

Please write clearly in block capitals.

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I declare this is my own work.

INTERNATIONAL A-LEVEL ECONOMICS

Unit 3 The Economics of Business Behaviour and the Distribution of Income

Time allowed: 2 hours

Materials

For this paper you must have:

- the Source Booklet, provided as an insert (enclosed)
- a calculator, which you are expected to use where appropriate.

Instructions

- Use black ink or black ball-point pen. Pencil should only be used for drawing.
- Fill in the boxes at the top of this page.
- Answer **all** questions in **Sections A, B and C**.
- Answer **EITHER** Question 15 or Question 16 in **Section D**.
- You must answer the questions in the spaces provided. Do **not** write outside the box around each page or on blank pages.
- Do **not** write in the Source Booklet.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 90.
- You may use a bilingual dictionary for this exam.
- You may **not** use an English dictionary.

For Examiner's Use	
Question	Mark
1–10	
11	
12	
13	
14	
15	
16	
TOTAL	



Section AAnswer **all** questions in the spaces provided.Only **one** answer per question is allowed.

For each question completely fill in the circle alongside the appropriate answer.

CORRECT METHOD



WRONG METHODS



If you want to change your answer you must cross out your original answer as shown.



If you wish to return to an answer previously crossed out, ring the answer you now wish to select as shown.

**0 1**

A firm that sells shoes merges with another firm that sells shoes.

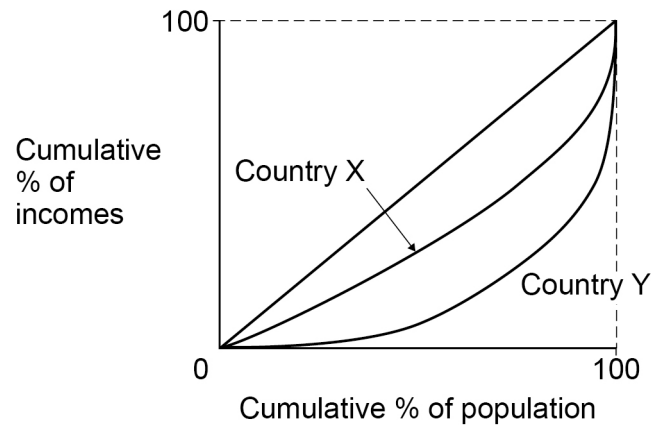
This is an example of

[1 mark]**A** conglomerate integration.**B** horizontal integration.**C** organic growth.**D** vertical integration.

0 2

The Lorenz curves in **Figure 1** show the distribution of income in two countries, Country X and Country Y.

Figure 1



Which one of the following can be concluded from **Figure 1**?

[1 mark]

- A** Income inequality is greater in Country Y than in Country X.
- B** The average income is higher in Country X than in Country Y.
- C** The Gini coefficient is higher in Country X than in Country Y.
- D** Wealth is more evenly distributed in Country X than in Country Y.

☒
☐
☐
☐

0 3

A firm operates in a perfectly competitive market in which there are no externalities.

Which type of efficiency is the firm **least** likely to experience when the market is in equilibrium in the long run?

[1 mark]

- A** Allocative efficiency
- B** Dynamic efficiency
- C** Productive efficiency
- D** X-efficiency

☐
☒
☐
☐

Turn over ►



0 4

Table 1 shows the average revenue earned by a firm for different levels of sales.

Table 1

Sales (units)	Average revenue (\$)
4	23 000
5	20 000
6	17 000
7	14 000

At which level of sales will the firm maximise its total revenue?

[1 mark]

