Please check the examination details below before entering your candidate information

Candidate surname: StemUp Model Solution

Other names:

Pearson Edexcel
International Advanced Level

Centre Number

Candidate Number

Tuesday 19 January 2021

Afternoon (Time: 2 hours)

Paper Reference **WEC13/01**

Economics

International Advanced Level
Unit 3: Business behaviour

You must have:
Source Booklet (enclosed)

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **ALL** questions in Section A and Section B.
- Answer **TWO** questions in Section C.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

Information

- The total mark for this paper is 80.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Calculators may be used.

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

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SECTION A

Answer ALL questions in this section.

Questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

1 Between 2009 and 2019 real house prices in Sydney, Australia rose by 40%. This price increase was more than in any other part of Australia.

What might be the effect of this increase in house prices in Sydney on the mobility of labour?

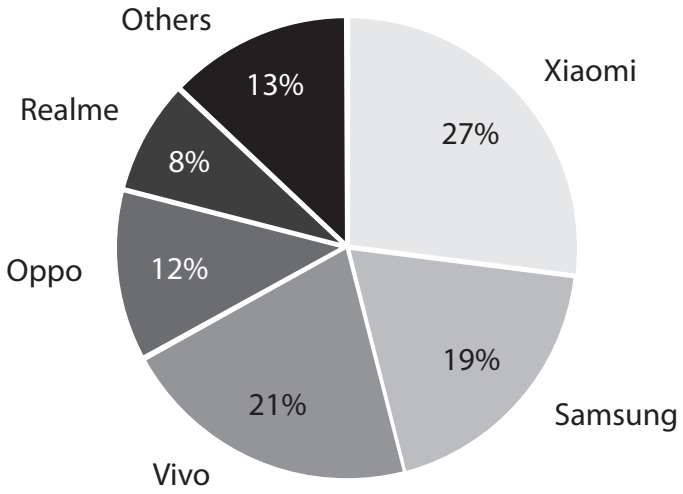
- ☒ **A** A decrease in the geographical mobility of labour
- ☒ **B** A decrease in the occupational mobility of labour
- ☒ **C** An increase in the geographical mobility of labour
- ☒ **D** An increase in the occupational mobility of labour

(Total for Question 1 = 1 mark)

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2 The chart shows the market share of smartphone companies in India in quarter 4, 2019.



What is the 4-firm concentration ratio?

- ☒ **A** 67%
- ☒ **B** 79%
- ☒ **C** 80%
- ☒ **D** 87%

(Total for Question 2 = 1 mark)

3 Hairdressing salons are assumed to operate under conditions of monopolistic competition.

Which **one** of the following will be true for a hairdressing salon in long-run equilibrium?

- ☒ **A** It is productively efficient
- ☒ **B** It makes supernormal profit
- ☒ **C** It is allocatively efficient
- ☒ **D** It makes normal profit

(Total for Question 3 = 1 mark)

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4 In 2017 the Centre for Economic Analysis estimated that the elasticity of supply of labour for car manufacturing in Poland was 1.3.

Which **one** of the following would have caused the elasticity of the supply of labour to become more elastic?

- ☒ **A** A fall in net migration
- ☒ **B** A rise in the level of welfare benefits
- ☒ **C** A fall in income tax rates
- ☒ **D** A rise in trade union membership

(Total for Question 4 = 1 mark)

5 In March 2020 the Angolan Government announced that it was privatising three state-owned textile factories.

Which **one** of the following is the most likely effect of this privatisation?

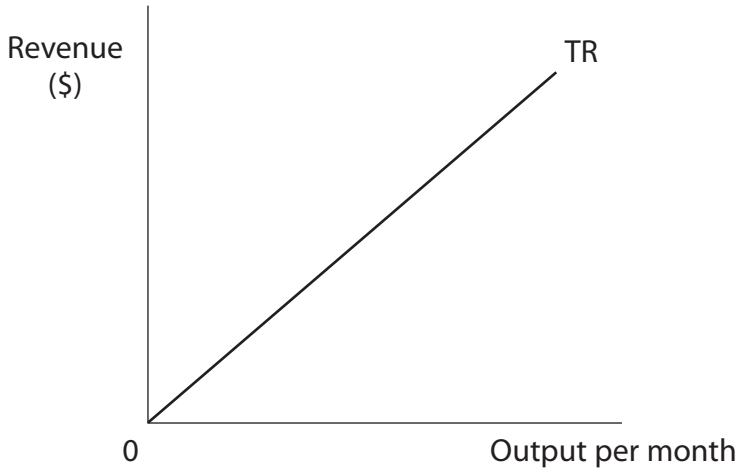
- ☒ **A** A decrease in X-inefficiency
- ☒ **B** A decrease in productive efficiency
- ☒ **C** A decrease in consumer choice
- ☒ **D** A decrease in share ownership

(Total for Question 5 = 1 mark)

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6 The diagram shows a firm's total revenue as output increases.



