



Oxford Cambridge and RSA

Monday 4 October 2021 – Morning

A Level Economics

H460/01 Microeconomics

Time allowed: 2 hours

You can use:

- a scientific or graphical calculator



Please write clearly in black ink. **Do not write in the barcodes.**

Centre number

--	--	--	--	--

Candidate number

--	--	--	--

First name(s)

Last name

StemUp Model Solution

INSTRUCTIONS

- Use black ink. You can use an HB pencil, but only for graphs and diagrams.
- Answer **all** the questions in Section A, **one** question in Section B and **one** question in Section C.
- Write your answer to each question in the space provided. If you need extra space use the lined pages at the end of this booklet. The question numbers must be clearly shown.

INFORMATION

- The total mark for this paper is **80**.
- The marks for each question are shown in brackets [].
- Quality of extended response will be assessed in questions marked with an asterisk (*).
- This document has **20** pages.

ADVICE

- Read each question carefully before you start your answer.

SECTION A

Read the following stimulus material and answer **all** parts of Question 1 which follow in this section.

The UK air travel sector

- 5 The UK's biggest airline, easyJet, has reported profits before tax of £445m on revenues of almost £6bn, in the financial year ending September 2018. As the largest of the UK operators (see Table 1), easyJet faces strong competition from other 'budget' airlines (Flybe and Jet2), package holiday firms (TUI and Thomas Cook) and the previous market leader, British Airways. The recent growth of easyJet in the UK has been helped by the closure of Monarch in December 2017 and continued labour disputes at British Airways.

	2015	2016	2017
easyJet	58.6	63.3	68.3
British Airways	41.3	42.1	42.8
TUI	10.6	10.9	11.3
Jet2	5.9	6.7	9.7
Flybe	7.8	8.4	9.2
Thomas Cook	6.4	6.6	7.3
Monarch	5.7	5.4	3.4

Source: CAA

Table 1 – UK Passenger numbers (million)

- 10 Across the whole of Europe, easyJet flew a record 88.5 million passengers, up 10% on the previous year, and filled 93% of its seats – meaning only 13 seats are empty on an average flight. Over the year, this 'load factor' (the percentage of seats sold across all flights) has increased by 9.8%. Typically, airlines have been satisfied with a load factor of around 75%.

Revenue per seat for easyJet in 2018 was £62, leading to a profit of £6.53 on each seat. But the airline had an additional £65m cost from "a change in approach to IT development" and a £40m cost from taking over the landing slots of the failed Air Berlin, at Tegel airport in Germany.

- 15 A growing amount of easyJet's revenue comes from what it calls 'ancillary' sources. When a customer buys a ticket online, they are also able to book hotel accommodation, car hire and airport transfers. The business aims to grow its holiday sales, offer an improved customer loyalty programme and target the business-travel market, with "a more personalised product including new business fares".

- 20 Although it is now common throughout the airline industry, easyJet was one of the first airlines to introduce a 'dynamic pricing model' which sees the price of a ticket increase as the date of the flight moves nearer. Table 2 shows how the prices quoted on two separate routes were lower if booked on the 18 December 2018 compared to the 18 March 2019. As the weeks go by, the price quoted will increase as the date of travel moves nearer. There are always exceptions to the rule, due to other supply and demand factors, but, in general, the sooner a customer books the
25 better price they get.

Route	Date when price was quoted	Date of travel		
		6 April 2019	1 June 2019	5 October 2019
London Gatwick to Gran Canaria	18 December 2018	£194	£74	£60
	18 March 2019	£259	£80	£76
London Luton to Barcelona	18 December 2018	£110	£42	£39
	18 March 2019	£122	£46	£42

Source: www.easyjet.com (accessed 18/12/18 & 18/03/19)

Table 2 – Ticket prices quoted on different dates (seat only)

On most routes, customers have a choice of airline, and in each case the service is largely identical. It is now common practice on these short and medium-haul routes that food, seat reservations and luggage are not included in the basic ticket price (see Table 3).

Airline	Basic price including all taxes	Seat reservation	One piece of check-in luggage
British Airways	£143	Included with luggage	£20
easyJet	£74	£6 to £18.50	£42
Thomas Cook	£73	£10	£48
TUI	£311	£11	£25

Source: Company websites (accessed 18/12/18)

Table 3 – Ticket prices quoted for London Gatwick to Gran Canaria (to travel on 1 June 2019)

Air travel is often said to be a demerit good. Politicians and economists have argued over the degree of control needed in the market and whether it is taxed enough. Most passengers entering or leaving the UK on a commercial flight will pay the Air Passenger Duty (APD) which was introduced by the UK government in 1993 for environmental reasons. However, a report published in 2018, called the 'Roadmap to decarbonising European aviation' considers other policies to reduce carbon emissions from air travel. The report criticises the lack of taxation of jet fuel across the world, saying: "Artificially cheap tickets through tax exemptions and government subsidies have propped up and propelled the industry." There is certainly a strong case for the current tax-free status of jet fuel to end.

Substitution, persuading travellers to switch from planes to trains, is another solution proposed in the report. It calls for, "greater competition in the rail sector in order to improve performance and drive down operating costs and fares". This suggestion would have been unthinkable 20 years ago. Today, speed and comfort have marginally improved for train travel (as there are now more fast routes). While, especially for shorter distances, flying has become increasingly unpleasant and time-consuming.

"It used to be a rule that, in order to compete with a one-hour flight, a train journey could be a maximum of three hours," says Mark Smith, of rail travel website Seat61. "That was allowing for an hour in the air and two for security, boarding and transfers. That simply is not the case anymore, with longer check-in and security times."

