



A-level ECONOMICS

Paper 1 Markets and market failure

Tuesday 6 June 2017

Afternoon

Time allowed: 2 hours

Materials

For this paper you must have:

- an AQA 12-page answer book
- a calculator.

Instructions

- Use black ink or black ball-point pen. Pencil should only be used for drawing.
- Write the information required on the front of your answer book. The **Paper Reference** is 7136/1.
- In **Section A**, answer **EITHER** Context 1 **OR** Context 2.
- In **Section B**, answer **ONE** essay.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 80.
- There are 40 marks for **Section A** and 40 marks for **Section B**.
- You will be marked on your ability to:
 - use good English
 - organise information clearly
 - use specialist vocabulary where appropriate.

Advice

- You are advised to spend 1 hour on **Section A** and 1 hour on **Section B**.

Section A

Answer **EITHER** Context 1 **OR** Context 2.

EITHER

Context 1

Total for this context: 40 marks

Privatisation of Royal Mail

Study **Extracts A, B and C** and then answer **all** parts of Context 1 which follow.

Extract A: UK parcels delivery market

Figure 1: UK parcels delivery market shares by revenue, 2015

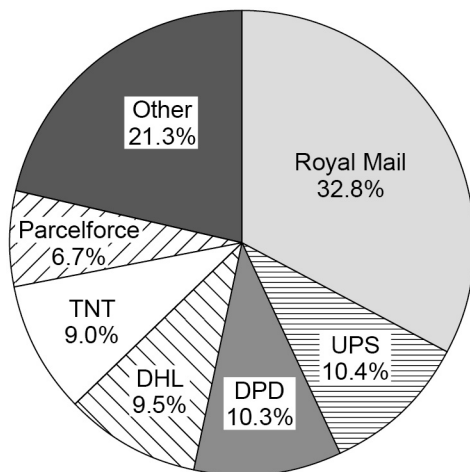
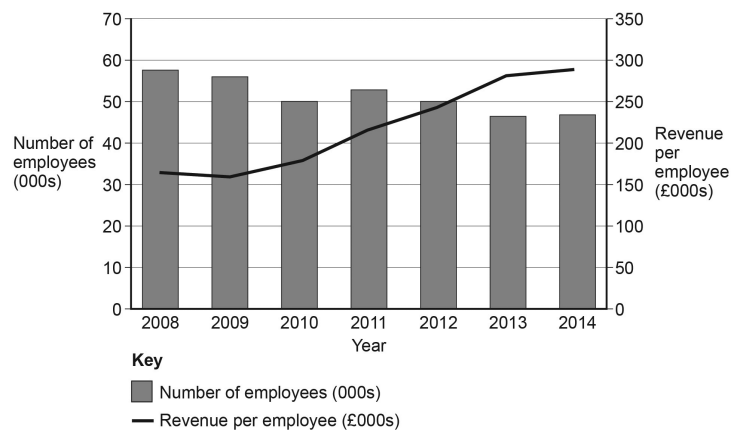


Figure 2: Employees and revenue per employee in the UK parcels delivery market



Source: Apex Insight Industry Report, 2015

Extract B: The privatisation of Royal Mail

Royal Mail has started a new chapter after the government ended 499 years of public ownership by selling off its remaining stake. Although critics have suggested that the government undervalued the company, total proceeds of the sale amount to £3.3 bn. The newly privatised company will have to cope with structural decline in the number of letters sent in the UK (Royal Mail has a near monopoly in this market), as well as fierce competition in the parcels delivery market, which is rapidly growing because of the growth of online shopping.

A review of Royal Mail is under way by the regulator Ofcom, triggered by concerns that the withdrawal of Whistl, a smaller rival in the door-to-door letters delivery market, means the postal operator has no competitive pressure to improve services and become more efficient. Ofcom is considering whether the price Royal Mail charges competing courier companies, such as Whistl or Amazon, to access its own delivery network are fair. It is also examining whether Royal Mail's Universal Postal Service obligations are reasonable. The Universal Postal Service obligations require Royal Mail to deliver letters and parcels to all parts of the country six days a week, unlike its competitors. Some consumer organisations have claimed that increased competition in the parcel market has led to a worsening service for rural and remote consumers, including problems such as non-deliveries and lengthy journeys to collect undelivered items.

Competitive pressures on Royal Mail's profits may require the firm to cut costs. Pay negotiations with workforce representatives are set to begin but the powerful Communication Workers Union is likely to fight any redundancies. Analysts say that this could make it harder for management to find cash for investments to boost competitiveness. 20

Source: News reports, October 2015

Extract C: Technological innovation in the postal market

Parcel operators compete with Royal Mail both on price, and technological and service innovations. Many competitors are using digital technology to drive innovation, such as notifying customers within a 15-minute window of delivery or interactive services to redirect deliveries. The parcel delivery firm DPD has recently built Europe's largest parcel distribution centre, a £100 million facility in Leicestershire that hints at a future where technology largely replaces labour. In the main, people are only involved in unloading and loading, as well as monitoring operations. This investment reveals the transformation under way in the UK's £8.3 bn parcel delivery market, which is rapidly expanding in response to the sharp growth in online shopping. Three conveyor belts loop its warehouse, where a parcel can enter the system, be scanned and sent to one of 172 possible exit doors within 90 seconds. Once running at full capacity, the facility will be capable of sorting 70 000 items an hour and the company expects to process more than 1 million parcels on its busiest nights. 1

By contrast, at Royal Mail's national distribution centre, workers wait for metal cages to be filled with parcels before rolling them across the warehouse floor. However, changes are afoot as Royal Mail clings to its dominant share of the parcel market, with some distribution centres accepting dispatches from retailers on Sundays. Royal Mail is also introducing equipment such as 'finger scanners' that allow workers to pick up and scan parcels more efficiently, as well as handheld smart devices for 76 000 frontline staff at a cost of £130 million. 5 10 15

Source: News reports, December 2015

- | | | |
|----------|----------|---|
| 0 | 1 | <p>Using the data in Extract A (Figure 1), calculate the three-firm concentration ratio in the UK parcels delivery market. Give your answer, as a percentage, to one decimal place.</p> <p style="text-align: right;">[2 marks]</p> |
| 0 | 2 | <p>Explain how the data in Extract A (Figure 2) show that the UK parcels delivery market is displaying dynamic efficiency.</p> <p style="text-align: right;">[4 marks]</p> |
| 0 | 3 | <p>Extract B (lines 12–14) states that 'The Universal Postal Service obligations require Royal Mail to deliver letters and parcels to all parts of the country six days a week'.</p> <p>With the help of a monopoly diagram, explain how the Universal Postal Service obligations are likely to affect Royal Mail's costs and profits.</p> <p style="text-align: right;">[9 marks]</p> |
| 0 | 4 | <p>Extract C (line 2) states that 'Many competitors are using digital technology to drive innovation'.</p> <p>Use the extracts and your knowledge of economics to assess whether the benefits outweigh the costs when the Government privatises organisations such as Royal Mail and opens up the market to competition.</p> <p style="text-align: right;">[25 marks]</p> |

Turn over ►

Do **NOT** answer Context 2 if you have answered Context 1.

OR

Context 2

Total for this context: 40 marks

The gender pay gap

Study **Extracts D, E and F** and then answer **all** parts of Context 2 which follow.

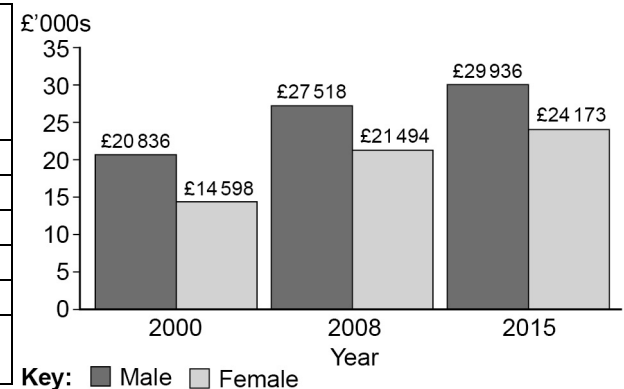
Extract D

Figure 3: Differences between male and female wages and employment in selected countries

Selected countries	Wage gap (%)	Female labour force participation rate (%)	Male labour force participation rate (%)
Japan	27	66	85
Norway	15	76	80
Slovenia	3	67	74
UK	18	72	83
USA	17	67	78
OECD* average	17	68	80

Source: Official statistics, 2016

Figure 4: Full-time annual earnings before tax, UK, 2000 to 2015



Source: Official statistics, 2016

*The OECD is the Organisation for Economic Co-operation and Development.

