College Admission Criteria and Preferences for Students

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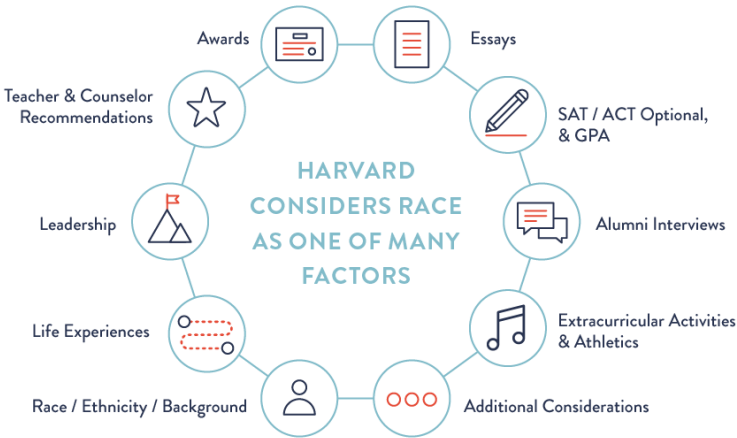
Preliminary and in progress

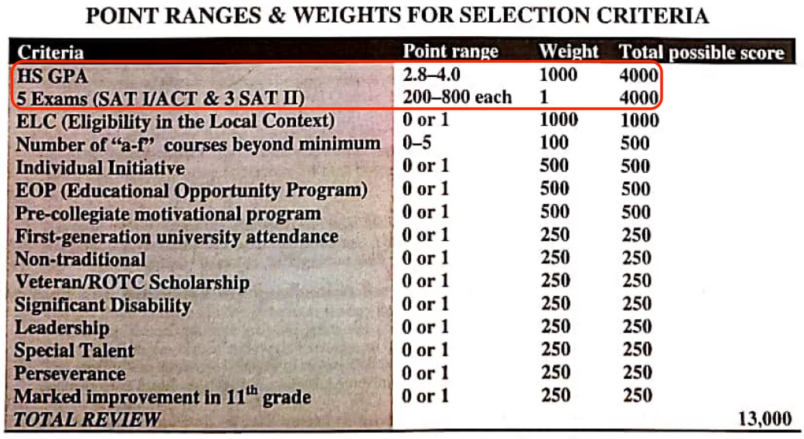
Motivation

- Universities are engines of social mobility, but access is unequal (Chetty et al. 2020)
- Interest in policies directly affecting admission mechanisms
  - Affirmative action (Black et al. 2022; Bleemer 2021; Otero et al. 2021)
  - Test-optional college admissions (Borghesan 2023)
- Universities' criteria to select students play a first-order role in determining access

Admission Criteria



Admission Criteria



POINT RANGES & WEIGHTS FOR SELECTION CRITERIA

Criteria	Point range	Weight	Total possible score
HS GPA	2.8–4.0	1000	4000
5 Exams (SAT I/ACT & 3 SAT II)	200–800 each	1	4000
ELC (Eligibility in the Local Context)	0 or 1	1000	1000
Number of "a-f" courses beyond minimum	0–5	100	500
Individual Initiative	0 or 1	500	500
EOP (Educational Opportunity Program)	0 or 1	500	500
Pre-collegiate motivational program	0 or 1	500	500
First-generation university attendance	0 or 1	250	250
Non-traditional	0 or 1	250	250
Veteran/ROTC Scholarship	0 or 1	250	250
Significant Disability	0 or 1	250	250
Leadership	0 or 1	250	250
Special Talent	0 or 1	250	250
Perseverance	0 or 1	250	250
Marked improvement in 11th grade	0 or 1	250	250
TOTAL REVIEW			13,000

Note: This photograph shows an internal archival UC Davis admissions document visualizing Davis's 2002 freshman admissions protocol. Students were assigned points on the basis of applicant characteristics, and those with scores above a designated threshold were admitted to the campus. Source: Archives and Special Collections, UC Davis — Shields Library.

This paper

How does discretion in admission criteria affect college access and outcomes?

- Document heterogeneity in baseline admission rules in Chilean centralized higher education system
  - Correlation between GPA weight and student body characteristics
- Exploit reform allowing use of high school peer ranking in admissions
  - Wide range of responses across colleges
  - Modest effects benefitting low-SES women (Larroucau et al. 2015)
- Discretion in criteria meaningfully affects student body of universities and degrees
  - Simulations show up to 50% change in student body, and up to 10% increase in low-SES students

