College Admission Criteria and Preferences for Students

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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
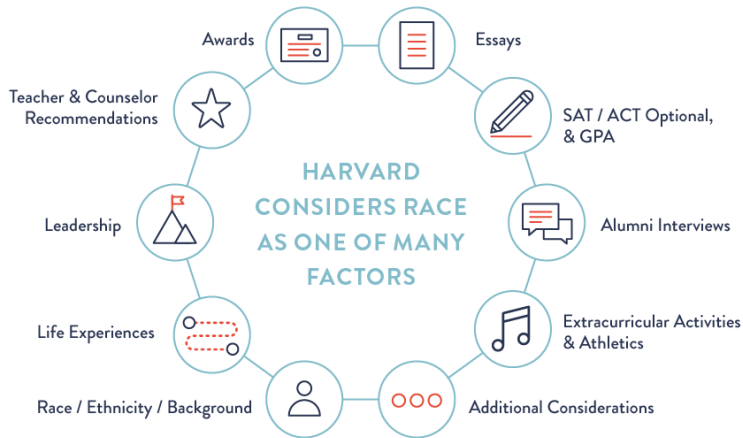
Admission Criteria

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
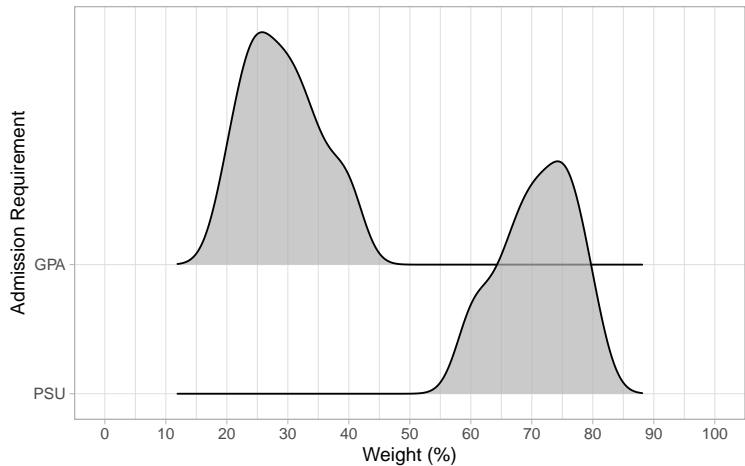
Year 2012

# Distribution of AR weights across programs, by student type
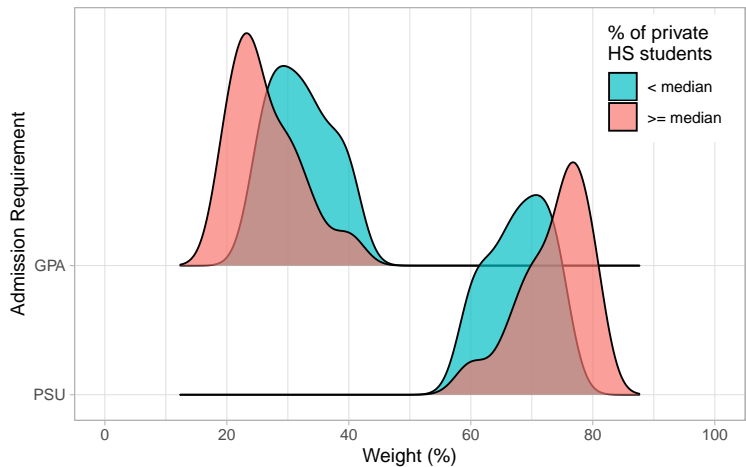
Year 2012

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

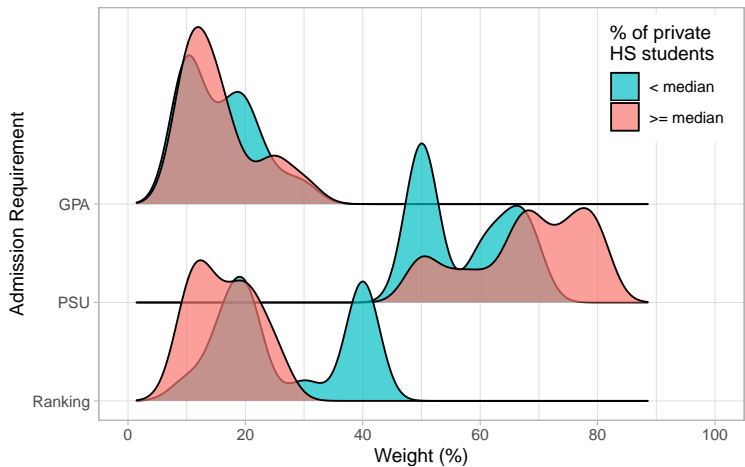 3. AR weights are correlated with students' SES

