

# Secondary effects of tuition-free college in high school trajectories: Evidence from a Chilean reform

ECSR - Barcelona

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# Motivation

# Higher education funding is a contentious matter

- Who has to pay for it?
- Increasing costs, diminishing public funding
- Skyrocketing student debt, debt relief and forgiveness
- Implications for inequality and mobility

## Are these policies progressive or regressive?

- Who would benefit from expanding college funding? Who is “at risk”?
- Tradeoffs between funding higher education versus other levels
- Who benefits *more* from college?

# Who benefits from college funding expansion?

College funding policies usually intended to benefit college students

- But there might be sizable and *unintended* effects on other populations
- One of those potentially affected groups is *high school students*
- In particular, are their decisions of continuing schooling or not affected by funding availability for *future* educational transitions?

# Inequalities in educational trajectories

# Status attainment, rational choice, and beyond

Two classic approaches to study inequality in students' trajectories:

- Status attainment models (Wisconsin)
- Rational choice models (Boudon)

Both would predict adaptation on students' decisions in response to:

- Changes in expectations
- Changes in costs and probability of success

Mare (2006) call for transition models to move beyond:

“approaches in which educational stratification results from information processing and rational calculation by atomized families and individuals”, focusing instead on “a broader set of concerns about the multiple interdependent decision makers at various institutional levels who may be responsible for levels and variations in educational attainment”

# Predicting student persistence

Researchers in education usually distinguish between:

- Status or individual characteristics, mostly unmodifiable
- (Mostly alterable) risk factors, in control of institutions

Somewhat related: “pull out” vs “push out”

- Lifecourse and disruptive events
- Family, neighborhood, and student factors
- School experiences
  - teacher- and peer-victimization
  - exclusionary discipline

**Are we getting prediction when we want causation?**

# From risk factors to policy and interventions

Experimental and quasi-experimental evaluation of policies and interventions modifying student behavior

- High school interventions
- Higher education interventions

Traditionally, emphasis on *information*:

- Information only: small and inconsistent effects
- Information + counseling: better
- Financial aid: even better
- Certainty of funding to rule them all ( Burland et al., 2023, Dynarski et al., 2021)



# What about anticipatory effects?

# Anticipatory effects of higher education funding

Both status attainment and rational choice models would predict that students' behavior might change in anticipation to future transitions:

- Shock of expectations
- Shock of funding and costs

Surprisingly little research actually testing this idea. Some examples:

- Cowan (2011): lowering college costs is associated with less risky sexual and drinking behavior in secondary students
- Venkataramani et al. (2019): bans of affirmative action increased risky behaviors among affected adolescents
- Koohi (2017): lowering costs of college for undocumented students decreased dropout rates and teen pregnancy
- Cáceres-Delpiano et al. (2018): access to credit decreased dropout and increased expectations in Chile

# Institutional context: Chilean education system

# Secondary education: Setting

Organization and funding designed during the military dictatorship (1973-1990), reformed during the 90s:

- Highly segregated in a three-tier system
  - Ownership: private, subsidized, public
  - Track: academic, vocational, mixed
- Funded by quasi-voucher
- Depends on attendance
- Modified in 2008, preferential subsidy

# Secondary education: Outcomes

High school dropout still an important issue in Latin America

- In Chile, primary school graduation almost universal for three decades
- In secondary education, still important:
  - Especially from 8th to 9th grade
  - Socioeconomic and gender disparities remain

*Huge but temporary* spike due to student mobilization in 2011

# Tertiary education: Setting

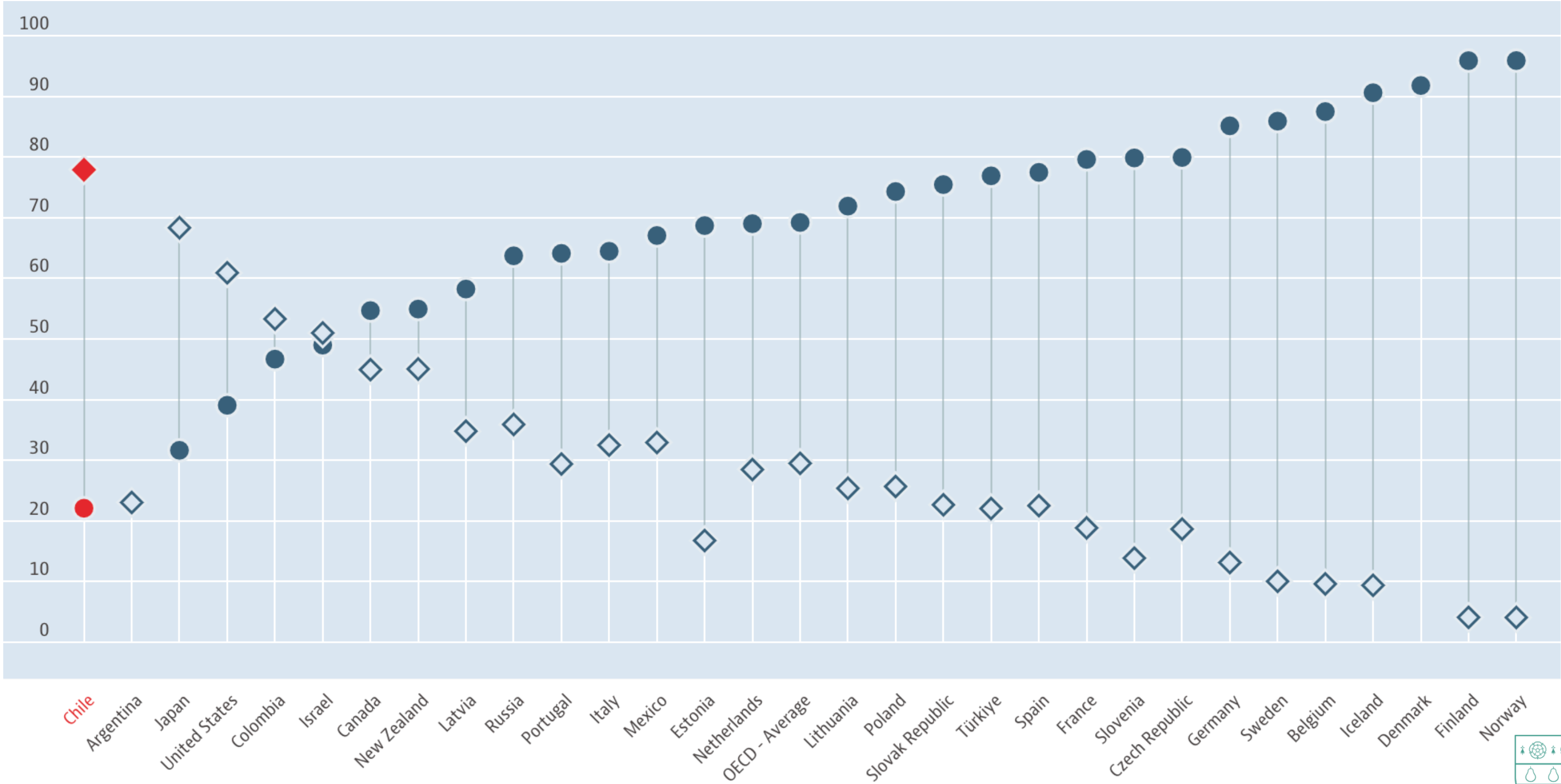
Organization and funding designed during the military dictatorship (1973-1990), reformed during the 90s:

- Self financing institutions (tuition)
- Competition for public funding (AFD and AFI)
- Mostly private enrollment
- Struggle to regulate for-profit and quality

“Massification based on privatization and heterogenisation” (Quaresma and Villalobos, 2022)

# Tertiary education

## Public vs private spending (2011)





# Tertiary education

## Student mobilization





# Tertiary education

## Student mobilization



# Tertiary education: Tuition-free college

Mobilization was instrumental to building a new coalition of old and new parties

In 2013, student leaders elected for the parliament

In 2014, the socialist Michelle Bachelet won her (second) presidential election with 62% of votes

- Reforms and tuition-free college in the campaign
- Tuition-free college announced (*almost* by surprise) on 2015

# Tertiary education

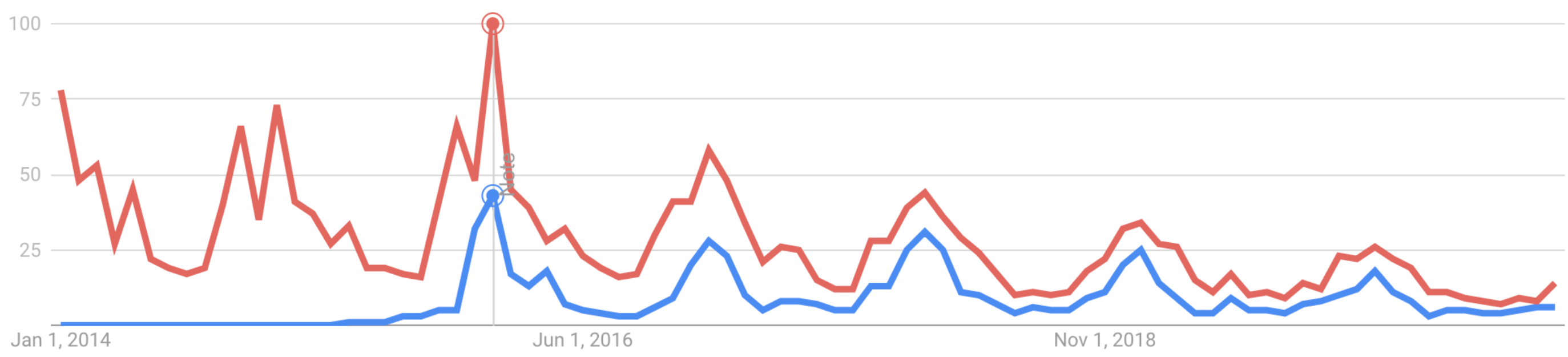
## Tuition-free college

Bachelet speech (21st May, 2015)

“The main goal we have established for ourselves in relation to higher education is achieving quality and tuition-free education for everyone. (...) many times scholarships are not enough to cover all fees, so the most vulnerable students and the middle class have to take on excessive debt to pay for the difference. This is why, moving towards our commitment of having tuition-free higher education for the 70% most vulnerable students at the end of my presidential period, starting in 2016 we will guarantee for the most vulnerable 60% of students enrolled in technical education, accredited and non-for-profit professional schools, or traditional universities, to have complete and effective tuition-free education, without scholarships or loans”

# Tertiary education

## Tuition-free college



Red line: search for scholarships and fellowships (“becas”)

# Tertiary education: Tuition-free college

The policy started in 2016:

- 30 institutions
- Public and non-profit
- Students in the lowest 50% of income

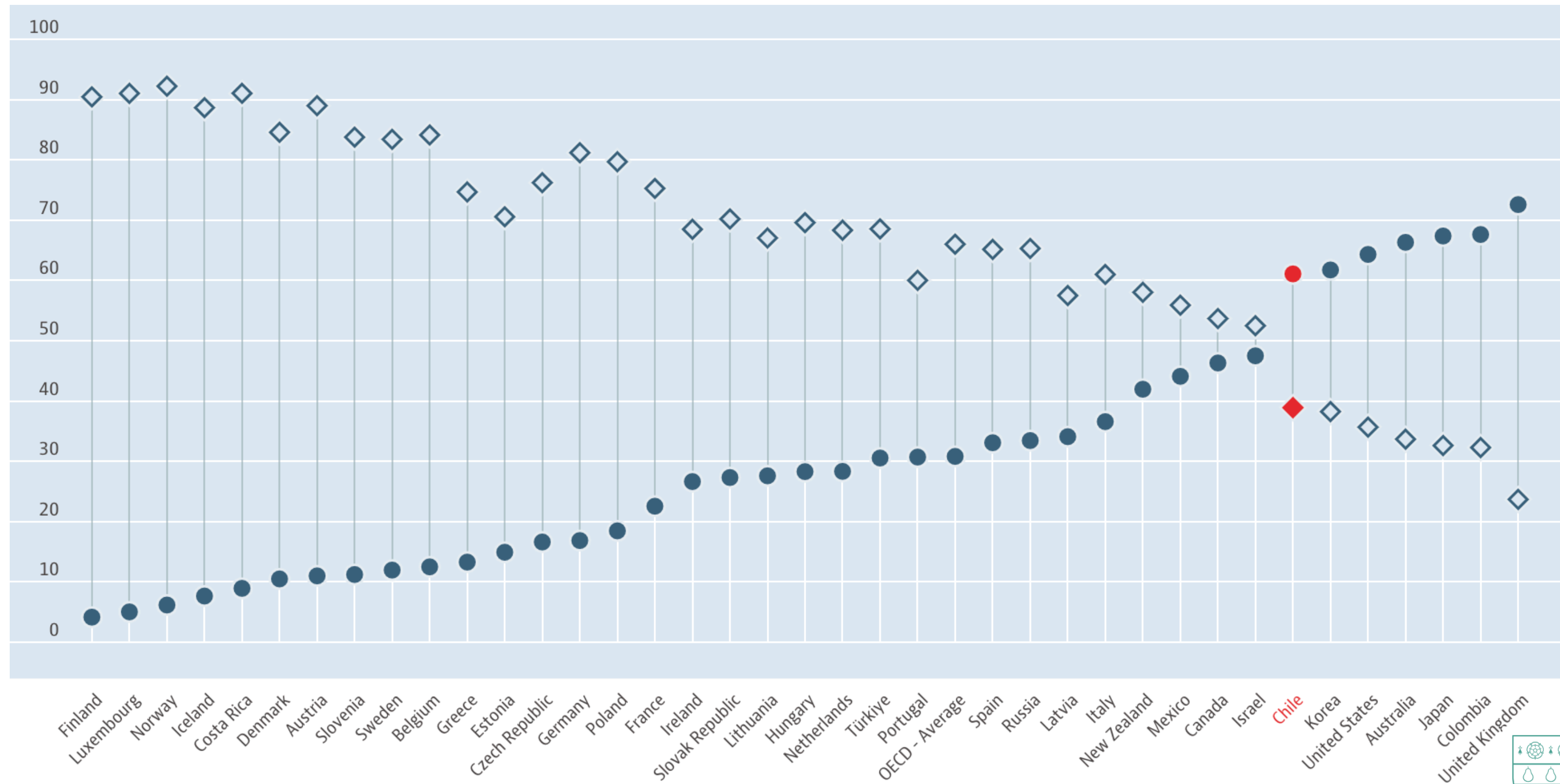
Following year:

- more institutions, especially technical
- expansion to 60% lowest income



# Tertiary education

## Public vs private spending (2019)



# Data and Methods

# Data and variables

Administrative data from the Chilean Ministry of Education open access initiative

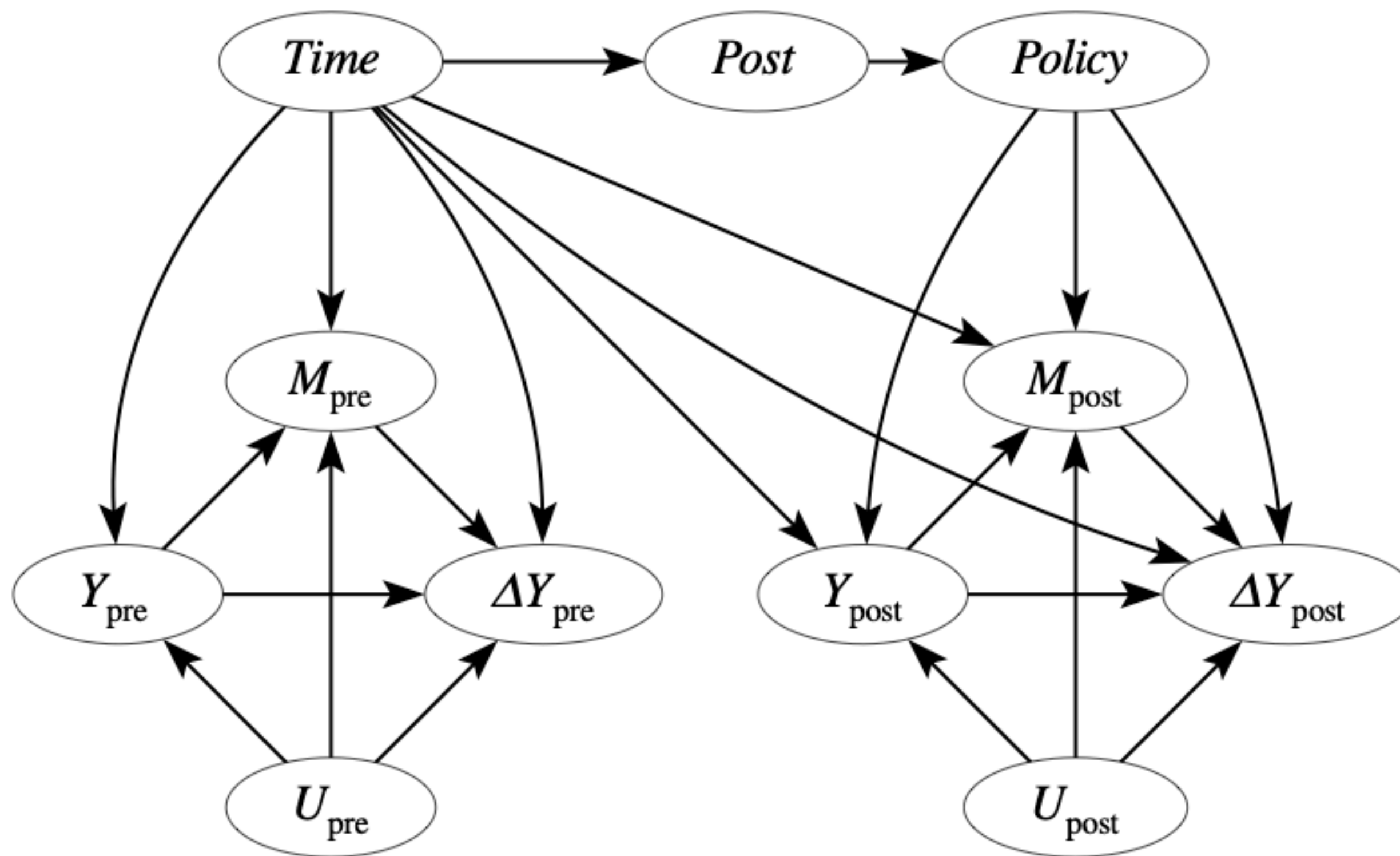
- Enrollment data (April)
- Promotion data (December)
- Years 2009-2020
- Students in the regular system