Which **one** of the following best characterises such a firm?

		Marginal Revenue
☒	**A**	Rising
☒	**B**	Constant
☒	**C**	Negative
☒	**D**	Falling

(Total for Question 6 = 1 mark)

TOTAL FOR SECTION A = 6 MARKS

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SECTION B

Study Figures 1 and 2 and Extracts A, B and C in the Source Booklet before answering Question 7. Write your answers in the space provided on the following pages.

7 (a) With reference to Figure 1 and Figure 2, calculate Tata Steel's total costs for steel production in 2019.

(2)

(b) Explain what is meant by the term 'monopsony employer' (Extract C, line 11).

(4)

(c) With reference to Extract B, examine the likely effects of the proposed merger between Tata Steel and Thyssenkrupp on the profits of European car manufacturers.

Illustrate your answer with an appropriate diagram.

(8)

(d) With reference to Extract C, analyse **two** reasons why the proposed merger between Tata Steel and Thyssenkrupp was blocked by the European Competition Commission.

(6)

(e) With reference to Extract A, Extract B and your own knowledge, discuss the benefits to Tata Steel and Thyssenkrupp of the proposed horizontal integration.

Illustrate your answer with an appropriate diagram.

(14)

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7 (a) With reference to Figure 1 and Figure 2, calculate Tata Steel's total costs for steel production in 2019.

(2)

Total costs = total revenue – profit

= Rs 73 822 bn – Rs 22 854 bn

= Rs 50 968 billion

(b) Explain what is meant by the term 'monopsony employer' (Extract C, line 11).

(4)

A monopsony employer is a firm that is the only (or dominant) buyer of a particular type of labour in a labour market. Because workers have no other employer to go to, the monopsonist has strong buying (bargaining) power and can use it to pay lower wages, and employ fewer workers, than would be the case in a competitive labour market.

In Extract C, the merged Tata Steel and Thyssenkrupp would have become the monopsony employer of steel workers in the UK and the Netherlands. Employees expected job losses and lower real wages, because they would have no alternative employer for their skill set, which would reduce their standard of living.

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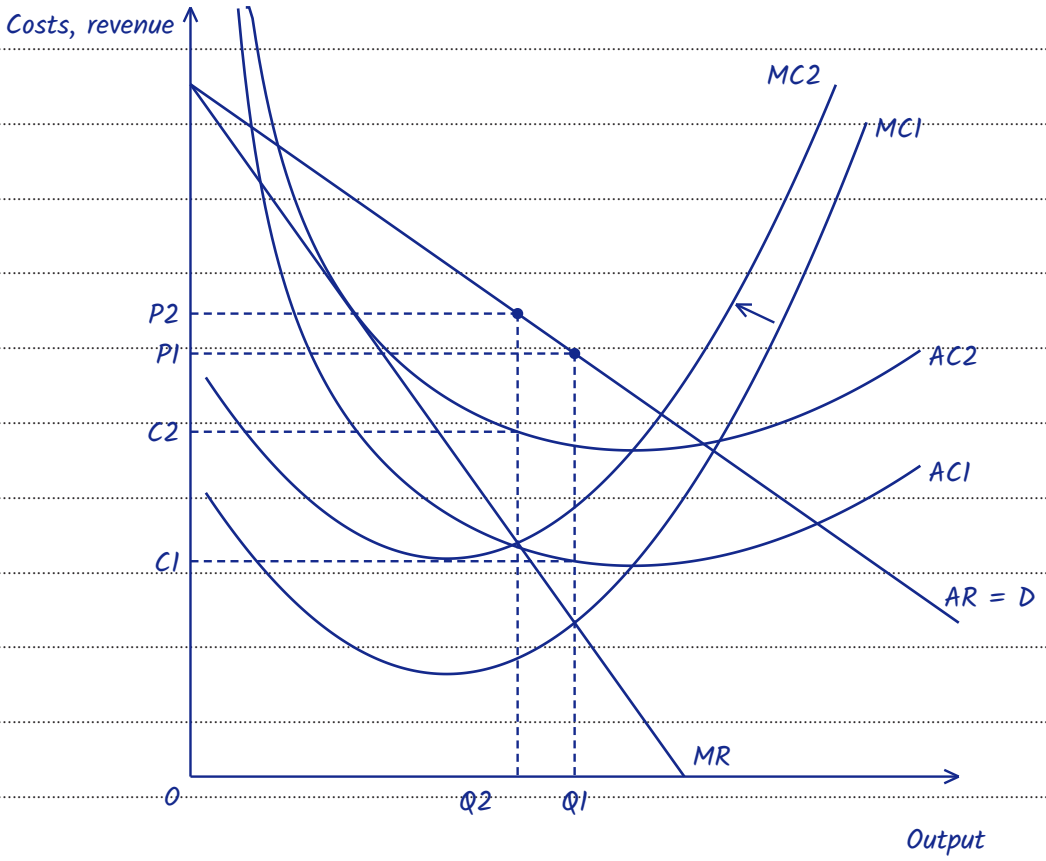
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(c) With reference to Extract B, examine the likely effects of the proposed merger between Tata Steel and Thyssenkrupp on the profits of European car manufacturers.

