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Five Components

- Economic Environment
- Primitives
- Exogenous variables
- Decision variables, time horizons and objective functions of agents
- Equilibirum solution concept

Economic Environment

- The extent of the market and its institutions
- The economic actors
- The information available to each other

Primitives

- Technologies (e.g. production sets)
- Preferences (e.g. utility functions)
- Endowments (e.g. assets)[1]

[1] https://www.hq.nasa.gov/iwgsdi/Economic_Endowments.html

Exogenous Variables

- Constraints on agent's behavior
- variables outside the model that alter the behavior of economic agents

Decision Variables

- e.g. utility maximization by consumers and quantity demanded
- e.g. profit maximization by firms and quantity supplied

Equilibrium Solution Concept

- e.g. Walrasian equilibrium with price-taking behavior by consumers
- e.g. Nash equilibrium with strategic quantity or price selection by firms

The Economic Model vs. The Econometric Model

- An econometric model includes unobservables that account for the fact that the economic model does not perfectly fit observed data.

Four Principal Ways

- Researcher uncertainty about the economic environment
- Agent uncertainty about the economic environment
- Optimization errors on the part of economic agents
- Measurement errors in observed variables

Unobserved Heterogeneity and Agent Uncertainty

- The research knows much less about the economic environment under study
- Researchers and economic agents can share uncertainty about the economic environment under study

Example 6

- Goal: derive a relationship between total costs and output from Cobb-Douglas production function

Four Selections

- Selection of functional forms
- Selection of distributional assumptions
- Selection of an estimation technique
- Selection of specification tests

Selection of Functional Forms

- Trade-off between data availablity and parametric flexibility
- Economically realistic
- Ease of estimation

Selection of Distribution assumptions

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Selection of Specification Tests

- Sensitivity
- Consistency

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