A 4 units

☐

B 5 units

☐

C 6 units

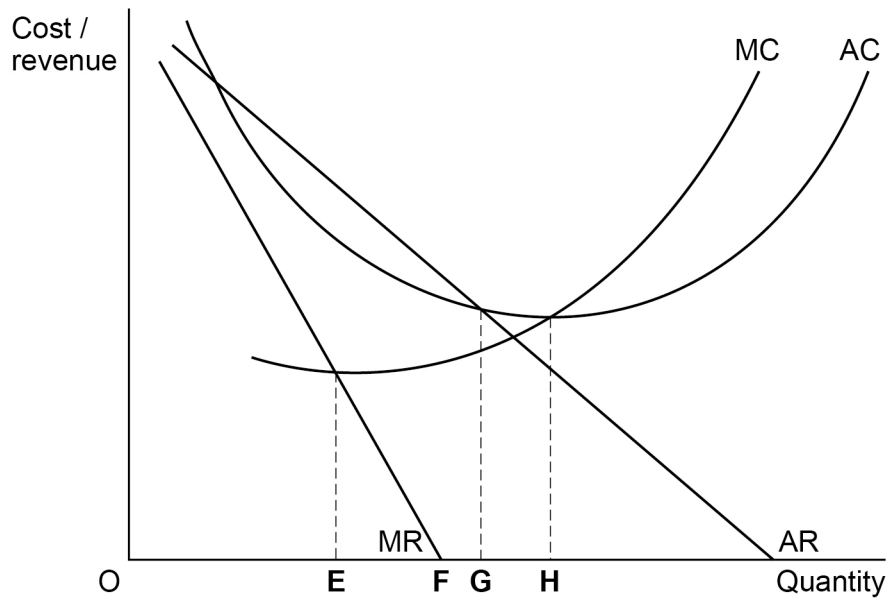
☒

D 7 units

☐


0 5 Figure 2 shows the cost and revenue curves for a firm.

Figure 2



At which level of output will the firm make normal profits?

[1 mark]

- A OE ☐
- B OF ☐
- C OG ☒
- D OH ☐

0 6 Wage rates in a particular industry have increased by 10% over the last year.

Which one of the following is the most likely reason for this increase?

[1 mark]

- A A fall in the marginal revenue product of the workers. ☐
- B A merger in the industry has increased monopsony power in the labour market. ☐
- C The introduction of a trade union into the industry. ☒
- D The minimum wage has risen from 15% below the equilibrium to 5% below the equilibrium. ☐

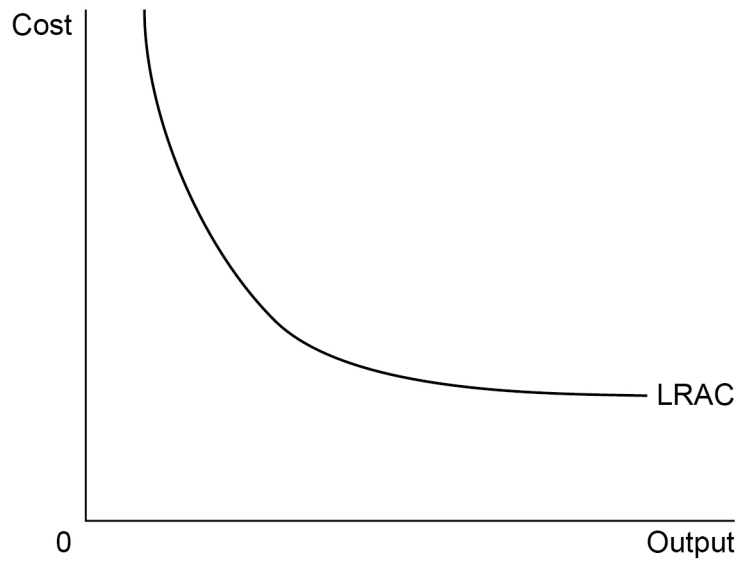
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0 7

Figure 3 shows the long-run average cost (LRAC) curve for a firm.

Figure 3



Which one of the following is the most likely reason for the shape of this curve?

[1 mark]

- A** Decreasing labour productivity over the firm's range of output.
- B** The entry of new competitors into the market.
- C** The firm is experiencing technical economies of scale.
- D** There is a low minimum efficient scale of production.

☐
☐
☒
☐

0 8

The wage elasticity of demand for labour in a particular industry is -0.2

Which one of the following is the most likely reason why this value is -0.2 ?

[1 mark]

- A** It is easy to substitute capital for labour.
- B** Labour costs are a low proportion of total costs.
- C** Price elasticity of demand for the final product is elastic.
- D** Workers' contracts can be ended at short notice.