## Variables

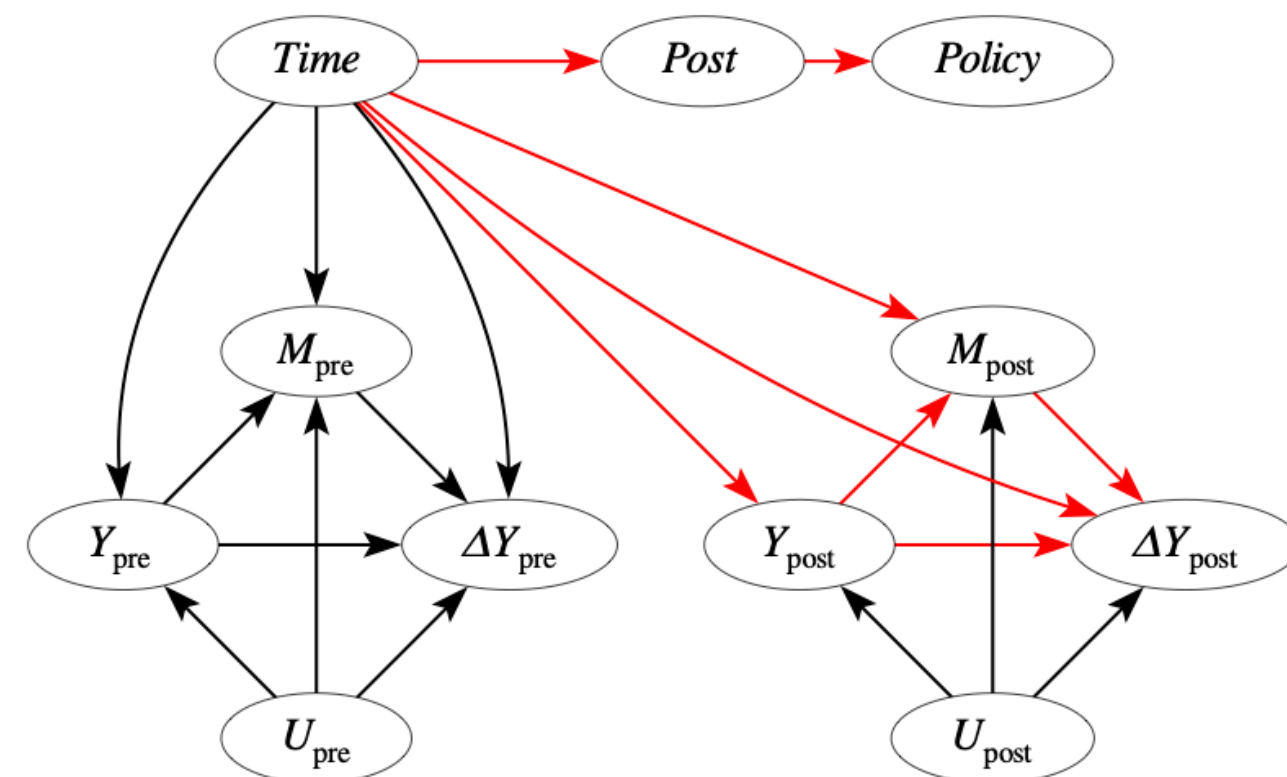
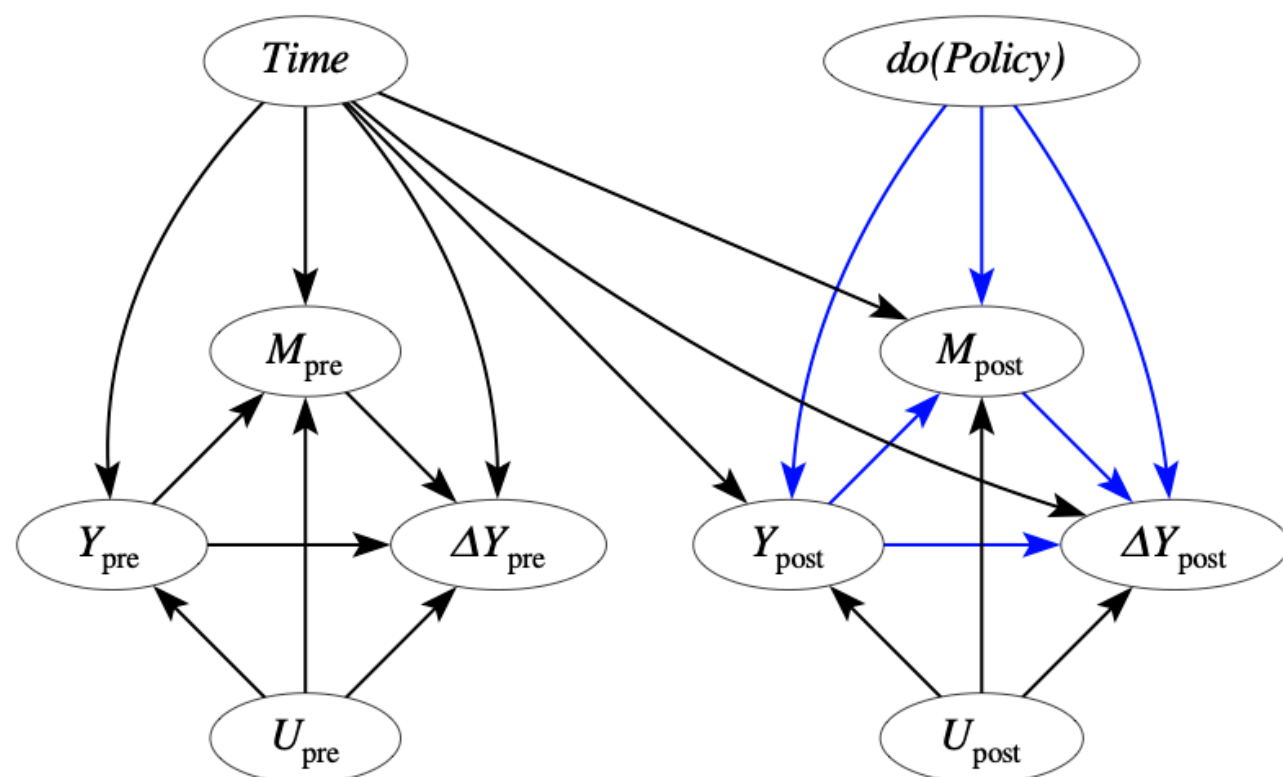
- Treatment: exposure to tuition-free college (pre/post 2016)
- Primary outcome: student dropout
- Secondary outcomes: student grade retention, school abandonment, track choice
- Subgroup: registry sex, region, grade, school track and ownership