At the same time as taxing air travel with the APD, the UK government subsidises some routes. One example, introduced in March 2019, is on a new route between Newquay (in Cornwall) and London Heathrow. Around 170 000 passengers are predicted to use the service each year. Over the first four years, the Department for Transport and Cornwall County Council will each pay up to £1.7m, representing a subsidy of £10 per passenger for a return flight. The UK Transport Secretary at the time, Chris Grayling, said, "Maintaining and enhancing air routes that help bring together the UK is one of the key benefits. This new route will see the people of the south west profit from a direct connection into [Heathrow], building on the government's ongoing commitment to the Newquay route, protecting choice and strengthening trade and travel opportunities for the whole UK."

- 1 (a) Refer to **line 11**. Calculate, using information from the stimulus material, the average cost of a seat on an easyJet plane in 2018.

Profit per seat = average revenue (AR) - average cost (AC), so AC = AR - profit
per seat

AC = £62 - £6.53 = £55.47 per seat

[2]

- (b) Refer to **lines 14–18**. Explain, using evidence from the stimulus material, what is meant by joint demand.

Joint demand is when goods are demanded together, so demand for one is
interdependent with demand for the other (complements): a customer buying an
easyJet flight ticket online may also book hotel accommodation, car hire and airport
transfers.

[2]

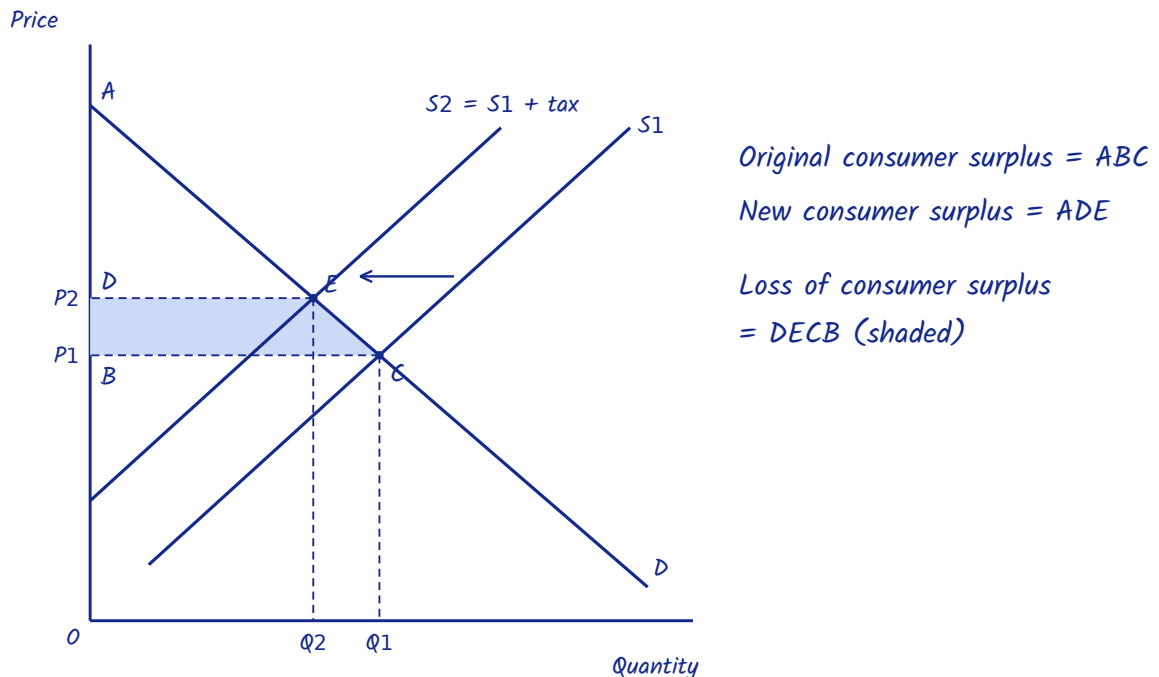
- (c) Using **Table 2**, explain the concept of utility.

Utility is the satisfaction or benefit a consumer derives from consuming a good or
service. Table 2 shows prices for 6 April (£194 or £259 to Gran Canaria) are far
higher than for 1 June (£74 or £80) or 5 October (£60 or £76): more people
want to fly at Easter, so total utility is higher and they will pay more. Prices
quoted further in advance are lower (£194 in December against £259 in March) as
a ticket bought far ahead gives lower utility.

[2]

- (d) "There is certainly a strong case for the current tax-free status of jet fuel to end." (lines 36–37)

Explain, using a diagram, the impact on the level of consumer surplus if jet fuel is taxed by the UK government.



..Taxing jet fuel raises airlines' costs, so supply shifts left from S_1 to S_2 . Price rises from P_1 to P_2 and quantity falls from Q_1 to Q_2 , so consumer surplus falls from ABC to ADE, a loss of the area DECB.

[4]

- (e) Evaluate **two** factors which may determine the value of the price elasticity of demand for air travel. [8]

Price elasticity of demand (PED) measures the responsiveness of quantity demanded to a change in price: $PED = \% \text{ change in quantity demanded} \div \% \text{ change in price}$. Availability of substitutes: the more close substitutes there are, the more price elastic demand is, because consumers can switch easily if price rises. On most routes customers have a choice of airline and the service is "largely identical", and Table 1 shows easyJet competes with at least five other large operators, such as British Airways (42.8 million passengers) and Jet2. Table 3 shows almost identical basic prices for easyJet (£74) and Thomas Cook (£73), so if easyJet raised its fares many passengers would switch, making demand for one airline highly price elastic. Rail is also becoming a closer substitute as longer check-in and security

times make short flights more time-consuming.