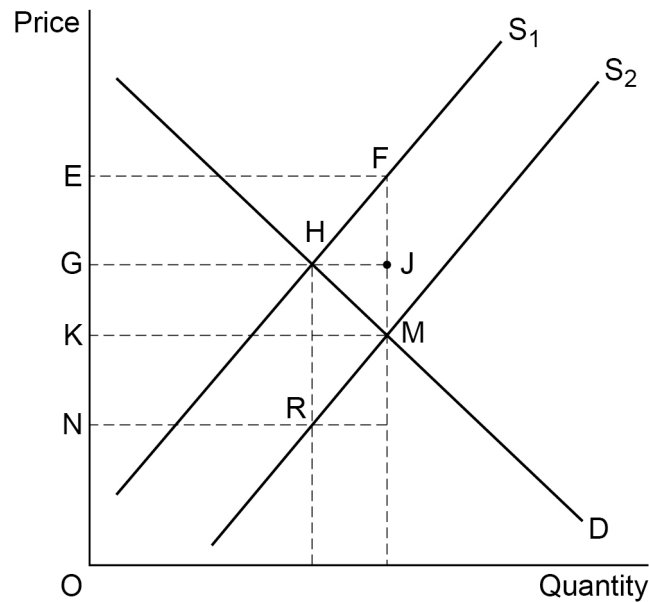
☐
☒
☐
☐


0 9

Figure 4 shows the original supply (S_1) and demand (D) curves in the market for electric vehicles.

A subsidy is given to producers to encourage the production of electric vehicles and this causes the supply curve to shift to S_2 .

Figure 4



Which one of the following areas shows the change in consumer surplus following the introduction of the subsidy?

[1 mark]

A EFHG

☐

B GHMK

☒

C GJMK

☐

D KMRN

☐

Turn over for the next question

Turn over ►



1 0

Some firms believe that patents should last for 25 years instead of 20 years.

Which one of the following would be the most likely effect if this change is introduced?

[1 mark]

A The amount that firms invest in research and development will increase.

☒

B The barriers to entry into existing markets will fall.

☐

C The marginal costs of firms that hold patents will increase.

☐

D The profits that firms with patents can earn will fall.

☐

10



Section B

Answer **all** questions in the spaces provided.

1	1	.	1
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Define 'decreasing returns to scale'.

[2 marks]

Decreasing returns to scale occur when all factor inputs are increased in the same proportion (the scale of production rises) but output increases by a smaller proportion, e.g. inputs double but output less than doubles.

Question 11 continues on the next page

Turn over ►



1 1 . 2 Table 2 shows the output of a firm when different numbers of workers are employed.

Table 2

Number of workers employed	Total product (output in units)	Marginal product (output in units)
1	130	
2		200
3	600	
4		180

Calculate the marginal product (output) of labour of the **third** worker.

You are advised to show your working.

[2 marks]

$$\text{Total product of 2 workers} = 130 + 200 = 330 \text{ units}$$

$$\text{MP of 3rd worker} = TP_3 - TP_2 = 600 - 330$$

$$\text{Marginal product of the third worker} = 270 \text{ units}$$

1 1 . 3 Calculate the average product (output) of labour when **four** workers are employed.

You are advised to show your working.

[2 marks]

$$\text{Total product of 4 workers} = 600 + 180 = 780 \text{ units}$$

$$AP = TP \div \text{number of workers} = 780 \div 4$$

$$\text{Average product} = 195 \text{ units per worker}$$

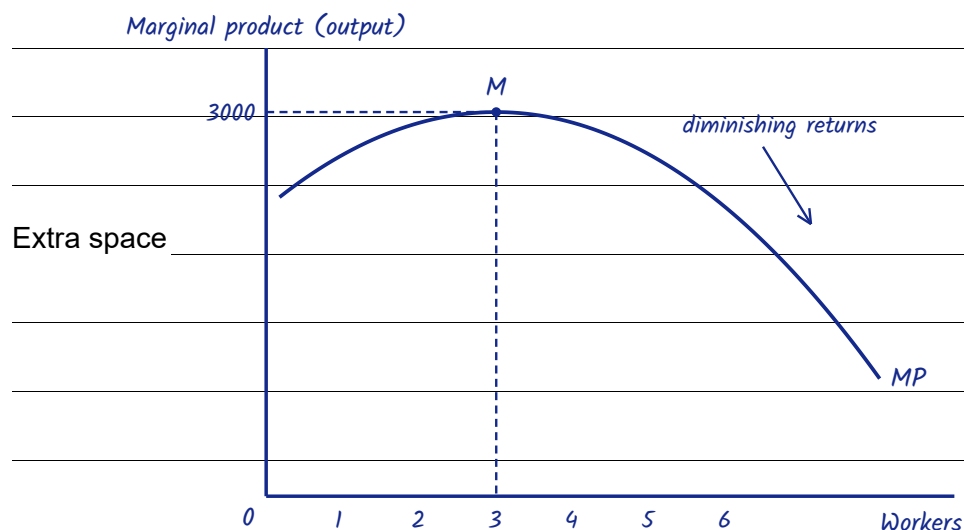


1 1 . 4

Explain, using a diagram, the law of diminishing returns.

