

# Econ 100A: Intermediate Microeconomic Analysis

## Lecture 15

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## Plan of Today's Lecture

- We continue Ch. 8:
- Analysis of a competitive firm
  - Supply curve of competitive firm: Supply curve tells how much output will be produced at different prices
    - SR
    - LR
    - Firm response to changes in input (and output) prices
  - Profits in SR:
    - Positive or Negative
  - Industry supply curve
  - LR:
    - competitive equilibrium entails zero profits

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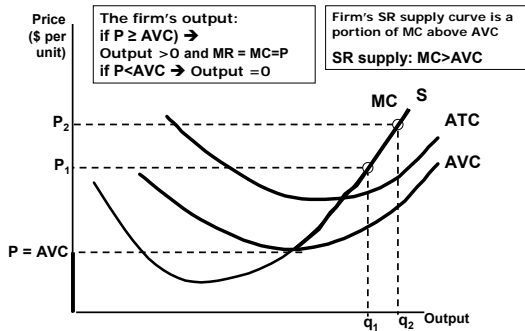
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## A Competitive Firm's SR Supply Curve, Fig. 8.6, p. 273



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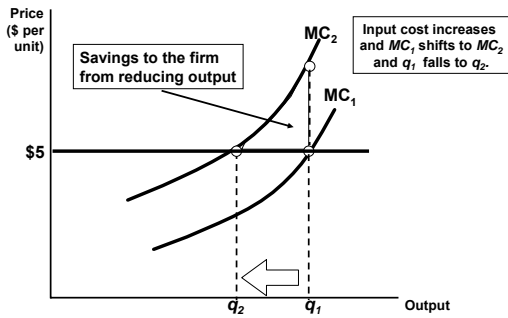
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### SR: The Response to a Change in Input Price, p. 274



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### SR: Industry (Market) Supply

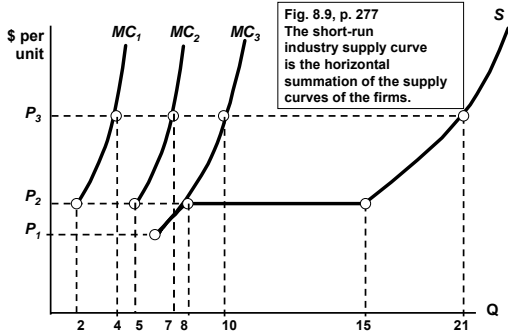


Fig. 8.9, p. 277  
The short-run industry supply curve is the horizontal summation of the supply curves of the firms.

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### SR & LR: Output Choice under perfect competition

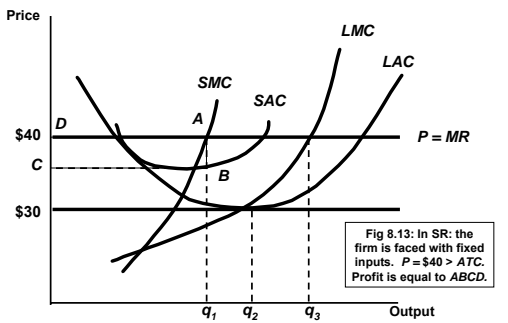


Fig 8.13: In SR: the firm is faced with fixed inputs.  $P = \$40 > ATC$ . Profit is equal to ABCD.

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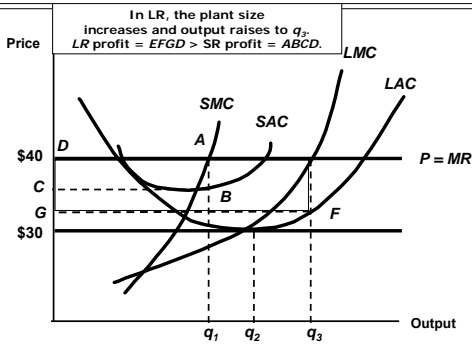
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## LR: Output Choice, Fig 8.13, p. 282 (continued)



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## Profits in Competitive Equilibrium

- Accounting profit
  - Difference between firm's revenues and direct costs
- Economic profit
  - Difference between firm's revenues and direct and indirect costs
- Unlike accounting profit, economic profit takes into account opportunity costs (indirect costs)
- Under perfect competition: what are the LR economic profits? (ZERO)

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## LR Profits (equations)

- Firm uses labor (L) and capital (K) with purchased capital
- Accounting Profit and Economic Profit
  - Accounting profit:  $\pi = R - wL$
  - Economic profit:  $\pi = R - wL - rK$ 
    - $wl$  = labor cost
    - $rk$  = opportunity cost of capital
  - costs
- Economic profit may be lower than accounting profit, because accounting profit does not include opportunity costs of funds (and of labor!)

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## LR: Zero Profit

- Competitive market LR equilibrium = Zero-Profit:

- A firm is earning a normal return on its investment, i.e.,
- Doing as well as it could if it invests its money elsewhere
- **Normal return** is firm's opportunity cost of using money to buy capital instead of investing elsewhere

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## Zero Profits (equations)

- Zero Economic Profits

- If  $R > wL + rk$ , positive economic profits
- If  $R = wL + rk$ , zero economic profits, but the firm is earning a normal rate of return, indicating the industry is competitive
- If  $R < wL + rk$ , the firms consider going out of business

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## Long-Run Competitive Equilibrium: Entry and Exit

- Entry and Exit

- The LR response to positive SR profits is to increase output (and profits); Profits will attract other producers →
- If more producers → increase of industry supply, which lowers the market price
- This continues until there are no more profits to be gained in the market = zero economic profits in LR equilibrium

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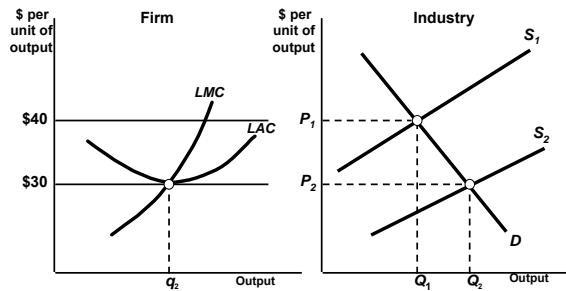
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## Long-Run Competitive Equilibrium – Profits, p. 284

- Profit attracts firms →
- Supply increases until profit = 0



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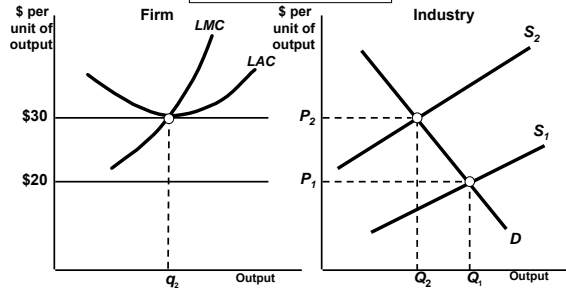
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## Long-Run Competitive Equilibrium – Losses

- Losses cause firms to leave
- Supply decreases until profit = 0



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## Summary of Today & Plan of Next Lecture

- Ch. 8 continued & finished
- The Competitive Firm's Supply Curve:
  - SR
    - Response to input price changes
    - Response to output price changes
  - LR
    - LR competitive equilibrium: Zero Profit
- Competitive industry:
  - Firm supply curve & Industry Supply curve
- Next Lecture: Ch. 9

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