Distribution of weights across degrees
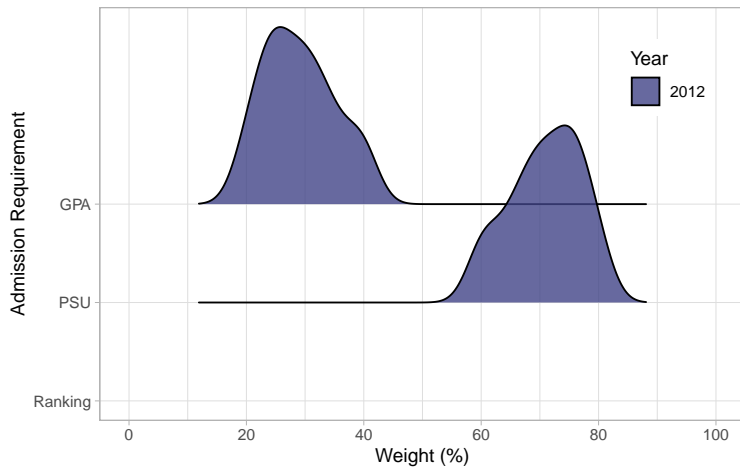
Distribution of weights across degrees
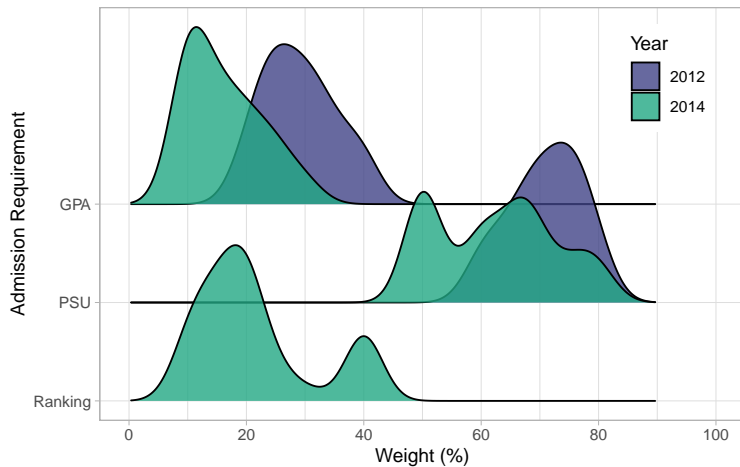
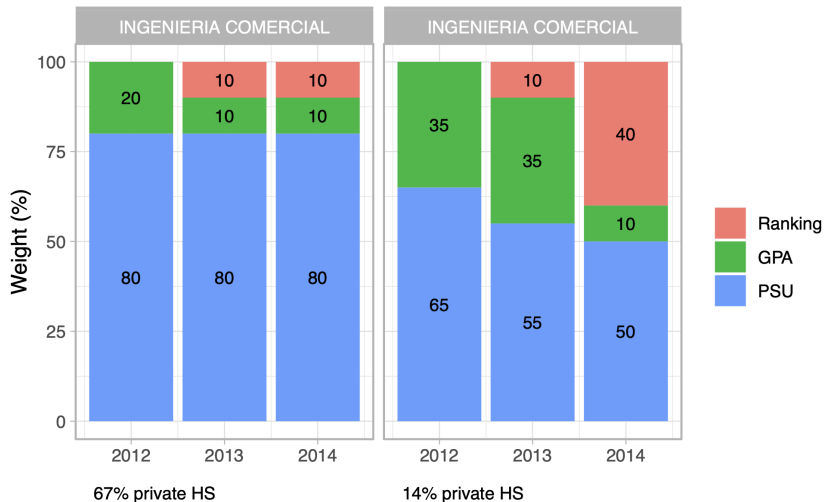# Distribution of weights across degrees

