Jockeying for position: High school student mobility and Texas' top-ten percent rule

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Overview

- Context: Controversy over affirmative action in college admissions
- Goal: Restore minority access to selective universities
- Unintended consequence: Incentive to attend high school with lower achieving peers

Texas' top-ten percent policy

- Automatic admission to any of the 35 public colleges to the top 10% of each high school graduating class
  - Includes flagships
  - Class rankings are determined by campus administrators
- Relevant to 1 in 6 high school students
  - Current backlash

High school choice framework

- Indirect utility for family *i* in neighborhood *j* at high school *k* is given by

$$V_{ijk} = v_i\left(e_i\left(\gamma_i, Q_k, p_{ik}\right), N_j, P_j, \tau_k, d_{jk}, M_{ij}\right)$$

- A family will alter high school attendance plans only if

$$V_{ij'k'} > V_{ij^\circ k^\circ} \quad \text{for some feasible } j', k'$$

High school choice framework

- Only those neighborhoods and schools where the child would end up being in the top-ten percent become relatively more attractive

  - Before : $p_{ik} = a(\gamma_i, Q_k) \times c(\gamma_i, Q_k)$
  - After: $p_{ik} = Max[T_{ik}, a(\gamma_i, Q_k)] \times c(\gamma_i, Q_k)$

Theoretical prediction

- Any student who strategically chooses an alternative high school should be more likely to attend a school where he/she expects to be in the top-ten percent
  - Convergence in thresholds
  - Relevance of motive and opportunity

Empirical strategies

- Pre-post analyses of high school thresholds and the composition of top-ten percent students
- Differences-in-differences analyses of 8th to 10th grade transitions
  - Threshold at school attended
  - Choice among high schools within the same district as the middle school campus

Primary data source

- Individual-level Texas Assessment of Academic Skills (TAAS) test score data
  - In the Spring of each year, students are tested in reading and math in grades 3-8 and 10, and writing in grades 4, 8, and 10
  - Test score document submitted for *every* student
  - Unique student identifiers

Analysis years

Cohort	8th-grade year	10th-grade year
A	1992-**1993**	1994-1995
B	1993-**1994**	1995-1996
C	1994-**1995**	1996-1997
D	1995-**1996**	1997-1998
E	1996-**1997**	1998-1999
F	1997-**1998**	1999-2000

Predicting class rank

Dependent Variable = Percentile class rank		
	TX sample	National sample
Reading percentile score	0.226	0.251
	(0.047)	(0.013)
Math percentile score	0.493	0.466
	(0.043)	(0.014)
Observations	787	10,918
R-squared	.384	.361

- Secondary data source: *NELS 1988 2nd follow-up*
- Method: OLS with high school fixed effects

