

The Effects of School Turnaround Strategies in Massachusetts

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April 2017

School “turnaround” approaches

- ▶ Recent emphasis on approaches to improve underperforming schools **dramatically** and **rapidly**
 - ▶ NCLB
 - ▶ School Improvement Grants (especially \$3.5 billion via ARRA beginning in 2010)
 - ▶ Transformation = replace principal and implement reforms in a School Improvement Plan
 - ▶ Turnaround = replace principal and >50% of school staff
 - ▶ Restart = charter conversion or external manager
 - ▶ Closure
 - ▶ Related (and often overlapping) state activity

School “turnaround” approaches

- ▶ Whether such approaches can improve student outcomes is critical for policymakers to understand, but evidence is mixed.
- ▶ National study of SIG program found null effects
 - ▶ *Obama administration spent billions to fix failing schools, and it didn't work* – Washington Post 2017
 - ▶ *The \$7 billion school improvement grant program: Greatest failure in the history of the US Department of Education?* – Smarick 2017
- ▶ State studies have found more mixed evidence

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School improvement in MA

- ▶ Massachusetts is one of the nation's highest performing school systems
- ▶ In 2010, legislature passed legislation to improve failing schools
- ▶ MA DESE sought to identify the most “stuck” schools – lowest performing and least improving – for intervention as Level 4 schools
 - ▶ Required to implement an improvement strategy
 - ▶ Eligible for SIG funding
 - ▶ Provided an array of other supports

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Identifying Level 4 schools

- ▶ Credible causal inferences enabled because of how the policy was implemented
- ▶ In March 2010, MA DESE:
 - ▶ Identified all 645 Title I schools in Corrective Action, Restructuring, or Improvement status
 - ▶ Identified the lowest performing 10% of these schools
 - ▶ 2006, 2007, 2008, and 2009 student achievement data
 - ▶ Of these 65 schools, created movement indicators
 - ▶ Bottom half on movement labeled Level 4
 - ▶ Thus, there is a sharp cutoff for Level 4 eligibility

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The current study

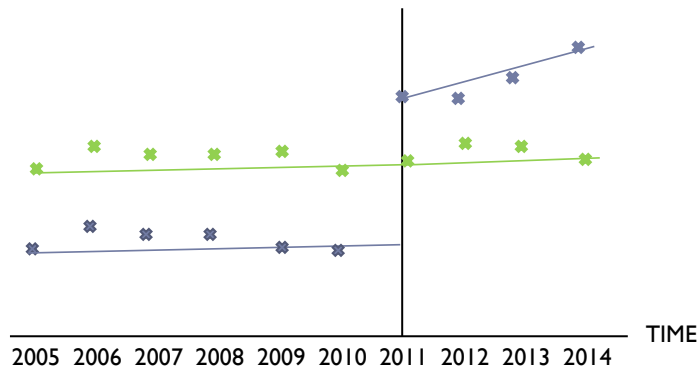
- ▶ (1) What is the effect of being identified as a Level 4 school on student performance?
- ▶ (2) What can we say about why this effect occurred?
- ▶ Data from 2006 through 2014
 - ▶ Student achievement and demographic data
 - ▶ Focus on students in grades 3-8
 - ▶ Focus here on math (very similar results in ELA)

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Central approach: Intuition

▶ Difference-in-differences/time-series design

- ▶ Look for change in school performance over time in Level 4 schools, but *not* in other schools.