Year 2014

Heterogeneous weighing response: two examples

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

Gender	Public				Charter				Private			
	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*
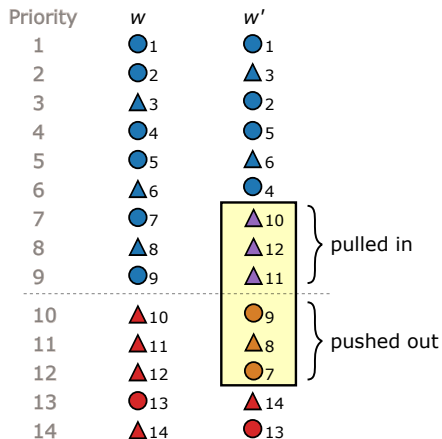
We document three key findings:

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
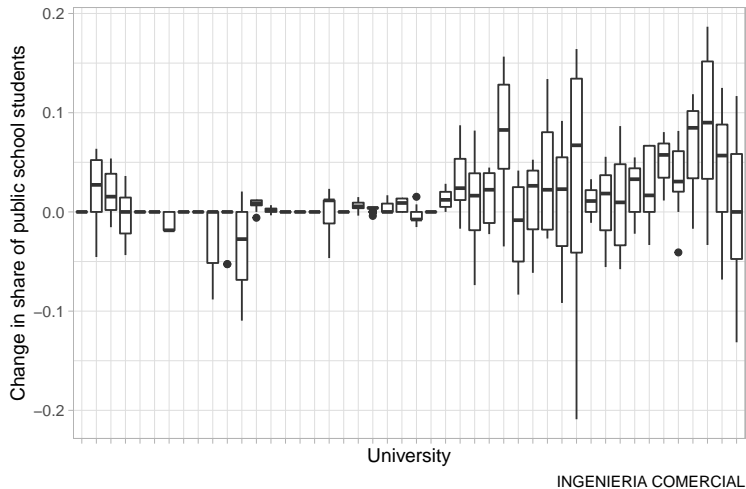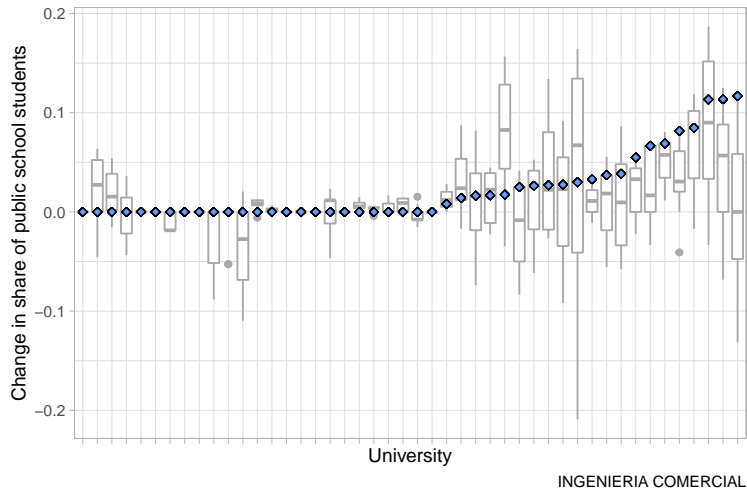 (Black et al. 2022)
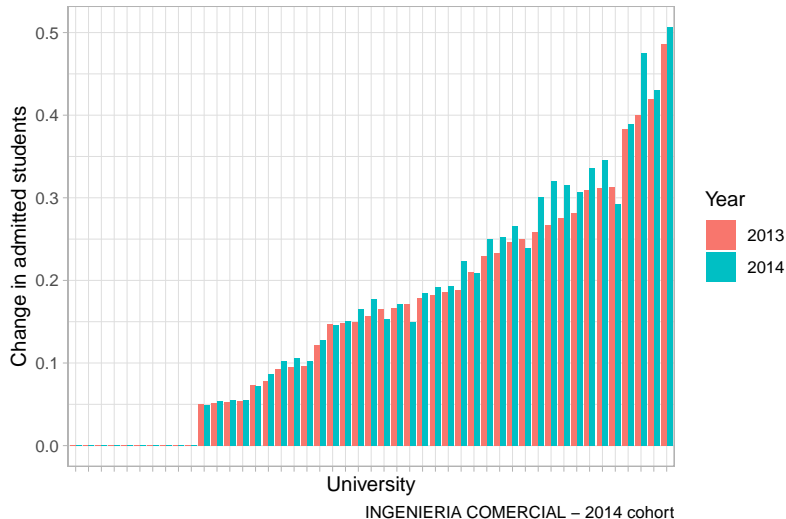
Priority	w	w'	
1	●1	●1	
2	●2	▲3	
3	▲3	●2	
4	●4	●5	
5	●5	▲6	
6	▲6	●4	
7	●7	▲10	pulled in
8	▲8	▲12	
9	●9	▲11	
10	▲10	●9	pushed out
11	▲11	▲8	
12	▲12	●7	
13	●13	▲14	
14	▲14	●13	