Extract E: Causes of the gender pay gap

Since the Equal Pay Act 1970, it has been illegal to pay men and women differently for the same work. Despite this, the overall pay gap is 19.2%, according to the Office of National Statistics. The pay gap for full-time workers is lower, at 9.4%, and the gap for part-time workers is actually negative, at -6.5%. In the UK, 41% of female workers are part-time, compared to only 11% of males.

1

5

Prior to the Equal Pay Act, it was common to find firms paying women less than men for comparable work, but since then discriminatory attitudes have lessened to the extent that some economists deny that the wage gap is a problem at all. A recent report found that women working in the same job, and at the same level, are paid just 0.8% less than their male equivalents. Certainly, the pay gap has been shrinking, partly due to demographic and social changes. In earlier times, most senior, highly paid jobs were held by men, while women of the same generation stayed at home. The Government claims that 2.2 million women who are not working want to work. They believe that increasing the female labour force participation rate could add 10% to the size of our economy by 2030, as well as benefiting women directly.

10

Interestingly, women in their twenties currently out-earn men and it is only when they reach their thirties, and perhaps start a family, that the pay gap starts to emerge. Is this due to employers undervaluing female staff once they have had a baby, or to outdated social conventions that women should be the main childcarers? Most of the highest paid jobs in

15

finance, engineering, science and technology are predominantly populated by men, while most of the lowest paid jobs, like caring and hospitality, are largely done by women. 80% of those working in the low paid care and leisure sector are women, compared to only 10% in the better paid skilled trades. The tendency for women to participate in low-productivity sectors is now a bigger factor in their low pay than discrimination. 20

Source: News reports, April 2016

Extract F: Tackling the gender pay gap

In 2016, the UK Government unveiled plans for a league table ranking firms by their gender pay gap. Companies with more than 250 employees will have to disclose how the salaries of their male and female staff differ. The Government hopes that this league table, of around 8 000 firms, will draw attention to the worst culprits. The Chartered Management Institute commented that shining a light on what men and women are paid at every level...is proven to speed up progress and would boost business productivity. But the Confederation of British Industry have warned that rankings unfairly name and shame firms as data will only be able to present a partial picture, given factors such as the mix of part-time and full-time working. 1 5

Trade unions have also questioned whether information alone is sufficient to bring about change. Unions have a role in supporting women to achieve promotions, negotiate better pay and obtain flexible working practices, such as part-time work, homeworking, paternity leave and on-site crèches. Should the government policy be to encourage women to join trade unions? Some economists suggest that the gender pay gap is halved for women who are union members compared to those who are not. Other suggestions include raising National Minimum Wage rates to increase the incomes of low-paid women and to encourage firms to appoint women to company boards. Women hold only 23.2% of posts on the boards of directors of large British firms, whereas Norway requires that large companies fill 40% of board positions with women. The UK Government recognises the need to raise aspirations and attainment for girls. The last decade has seen successful initiatives promoting traditionally male academic courses and careers to girls and young women. 10 15 20

Source: News reports, February 2016

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|----------|----------|---|
| 0 | 5 | <p>Using the data in Extract D (Figure 3), calculate the mean female labour force participation rate for the five countries listed. Give your answer to one decimal place. [2 marks]</p> |
| 0 | 6 | <p>Explain how the data in Extract D (Figure 4) show that the degree of inequality between the pay of male and female workers is falling. [4 marks]</p> |
| 0 | 7 | <p>Extract E (lines 22–23) states that ‘The tendency for women to participate in low-productivity sectors is now a bigger factor in their low pay than discrimination’.</p> <p>With the help of a diagram, explain how the difference between the marginal revenue product of male and female workers might account for the lower average earnings of women. [9 marks]</p> |
| 0 | 8 | <p>Extract F (lines 19–20) notes that ‘The UK Government recognises the need to raise aspirations and attainment for girls’.</p> <p>Use the extracts and your knowledge of economics to evaluate the policies that government might use to reduce the gender pay gap. [25 marks]</p> |

Turn over ►

Section B

Answer **ONE** essay from this section.

Each essay carries 40 marks.

EITHER**Essay 1**

Roughly £18bn is forecast to be spent in the UK on advertising in 2017. Much of this will be spent by monopolistically competitive firms or oligopolies seeking to differentiate the products they sell to consumers.

0	9
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Explain how price and output are determined for a firm in a monopolistically competitive market, in both the short run and the long run.

[15 marks]

1	0
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Evaluate the view that government regulation of monopolistically competitive markets is unnecessary, and that policies to encourage competition and prevent the abuse of monopoly power should focus entirely on oligopolies and monopolies.

[25 marks]

OR**Essay 2**

Attempts by governments to equalise incomes are well-intentioned but counter-productive. They destroy incentives for people to lift themselves out of poverty.

1	1
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Explain the main causes of poverty in the UK.

[15 marks]

1	2
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To what extent can the problem of poverty in the UK be solved through the operation of market forces? Justify your answer.

[25 marks]

OR

Essay 3

In 2018, the UK Government will impose a new tax on sugary drinks, aimed at tackling obesity. Behavioural economists believe that taxation alone is unlikely to be very effective in reducing consumption. By 2050, obesity is predicted to affect 60% of adult men, 50% of adult women and 25% of children. It is associated with a range of health problems including type 2 diabetes, cardiovascular disease and cancer.

1	3
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Explain why, in a free market, sugary drinks may be overconsumed.

[15 marks]

1	4
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Evaluate the view that imposing a tax is the most effective government policy for reducing the market failures arising from overconsumption of unhealthy food and drink.

[25 marks]

END OF QUESTIONS

There are no questions printed on this page

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Question
number

0 1

Three-firm concentration ratio = combined market share of the three largest firms.

Royal Mail 32.8% + UPS 10.4% + DPD 10.3% = 53.5%

0 2

Dynamic efficiency is achieved when firms lower their costs of production and improve their products over time through investment, innovation and new technology.

Figure 2 shows that the number of employees in the UK parcels delivery market fell from about 58 000 in 2008 to about 47 000 in 2014, whereas revenue per employee rose from about £160 000 to about £290 000, an increase of around 80%.

Fewer workers are therefore generating much more revenue each, so labour productivity has risen sharply. Since this has happened while the number of workers fell, it is likely to be the result of investment in capital and new technology, such as automated sorting centres and digital tracking, and better organisation. Average costs fall over time as productivity rises, which shows that the market is displaying dynamic efficiency.

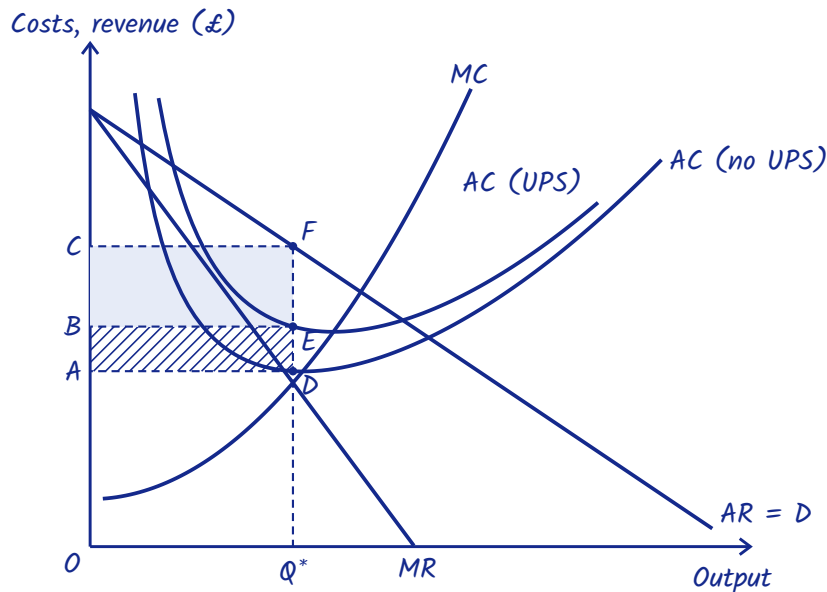
0 3

A monopoly is a market dominated by a single firm. Royal Mail has a near monopoly in letters (Extract B) and the largest share of the parcels market, 32.8%. The Universal Postal Service (UPS) obligations require Royal Mail, unlike its competitors, to deliver letters and parcels to every address in the UK, including remote rural areas, six days a week.