# Identification



# Identification



# Estimation

## **Single-group event study (aka pre/post)**

Segmented regression analysis

Yearly dummies for time dynamics

## **With comparison group**

Difference-in-differences

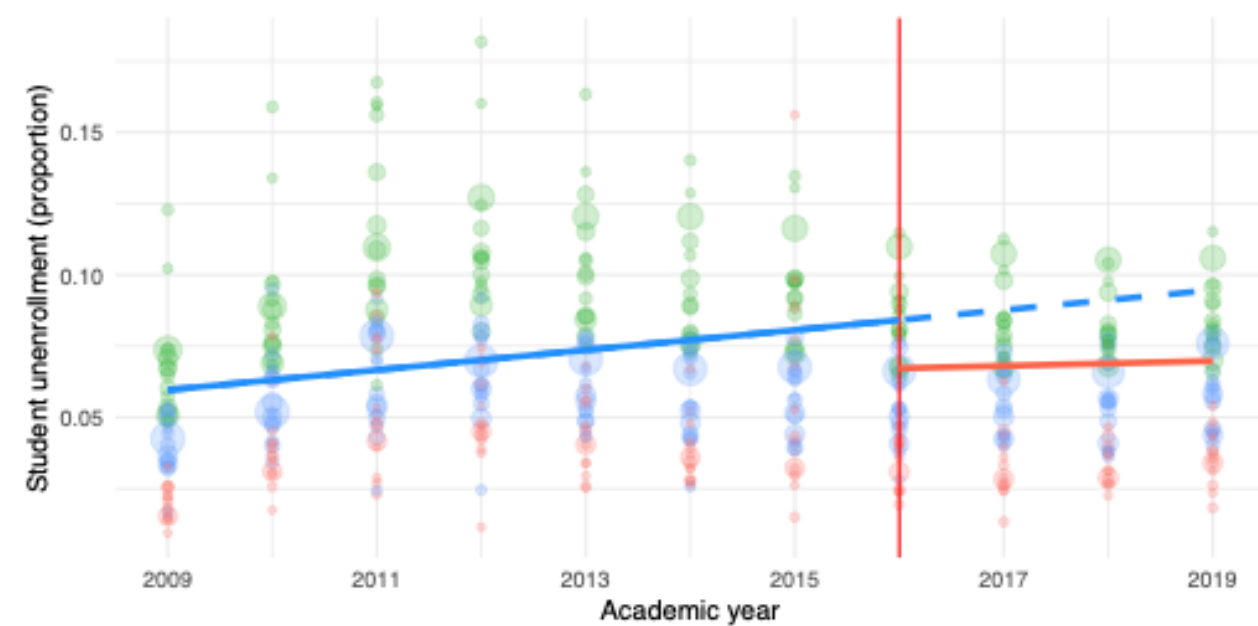
Trajectory balancing

# Main results

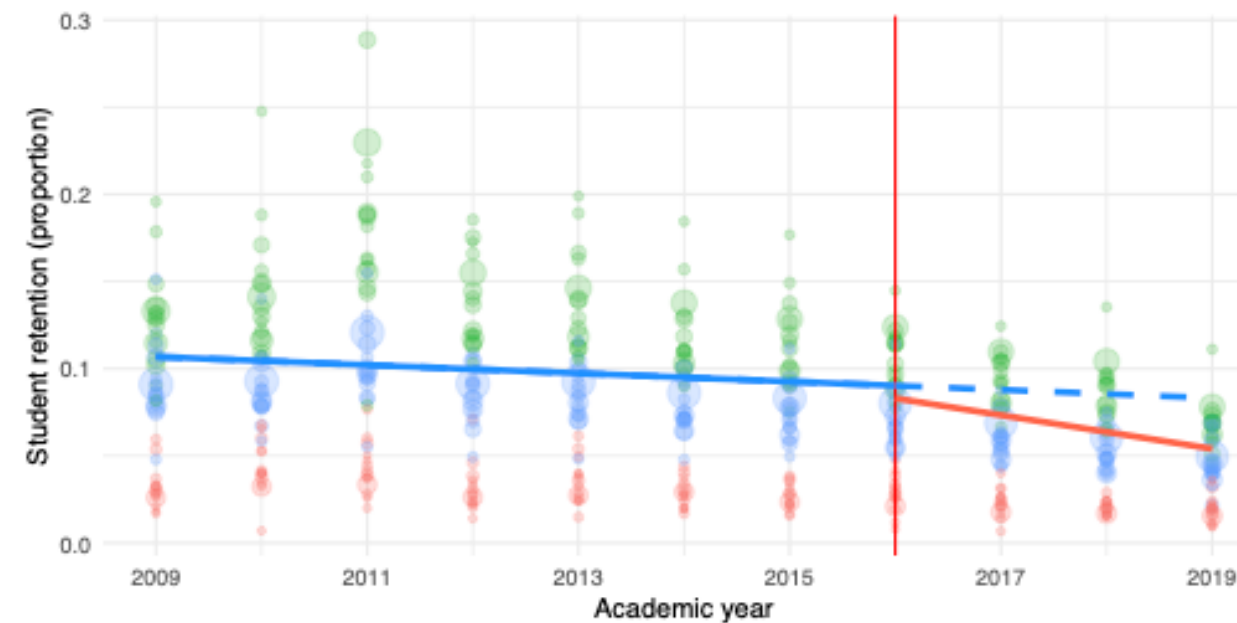
# Segmented regression



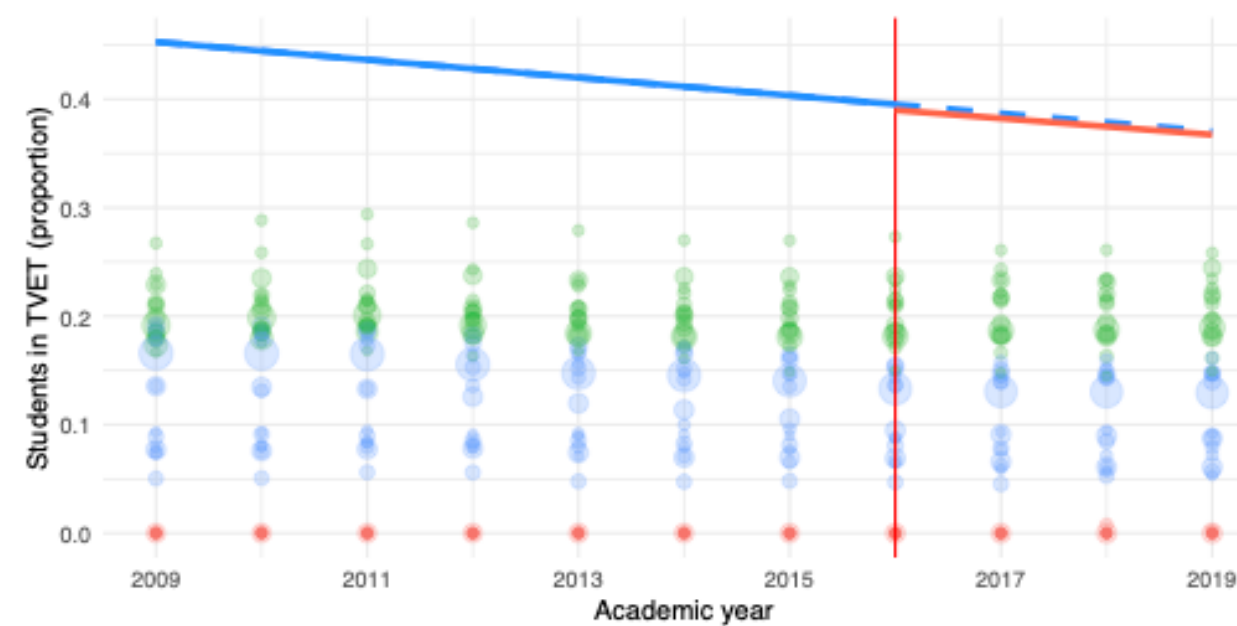
Dropout



Unenroll

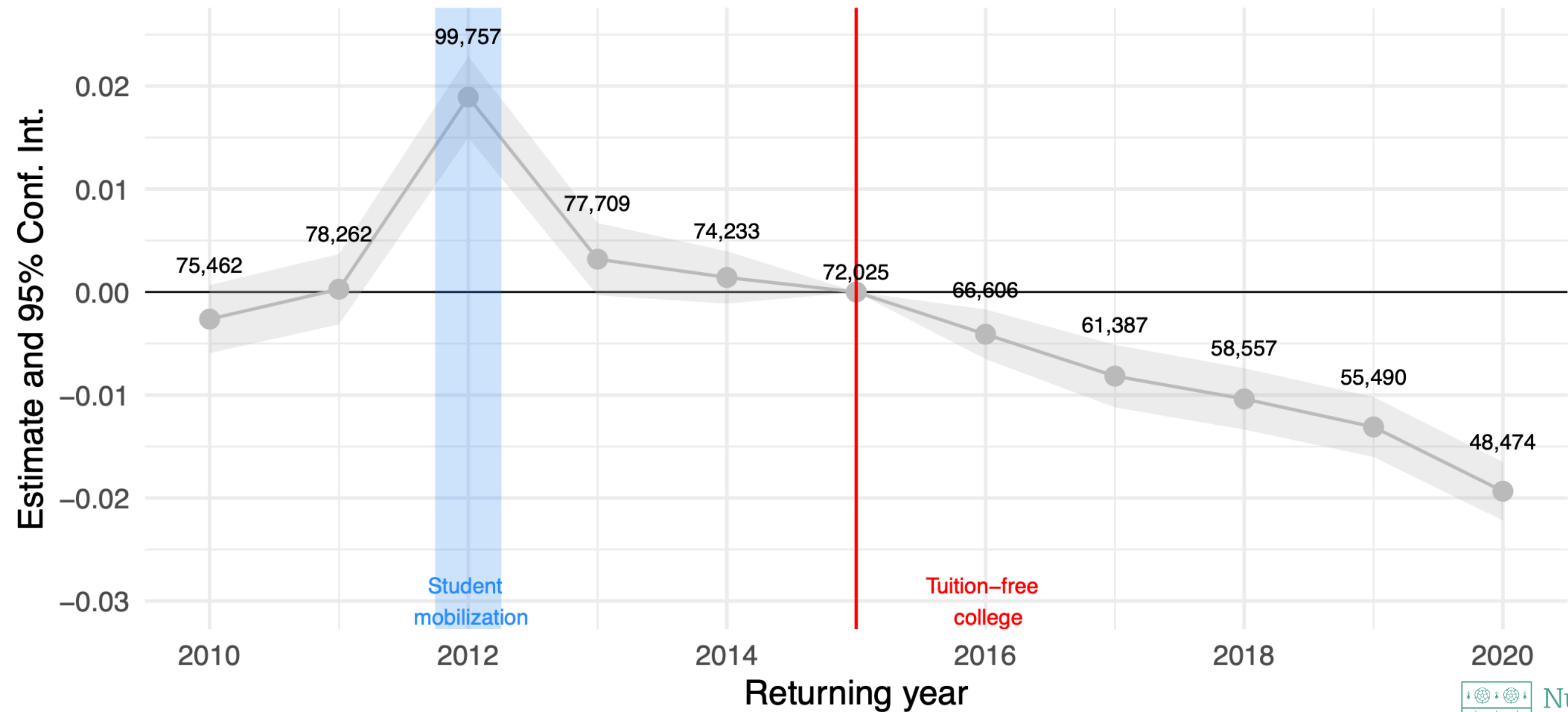


