makes the drug), said, when NICE refused to back Kadcyla®, that the UK's drug evaluation system was 'no longer fit for purpose'. This was a normative statement (i.e. a value judgement) from a company that wanted to make profits from sale of its drug. It was attempting to influence the debate about how decisions about NHS spending on drugs should be made.

Ultimately, the methodology used by NICE is based upon value judgements about how to value the benefits of different treatments. However, that methodology is applied across all areas of drug spending. The danger of allowing cancer experts to determine the methodology is that they will overvalue the benefits of cancer therapies compared to treatments for other illnesses. So they will place greater emphasis on drugs like Kadcyla® and Zytiga® than on non-cancer drugs. This will distort spending in the NHS. Cancer patients will benefit at the expense of other patients. The result will be a less fair allocation of scarce resources and lower overall economic welfare.

# 4 | Production possibility frontiers

## Question 1 page 18

The production possibility frontier of an economy is as shown in Figure 1.

- (a) (i) If the economy produces 15 units of manufactured goods, what is the maximum number of non-manufactured goods it can produce?  
 (ii) How many manufactured goods could it produce if production of non-manufactured goods was 50 units?

(b) The economy is currently operating at point C. What is the opportunity cost of increasing production of non-manufactured goods by (i) 15 units; (ii) 20 units?

(c) The economy is at D. What is the marginal cost of increasing production of non-manufactured goods to the point (i) C; (ii) B?

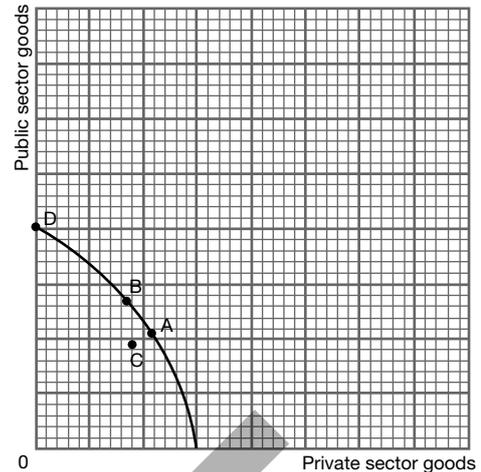
- (a) (i) 45 units.  
 (a) (ii) 0 units.  
 (b) (i) 15 units of manufactured goods.  
 (b) (ii) 30 units of manufactured goods.  
 (c) (i) 5 units of manufactured goods.  
 (c) (ii) 20 units of manufactured goods.

## Question 2 page 19

Draw a production possibility frontier. The vertical axis shows the production of public sector goods and the horizontal axis shows production of private sector goods. The economy is currently producing at point A on the frontier where 50 per cent of all production is devoted to public sector goods and 50 per cent to private sector goods.

- (a) Mark the following points on your drawing.  
 (i) Point A.  
 (ii) Point B which shows production following the election of a government which increases government spending on both education and the National Health Service.  
 (iii) Point C where unemployment is present in the economy.  
 (iv) Point D where the government takes over production of all goods and services in the economy.

Figure 1



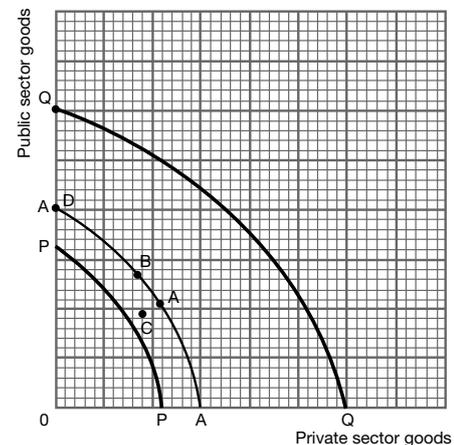
Note that in Figure 1, point B can be anywhere to the left of point A on the curve. Point C could be anywhere to the left of the production possibility frontier.

