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## ADVANCED ECONOMETRICS FOR BUSINESS STUDIES

Period: a.y. 2023/24 – II sem.

Instructor:  
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### Course description

The use of empirical methods in management research has seen a tremendous increase in the past two decades. Hence, it is growingly important for PhD students to master a varied toolkit of empirical methods to analyze their research questions, and critically read others' research. Building on and expanding knowledge acquired in previous methodological courses in the BA&M PhD program, the goal of this course is to dive into the problem of causal inference, and learn the main empirical methods useful to discern the direction of causality in management research.

In particular, the course will cover: (i) review of basic principles of inference and linear regression models; (i) theory of the main techniques aimed at uncovering causality (and the main challenges to this end); (ii) exercises and data applications. The reading list includes selected chapters of Angrist & Pischke (2009) "Mostly harmless econometrics", Wooldridge (2002) "Econometric analysis of cross section and panel data", and a number of academic articles.

### Class format and teaching approach

Sessions are based on a combination of teaching covering the basic methods, and class discussions of the assigned articles (marked with \* in the reading list below). The discussion on each paper will start with a short presentation by some of the students (see in Blackboard the list of assignments), and will be followed by a joint discussion on the empirical approaches adopted to tackle the research question of the paper. Collectively, the goal of the course is to acquire a solid understanding of a number of empirical methods, and develop a critical understanding of their strengths and limitations. Furthermore, in order to improve the ability to use data, students will be asked to solve a number of weekly data assignments.

## Evaluation and grading policy

Students will be evaluated according to the following criteria:

Course requirements	Weight
Final written exam	33%
Data assignments	33%
Paper presentation and class discussions	33%

## Sessions and readings

### The problem of causality

- **Causal framework**
  - Angrist & Pischke (2009): Chapter 2
- **Experimental approaches**
  - Kotha R., Vissa B. 2022. Do ambitious entrepreneurs benefit more from training? *Strategic Management Journal* \*
- **Control variables and group heterogeneity**
  - Gormley T., Matsa D. 2014. Common errors: How to (and not to) control for unobserved heterogeneity. *Review of Financial Studies*.

### Instrumental variable regressions

- **Properties of IVs, and estimation strategy**
- **Diagnostics**
  - Angrist & Pischke (2009): Chapter 4
  - Bernstein S. 2015. Does going public affect innovation? *Journal of Finance* \*
  - Heese J., Perez-Cavazos G., Peter C. 2022. When the local newspaper leaves town: The effect of local newspaper closures on corporate misconduct. *Journal of Financial Economics*\*

### Differences-in-differences

- **General framework**
  - Angrist & Pischke (2009): Chapter 5
  - Flammer C., Ioannou I. 2020. Strategic management during the financial crisis: How firms adjust their strategic investments in response to credit market disruptions. *Strategic Management Journal* \*
  - Assenova V. 2022. Institutional change and early-stage startup selection: Evidence from applicants to venture accelerators. *Organization Science* \*
- **Triple differences, and combining DiD with IV and matching**
  - Tsoutsoura M. 2015. The effect of succession taxes on family firm investment: Evidence from a natural experiment. *Journal of Finance* \*
- **Synthetic control method**
  - Abadie A. 2020. Using synthetic controls: Feasibility, data requirements, and methodological aspects. *Journal of Economic Literature*

### Computing standard errors

- **Why do we care?**
- **Clustered vs. robust standard errors**
- **Standard errors in panel data models**
  - Angrist & Pischke (2009): Chapter 8
  - Bertrand M., Duflo E., Mullainathan S. 2004. How much should we trust differences-in-differences estimates? *Quarterly Journal of Economics*
  - Abadie A., Athey S., Imbens G., Wooldridge J. 2017. When should you adjust standard errors for clustering? *Working paper*
  - Petersen M. 2009. Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies*
  - Connelly B., Li Q., Shi W., Lee K.B. 2020. CEO dismissal: Consequences for the strategic risk taking of competitor firms. *Strategic Management Journal* \*

### Regression discontinuity design

- **General framework**
- **Fuzzy vs. sharp discontinuity design**
- **Diagnostics and estimation**
  - Angrist & Pischke (2009): Chapter 6
  - Cunat V., Gine M., Guadalupe M. 2012. The vote is cast: The effect of corporate governance on shareholder value. *Journal of Finance*
  - Bradley D., Kim I., Tian X. 2017. Do unions affect innovation? *Management Science* \*
  - Gonzalez-Uribe J., Reyer S. 2021. Identifying and boosting gazelles: Evidence from business accelerators. *Journal of Financial Economics* \*

### Quantile, multinomial and count models

- **Quantile regressions**
  - Angrist & Pischke (2009): Chapter 7
  - Levine R., Rubinstein Y. 2017. Smart and illicit: Who becomes an entrepreneur and do they earn more? *Quarterly Journal of Economics* \*
- **Multinomial and ordered models**
  - Wooldridge (2002): Chapter 15.9
- **Count models**
  - Wooldridge (2002): Chapter 19

### Alternative methods

- **fsQCA**
  - Misangyi V., Acharya A. 2014. Substitutes or complements? A configurational examination of governance mechanisms. *Academy of Management Journal*
- **Machine learning**
  - Bandiera O., Prat A., Hansen S., Sadun R. 2020. CEO behavior and firm performance. *Journal of Political Economy* \*

### Faculty bio

Mario Daniele Amore is Full Professor at Bocconi University, and Research Affiliate at the Center for Economic Policy Research (CEPR). He received a PhD in Economics and Management from Copenhagen Business School. His research interests

include corporate governance, family business, and corporate finance. Furthermore, Mario is interested in the interactions between strategy, finance and innovation, and the behavioral aspects of corporate decision-making. Mario's works have been published in journals such as *Management Science*, *Journal of Financial Economics*, *Strategic Management Journal*, *Organization Science*, *Journal of Law & Economics*, and *Journal of Financial and Quantitative Analysis*. His research has been featured in *Bloomberg*, *Harvard Business Review*, *The Wall Street Journal*, *Harvard Law School Forum on Corporate Governance*, and *Sole 24 Ore*. Mario currently serves as Associate Editor of *Management Science* and *Journal of Corporate Finance*, and Editorial Review Board Member of *Strategic Management Journal* and *Corporate Governance: An International Review*.