Predicting class rank

- Composite 8th-grade percentile score

$$s_{it} = 0.226 \times reading\ pctile_{it} + 0.493 \times math\ pctile_{it}$$

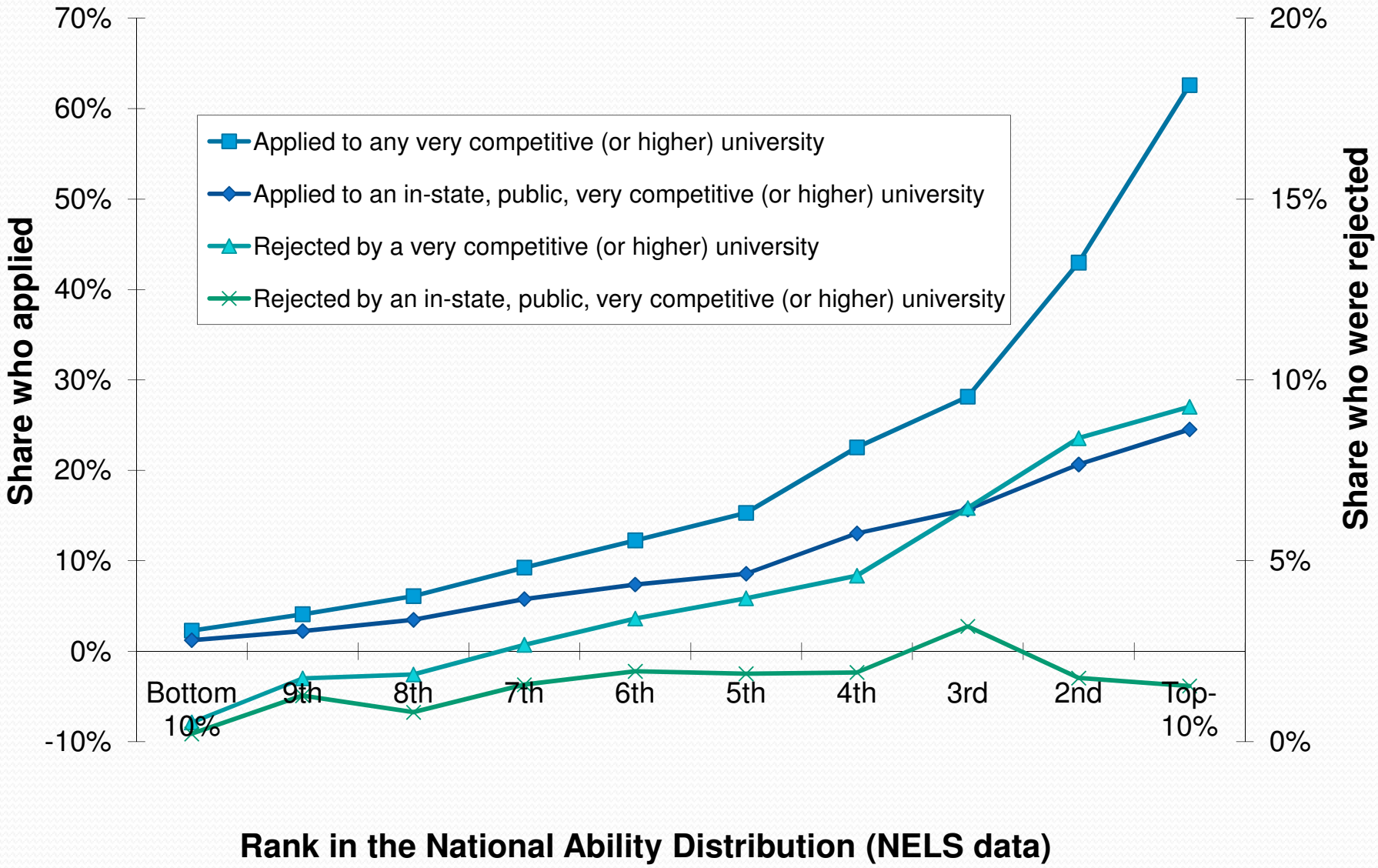