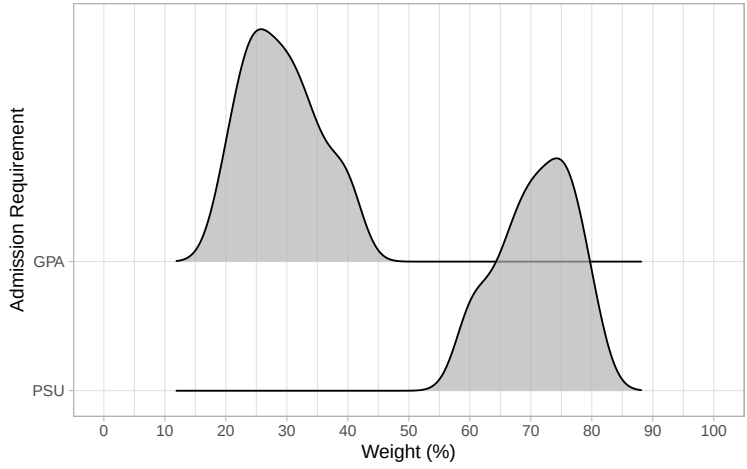
Literature and Contributions

- Centralized Admission Systems in educational markets
  - Increasing adoption around the world CCAS Map
  - Implementation details (discretion over weights) matter for outcomes
- College preferences for students (Arcidiacono et al. 2022)
  - Transparency of admission mechanism
- Affirmative action (Black et al. 2022; Bleemer 2021; Otero et al. 2021; Reyes 2022)
  - May interact with supply responses (Kapor 2020; Borghesan 2023)
  - Observable reaction to exogenous policy shock allows clear identification

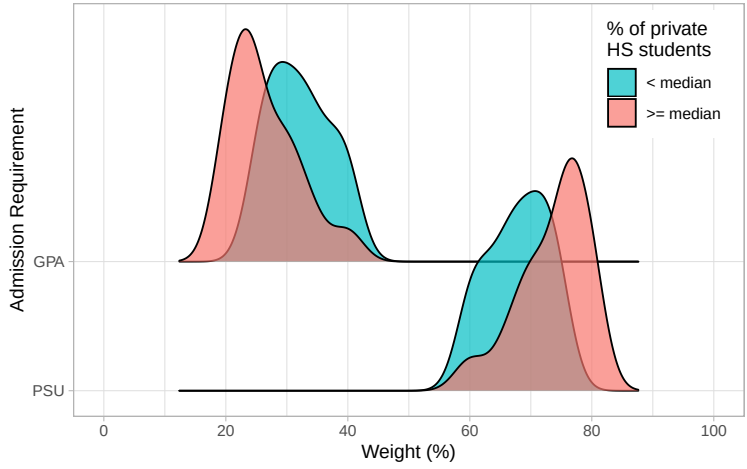
Chile's college admission system

- "Top" 33 institutions admit students via a centralized admission system
- Students apply to programs (i.e. college-major pairs)
- In 2012, admission to any of the 1,200 programs was based on two separate scores
  1. high school **GPA**,
  2. standardized test (**PSU**)
- Programs announce **weights** on each score $\longrightarrow$ total (application) score Example
- Students ranked by application score, market is cleared by DA subject to available vacancies Vacancies DA details

Distribution of AR weights across programs



Distribution of AR weights across programs, by student type



Policy: Introduction of Additional Admission Requirement

- Add within-school GPA **ranking** ("contextual GPA") as admission criterion Details

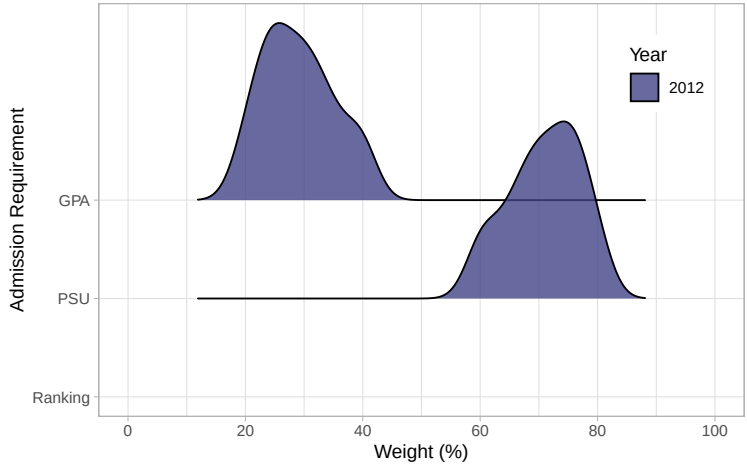
  2013: ranking score weight is fixed at 10%

  2014: college-degrees *choose* ranking score weight (between 10 and 40%)

- Policy goals
  - ▷ Target top students from low SES schools
  - ▷ Evidence on ranking score predicting college academic success

- How did colleges respond?
  1. AR weights influence admissions via significant variations in application scores
  2. Universities have heterogeneous AR weights, and constraints seem binding for some
  3. AR weights are correlated with students' SES