Illustrate your answer with an appropriate diagram.

(8)

Car manufacturers buy large amounts of high-value steel, so steel is a key variable cost. Extract B shows that the merged firm would be the second largest steel producer in Europe, with 48,000 workers and €15 billion in sales. This increases its market power and price-setting ability, so it could raise the price of steel sold to car makers.



The higher steel price shifts the car maker's cost curves up from MC1 and AC1 to MC2 and AC2. The profit-maximising output, where MC = MR, falls from Q1 to Q2 and the price rises from P1 to P2. However, average cost rises by more than price, so supernormal profit falls from the area (P1 – C1) × Q1 to the much smaller area (P2 – C2) × Q2.

However, the fall in profit may be small. ArcelorMittal would still be the largest European

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producer, so the steel market stays an oligopoly and rivals, or cheaper imported steel, may stop the merged firm raising prices much. Steel is only one part of the total cost of a car, so a small rise in its price only slightly raises AC. If demand for cars is price inelastic, car makers can pass the higher costs on to buyers and protect their profits. Also, the merger was expected to save over €400 million and lower long-run average costs; if some of these economies of scale are passed on as cheaper steel, car makers' costs could even fall and profits rise. So profits are only likely to fall significantly if the merged firm uses its market power and steel is a large share of car makers' costs.

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(d) With reference to Extract C, analyse **two** reasons why the proposed merger between Tata Steel and Thyssenkrupp was blocked by the European Competition Commission.

(6)

The European Competition Commission carries out competition policy, which aims to make markets more competitive and protect consumers from the abuse of market power. A merger is when two firms agree to join together to form one firm.

Reason 1: reduced competition in the steel market. Extract C says the merger would cause a reduction in competition, giving Tata Steel and Thyssenkrupp more dominance in the market. With fewer rivals the merged firm would have greater price-setting power, so it could raise the price of steel significantly. Car manufacturers and packaging firms gave feedback that this would raise their costs of production, which would squeeze their profit margins or be passed on to consumers as higher prices, reducing consumer surplus and making it difficult for these firms to remain profitable.

Reason 2: monopsony power in the labour market. The merged firm would be a monopsony employer of steel workers in the UK and the Netherlands. With stronger bargaining power over wages, it could cut jobs (the plan was to cut 4,000 staff) and push down real wages, because the workers would have no alternative employer for their skills. This would reduce their standard of living, so the Commission judged the merger to be against the public interest and blocked it.

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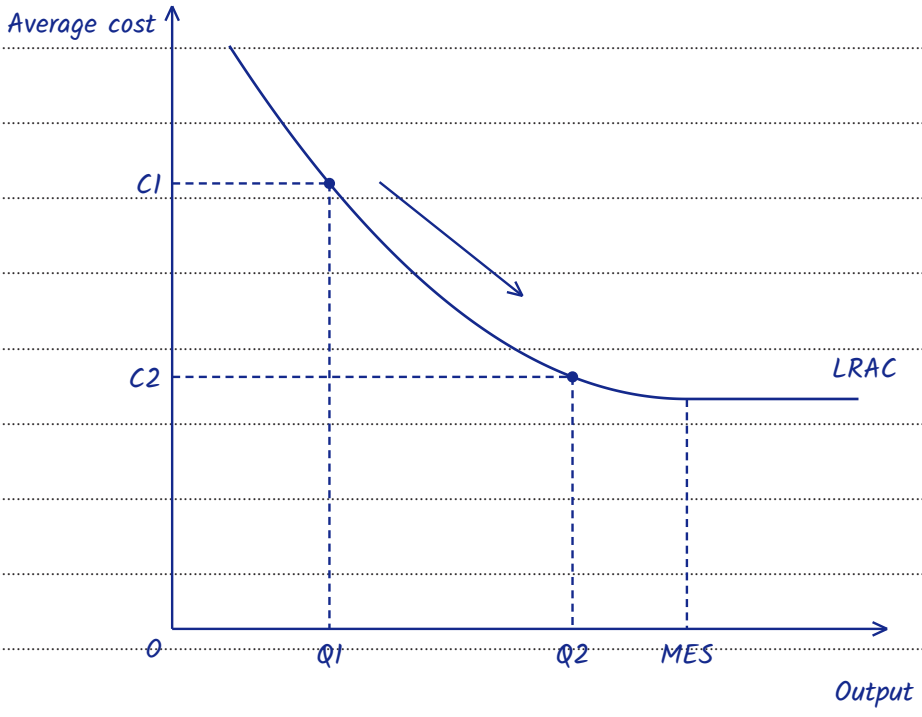
(e) With reference to Extract A, Extract B and your own knowledge, discuss the benefits to Tata Steel and Thyssenkrupp of the proposed horizontal integration.