Retention



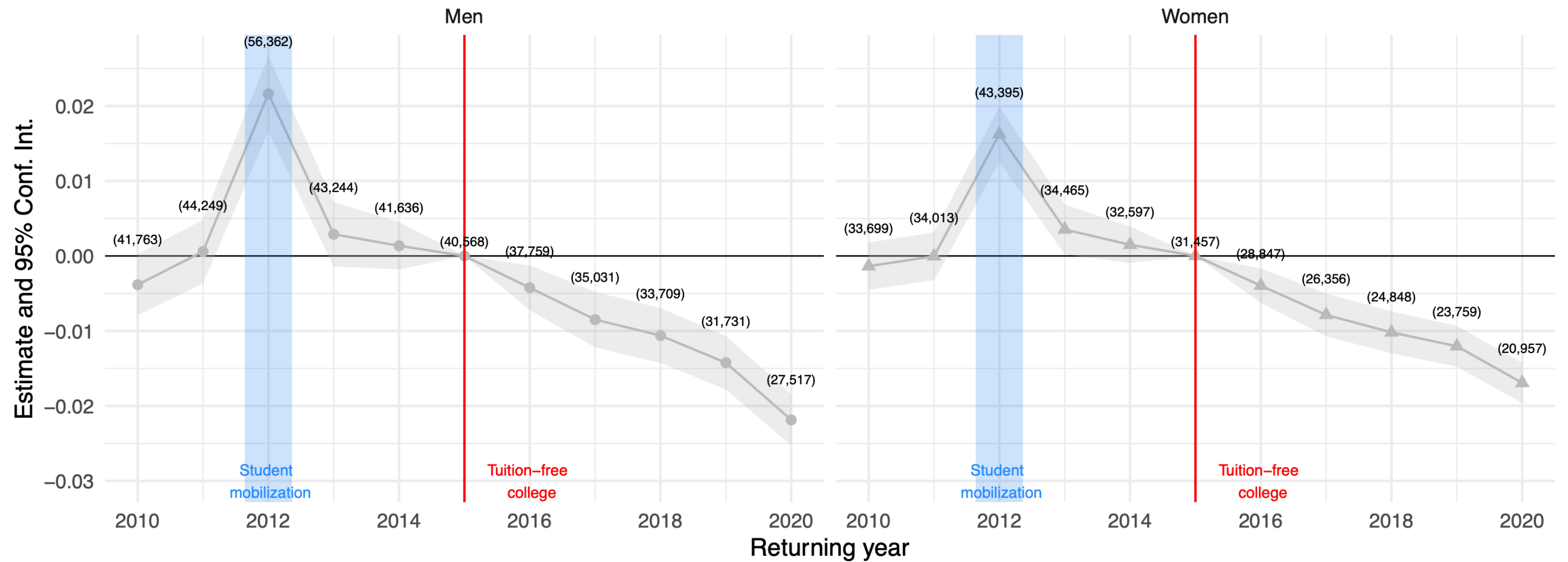
TVET

# Single-group event study



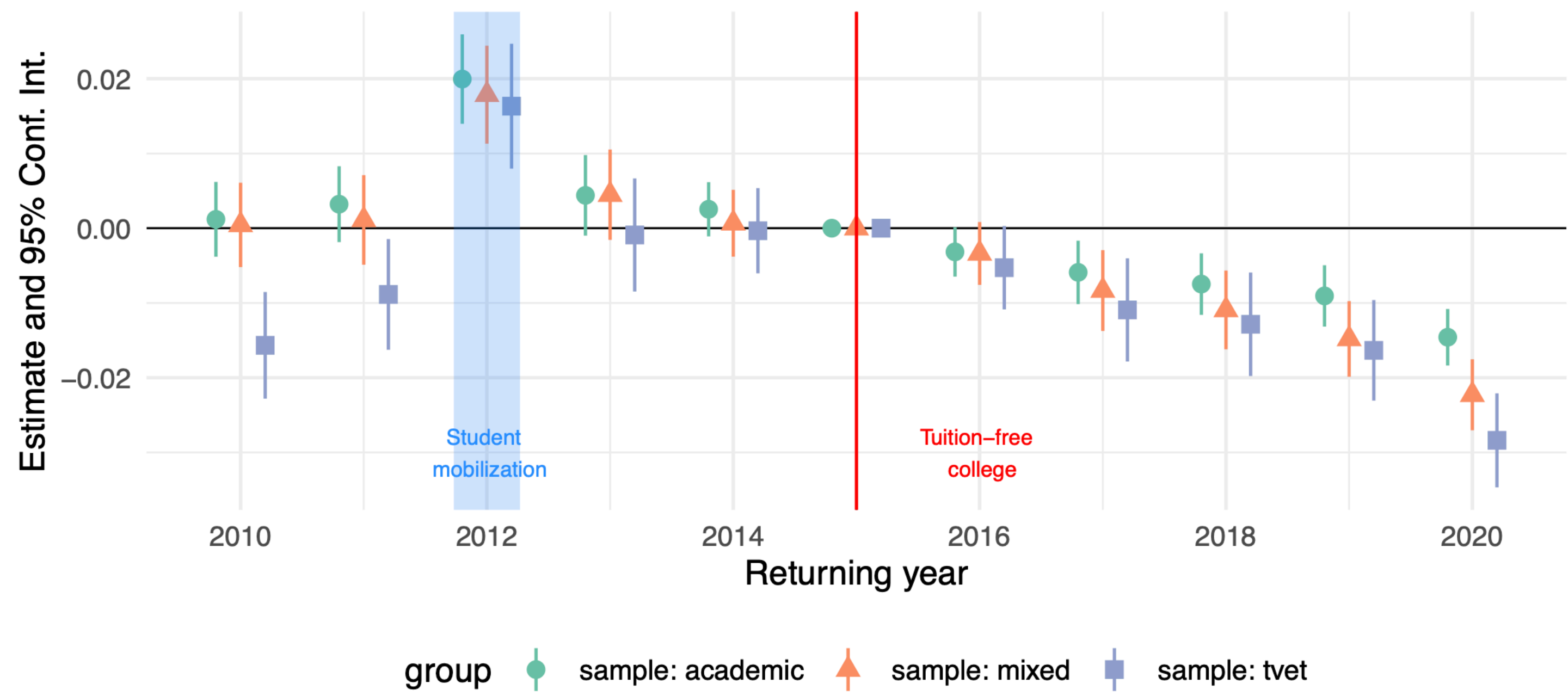
# Subsample analysis

## Registry sex



# Subsample analysis

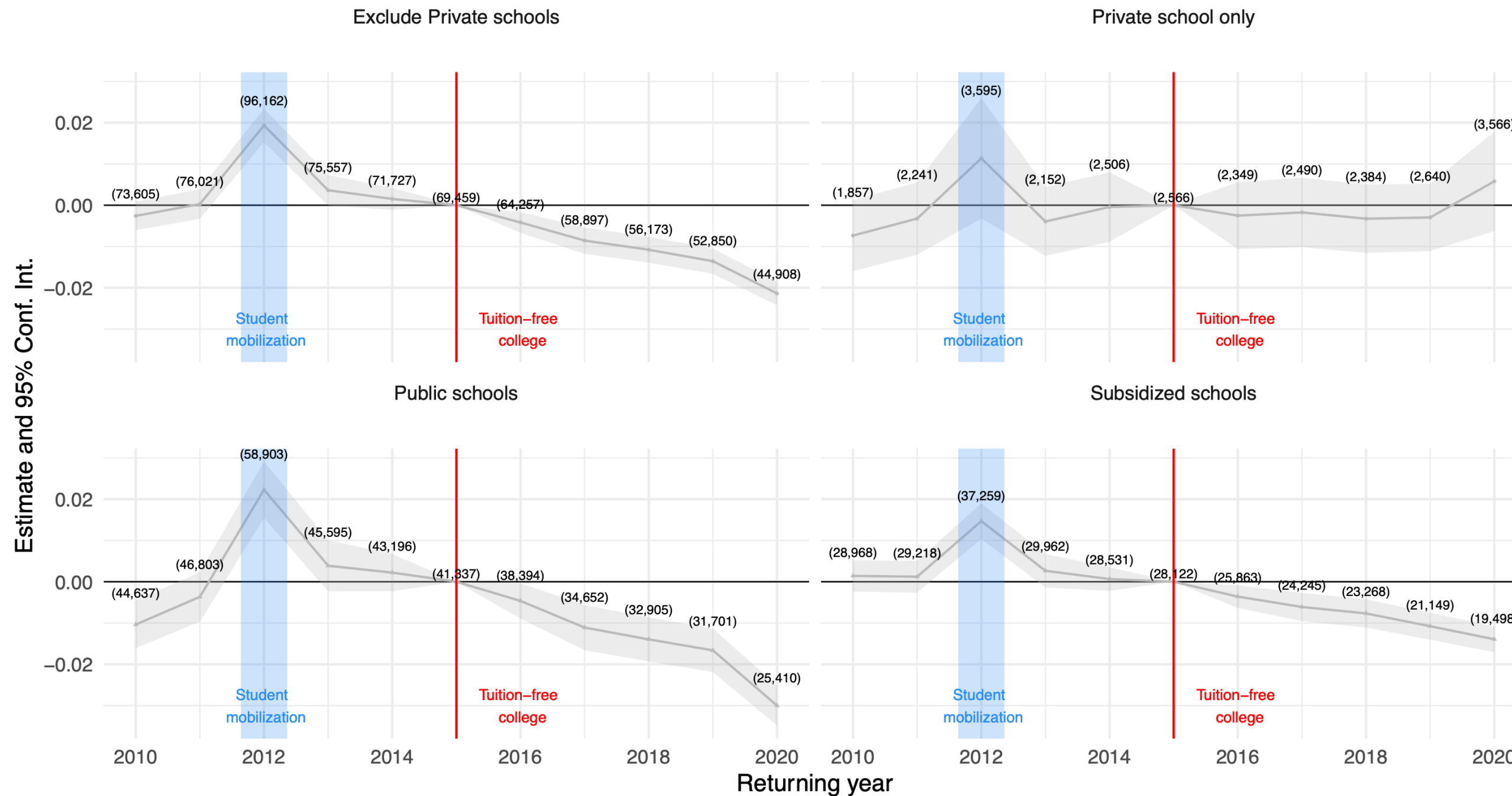
## School track





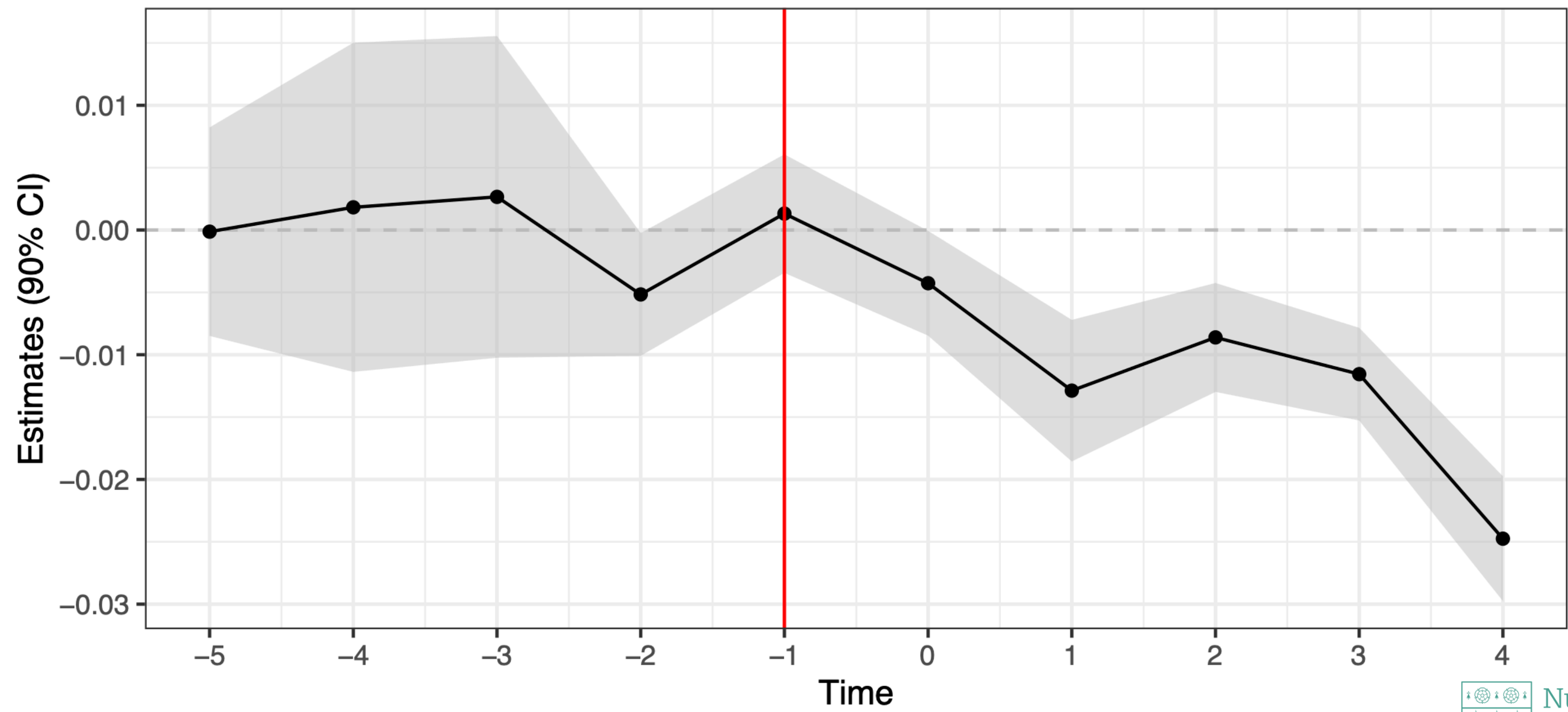
# Subsample analysis

## School ownership



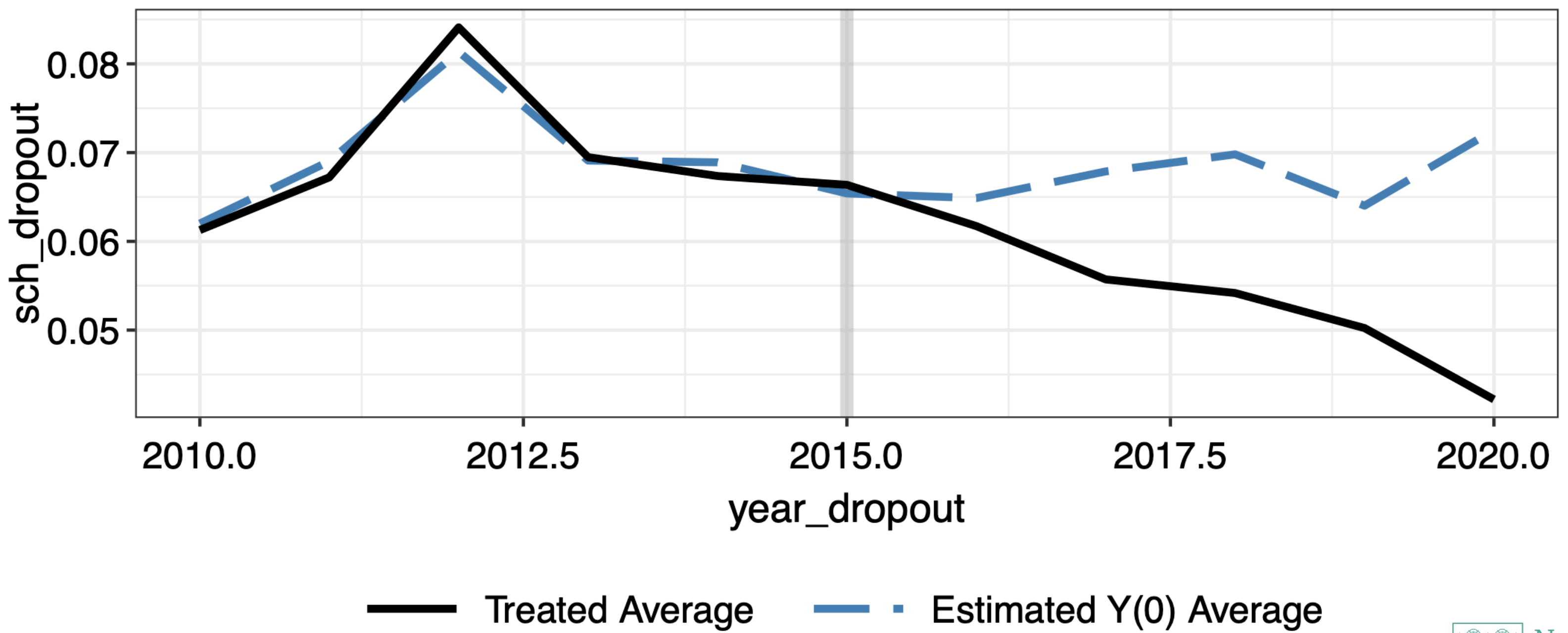
# Difference-in-difference

Dropout rates



