

Cost Curves and (in) Efficiency

Webnote 156
Syllabus: Items 42-46

SHORT RUN AND LONG RUN

- Short run = at least one FoP is fixed. In other words the firm cannot change at least one factor. Example would be the factory building
- Long run = all factors variable and therefore the firm can plan the ideal scale of the operation
- How long is each? This depends on the industry but typically the short run is 0 to 12 months and 12+ months to measure the long run.

What is the difference in Economics between the following:

- **Diminishing marginal returns (SR)**
- **Decreasing returns to scale (LR)**
- **(Dis) Economies of Scale (LR)**

Short Run Costs

Diminishing Marginal Returns

- **Short run concept**
- **Influences shape of short run average cost curve**
- **At least one of the FoP is fixed**
- **Leads to inefficiency and waste of scarce resources**
- **Highlights that growth is difficult to manage in the short term**
- **Long term strategy is required**
- **If the firm is unable to manage growth effectively then it will face rising AVC i.e. DMR**
- **If AVC is rising it implies DMR see ab in diagram (e). However for an accurate analysis it is necessary to do a marginal analysis looking at changes in marginal cost or even better at marginal product.**
- **See blink p.79-81**

								HL 2.3	
TP	TFC	TVC	TC	AFC	AVC	ATC	MC	Q	Labour
0	400	0	400	0	0	0	0	0	0
10	400	200	600	40	20	60	20	1	1
25	400	400	800	16	16	32	13,33	2	2
45	400	600	1000	8,89	13	22,22	10	3	3
70	400	800	1200	5,71	11,43	17,14	8	4	4
90	400	1000	1400	4,44	11,11	15,55	10	5	5
105	400	1200	1600	3,81	11,43	15,24	13,33	6	6
115	400	1400	1800	3,48	12,17	15,65	20	7	7
120	400	1600	2000	3,33	13,33	16,67	40	8	8

Long Run Costs

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(Dis) Economies of Scale

- Long run concept
- Measures the average unit cost
- Causes the LRAC to rise or fall
- Measure of efficiency
- Note that increasing returns can exist with a rising average unit cost
- See webnote 216

Returns to Scale

- Long run concept that examines the change in total output as a result of increasing the total inputs
- Growth of firm can result in increasing, constant or decreasing returns to scale
- All of the factors of production are variable
- Indicates the effectiveness of long term planning
- Highlights that growth is difficult to manage in the long term
- If the firm is unable to manage long run growth effectively then it will face rising LRAC
- Be aware that the long run is a planning device and that the firm only operates in the short run

See also economies and diseconomies of scale on webnote 216

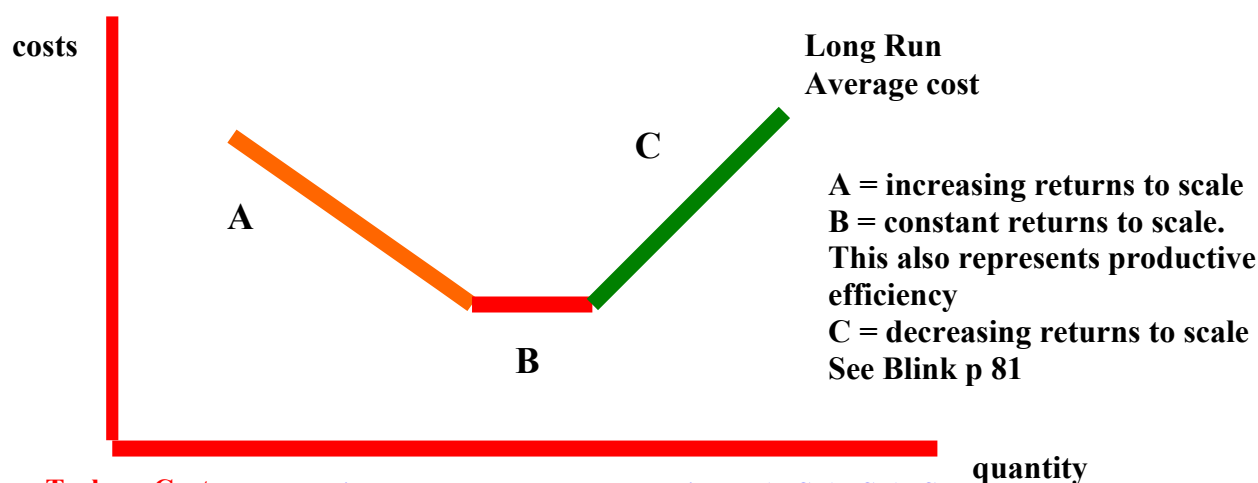
Note: returns to scale relates to changes in the quantity of output and economies of scale relate to changes in unit cost

Table (A) Returns to scale and economies of scale for a firm producing cakes

Size of firm (FOP) (Inputs)			Input Change	Output Kilos	Output Change	Returns to scale	Economies of scale
land	labour	capital					
5	2	4		100			
10	4	8	100%	250	150%	increasing	yes- if unit cost falls
15	6	12	50%	400	60%	increasing	yes- if unit cost falls
20	8	16	33%	500	25%	decreasing	no-if unit cost rises
25	10	20	25%	600	20%	decreasing	no-if unit cost rises

Note: returns to scale relates to changes in the quantity of output and economies of scale relate to changes in unit cost. The table above only gives information about changes in kilos of output.

Fig C: LRAC can also show Returns to Scale



Task on Cost curves: Using the table below draw on one diagram ATC, AVC, AFC and Marginal Product (MP). (see Blink p79 for graph)
 Question: At what output level does diminishing marginal returns set in?