Distribution of weights across degrees



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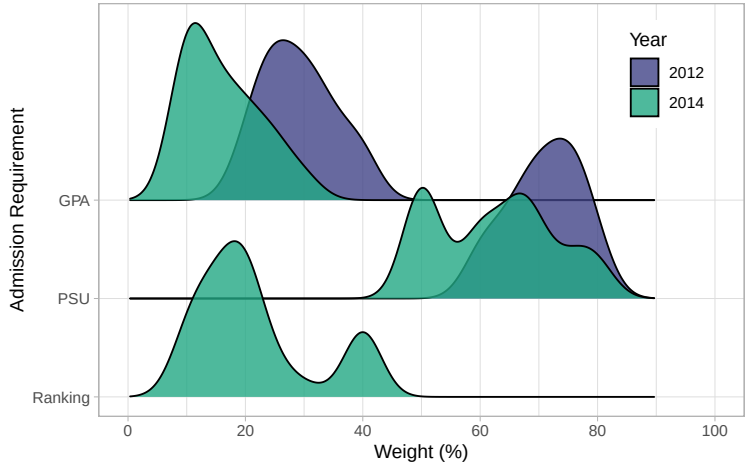

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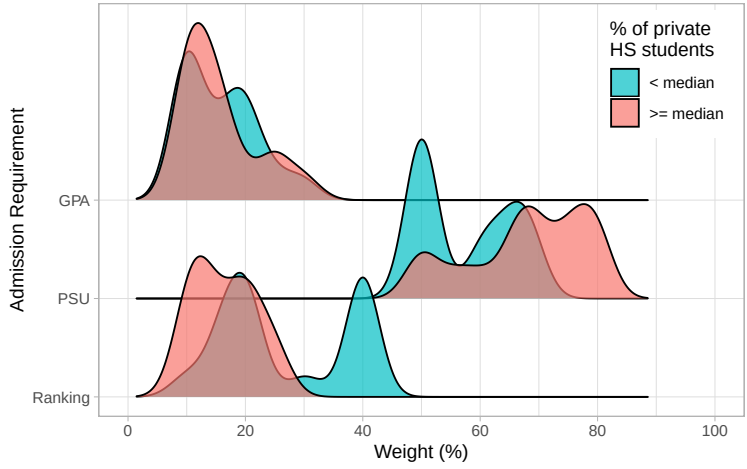
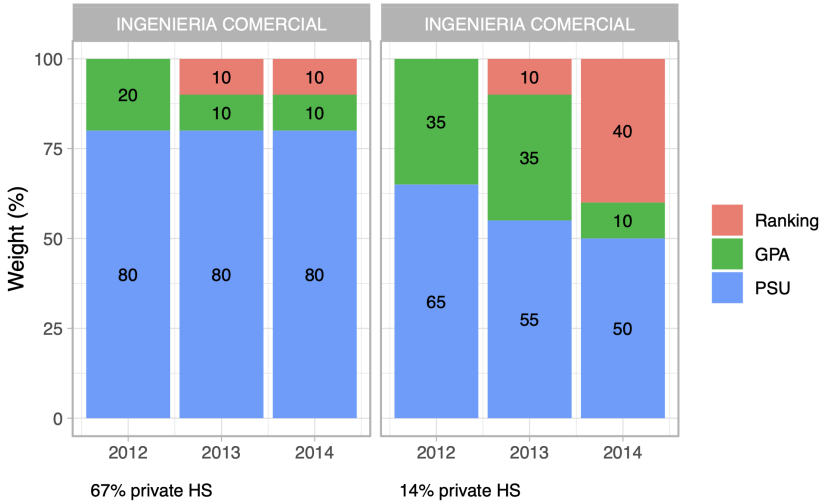


Heterogeneous weighing response: two examples



All colleges

Data

- Market is the entire country ($\approx 300k$ students per cohort), "top" 33 colleges
- Available from year 2004 onwards; we focus on 2012-2014

1. Degree-level data (admission criteria, weights, vacancies, prices location)
2. Student-level data
   - ▷ Preferences: rank order list
   - ▷ Demographic characteristics: gender, age, graduating school (linked to school type, SES, neighborhood, etc.)
   - ▷ Admission requirements: high school GPA, within-school ranking, PSU scores
   - ▷ College outcomes: enrollment, persistence, graduating time (but no grades!)
3. Centralized Admission System results
   - ▷ Students' application scores, admission results, cutoff scores

Effects of the policy

- Simulate admission for the 2014 cohort under 2013 AR (Larroucau et al. 2015)
- Negligible effects on extensive margin (in/out of Centralized Admission System)
- Significant redistributional *intensive margin* effects (rank of assigment)
  - Driven mostly by women from non-private high schools