(b) Draw another diagram putting on it the original production possibility frontier you drew for (a), labelling it AA.

(i) Draw a new production possibility frontier on the diagram, labelling it PP, which shows the position after a devastating war has hit the economy.

(ii) Draw another PPF labelling it QQ which shows an increase in productivity in the economy such that output from the same amount of resources increases by 50 per cent in the public sector but twice that amount in the private sector.

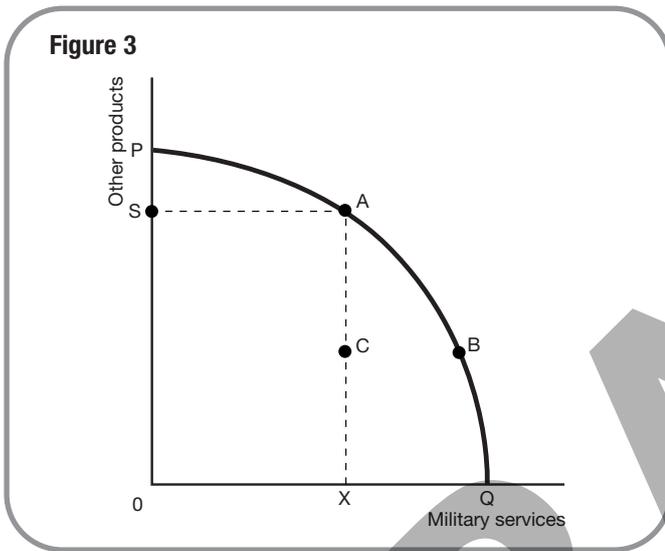
Figure 2



Note that the production possibility frontier PP can be anywhere to the left of the line AA.

1. What is a production possibility frontier for an economy?

A production possibility frontier shows the different combinations of goods that an economy could produce if all resources were fully employed in the economy. It therefore shows the maximum amount of output that could be produced with the resources available. For instance, in Figure 3 here, assume that the production possibility frontier for the economy is PQ. It could, therefore, produce no military services at all and devote all its scarce resources to producing OP of all other products. Alternatively, it could be at A, producing OS of all other products and OX of military services. Other possible combinations of products include those at point B and producing OQ of military services and no other products.



2. Explain why a production possibility frontier might shift inwards or outwards. Illustrate your answer with examples from the data.

In most circumstances today, economies grow over time. Workforces become more productive because they are better educated. The amount of capital involved in production increases. Technological progress enhances the productivity of new capital compared to the capital it replaced. Economic growth is shown by a shift in the PPF outwards to the right. In

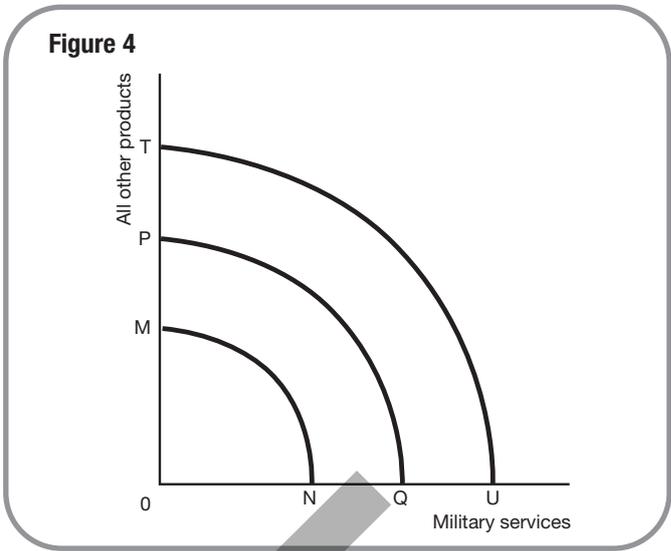


Figure 4, this is shown by a shift in the PPF outwards, to the right, from, for example, PQ to TU. China provides an example of a country that has grown quickly since the mid-1970s. During this time, it had a 'relatively well-educated workforce' that allowed increases in labour productivity. There was a 'considerable flow of investment money and technological know-how into China' that increased the stock of physical capital and allowed for technological progress. The legal environment also changed as Chinese people were allowed to 'set up their own businesses in a more free market style economy'. This led to a growing private sector that was able to exploit China's growing links with the global economy.

