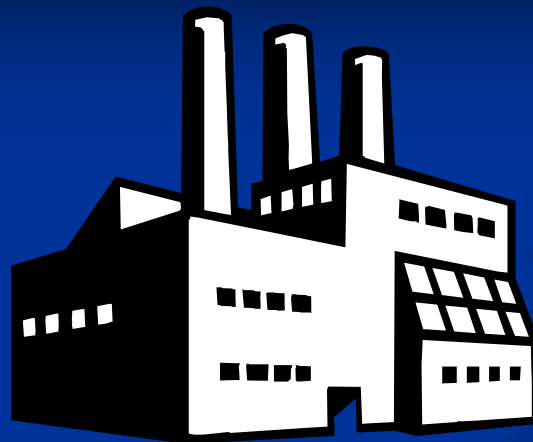
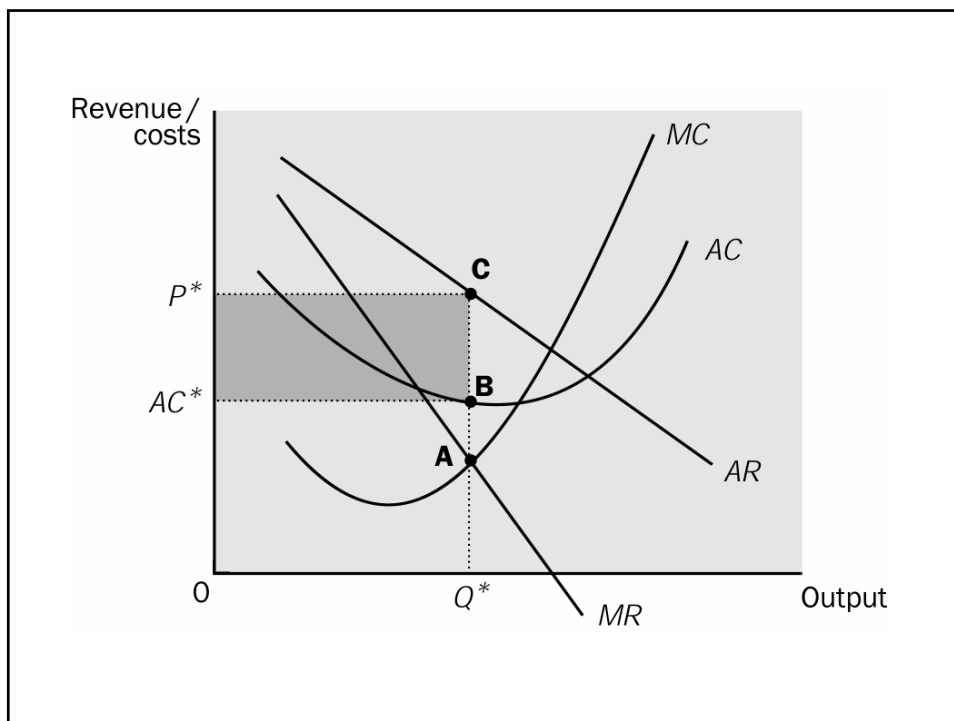


Economics of the Firm

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Suppose we are considering a firm that produces only one output. In this case we write the net output bundle as $(y, -\mathbf{x})$ where \mathbf{x} is a vector of inputs that can produce y units of output. We can then define a special case of a restricted production possibilities set, the **input requirement set**:

$$V(y) = \{\mathbf{x} \text{ in } \mathcal{R}_+^n : (y, -\mathbf{x}) \text{ is in } Y\}$$

The input requirement set is the set of all input bundles that produce *at least* y units of output.

Note that the input requirement set, as defined here, measures inputs as positive numbers rather than negative numbers as used in the production possibilities set.

Problems with the neoclassical theory of production and the firm

- Emphasis on technology, rather than subjective valuation
- No place for the entrepreneur or the investor
- Little insight into the firm as structure of property rights
 - Who owns what
 - How firms are organized, financed, governed, etc. (authority, delegation, monitoring, evaluation)

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Two aspects of the “theory of the firm”

- Theory of production
 - The structure of production
 - Factor pricing
 - The entrepreneur’s costs
- Theory of the firm
 - Why do entrepreneurs establish firms?
 - What determines the size and scope of the firm?
 - How should firms be organized and managed?

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Neoclassical production theory

- Take factor and output prices as given, solve for profit-maximizing level of output.
- Extensions: downward-sloping demand curves, price discrimination, multiple products, strategic interaction
- Problems: no time or uncertainty; no causal explanation for factor prices; emphasis on the wrong problems

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Austrian production theory

■ Sources

- Menger, Böhm-Bawerk, Mises, Hayek
- Rothbard, *Man, Economy, and State*, chapters 5–9
- Lachmann, *Capital and Its Structure* (1952)



■ Key issues

- Factor pricing and factor use (structure of production)
- Entrepreneurial profit and loss



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Factor pricing

- Factors of production: land, labor (including management), capital goods
- Austrian theory of **imputation**
 - Rental prices of (nonspecific, isolable) factors (used in variable proportions) tend to equal their **discounted marginal revenue products**.
 - Rental prices of other factors set by bargaining between resource owners and entrepreneurs.

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MRP examples

- Variable proportions (isolable factors):
 $4A + 10B + 2C \rightarrow \100
 $3A + 10B + 2C \rightarrow \80
 $MRP(A) = \$20$
- Fixed proportions (non-isolable factors):
 $4A + 10B + 2C \rightarrow \100
 $3A + 7.5B + 1.5C \rightarrow \75
 $MRP(A) = \$25$
- Specific, non-isolable, and indispensable factors:
 $1A + 2B + 3C \rightarrow \200
 $0A + 2B + 3C \rightarrow \0
 $MRP(A) = \$200$

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Imputation

- Classical view: costs determine prices
- Austrian view: prices determine costs
 - All costs are opportunity costs.
 - Factor prices tend to equal their DMRPs (marginal productivity theory).
 - Factors tend to be allocated to their highest-valued uses in production.
 - The purchase price of a capital asset will tend to equal the sum of its future DMRPs.



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Entrepreneurship, profit, and loss

- In the evenly rotating economy (ERE)
 - Factors (including management) earn their DMRPs.
 - Capitalists earn interest (reward for forgoing current consumption).
 - No profits and losses!
- Outside the ERE
 - Entrepreneurs earn profits and losses based on anticipations of future prices (Knight, 1921).

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The firm as an organization

- Neoclassical view: firm as production function
- Agency-theoretic view: firm as a nexus of contracts
- Property-rights view: firm as **ownership of assets**
 - The firm is the capitalist-entrepreneur (or a group of capitalist-entrepreneurs) plus the alienable assets he owns.
 - Ownership conveys authority (*taxís* and *cosmos*)
 - Firms can own many, or no, production processes.

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The theory of the firm

- Why do firms exist?
 - Transaction costs of market exchange (Coase 1937)
 - Entrepreneurial judgment is non-contractible (Knight, 1921)
- What determines the boundary of the firm?
 - Internal and external transaction costs
 - Entrepreneurial talent
 - Need for economic calculation (Rothbard)
- How should the firm be organized?
 - Costs and benefits of delegation

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Takeaways

- Austrian economics offers a unique theory of production, not merely a verbal rendition of neoclassical production theory.
 - Causal, realistic analysis of factor pricing and use
 - Grounded in marginal utility theory
 - Emphasis on economic, not technological, aspects of production
- Much remains to be done in this area.
 - Rent theory, internal organization of the firm, microeconomics of business cycles, critique of neoclassical cost-curve analysis, more. . . .