

Do Better Schools Matter? Parental Valuation of Elementary Education - Reading Notes III

Econ 613
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There is a reason to believe that school quality influences local housing values. [Black \[1999\]](#) estimates school quality effects on house prices by comparing house prices on either side of, but adjacent to, elementary school zoning boundaries of school districts in Massachusetts. [Black \[1999\]](#) introduces boundary fixed effects (BFE) method to address concerns that better schools are in better neighborhoods and students from affluent neighborhoods tend to have higher grades. The paper finds that parents are willing to pay 2.5 percent more for a 5 percent increase in test scores. Findings also suggest that a move from a school that scores in the twenty-fifth percentile to a school in the seventy-fifth percentile would result in a house price increase of \$5452. These findings are robust to a number of sensitivity tests. Moreover, the paper provides information on parents' preferences on schools with higher test scores and helps to evaluate various education policies.

In identifying the treatment effect of school test scores on housing prices, this paper examines the standard parametric hedonic price model. In the hedonic price model, housing sales price is a function of the housing characteristics, the location, and an additional value of school quality. However, this specification raises two types of omitted variable bias. First, there are omitted variables that vary at the school district level. Second, there are omitted variables that can change over space, both within and across school districts. To minimize the potential bias, [Black \[1999\]](#) purposes BFE approach. This method replaces the vector of observed characteristics in the hedonic setting with a full set of boundary dummies that account for any unobservables on either side of the district boundary. One key assumption of the BFE method is that houses near school attendances boundaries need to be sufficiently close to each other such that once house characteristics are controlled for, any differences in housing prices are attributable to school quality.

The paper analyzes housing sales and purchase data from suburbs of Boston from 1993 to 1995. Houses data are then matched with school-district-level data from the 1990 census. The primary sample consists of 22,679 single-family residences within 39 school districts that have at least two elementary schools.

In the empirical part, the standard hedonic price model overestimates the treatment effect of

test scores due to omitted variable problems. The paper proceeds estimation with BFE approach with the distances at 0.20 miles and 0.15 miles from the boundary. This estimation provides simple differences in means of housing prices on opposite sides of the boundary. Furthermore, the paper compares the magnitude of results of different specifications. The results show that parents are willing to pay 2.5 percent more for a 5 percent increase in test scores. Findings also suggest that a move from a school that scores in the twenty-fifth percentile to a school in the seventy-fifth percentile would result in a house price increase of \$5452. The comparison of magnitude further suggests that the standard hedonic model overestimates the value of school quality on housing price.

Black [1999] also conducts a number of robustness checks. Concerns include 1) areas being compared are different neighborhoods; 2) better schools tend to locate in better neighborhoods, and students have higher test scores in better schools; 3) racial and age distribution might matter. 4) People might place more value on better schools if they have more bedrooms in their units. The results are robust under these sensitivity checks.

To summarise, Black [1999] compares house prices on opposite sides of school attendance zone boundaries and argues that the difference in prices revealed the willingness to pay for school quality. Moreover, the paper helps to evaluate various education policies. One concern is that estimate of test scores on housing prices suffers from "sorting bias": the observed gap in prices overstates the willingness to pay for some families. Black [1999]'s BFE estimation is one special case where everyone has the same preferences. One future direction might be to allow heterogeneity in preferences. Another explicit assumption Black [1999] makes is that every household has at least one child, and their parents somehow value school quality.

References

Black, Sandra E., "Do Better Schools Matter? Parental Valuation of Elementary Education," *The Quarterly Journal of Economics*, 1999, 114 (2), 577–599.