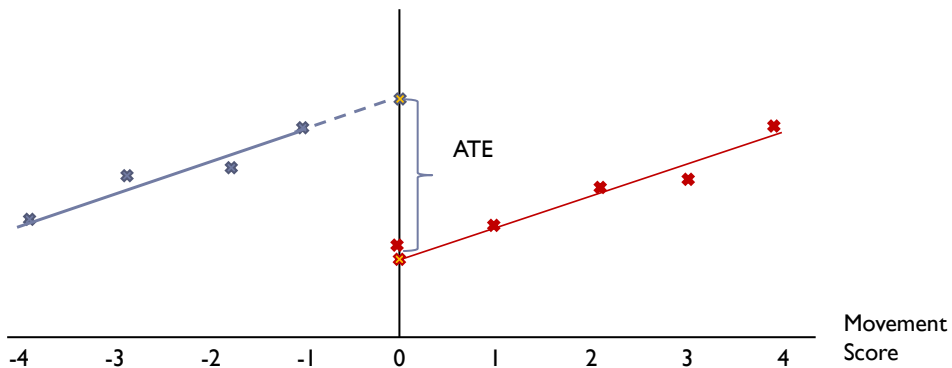


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Central approach: Intuition

▶ Regression discontinuity design

- ▶ Disruption in trend on either side of an exogenous cut-point

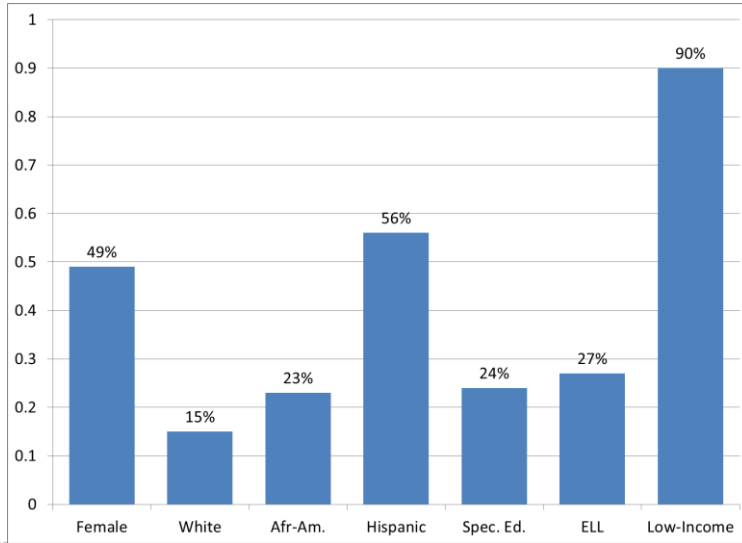


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Key Findings

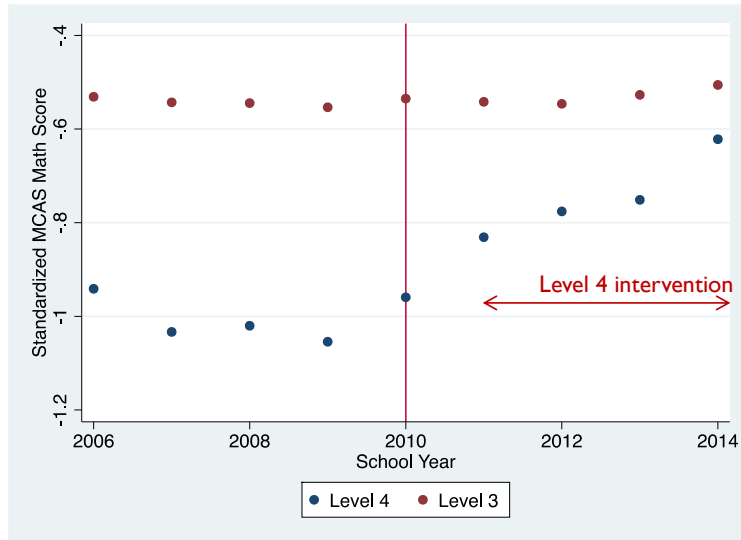
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Level 4 schools tend to serve low-income, minority, low-performing students



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Large, positive effects of Level 4 status



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DD: Effects consistent across models

	Preferred model
Effect in 2011	0.126 ** (0.047) [p=0.008]
Effect in 2014	0.290 *** (0.073) [p<0.001]
Year effects	x
School effects	x
Student controls	x

