

## **Econ 613 Reading Note #3**

### **DO BETTER SCHOOLS MATTER?**

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This paper focuses on estimating the relationship between house prices and student test scores which are the representatives of school quality and student outcomes. To overcome the drawbacks of previous literature, authors classify the data and compare houses on opposite sides of attendance district boundaries controlling for neighborhood difference. The main finding reveals that 5 percent increase in elementary school test scores leads to an increase in the marginal resident's willingness to pay of approximately 2.1 percent, or \$3948 at the mean house price of \$188,000. In addition, better schools matter not only parents, but also home owners. A one-point increase in test scores could lead to an increase in house values of close to \$70 million.

As a standard estimation, house price is usually described as a function of house characteristics, neighborhood and school district characteristics and the student average test score. However, there is omitted variable problems in previous literature including house and within-neighborhood characteristics. This paper eliminates such problems by substituting neighborhood and school district characteristics with a set of boundary dummies. Comparing houses on close opposite sides of an attendance district boundaries in same city, authors control for unobserved factors.

The empirical analysis is based on the data of 22,679 single-family residences within 39 school districts in Massachusetts. The regression results of standard estimation shows the omitted variable problem will overestimate the effect of test score on the house price. After including boundary fixed effects and classifying houses according to their distances from the nearest boundary in estimations, the coefficient on test score is approximately half of the initial estimation which is about 0.015, suggesting a 5 percent increase in test scores is associated of a 2.1 percent increase in housing price.

There are some further verifications and sensitivity tests. (1) Comparing regressions of the same group with and without boundary fixed effects, authors clarifies the change of sample size would not drive the different results. (2) Differences in means of full sample

and different mile distance groups show houses closer to the boundary are more similar in both physical attributes and neighborhood characteristics. (3) Exclude road boundary samples to eliminate the concern of the opposite sides but in different neighborhood samples' effects. (4) Include the "high side dummy" to estimate the effect of better schools in better neighborhood. (5) Include neighborhood characteristics such as the racial and age distribution. (6) House quality such as internal square footage and lot size of opposite sides of boundary is not statistically different. (7) Include bedrooms dummy to test if there is no price effect of better schools for one- and two-bedroom homes without children.