- Statewide percentile rank

$$r_{it} = F_t^8(s_{it})$$

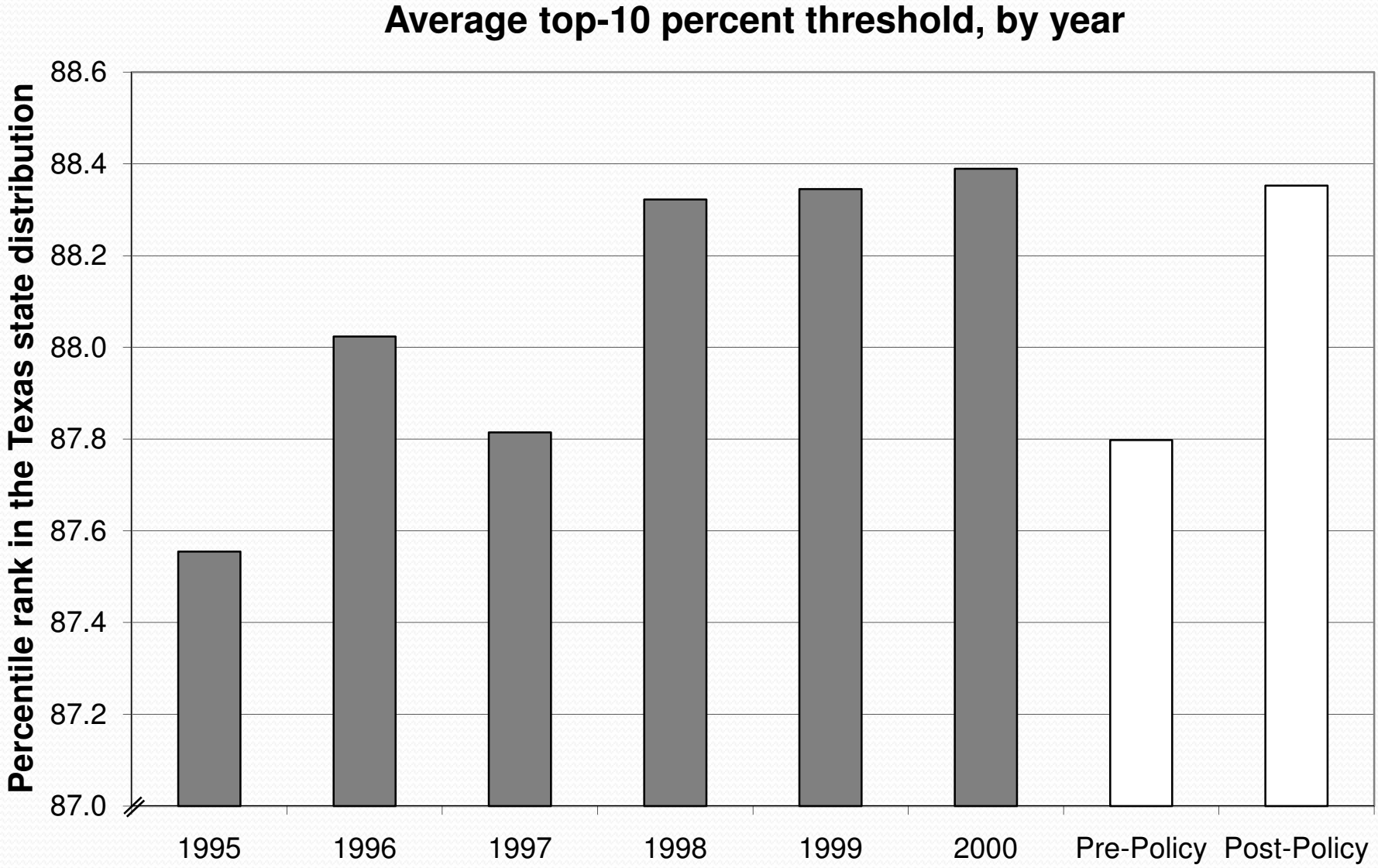
- Percentile rank within school k

$$r_{ikt} = F_{k,t+2}^{10}(r_{it})$$