[4 marks]

The law of diminishing returns states that, in the short run, when successive units of a variable factor (labour) are added to a fixed factor (capital), the marginal product of the variable factor will eventually fall. In the diagram, the first three workers can specialise and use the fixed capital more fully, so MP rises up to point M (the 3rd worker). After M each extra worker has less capital to work with, so MP falls, e.g. from 3000 to about 2700 units for the 4th worker. The falling section of the MP curve to the right of M shows diminishing returns, though total product still rises while MP is positive.



10

Turn over for Section C**Turn over ►**

Section C

Look at the Source Booklet and answer **all** questions in the spaces provided.

Do **not** write in the Source Booklet.

1 2

Extract B (lines 12–13) states: ‘The way firms create or use new technologies and the degree of market concentration affect the profits that can be earned.’

1 2 . 1

Explain why the degree of market concentration affects a firm’s ability to make high profits.

[4 marks]

Market concentration is the extent to which a market is dominated by a few large firms, measured by an n-firm concentration ratio. Profit is total revenue minus total cost. In a highly concentrated market (oligopoly or monopoly) the dominant firms have market power. Demand for each firm's product is relatively price inelastic because there are few close substitutes, so firms can act as price makers, setting price above average cost and earning supernormal profit. Large firms also gain economies of scale and network effects, lowering average costs and widening profit margins; with few rivals they may also collude. If high barriers to entry exist, these profits are not competed away in the long run. In contrast, in a market with low concentration, many firms compete and demand for each is price elastic, so prices stay close to average cost and only normal profit is earned in the long run.



1 2 . 2

To what extent do the data suggest that the degree of market concentration affects a firm's ability to make high profits in the global market for social media?

Use the data in **Extract A** to support your answer.

[4 marks]

The data largely suggest that high concentration allows high profits. The global social media market is highly concentrated, with a 4-firm concentration ratio of at least 91.7% in every year from 2011 to 2021, and the market leader's profits rose from \$0.66bn in 2011 to \$33.74bn in 2021, an increase of \$33.08bn (about 5012%). As the ratio rose from 91.7% in 2012 to a peak of 98.1% in 2017, profits grew strongly, to \$11.52bn. However, from 2011 to 2013 concentration was similar but profits were low (\$0.07bn to \$0.66bn), and from 2019 to 2021 the ratio fell from 95.9% to 94.4% while Facebook's profits still rose from \$19.55bn to \$33.74bn. Profits also depend on market size, advertising demand and patents, and we do not know how the 4-firm ratio is made up. On balance, high concentration seems to enable high profits, but it is not the only factor.

8

Turn over for the next question

Turn over ►



1 3

Extract B (lines 21–22) states: ‘technological change can reduce contestability in some markets.’

Explain how technological change may affect contestability in different markets.

[12 marks]

Technological change is the development and use of new methods of production, new products and new ways of selling, for example the internet, e-commerce, apps and automation. A contestable market is one in which firms can enter and leave easily: barriers to entry and exit are low and there are no significant sunk costs. In a perfectly contestable market the mere threat of hit-and-run entry forces incumbent firms to keep prices close to average cost and earn only normal profit, whatever the number of firms. Contestability depends on barriers such as sunk costs, economies of scale, access to technology, brand loyalty and legal barriers like patents.

In many markets technological change has increased contestability. The internet has greatly reduced the cost of setting up a business: a firm can sell online through a website or an e-commerce platform without investing in shops, so fixed and sunk costs are low. Online and social media marketing is cheap compared with television advertising, and price comparison websites give consumers better information, weakening brand loyalty. Cloud computing lets small firms rent IT capacity instead of buying it, so if they fail they can exit with little loss. This makes hit-and-run competition possible: if incumbents earn supernormal profits, new firms enter, forcing prices down. Retailing, travel agencies and taxi services, where apps allow new firms to enter quickly, have become more contestable. Technology also creates new products, and through Schumpeter's creative destruction new firms with better technology can replace dominant incumbents, as digital cameras replaced film and streaming replaced video rental.