However, production possibility frontiers will shrink inwards if the amount and quality of resources are reduced. In Figure 4, this would be shown by a shift, for example, from PQ to MN. The Civil War in Syria provides a good example of how a PPF can shrink. The workforce has shrunk as war has killed, injured and displaced millions of people. Education, vital to the future growth of the economy, has been badly affected as 'thousands of schools have been destroyed or are being used as shelter for displaced persons'. Factories and offices have been destroyed. Trade has been disrupted as foreign countries imposed export bans on trade with Syria. There has also been a shift towards armaments production at the expense of civilian production. This will have reduced investment needed to replace existing physical capital coming to the end of its useful life.

**3. A peace group has put forward a proposal that the UK should not replace its fleet of Trident submarines. Using production possibility frontiers, evaluate the possible economic implications of this proposal.**

Not replacing Trident could have significant economic implications for the UK. Trident has an opportunity cost – the benefits foregone from the next best alternative. This could be other military services such as military equipment or employing more military personnel. It could be other types of government spending, such as on health or education, or the money saved could be used to cut taxes, increasing the after-tax income of households or firms to spend on consumption or investment goods. These choices will affect the production possibility frontier of the UK economy and have implications for current welfare and future growth of the economy.

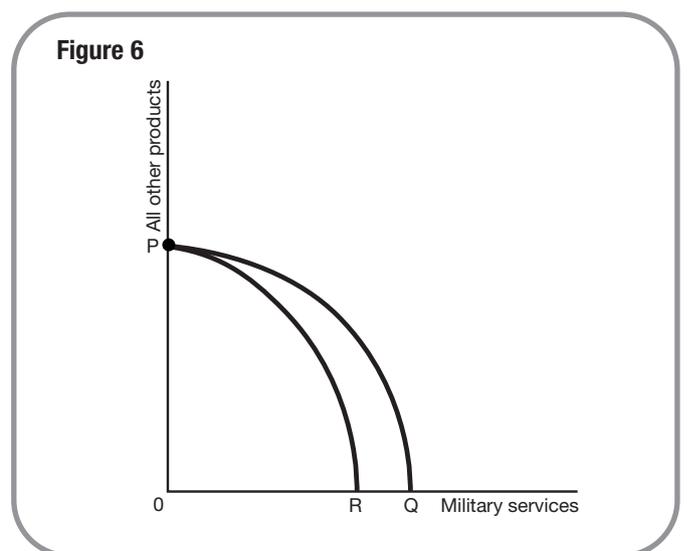
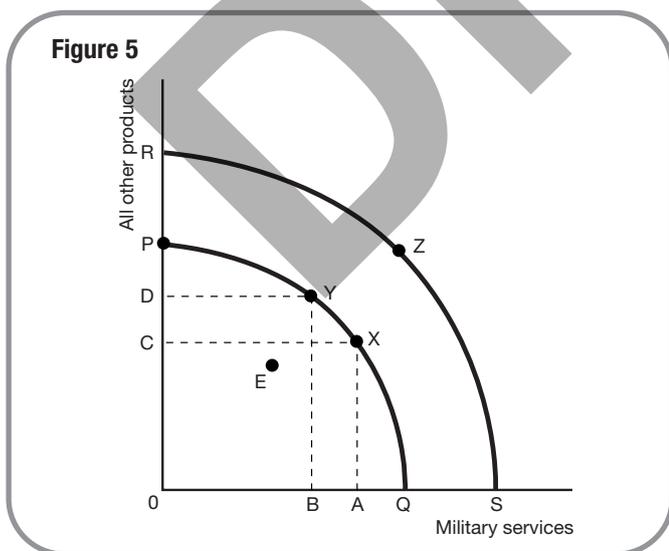
Assume in Figure 5 that the production possibility frontier of the economy is PQ. If Trident is not replaced but the money is used instead to increase spending on other military spending, then the production possibility frontier of the economy in Figure 5 will remain unchanged. The same volume of military services will be produced although its composition will be different. However, if the money saved is used to increase spending on civilian projects, such as more health care or more leisure services, then the point of production on the production possibility frontier will change. Assume that currently the economy produces at the point X. The shift away from military spending towards civilian spending will move the point of production from X to, say, Y. AB represents the estimated £25 billion loss of military spending because Trident has been scrapped whilst CD represents the increase in civilian spending as a result.