Students' motivations



Exploratory distributional analysis



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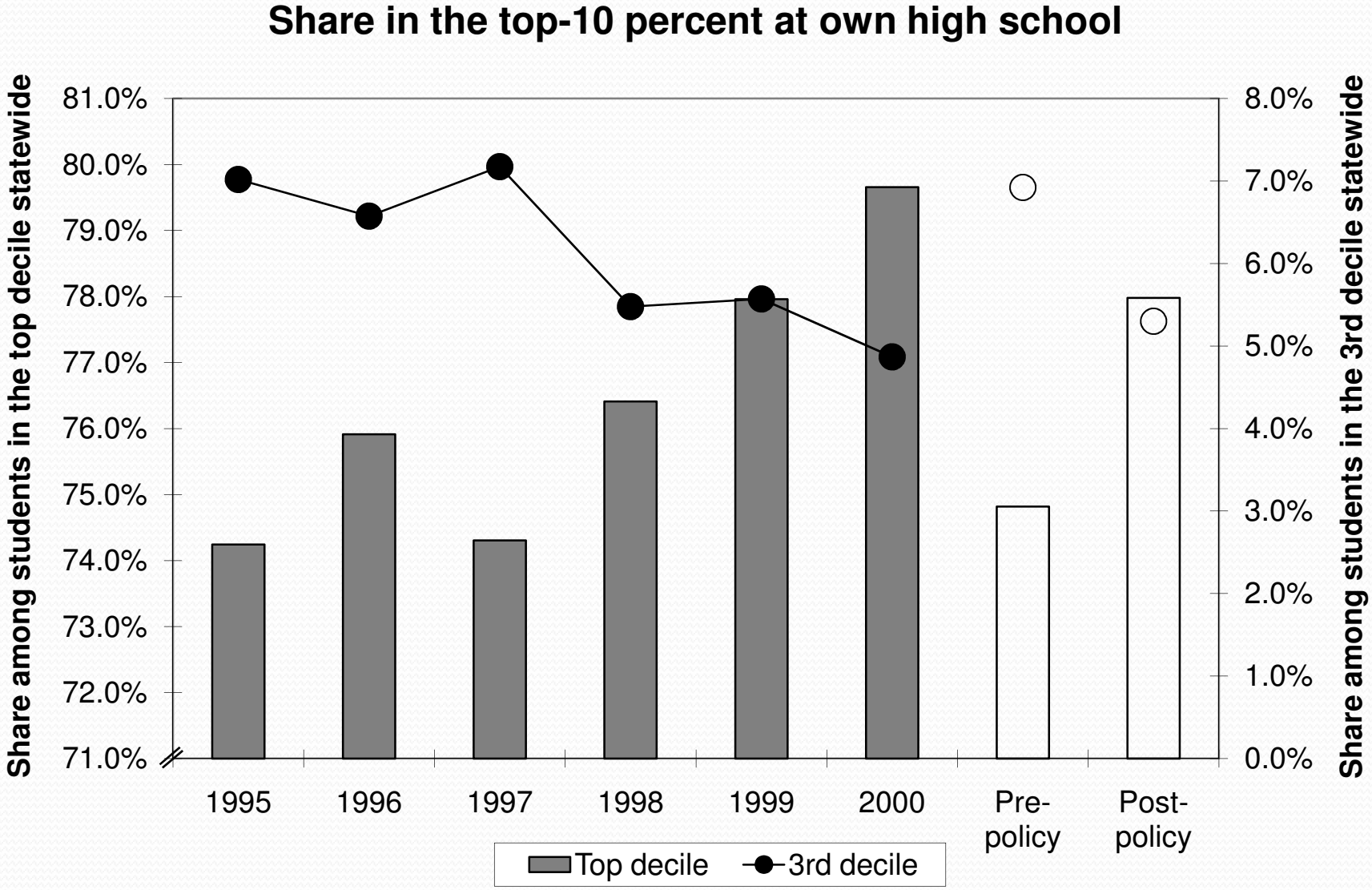


