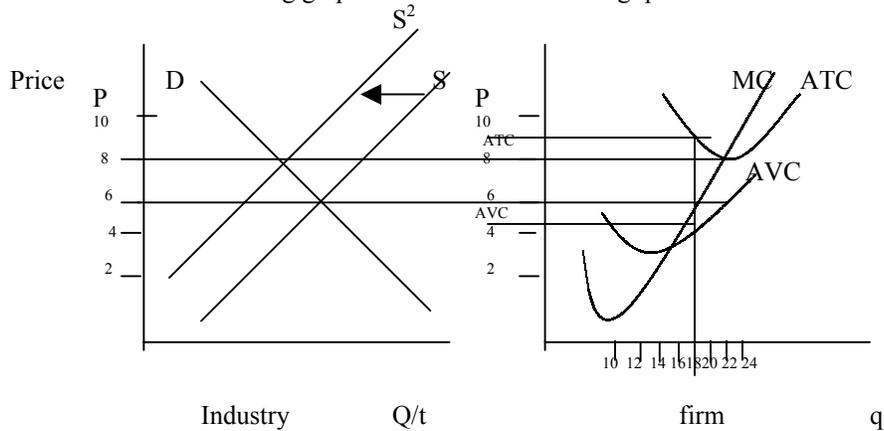


In class exercises Chapter 7

1. Use the following graphs to answer the following questions.



- a) What is the price? What is the profit maximizing quantity?

$$P = \$6, q = 18$$

- b) At the profit maximizing quantity, is the firm making an economic loss or an economic profit, or zero economic profit?

$$\text{Loss} - P < ATC$$

- c) In the short-run, will this firm shut down or stay open?

$$\text{Stay open } P > AVC$$

- d) What happens in the industry, in the long-run, as a result of the profits or loss found in part b)?

Firms exit until

- e) What would be the price in the long-run (after part b) - when the industry is in a STABLE EQUILIBRIUM?

Price is driven to \$8 (where $P = MR = MC = \min ATC$), so S decreases to S^2

- f) What are the total fixed costs?

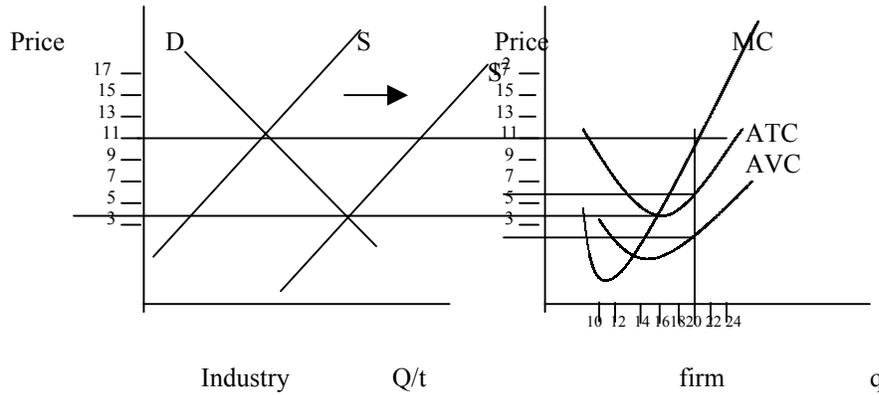
$TFC = TC - TVC \rightarrow$ or $AFC = ATC - AVC$, at $q = 18$ $ATC = \$9$ and $AVC = \$4.25$, so $AFC = 9 - 4.25 = \$4.75$. To get this to be a TFC, we know $TFC = AFC * Q$, so $TFC = \$4.75 * 18 = \85.50

NOTE: Your numbers may be a little different because the graph is not precise, that is fine, just be sure the equations are used appropriately.

- g) What are the total variable costs?

$$TVC = AVC * Q = \$4.25 * 18 = 76.50$$

2. Use the following graphs to answer the following questions.



a) What is the price? What is the profit maximizing quantity?

$P = \$11$; $q = 20$

b) At the profit maximizing quantity, is the firm making an economic loss or an economic profit, or zero economic profit?

Profit $P > ATC$

c) In the short-run, will this firm shut down or stay open?

Stay open; $P > AVC$

d) What happens in the industry, in the long-run, as a result of the profits or loss found in part b)?

Firms enter

e) What would be the price in the long-run (after part d) - when the industry is in a STABLE EQUILIBRIUM?

Entry until Profits = 0, or $P = MR = MC = \min ATC$, at $P = \$3.25$

f) What are the total fixed costs?