Illustrate your answer with an appropriate diagram.

(14)

Horizontal integration is when two firms in the same industry, at the same stage of production, join together. Tata Steel and Thyssenkrupp both make high-value steel in Europe.

The main benefit is economies of scale. The combined firm, with €15 billion in sales, could buy iron ore and energy in bulk at lower prices (purchasing economies), use its largest and most modern furnaces more fully (technical economies) and remove duplicated head offices (managerial economies). Extract B states the firms expected efficiency savings of over €400 million and lower long-run average costs, partly by cutting 4,000 administration and manufacturing jobs, which would also reduce X-inefficiency.



As the merged firm increases output from Q1 to Q2, it moves down its LRAC curve and average cost falls from C1 to C2, closer to the minimum efficient scale. Lower costs raise profit on every tonne sold. This matters because the 25% US tariff cut European steel makers' annual profits

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by between 8% and 17%, so the savings help restore profitability and let the firm compete on price with ArcelorMittal and cheap imports.

A second benefit is market power. As the second largest European producer, the firm would gain price-setting ability and could raise prices to earn supernormal profit. These profits could be reinvested in research and new technology, increasing dynamic efficiency; Tata Steel already uses the latest technology in India (Extract A) and could share this with Thyssenkrupp.

However, these benefits may be smaller than expected. The €400 million of savings is only about 2.7% of €15 billion in sales (400 ÷ 15,000 × 100), so it may not offset the 8% to 17% fall in profits caused by the tariffs. A firm operating in 26 countries may suffer diseconomies of scale, such as poor communication and a culture clash between an Indian and a German business, which would push LRAC back up. The 4,000 job cuts bring redundancy and legal costs in the short run and uncertainty may lower staff motivation and productivity, so the gains would mostly come in the long run. Price-setting power is limited because ArcelorMittal remains the market leader. Most importantly, the risk of government intervention was real: the European Competition Commission blocked the merger in 2019, so none of the benefits were achieved.

Overall, the main benefit would have been lower long-run average costs from economies of scale, which mattered greatly after the tariffs. But the size of the gain depends on avoiding diseconomies of scale and on regulatory approval, which is why it was never realised.

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(TOTAL FOR SECTION B = 34 MARKS)

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SECTION C BEGINS ON THE NEXT PAGE.

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SECTION C

Answer TWO questions from this section.

8 In South Africa, in 2019, insurance, mobile phones and retail banking were markets that had high concentration ratios. For example, the 4-firm concentration ratio was 96% for mobile phones and 74% for insurance.

Evaluate the disadvantages of an oligopolistic market for producers and consumers. Refer to an industry of your choice in your answer.

Illustrate your answer with an appropriate diagram(s).

(Total for Question 8 = 20 marks)

9 In 2020 the low-cost airline Flybe shut down. A decrease in demand for European flights led to Flybe's revenue falling below its costs of production.

Evaluate whether a firm should always shut down if its costs of production are greater than its revenue. Refer to an industry of your choice in your answer.

Illustrate your answer with an appropriate diagram(s).

(Total for Question 9 = 20 marks)

10 In 2018 the South African Government passed the National Minimum Wage Act.

Evaluate the likely microeconomic effects of the introduction of a national minimum wage on businesses and workers in the tourism industry.

Illustrate your answer with an appropriate diagram(s).