Effect on costs: to reach every address Royal Mail must run a much larger national network, with more mail depots and delivery offices, a larger fleet of vehicles and more staff. Many of these are fixed costs that must be paid regardless of the volume of mail, so average costs at every level of output are higher. Delivering to rural and remote areas also involves longer journeys, more fuel and more staff time per item, and six-day delivery means vans and staff are used even on days when volumes are low, so there is spare capacity and productivity is lower.

Do not write outside the box

Question
number



As shown in the diagram, the UPS shifts the average cost curve up from AC (no UPS) to AC (UPS). Royal Mail still profit maximises where $MC = MR$, producing Q^* and charging price C , read off the AR curve at F. Without the UPS average cost at Q^* would be A , so supernormal profit would be the whole area $ACFD$.

With the UPS, average cost at Q^* rises to B , so supernormal profit shrinks to the shaded area $BCFE$; the hatched area $ABED$ is the profit lost to the extra costs. If the UPS also raises variable costs, MC shifts up as well, so output falls, price rises and profit falls further.

Profits are squeezed further because competitors without the obligation can 'cherry pick' the most profitable, densely populated urban routes and types of business, undercutting Royal Mail there and leaving it with the loss-making rural deliveries, which have to be cross-subsidised. However, the size of the fall in profit depends on how far Royal Mail can use its monopoly power to pass the higher costs on to consumers: demand for letters is fairly price inelastic, so higher prices would protect profit, unless Ofcom limits its prices. The UPS may also give Royal Mail a reputation for reliability that wins business, partly offsetting the higher costs.

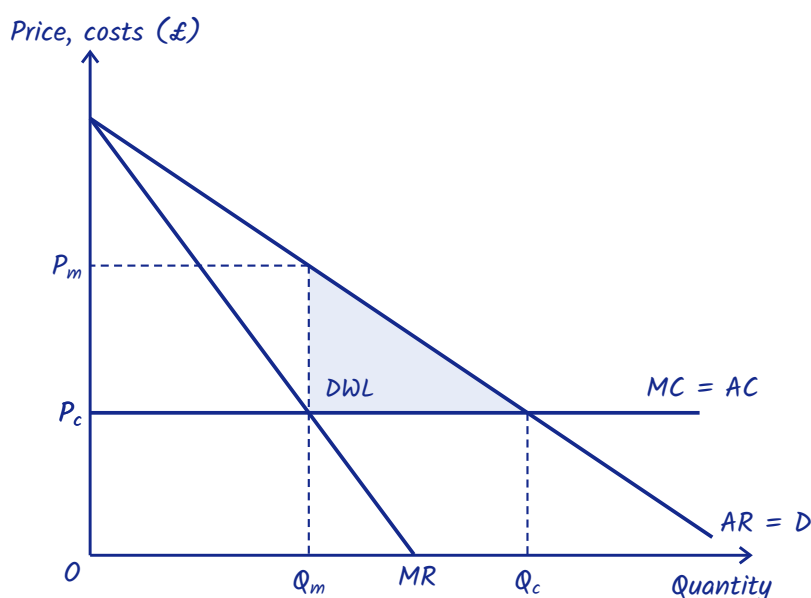
0 4

Privatisation is the transfer of a state-owned organisation into private ownership, as with the sale of the government's remaining stake in Royal Mail, which raised £3.3 bn (Extract B). It is often combined with deregulation or liberalisation, which removes barriers to entry so that new firms such as DPD, UPS and Whistl

Do not write outside the box

can compete.

The main benefit is greater efficiency. A state-owned firm has no profit motive and no threat of bankruptcy, so it tends to suffer from X-inefficiency, with costs above the minimum possible. Once privatised, Royal Mail is accountable to shareholders who want profits, and competitive pressure forces it to cut costs (Extract B, line 18). Competition also drives dynamic efficiency: Extract C shows competitors using digital technology to notify customers within a 15-minute delivery window, and DPD investing £100 million in a highly automated distribution centre that can sort 70 000 items an hour. Royal Mail has been forced to respond, introducing finger scanners and handheld smart devices for 76 000 frontline staff at a cost of £130 million and accepting dispatches on Sundays. Revenue per employee in the market rose from about £160 000 to £290 000 between 2008 and 2014 (Figure 2), evidence of rising productivity.



Opening the market to competition also benefits consumers through lower prices and more choice. As shown in the diagram, a monopolist maximises profit where $MC = MR$, restricting output to Q_m and charging P_m . With competition, price is driven down towards marginal cost, so output rises to Q_c and price falls to P_c . Consumer surplus increases and the deadweight welfare loss (shaded) is removed, so the market moves towards allocative efficiency, with firms more responsive to what consumers want.

Privatisation also gives the firm access to private capital markets, so investment

no longer has to compete with schools and hospitals for scarce government funds and is not cut when the government needs to reduce borrowing. The sale raised £3.3 bn, which reduces public sector borrowing, and the government no longer bears the risk of losses.

However, there are significant costs. First, critics argue the government undervalued Royal Mail (Extract B), so taxpayers received less than the true value of the asset, and the sale proceeds are a one-off gain, whereas the government gives up the future stream of profits for ever.

Second, privatisation may simply replace a public monopoly with a private one. In letters Royal Mail still has a near monopoly and, after Whistl withdrew, it faces 'no competitive pressure to improve services and become more efficient' (Extract B). A private monopolist may exploit its market power by raising prices and cutting quality to increase supernormal profit, so the welfare loss shown in the diagram could actually grow. This means a regulator such as Ofcom is needed, which is costly, and regulation may fail because of asymmetric information or regulatory capture. Royal Mail also controls access to the delivery network, and Ofcom is investigating whether the prices it charges rivals such as Amazon and Whistl are fair.

Third, competition can damage the quality and consistency of service.

Profit-seeking rivals concentrate on profitable urban areas, and consumer organisations claim that service for rural and remote consumers has worsened, with non-deliveries and long journeys to collect items (Extract B). Postal services have positive externalities and a strong equity case, as they keep remote communities and businesses connected, and the free market would under-provide them. Cherry picking also threatens the finances of the Universal Postal Service, which may then need a subsidy.

Fourth, workers may lose out. DPD's centre 'hints at a future where technology largely replaces labour' (Extract C), and employment in the market has fallen from about 58 000 to 47 000. The powerful Communication Workers Union is likely to resist redundancies, which could lead to strikes and make it harder to find cash for investment (Extract B), so the efficiency gains may be delayed.

Evaluation: whether the benefits outweigh the costs depends on the type of market. Parcels delivery is growing rapidly because of online shopping (the market is worth £8.3 bn), has relatively low barriers to entry and is highly contestable, so competition clearly brings lower prices and innovation. Letters delivery, by contrast, is in structural decline and has natural monopoly characteristics: the national network has very high fixed costs and large economies of scale, so duplicating it is wasteful, and the failure of Whistl suggests competition there is unsustainable. In letters, the benefits of privatisation depend largely on how effective Ofcom is, for example through RPI – X price caps and quality targets. The time period also matters. In the short run the costs are visible, such as job losses and the risk of undervaluation, while the efficiency and innovation benefits build up over the long run. Alternatives, such as keeping public ownership but contracting out services, or funding the UPS through a levy on all operators, might achieve some benefits at lower cost.

