

Comment on Vasconcellos' et al.

*“Evaluating the Impact of Participation in the  
Brazilian Public School Mathematical  
Olympiad on Math Scores in Students’  
Standardized Tests”*

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# Summary

- Authors investigate differences in math scores between schools that participate and do not participate in Brazil's Public School Math Olympiad
- Using a combination of regression and propensity scores weighting, they find that participating schools gain, on average 2 points on Prova Brazil- Math, a standardized 9th grade test
- Under some assumptions, the program is cost-effective

# Why use propensity scores?

- Remove biases due to differences in observables

	Average Impact on the Math Score	
	Coeff.	t
Differences of means without controls	7.44***	10.89
ATT	2.14***	4.73
ATT (diff-in-diff)*	1.99***	5.03

From Table 3 in the paper

# Why use propensity scores?

- A simple difference-in-difference estimator would yield same estimate (if anything, more conservative)

	Participating Schools	Non- Participating Schools	
9th Grade Math 2005	239.7	233.1	
9th Grade Math 2007	239.8	231.7	
Change Over Time	0.1	-1.4	DD=1.5

From Appendix Table A in paper

- Authors' preferred estimate: 1.99 (SE 0.40)

# Advantage of simple DD?

- More transparent
- Effect is all driven by math loss among non-participating schools

	Participating Schools	Non- Participating Schools	
9th Grade Math 2005	239.7	233.1	
9th Grade Math 2007	239.8	231.7	
Change Over Time	0.1	-1.4	DD=1.5

# Interpretation: Is it really a something about the Math Olympiad?

- One potential counterfactual test is to look at differences in *language* scores between schools that participate and do not participate in the Olympiad

	Participating Schools	Non- Participating Schools	
9th Grade Portuguese 2005	224.4	220.8	
9th Grade Portuguese 2007	227.8	222.4	
Change Over Time	3.4	1.6	DD=1.8

From Appendix Table A in paper

- Same effect on math and language

# Interpretation: Is it really a something about the Math Olympiad?

- Most schools participate in the Olympiad
- Why don't the few that do not participate do so?
  - Worse on school observables, suggesting more complicated pedagogical environments

<b>No. of Schools</b>	
<b>Treated</b>	<b>Control</b>
22,703	1,756

From Table 3 in paper

# Suggestions

- Can you find out more about school contexts and reasons for non-participation?
- Can you get more years of data?
  - Focus on schools that some years participate and some years do not
    - Is the time series of their scores correlated with when they participate?
- Can you exploit any source of geographic variation, for example, exogenous changes in the supply of math teachers?
- Report effect sizes (in terms of standard deviations)