(Total for Question 10 = 20 marks)

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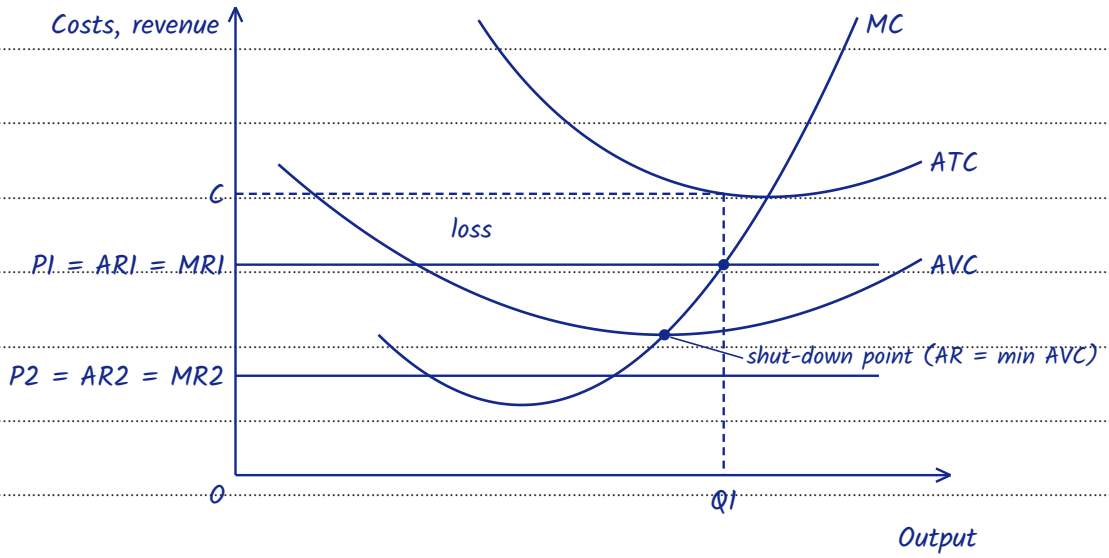
Indicate which question you are answering by marking a cross in the box ☒. If you change your mind, put a line through the box ☒ and then indicate your new question with a cross ☒.

Write the answer to your SECOND chosen question on page 22

Chosen question number: **Question 8** ☐ **Question 9** ☒ **Question 10** ☐

A firm's costs of production are made up of fixed costs, which do not change with output (for an airline, aircraft leases, airport slots and insurance), and variable costs, which rise with output (fuel, crew wages and landing charges). When total costs are greater than total revenue the firm makes a loss, earning less than normal profit. However, this does not mean it should always shut down: the decision depends on whether revenue covers variable costs, and on the time period.

In the short run, fixed costs must be paid whether the firm produces or not. So a loss-making firm should keep producing as long as average revenue is at least equal to average variable cost (AR ≥ AVC), because each sale then covers its variable cost and makes a contribution towards the fixed costs. Shutting down would leave the firm with a loss equal to its whole fixed cost, which would be larger. The short-run shut-down point is therefore where AR = AVC at the minimum of the AVC curve.



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The diagram shows a price-taking firm. At price P1, MC = MR at Q1. Price is below ATC, so the firm makes a loss of (C – P1) × Q1, but P1 is above AVC, so in the short run it should continue to produce. If demand falls and price drops to P2, below the minimum of AVC, the firm cannot even cover its variable costs, so every flight adds to the loss and the firm should shut down. This is what happened to Flybe: the fall in demand for European flights meant fares no longer covered fuel, crew and airport charges.

In the long run all costs are variable, so the firm should leave the industry if AR stays below ATC, because the resources could earn at least normal profit in another use. In perfect and monopolistic competition firms must profit maximise (MC = MR) to survive, while monopolies and oligopolies with supernormal profits can survive without always doing so.

However, there are many reasons why a firm may not shut down even if costs exceed revenue. First, the loss may be temporary. In 2020 many airlines made huge losses but kept operating because they expected demand to recover; shutting down permanently would mean losing aircraft, staff and valuable airport slots that are costly to replace. Second, a firm with large cash reserves, or one that receives government support, such as the loans and state aid many airlines received in 2020, can survive losses for some time. Third, a multi-product firm may cross-subsidise: an airline may keep a loss-making route because it brings passengers onto its profitable long-haul flights.

Also, firms may not be profit maximisers. A new low-cost airline may accept losses in the short run to build market share, or use predatory pricing to force rivals out of the market and then raise fares. A public sector or state-supported airline may keep regional routes open to provide transport links, a social objective rather than profit. Finally, the firm may be able to cut costs, for example by renegotiating aircraft leases, or raise revenue through extra fees, so that AR rises

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above AVC again.

In conclusion, a firm should not always shut down when costs are greater than revenue. In the short run it should continue as long as revenue covers variable costs; it should shut down only when AR < AVC, as for Flybe, or in the long run if losses are expected to continue. The decision depends on how long the losses are expected to last, the firm's objectives, its cash reserves and whether government support is available. For an airline in a temporary crisis, staying open is often the better choice.