Heterogeneous ability to select students (extensive margin)

INGENIERIA COMERCIAL – 2014 cohort

Variety of choices within the "possibility frontier"

INGENIERIA COMERCIAL

Variety of choices within the "possibility frontier"

INGENIERIA COMERCIAL

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

Priority	2014 cohort		2013 cohort	
	w_{2013}	w_{2014}	w_{2013}	w_{2014}
1	◯1	◯1	◯1	◯1
2	◯2	△3	◯2	△3
3	△3	◯2	△3	◯2
4	◯4	◯5	◯4	◯5
5	◯5	△6	◯5	△6
6	△6	◯4	△6	◯4
7	●7	△10	●7	△10
8	△8	△12	△8	△12
9	●9	△11	△9	●11
10	△10	●9	△10	△9
11	△11	△8	●11	△8
12	△12	●7	△12	●7
13	◯13	△14	◯13	△14
14	△14	◯13	△14	◯13

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

Simulation

In progress

References I

Arcidiacono, Peter, Josh Kinsler, and Tyler Ransom (2022). "Divergent: The Time Path of Legacy and Athlete Admissions at Harvard". In: *Journal of Human Resources*, 0421–11641R1.

Black, Sandra E., Jeffrey T. Denning, and Jesse Rothstein (2022). "Winners and Losers? The Effect of Gaining and Losing Access to Selective Colleges on Education and Labor Market Outcomes". In: *American Economic Journal: Applied Economics.*

Bleemer, Zachary (2021). "Top Percent Policies and the Return to Postsecondary Selectivity".

Borghesan, Emilio (2023). "The Heterogeneous Effects of Changing SAT Requirements in Admissions: An Equilibrium Evaluation". Working Paper.

Chetty, Raj et al. (2020). "Income Segregation and Intergenerational Mobility Across Colleges in the United States*". In: *The Quarterly Journal of Economics* 135.3, pp. 1567–1633.

Kapor, Adam (2020). "Distributional Effects of Race-Blind Affirmative Action". Working Paper.

References II

Larroucau, Tomás, Ignacio Ríos, and Alejandra Mizala (2015). "The Effect of Including High School Grade Rankings in the Admission Process for Chilean Universities". In: *Revista de Investigación Educacional Latinoamericana* 52262.1, pp. 95–118.

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

America tries to figure out a fairer way to select students

Sidelining standardised tests won't make college admissions fairer

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.