	Public				Charter				Private			
Gender	N	↑	=	↓	N	↑	=	↓	N	↑	=	↓
Female	11,090	8.6	86.8	4.6	27,600	6,8	88,4	4,8	9,691	2,8	91,0	6,2
Male	11,523	4.6	88.1	7.3	25,685	4,7	89,4	5,9	10,567	2,1	89,8	8,1
Total	22,613	6.6	87.5	5.9	53,285	5,8	88,9	5,3	20,258	2,4	90,4	7,2

Admission criteria weights as selection tool

We explore how the pool of students admitted to a program responds to changes in the AR, *holding every other universities' choices fixed*

We document three key findings:

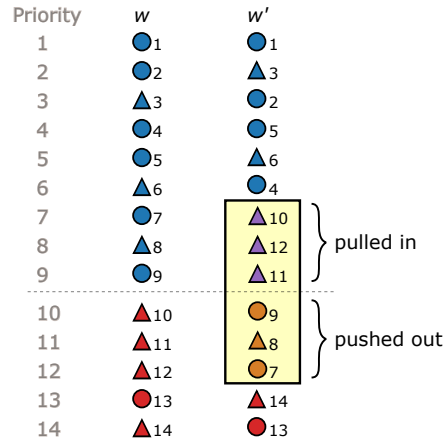
1. Programs differ in their ability to select students
    - ▷ Total pool of admitted students and their characteristics (i.e. extensive and intensive margins)
2. The introduction of the ranking expands the programs' ability to select
3. Programs choose different outcomes in their "possibility frontier"

Leading example: Business and Economics

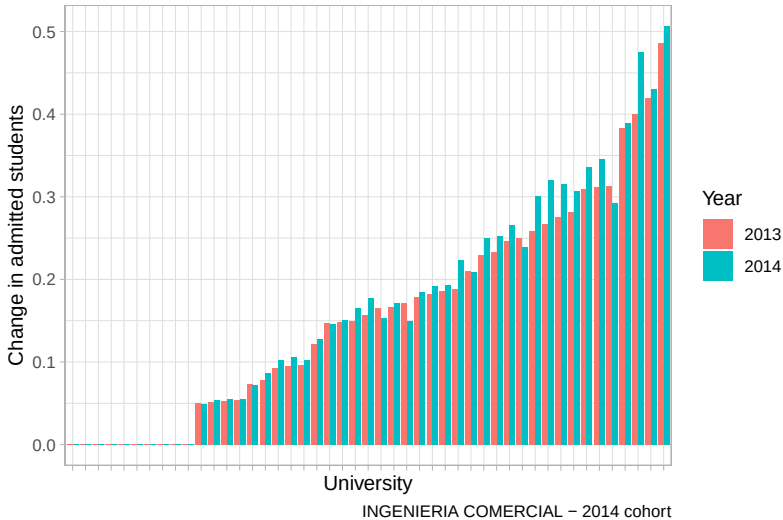
Choice of AR weights and student selection

- Admittance determined by priority & vacancies
- Priority determined by application score $s_i(w, \ldots)$
- $w' \neq w$ induces different priorities
- Around the cutoff, w' induces different set of admitted students
- Under w', some are **pulled in** and some are **pushed out** by the policy

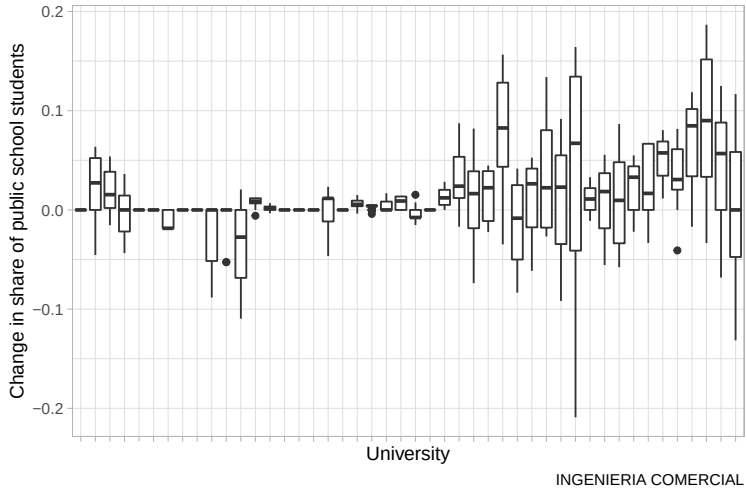
(Black et al. 2022)



Heterogeneous ability to select students (extensive margin)



Variety of choices within the "possibility frontier"