Overall, I judge that the benefits outweigh the costs in competitive markets such as parcels, where the evidence of dynamic efficiency is strong. For natural monopoly elements such as letters, the benefits only outweigh the costs if the regulator protects the Universal Postal Service and prevents abuse of monopoly power, so effective regulation is the key condition for privatisation to succeed.

Question
number

0 5

$$\text{Mean} = (66 + 76 + 67 + 72 + 67) \div 5 = 348 \div 5 = 69.6\%$$

0 6

The degree of inequality is best measured by women's pay relative to men's, not the absolute difference. Female full-time earnings as a percentage of male earnings were:

$$2000: £14\,598 \div £20\,836 = 70.1\%; 2008: £21\,494 \div £27\,518 = 78.1\%; 2015: £24\,173 \div £29\,936 = 80.7\%.$$

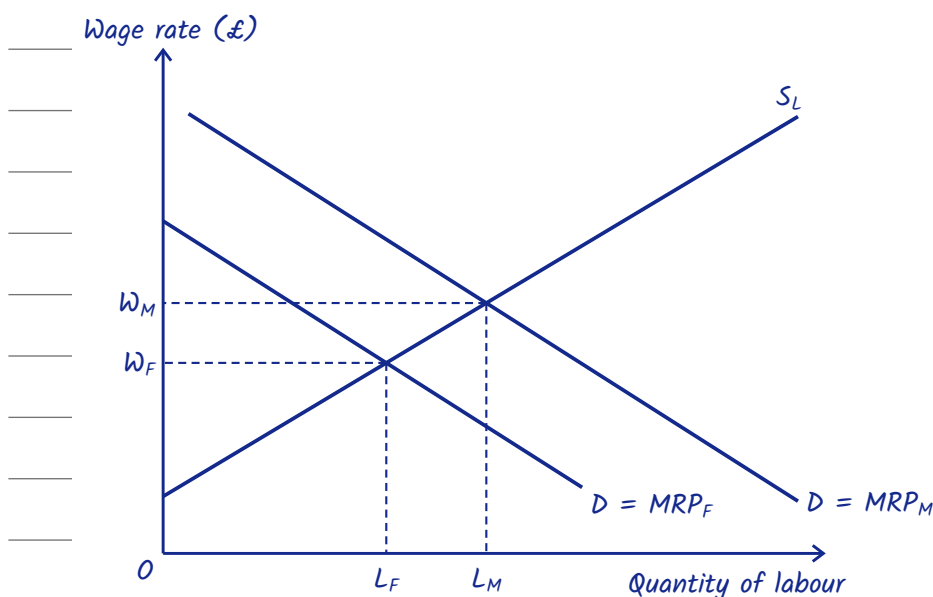
So the gender pay gap in relative terms fell from about 29.9% to about 19.3%.

This is because women's earnings rose by 65.6% between 2000 and 2015, while men's rose by only 43.7%. The absolute gap also narrowed slightly, from £6238 to £5763. Women are still paid less than men, but the degree of inequality is falling.

0 7

Marginal revenue product (MRP) is the extra revenue a firm gains from employing one more worker: $\text{MRP} = \text{marginal physical product (MPP)} \times \text{marginal revenue}$.

The demand for labour is a derived demand, and a profit-maximising firm employs workers up to the point where the wage equals MRP, so the MRP curve is the demand curve for labour. The higher the productivity of workers, and the higher the price of what they produce, the higher the MRP and so the higher the wage.



Extract E states that 80% of those working in the low-paid care and leisure sector are women, while the highest paid jobs in finance, engineering, science and

technology are mainly done by men. In caring and hospitality, output per worker is hard to raise with capital and the value of the output is low (care is often funded by tight public budgets), so MRP is low. In finance and engineering, workers use a lot of capital and produce output of high value, so MRP is high. As shown in the diagram, if both groups face similar supply conditions, the higher demand curve $D = MRP_M$ in male-dominated sectors gives a wage of W_M , whereas the lower $D = MRP_F$ in female-dominated sectors gives a wage of only W_F . Average earnings of women are therefore lower even if no employer discriminates, which is consistent with women in the same job and at the same level being paid only 0.8% less than men.

Within firms, MRP differences can also arise because women are under-represented in senior roles and take career breaks to have children, so they build up less experience and firm-specific human capital. This is why the gap emerges in women's thirties (Extract E). 41% of female workers are part-time, often in jobs with less training and fewer promotion prospects. Where output is hard to measure, employers' perceptions of productivity matter, so lower perceived MRP, possibly reflecting discrimination, also lowers women's wages. Finally, if many women seek flexible work in the same sectors, the supply of labour there is high, pushing wages down further. However, MRP may understate the social value of care work, which has positive externalities, so low pay does not necessarily mean low value to society.

08

The gender pay gap is the difference between the average earnings of men and women, expressed as a percentage of male earnings. In the UK the overall gap is 19.2% (Extract E), and the wage gap of 18% is above the OECD average of 17% and far above Slovenia's 3% (Figure 3). The gap has narrowed, as women's full-time earnings rose from 70.1% of men's in 2000 to 80.7% in 2015 (Figure 4). Since discrimination for the same work is now small (0.8%), the main causes are occupational segregation into low-MRP sectors, part-time working (41% of women compared with 11% of men) and the career penalty from having children. Effective policies must target these causes.

Raising aspirations and attainment for girls (Extract F). Promoting traditionally male courses and careers, such as science, engineering and technology, increases girls' human capital and allows them to enter high-MRP occupations. As shown in the diagram in my answer to 07, this would raise the demand for female labour and increase women's wages, tackling the root cause of the gap. It also reduces occupational immobility and the shortage of skilled engineers, raising productivity in the economy as a whole. However, the policy works only in the long run, as today's schoolgirls will not reach senior posts for decades, and subject choices also reflect preferences and social norms that are slow to change. It does nothing for women already in the labour market.

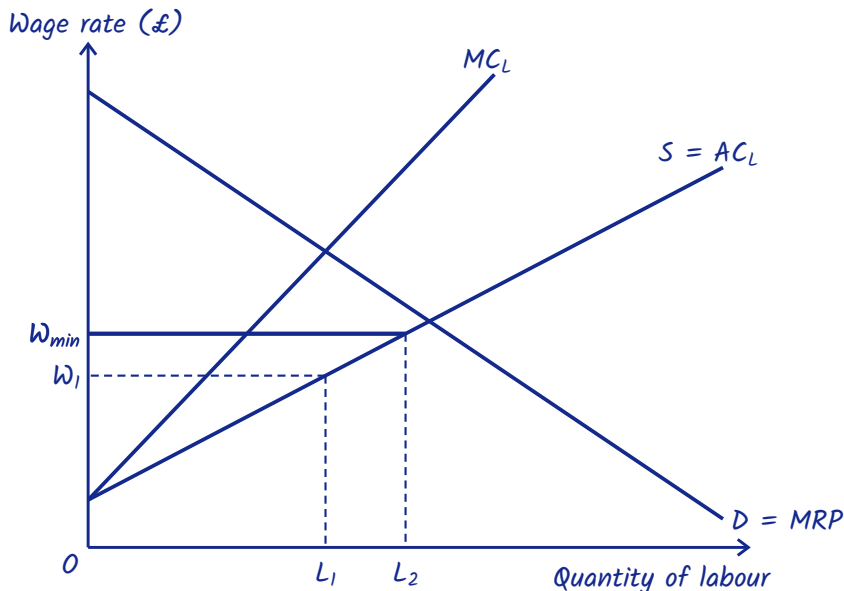
Pay disclosure league tables. Firms with more than 250 employees must publish their gender pay gaps (Extract F). This reduces asymmetric information, so workers can compare employers, and reputational pressure may push firms to change, which the Chartered Management Institute says speeds up progress. The cost to the government is low. However, the CBI warns that the data present only a partial picture, as a firm employing many part-time women may appear to discriminate when it does not. Information alone may not change behaviour, and the policy covers only around 8000 firms.

Encouraging trade union membership. Unions can use collective bargaining to raise wages towards workers' MRP and negotiate flexible working, paternity leave and on-site crèches (Extract F); some economists suggest the gap is halved for union members. However, union membership has been in long-term decline, female membership is already higher than male yet the gap persists, and it is unclear how a government could encourage membership or whether it should. Unions that push wages above MRP in competitive markets may reduce employment.

