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!!