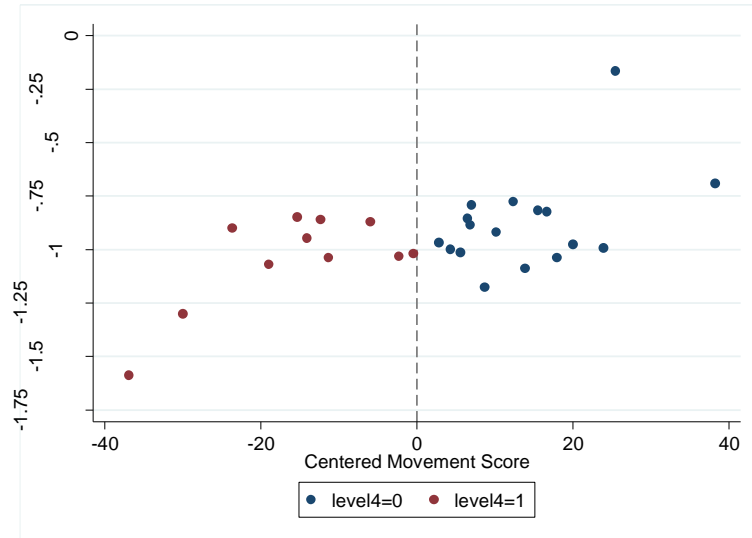
For comparison, this is about the effect of reducing class size by 30% in elementary school.

This is about 1/3 of the income-based test-score gap.

Note: ~, p<0.10; *, p<0.05; **, p<0.01; ***, p<0.001

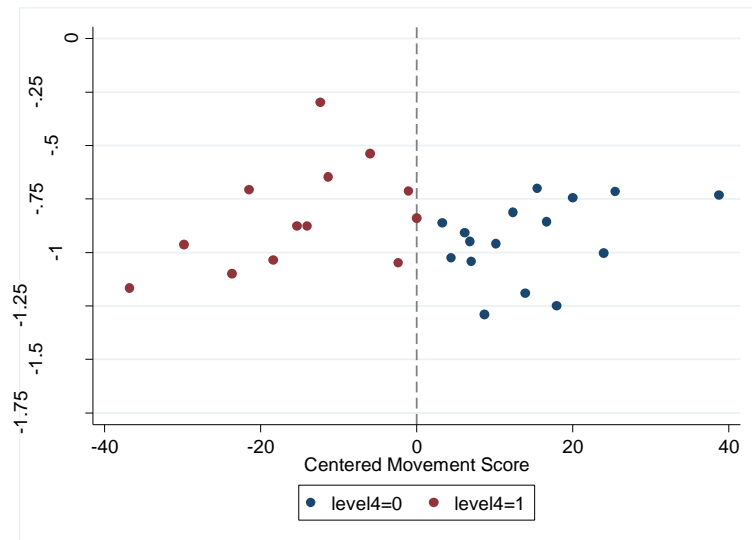
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RDD: no difference in 2010



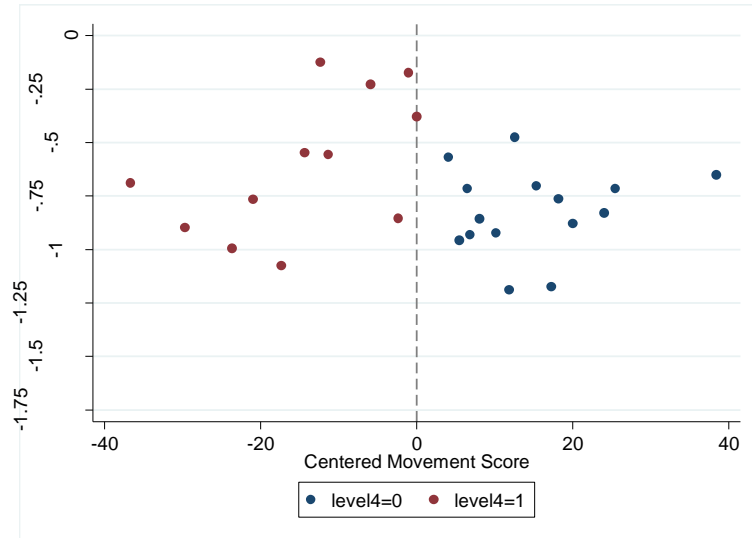
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RDD: large effect in 2011 (1st year)