However, this depends on the width of the market definition and the route. PED for air travel as a whole is lower than for easyJet alone, as switching airline does not reduce air travel, and on routes over water such as Gatwick to Gran Canaria there is no rail substitute, so demand is relatively inelastic.

Necessity or luxury: business travellers who must attend a meeting on a set date see the flight as a necessity with little choice over when to travel, so their demand is price inelastic, which is why easyJet targets business travel with "new business fares". Holiday travellers see air travel as a luxury and can choose when, where or whether to fly, so their demand is more elastic. Dynamic pricing (Table 2: £194 rising to £259 for April flights to Gran Canaria) exploits the more inelastic demand of late bookers.

Evaluation: PED also changes over time; in the long run consumers find substitutes such as faster rail routes, so demand becomes more elastic. Brand loyalty and easyJet's loyalty programme may lower its PED, and flights are an occasional purchase, a small share of income. Overall, substitutes are the most important factor for an individual airline, while necessity versus luxury matters more for the market as a whole, but no single factor decides PED and it differs by route and customer.

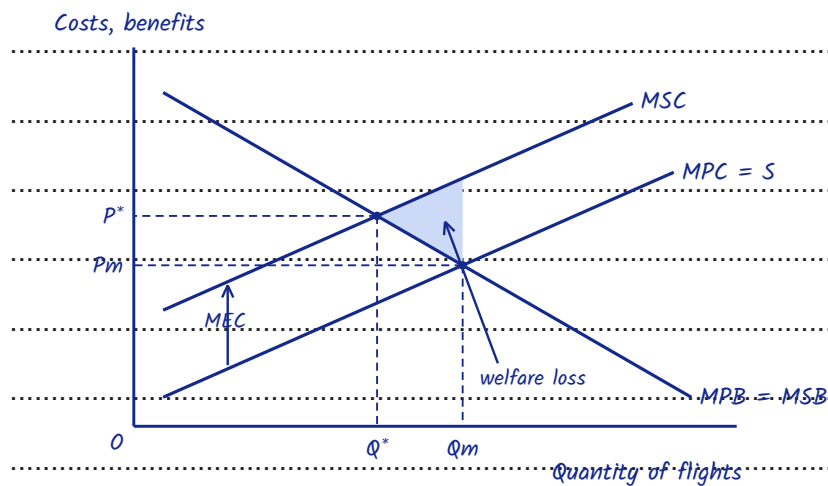
- (f)* Evaluate, using evidence from the stimulus material, government intervention in the market for air travel. [12]

Government intervention aims to correct market failure. Air travel is described as a demerit good: it creates negative externalities such as carbon emissions and noise, so the marginal social cost (MSC) exceeds the marginal private cost (MPC). Airlines and passengers only consider private costs and benefits, so the free market overconsumes flights at Q_m , where $MPC = MSB$, rather than at the social optimum Q^* , where $MSC = MSB$, creating the shaded welfare loss in the diagram on the next page.

The UK government introduced Air Passenger Duty (APD) in 1993 for environmental reasons. This indirect tax raises the cost of flying, shifting the MPC curve upwards towards MSC, internalising the externality, so price rises and quantity falls towards Q^* , reducing the welfare loss. APD also raises revenue that can be spent on reducing emissions.

However, intervention is inconsistent. Jet fuel is tax free, and the 2018 report says that "artificially cheap tickets through tax exemptions and government subsidies have propped up and propelled the industry", so the true cost of air travel is not reflected in its price and overconsumption continues.

The government also subsidises the new Newquay to Heathrow route: the Department for Transport and Cornwall County Council each pay up to £1.7m over four years, a subsidy of £10 per passenger for a return flight, with around 170,000 passengers a year. This lowers the price and raises consumption, the opposite of the usual policy for a demerit good. On the other hand, the subsidy may be justified if the route creates positive externalities: connecting Cornwall to London strengthens "trade and travel opportunities" for the local economy, so $MSB > MPB$ and the route would be underprovided without support. Greater competition in rail to drive down fares would encourage substitution from planes to trains.



Evaluation: the effectiveness of APD depends on PED. If demand is price inelastic, as far as business travellers, the tax raises revenue but cuts flights only slightly, so emissions fall little. The government also faces information failure: the external cost of carbon is hard to value, so the tax may be set at the wrong level, causing government failure. A jet fuel tax would work best internationally; if only the UK acts, airlines may refuel abroad. Subsidies have an opportunity cost, as the £3.4m could be spent on rail.

Overall, intervention is justified because the free market ignores large external costs, but current policy is only partly successful: APD moves output towards Q^* , while tax-free jet fuel and route subsidies push the other way. Whether intervention raises welfare depends on whether it corrects market failure without creating government failure. Targeted subsidies for remote regions may be justified, but taxing jet fuel and improving rail would reduce negative externalities more in the long run.

SECTION B

Answer **EITHER** Question 2 **OR** Question 3.

EITHER

- 2* The gender pay gap for full-time workers in the UK has fallen from 17% to 9% in the past 20 years. However, the gap is still over 30% in many engineering and manufacturing jobs but is much smaller, or even negative, in many service sector jobs, including in the health sector.