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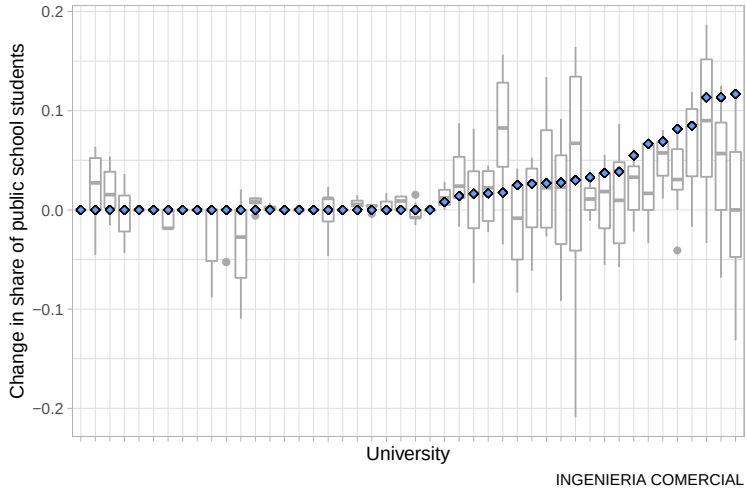
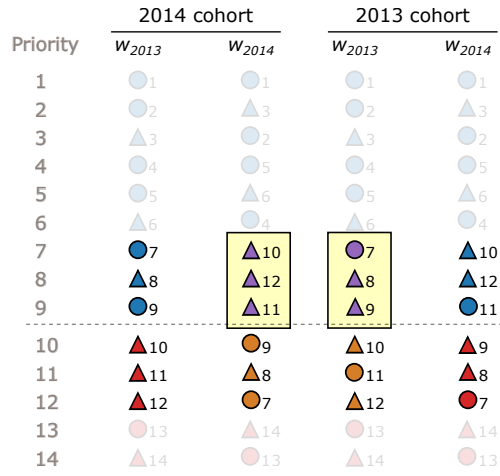


Measuring academic outcomes

- Objective is to quantify potential trade-off: how changes in AR weights induced changes in students' demographics and academic performance
- Problem: cannot observe academic outcomes of students not admitted to the program
  - ▷ Match effects, differences in standards
- Our solution: find appropriate comparison group in previous years (Reyes, 2022)

Defining comparison groups

- 2014 cohort: we can identify groups by simulating admission using w_{2013}
- Cannot compare academic outcomes
- Idea: use 2013 cohort to identify valid comparison group
- Concerns: low power, assumptions about inter-year stability



Shape is academic outcome; e.g. △ = graduated, ○ = not graduated

Simulation

In progress

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Otero, Sebastián, Nano Barahona, and Cauê Dobbin (2021). "Affirmative Action in Centralized College Admission Systems: Evidence from Brazil". JMP.

College admissions

America tries to figure out a fairer way to select students

Sidelining standardised tests won't make college admissions fairer

U.S.

College Admissions Scandal

Complete coverage of a brazen cheating scheme.

University of California Drops SAT Scores for Admission

The University of California won't consider SAT and ACT scores that applications under a settlement of a student lawsuit.

By Associated Press | May 14, 2021, at 11:43 p.m.

Save

American universities need to rethink their admissions process

Making standardised tests optional is unlikely to narrow the gap between rich and poor

Higher Education

Harvard won't require SAT or ACT through 2026 as test-optional push grows

The fast-spreading movement aims to limit the role of the standardized exams in college admissions

By Nick Anderson

December 16, 2021 at 7:00 p.m. EST

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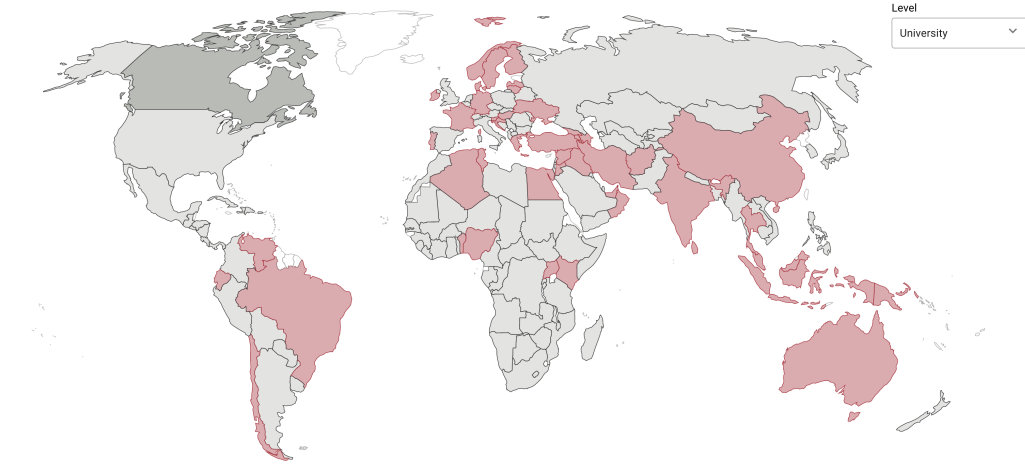
Centralized Admission Systems across the world