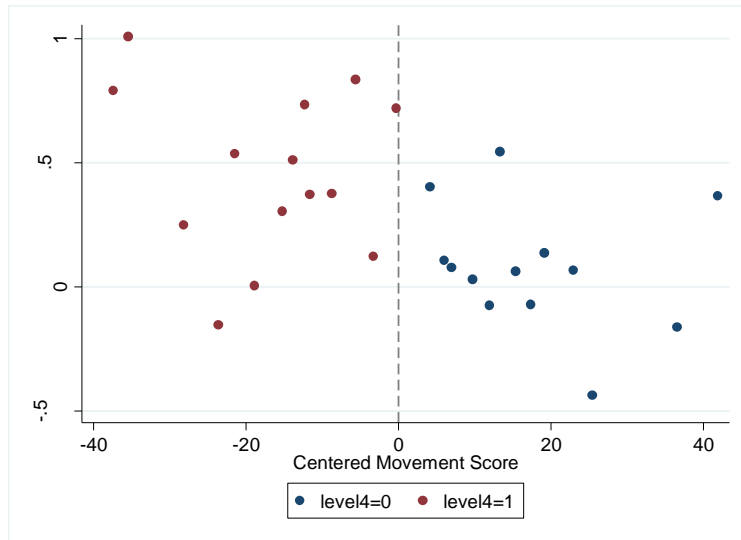
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RDD: larger effect by 2014 (4th year)



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Average gain: 2010 to 2014



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Mechanisms

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Changes in teacher effectiveness


- ▶ Two means by which teacher quality can improve in these schools:
 - ▶ Schools replaced ineffective teachers with new, more effective teachers, AND/OR
 - ▶ Existing teachers improved their performance
- ▶ Estimate standard value-added model before and after.
- ▶ Make two central comparisons
 - ▶ Teachers who move INTO or OUT OF a Level 4 school (before)
 - ▶ Teachers who STAY in Level 4 school (before vs. after)

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Changes in teacher effectiveness


- ▶ Schools are replacing less effective teachers with more effective ones

	Teacher Level Fixed Effect
Move Out (Pre-Level 4)	-0.239
Move In (Pre-Level 4)	-0.028
Difference	0.211



- ▶ Teachers in these schools improve substantially

	Teacher Level Fixed Effect
Stayer (Pre-Level 4)	-0.143
Stayer (Post-Level 4)	0.023
Difference	0.166



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Conclusion and implications

- ▶ Being identified as a Level 4 school improved student outcomes significantly and substantially in the first year, on average
- ▶ AND, it changed schools' performance trajectories
 - ▶ By 2014, being identified as a Level 4 school had improved student outcomes by ~0.40 to 0.50 SD.
- ▶ These results are consistent using two very different sources of identifying variation:
 - ▶ Within school over time (DD)
 - ▶ Across schools in same time period (RDD)

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Conclusion and implications

- ▶ **Constellation of factors seems to be important for success**
 - ▶ Whole package included improvement strategy, support, and accountability

- ▶ **Teacher effectiveness in these schools changed substantially**
 - ▶ Teachers who left had quite low value-added
 - ▶ Teachers who entered (from the district) had somewhat above average value-added in other schools
 - ▶ Teachers who remained in Level 4 schools improved substantially

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Conclusion and implications

- ▶ **This serves as proof of concept that rapid and sustained improvement is possible**
 - ▶ Effects are larger than in other contexts, suggesting that something about the MA approach worked better

- ▶ **Suggests that:**
 - ▶ Schools made wise human capital decisions that made a real difference
 - ▶ School context matters substantially for teacher effectiveness

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Thank You

Questions/Comments
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