PhD in Economics and Management

Econometrics for Management

Instructor: Chiara Dal Bianco

Syllabus 2022/2023

Course objectives

This course provides students with a first toolkit of methods to answer cause-and-effect questions using empirical analysis. The focus will be on (i) specifying an appropriate econometric model given the causal question of interest and the available data, (ii) interpreting the model parameters, and (iii) performing a set of tests to check the validity of the assumptions made. The topics will be illustrated and explained through the discussion of several applied papers.

Prerequisites

Students are required to be familiar with basic concepts of probability and statistics, and the linear regression model (Stock and Watson, Introduction to Econometrics, chapters 2 to 5).

Course content
1. Key concepts in applied econometrics:
    a. Causality
    b. Ceteris paribus condition (other things equal)
    c. Endogeneity, selection bias and omitted variables bias
2. A toolkit for causal inference:
    a. Randomized experiments and natural experiments
    b. Simple and Multiple regression
        i. inference – OLS, model fit, tests and confidence intervals
        ii. parameters interpretation – continuous/categorical/binary regressors
        iii. heteroskedasticity
    c. Propensity score matching
    d. Instrumental variables
        i. instrument choice
        ii. inference (just-identification and over-identification)
        iii. hypothesis testing: exogeneity, instruments validity, instruments relevance
    e. Differences-in-differences
    f. Introduction to panel data analysis: random effect, fixed effect and first difference estimators
3. Binary response models and censoring:
    a. Linear probability model, Logit and Probit model (pros and cons, parameter interpretation)
    b. Tobit and Heckman selection model

Textbooks and teaching material
- Joshua D. Angrist and Jörn-Steffen Pischke. Mastering 'metrics: The Path from Cause to Effect (Chapters 1 to 3, 5) – introductory reading
- Jeffrey M. Wooldridge (2015). Introductory Econometrics: a Modern Approach. Sixth edition (Chapters 1 to 9, 15, 17).
- Joshua D. Angrist and Jörn-Steffen Pischke. Mostly harmless econometrics: An Empiricist's Companion (Chapters 2-3-4)

- A. Colin Cameron and Pravin K. Trivedi. Microeconometrics. Methods and applications (Chapters 14)

Research articles (more will be provided during the course):
- Introduction:
  - Tucker, Jenny Wu, Selection Bias and Econometric Remedies in Accounting and Finance Research (February 7, 2011). Journal of Accounting Literature, Winter 2010, Vol 29: 31-57. Available at SSRN: https://ssrn.com/abstract=1756911
  - Angrist, Joshua D., and Jörn-Steffen Pischke. 2010. "The Credibility Revolution in Empirical Economics: How Better Research Design Is Taking the Con out of Econometrics." Journal of Economic Perspectives, 24 (2): 3-30.

- Randomized experiments:
  - FLOYD, E. and LIST, J.A. (2016), Using Field Experiments in Accounting and Finance. Journal of Accounting Research, 54: 437-475. doi:10.1111/1475-679X.12113
  - Friebel, Guido, Matthias Heinz, Miriam Krueger, and Nikolay Zubanov. 2017. "Team Incentives and Performance: Evidence from a Retail Chain." American Economic Review, 107 (8): 2168-2203. DOI: 10.1257/aer.20160788
- Simple and multiple regression
  - KOTHARI, S.P., SHU, S. and WYSOCKI, P.D. (2009), Do Managers Withhold Bad News?. Journal of Accounting Research, 47: 241-276. doi:10.1111/j.1475-679X.2008.00318.x
- Propensity score
  - Guadalupe, Maria, Olga Kuzmina, and Catherine Thomas. 2012. "Innovation and Foreign Ownership." American Economic Review, 102 (7): 3594-3627. DOI: 10.1257/aer.102.7.3594
  - Jonathan E. Shipman, Quinn T. Swanquist, and Robert L. Whited (2017) Propensity Score Matching in Accounting Research. The Accounting Review: January 2017, Vol. 92, No. 1, pp. 213-244. https://doi.org/10.2308/accr-51449
- Instrumental variable
  - Larcker, D. F., & Rusticus, T. O. (2010). On the use of instrumental variables in accounting research. Journal of Accounting and Economics, 49(3), 186–205. http://doi.org/10.1016/j.jacceco.2009.11.004
- Heckman selection model
  - Clive S. Lennox, Jere R. Francis, and Zitian Wang (2012) Selection Models in Accounting Research. The Accounting Review: March 2012, Vol. 87, No. 2, pp. 589-616. https://doi.org/10.2308/accr-10195
- Binary response models
  - Amir, E., Kallunki, J. & Nilsson, H. The association between individual audit partners' risk preferences and the composition of their client portfolios. Rev Account Stud 19, 103–133 (2014). https://doi.org/10.1007/s11142-013-9245-8

Examination policy
Paper presentation: you will be required to comment on the empirical strategy and the results of a research article (30%)
Final written exam (50%)
Class participation (20%)

Office hours
Any time by appointment via email to chiara.dalbianco@unipd.it