

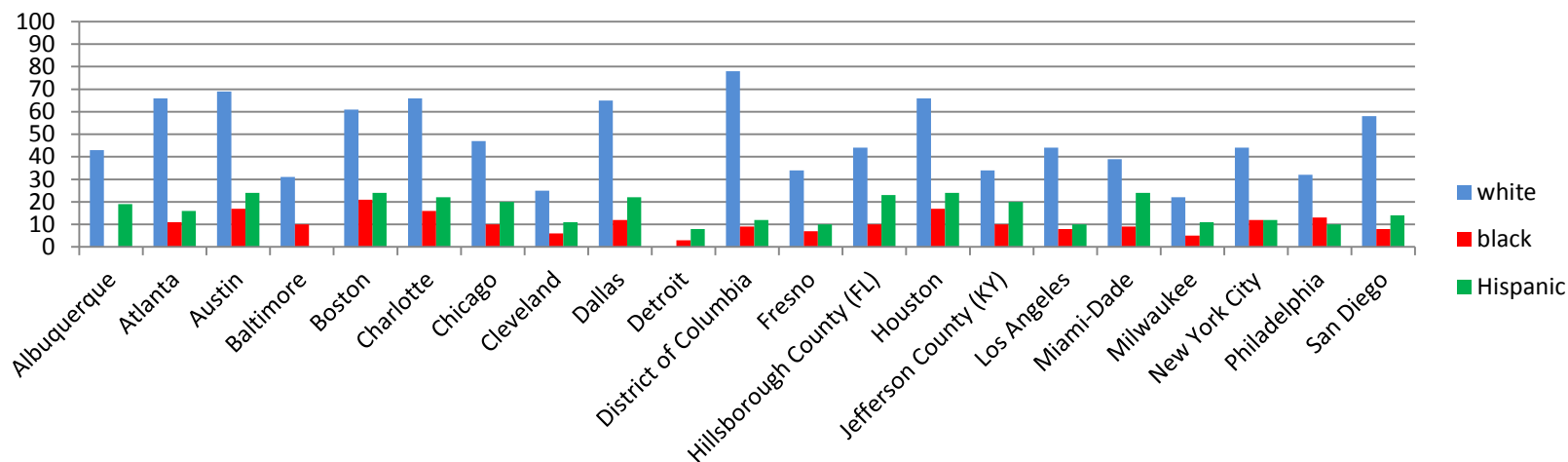
# Inequality in the 21<sup>st</sup> Century: The Declining Significance of Discrimination

Roland G. Fryer, Jr.  
Robert M. Beren Professor of Economics  
Harvard University  
EdLabs  
NBER

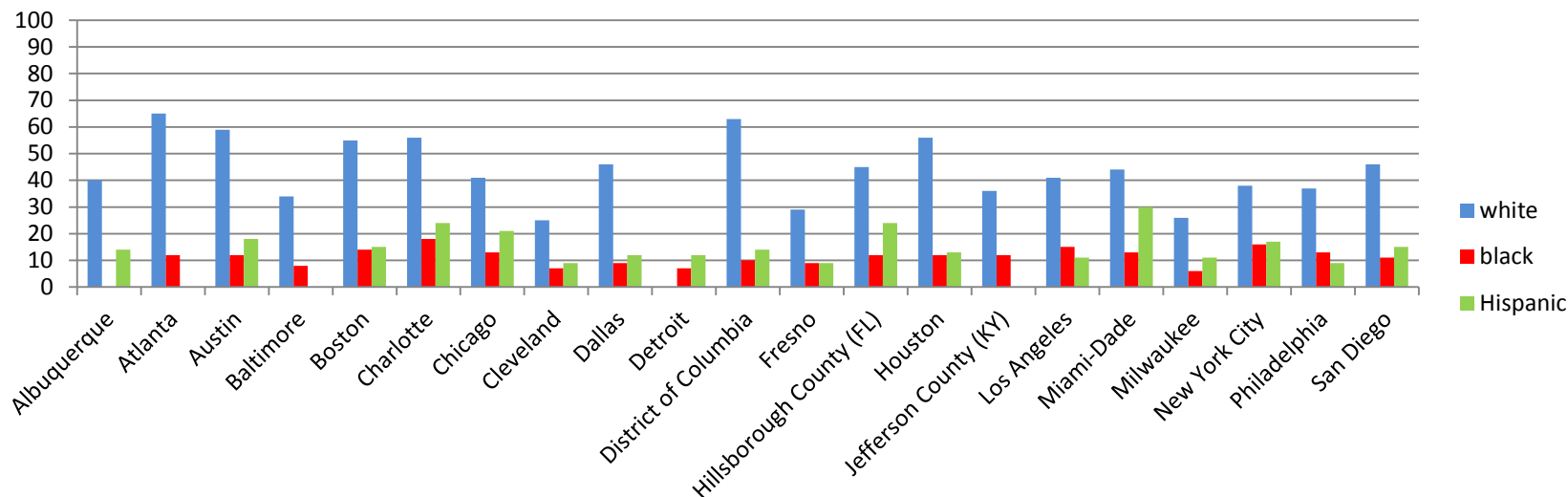


*Among cities that participate in NAEP, the magnitude of racial differences in educational achievement is startling.*

**Percent Proficient, 8<sup>th</sup> Grade Math, NAEP 2011**

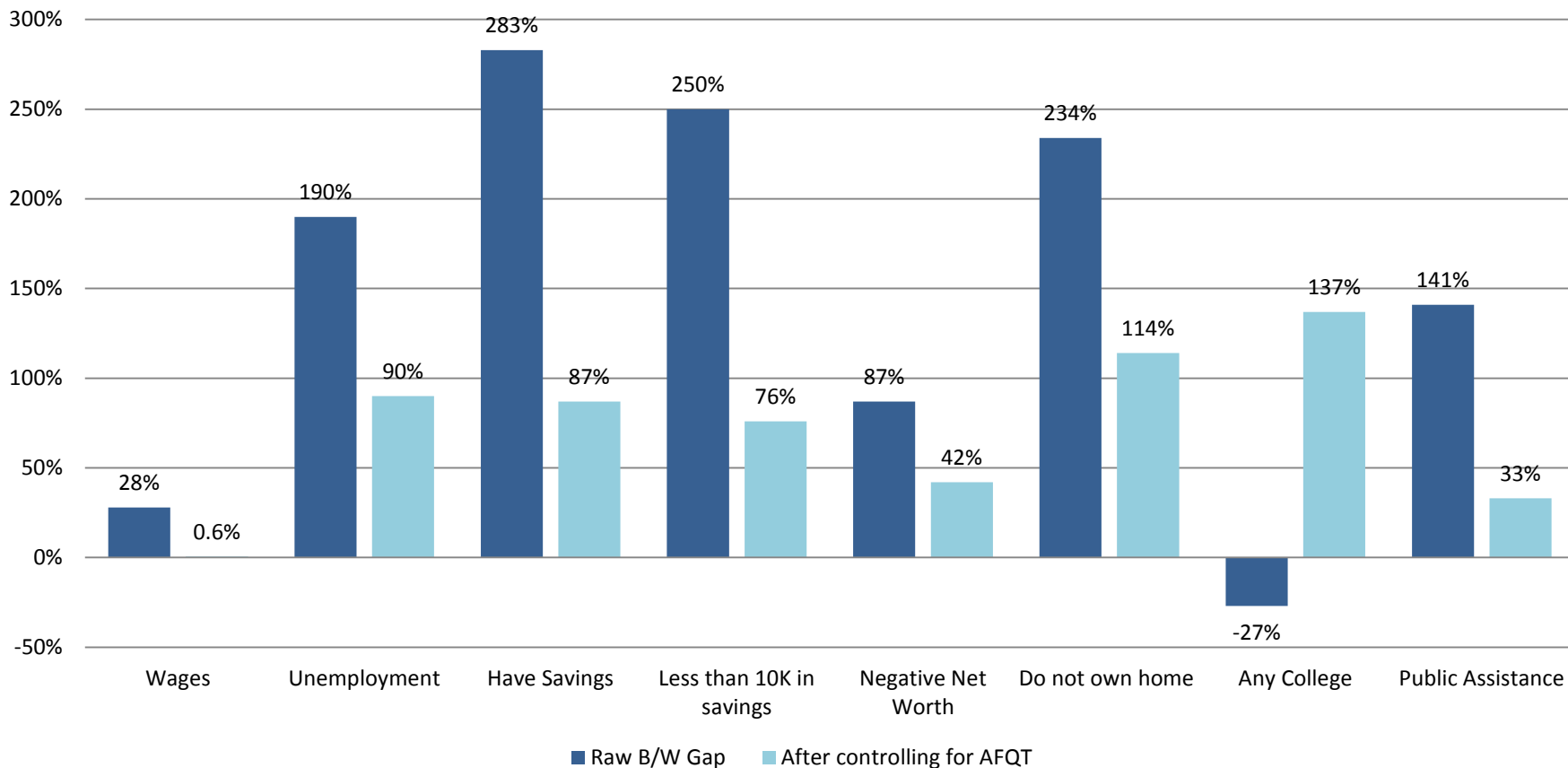


**Percent Proficient, 8th Grade Reading, NAEP 2011**



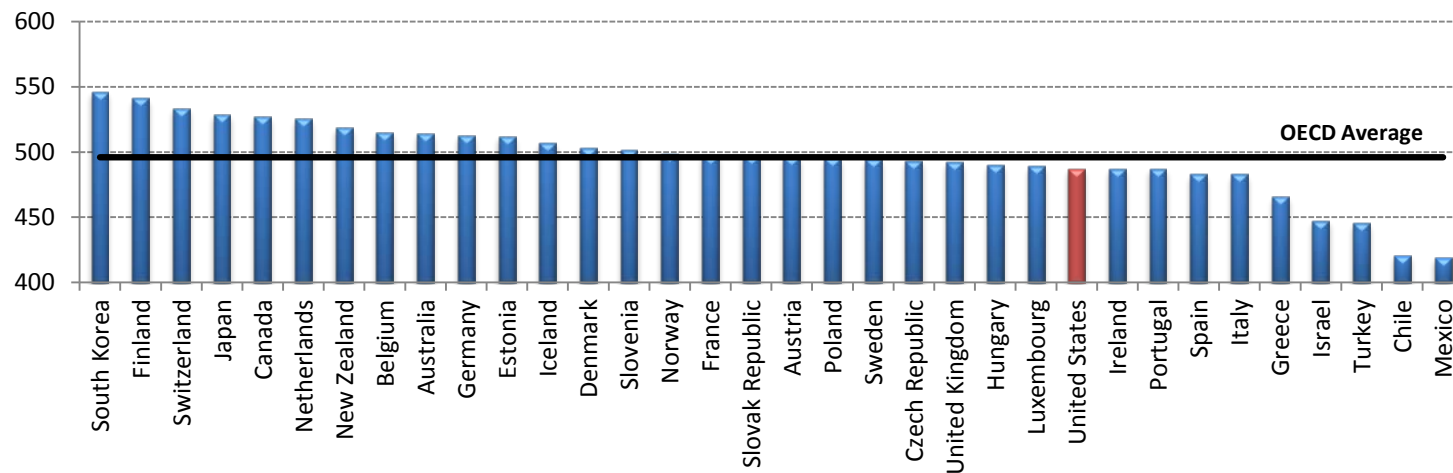
*Accounting for **educational achievement** drastically reduces racial and socioeconomic inequality across a wide range of important life outcomes.*

**Black-White Differences in Economic Outcomes (NLSY79)**  
**Before and After Controlling for 8th Grade Test Scores**



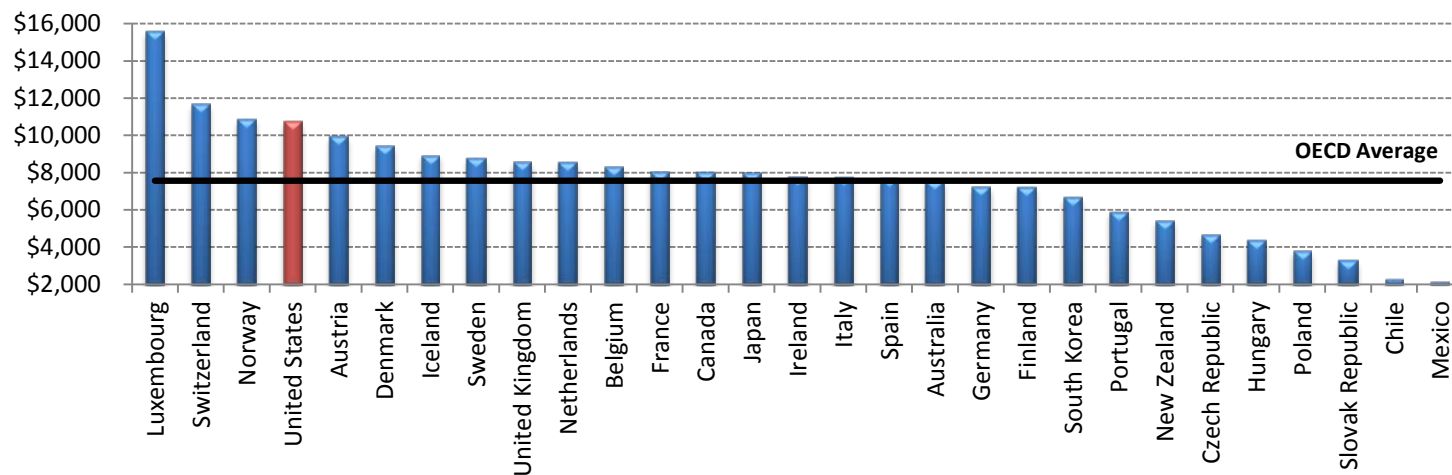
## United States vs. OECD Countries

### Mathematics Literacy Among 15-Year-Olds, 2009



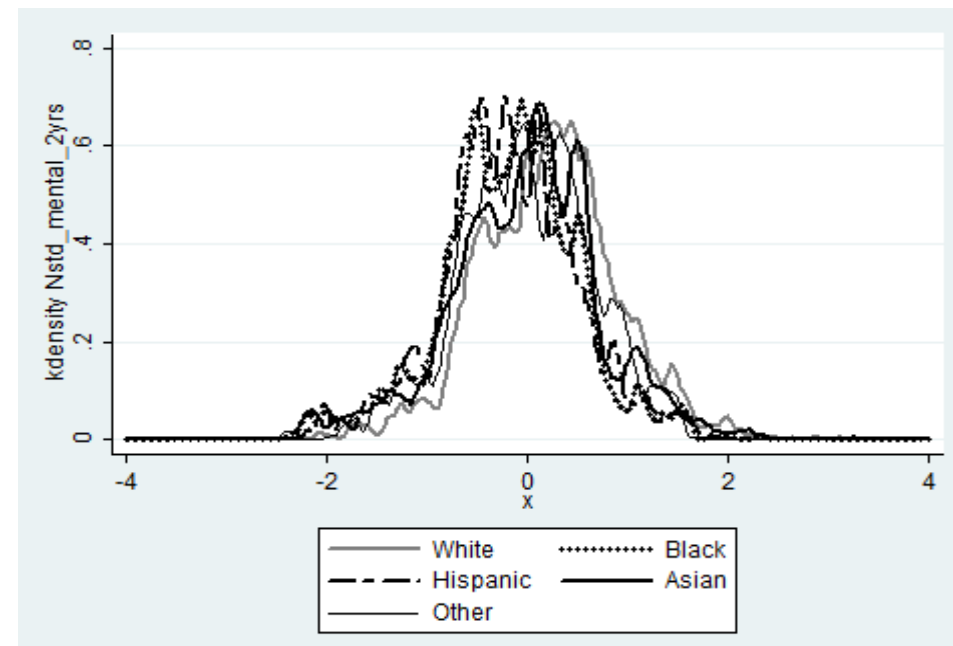
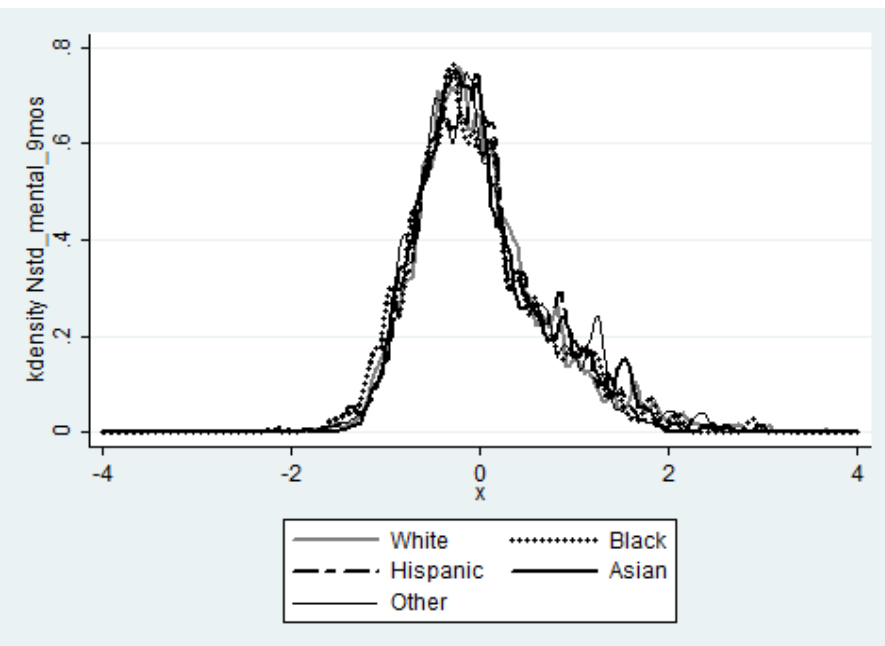
Source: OECD, Program for International Student Assessment (PISA), 2009

## Annual Expenditure Per Student, 2007

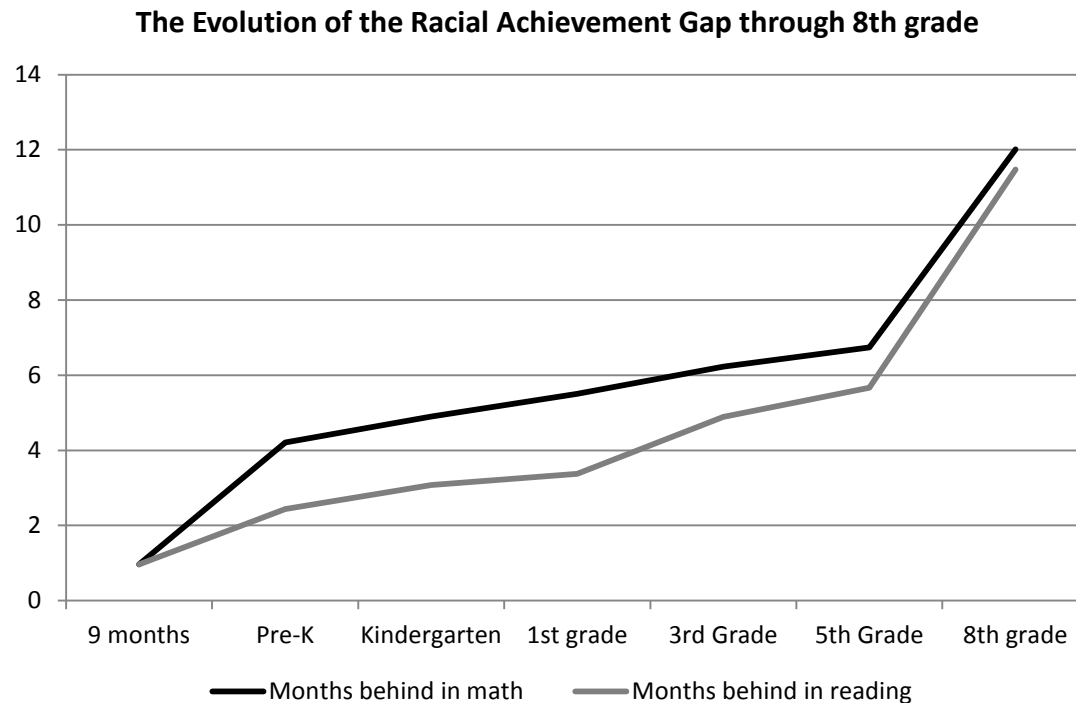


Source: Education at a Glance 2010: OECD Indicators

- Test Score Gap Does Not Exist at 9 months old
- The correlation between 9 month old scores and 12 year old scores is 0.3
- Black kids lose ground starting at age 2



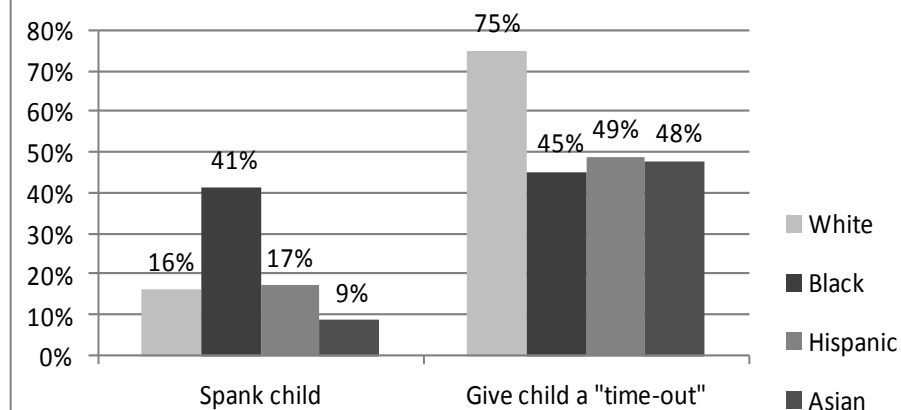
- Black kids enter kindergarten 0.64 SD (or 8 months) behind their white peers
- The gap can be accounted for by 13 simple variables that proxy for Pre-K home environment
- The gap grows 0.1 SD per year from Kindergarten through eighth grade
- We don't really know why



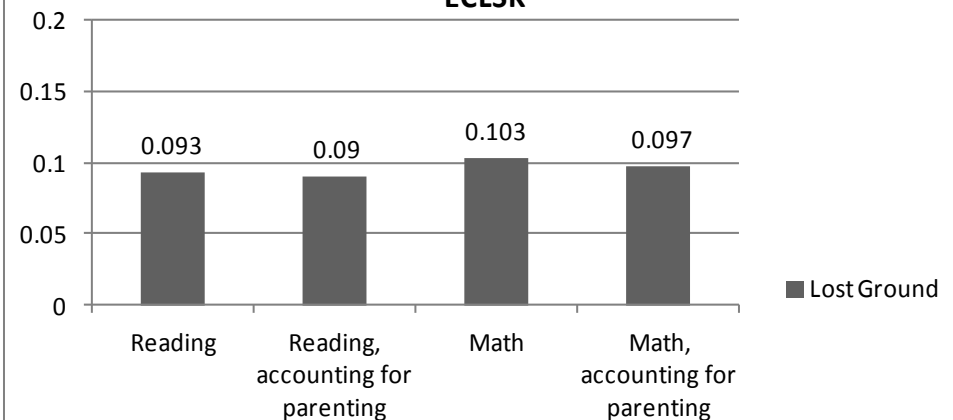
We tested dozens of hypotheses, including:

- Poor parenting
- Racist Teachers
- Summer Setback
- Flawed Standardized Tests
- School Quality

## How parents respond to misbehavior, by race

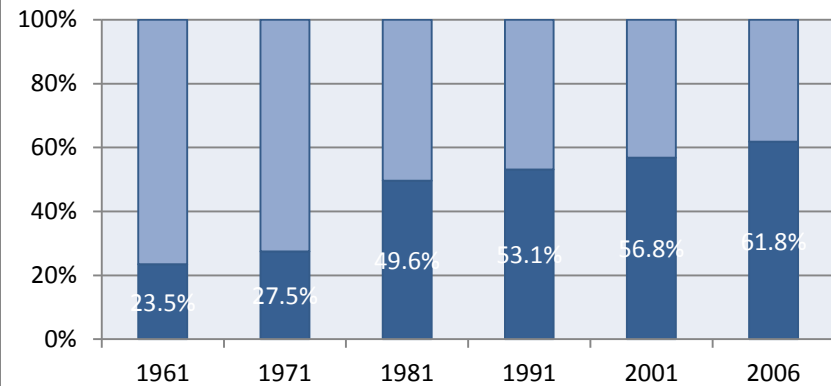


## Lost ground from Fall Kindergarten to Spring 1st grade, before and after accounting for parenting practices, ECLSK

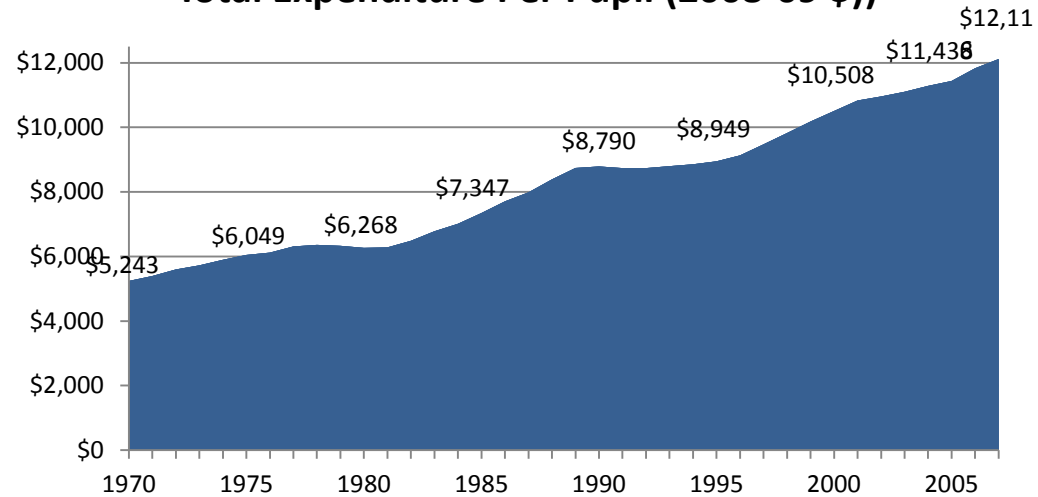


# Conventional Wisdom Seems Ineffective

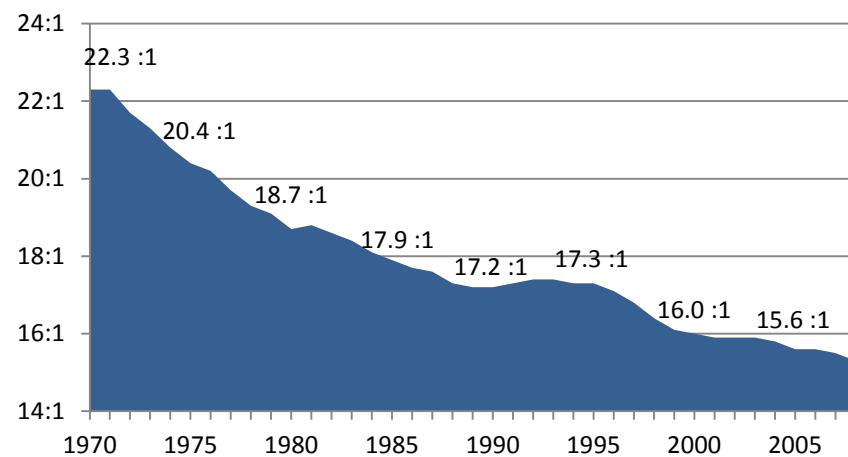
## Percentage of Teachers with a Master's Degree or Higher



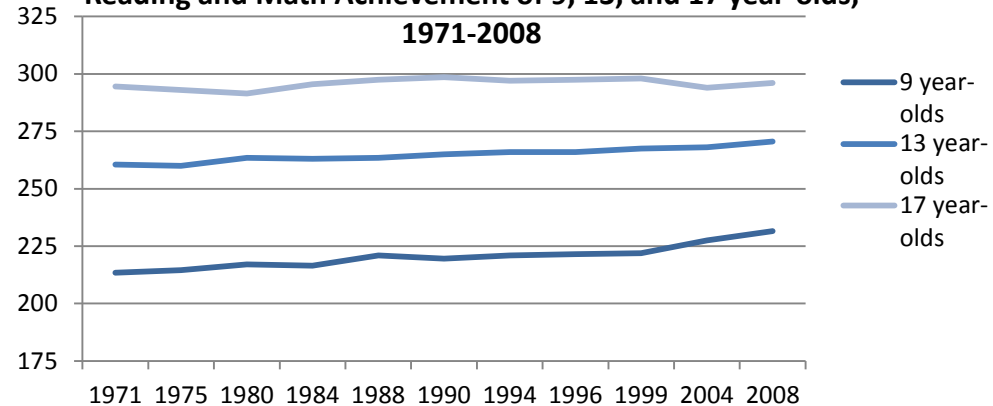
## Total Expenditure Per Pupil (2008-09 \$)



## Student to Teacher Ratio



## Reading and Math Achievement of 9, 13, and 17 year-olds, 1971-2008





Distributed a total of \$10 million to kids in 5 cities.

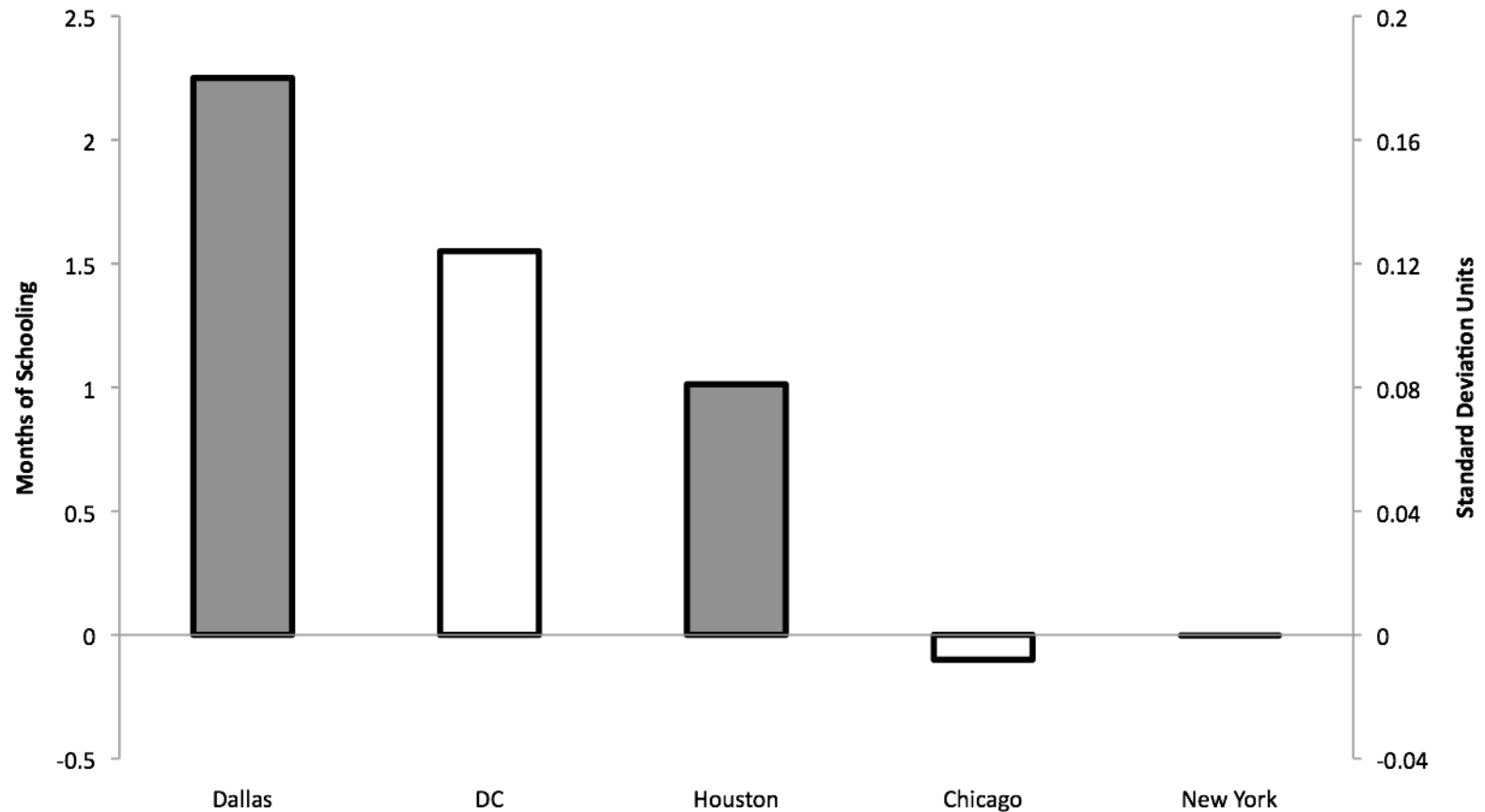
A. Input Experiments

- Dallas
- Houston
- Washington DC

B. Output Experiments

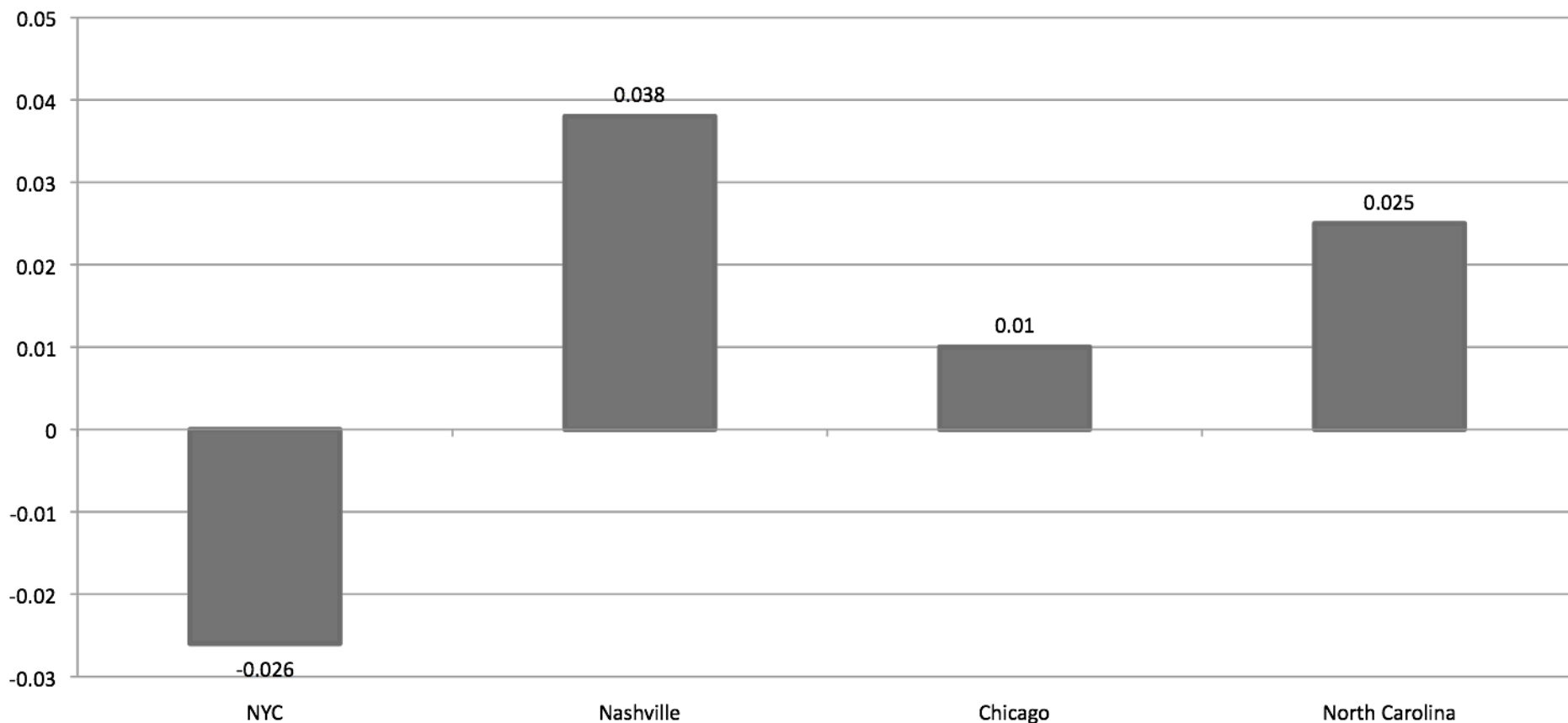
- New York City
- Chicago
- Teacher Incentives

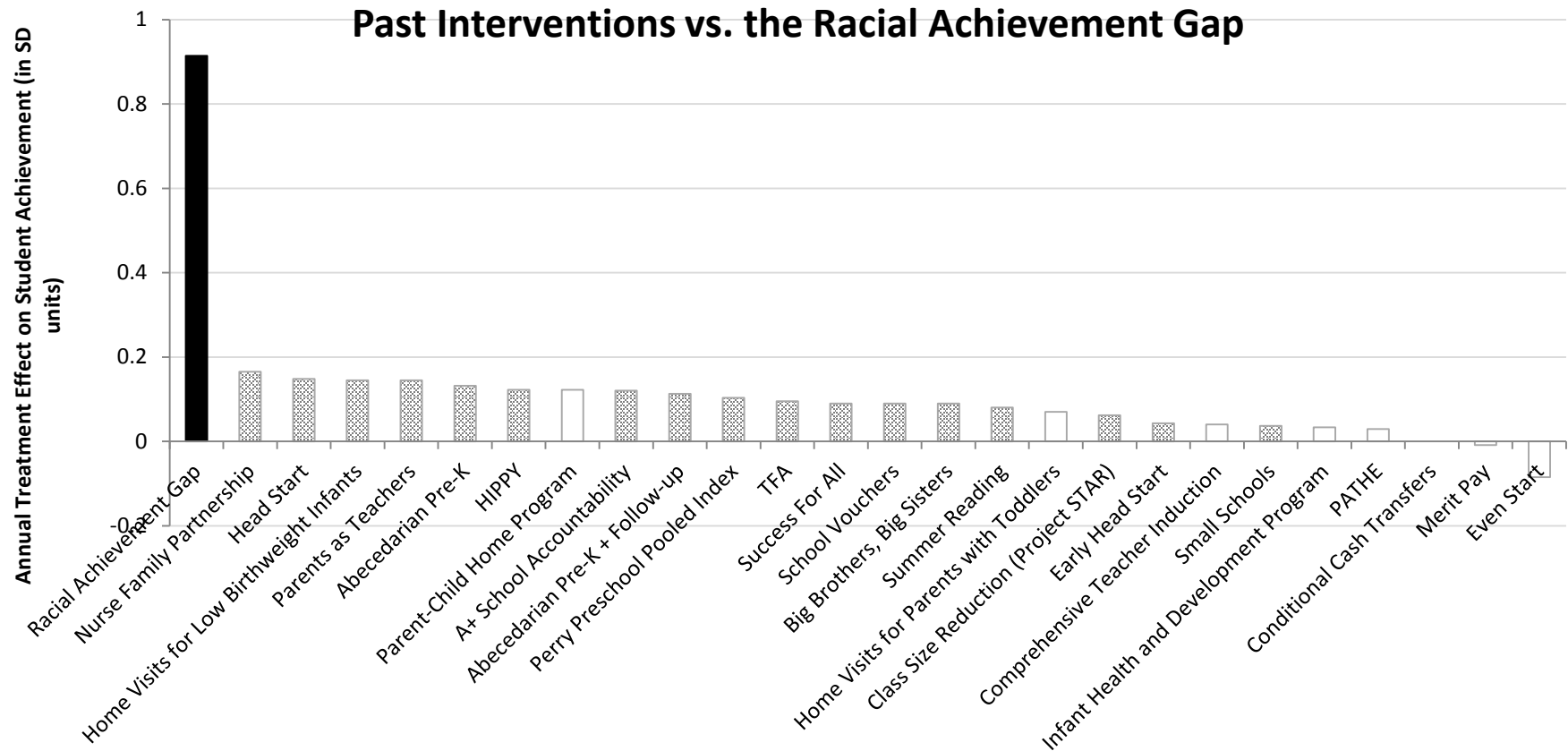
**The Effect of Incentives on Student Achievement**



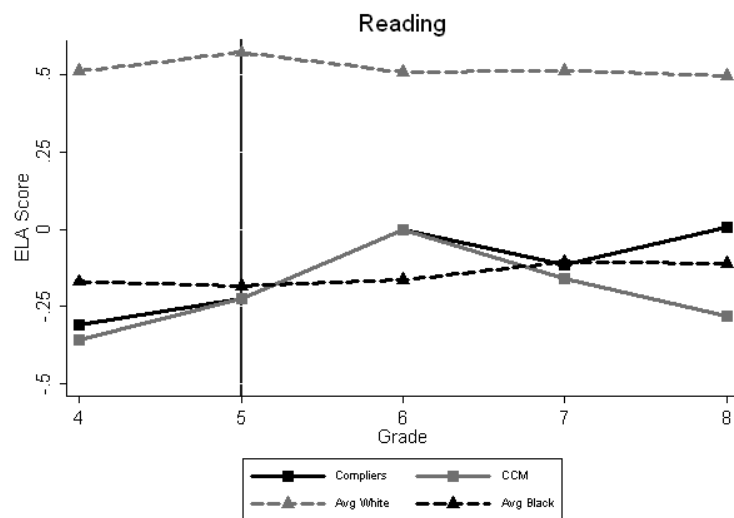
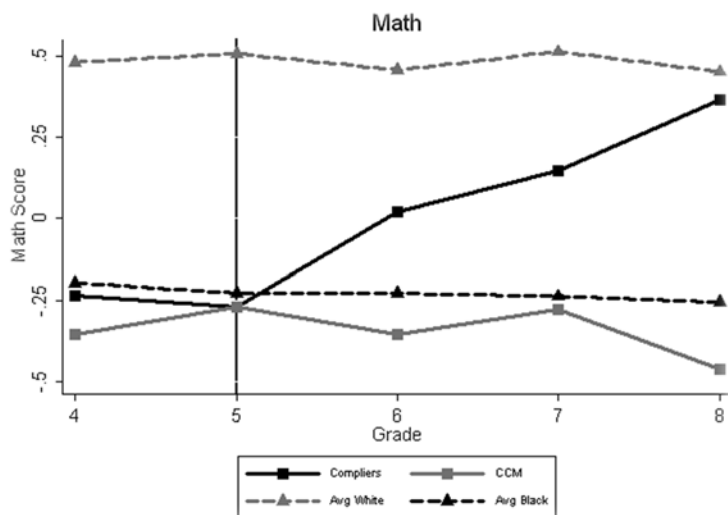
Shaded boxes represent statistically significant results at  $p < 0.05$ .

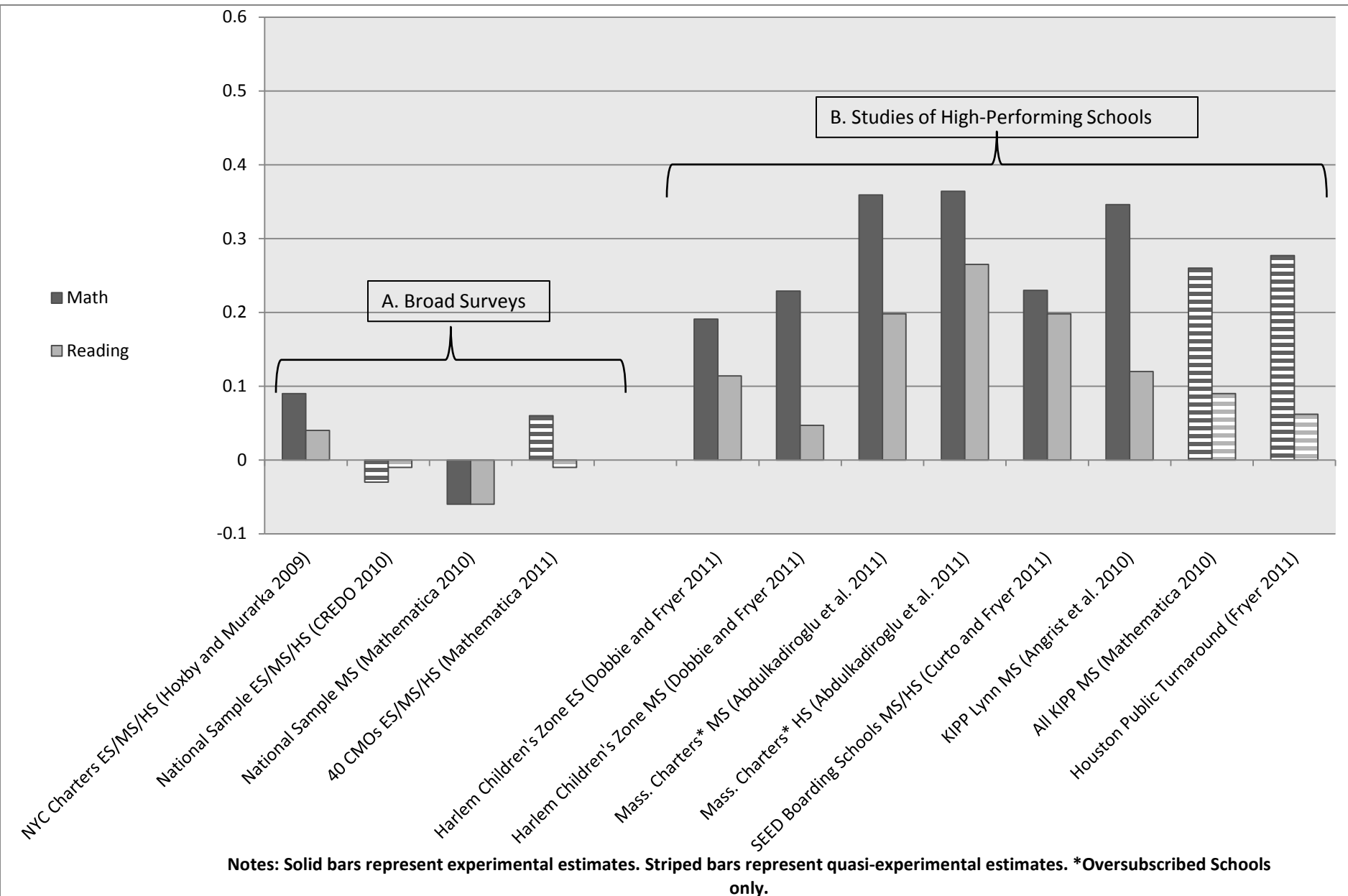
**Effect of Teacher Performance Pay Programs on Student Achievement**

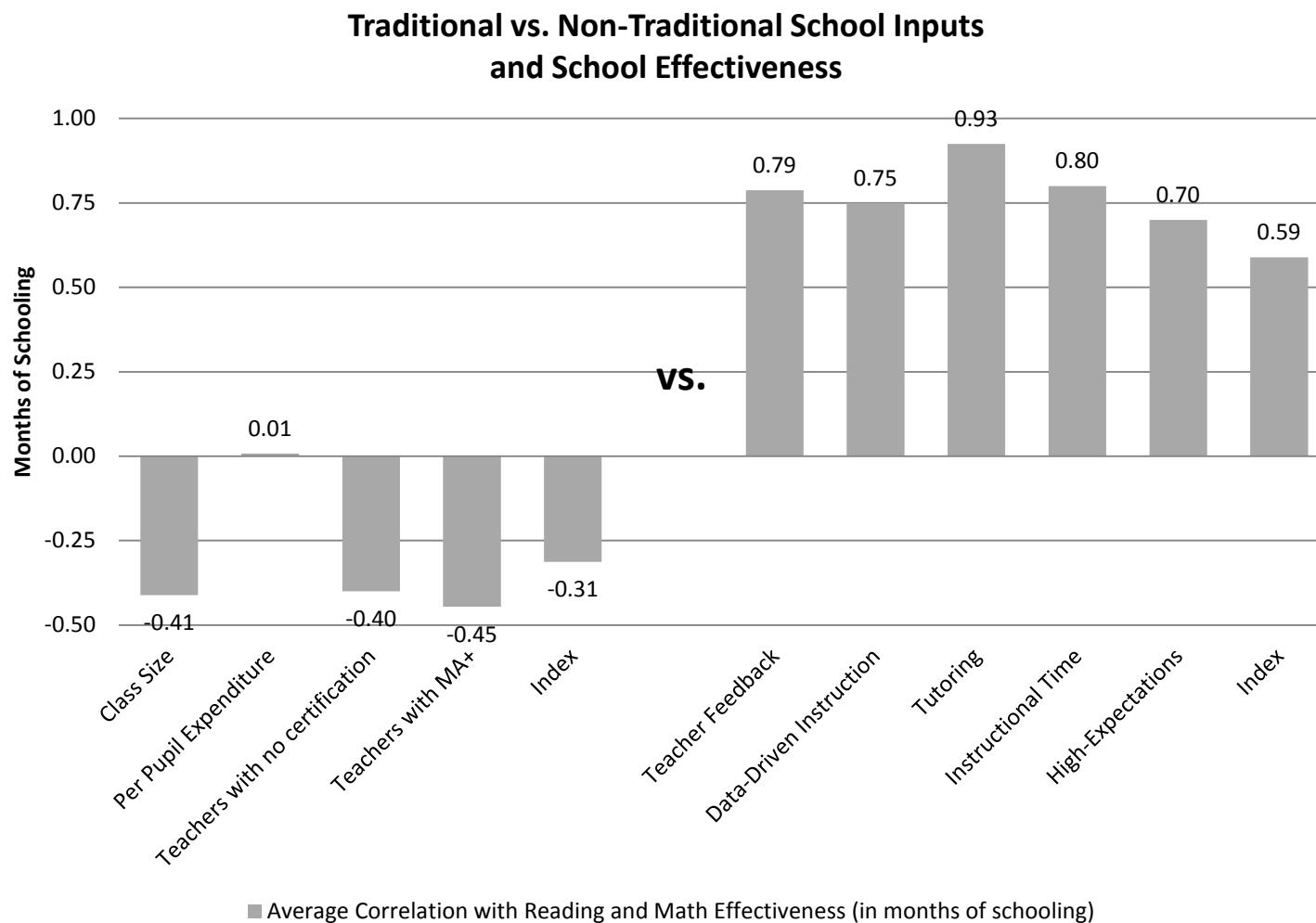




## Harlem Children's Zone







*The key goal is to translate charter schools' successful policies into common principles and then transplant them into traditional public schools. To this end, EdLabs initiated a multi-year study of NYC charters that determined that the following five policies and practices have the greatest correlation with student achievement:*



### More Time in School

- Extended day, week, and school years are all integral components of successful school models. In the case of Harlem Children's Zone's Promise Academy, students have nearly doubled the amount of time on task compared to students in NYC public schools.



