Applied Econometrics II

Chapter 1 – The Concept of Causality

08/25/22

* Empirical analysis – determine which theory works better in our case
* Quantitative magnitude?
* Theory doesn’t give the quantitative magnitude
* Causality
* Correlation
* A/B Testing – comparison of “packages” instead of “items”
* Causal analysis = A/B Testing (in business it is not always “packages”)
* Counterfactual – the one outcome that we do not observe
* Observation data would lead to biased estimation of the causal effect
* Randomly assign multiple products to different age groups – randomization solves the issue
* Average causal effect = Average Treatment Effect
* If we have only observational data, identifying causal effect isn’t an easy task
* Types of data:
  + Observational
  + Experimental – there has to be some randomization
  + Cross-sectional – multiple entities, single time period
  + Time series – single entity, multiple time periods (forecasting)
  + Panel – combination of both – multiple entities, 2 or more periods
* Prediction vs. Causal effect
* Prediction (Forecasting) – how many people watch a show on Netflix?
  + Focus on Y (dependent variable)
* Causal – Determinants of poverty?
  + Focus on X (getting the causal right)