Research Methods for Economics and Policy
Data and Methods

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Part of the material is based on the Economic Research Process Course at U Gothenburg

What are we going to do?

1. Academic presenting

2. Example of a presentation

Presenting and Public Speaking

- Jerry Seinfeld on public speaking

Why do We Give Academic Presentations?

- ▶ Presentations enable us to:

  - Structure our work and understand it better. Many of us use presentations to understand how to communicate a research project before writing a manuscript

  - Collect helpful comments and suggestions to improve the paper

  - Shareour findings and knowledge/take part in the scientific dialogue

  - Make ourselves and our research known

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$\Rightarrow$ None of these benefits are realized if the audience does not understand

Academic Presenting

- A talk requires a simpler communication with respect to that of a paper

- Listeners lose attention quickly – What you say and how makes it hard or easy for listeners to follow

- Help the listener (who may tune out from time to time) to keep track through a well thought through structure and regular pointers to that structure

  - As I just showed you. . .

  - Now when I have showed A, I move on to B. . .

  - Remember my purpose was to. . .

  - Or, simply put, I am asking A (the intuitive version of your research question). I formalize this in my model. . . where the parameter alpha measures. . .

Academic Presenting

- In addition, during your presentation:

  - Make explicit transitions and use words that mark your progress: First, next, finally, my first result showed, my second...

  - Use reminders of your central argument (To reiterate, as I mentioned, remember my RQ was...)

  - Make (short) breaks

  - Use simple but precise syntax and language, make it as accessible as possible.

Slides (1)

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- ▶ The structure, style and wording of the slides are super important

- ▶ How should the slides look like?
  - Keep text to a minimum: use dry sentences; space is limited, make sure that any word you insert is relevant and useful to get the point across
  - Use bullet points, maximum 2 lines per bullet, ideally 1
  - My RTB1: maximum 4 main bullet points per slide
  - My RTB2: consider 2/3 minutes per slide
  - Slides should be clear and readable, do not use a font that is too small
  - Use pauses to highlight what you are talking about and generate a logical flow
  - Highlight the most important words to direct the attention
  - (!) **DO NOT** PUT ANYTHING IN YOUR PRESENTATION THAT YOU ARE NOT GOING TO TALK ABOUT OR THAT IS NOT USEFUL TO THE NARRATIVE

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  - The precise research questions

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- Add pointers/links to side results or other aspects of your work that are of second importance but may be relevant, depending on the audience, what you are asked, etc

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    1 Introduction: intro, research question, background, intuition of methodology, preview of results, contribution

    2 Context and background

    3 Data: describe data source(s), relevant variables, sample selection

    4 Identification/Empirical methodology: describe empirical strategy

    5 Findings: describe your main findings

    6 Channels/Discussion

    7 Conclusions

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  - Towards the end people will get tired: so, use easy and intuitive figures to present your results, ideally with one bullet point on top with a "headline" finding

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    - Take notes of important questions/comments

A Concrete (Guided) Example

Should you Meet The Parents? The impact of qualitative information sessions on school choice

with Elisa Facchetti (U tor Vergata, IFS, IZA) and Marco Ovidi (U Cattolica del Sacro Cuore)

Introduction

- My recommendation is structuring the Introduction as follows:

  - First slide: i) general issue; ii) describe setting and specific aspect tackled; iii) research question

  - Second slide: Focus/motivation

  - What you do (identification)

  - What you find

  - Contribution (*)

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Research question: Does provision of hard-to-find information on non-test score school attributes affect parental enrolment decisions?

$\rightarrow$ Study a context where info on school quality already widespread
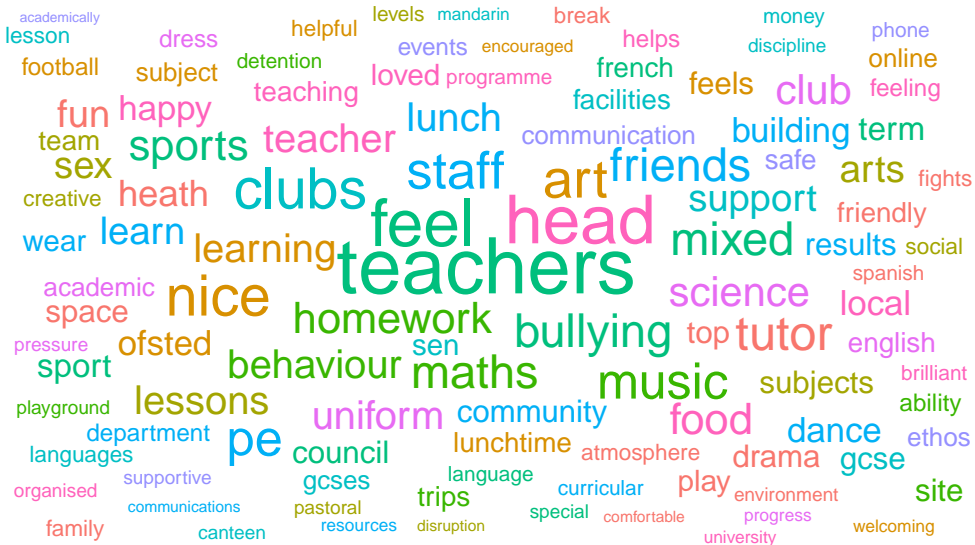
$\rightarrow$ Focus on high-SES parents