Evaluate, using an appropriate diagram(s), whether wage differentials are mainly caused by the presence of a monopsonistic employer. [25]

OR

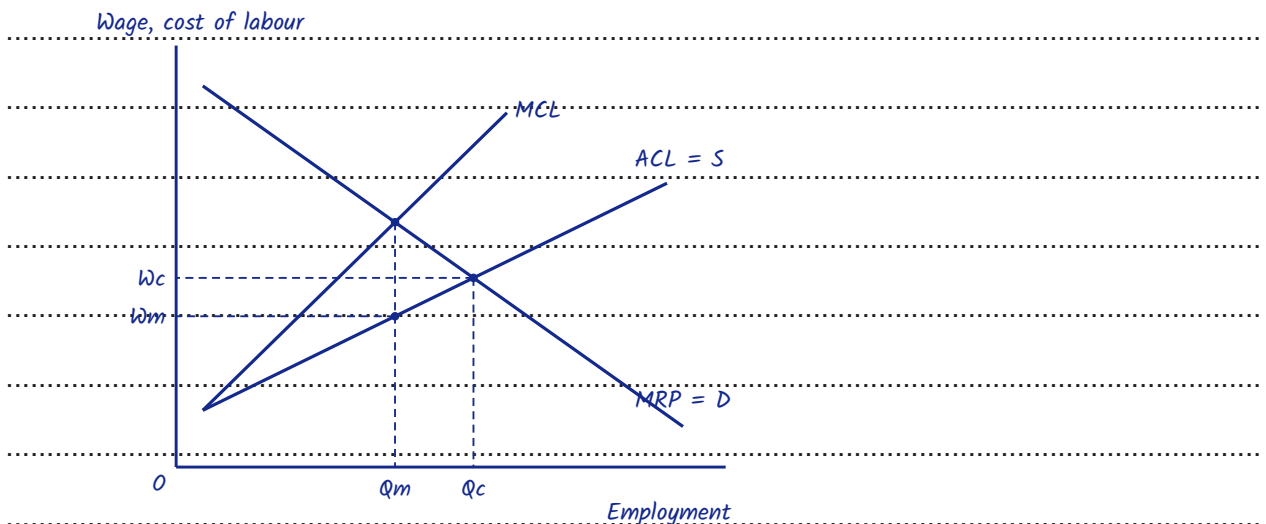
- 3* The nature of the market experienced by internet-based firms, such as Amazon Marketplace, eBay and Alibaba, means that they may not have an objective of profit maximisation.

Evaluate, using an appropriate diagram(s), how a firm's objectives, other than profit maximisation, may affect its price and output decisions. [25]

Question 2.....

Wage differentials are differences in wage rates between workers, occupations, industries, regions or genders. In a perfectly competitive labour market with perfect information and perfect labour mobility, differentials would be competed away: if pilots were paid more than bricklayers, bricklayers would retrain as pilots, increasing the supply of pilots until wages were equalised. In reality differentials persist, such as the 9% gender pay gap for full-time workers, which is still over 30% in many engineering and manufacturing jobs.

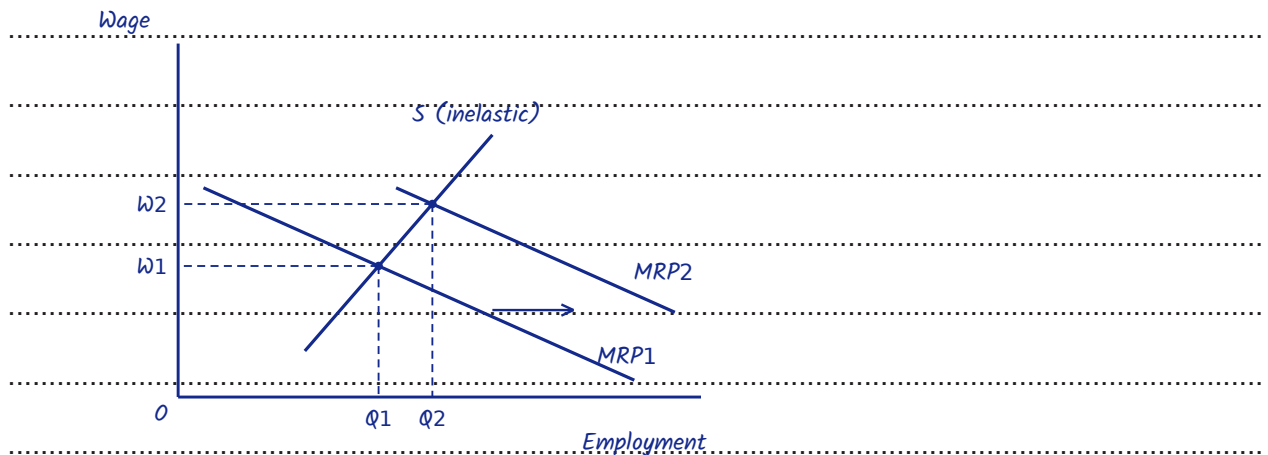
A monopsony is a single, or dominant, buyer of labour. Because the monopsonist faces the whole upward-sloping supply curve of labour ($ACL = S$), it must raise the wage rate to attract an extra worker and then pay that higher wage to all its existing workers, so the marginal cost of labour (MCL) is above the average cost of labour. A profit-maximising monopsonist employs where $MCL = MRP$, at Q_m , but only has to pay the wage given by the supply curve, w_m . In a competitive labour market the wage would be w_c , where $MRP = ACL$, with employment Q_c . The monopsonist therefore pays a lower wage and employs fewer workers, and workers are paid less than their MRP .



This can explain some differentials. Around 90% of teachers in the UK are directly or indirectly employed by the state, and the NHS is the dominant employer of nurses, so wages in these occupations may be held below the competitive level. Most car workers are employed by a small number of large firms, and in towns dominated by one manufacturing plant workers with specific skills have few alternative employers. Women are often less geographically mobile, for example because of childcare, so their labour supply to a local employer is more wage inelastic, letting the firm pay them less, which may add to the gender pay gap.