American universities need to rethink their admissions process

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

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

⬜ Save

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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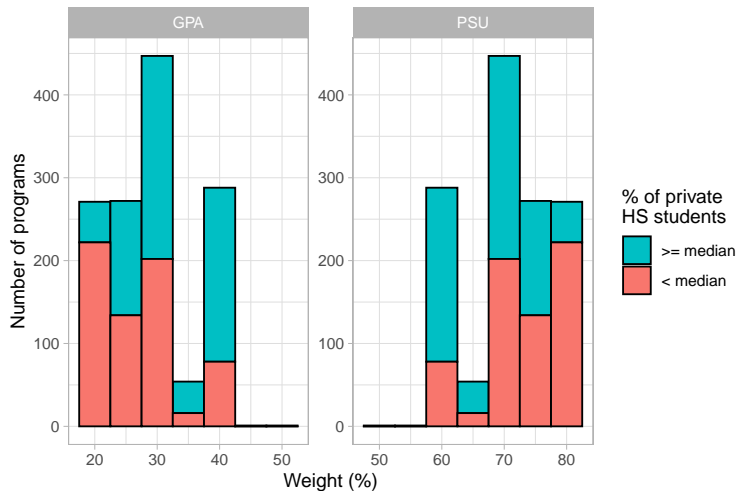# Centralized Admission Systems across the world
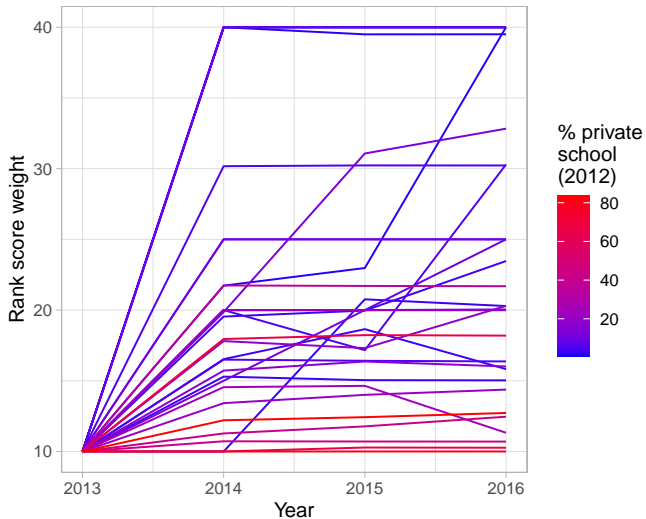