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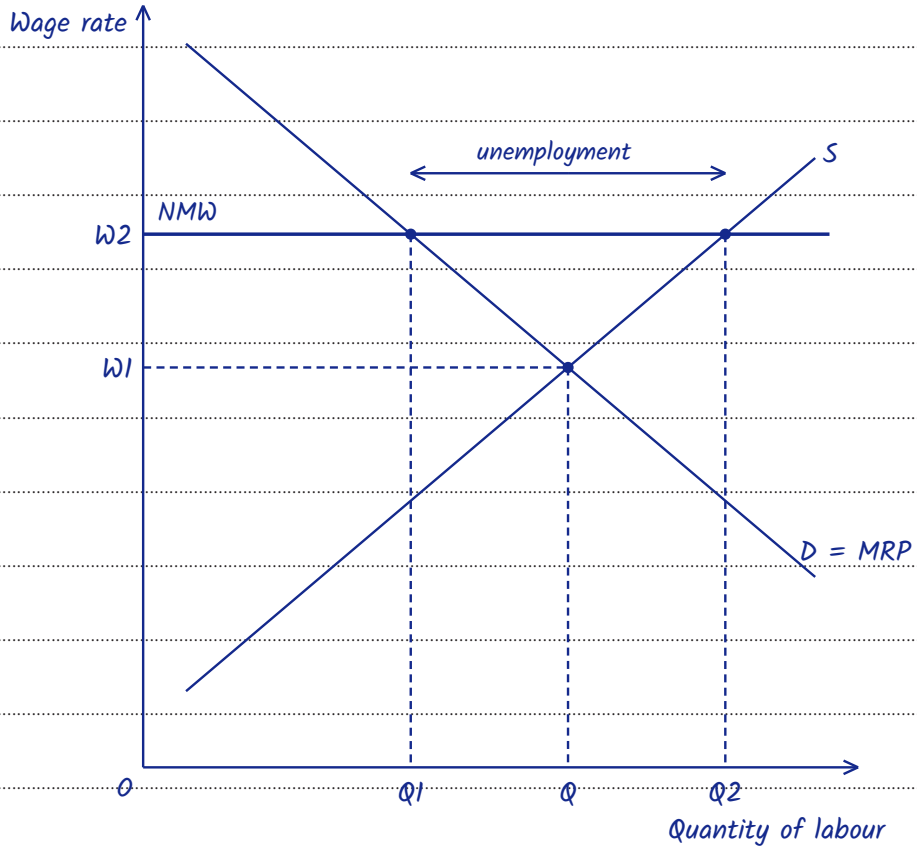
Write the answer to your SECOND chosen question here

Indicate which question you are answering by marking a cross in the box ☒. If you change your mind, put a line through the box ☒ and then indicate your new question with a cross ☒.

Chosen question number: **Question 8** ☐ **Question 9** ☐ **Question 10** ☒

A national minimum wage is a legal price floor: the lowest hourly wage that employers are allowed to pay workers. South Africa's national minimum wage started in 2019 at R20 per hour. The tourism industry, including hotels, restaurants, game lodges and tour operators, is labour intensive and employs many low-skilled workers on low wages, so it is likely to be strongly affected.

If the minimum wage is set above the equilibrium wage, it changes the outcome in the labour market, as shown below.



The wage rises from W1 to W2. The quantity of labour demanded by tourism businesses contracts from Q to Q1, while the quantity of labour supplied extends from Q to Q2 because the

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higher wage gives a greater incentive to work. This creates an excess supply of labour, so unemployment of Q2 – Q1 appears.

Effects on businesses: wages are a large share of a hotel's or restaurant's costs, so higher wage costs raise costs of production and reduce profits, especially for small guest houses. Firms may respond by raising prices, cutting staff or hours, or substituting capital for labour, for example online check-in, self-service kiosks and fewer cleaners. On the other hand, there will be a larger pool of applicants to choose from, and better paid staff may be more motivated and productive (efficiency wages), with lower staff turnover and lower recruitment and training costs, which offsets part of the cost increase.

Effects on workers: those who keep their jobs gain a higher income and a better standard of living, and real wages rise if the increase is above the rate of inflation. It also reduces exploitation of low-paid workers such as waiters, cleaners and kitchen staff. However, workers who lose their jobs or hours (Q – Q1) are worse off, and some may be pushed into informal jobs paying below the minimum.

The size of these effects depends on several factors. The most important is magnitude: how far the minimum wage is set above the equilibrium wage. Many tourism workers were paid below R20 per hour, so the impact on them is significant, but for skilled staff such as chefs and managers the minimum wage is below the market wage and has no effect. Second, it depends on the elasticity of demand for labour. If demand for tourism is price elastic, hotels cannot pass higher costs on to customers, so job losses and falls in profit are larger. However, many tourists come from high-income countries and visit for safaris and beaches that cannot easily be substituted, so demand may be price inelastic and firms can raise prices with only a small fall in sales.