Leaving the position of the production possibility frontier unchanged assumes that scrapping Trident does not lead to an increase in investment. However, assume that the £25 billion saved from the Trident project is spent on public sector capital goods such as new roads and schools or private sector capital goods such as new offices and production facilities or equipment rather than consumption goods. Initially, the position of the production possibility frontier will remain

unchanged although production will change from, say, the point X to the point Y. In the long term, however, increased investment will shift the production possibility frontier to the right from PQ to, say, RS. In the long term, production could change from point Y to a point such as Z on the new higher production possibility frontier. The £25 billion could be spent on a combination of capital and consumption goods. In general, the more is spent on capital goods, the larger will be the shift in the production possibility frontier.

However, scrapping Trident may have other consequences. Scrapping the Trident programme will mean that the existing infrastructure which supports the current Trident submarines will become redundant. So too will the workers associated with the Trident programme. In the short term, this is likely to cause unemployment. The economy will therefore operate within its production possibility frontier, for example at the point E in Figure 5. If the highly skilled workers and facilities associated with Trident find no employment in the long term, this could shift the production possibility frontier back towards the origin. This is shown in Figure 6. Before the scrapping of Trident, the economy's production possibility frontier was PQ. Now it is PR. The economy can produce the same number of non-military goods but fewer military goods.

The peace group would most likely argue that the best use of scarce resources would be to scrap Trident and devote the resources to non-military uses. The military and some politicians might be split about whether to proceed with Trident or reallocate the resources to other military purposes. Ultimately, the decision should be about whether the defence of the country needs Trident and whether there would be any increase in national security if the money were spent on other military materials. If the decision were to be to scrap Trident and reduce military spending, should the resources be allocated for present consumption or increased future consumption? The negative effects of possible increased unemployment also need to be taken into account. Overall, there is unlikely to be any consensus about which alternative to take because it depends on the costs and benefits that individuals and institutions place on the different alternatives.



# 5 | Specialisation and the division of labour

## Question 1 page 22

(a) Explain, with the help of the photograph, what is meant by 'specialisation'.

Specialisation involves economic units concentrating on particular activities. In the photograph, a garment-manufacturing factory is shown. Materials, such as cloth, thread and buttons, are combined to produce a completed garment. Specialised machinery, such as sewing machines, is used. Workers have particular skills that they employ to make garments.

Specialisation requires that goods and services be traded. For example, workers trade their time at work for food and other products. The garment manufacturer trades its finished products for money that it then uses to buy cloth, pay the wages of workers and give a profit to the owners of the firm.

(b) What might be some of the (i) advantages to firms and (ii) disadvantages to workers of the division of labour shown in the photograph?

(i) Firms are likely to benefit in a number of ways from specialisation. Workers that make garments become highly skilled by constantly carrying out the same activity. Repetition of tasks speeds up the rate of work and reduces errors. Workers are able to use specialised machinery, such as sewing machines. The layout of the factory should help reduce the amount of time spent making each garment. Greater efficiency enables firms to compete in the marketplace. The more efficient a firm, the more likely it is to win orders and make a profit.

