Can Increased Education Spending Improve the Life Outcomes of Low Income Children?

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Motivation

• Public K-12 education is one of the largest single components of government spending (OECD 2013 report).

• Differences in school quality across neighborhoods are often cited as drivers of achievement gaps by parental socioeconomic status and race/ethnicity.

• Since Coleman 1966, many have questioned whether school financial resources (i.e. school spending) matter.

• The claim that there is no relationship between school resources and student outcomes has subsequently been made by many well-known scholars and policy-makers.
  • It has become accepted wisdom among many economists.

• There are 3 reasons why they COULD be correct:
  1. Increased spending is wasted by bureaucracy.
  2. Spending levels are above the point where increases really matter.
  3. Money does not matter.

• However, the evidence supporting this claim is weak.
Many Studies Find Small Effects or No Effect

The “Link” Between Education Spending and Student Performance

Despite more than doubling per-student expenditures…


American Student NAEP Reading Scores, 1971–2004

…reading scores in U.S. schools have remained relatively flat.

Changes in NAEP in the Long Run

While comparing time series of spending and test scores like these are suggestive, they are not conclusive, and have known flaws.

1. Many countervailing forces may be at play.
   - Increased residential segregation by income
   - Increased teen motherhood and paternal incarceration
   - Increased inequality in parental income

2. Test scores are not the best measure of the skills.
   - Outcomes such as dropout matter
   - Ideally we would like to see effects on real economic outcomes.

3. Some “business as usual” spending changes are mechanically associated with worse outcomes.
Bias Due to Compensatory Spending Increases

How do we deal with this?

We use sudden changes in spending due to the passage of court ordered school finance reforms.

Most spending was funded locally prior to reforms.

These reforms increased spending in some districts and not others for reasons unrelated to underlying neighborhood change, or other factors that might be associated with changes in student outcomes.
Empirical Method

1. Use the School Finance Reforms (SFRs) between 1970 and 2000 as an external “shock” to per pupil spending.

2. Identify which school districts will experience larger versus smaller changes in school spending (due to the reforms).
   1. Low income and low spending districts in 1972 (pre-reforms).
   2. Type of reform.

3. Link school spending data to a nationally representative data on individuals born between 1955 and 1980 and tracked over time through 2011.

4. Test whether exposed cohorts have better adult outcomes relative to unexposed cohorts in those districts that experience larger reform-induced spending increases.
   1. Focus on outcomes of the poor (less than 2 times the Federal poverty line)
Effect of Court Ordered SFRs on School Spending

- Spending in districts with high and low reform-induced spending increases were on similar trajectories pre reform but very different trajectories after reforms.
Effects on Years of Educational Attainment

Children exposed to reform-induced spending increases see increases in educational attainment. A 10 percent increase in school spending leads to an additional 0.31 years of education. For children from low-income families, this increase is 0.46 years of education.
Children exposed to reform-induced spending increases have higher wages.
A 10 percent increase in school spending leads to a 7.7 percent increase in the wage.
For children from low-income families, this increase is 9.6 percent.
Children exposed to reform-induced spending increases lower incidence of adulthood poverty. A 10 percent increase in school spending leads to a 2.6 percentage point decrease in the likelihood of adult poverty. For children from low-income families, this decrease is 6.2 percentage points.
Effects Appear To Work Through Improved Resources: How it is spent matters!

Reform Induced increase in school spending are associated with:

- More instructional spending
- More spending on support staff
- Smaller Classes
- Higher Teacher Salaries
- Longer School Years
Preliminary Evidence of Dynamic Complementarity

The reduction in the likelihood of adult poverty are much larger among low income children who also had access to public Pre-K (Head Start)

Among children with access to high levels of Head Start spending increasing K-12 spending by 10 percent reduced adulthood poverty by 12 percentage points.
To conclude....

1. There is a strong positive causal relationship between increased school spending and improved adult outcomes.

2. Calculations reveal that the internal private rate of return on education spending is about 9 percent (higher than the long run return on stocks).

3. The effects are more pronounced for those from low income families such that improved education spend does reduce disparities in adult outcomes for those from advantaged and disadvantaged backgrounds.

4. Preliminary evidence suggests that early education spending that is sustained through adolescence can have sizable effect on the life trajectories of children from low income families.