However, as Extract B says, technological change can reduce contestability in



some markets. Many digital markets have very high fixed costs, such as developing a search engine or operating system, but marginal costs close to zero. Average costs fall continuously as output rises, giving huge economies of scale, so the market may become a natural monopoly in which one firm can supply at a lower cost than several. A new entrant operating at a small scale would have much higher average costs. Much of this spending on R&D and software is a sunk cost that cannot be recovered on exit, which deters entry.

Network effects strengthen this. The value of a social network or search engine to each user rises as more people use it; more users attract more advertisers and generate more data, which improves the product further. Google's search engine and Facebook are examples where users would not switch to a new firm with few users, so the market tips towards one dominant firm. Control of data, patents on new technology and high switching costs create further barriers. Dominant firms can also use their profits to buy innovative start-ups before they become a threat, reducing potential competition.

Therefore the effect of technological change on contestability differs between markets. It depends on whether the technology lowers or raises sunk costs and the minimum efficient scale, and on the strength of network effects. In markets where technology reduces start-up costs, such as online retailing, contestability increases, but in platform markets with network effects and natural monopoly features, it falls.



1 4

Extract C (lines 1–3) states: ‘Concerns have grown about the market dominance of tech sector firms in recent years and governments are trying to ensure that their high market shares do not cause consumers to suffer.’

Evaluate the case for and against increased government intervention to limit the monopoly power of large firms.

[25 marks]

Monopoly power is the ability of a firm to influence the price of its product and the terms on which it is sold. A pure monopoly has 100% of a market, but a firm with over 25% market share may be treated as a monopoly by competition authorities. Extract C shows growing concern about tech firms such as Google, Facebook and Amazon, whose high market shares give them great power.

The case for more intervention rests on the costs of monopoly power. A profit-maximising monopolist produces where $MC = MR$, at Q_m , and charges P_m , above the competitive price P_c . Output is restricted, so $P > MC$ and the firm is allocatively inefficient: the shaded triangle is a deadweight loss of welfare, and consumer surplus is transferred to the firm as supernormal profit.

Consumers suffer from higher prices, less choice and possibly lower quality. Protected by barriers to entry, a monopolist faces little pressure to minimise costs, so X-inefficiency may occur and it need not produce at the lowest point on its AC curve. Large firms can also use monopsony power to squeeze suppliers, such as app developers or news publishers, and to hold down workers' wages. In tech markets, dominant platforms collect vast amounts of consumer data and may use predatory pricing or buy start-ups to remove future rivals, reducing innovation. Income and wealth become more unequal as monopoly profits flow to shareholders.

Governments can intervene in several ways. Competition authorities can investigate and block mergers, or even force demergers, for example separating



Instagram and WhatsApp from Facebook. They can fine firms for abusing dominance, ban anti-competitive practices, and use price regulation such as RPI – X price caps for natural monopolies. Windfall or digital services taxes can capture excess profits, laws such as Australia's rule that platforms must pay for news content shift some profit back to suppliers, and lowering barriers to entry, for example by requiring data sharing, increases contestability.

However, there is a strong case against increased intervention. Large firms gain economies of scale, so their average costs may be far lower than those of many small firms; a monopoly may then charge a lower price than a

Extra space competitive industry. In digital markets with network effects and very low marginal costs, one dominant firm may be the most efficient structure, a natural monopoly, and breaking it up would raise costs and reduce the value of the service to users, many of whom pay a zero price. Supernormal profits also finance research and development, so monopolies can be dynamically efficient, developing new products. Schumpeter argued that the chance of monopoly profit is the reward for innovation, and creative destruction means that dominance is often temporary as new technologies emerge. Furthermore, if a market is contestable, the threat of entry keeps prices close to average cost even with few firms.