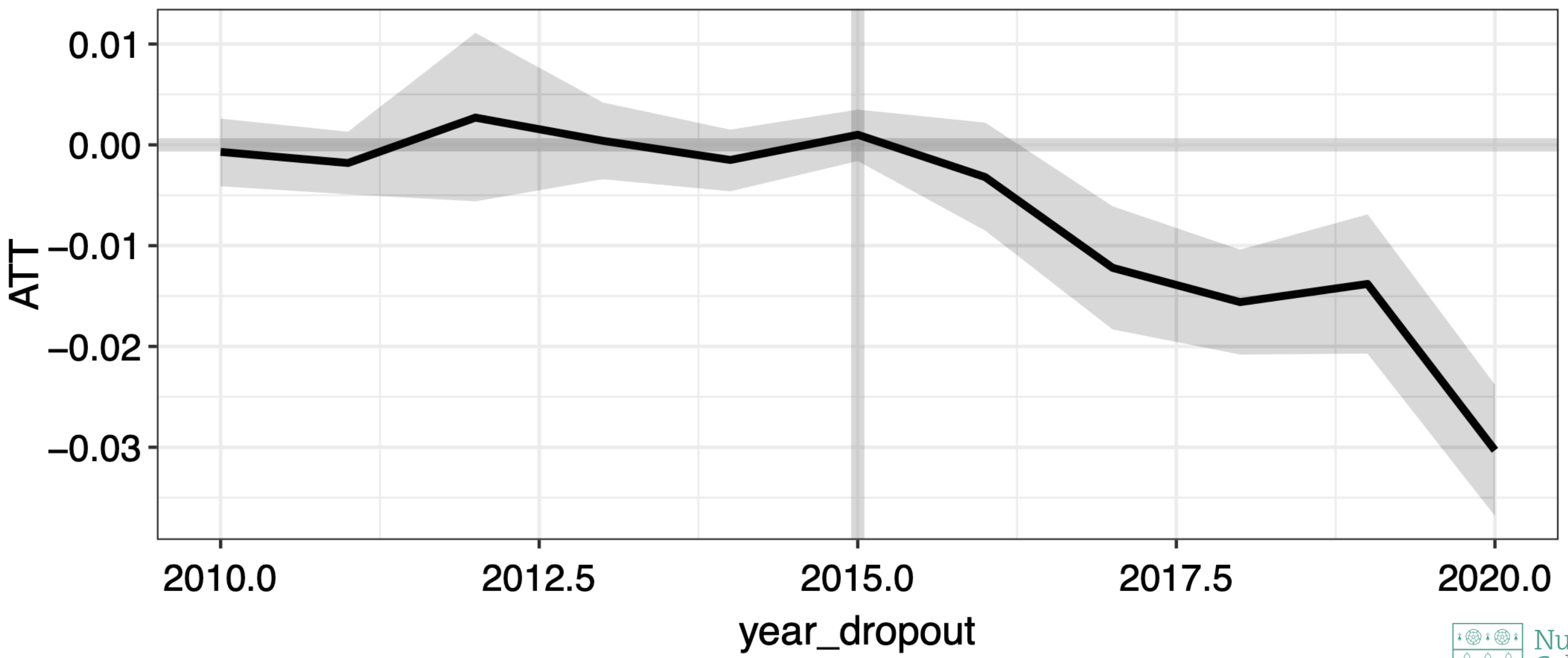
# Trajectory balancing

## Treated and Counterfactual Averages



# Trajectory balancing

## Average Treatment Effect on the Treated



# Conclusions

The introduction of tuition-free college in 2016 seems to have benefited high school students, lowering their dropout rates:

- As expected, the effect is more pronounced for the most disadvantaged students

In other outcomes (retention/promotion, school abandonment, track choice) there is no clear effect of the policy.

The results highlight the importance of focusing on *broader* impacts of education funding policies, affecting our equity considerations:

- Policies themselves can modify their *at risk* population

Future research should address the trajectories of the *induced* students, beyond high school

# Thank you!

Questions, comments? You can find me at [pablo.geraldo@nuffield.ox.ac.uk](mailto:pablo.geraldo@nuffield.ox.ac.uk)