Boardroom quotas. Norway requires 40% of board positions to be held by women, compared with only 23.2% in large UK firms. Quotas could break the 'glass ceiling' and provide role models. However, they affect very few women directly, may lead to tokenism and restrict firms' freedom to appoint the best candidate, which could reduce efficiency.

Raising the National Minimum Wage. Since women dominate low-paid sectors such

as care, a higher minimum wage directly raises their incomes and narrows the gap at the bottom of the pay distribution. In a competitive labour market, however, a minimum wage above equilibrium causes an excess supply of labour, so some low-paid women might lose their jobs or hours, and care providers already face tight budgets. The effect depends on market structure:



As shown in the diagram, a monopsony employer (for example a large care home chain in a town) hires L_1 workers where $MC_L = MRP$ and pays only w_1 . A minimum wage set at w_{min} makes the marginal cost of labour constant at w_{min} up to the supply curve, so employment rises to L_2 and wages rise. Where employers have monopsony power, a minimum wage can raise women's pay without reducing employment.

Childcare and parental leave. Subsidised childcare and shared parental leave would reduce the career penalty of motherhood and allow more women to work full time. The Government claims 2.2 million women who are not working want to work and that higher female participation could add 10% to the economy by 2030 (Extract E). The policy is expensive, causing an opportunity cost, but higher employment would raise tax revenue and reduce benefit spending, partly paying for itself. Tougher penalties for discrimination are another option, but discrimination is now a smaller cause.

Evaluation: first, it can be questioned whether the gap is entirely a problem. Women in their twenties out-earn men and part-time women earn 6.5% more per

hour than part-time men, so some of the gap reflects choices about work and family. Market forces are already narrowing it, so heavy intervention risks government failure, raising firms' labour costs and making them less willing to employ women. Second, no single policy is enough, since the gap has several causes. Pay disclosure is cheap but weak; the NMW is a blunt instrument whose success depends on monopsony power; quotas affect only a few.

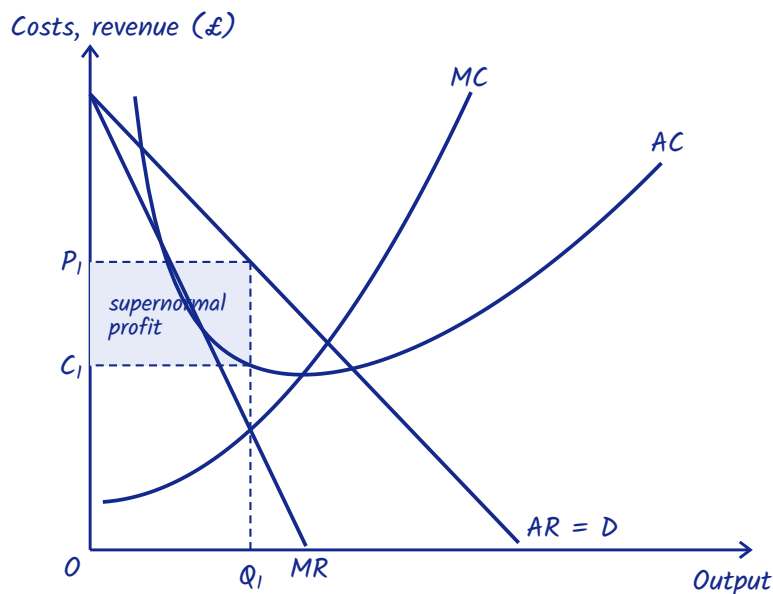
In conclusion, the most effective policies are those that tackle the main causes: occupational segregation and the motherhood penalty. A combination of raising girls' aspirations in STEM subjects in the long run and subsidised childcare with shared parental leave in the short run is likely to have the largest impact, supported by low-cost pay disclosure to keep pressure on firms.

Question
number

0 9

A monopolistically competitive market has many firms and many consumers, each firm with a small market share; products are differentiated, for example by branding, quality, location or advertising; there are no significant barriers to entry or exit; and consumers have good information. Examples include restaurants, hairdressers and clothes shops. Because products are differentiated, each firm has some influence over its price and faces a downward sloping demand (AR) curve, which is fairly price elastic because there are many close substitutes. As each firm is small, it makes price and output decisions independently, without worrying about rivals' reactions.

Short run. The firm aims to maximise profit, so it produces where marginal cost equals marginal revenue ($MC = MR$). The price is then found from the AR curve at that output.



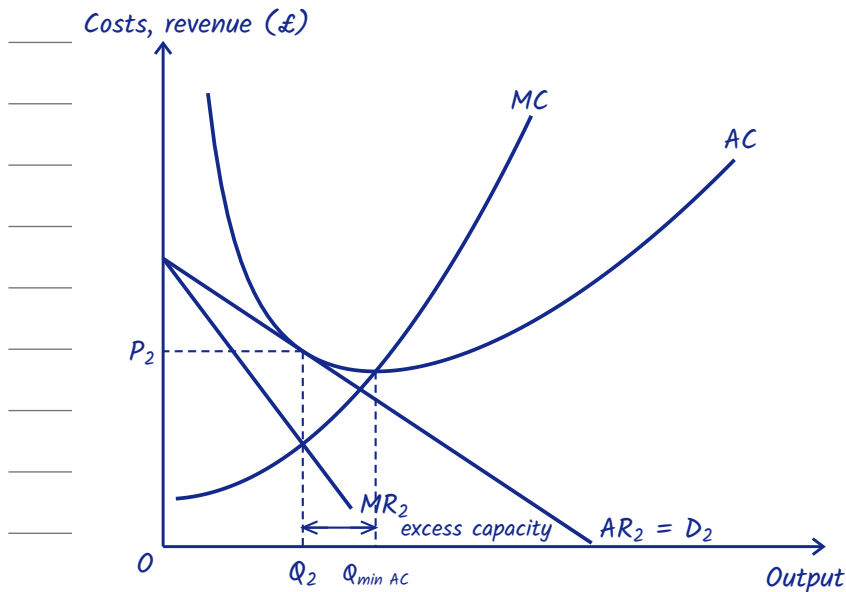
As shown in the diagram, the firm produces Q_1 where $MC = MR$ and charges P_1 .

Average cost at Q_1 is C_1 , which is below P_1 , so the firm makes supernormal (abnormal) profit equal to the shaded area $(P_1 - C_1) \times Q_1$. A firm could also make a loss in the short run if demand is low, so that AR lies below AC.

Long run. Supernormal profit acts as a signal to entrepreneurs. Since there are no barriers to entry, new firms enter the market offering similar, close-substitute products. Each existing firm loses customers, so its demand (AR) curve shifts to the left, and it also becomes more price elastic because there are more substitutes. Entry continues until supernormal profit has been competed away.

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As shown in the diagram, long-run equilibrium occurs where the new AR_2 curve is just tangent to the AC curve. The firm still profit maximises where $MC = MR_2$, producing Q_2 , and at this output price P_2 equals average cost, so only normal profit is made. If firms were making losses, the reverse would happen: some firms would leave, the remaining firms' demand would shift right, and losses would disappear until normal profit was restored.

In long-run equilibrium price and output differ from perfect competition. Output Q_2 is below the output at minimum average cost, so the firm has excess capacity and is productively inefficient, and price is above marginal cost, so it is allocatively inefficient. Firms therefore try to escape this position by further differentiating their products through advertising and branding, such as the £18bn spent on UK advertising. If successful, this shifts AR to the right and makes it less elastic, allowing supernormal profit to be earned again in the short run, although the extra advertising raises costs and rivals will copy successful ideas, so in the long run normal profit returns.