However, monopsony cannot be the main cause. The gender pay gap is smallest, or even negative, in the health sector, where the NHS has the strongest monopsony power, and largest in engineering and manufacturing, where there are many employers. This suggests other causes are more important.

Differences in MRP: workers who are more productive (higher MPP) or who generate more revenue for the firm are paid more. Top sports stars and highly skilled engineers have a high MRP, so demand for their labour is higher: in the diagram below, demand rises from MRP_1 to MRP_2 and, with an inelastic supply of skilled labour, the wage is w_2 instead of w_1 .



Differences in supply: highly skilled workers are scarce and their supply is wage inelastic, because acquiring human capital takes years of training. Wages must be higher to compensate people for investing in education, as there is an opportunity cost, measured by the earnings given up by staying in education. Unskilled jobs have a large and elastic supply of labour, which keeps wages low, while demand for specialist workers is often wage inelastic.

Labour immobility: workers who are not occupationally mobile cannot move into higher paid jobs. Engineering requires specific skills, and the UK education system is still catching up with the rest of the world in encouraging and enabling girls to study the STEM subjects needed to enter these higher skilled and better paid jobs, which helps to explain the 30% gap. Workers who are not geographically mobile, because of housing costs or family ties, may not want to, or be able to, move to areas where wages are higher.

Other factors: many women, through culture, religion or choice, do not seek the highest responsibility, best paid jobs, and many choose to leave the labour market temporarily or permanently, or to work part time, reducing their experience and promotion prospects. The flexible, part-time nature of many service industries, especially health and retail, suits these choices, which may explain the small or negative gap there. Discrimination may also reduce demand for some groups, while trade unions can raise wages; a union bargaining with a monopsonist can even raise both the wage and employment towards

W_c and Q_c .
 Evaluation: the importance of monopsony depends on the elasticity of supply of and demand for labour. Where supply to the firm is wage inelastic, as in an area with one large employer, the monopsonist can hold wages well below the competitive level; but if demand for labour is wage inelastic, wages cannot be held down as easily as in a wage elastic occupation. It also depends on the time period, as in the long run workers can retrain or relocate, reducing monopsony power. The fall in the gender pay gap from 17% to 9% over 20 years is more consistent with changes in education, qualifications and attitudes than with any fall in monopsony power.
 In conclusion, monopsony can explain why wages are below the competitive level in particular sectors, such as teaching and nursing, and may contribute to some differentials between groups. However, it is not the main cause of wage differentials: differences in MRP, skills and human capital, labour immobility and choices about careers and working patterns are more significant, as shown by the gender pay gap being highest where there are many employers and lowest in health, where monopsony is strongest. Monopsony is therefore a contributory cause rather than the main one.

SECTION C

Answer **EITHER** Question 4 **OR** Question 5.

EITHER

- 4* China is the world's second largest economy, has the fastest growing consumer market and is the second largest importer of goods – all from a centrally planned economy. However, more than 50% of China's surface water is not fit for human consumption.

Evaluate whether economic incentives are required to achieve an efficient allocation of resources.

[25]

OR

- 5* According to scientists, there are at least half a million pieces of space rubbish in the earth's atmosphere.

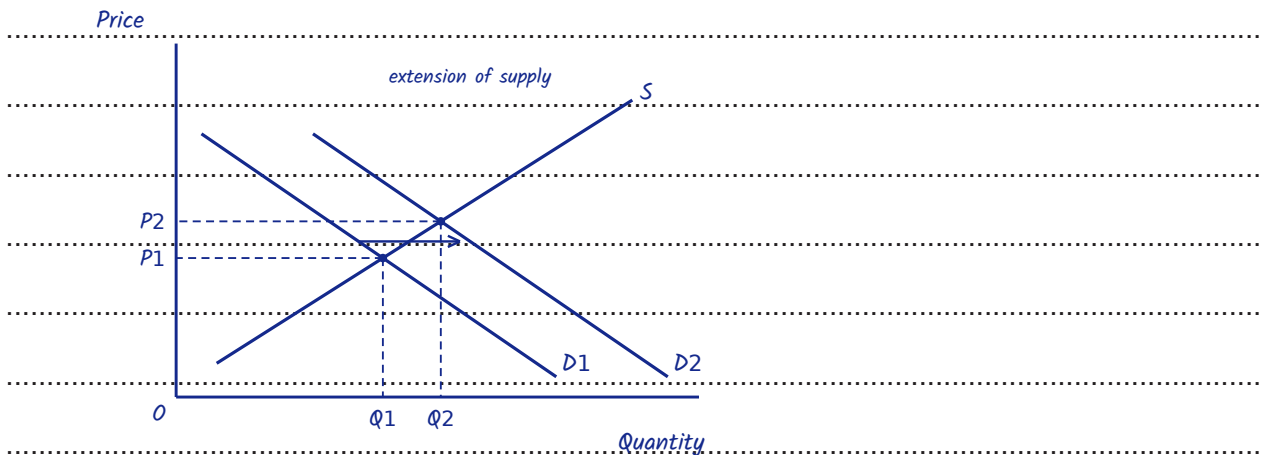
Delhi, India's capital city, sees 80 deaths a day due to air pollution.

Evaluate how the problem of scarcity can be used to explain the requirement to make choices between free goods and economic goods.

[25]

Question 4.....

