Principles of Economics

Discussion Session 6: Entry and Exit Decisions

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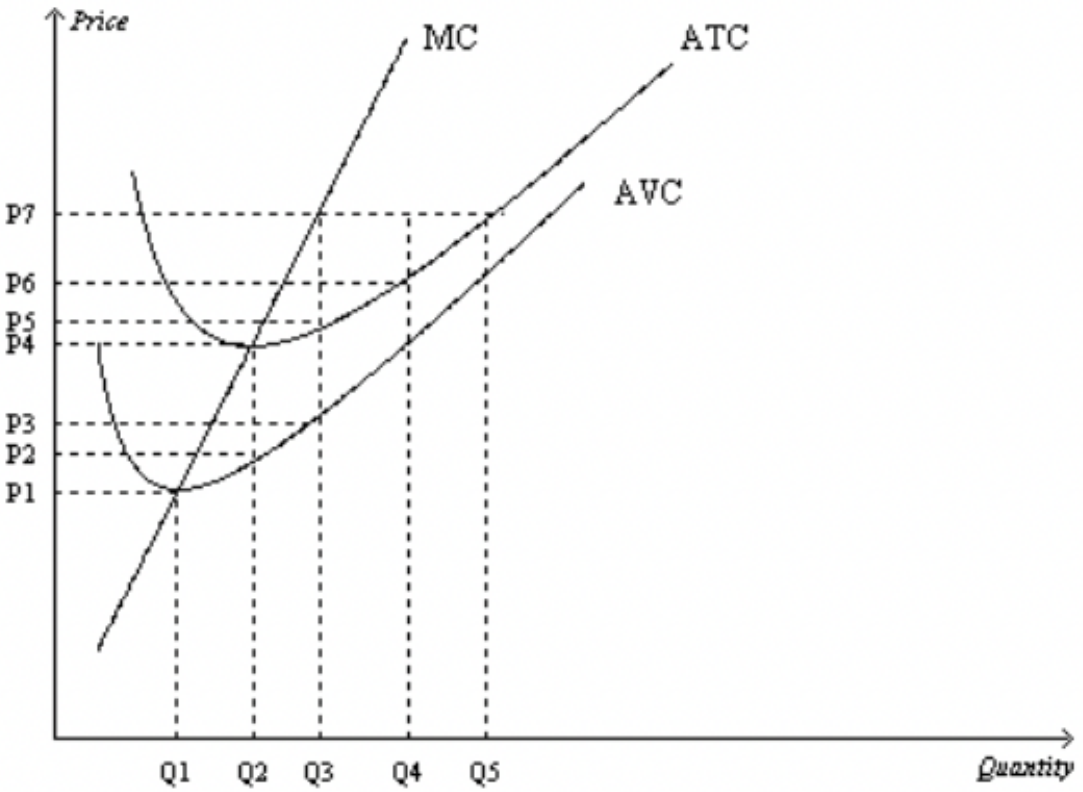
Exercise 1: Profit Maximization

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**.