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- Evaluate the impact of MTP using a Diff-in-Diff design
    - Outcomes: sector, preferences, and parental demand for school attributes of the chosen secondary school

What we find

- ▶ The prob. of enrolling at a state-funded rather than private secondary school increases by 2.4 pp:
  - 1 more student per school-year opting for the state sector; 17% reduction of the outflow to the private sector
  - Treatment effects driven by high-SES and high-ability students
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- ▶ MTP held parental demand for school attributes other than environment constant

Literature and Contribution

▶ **Information interventions and school choice, mainly on school** performance/low-SES households
[Hastings and Weinstein, 2008; Jensen, 2010; Kessel and Olme, 2017; Allende et al., 2019; Burgess and Greaves, 2021]

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▶ Parental beliefs on school and peer quality and show that parents' opinions are not fully accurate
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⇒ Parental choices are not necessarily well-informed on non-test score attributes.

Background and Data

- ▶ Background section:
  - Here is where you should provide the audience with the details they need to understand what you do. No more, no less!
  - I usually try to have (broadly speaking) two parts: one with the institutional context, one that describes the policy/event/shock that is the object of the paper

- ▶ Data section:
  - Describe the main characteristics of your data: source, sample size, main variables that you use, why the data is fit for your RQ
  - Make sure to be clear about the potential strength and weaknesses of your project

School choice and the primary to secondary transition

- Centralised assignment mechanism: parents state preferences for schools at the end of primary school
  - Allocation of seats mainly based on home-school distance
  - In London, 70% get first choice; 90% get top 3 choices
  - Private schools: no centralised assignment mechanism

- Information on school performance and intake characteristics are public and freely available to parents
  [Silva et al., 2013; Burgess et al., 2015; Battistin and Neri, Forthcoming]

- Secondary schools are bigger and more diverse than primaries
  - Average home-school distance: 1.9 km vs 0.9 km (160 kids per cohort vs 45)
  - $41\% - 61\%$ FSM and non-white in average Camden secondary vs $34\% - 50\%$ in participating primaries

- Outflow of kids from borough after attending local primary schools:
  - 10% go to private schools, 25% go to other neighbourhoods
  - Potential consequence: monetary loss for local secondary schools

The Meet the Parents Initiative

- ▶ MTP started in 2012 and rolled-out in following years `Roll-out` `Map`
  - 56% and 70% of local primary and secondary schools

- ▶ Each primary school hosts 1 meeting per year in September; parents/pupils from around 4 secondary schools participate to each meeting

- ▶ One hour-long meetings involving a panel discussion guided by a moderator `Pictures`
  - Direct interaction between prospective and current secondary school parents and pupils
  - School-specific content, standardised outline:
    - Why did you choose your secondary school? - What do you like about your school? - What would you change?

- School performance is rarely mentioned at the meetings
  - Info on school attributes that parents reportedly value: environment, lunch breaks, security, discipline, values

Data

- National Pupil Database **[2006-2018]**: admin records on the universe of students in state schools
  - 90,000 students per year, 1,800 primary and 510 secondary schools in London
  - Student characteristics, test scores
  - Residence: census block ($\sim$ 800 HHs)

- Private school enrolment $\equiv$ not being tracked in secondary school
  - 10% of students leave public education in Camden (close to official figure $\sim$ 8%)

- Parental preferences **[2014-2018]**: centralised assignment to schools
  - Ranking of preferred schools submitted by parents and school offer

- 85 MTP Meetings
  - Date, location and characteristics of the meetings **[2014-2018]**
  - Avg no. of parents: 15 from grades 5/6

Descriptives

Identification

- ▶ This is where you describe your empirical strategy - e.g., how you causally identify the parameter your after
    - Present the main model you estimate, clarifying: outcome variable, main indep variable of interest, controls, standard errors used
    - Important: clarify the assumptions underpinning your methodology
    - Make sure the audience understand the important aspects of it: e.g., what is your control group?
    - How will you test your assumption?