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Third, many tourism services, such as guiding, cooking and personal service, are hard to replace with machines, so labour demand is quite inelastic and unemployment may be small. Fourth, time matters: in the short run firms may keep workers, but in the long run they can invest in labour-saving technology, so job losses may grow. Fifth, in remote tourist areas a large hotel or lodge may be a monopsony employer; there a minimum wage can raise both wages and employment. Finally, the effect depends on enforcement, since many tourism jobs are informal or seasonal.

In conclusion, the national minimum wage is likely to benefit most tourism workers through higher pay, while raising costs and reducing profits for businesses. Large job losses are unlikely because the minimum wage is modest, tourism labour is hard to replace and foreign demand is fairly inelastic, but small, labour-intensive firms in price-sensitive domestic tourism are the most likely to cut jobs.

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TOTAL FOR PAPER = 80 MARKS

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Pearson Edexcel International Advanced Level

Tuesday 19 January 2021

Afternoon (Time: 2 hours) | Paper Reference **WEC13/01**

Economics

International Advanced Level
Unit 3: Business behaviour

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Sources for use with Section B.

Tata Steel

Figure 1 Tata Steel's total revenue, 2015–2019, in billion Rupees (Rs)

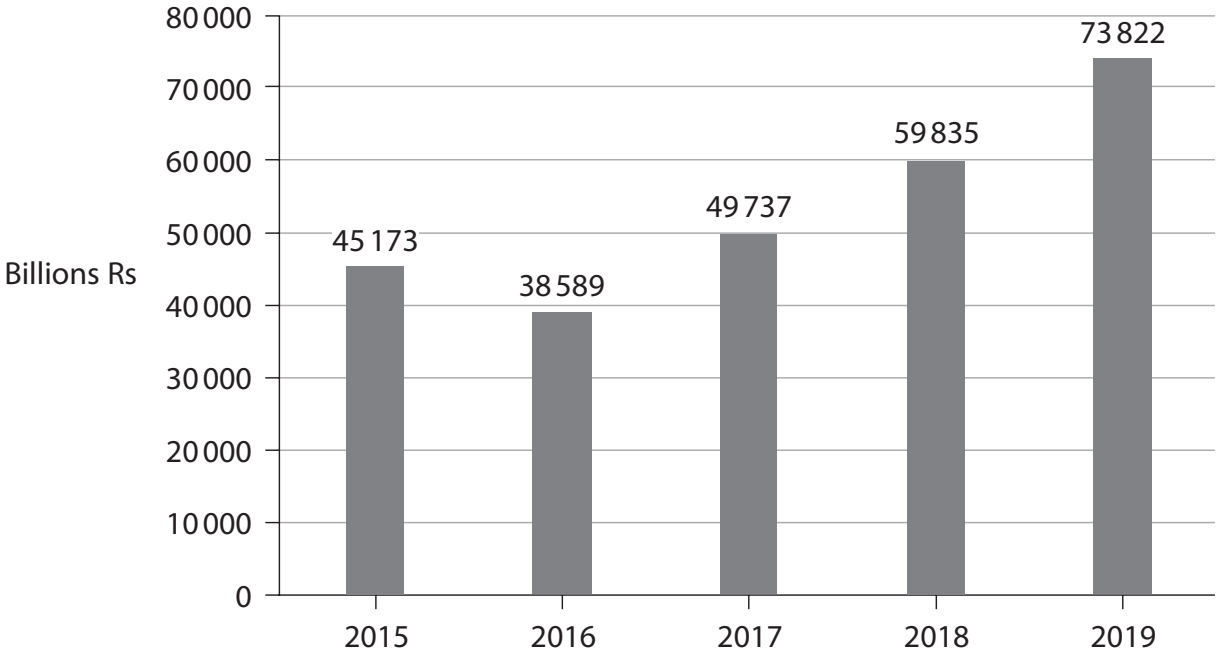
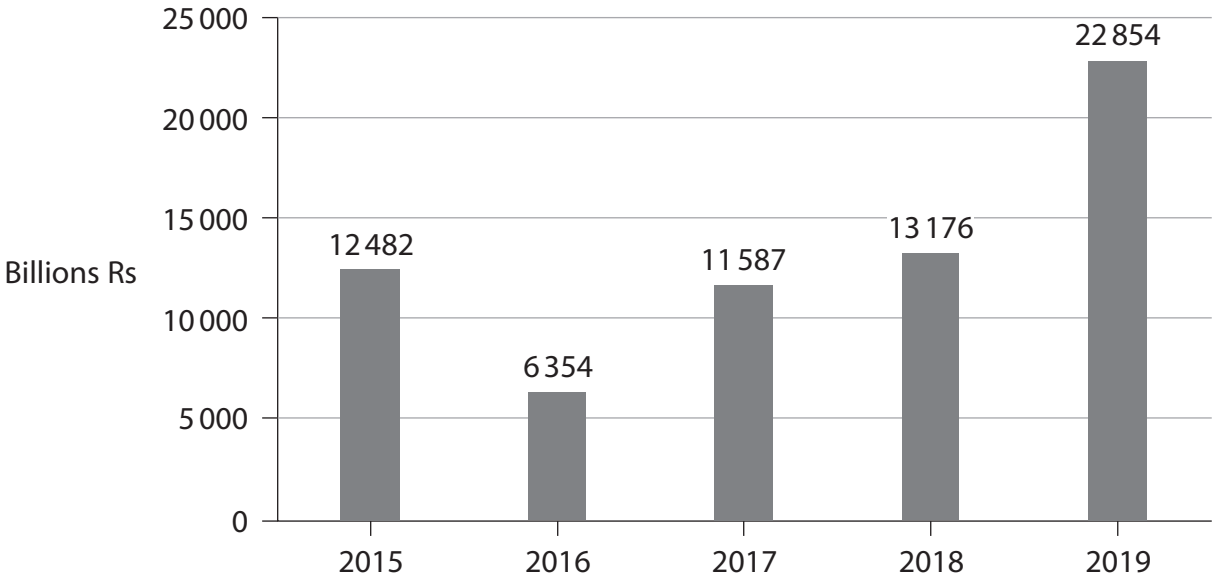