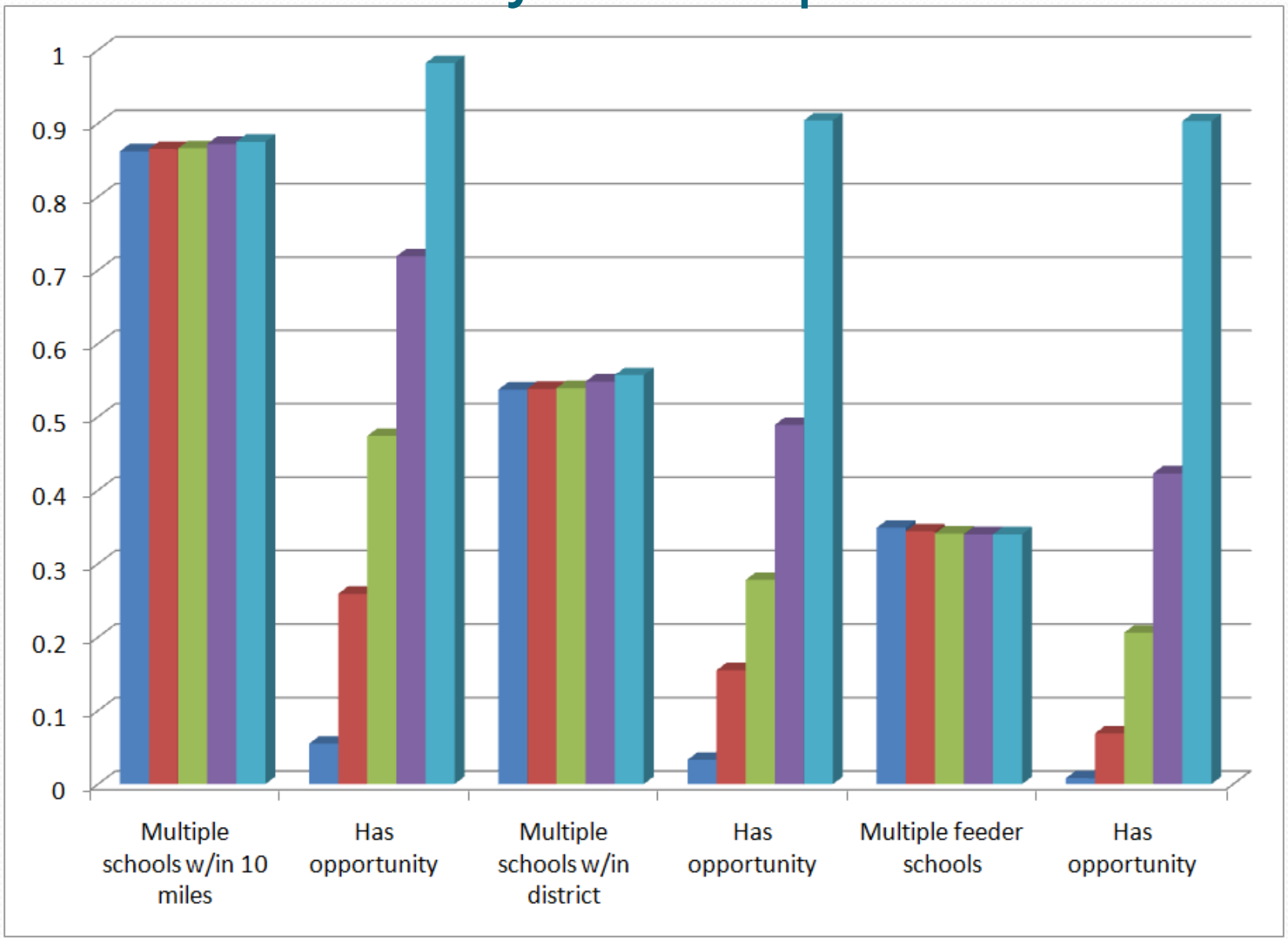
Analyses of 8th–10th grade transitions

- Threshold at high school attended, held constant at initial year value

$$thresh_{ijkt} = \alpha_{ij} + \sum_{a=1}^{5} \beta_a \times I_{ai} + \sum_{a=1}^{5} \gamma_a \times post_t \times I_{ai} + \mathbf{X}_{it}\boldsymbol{\Gamma} + \varepsilon_{ijkt}$$