Empirical strategy: DiD

▶ Compare primary treated schools with untreated schools in <u>Camden and neighbouring districts</u>:

$$Y_i = \alpha_1 MTP_{s(i),t(i)} + X'_{i,t(i)}\zeta + W'_{s(i),t(i)}\delta + \phi_{s(i)} + \phi_{t(i)} + \phi_{l(i)} + e_i$$

  ∗ y_i: outcome of student i in grade 5/6 at primary school s in year t, residing in area l

  ∗ $s(\cdot)$, $t(\cdot)$ and $l(\cdot)$ uniquely map student i to the corresponding school, year, and block

  ∗ MTP equal to 1 if school s hosted an MTP meeting at time t

  ∗ X_i and $W_{s,t}$ are vectors of individual and school

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Treatment group:

▶ All pupils in a school-cohort with a MTP meeting

▶ Identity of participants is not observable

▶ 97% parents plan to discuss findings with non-participating peers

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Identifying assumption

▶ NO randomization of treated schools

▶ Selection of secondary schools into MTP does not pose identification issues `quality` `trends`

▶ Absent MTP, enrolment changes would have been similar among treated and control schools

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Parallel trends assumption

$$Y_{iw} = \sum_{k=-7}^{3} \beta_k MTP_{s(i)} \cdot D_{t(i),w}^k + \sum_{k=-7}^{3} \gamma_k D_{t(i),w}^k + \eta_{s(i)} + \eta_{t(i)} + \eta_{l(i)} + v_{iw},$$

* Generalised DiD with stacked-by-event design [Cengiz et al., 2019; Deshpande and Li 2019]
* Event: date of MTP meeting

Results Section

- This (as it's partly the case for what we've seen so far) depends on the specific paper

- I would start by showing that the identification assumption(s) hold in your context: e.g., for DID, show pre-trends; for RCT show balancing table; etc

- If you have different sets of (main) results, clarely label them and use slides to separate them

- Start with main results and leave subsample analyses for later unless they are useful to build a narrative

- It is likely that by this time, the audience will be tired. If you use different models or make substantial additions to the main model in your empirics Section, start the corresponding result section by discussing what you do differently

- Use figures to visualise results, but provide "headline estimates"
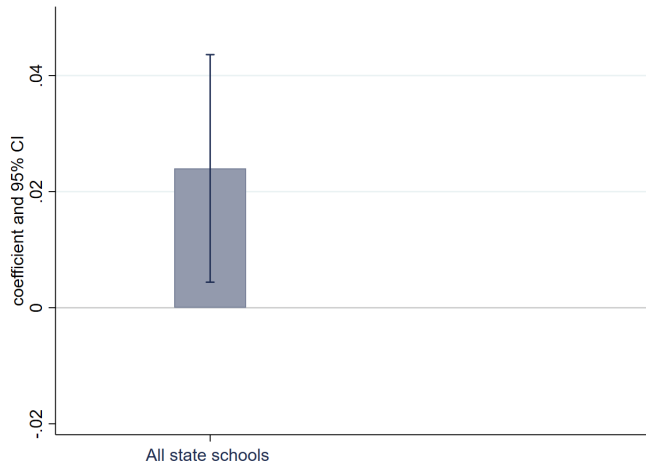
Results:
School Choice