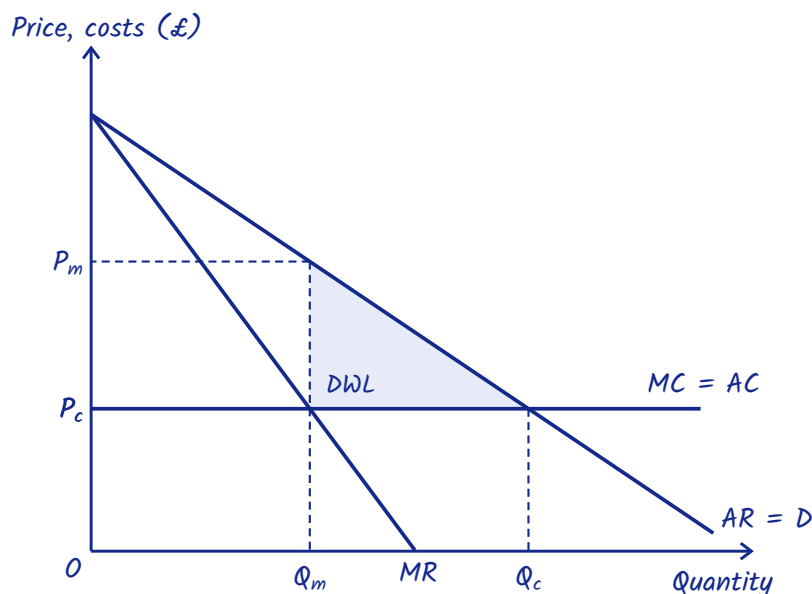
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Government regulation includes competition policy, enforced in the UK by the Competition and Markets Authority (CMA), sectoral regulators such as Ofgem, Ofwat and Ofcom, and wider rules on consumer protection, health and safety and information. Its objectives include efficiency, fairness for consumers, safety and transparency.

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In monopolistically competitive markets there are many firms, differentiated products and low barriers to entry, for example restaurants, hairdressers and estate agents. In an oligopoly a few firms dominate, there are high barriers to entry and firms are interdependent, such as supermarkets or energy suppliers. A monopoly is a single dominant firm, legally a firm with over 25% market share, such as Royal Mail in letters.

The case for the view. Market power, and so the potential to abuse it, lies mainly with oligopolies and monopolies. High barriers to entry allow them to raise prices above marginal cost and restrict output, earning supernormal profit in the long run.



As shown in the diagram, a monopolist producing where $MC = MR$ sets output Q_m and price P_m , compared with Q_c and P_c under competition. Consumer surplus is transferred to the producer and there is a deadweight welfare loss (shaded), so the market is allocatively inefficient. Lack of competition can also cause X-inefficiency. Oligopolists have an incentive to collude, forming cartels to fix prices like a monopoly. This is why the CMA investigates mergers and cartels, can fine firms up to 10% of turnover and can force firms to sell off parts of their businesses, while regulators use RPI – X price caps for natural monopolies such as water.

Monopolistically competitive markets, in contrast, are highly contestable. Any firm making supernormal profit attracts new entrants, so in the long run only normal

profit is made, and firms cannot sustain high prices. Market forces do the job of regulation automatically. Their welfare losses are small because demand is price elastic, and competition encourages innovation and choice. Regulating many small firms would also be very costly relative to the benefit, and the scarce resources of the CMA are better used where the harm is greatest. Information problems are increasingly solved by the market itself, through review websites such as TripAdvisor and product testing by Which?.

The case against the view. First, monopolistic competition still involves inefficiency: in long-run equilibrium price exceeds marginal cost and firms operate with excess capacity, so they are both allocatively and productively inefficient. Excessive advertising (much of the £18bn) and excessive product differentiation use scarce resources with little social benefit, and too much choice can confuse consumers. Second, product differentiation and location can give firms local monopoly power, such as the only takeaway in a village or a branded product with loyal customers, so some abuse is possible.

Third, many market failures in these markets are not about monopoly power at all, but still require regulation. Asymmetric information means consumers cannot judge the hygiene of a restaurant kitchen or the safety of beauty treatments, so food hygiene ratings, health and safety rules and laws against misleading advertising are necessary. Negative externalities such as litter from fast food outlets also need intervention. Without regulation, firms in competitive markets may compete by cutting corners on safety. So regulation of monopolistically competitive markets is necessary, even if competition policy is not.

Fourth, it would be wrong to focus 'entirely' on oligopolies and monopolies as if all of them were harmful. Some large firms benefit consumers: natural monopolies and oligopolies can exploit economies of scale, giving lower average costs than many small firms, and supernormal profit can fund research and development, leading to dynamic efficiency, as Schumpeter argued. Contestable oligopolies with low sunk costs may behave competitively. Intervention can also lead to government failure: regulators face asymmetric information, may suffer regulatory capture, and price caps may discourage investment.

Evaluation: the answer depends on what is meant by regulation. If it means policies to encourage competition and prevent abuse of monopoly power, then it is reasonable for these to focus mainly on oligopolies and monopolies, because that is where barriers to entry, collusion and large welfare losses are found, and monopolistically competitive markets correct themselves through entry in the long run. However, even this needs a qualification, because a merger of small firms could create a new oligopoly, so the CMA must keep watching all markets.

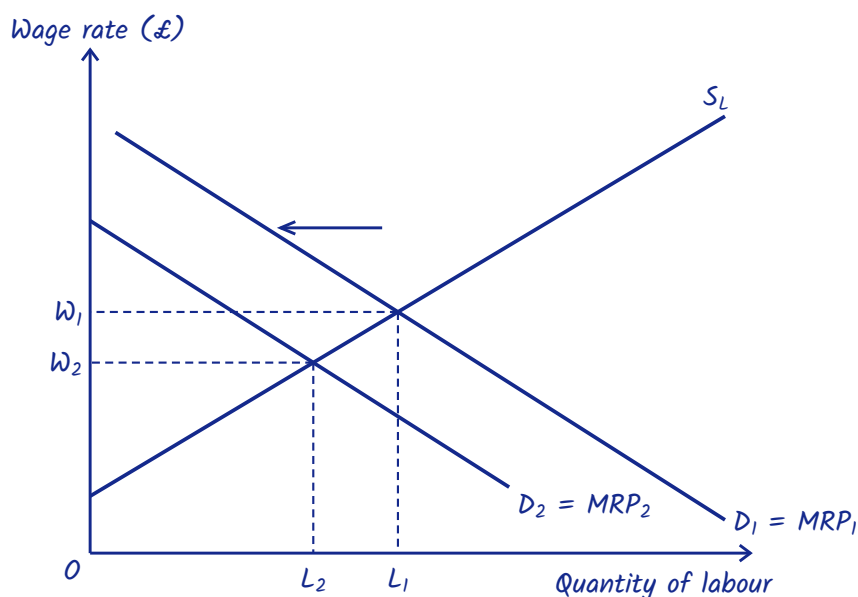
If regulation is understood more widely, the view is wrong. Consumer protection, safety and information regulation is essential in monopolistically competitive markets, which affect consumers every day, and online reviews only partly correct information gaps. In conclusion, competition policy should concentrate on oligopolies and monopolies, judged by contestability and behaviour rather than the number of firms, but government regulation of monopolistically competitive markets is still necessary to correct information failures and externalities.

Absolute poverty is when a household cannot afford basic necessities such as food, shelter and heating. Relative poverty is when household income is low compared with the average; in the UK it is measured as income below 60% of median household income, either before or after housing costs. Poverty is mainly about low income, but wealth poverty, having few assets or savings, also matters, as households without wealth cannot cope with shocks. In the UK most poverty is relative.

Unemployment. People without a job rely on benefits, which are much lower than average earnings, so they are likely to be in relative poverty. Cyclical unemployment rises in recessions, as in 2008 to 2009, when aggregate demand falls. Structural unemployment results from the decline of industries such as coal mining and manufacturing, concentrated in regions like the North East, where workers lack the skills for new jobs and are geographically immobile because of high housing costs elsewhere. The unemployment trap also contributes: if benefits are close to the wage a person could earn after tax and work costs such as childcare, there is little incentive to take a job.

Low pay and in-work poverty. Most people in poverty now live in working households. Wages are determined by the marginal revenue product (MRP) of labour, so workers with low skills and low productivity earn low wages.