..An efficient allocation of resources occurs when allocative efficiency is achieved, where.....
..P = MC (MSB = MSC) and there are no external costs or benefits, missing markets,.....
..information gaps or information asymmetries. It also requires productive efficiency,.....
..producing at the lowest average cost, and dynamic efficiency over time. Economic.....
..incentives are what motivate economic agents to behave in a certain way: consumers are.....
..motivated by their net benefit, producers by profit and workers by financial reward.....
..A fundamental principle of economics is that "people respond to incentives". In.....
..market-based economies, prices send signals which act as incentives to buyers and.....
..sellers, changing the amount they are willing to buy or sell. When coffee prices rise.....
..rapidly, many consumers drink less coffee or switch to another drink; lower prices.....
..encourage buyers to purchase more, because the utility gained per pound spent rises.....
..relative to other goods. On the supply side, as shown in the diagram, an increase in.....
..demand from D1 to D2 raises the price from P1 to P2, which signals that consumers.....
..want more and gives producers an incentive to extend supply to Q2, while the higher.....
..price rations the good. A prolonged fall in price drives the less efficient firms out of.....
..the market, as it is no longer profitable for them to supply.....

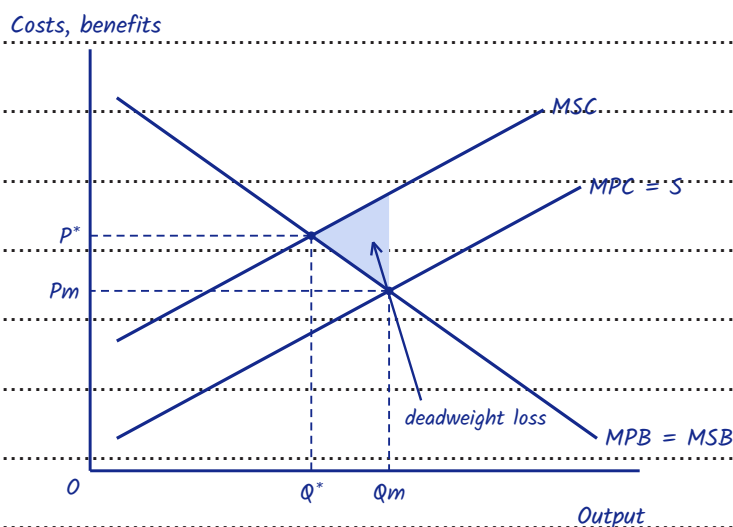


Market economies also use the profit motive as an incentive. Profit motivates entrepreneurs to accept the risk of acquiring and organising resources to seek market opportunities, and the desire to make profit gives an incentive to innovate, reduce costs and improve product quality, leading to productive and dynamic efficiency.

An economy that does not use incentives, such as a traditional centrally planned economy, is unlikely to achieve an efficient allocation. First, there is a lack of choice: planning tends towards uniform products, as in the Soviet Union where everything from cars to food was mass-produced with little variety, in contrast to the designer labels and international brands now found in China. Second, poor quality and innovation: without the profit motive, products and technology in the Soviet Union and China were years behind the developed world. Third, inefficiency: workers and managers had no incentive to work efficiently as jobs were guaranteed. Planners would also need to know the private and social costs and benefits of millions of goods, which is impossible to estimate accurately.

China shows the power of incentives. Although it is described as centrally planned, it has the fastest growing consumer market and is the second largest importer of goods, and it now produces high quality products such as iPhones and laptops and can undercut many market economies on cost. This success has largely followed the market-based reforms since 1978, which introduced private firms, profit and price signals. China is therefore not a true planned economy, and its growth suggests incentives are required.

On the other hand, it can be argued that an efficient allocation could be achieved without market incentives. As long as the government seeks to maximise economic welfare, it can direct resources through central planning: creating state enterprises, setting annual and five-year plans, determining the price and output of each industry, and allocating workers to jobs so the "correct" output of each good is achieved. Planning can also provide public goods and ensure basic needs are met. Moreover, even with incentives, efficiency is not guaranteed, because incentives lead to market failures. Consumers and producers act on private costs and benefits: when $MSC > MPC$ there are negative externalities, leading to overproduction and a deadweight welfare loss. More than 50% of China's surface water is unfit for human consumption, because factories responding to the profit incentive dump waste into rivers without paying the external cost, producing at Q_m instead of the social optimum Q^* .



When $MSB > MPB$ there are positive externalities, so goods such as education are underconsumed. There is no incentive to supply or pay for public goods, which are non-excludable and non-rival, because of the free-rider problem, leading to missing markets. Incentives are also unreliable when there are information gaps or asymmetries, as consumers may make choices that do not maximise their welfare. Evaluation: incentives are likely to be essential, because without them an economy would

rely on central planning, and the information needed to plan efficiently is so complex.
Incentivising behaviour lets the free market find the best way to achieve a social goal,
for example a pollution tax or tradable permits give firms an incentive to cut pollution
in the cheapest way. However, individual incentives may not be enough, so it may be
necessary to include incentives AND disincentives in law and economic policy, such as
regulation of water pollution in China. Consumers and firms may also act irrationally, so
incentives on their own may be ineffective and "nudges" may be needed.
In conclusion, economic incentives are required to achieve an efficient allocation of
resources, since planned economies without them suffered from inefficiency, poor quality
and lack of choice, and China's growth has come from market-based reforms. However,
incentives are necessary but not sufficient: because private incentives ignore external
costs, as shown by China's polluted water, government intervention is needed to correct
the incentives so that agents face the full social cost of their decisions.

END OF QUESTION PAPER

[illegible]

Oxford Cambridge and RSA

Copyright Information

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website (www.ocr.org.uk) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact The OCR Copyright Team, The Triangle Building, Shaftesbury Road, Cambridge CB2 8EA.

OCR is part of the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.

ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).

