Introduction
Econometria I

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Introduction

- What conveys the study of econometrics?
- The unification of three main areas:
    1. Statistics
    2. Economic theory
    3. Mathematics

"Econometrics conveys application of mathematical statistics and the tools of statistical inference to the empirical measurement of relationships postulated by an underlying theory."

The Big Data Revolution: Into a new paradigm?

Traditional econometrics: Measuring and testing theoretical relationships
Can Big Data replace theory?

The practice of econometrics

- Theoretical econometrics vs. applied econometrics
- This course is designed for the applied economist.
- Applied econometric methods will be used for estimation of important quantities, analysis of economic outcomes such as policy changes, markets or individual behavior, testing theories, and for forecasting.

Econometric Modeling

- Consider the Keynesian consumption function:
  $C = f(X)$, where X is disposable income.
- Theoretical postulates: dC/dX is positive and $0 < dC/dX < 1$.
- Implications:
  1. $MPC > 0$
  2. $APC = C/X$ falls with income
  3. $d(C/X)/dX = (MPC - APC)/X < 0 \rightarrow MPC < APC$

Keynes' Consumption Funcion

- How do we test this theory?
- Estimate the equation $C = \alpha + \beta X$ and test whether $\alpha > 0$ and $0 < \beta < 1$.
- Some points to note:
    1. Notice the behavioral aspect of the model.
    2. The model states an unambiguous and deterministic relationship between the dependent and independent variables.
    3. Models are only simplifications of reality; we need an stochastic element.
    4. A probabilistic model is less precise but more robust!

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