Enrolment: dynamic effects for state-funded schools
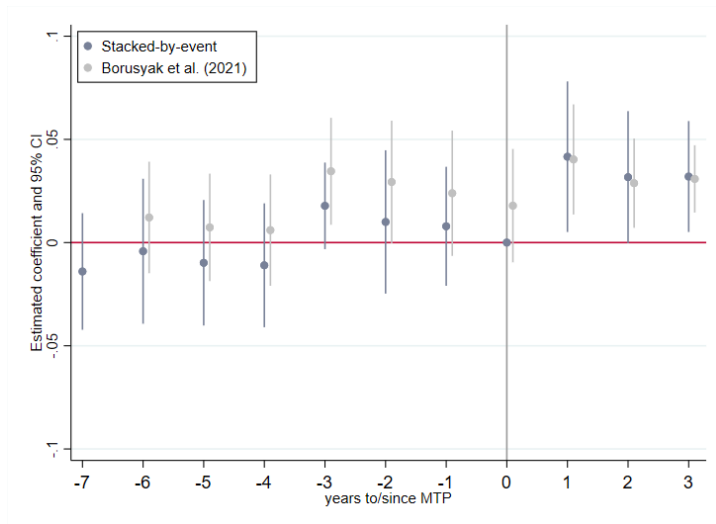
Notes: P-values for the joint significance of pre-conversion coefficients are 0.35 (stacked design) and 0.27 (Borusyak et al., 2021)
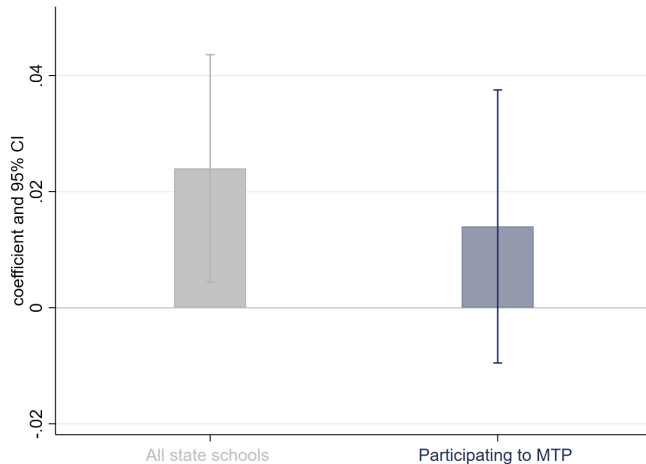
participating

Enrolment: state-funded and participating schools

▶ Enrolment in state-funded schools increases by 2.4 pp ∼ 1 more pupil per MTP meeting

Preference   Table   hetero-state   hetero-partic   hetero-distance   robustness

Enrolment: state-funded and participating schools

▶ Enrolment in participating school increases by 1.4 pp (not significant)

Results:
Competition and Information Effects

Direct and indirect effects of MTP: Estimation

▶ Examine whether MTP generates spillovers through geographical proximity to treated parents

▶ Living in a block with a higher share of treated parents may affect enrolment outcomes via two different channels:

⇒ Spread of **information** about participating institutions [social interactions] ($\uparrow$) vs greater **competition** ($\downarrow$)

▶ Intensity of exposure to treatment for student i as the share of students *directly* exposed to MTP in her block:

$$MTPI_{l(i)} = \frac{\sum_j MTP_j \cdot \mathbb{1}[l(j) = l(i)]}{\sum_j \mathbb{1}[l(j) = l(i)]}$$

▶ We estimate spillover effects through the following specification:

$$Y_i = \tau_1 MTP_{s(i),t(i)} + \tau_2 MTPI_{l(i),t(i)} + \tau_3 MTP_{s(i),t(i)} \cdot MTPI_{l(i),t(i)} + \eta_{s(i)} + \eta_{t(i)} + \eta_{l(i)} + \varepsilon_i$$

Where:

∗ τ_1: *direct* effect of MTP on treated parents in hypothetical areas where no other parent is treated

∗ τ_2: *indirect* effect of MTP for untreated parents

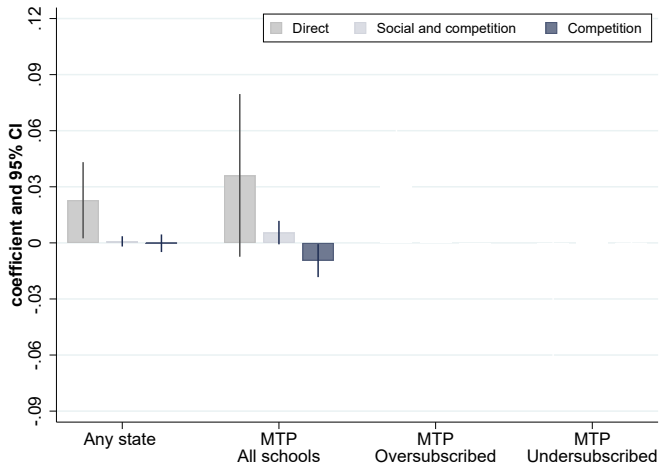∗ τ_3: *indirect* effect of MTP for treated parents