### Small Group Tutoring

- In top performing schools, classroom instruction is supplemented by individualized tutoring, both after school and during the regular school day.



### Human Capital Management

- Successful charters reward teachers for performance and hold them accountable if they are not adding value.



### Data Driven Instruction and Student Performance Management

- In the top charter schools, students are assessed frequently, and then, in small groups, re-taught the skills they have not yet mastered.



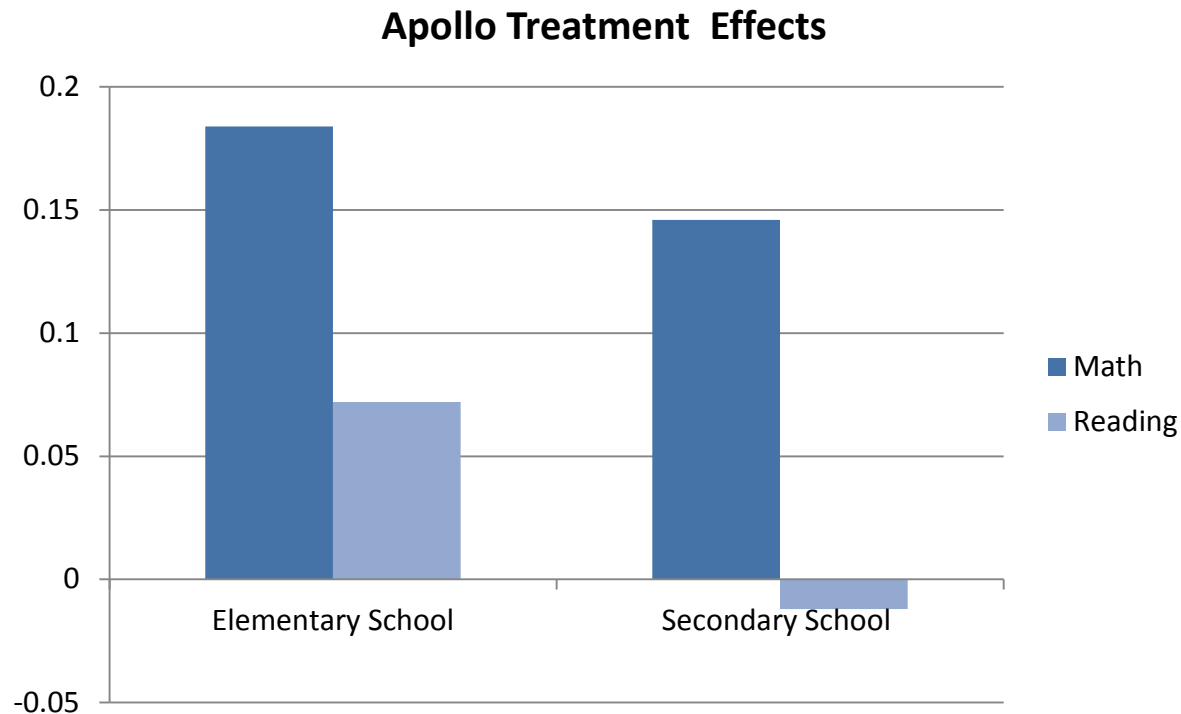
### Culture and Expectations

- In successful schools, students buy into the school's mission and into the importance of their education in improving their lives.

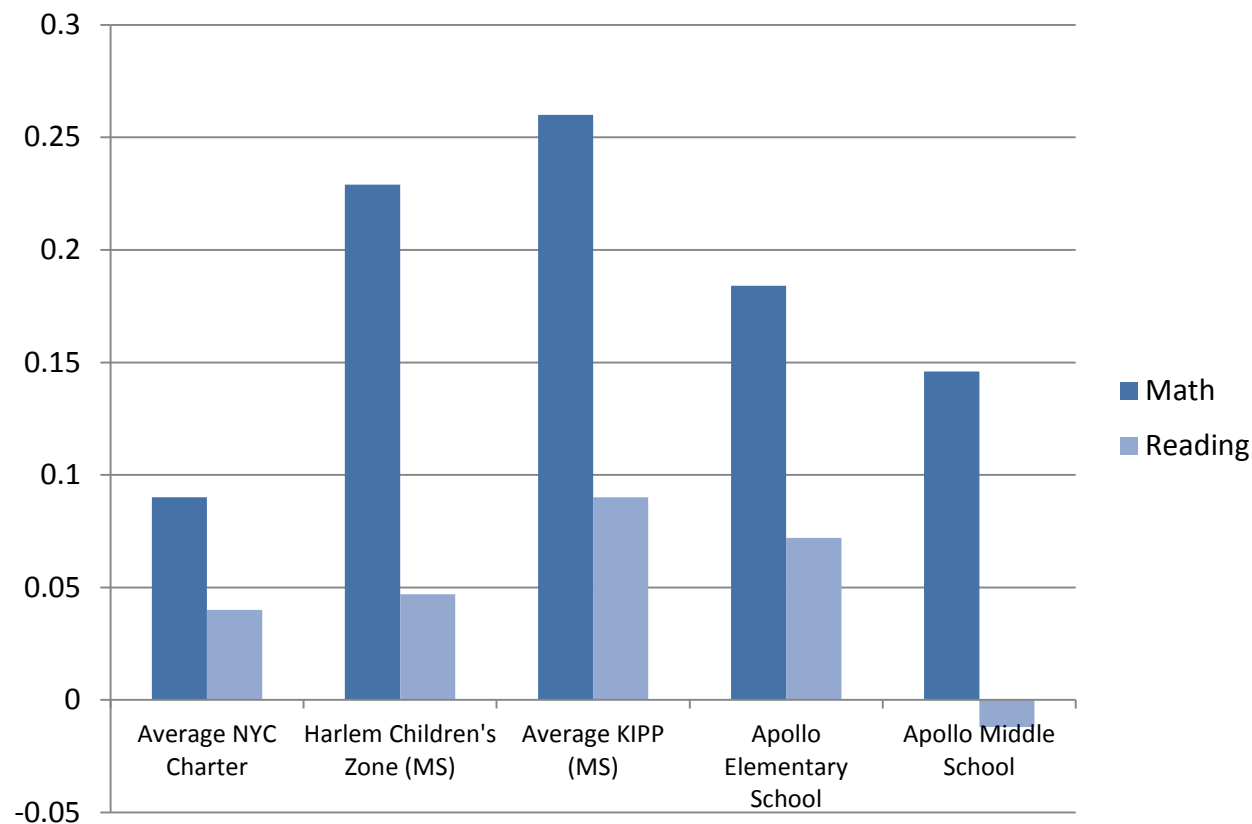


In Math, we see positive and statistically significant results in elementary and secondary schools. The gains in grades that received high-dosage tutoring were dramatic.

The reading results are mixed. Elementary schools have small positive and statistically significant results. Secondary school results are insignificant.



Pooling all grades together, the results are similar to those achieved by the Harlem Children's Zone Promise Academy Middle Skill and KIPP – two of the country's most recognized charter operators.



Using an estimate of the correlation between test scores and future earnings, we can calculate a rough rate of return for the first year of the Apollo experiment and compare it to other popular education interventions.

Initiative	Cost/Student	IRR
Apollo 20 Elementary	\$355	26.70%
Apollo 20 Secondary	\$1,837	13.42 %
“No Excuses” Charter School	\$2,496	18.50 %
Early Childhood Education	\$8,879	7.60 %
Reduced Class Size	\$3,501	6.20 %