1.9 Costs of Production and Economies and Diseconomies of Scale

Total Marks

AQA 7136 · Calculators not allowed · about 70 minutes · Write-in edition

Name: _____ Date: ____ / ____ / _____

Answer all questions. Use full sentences for all explain, assess and evaluate questions. Time guidance: 60 minutes total; allow about 25 minutes for the 25-mark evaluation question plus checking.

1 Explain risk-bearing economies of scale and how diversification by a larger firm can lower its average costs or risks compared with a small specialised firm.

(Total for Question 1 is 2 marks)

2 Evaluate the view that all firms should aim to grow to minimise average costs and exploit economies of scale.

(Total for Question 2 is 25 marks)

3 Define 'variable cost' in the context of a firm's short-run production.

(Total for Question 3 is 1 mark)

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4 Explain why average fixed cost (AFC) falls as output rises, using the relationship between fixed cost and output for a typical firm.

(Total for Question 4 is 2 marks)

5 Cost table for a small producer. Fixed cost is £40 at all output levels. Variable cost (VC) is given in the table for outputs 1 to 3 units. Calculate the missing columns: average fixed cost (AFC), average variable cost (AVC), average total cost (ATC) and marginal cost (MC). Show working. Table: Output (units): 1, 2, 3. Fixed cost GBP: 40, 40, 40. Variable cost GBP: 30, 50, 70.

(a) Complete the table and give AFC, AVC and ATC for output = 1 unit. **(3)**

(b) Give AFC, AVC and ATC for output = 2 units. **(3)**

(c) Give AFC, AVC and ATC for output = 3 units. **(3)**

(d) Calculate marginal cost (MC) for increasing output from 1 to 2 units, and from 2 to 3 units. **(2)**

(Total for Question 5 is 11 marks)

6 State two internal economies of scale a large manufacturing firm might enjoy as it expands production.

(Total for Question 6 is 2 marks)

7 Explain marketing economies of scale and give a brief example relevant to a national retailer.

(Total for Question 7 is 2 marks)

Mark scheme · 1.9 Costs of Production and Economies and Diseconomies of Scale

Question 1

larger firms can diversify products and markets, spreading the risk of a downturn in any one market across other products or regions — **M1**

this reduces the likelihood of large income swings and can lower the effective average cost of capital or insurance-like expenses — **A1**

Answer: Large firms can diversify products and markets, spreading risk and reducing income volatility and effective per-unit costs associated with risk.

Question 2

Level 1 Basic assertions about growth and lower average cost with little or no development or supporting analysis. Limited reference to economies or diseconomies of scale. Judgement, if present, is unsupported or superficial. — **1-5**

Level 2 Some relevant analysis, identifying economies of scale and that growth can reduce average cost. Some consideration of diseconomies or practical limits, but analysis is partial and lacks depth or clear evaluation. Limited use of examples or theory. — **6-10**

Level 3 Clear analysis of how internal economies of scale lower average costs and how diseconomies of scale can raise costs, with discussion of MES and plant size. Considers short-run versus long-run and introduces market-structure implications. Argument demonstrates awareness of trade-offs but limited judgement or nuance. — **11-15**

Level 4 Detailed analysis including diagrams as appropriate, evaluation of conditions under which growth reduces costs, and development of counterarguments such as diseconomies, management limits, and alternative firm objectives. Considers variation by industry, stage of industry life-cycle and external economies. A reasoned provisional judgement is presented. — **16-20**

Level 5 Comprehensive and balanced evaluation. Strong analysis of economies and diseconomies of scale, clear use of LRAC/MES and short-run SRAC tangency, and consideration of distributional, market-structure and strategic factors. Weighs benefits of growth against costs, non-cost objectives (e.g. flexibility, niche strategy), and provides a well-supported concluding judgement that distinguishes between firm types and circumstances. — **21-25**

Indicative content:

- Explain how internal economies of scale (technical, managerial, financial, marketing, risk-bearing) reduce long-run average costs as firms grow
- Use LRAC and SRAC reasoning: as firms move along LRAC they can choose larger plant sizes until MES is reached, lowering ATC
- Consider that MES may occur at different output levels across industries, so not all firms need to become large to reach minimum cost
- Discuss diseconomies of scale arising from coordination problems, communication costs and managerial inefficiencies that can increase average costs beyond a certain size
- Evaluate short-run constraints: firms may be operating with excess capacity or face high adjustment costs to expand plant, so growth is not always immediately cost-minimising
- Consider market-structure implications: in some markets, small firms may survive by specialising or differentiating, avoiding scale-based competition
- Non-cost objectives: firms may prioritise flexibility, control, quality or niche service which favour remaining small
- Consider external economies and public policy: in some clusters, external economies mean many firms benefit without growing large, altering incentives
- Weigh up strategic reasons to grow even if short-term average cost improvements are small (market power, access to finance) against risks (diseconomies, regulatory scrutiny)
- Conclude with a balanced judgement: growth can minimise costs for many firms, but it is not universally desirable; decision depends on industry MES, managerial capacity, strategic objectives and the potential for diseconomies

Question 3

a cost that changes with the level of output, for example raw materials or piece-rate labour — **B1**

Answer: A cost that changes with the level of output, for example raw materials or piece-rate labour.

Question 4

AFC = fixed cost divided by output, so as output rises the same fixed cost is spread over more units — **M1**

therefore AFC falls continuously as output increases (spreading effect) — **A1**

Answer: AFC = fixed cost/output, so increasing output spreads the fixed cost over more units and AFC falls.

Question 5

(a) AFC = 40 / 1 = 40.0 **M1**

(a) AVC = 30 / 1 = 30.0 **M1**

(a) ATC = (40 + 30) / 1 = 70.0 **M1**

(a) Answer: AFC = 40.0, AVC = 30.0, ATC = 70.0

(b) AFC = 40 / 2 = 20.0 **M1**

(b) AVC = 50 / 2 = 25.0 **M1**

(b) ATC = (40 + 50) / 2 = 45.0 **M1**

(b) Answer: AFC = 20.0, AVC = 25.0, ATC = 45.0

(c) AFC = 40 / 3 = 13.33..., accept 13.3 **M1**

(c) AVC = 70 / 3 = 23.33..., accept 23.3 **M1**

(c) ATC = (40 + 70) / 3 = 36.666..., accept 36.7 **M1**

(c) Answer: AFC = 13.3 (awrt), AVC = 23.3 (awrt), ATC = 36.7 (awrt)

(d) MC 1->2 = change in total cost = (40+50) - (40+30) = 90 - 70 = 20 **M1**

(d) MC 2->3 = (40+70) - (40+50) = 110 - 90 = 20 **M1**

(d) Answer: MC (1->2) = £20.0; MC (2->3) = £20.0

Question 6

technical economies, for example more efficient specialist machinery or production techniques **B1**

managerial economies, for example employing specialist managers which improves efficiency **B1**

Answer: Technical economies (specialist machinery) and managerial economies (specialist managers).

Question 7

marketing economies arise because advertising and brand-building costs can be spread over a larger output or more stores **M1**

example: a national retailer runs one national TV campaign that reaches many stores, lowering advertising cost per unit sold **A1**

Answer: Advertising and brand costs are spread over larger sales; e.g. a national TV ad campaign lowers advertising cost per unit for a national retailer.