3

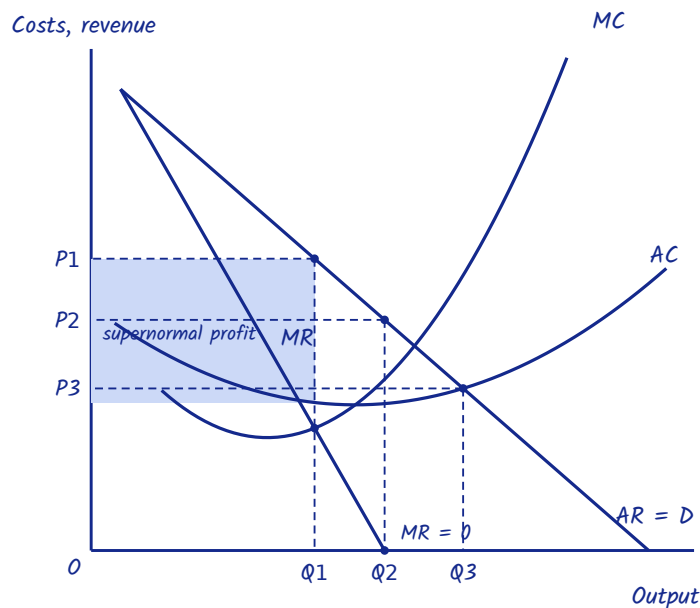
Traditional theory assumes that firms aim to maximise profit by producing where $MC = MR$. Internet-based markets such as Amazon Marketplace, eBay and Alibaba may be among the closest examples of perfect competition: there are many firms offering an almost homogeneous product, there is freedom of entry and exit, and customers have near-perfect information because they can compare prices instantly. Firms would make only normal profit in the long run and prices would be kept low by competitive pressure. However, these markets are not perfectly competitive: there is some branding and some barriers to entry and exit, so supernormal profit may be possible in the short run, and in modern markets profit maximisation is unlikely to be the only objective.

Non-profit-maximising objectives arise because of the divorce of ownership from control: managers (agents) may pursue their own goals rather than those of shareholders (principals). Firms may also lack the information to identify exactly where $MC = MR$.

Revenue maximisation: the firm maximises total revenue where $MR = 0$. In the diagram, the profit-maximising firm produces Q_1 at price P_1 , earning the shaded supernormal profit, whereas a revenue maximiser produces Q_2 at the lower price P_2 . Output is higher and price is lower than under profit maximisation. Managers whose pay or status depends on sales revenue may prefer this. It is only really possible if the firm has some price-setting power, so that AR slopes downwards, and enough profit to satisfy shareholders.

ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).



Sales (volume) maximisation: the firm maximises output subject to making at least normal profit, so it produces where $AR = AC$, at Q3 and price P3. Output is even higher and price even lower, and only normal profit is made. For an online seller, where it is so easy for customers to compare prices, this low price may be essential to attract buyers, and a large volume of sales spreads fixed costs such as website development.

Growth and market share: growth is a relatively loose concept and both sales and revenue maximisation can be considered in this way. Growth may come at the expense of short-term profits: starting a price war may reduce profits but increase market share, which can raise profits in the long term. A firm selling on Amazon Marketplace may charge a low price in the short run to gain a large number of ratings on the site, which it can benefit from in the future, giving it better potential to dominate the market. Similarly, a firm may set a limit price below the profit-maximising level to deter new entrants.

Satisficing: owners or managers may aim for a satisfactory level of profit while pursuing other goals. Many small sellers on eBay run the business from home

ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).

and may be content with enough income to live on, so price and output lie between the profit-maximising and sales-maximising levels. Survival is also important in highly competitive online markets: in the short run a firm may accept a price below AC as long as it covers AVC.

Stakeholder (behavioural) objectives: all stakeholders in a firm, such as shareholders, managers, workers, customers and suppliers, want to maximise their own welfare and have some power to influence its behaviour. The firm's price and output are then determined by the relative power of the different stakeholders.

Corporate social responsibility, such as ethical sourcing or paying higher wages, raises costs and may lead to higher prices and lower output, while a focus on customer service, such as free returns and fast delivery, may mean accepting lower profit margins.

Evaluation: the impact of these objectives depends on the market. Most firms selling on platforms such as Amazon Marketplace and eBay are very small, often operating from a house or small industrial unit, but have to compete against well-known brands who also sell on these platforms; they are close to price takers, so their objectives may have little impact on their price and output.

Because price is the key factor on platforms where customers make easy price comparisons, sales maximisation may have the most significant effect on price and output. However, customer ratings and comments are vital on these trading platforms, so non-maximising objectives such as customer service may have the most significant impact.

It also depends on the time period: pursuing growth or market share with low prices now may be a way of maximising profit in the long run, so the difference from profit maximisation may be smaller than it appears. Shareholder pressure,

ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).

performance-related pay and the threat of takeover limit how far managers can depart from profit maximisation, especially for listed companies, and objectives can conflict, so firms often trade off between them.

In conclusion, objectives other than profit maximisation generally lead firms to set a lower price and a higher output than a profit maximiser, with revenue maximisation at $MR = 0$ and sales maximisation at $AR = AC$, while satisfying and stakeholder objectives give outcomes in between. The effect is greatest for firms with some market power, such as the platforms themselves and large brands; for the many small sellers in a highly competitive online market, competition and the need to win ratings mean their price and output are largely determined by the market rather than by their own objectives.

ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).

5

Scarcity is the basic economic problem: human wants are unlimited but the resources available to satisfy them (land, labour, capital and enterprise) are finite.

The issue of scarcity means we have to make choices about what, how and for whom to produce from limited resources, so every economic decision involves an opportunity cost, the value of the next best alternative forgone.