Technological change and globalisation have reduced the demand for low-skilled labour:



As shown in the diagram, as automation and cheap imports reduce the MRP of low-skilled workers, labour demand shifts from D_1 to D_2 , so the wage falls from W_1 to W_2 and employment falls from L_1 to L_2 . At the same time the supply of low-skilled labour is large, which keeps wages low. More flexible labour markets, including zero-hours contracts, part-time work and temporary jobs, plus the decline of trade union power, mean many workers are underemployed and have weak bargaining power. Employers with monopsony power may pay wages below MRP.

The poverty trap. As low earners increase their income, they pay income tax and National Insurance and lose means-tested benefits at the same time, so the effective marginal tax rate can be very high, sometimes over 70%. This reduces the incentive to work longer hours or seek promotion, keeping people in poverty. High housing costs. Rents and house prices have risen much faster than incomes, because housing supply is inelastic, so poverty after housing costs is much higher than before housing costs, especially in London.

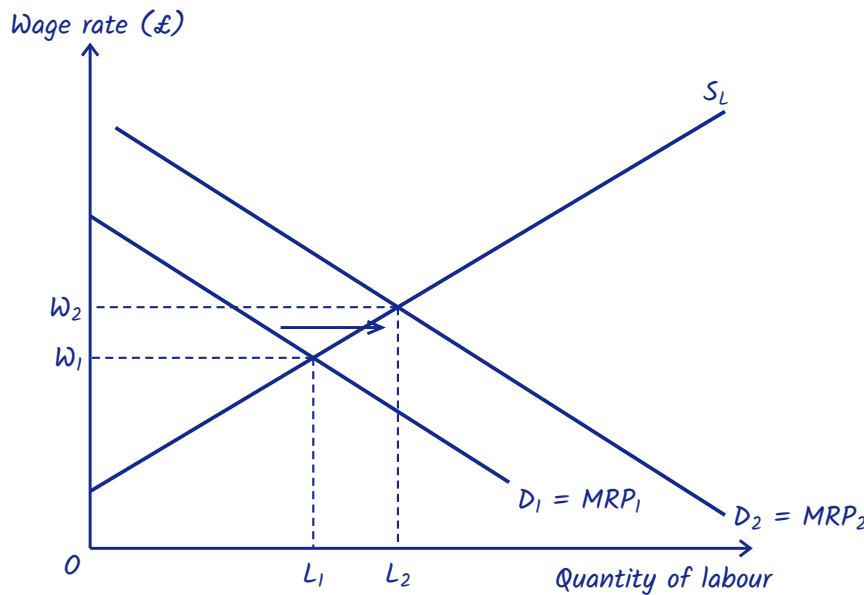
Family circumstances and other factors. Single-parent families and large families are more likely to be poor because there are fewer earners and more dependants, leading to child poverty, which affects around 4 million children. Sickness, disability and caring responsibilities reduce the ability to work, and pensioners relying only on the state pension may be in relative poverty. Finally, poverty is self-reinforcing: children from poor families often have lower educational attainment, so they acquire less human capital and earn lower wages as adults, creating a cycle of poverty across generations. Unequal distribution of wealth, including inheritance, widens these differences further.

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Market forces are the forces of supply and demand which, through the price mechanism, determine prices, wages and the allocation of resources without government intervention. Poverty can be absolute, lacking basic necessities, or relative, having an income below 60% of the median. The extent to which market forces can solve poverty depends greatly on which type is meant.

The case for market forces. First, markets create economic growth and jobs, and

employment is one of the strongest routes out of poverty. As firms grow, the demand for labour rises:



As shown in the diagram, rising demand for labour (D_1 to D_2), as the economy grows and productivity improves, raises both the wage from w_1 to w_2 and employment from L_1 to L_2 . Over the long run, market-driven growth has eliminated most absolute poverty in the UK, and the benefits of growth 'trickle down' to lower income groups through more jobs and higher real wages.

Second, free market economists argue that much poverty is caused or reinforced by the state, not the market. Generous welfare benefits create the unemployment trap and a culture of dependency, and high marginal tax rates create the poverty trap. Lower labour taxes and lower welfare spending give stronger incentives for people to escape poverty by their own efforts, as the statement in the question suggests. Similarly, high housing costs are partly a failure of policy, for example Green Belt planning laws that restrict new homes; allowing the market to build more houses would reduce housing costs and poverty after housing costs.

Third, market forces provide incentives to invest in human capital: the high wages of skilled workers encourage people to train and gain qualifications, raising their MRP. The UK has a reasonable degree of social mobility, and many people classed as poor are only temporarily so, for example students or people between jobs, and move out of poverty through the labour market.

The case against. Markets reward people according to the value of their marginal

revenue product, so those with no or low MRP, such as the sick, disabled, elderly, children and carers, receive little or no income from the market. Market forces cannot solve their poverty. Moreover, relative poverty may actually be increased by markets: skill-biased technological change and globalisation raise the wages of skilled workers while reducing the demand for unskilled labour, widening inequality. The evidence for trickle down is weak, as the gains of growth since the 1980s have gone disproportionately to the top, and wealth tends to become concentrated through inheritance and returns on assets.

There are also market failures that keep people poor. Education and training have positive externalities and suffer from information failure, while poor families face credit constraints, so the free market under-invests in the human capital of the poorest children. Labour markets are not perfectly competitive: monopsony employers can pay wages below MRP, so a National Minimum Wage can raise pay without reducing jobs. Market economies also suffer cyclical unemployment in recessions, which hits low-paid workers hardest.

So some government intervention is needed: a progressive tax system, which redistributes income more effectively than regressive indirect taxes; a minimum wage; state provision of education, healthcare and transport infrastructure to give everyone a minimum level of human and physical capital; and benefits for those unable to work. Well-designed policies can retain incentives, for example working tax credits and Universal Credit's lower taper rate, which reduce the poverty trap, so intervention and incentives are not necessarily in conflict.

Evaluation: the key distinction is between absolute and relative poverty. Market forces have been very successful at reducing absolute poverty through growth in the long run. However, relative poverty is about the distribution of income, and since markets reward people unequally, they cannot remove it; some economists even argue relative poverty is inevitable in any market economy. The magnitude of incentive effects is also disputed: evidence suggests that most people in poverty are in work or unable to work, so cutting benefits would increase hardship rather than incentives.

In conclusion, market forces can solve poverty only to a limited extent. They are

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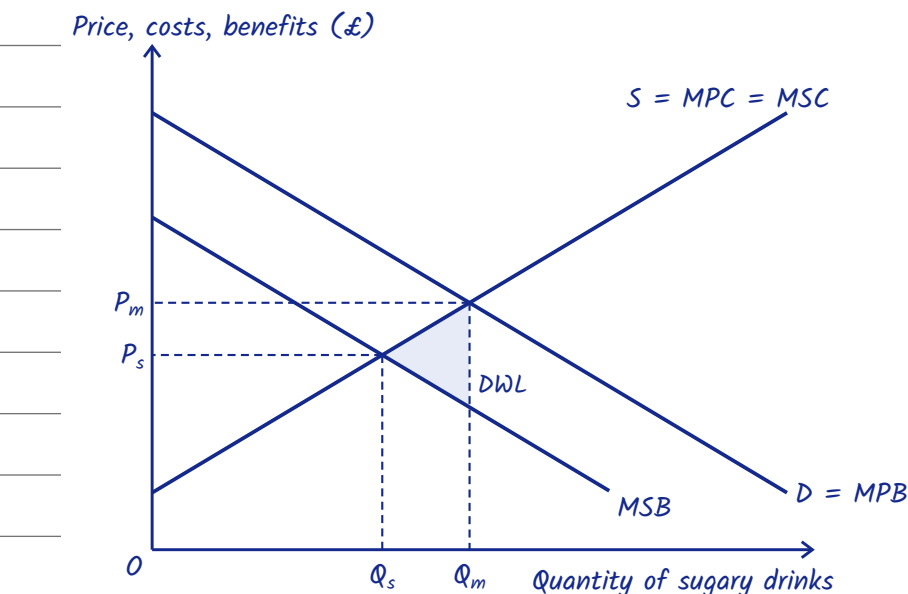
essential for creating the jobs and growth that reduce absolute poverty and help many people escape relative poverty, and government failures such as the poverty trap and restrictive planning should be removed. But without government action to redistribute income, invest in education and support those who cannot work, market forces would leave significant relative poverty and might even increase it. The best approach combines market forces with targeted intervention that keeps the incentive to work.