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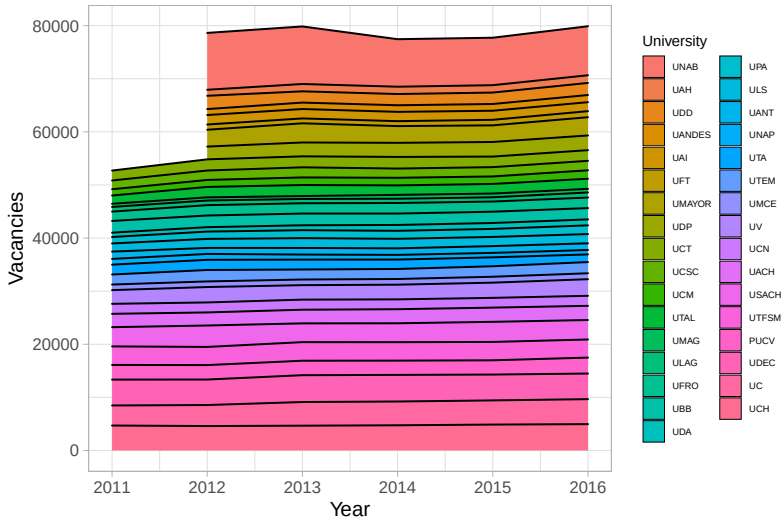
Annual Vacancies by University



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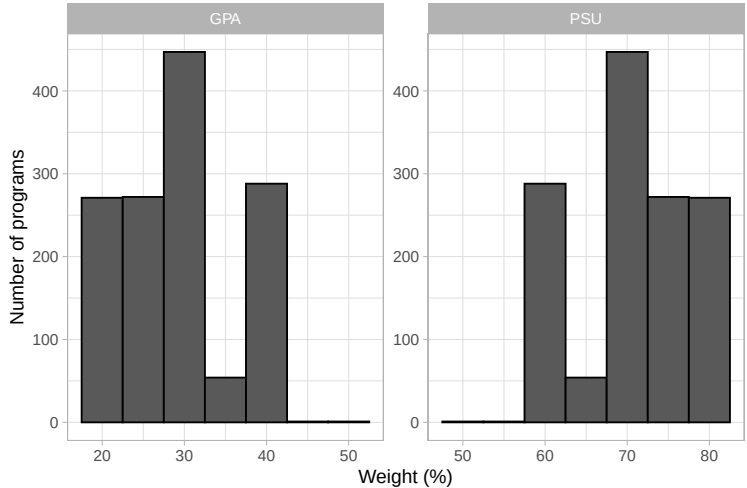
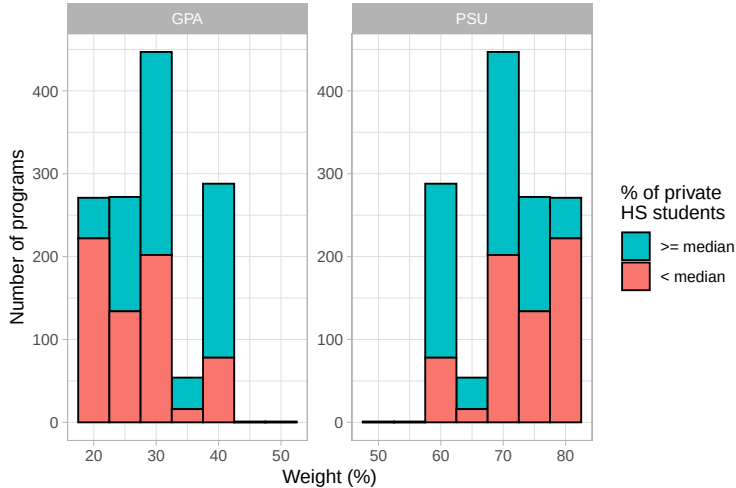