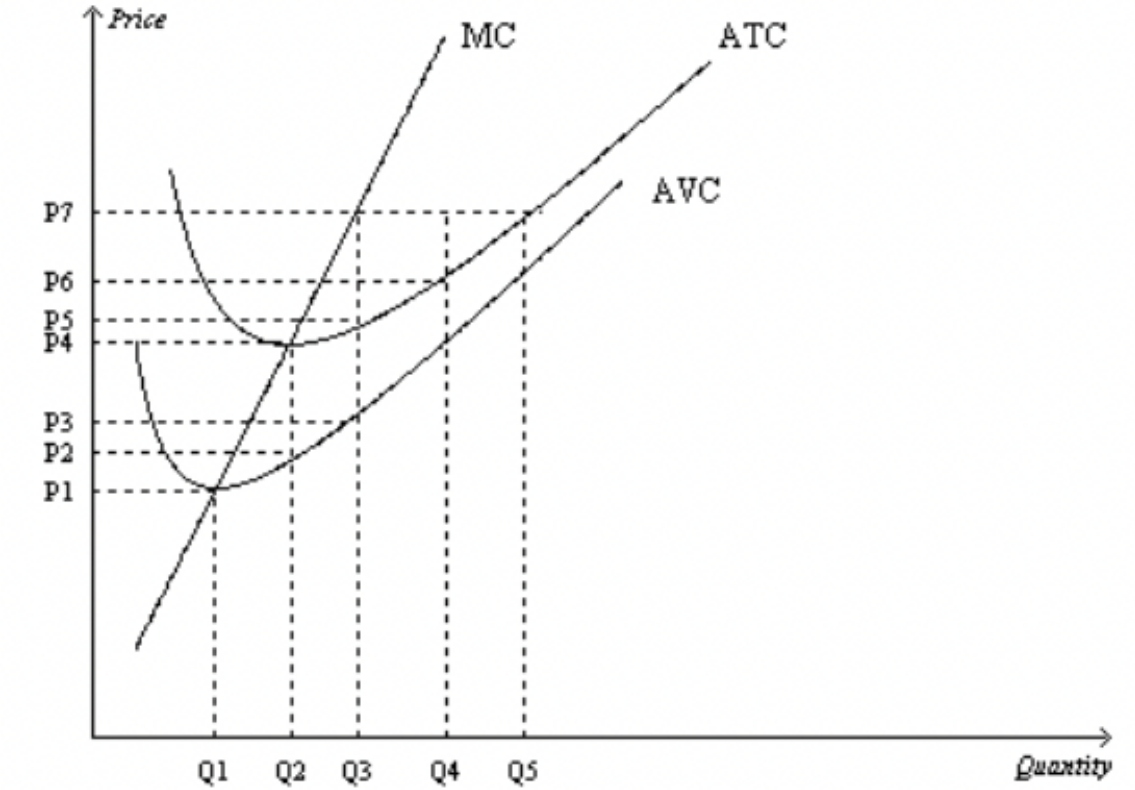
Exercise 1: Profit Maximization

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

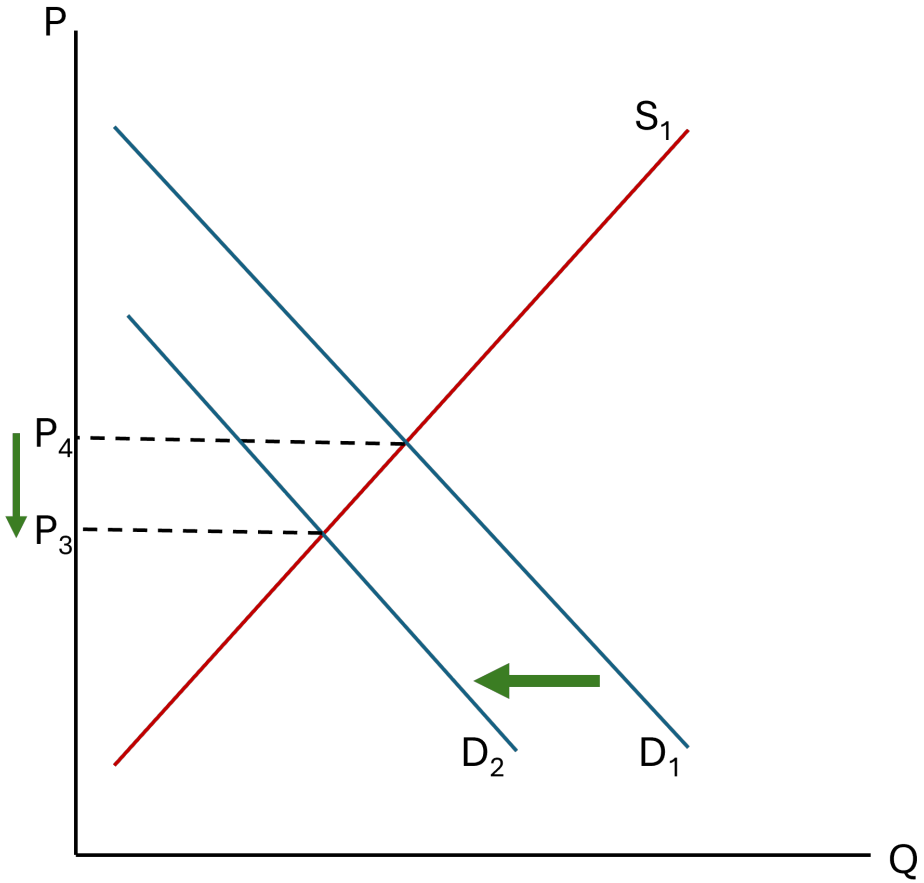
Situation	Profit = TR - TC	Decision
Price $>$ ATC	Positive	Keep operating in short- and long-run
AVC $<$ Price $<$ ATC	Negative	Keep operating in short- but shut down in long-run
Price $<$ AVC	Negative	shut down in short- and long-run

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.