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Market failure occurs when the free market leads to a misallocation of resources, so that economic welfare is not maximised. Sugary drinks are likely to be overconsumed, meaning that more is consumed than the socially optimal quantity, for several reasons.

Demerit good and information failure. Sugary drinks are a demerit good: consumption is more harmful to the individual than they realise. Consumers have imperfect information about the sugar content of drinks, a can of cola contains around nine teaspoons, and about the long-term health risks, such as obesity, type 2 diabetes, cardiovascular disease and tooth decay. They therefore overestimate the private benefit, so their demand is higher than it would be with full information.

Negative externalities in consumption. Consuming sugary drinks imposes costs on third parties. Obesity, predicted to affect 60% of adult men, 50% of adult women and 25% of children by 2050, increases demand for NHS treatment, which is paid for by taxpayers, and illness reduces productivity and increases sickness absence, lowering output. So the marginal social benefit (MSB) of consumption is below the marginal private benefit (MPB).



As shown in the diagram, consumers ignore the external costs and consume where $MPB = MPC$, at quantity Q_m and price P_m . The socially optimal quantity is Q_s , where $MSB = MSC$. Between Q_s and Q_m the marginal social cost of each drink exceeds its marginal social benefit, so there is overconsumption and a deadweight

welfare loss shown by the shaded triangle (DWL). The price of sugary drinks does not reflect their full social cost.

Behavioural reasons. Behavioural economics shows that consumers are not always rational. Bounded rationality means consumers use rules of thumb rather than carefully weighing up costs and benefits. Bounded self-control means that even when they know drinks are harmful, they find it hard to resist them. Consumers suffer from present bias, valuing the immediate pleasure of a drink much more than future health costs, and from over-optimism bias, believing that illness will happen to other people. Sugar can also be habit forming, so demand becomes more price inelastic and consumption is hard to reduce.

Social norms and marketing. Drinking fizzy drinks is a social norm among many young people, and heavy advertising, often aimed at children, creates brand loyalty and strengthens demand. Large default portion sizes and 'meal deal' offers act as anchors that encourage consumers to buy more. Children are particularly likely to overconsume because they lack information and self-control, which is a concern for their dental health.

Finally, sugary drinks are cheap to produce and are often priced lower than healthier alternatives, so the price signal encourages consumption. For all these reasons, the free market price mechanism leads to a quantity of sugary drinks above the socially optimal level.

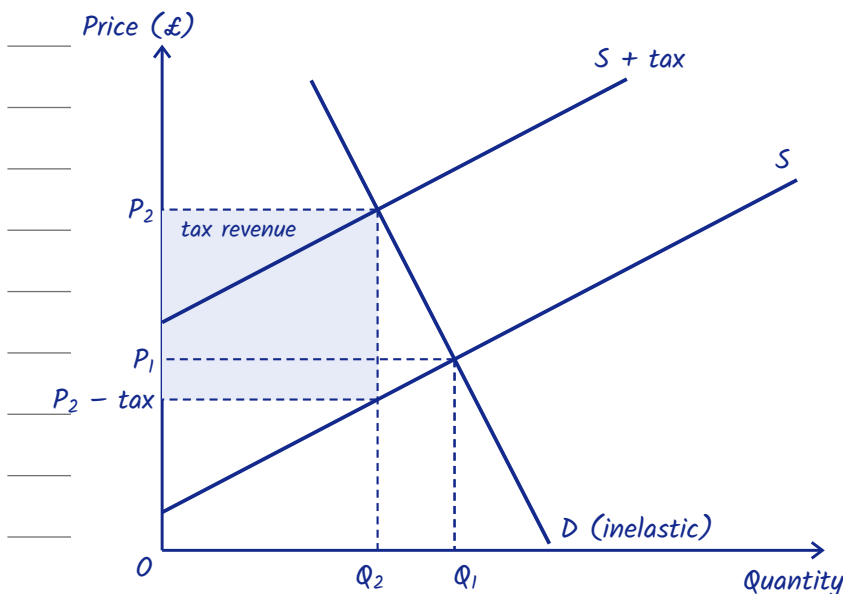
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Overconsumption of unhealthy food and drink causes market failure because these are demerit goods with negative consumption externalities, such as costs to the NHS and lost productivity, and because of information failure and behavioural biases. The aim of policy is to reduce consumption towards the socially optimal level.

How a tax works. An indirect tax can be specific, a fixed amount per unit, such as the UK sugar levy of 18p or 24p per litre depending on sugar content, or *ad valorem*, a percentage of the price, such as VAT. A tax raises firms' costs and shifts the supply curve up, raising price and reducing the quantity demanded. Ideally a Pigouvian tax equal to the marginal external cost internalises the

externality, so the market produces the socially optimal quantity where $MSB = MSC$.



However, as shown in the diagram, if demand is price inelastic, the tax raises price from P_1 to P_2 but quantity falls only a little, from Q_1 to Q_2 . Because sugary drinks are habit forming and have strong brand loyalty, PED is likely to be low, so a tax may not reduce consumption very much. On the other hand, the tax revenue (shaded) is large, and can be spent on public health, for example the sugar levy revenue was promised to school sport, which helps to reduce obesity in another way.

Strengths of a tax. It uses the price mechanism, so consumers who value the drinks most can still buy them, and it raises revenue rather than costing the government money. A major strength of the UK levy is that it is paid by producers according to sugar content, giving them an incentive to reformulate their drinks to reduce sugar and avoid the tax; many firms did this before the levy even started, reducing sugar intake without consumers changing their behaviour.

Weaknesses of a tax. The incidence of the tax depends on the elasticities of demand and supply: firms may absorb some of the tax to protect sales, so the price rise is smaller. Taxes on food and drink are regressive, taking a larger share of the income of poor households, who spend more of their income on such products. It is very hard to value the external cost, so the tax may be set at the

wrong level, causing government failure. The levy only covers some drinks, with milk-based and fruit juice drinks exempt, and does not cover sugary foods such as chocolate, so consumers may simply substitute towards other unhealthy products. Finally, a tax does nothing to correct the information failure or the behavioural biases that cause overconsumption.

Alternative policies. Regulation can be more certain: limits on sugar added in production, bans on sugary drinks in school vending machines or restrictions on advertising to children directly reduce consumption, although they remove consumer choice and need enforcing. A minimum price per litre would raise price like a tax but the extra revenue would go to producers. Information policies tackle the root cause of information failure: clearer 'traffic light' labelling, showing sugar as teaspoons, and education campaigns help consumers make better choices, but people often ignore information because of bounded self-control. Subsidies for healthy alternatives, such as free school milk, water fountains and fruit in schools, reduce the relative price of healthy options without being regressive, but have an opportunity cost.

Nudges. As the question notes, behavioural economists believe taxation alone is unlikely to be very effective. Nudges change the choice architecture without banning anything: placing healthy items at eye level and sugary drinks away from tills, making smaller bottles the default size and using social norm messages.

These are cheap and respect freedom of choice, but their effects may be small and some argue they are manipulative or a sign of the 'nanny state'.

Evaluation: the effectiveness of a tax depends on the price elasticity of demand, the size of the tax and the response of producers. Where demand is inelastic the main effect is revenue, not reduced consumption, but if the tax causes reformulation, it can be very effective. A tax corrects the externality but is less suited to the information failure and behavioural biases, which are better addressed by labelling, education and nudges. There is also a debate about whether the government should interfere with consumers' choices at all, although the costs to the NHS and the impact on children justify some intervention.

In conclusion, a tax is an effective policy, particularly a producer-based tax like

the sugar levy that encourages reformulation, but it is not the most effective policy on its own. Because overconsumption has several causes, the most effective approach is a package: a tax to internalise the externality and raise revenue, combined with regulation of advertising and school food, better information and nudges. The best policy is therefore a combination, with the tax playing a central but not exclusive role.