

Principles of Production Economics

1. Definition of Production process
2. Resources, Inputs and outputs
3. Types of resources: Natural, Financial, Human, Economic
4. Nature of resources and Economic decisions
5. The circular flow of resources between the household and firm

- The production theory/laws
 - The production function
 - The law of variable proportion
 - Assumption of production function
 - Geometric and graphical illustration of production models
 - Types of production function: limitations and advantages
 - The stages of production and production ratios
 - Elasticity of production

- Production and Efficiency Measure

- Returns to scale

- Technical efficiency in resources use

- Allocative efficiency

- Economic efficiency in resources use

- Production frontiers

- Production objectives

Functions and extremum

Concavity and convexity of functions

Increasing and decreasing function

Relative extremums

Factor-factor and Product-Product Relationship

- Iso-quant , Iso-cost, Iso-cline, ridgeline and expansion paths
- Inputs relationship and substitution
- Least-cost criterion
- Equi-marginal returns and allocation of limited inputs
- Revenue maximization and output combination

Optimization subject to constraints

- The Lagrangian multiplier
- Budgetary analysis
- The Linear Programming
 - The graphical approach
 - The simplex algorithm