Principles of Economics

Discussion Session 6: Entry and Exit Decisions

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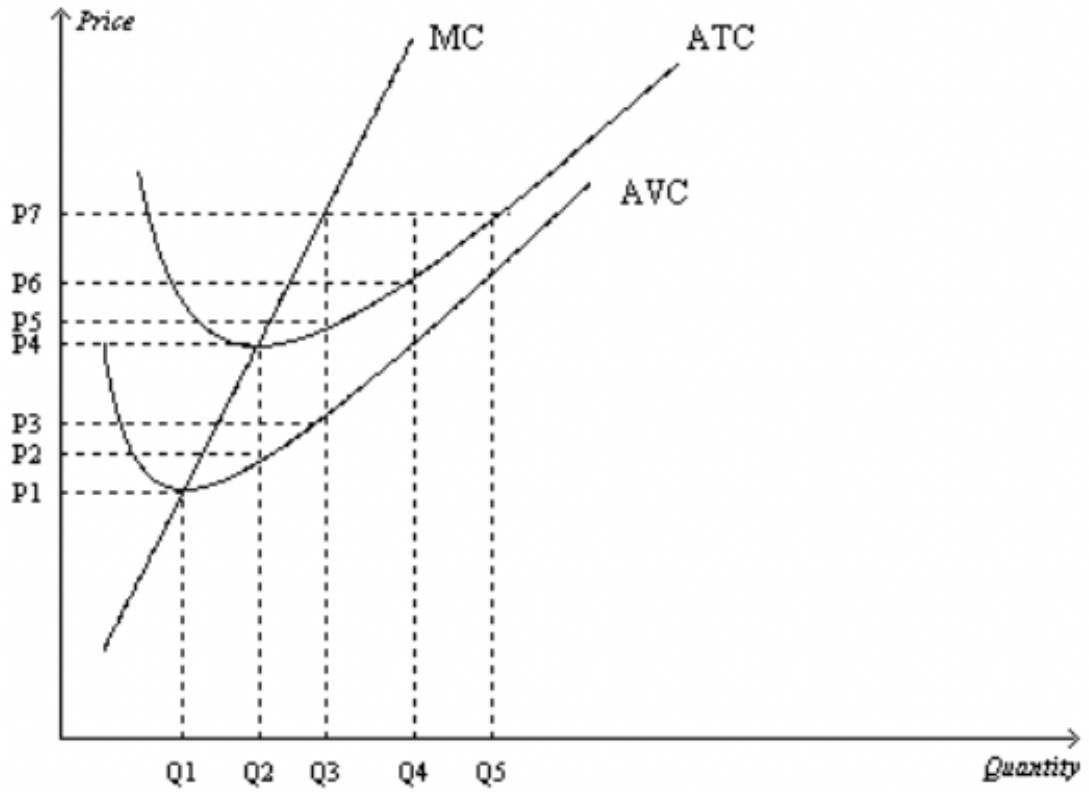
Exercise 1: Profit Maximization

Q1: Suppose Amelia's Taqueria operates in a competitive market and maximizes its profits. If the market price is $P7$, which quantity level should the firm choose? Find regions representing **total revenue**, **total cost**, **variable cost**, and **profit**.



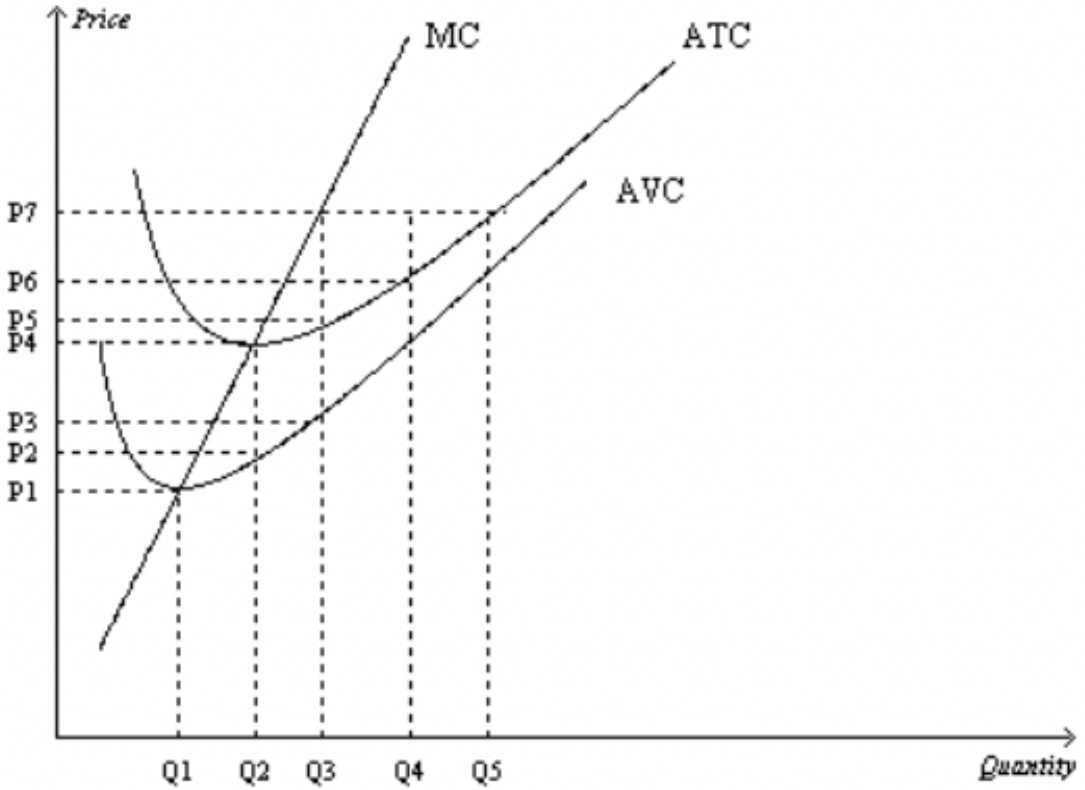
Exercise 1: Profit Maximization

Solution:

- Profit-maximizing quantity is $Q3$ ($P = MR = MC$)
- $TR = P7 \times Q3$
- $TC = P5 \times Q3$
- $VC = P3 \times Q3$
- $Profit = (P7 - P5) \times Q3$

Exercise 2: Shut Down in Short-Run vs Long-Run

Q2: Should Amelia shut down her taqueria in the short run if the market price is P7? P3? Below P1? How about in the long run?



Exercise 2: Shut Down in Short-Run vs Long-Run

Solution:

- When price is $P7$: Making positive profits :)
  $\Longrightarrow$ Keep operating in both short- and long-run.

- When price is $P3$: Making losses, but the firm can cover its variable costs and part of its fixed costs.
  $\Longrightarrow$ Operate in short-run but shut down in long-run.

- When price is below $P1$: Making losses, and can't even cover variable costs :(
  $\Longrightarrow$ Shut down immediately.

Summary: Shut Down in Short-Run vs Long-Run

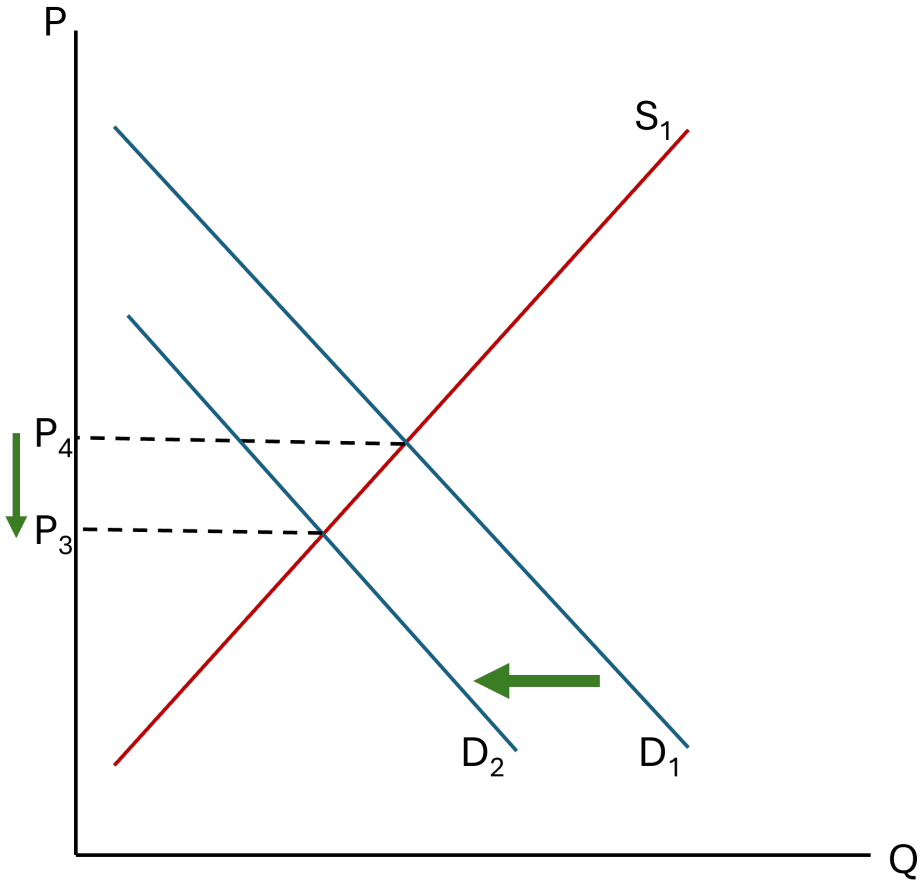
Situation	Profit = TR - TC	Decision
Price $>$ ATC	Positive	Keep operating in short- and long-run
AVC $<$ Price $<$ ATC	Negative	Keep operating in short- but shut down in long-run
Price $<$ AVC	Negative	shut down in short- and long-run

Effect of Entry and Exit on Aggregate Supply

Suppose there is a negative demand shock in the market for Mexican food.

- Demand curve shifts left.
- Price falls from P_4 to P_3.

1. How will this effect Mexican restaurants' profits? How will they react?
2. What will happen to the aggregate supply curve over time?



Exercise 3: Supply in Short-Run vs Long-Run

Q3: Suppose Mexican food becomes popular in Boston and the demand curve shifts to the right. As a result, the current equilibrium price in the taco market increases from $P4$ to $P7$. What will happen to the supply of juice in the short- and long-run? Show on graphs. *(Hint: think about the profit when the price is P4.)*

Exercise 3: Supply in Short-Run vs Long-Run

Solution:

- In the short run, the supply curve is fixed. The price increases to $P7$ and the equilibrium quantity increases. Firms earn positive profits.
- In the long run, new firms enter the market, and hence supply curve shifts to the right. Price decreasaes, and quantity keeps increasing. The entry stops when the price falls to $P4$, and all firms earn zero profits again.