

# 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

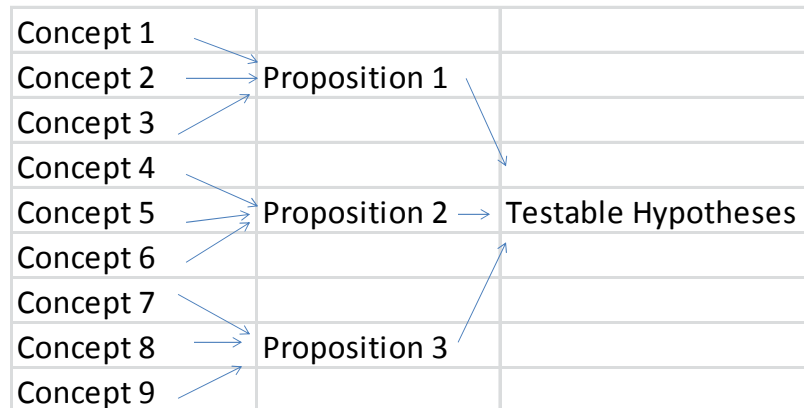
## Theory Development

- 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



## Economic Theory

- Perfect competition leads to Pareto optimal outcomes
- Market failure
  - Imperfect competition
  - Public goods
  - 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