

Profit maximisation: revenues

To identify the optimal quantity that should be produced in order to minimize costs is not enough, because we also need to take **demand** into consideration.

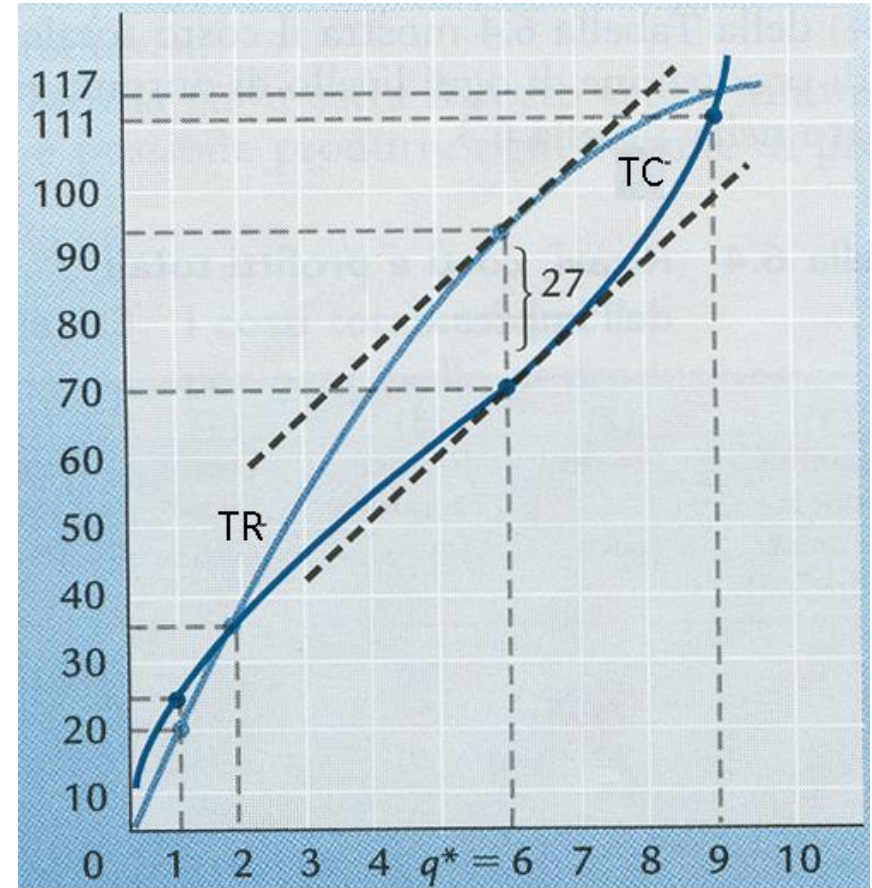
This means to introduce revenues:

$$\Pi = (p*q) - (c*q)$$

What quantity maximises profits?

The total profit approach

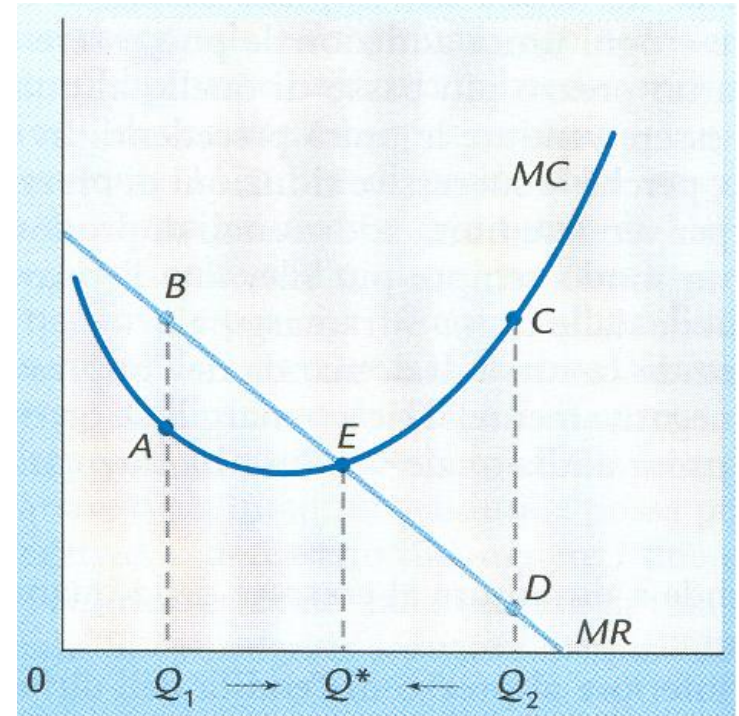
Out put	Total costs	Total revenues	Total profit
0	10	0	-10
1	25	21	-4
2	36	40	4
3	44	57	13
4	51	72	21
5	59	85	26
6	69	96	27
7	81	105	24
8	95	112	17
9	111	117	6
10	129	120	-9



What quantity maximises profits?

The marginal cost/marginal revenue approach

Output	Marginal revenue	Marginal costs	Marg. profit	Firm's choice
0	0	0	0	Increase
1	21	15	6	Increase
2	19	11	8	Increase
3	17	8	9	Increase
4	15	7	8	Increase
5	13	8	5	Increase
6	11	10	1	
7	9	12	-3	Diminish
8	7	14	-7	Diminish
9	5	16	-11	Diminish
10	3	18	-15	Diminish



MAX PROFIT
CONDITION

$$MR=MC$$

N.B.

Exercises

1

To produce 800 pieces per week a firm faces an average cost of 20,000€ per piece.

With a different plant it could be possible to produce them at an average cost of 18.000€ per piece.

Even if no plants could lead to a lower price to produce 800 pieces, bringing the production to 850 pieces per week, it would be possible to obtain an average cost of 17,000 €.

Trace a long run average cost curve and short run average cost curves coherent with the provided data.

2

The long run average cost for the firm PIPPO for 10 q per week is 12€. With that output level the plant is over-utilised.

Will the long run marginal cost be lower, higher or equal to 12?

This is the cost table of firm SOL:

Q	FC	VC	TC	MC	VAC	FAC	TAC	p	MR	TR	π	$\Delta\pi$
0	46	0	46	0								
1	46	30	76	30				40				
2	46	50	96	20				40				
3	46	58	104	8				40				
4	46	64	110	6				40				
5	46	84	130	20				40				
6	46	114	160	30				40				
7	46	150	196	36				40				
8	46	190	236	40				40				
9	46	240	286	50				40				

- a) Complete the table
- b) What is the quantity maximising profits? How much is the profit? Should the firm continue to produce in the long run?
- c) If the price decreased, reaching 20€, what quantity would maximise profits in the short run? What would happen in the long run?
- d) If the price decreased up to 15€, how much would be the profit/loss? What would be the profits in case of a temporary stop of production in the short run? What should the company do in the short run?