Figure 2 Tata Steel's profit, 2015–2019, in billion Rupees (Rs)



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Extract A The Indian steel industry

India is the world's second largest steel producer. The growth in the Indian steel industry has been stimulated by the availability of iron ore and low-cost labour. Firms in this industry are dynamically efficient, using the latest technology in their production process.

Tata Steel is the largest steel producer in India with the capacity to produce 13 million tonnes per year. It is also one of the largest steel-producing companies globally and operates in 26 countries with major sites in India, the Netherlands and the UK. It employs 85 500 workers globally.

Extract B Merger proposal

The German steel producer, Thyssenkrupp, is Europe's second largest producer of high-value steel, followed by Tata Steel. In 2017 these companies planned to merge their European manufacturing operations. This integrated business would have 48 000 workers and generate €15 billion in sales.

The merged company would be based in the Netherlands and become the second largest European steel manufacturer. Even after this merger, ArcelorMittal SA would still be the largest European steel manufacturer.

The merger was proposed after the European steel industry had a 25% tariff (tax on imports) placed on its sales to the USA, its largest market. Since the tariffs were imposed, steel manufacturers experienced a fall in annual profits of between 8% and 17%.

The merged firm expected that improvements in efficiency would result in savings of over €400 million. It is planned to reduce staff by a total of 4 000 in administration and manufacturing. It also hoped that it could benefit from lower long-run average costs.

Extract C Merger blocked

In June 2019 the European Competition Commission blocked the proposed merger between Tata Steel and Thyssenkrupp. It concluded that the merger would cause a reduction in competition which would result in a significant increase in the price of steel. During the investigation the Commission received feedback from car manufacturers and firms in the packaging industry. These industries believed the merger would give Tata Steel and Thyssenkrupp more dominance in the market. This would be likely to result in higher costs of production that would make it difficult for firms in these industries to remain profitable.

Employees of Tata Steel and Thyssenkrupp were concerned that the merger would create a monopsony employer of steel workers in the UK and the Netherlands. Employees expected job losses and lower real wages. This would have a negative effect on their standard of living as they would have no alternative employer for their skill set.

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Acknowledgements

Figures 1 and 2 based on data from https://economictimes.indiatimes.com/tata-steel-ltd/yearly/companyid-12902.cms

Extract A adapted from
https://www.thebalance.com/the-10-biggest-steel-producers-2010-2340299 and
https://www.tatasteeleurope.com/

Extract B adapted from
https://www.independent.co.uk/news/business/tata-steel-merger-thyssenkrupp-port-talbot-wales-a8423946.html and
https://www.theguardian.com/business/2017/sep/20/tata-steel-merge-thyssenkrupp-job-losses-port-talbot

Extract C adapted from
https://www.ft.com/content/5f0feae0-8c3f-11e9-a24d-b42f641eca37 and
https://www.wsj.com/articles/eu-blocks-merger-of-steelmaking-units-of-tata-thyssenkrupp-11560251203