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# Chapter 10: Production and Cost Estimation

# Basic Concepts of Production Theory

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- ❖ Inputs are considered *variable* or *fixed* depending on how readily their usage can be changed
- ❖ Variable input
  - ~ An input for which the level of usage may be varied to increase or decrease output
- ❖ Fixed input
  - ~ An input for which the level of usage *cannot* be changed and which must be paid even if no output is produced
- ❖ Quasi-fixed input
  - ~ A “lumpy” or indivisible input for which a fixed amount must be used for any positive level of output
  - ~ None is purchased when output is zero

# Short-Run versus Long-Run Decisions

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## ❖ Short run

- ~ A time period during which at least one of the firm's inputs is fixed
- ~ Fixed inputs - cannot be adjusted as output changes in the short run

## ❖ Long run

- ~ A time horizon long enough for a firm to vary all of its inputs
- ~ Variable inputs - can be adjusted up or down as the quantity of output changes