Direct and Indirect Effects of MTP: Results

▶ Competition does not bind in the public sector as a whole since a state school seat is guaranteed by law
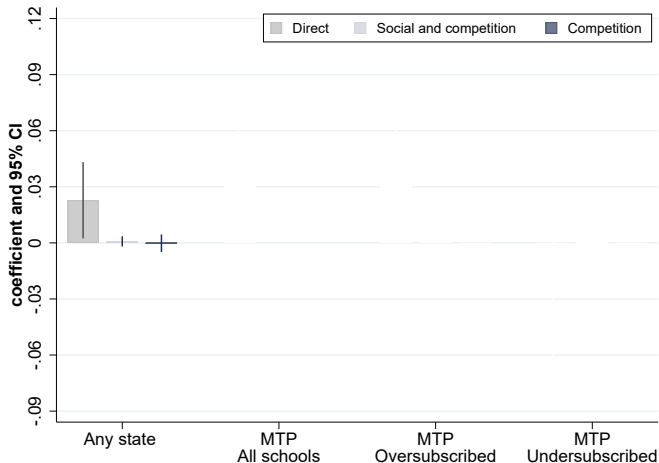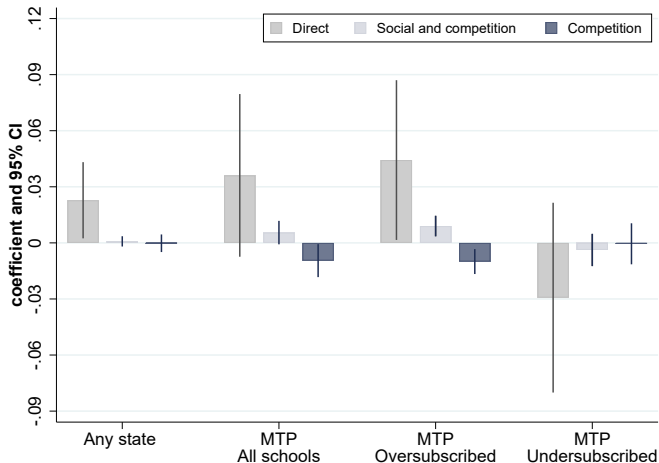
Direct and Indirect Effects of MTP: Results

- ▶ 1σ higher exposure to treated peers in the neighbourhood:
  - Untreated parents: increases enrollment at participating schools by about 0.55 pp
 - Treated parents: decreases enrollment at participating schools by 0.95 pp

Direct and Indirect Effects of MTP: Results

▶ As expected, competition binds only at oversubscribed schools

Direct and Indirect Effects of MTP: Results

► Assume treated parents are not additionally affected by the spread of information from other treated neighbours:

  ▪ 1σ higher exposure to treated peers ⇒ ↑ enrollment of untreated parents at participating schools by 0.55 + 0.95 = 1.5 pp
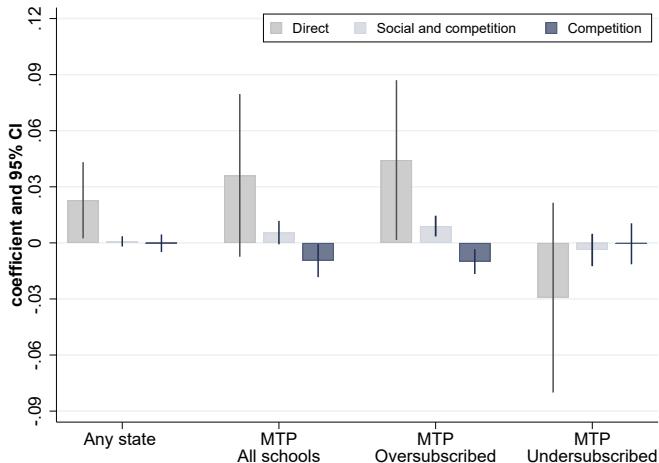
Conclusions

Conclusions

- MTP provides hard-to-find information that shift parental decisions
  - Parents react to (so-far overlooked) information on school values & environment

- Low cost, effective intervention:
  - Net *financial* benefits for local secondary schools $\sim$ £318, 945 [Table]
  - Welfare and scaling up effects depend on the general equilibrium effects

- Can help contrast adverse consequences of outflow from state sector:
  - Decrease in resources available as more children opt for private ed. [Jackson et al., '16; Gibbons et al., '17]
  - Change in composition as high-SES students opt out [Altonji et al., '15]

∗ Potential long-term effects:
  → Educational and labor market effects for treated and public sector students