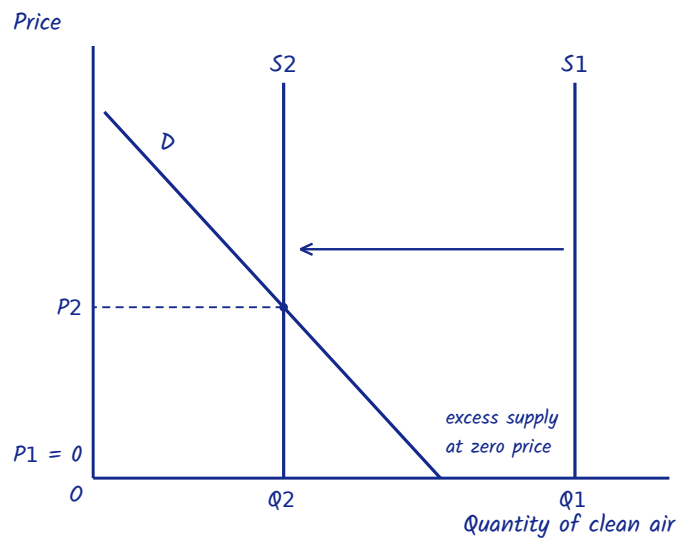
Economic goods are those which are scarce and have a value attached to them: using resources to produce them means other goods cannot be produced, so they have an opportunity cost, and we find ways to use them in an optimum way, including using substitutes and complements. Free goods are those which, when used, do not have a monetary value: supply is unlimited relative to demand at a zero price, so there is no opportunity cost. For example, we breathe in air but do not have to pay for it.

The problem of scarcity therefore implies that there is no need to make a choice between free goods and economic goods, because there is no opportunity cost involved in consuming free goods: breathing more air does not mean giving up anything else. Choices are only needed between economic goods, which can be shown on a production possibility frontier.

Scarcity results in a price being placed on economic goods. The price discourages demand and encourages firms to develop alternatives. As a good becomes scarcer its supply falls, so the price rises to ration the good. In the diagram, when supply is S_1 there is excess supply at a zero price, so clean air is a free good; if supply falls to S_2 , the quantity demanded at a zero price exceeds supply and a positive price P_2 is needed to ration it, so it becomes an economic good.

ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).

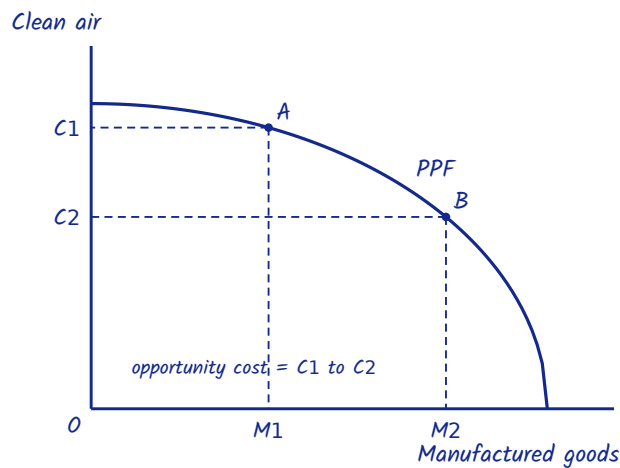


However, choosing to prioritise the production and consumption of economic goods can degrade or exhaust the supply of free goods. Clean air was not a scarce good hundreds of years ago, when the population was a fraction of today. In many large cities, such as Delhi, Beijing and New York, clean air is now scarce, because the atmosphere is used as a sink for dumping pollutants, and its limited capacity to absorb them has been exceeded. Delhi sees 80 deaths a day due to air pollution, showing the very high cost of treating air as free.

Once clean air becomes an economic good, resources must be spent to obtain it, for example installing filters and catalytic converters and switching to cleaner technology, which has an opportunity cost. Society must then choose between more manufactured goods and cheap transport on the one hand and cleaner air on the other, as shown by a move from A to B on the PPF, where more manufactured goods ($M1$ to $M2$) are gained at the cost of less clean air ($C1$ to $C2$).

ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).



Similarly, space was once effectively a free good, but there are at least half a million pieces of space rubbish in the earth's atmosphere, so safe orbits are now scarce: launching satellites risks collisions, and removing debris uses resources.

Sand lying near a river is a free good, but once it is collected and carried to a building site it becomes an economic good, scarce in relation to its demand, and fetches a price.

Evaluation: economics assumes that people make decisions to maximise their own utility. However, if many people do this, the net effect may be to deplete a resource such as clean air, making everyone worse off in the long run, because free goods have no price to signal their growing scarcity and no one has an incentive to conserve them. Therefore, the problem of scarcity does explain why there is a requirement to make choices which consider both economic and free goods. Both free goods and economic goods have utility for economic agents, so ignoring free goods leads to a misallocation of resources.

The answer also depends on how narrowly a good is defined: "air" may be a free good, but "clean air" is, for many people, an economic good nowadays. It depends on location and time: air in rural areas may still be free, while in Delhi it is scarce. Because the market does not price free goods, government intervention,

ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).

such as emissions limits or international agreements on space debris, may be needed to make agents account for the opportunity cost.

In conclusion, the problem of scarcity explains why choices must be made, and strictly it implies no choice is needed between free goods and economic goods because free goods have no opportunity cost. However, as producing economic goods uses up and pollutes free goods, many former free goods, such as clean air in Delhi and orbits in space, have become scarce economic goods, so scarcity now does require us to make choices between producing economic goods and preserving goods that were once free.