Level
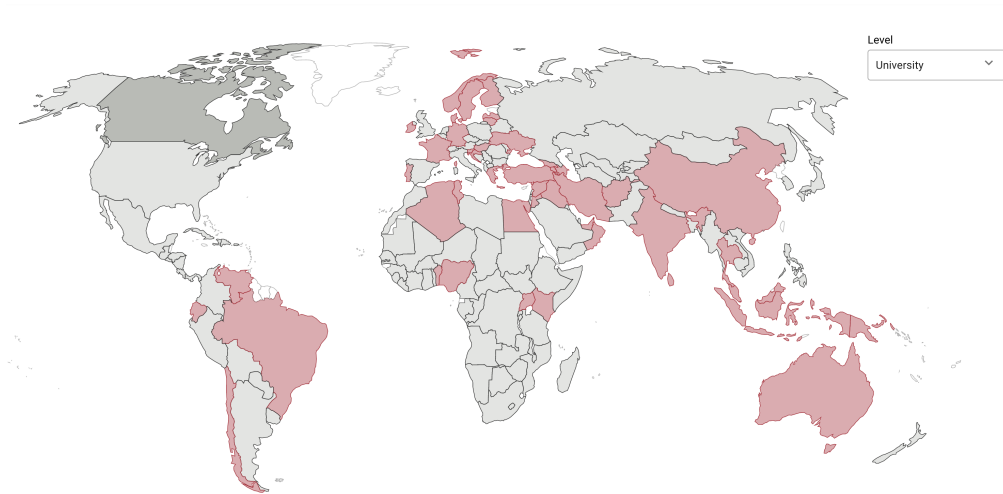
University

Annual Vacancies by University
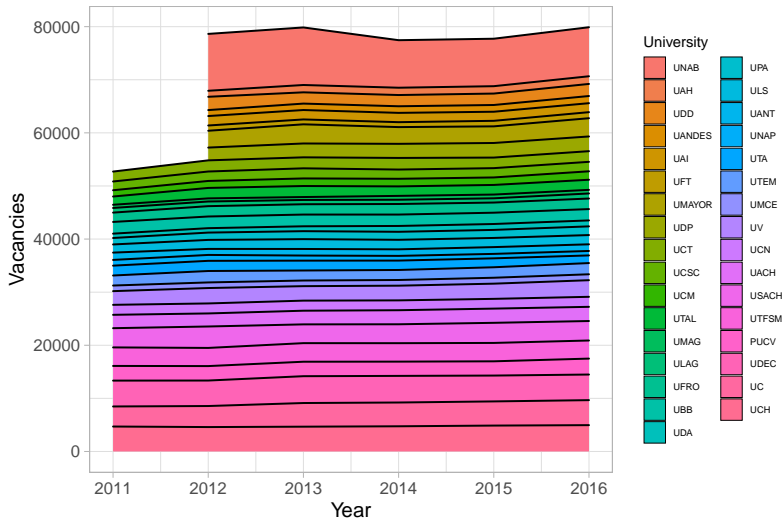
Distribution of AR weights across programs
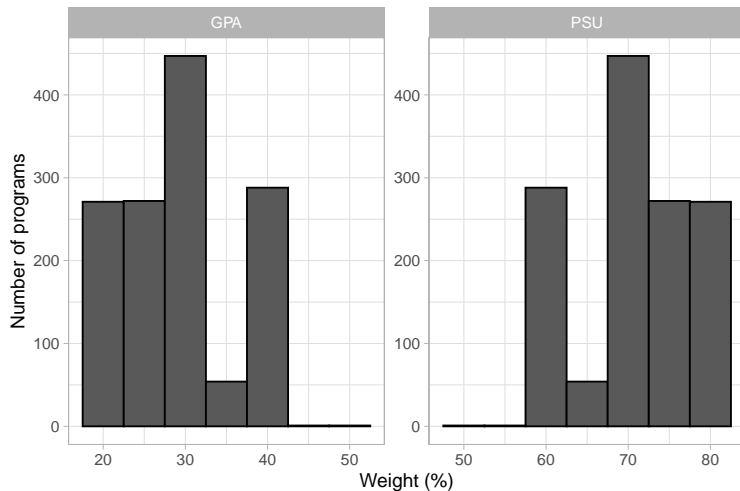
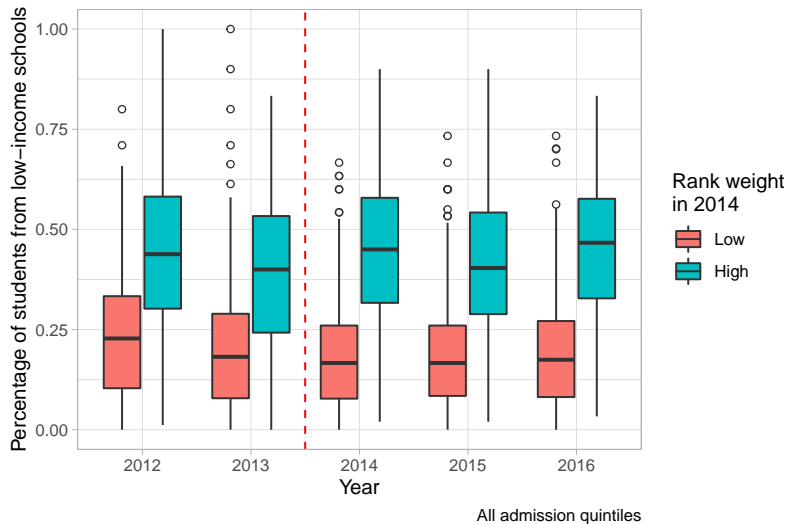# Distribution of AR weights across programs, by student type

Heterogeneity in rank score weight

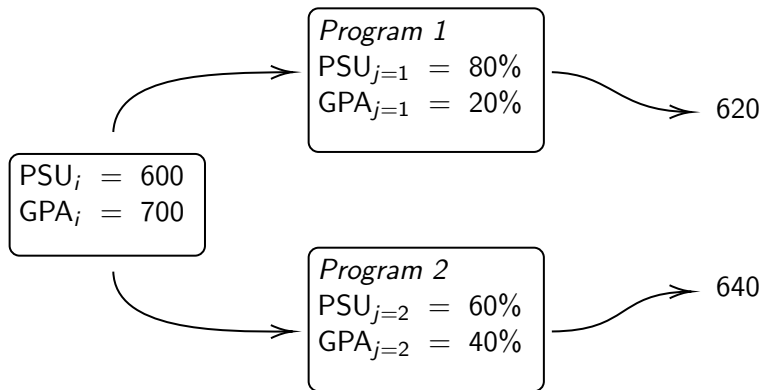# Degrees that weight ranking highly attract low-income students

