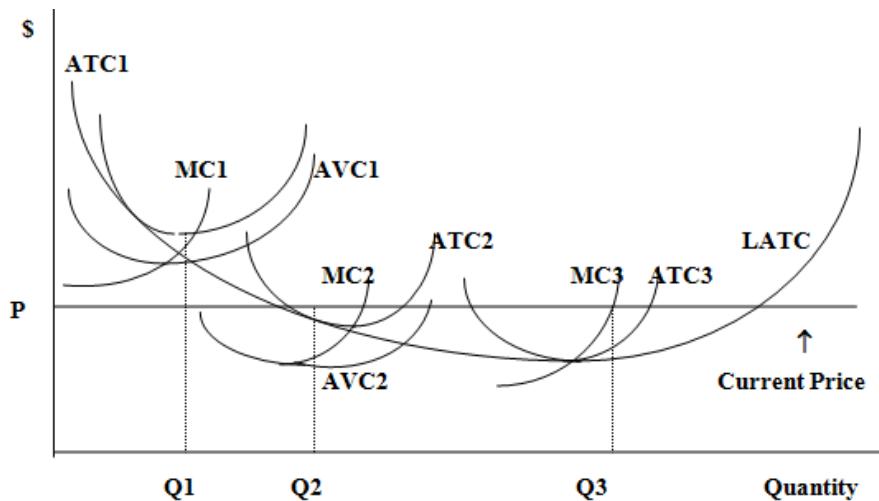


Problem Set 10:

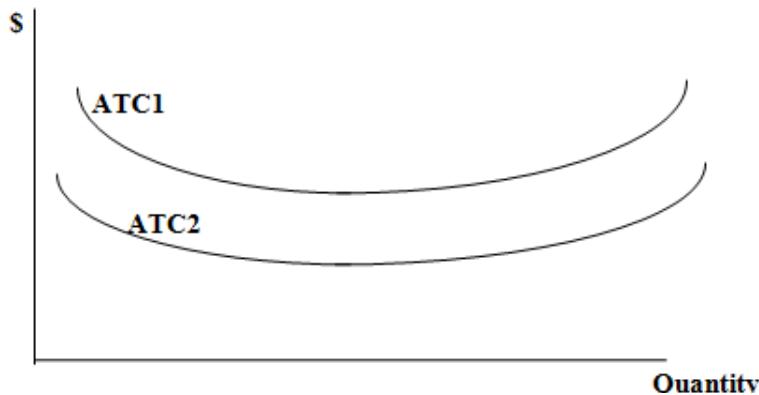
1. Three companies are pictured below on a long run ATC curve. The quantities produced for each firm are shown also. If the expected long run equilibrium is known to be coming in five years, describe the preferred strategy each firm should take in both the short run and long run (that is, answer the questions below).



- a. Firm 1 should do what in the short run? Explain your reasoning.
- b. What choices or strategies does firm 1 have in the long run?
- c. Firm 2 should do what in the short run? Explain your reasoning.
- d. What choices or strategies does firm 2 have in the long run?
- e. Firm 3 should do what in the short run? Explain your reasoning.
- f. What should firm 3 do in the long run?

2. Describe in words the process by which long-run equilibrium is arrived at in the scenario explained in the previous question. In particular explain the following questions:

- a. What functions change in the process and why? Assume the LATC curve does not change.
- b. Do more or less resources flow into this product area? Explain.
- c. If the long-run ATC curve was to fall as shown below, would the industry tend to become more or less competitive? Why?



3. When you look at the demand curve for an individual firm there is no consumer surplus that can be measured because demand is equal to price. Yet, when you look at the market demand situation it is clear that consumer surplus exists. Explain how this can be true.
4. Each of 1000 identical firms in a competitive peanut butter industry has a short-run marginal cost curve given by $SMC=4+Q$. If the demand curve for this industry is $P=10-(Q/500)$, what will be the short-run loss in producer and consumer surplus if an outbreak of aflatoxin suddenly makes it impossible to produce any peanut butter?
5. A firm in a competitive industry has a total cost function of $TC=0.2Q^2-5Q+30$. Find the expression for the marginal cost curve. If the firm faces a price of 6, what quantity should it sell? What profit does the firm make at this price? Should the firm shut down?