Intervention may also lead to government failure. Regulators suffer from asymmetric information, as they know less about costs than the firms, so price caps may be set at the wrong level. Regulatory capture can occur, and investigations are slow and costly, so regulation struggles to keep pace with fast-changing tech markets. Tech firms operate across national borders, so action by one country may simply lead firms to move profits elsewhere, and effective control requires international agreement. Heavy taxes or forced

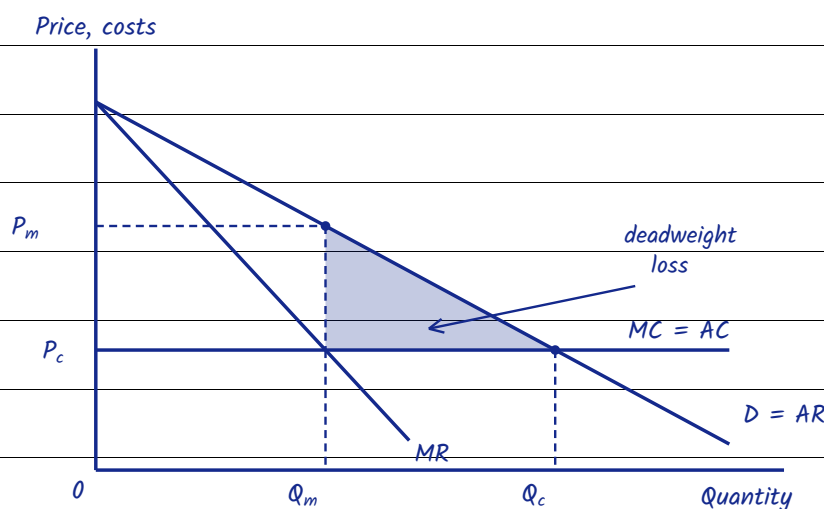
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break-ups could reduce investment and lead to job losses.

Whether more intervention is justified depends on several factors. First, the degree of contestability: where barriers to entry are high and permanent, intervention is more needed. Secondly, whether economies of scale and innovation benefits outweigh the deadweight loss. Thirdly, the type of intervention: a pragmatic, case-by-case approach that assesses whether a firm actually harms consumers is likely to be better than a dogmatic approach that treats all high market shares as harmful. Finally, the quality of the regulator and international cooperation.

In conclusion, monopoly power can harm consumers through higher prices, less choice and lost welfare, and the growing dominance of tech firms strengthens the case for action. However, large firms can also bring economies of scale and innovation, and intervention risks government failure. On balance, I judge that increased intervention is justified where there is clear evidence of abuse, such as blocking mergers that remove rivals and requiring data sharing, but not blanket break-ups or price controls, which could destroy the efficiency benefits.



Section D

Answer **EITHER** Question 15 **OR** Question 16.

Shade the circle below to indicate which optional question you have answered.

Question 1 5 ☐Question 1 6 ☒

CORRECT METHOD



WRONG METHODS

**Either****1 5**

Economists make assumptions to help them understand consumer behaviour. A key assumption has been that consumers will aim to maximise their own economic welfare.

Assess the view that consumers always aim to maximise their utility when making economic decisions.

[25 marks]**or****1 6**

A recent report by the International Labour Organization (ILO) found that, during 2020, wage rates had fallen in many countries. The report also found that women and low-paid workers had been particularly badly affected.

Evaluate policies a government could use to reduce differences in wage rates.

[25 marks]

Wage rates are the price of labour, the amount paid per hour or per week. In a competitive labour market the wage is set where the demand for labour, which is derived demand equal to the marginal revenue product ($MRP = MPP \times MR$), meets the supply of labour. Wage differences arise because MRP differs between workers, due to skills, education and productivity, and because labour markets are imperfect: discrimination, monopsony, trade union power and immobility of labour. The ILO report shows women and low-paid workers suffered most in 2020. Some differences are useful, as they signal where labour is needed and give incentives to train, so policy should target differences caused by market imperfections.