All admission quintiles

Simple example of Admission Requirements weighing

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

PSU$_i$ = 600
GPA$_i$ = 700

Program 1
PSU$_{j=1}$ = 80%
GPA$_{j=1}$ = 20%

620

Program 2
PSU$_{j=2}$ = 60%
GPA$_{j=2}$ = 40%

640

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
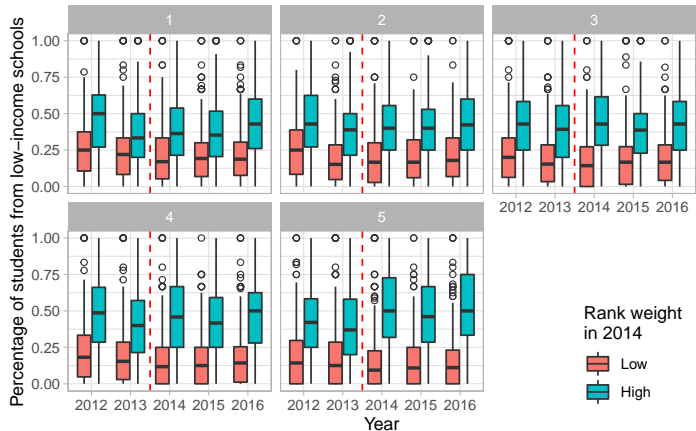
▶ If below N_c, ranking score is just GPA score

▶ 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)
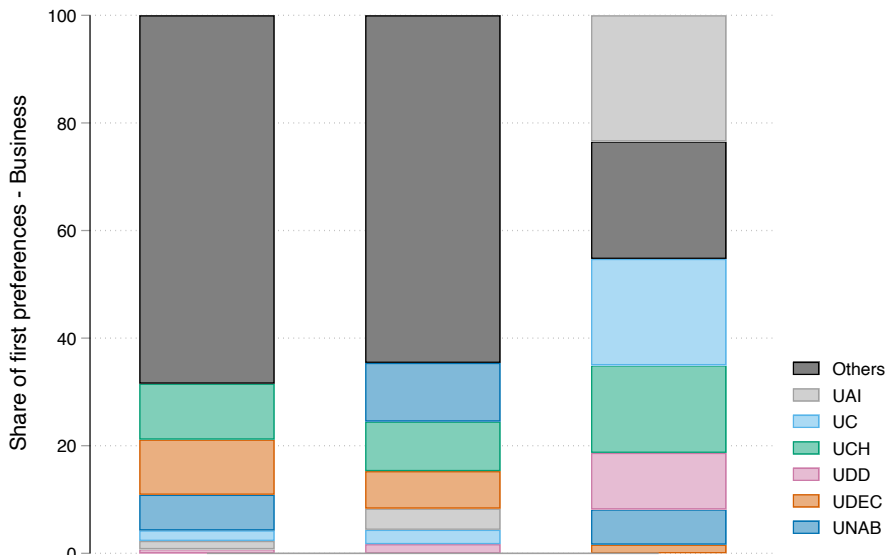

INGENIERIA COMERCIAL
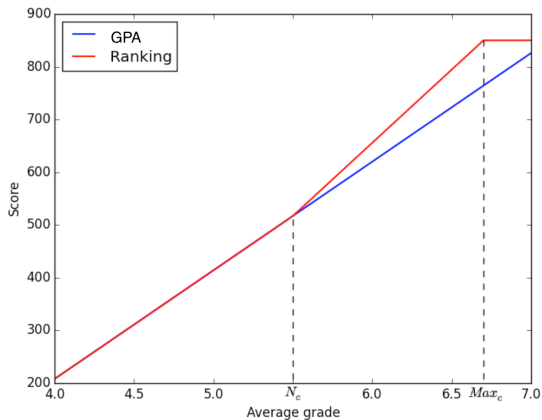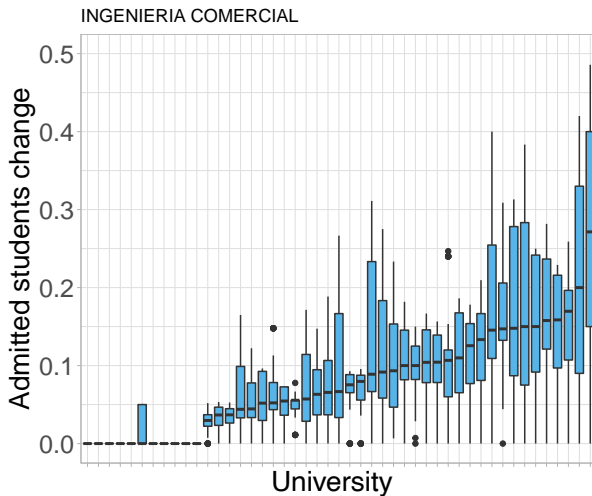
RS increases admittance of low-SES students only in top quintile of admittance

