Theory

Systematic Search for Knowledge

• Observation, study, and experimentation
• Formation of testable propositions
  – Using established theories
  – Testing propositions against actual experience
• Theory must produce “falsifiable” statements
  – Karl Popper
• Survivor principle
  – Bad research gets weeded out
Theory

- Compare theory with actual experience
  - Reject theories inconsistent with the data
- But before rejecting theory
  - Reexamine logical process
  - Reexamine the data
    - Bias
    - Measurement error
  - Find the problem with theory

Theory Section

- Provides a framework for thinking about the problem
- Provides the logical foundation on which the entire study rests
- Convinces the reader that the results of the study are meaningful
Logic

- Inductive Logic
  - Specific observations → general conclusions
    - Sun rises every morning, so it will rise tomorrow morning
- Deductive Logic
  - Employ general propositions about reality
  - Factual information about a given situation
  - Derive conclusions (testable hypotheses) about specific phenomena
    - Demand is downward sloping (theory)
    - If lumber prices rise, people will buy fewer homes
    - If \( x \rightarrow y \), and \( y \rightarrow z \), then \( x \rightarrow z \)
  - Identify the general propositions and assumptions you make

Assumptions

- Make assumptions explicit
  - Firms maximize profits
  - Markets are in equilibrium
  - Utility functions are continuous and differentiable everywhere
- Assume away irrelevant conditions to concentrate on only a few relevant ones
- Try to explain a lot with very little
Assumptions

• We assume that people are utility maximizers
• But we see charity and altruism
• We can
  – Define utility more broadly
  – Assume people maximize utility for market transactions

Explanation or Prediction

• Prediction: Work with a fixed set of assumptions which lead to some outcome
• Explanation: Describe a set of assumptions that are consistent with observed outcome
• Can do one or the other, but not both
Theory Development

• Theoretical discussions abstract from reality
  – Combines concepts, propositions, and logical manipulations of concepts and propositions
  – Leads to a hypothesis that can be tested against actual experience

Theory Development

• Concepts
  – Labor
  – Capital

• Propositions
  – Diminishing returns to labor
  – \( W = MP \)

• Testable Hypotheses
  – If \( K \) is fixed in short run, as \( L \) rises, \( W \) falls
Theory Development

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Economic Theory

- Perfect competition leads to Pareto optimal outcomes
- Market failure
  - Imperfect competition
  - Public goods
  - Externalities
  - Externalities
  - Asymmetric information
  - Inequality
Microeconomic Theory

• Supply and demand
• Consumer surplus, producer surplus
• Deadweight loss from taxation
• Free trade
• Firms in competitive markets
• Monopoly
• Monopolistic competition
• Oligopoly

Microeconomic Theory

• Markets for factors of production
• Earnings and discrimination
• Inequality and poverty
• Public goods and common resources
• Externalities
• Efficient markets
Macroeconomic Theory

- GDP, CPI, Unemployment
- Monetary policy
- Fiscal policy
- Open economy macroeconomics
- Inflation and unemployment
- Long run economic growth
- Exchange rates
- Standards of living