Distribution of AR weights across programs, by student type



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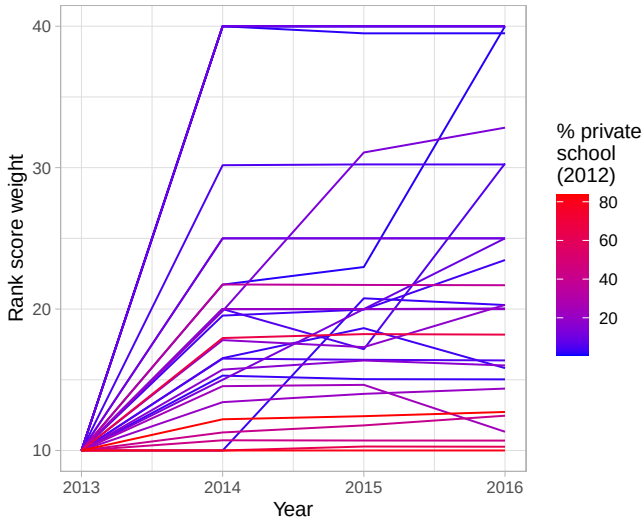
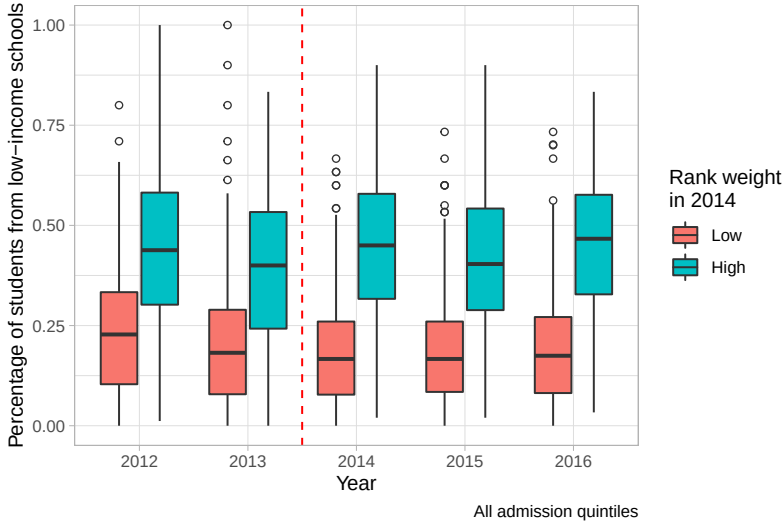
Heterogeneity in rank score weight



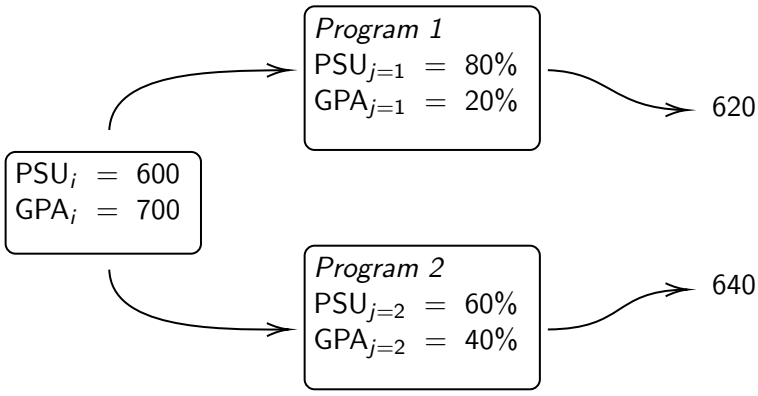
Degrees that weight ranking highly attract low-income students



By entry quintile

Simple example of Admission Requirements weighing

Scores$_i$	Weights$_j$	Application Score$_{ij}$



Scores $\sim \mathcal{N}(500, 110)$, so difference is ≈ 0.18 SD

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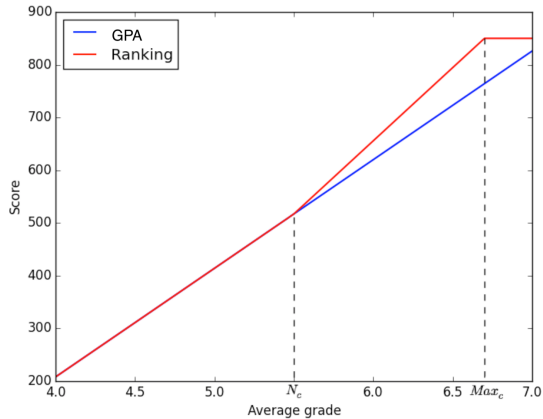
Details: Ranking

Two important quantities: $t-3$ **to** $t-1$ **average GPA** N_c and $t-3$ **to** $t-1$ **average maximum GPA** Max_c

- If below N_c, ranking score is just GPA score
- If between N_c and Max_c, ranking score is linearly higher than GPA score
- If above Max_c, ranking score is set to maximum (850)