- Addition of interactions with the presence of local top-10% opportunities

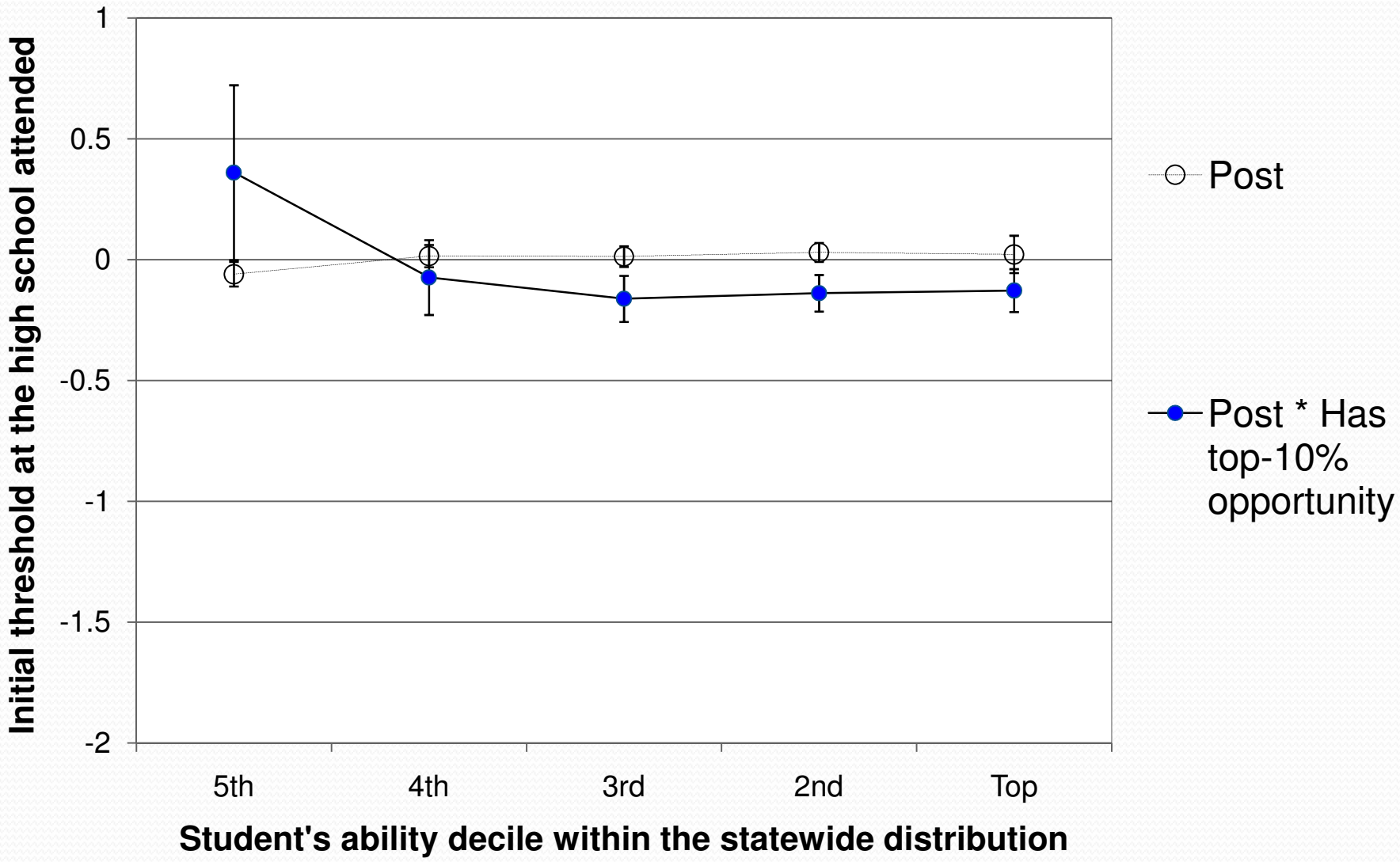
Analysis samples



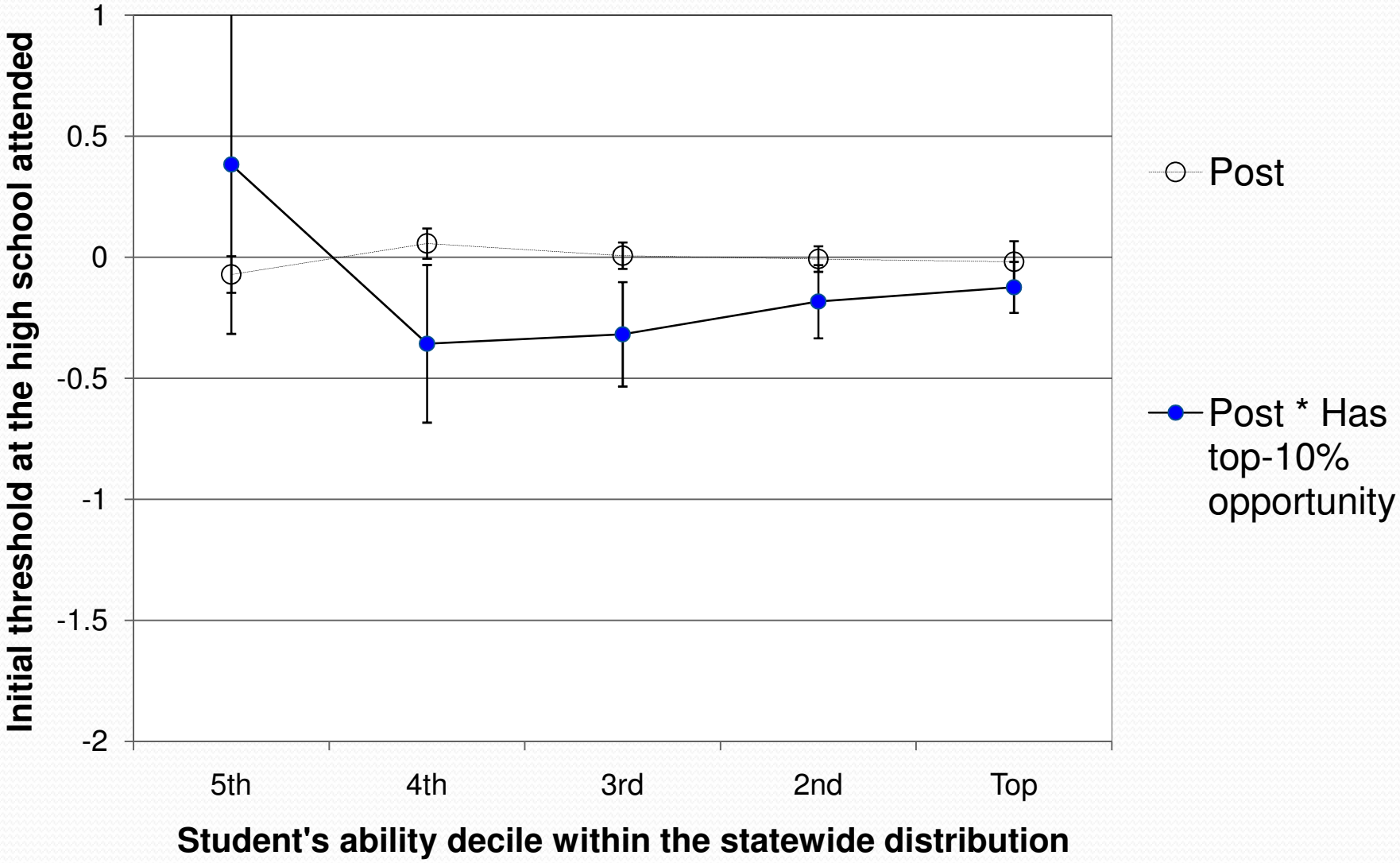
Impact on threshold at HS attended

	(1)	(2)	(3)	(4)	(5)
	Actual Threshold$_{ikt}$	*Baseline Threshold$_{ikt}$*			
Post * Top-Decile	-0.028	-0.101	-0.103	-0.130	-0.169
	[0.067]	[0.026***]	[0.029***]	[0.041***]	[0.090*]
Post * 2nd Decile	0.126	-0.062	-0.064	-0.095	-0.132
	[0.075*]	[0.029**]	[0.034*]	[0.051*]	[0.107]
Post * 3rd Decile	0.237	-0.055	-0.064	-0.085	-0.111
	[0.083***]	[0.026**]	[0.030**]	[0.044*]	[0.084]
Post * 4th Decile	0.389	-0.010	-0.009	-0.010	-0.077
	[0.092***]	[0.028]	[0.032]	[0.049]	[0.097]
Post * 5th Decile	0.497	-0.037	-0.042	-0.052	-0.012
	[0.099***]	[0.03]	[0.034]	[0.051]	[0.089]
Observations	1,047,935	1,047,935	904,993	570,584	223,115
Sample Restriction	None	None	More than one HS w/in 10 miles	More than one HS in district	More than one feeder HS