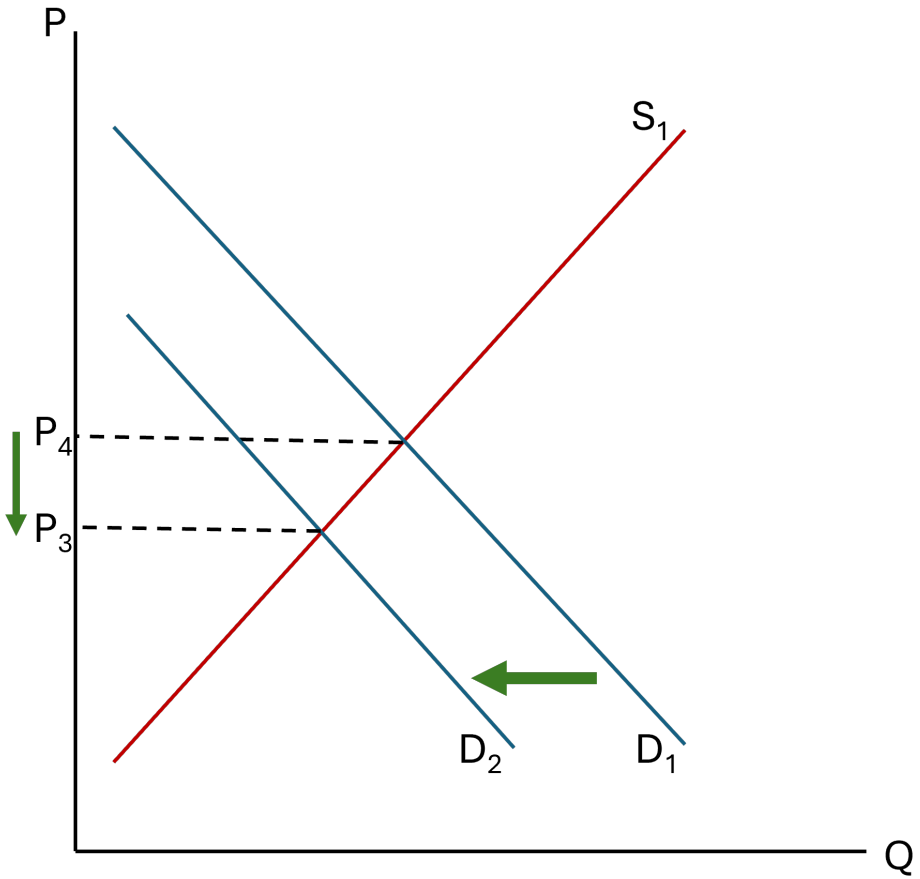
1. How will this effect Mexican restaurants' profits? How will they react?
2. What will happen to the aggregate supply curve over time?