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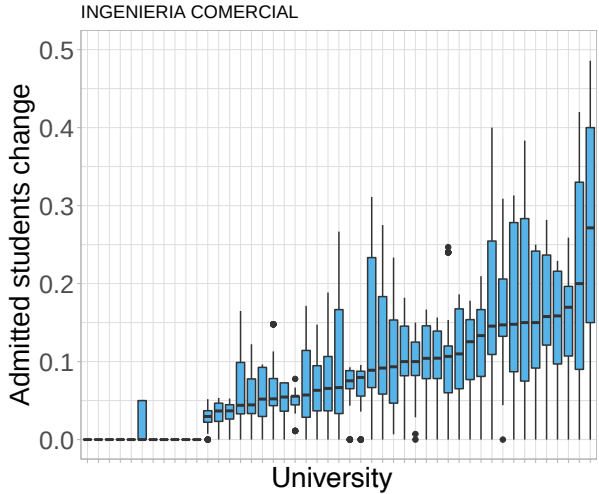
Heterogeneous ability to select students (extensive margin)



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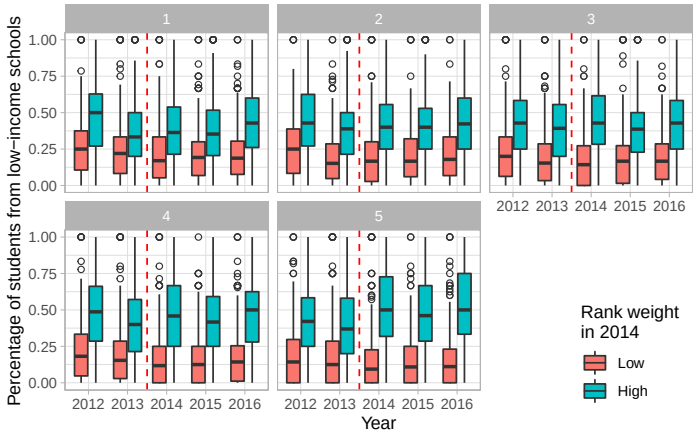
RS increases admittance of low-SES students only in top quintile of admittance



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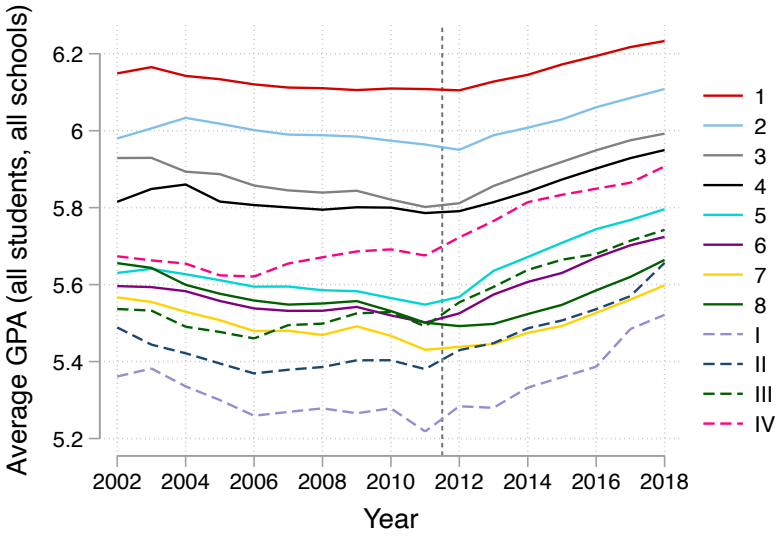
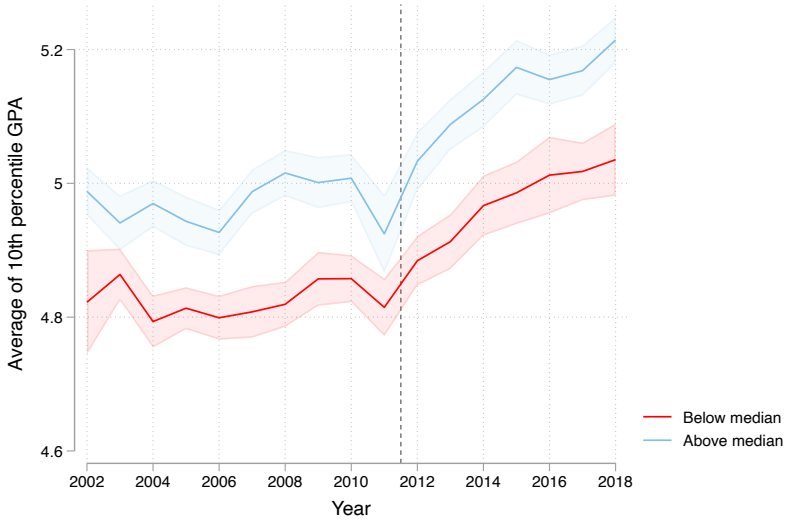
Grades trend upwards



Convergence?

Divide schools by share of students that applied to college in 2007



What happened in schools?

- Higher grades in the time series starting 2012 - but across *all school classes*
- Schools seem to grade coordinatedly, some convergence?
- Private schools give better grades than their public or subsidized counterparts - but conditional on PSU scores, this is reversed More

Types of schools, grades and PSU