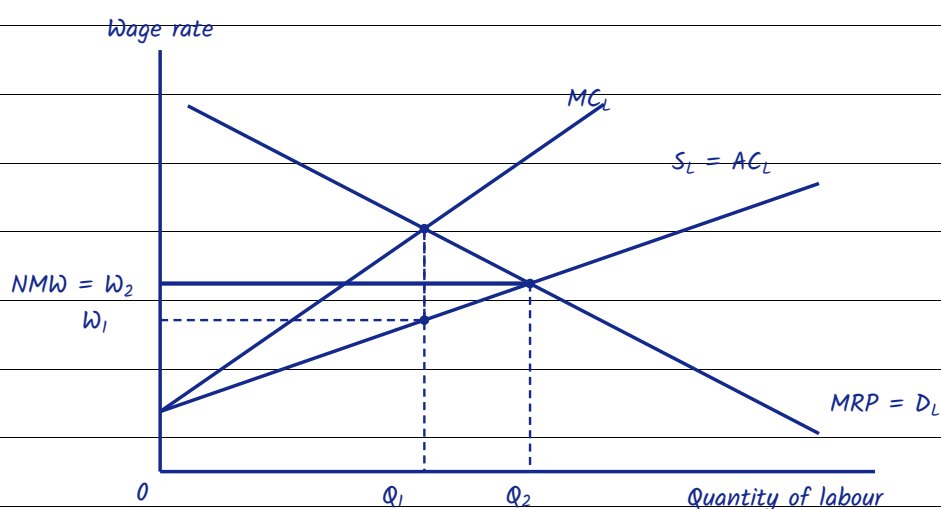
One policy is a national minimum wage (NMW), a legal minimum hourly wage. It directly raises the pay of the lowest paid, many of whom are women, narrowing

Turn over ►

differences. In a competitive market an NMW above the equilibrium causes unemployment, as firms move up their MRP curve and employ fewer workers.

However, many low-wage labour markets are monopsonies, for example a dominant local employer. A monopsonist employs where $MC_L = MRP$, at Q_1 , and pays only w_1 , below MRP. If the NMW is set at w_2 , the marginal cost of labour becomes horizontal at w_2 up to the supply curve, so the firm employs more workers, Q_2 , at a higher wage. Both the wage and employment rise and wage differences fall.

The effectiveness of an NMW depends on its level relative to the equilibrium and average wages: if it is set too high, unemployment rises among the least skilled, and if too low, it has no effect. It depends on the wage elasticity of demand for labour: if demand is inelastic, because labour is a small share of costs or hard to replace with capital, few jobs are lost. Evasion in the informal sector, common in developing economies, and the growth of the gig economy, where workers are



self-employed, also limit its impact, as does a single national rate when living costs differ by region.

A second policy is anti-discrimination legislation, such as equal pay laws requiring men and women to be paid the same for work of equal value. Discrimination lowers the demand for some groups below their MRP, so outlawing it raises their wages and reduces the gender pay gap. However, the law is hard to enforce:



discrimination may be hidden in recruitment and promotion, and the gap is also caused by occupational segregation and career breaks for childcare, which equal pay laws do not address. Policies such as subsidised childcare and flexible working may be needed alongside.

Thirdly, supply-side policies such as state-funded education, training and apprenticeships raise the skills and MRP of low-paid workers, increasing demand for their labour and their wages, while increasing the supply of skilled workers moderates the highest wages. This tackles the root cause of differences and also raises productivity and growth. However, it is expensive, has an opportunity cost, and takes many years to have an effect, and workers may not take up the

Extra space training.

Fourthly, the government can strengthen trade unions, for example by giving workers the right to collective bargaining. Unions act as a countervailing power to monopsony employers and push up wages of their members. However, strong unions in competitive markets may raise wages above equilibrium, causing unemployment, and may widen differences between union members and non-members. Competition policy that reduces monopsony power can have a similar effect.

Other policies include using the government's role as a major employer to set fair pay scales, and progressive income taxes or maximum wage controls on top pay. Higher taxes on high earners reduce differences in net pay but not in gross wage rates, and may reduce incentives to work and cause a brain drain of skilled workers.

There is also a risk of government failure. Governments lack information about MRP in each market, and differences that reflect productivity are needed to allocate labour efficiently. Reducing them too far weakens incentives to train and work hard, and policies such as a high NMW or strict employment protection can make labour markets less flexible.

Turn over ►



In conclusion, no single policy removes all wage differences, because they have many causes. A national minimum wage is the most direct and effective way to raise the pay of the low paid, especially where employers have monopsony power, provided it is set carefully. Anti-discrimination laws are needed to tackle the gender gap, and in the long run education and training are the most effective, as they raise MRP. On balance, a combination of a moderate NMW, enforced equal pay laws and investment in skills is the best approach.

END OF QUESTIONS



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2 8



2 2 6 X E C 0 3