Long-Run Costs and Output Decisions

Chapter Outline
1. Short-run Profits and Losses
   a. Maximizing Profits
   b. Minimizing Losses
   c. Short-run Supply Curve
2. Economies and Diseconomies of Scale
3. Long-Run Adjustments
   a. Short-run Profits
   b. Short-run Losses
   c. Long-run Profits

Short-run Profits and Losses
\[ \pi = TR - TC \]
\[ \pi = Q^*(P - AC) \]

Show Graphically: Maximizing Profits
Show Graphically: Minimizing Losses

A firm will shut-down in the short-run if:
1. Losses > TFC
2. \( P < AVC \)

Economies and Diseconomies of Scale

Economies of Scale – increasing the firms scale (production capacity) results in lower costs per unit produced.

Ex: automobile production, bus

Constant Returns to Scale – increasing the firms scale (production capacity) has no effect on costs per unit produced.

Diseconomies of Scale – increasing the firms scale (production capacity) results in higher costs per unit produced.

Ex: bureaucratic inefficiency

Long-Run Adjustments
Show Graphically: Short-run Profits under Economies of Scale \( \Rightarrow \pi = 0 \)
- Firms will enter as long as there are profits to be made
- Firms will expand as long as there are economies of scale to be realized

Show Graphically: Short-run Losses under Constant Returns to Scale \( \Rightarrow \pi = 0 \)
- Firms will exit as long as there are losses

Long-run Profits
\[ P^* = SRMC = SRAC = LRAC \text{ and } \pi = 0 \]