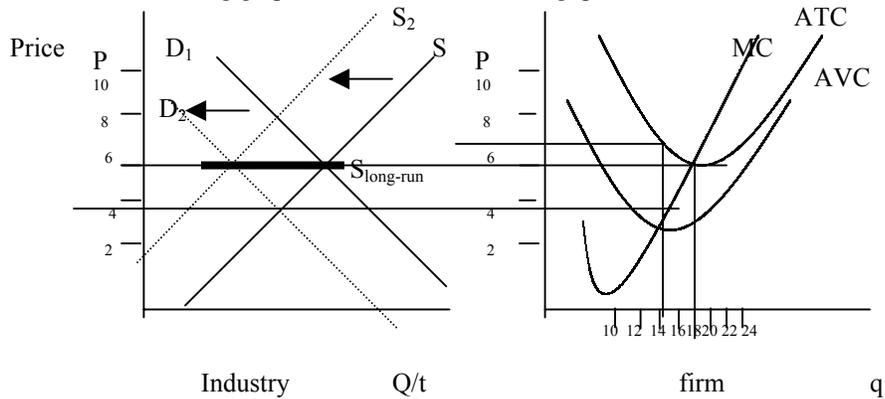
$TFC = TC - TVC \rightarrow$ or $AFC = ATC - AVC$, at $q = 20$ $ATC = \$6$ and $AVC = \$2$, so $AFC = 6 - 2 = \$4$. To get this to be a TFC, we know $TFC = AFC * Q$, so $TFC = \$4 * 20 = \80

NOTE: Your numbers may be a little different because the graph is not precise, that is fine, just be sure the equations are used appropriately.

g) What are the total variable costs?

$TVC = AVC * Q = \$2 * 20 = 40$

3. Use the following graphs to answer the following questions.



a) Show the firm in a long-run equilibrium (that is, add the ATC, AVC, find the profit maximizing quantity).

In PC, $P = MR$, profit max is to choose Q where $MC = MR$.
Here $P = 6$, so $q = 18$ and profit = 0

b) Now suppose that the price of a complement increases, how will this impact the firm and the industry?
Show this graphically.

D decreases, this causes Price to fall (to around \$4), this causes firms in the industry to make economic losses ($P < ATC$), so firms will leave

c) Given the change in part b) what happens to the firm's profit maximizing quantity? How does the firm's profit change in the short-run?

Q decreases (here it is about 14, but may be different in your graph depending on your demand shift) Economic losses ($P < ATC$)

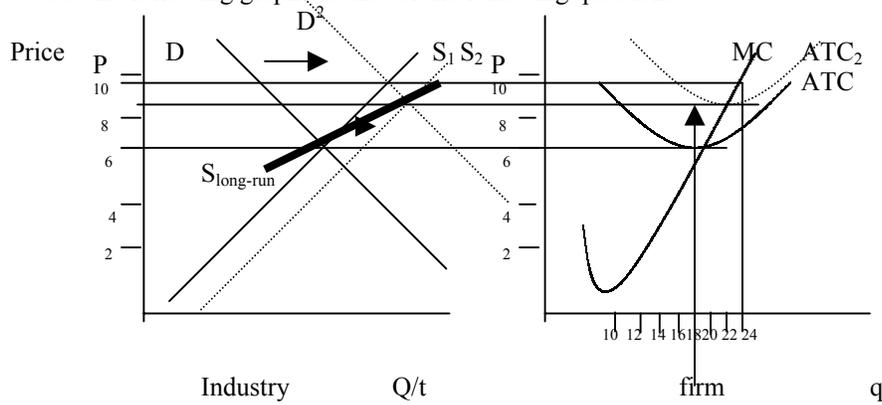
d) What happens in the industry, in the long-run, as a result?

Firms exit

e) Find the long-run supply curve, given the firm faces constant costs.

Connecting two points in which Profits = 0, and $P = \min ATC$, Long-run supply is perfectly elastic.

4. Use the following graphs to answer the following questions.



a) Show the firm in a long-run equilibrium (that is, add the ATC, AVC, find the profit maximizing quantity).

In PC, $P = MR$, profit max is to choose Q where $MC = MR$.
Here $P = 6$, so $q = 18$ and profit = 0

b) Now suppose that the price of a substitute increases, how will this impact the firm and the industry? Show this graphically.

D increases (shifts right)

c) Given the change in part b) what happens to the firm's profit maximizing quantity? How does the firm's profit change in the short-run?

It increases (here $q = 24$), the firm makes an economic profit ($P > ATC$)

d) What happens in the industry, in the long-run, as a result?

Firms enter

e) Find the long-run supply curve, given the firm faces increasing costs.

As firms enter, the entry drive up the cost – so ATC and S both increase.