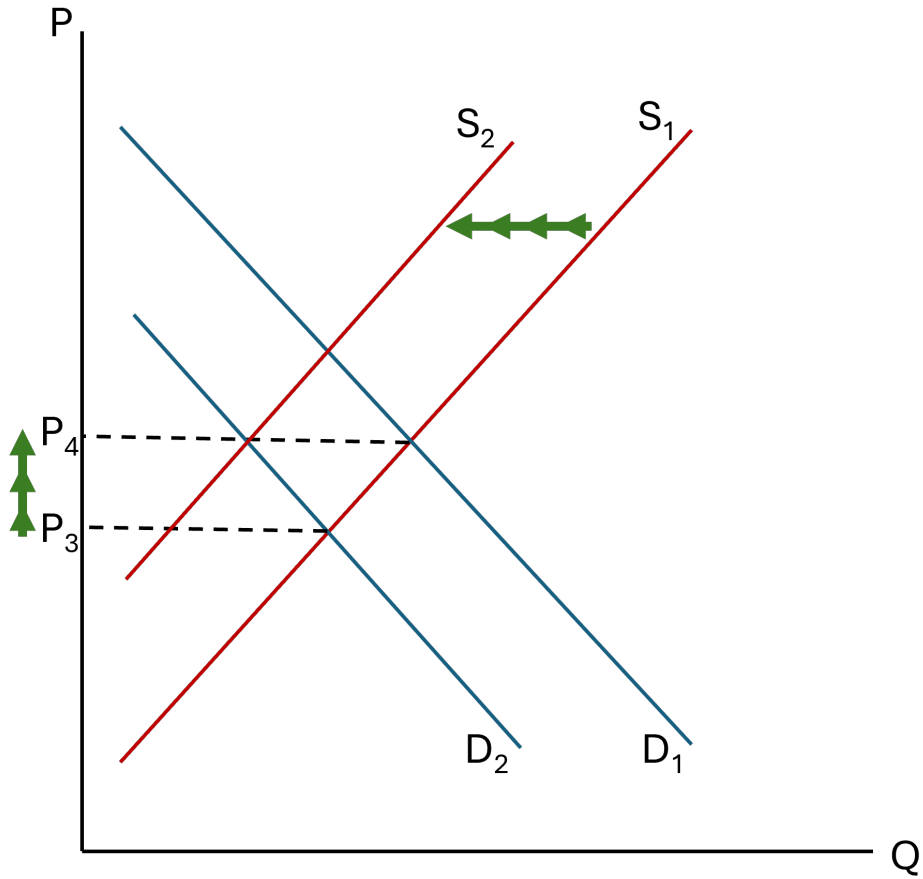


Effect of Entry and Exit on Aggregate Supply

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

1. How will this effect Mexican restaurants' profits? How will they react?
   $\Longrightarrow$ Negative profits cause long-run exits.
2. What will happen to the aggregate supply curve over time?
   $\Longrightarrow$ Aggregate supply shifts left as restaurants exit, until P returns to P_4.



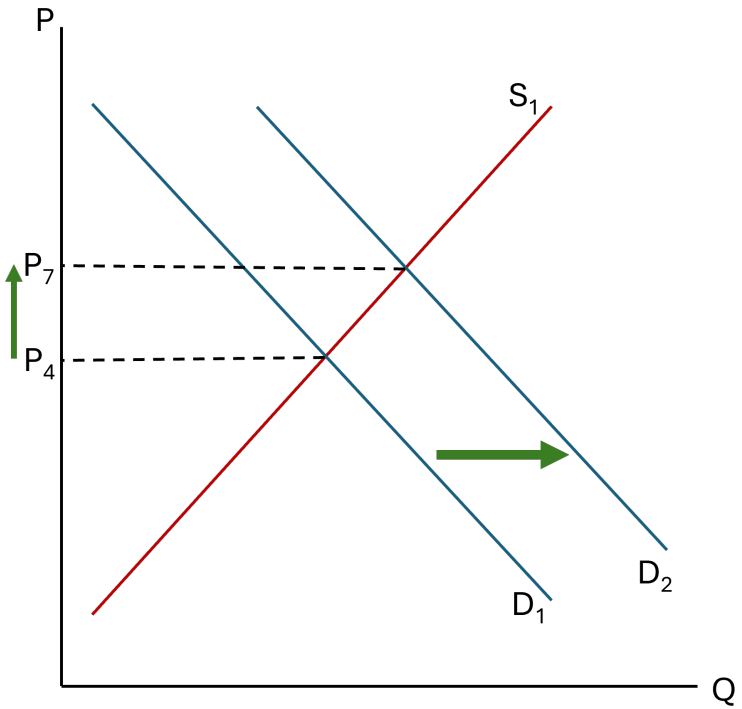


Exercise 3: Supply in Short-Run vs Long-Run

Suppose Mexican food suddenly becomes popular in Boston.

- Demand curve shift right.
- Equilibrium price increases from P_4 to P_7.

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



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

Solution:

1. Positive profits cause new entries.
2. Aggregate supply shifts to the right.
3. Supply increases until P returns to P_4 and entries cease.