Methodology

Econ 4151/5161
Outline

- Data Reduction
- Time Series and Macro
- Statistical Analysis in Macroeconomics
Data Reduction

• While there are difficulties with statistical analysis of macro/finance data, it is still possible to learn and reduce uncertainty.

• Good practice: convince a skeptic that information is coming from data.
• Sims (1995) argues theory is ultimately about data reduction/compression

• Without availability of experiments, statistical analysis is only coherent means of evaluating success or failure of data reduction
Time Series and Macro

- Rational Expectations
  - Agents are a bit like econometricians (learning)
  - Conditional forecasts
  - RE vs. Market Efficiency
Time Series and Macro

• Microfoundations and Lucas Critique
  • Large scale Keynesian models failed (Nelson, 1972)
  • But so do modern DSGE models
  • Empirical issue as to what level relationships exists
Macroeconomic structures exist (Hoover)

E.g., General Price Level, Aggregate Output

Not defined by theory

Not necessarily explained by individual intent (microfoundations)

Manipulable and supervene on microeconomic reality
• Examples of aggregate structures:
  
  • Hoover’s electricity example
  
  • Yield Curve (Diebold-Li Nelson-Siegel)
  
  • Contrary to Lucas Critique, correlations between macro variables relatively stable across policy regimes (Sims and Zha, 2006)
  
  • DSGE theory useful for priors, but shouldn’t be expected to explain and predict data as well as a time series model
Statistical Analysis in Macroeconomics

• Be knowledgeable about data
• Be aware of statistical problems
• Avoid mistakes by thinking about identification (what can the data tell us?)
• Methods depend on context, but be systematic in inference (i.e., use statistics)
• Be useful!!