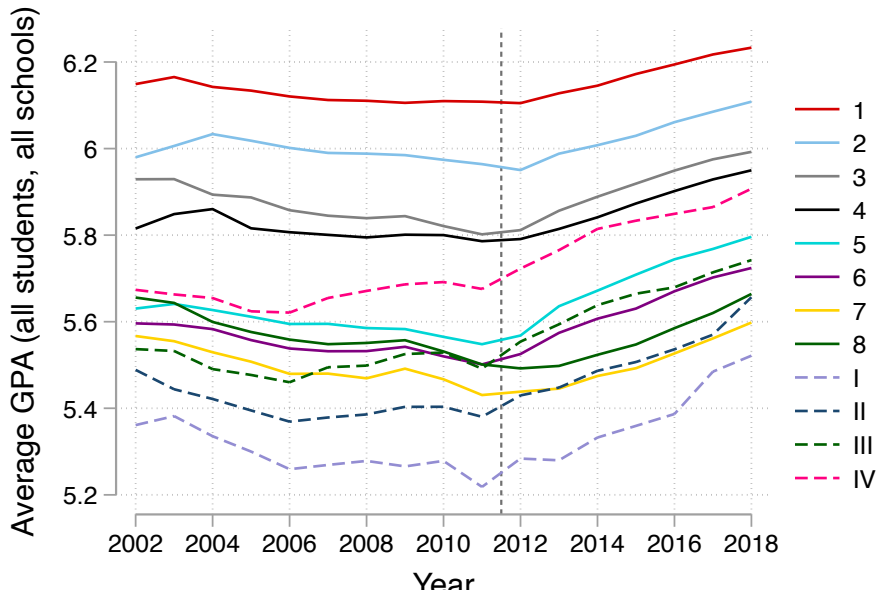Panes correspond to admission quintiles
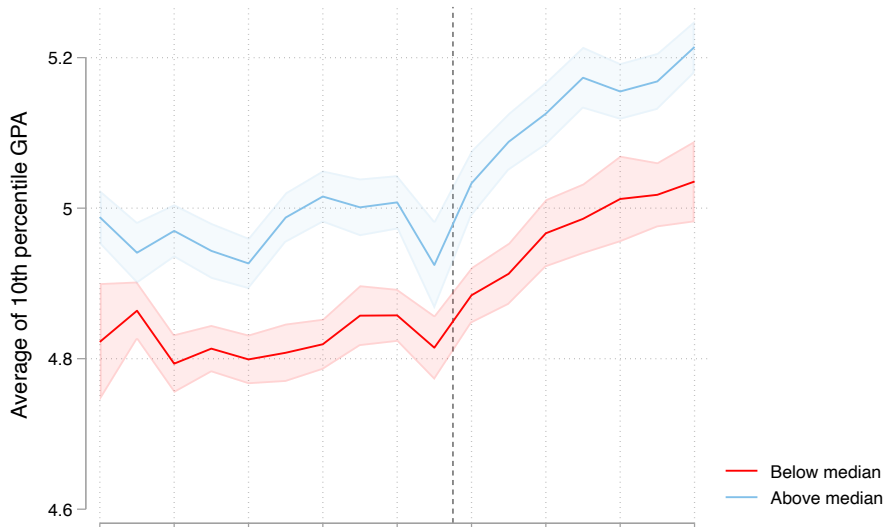
Application preferences by high school type

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