(ii) Specialisation can give rise to disadvantages for firms. Workers may become bored carrying out the same job, which can affect their motivation, attendance and concentration. If there is a breakdown in a piece of specialised machinery, such

as a sewing machine, it can bring work to a halt for an employee. If, say, there is an electricity disruption, work in the whole factory could halt. A small group of workers may equally have the power to bring all production to a halt if they strike in pursuit of their demands. It may not be possible to transfer workers with specialised skills from one job to another if work needs to be done in a different area. Specialisation may, therefore, add to costs of production unless work is organised relatively efficiently and there are relatively few interruptions to the working system.

## Question 2 page 23

(a) Who might be the buyers and sellers in the local Burscough market for grocery products?

The buyers in the local Burscough market for grocery products are likely to be mainly individual households who live either in the town or within easy travelling distance of it, or workers who have jobs in the town. There may also be some purchases from local businesses, but this is likely to be very small. The sellers in the local market are the independent grocer, the convenience store and the two supermarkets. In addition, some supermarket chains may deliver to the area from online orders. There may also be a once or twice a week traditional market where sellers hire stalls.

(b) What is the relationship between this market and the market for (i) meat and (ii) petrol?

Meat and vegetables are complementary products. Shoppers who buy meat in the town are also likely to buy their vegetables locally. An increase in demand for meat, for example because more people have moved into the area, is likely to raise the demand for vegetables and vice versa. The supermarkets in Burscough will sell both meat and vegetables under one roof, encouraging customers to buy them together. Petrol will be needed by any buyer who used a car to go to the Burscough shops. Petrol would then be said to be in derived demand from vegetables. Equally, the shops in Burscough have to have their vegetables delivered to their premises. So deliveries require petrol. Again, petrol is in derived demand from vegetables.

**1. Getting an Antler suitcase to a customer usually involves firms operating in the primary, secondary and tertiary sectors. Explain why this is the case.**

The raw materials used to make Antler suitcases are extracted by firms operating in the primary sector of the economy. The data do not specify precisely which raw materials are used. However, the plastic used to coat the fabric used in an Antler suitcase is partly made from oil, a primary product extracted by oil companies in the primary sector of the economy.

Antler suitcases are then manufactured in the secondary sector of the economy. The manufacturing will be undertaken by 'Linecross, a plastics company'. The manufacture of the fabric used, Don & Low, is also part of the secondary sector.

The tertiary sector of the economy is the service sector. The fabric made by Don & Low, for example, needs to be transported to Linecross. Transport is part of the tertiary sector. Antler needs to transport its suitcases to the shops that will sell them, again part of the tertiary sector. Antler will also use many other service sector companies. For example, it will use banks to process its payments. It will use marketing agencies to help sell its products. It will use accounting firms to certify its accounts.

**2. Suggest reasons why making suitcases involves specialisation.**

Making and selling a suitcase is a complex process. There is a long chain of production and many suppliers. Each supplier brings its own expertise, whether it is in manufacturing fabric, making plastics or providing services, such as logistics or accountancy. Within each supplier, there will also be specialisation amongst workers. In a company like Linecross, there will be managers, production workers and office staff.

Specialisation occurs for a number of reasons. One is knowledge and expertise. No one worker or firm has the knowledge or expertise to manufacture a suitcase such as those produced by Antler. For example, the fabric made by Don & Low is a highly specific type of fabric used in protective helmets and armour for military vehicles. This is a highly specialised fabric which few other companies round the world would be able to make.

Another reason for specialisation is cost. Antler itself uses other companies to manufacture its suitcases. It could produce them itself, but it is likely that it has found that outsourcing the work to other companies results in lower costs of manufacture.

Workers making suitcases at each stage of production will be more productive because they use specialist tools and equipment which would be unlikely to be available if a suitcase were made completely by one worker. They will also have highly specific job expertise that will increase their productivity compared to a worker attempting to do all tasks.

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