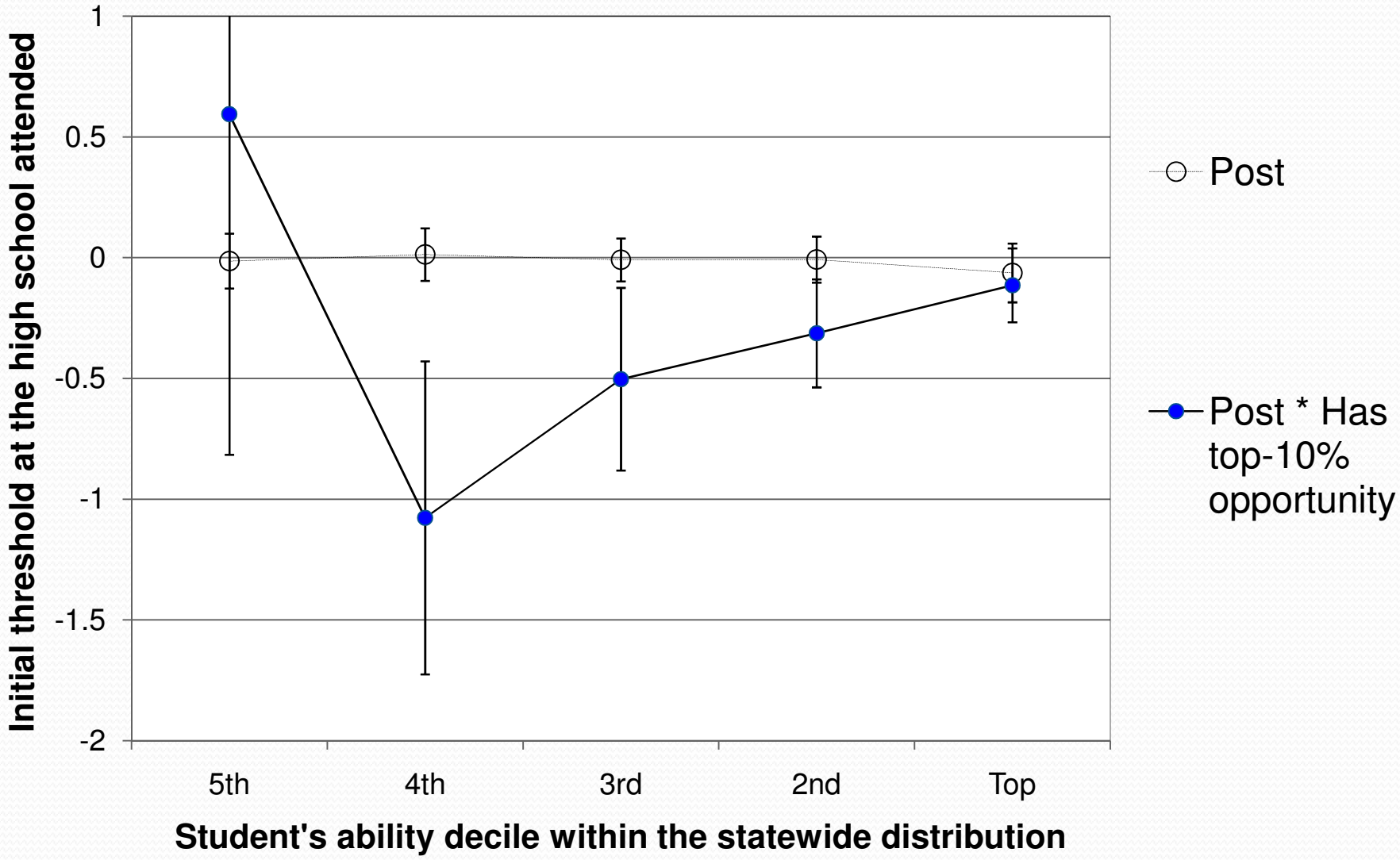
Multiple high schools within 10 miles



Multiple high schools within the district



Multiple feeder high schools



Current direction

- Decomposition of the threshold patterns using discrete choice analysis, treating each district as a separate market
  - Role of school quality, distance, feeder high school status, and student demographics
  - Simulation of changes in enrollment shares and composition of the top-10%