COUNTERFACTUAL IMPACT EVALUATIONS IN EUROPE: “THE DATA REVOLUTION”

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Introduction

- Counterfactual impact evaluations are econometric ex-post estimations of policy effects;
  - typically on program participants (= treated companies or individuals)
  - requires control groups (typically non-treated firms/individuals)
- Methods used are
  - Matching estimators
  - (Conditional) Difference-in-Difference regressions
  - Instrumental variable regressions
  - Regression Discontinuity Designs
  - randomized control trials, „quasi-natural“ experiments
- Methods are “data-hungry”, and therefore not always used in current policy practice.
- The application of methods requires trained researchers in the areas of statistics/econometrics AND economics/business or related field.
- Sometimes also advanced IT skills (“big data”)
Data

• Administrative participant data is usually available from the managing authorities (often even with firm ID, e.g. VAT numbers)
• Also, DG Regional Policy has a website with beneficiary data
• Such data can be linked to
  o company level information for almost every country using balance sheet (and other data), e.g. Orbis database (formerly Amadeus) or national resources.
  o patent data (e.g. PATSTAT)
• Control groups can be constructed from firms that have not been “treated”.
• Example from Germany: “Effects of heterogeneous treatments“; joint work with Thorsten Doherr (ZEW), Cindy Lopes-Bento (U Maastricht)
Heterogeneous treatments

• Cohesion policy data:
  o list of about 45,000 projects
  o Title of the grant allows categorizing into different groups (labor and IT-skill intensive)
• Method: (Conditional) Difference-in-Difference
• Control group: „Matched“ non-funded firms
• Also: „dynamic“ treatment effects
  o Treatment effect could evolve over time rather than occurring in a single period
Difference-in-Difference
Treatment effect over time for ln(employment) by grant type

95% confidence interval
Thanks for your attention!
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Some relevant references: