

Econ 613 Reading Note #3

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We know that school quality is important for not only parents but also economists, educators, and policymakers. Also, it is difficult to evaluate the relationship between school quality and student outcomes. Previous literature has examined that the relationship between school quality and house price is influenced by the fact that better schools are more likely to locate in better neighborhoods. However, they fail to control for neighborhood characteristics, which may overestimate the value of schools. Hence, the research, in the paper "Do Better Schools Matter? Parental Valuation of Elementary Education(1999)", focuses on the causal effect of school quality on house prices where houses are located on opposite sides of attendance district boundaries. The main finding of the research is that if the test scores of elementary schools are increased by 5 percent, the parents will be more willing to pay approximately 2.1 percent at the mean house prices. In other words, there is a positive correlation between house price and school quality.

The data used for analysis is collected from Massachusetts counties because they have small school districts which can avoid heterogeneity of population within districts. It combines housing price data and school quality data. The housing price data includes the information of purchases and sales from 1993 through 1995 in Massachusetts's three counties. But, the research is limited to single-family residences and excludes school districts with intradistrict choice programs and insufficient definition of attendance district boundaries. The school quality data relies on the sum of math and reading scores in the fourth-grade MEAP test over 1988, 1990, and 1992.

To analyze the relationship between house prices and school quality, previous research has constructed a hedonic price function as follows:

$$\ln(price_{iaj}) = \alpha + X'_{iaj}\beta + Z'_j\delta + \gamma test_{aj} + \epsilon_{iaj}(1)$$

However, it is impossible to observe all relevant house or neighborhood characteristics. The function will generate biased results because of omitted variables. So, the author replaces the vector of characteristics with a set of boundary dummies getting a new function:

$$\ln(price_{iab}) = \alpha + X'_{iab}\beta + Z'_b\phi + \gamma test_a + \epsilon_{iab}(2)$$

It solves the omitted variable problems. Comparing the test results by using the function (1) and (2), the coefficient on school test scores in function (2) is approximately half of the coefficient in function (1). This finding suggests that if the house or neighborhood characteristics are not appropriately controlled, the value of school quality will be overestimated when test scores increase. To better understand the results on the coefficient,

the author compares all results in the statistic table and concludes that if the test scores increase 5 percent, the housing prices will increase 2.1 percent.

In addition to the analysis of results, this paper also includes sensitivity analysis on hypotheses. The first hypothesis is that better schools are in better neighborhoods. To test it, the author creates the artificial attendance district boundaries and set the “control” group and “treatment” group. The result indicates that since the coefficient on the control group is zero and insignificant, this hypothesis doesn’t need to be considered. Moreover, the author includes neighborhood characteristics such as the racial, unobservable differences in house quality such as owner’s care, and the number of bedrooms to check their influence on coefficient in the regression. The finding reinforces that the house price is replied on the differences in elementary school’s quality and not on other relevant factors which may influence house quality. So, all sensitivity checks are passed robustly.

In conclusion, this paper has made an improvement on the function in previous research and concludes that there is a positive correlation between house prices and school quality. This result is robust to different sensitivity checks and also useful to not only parents but also homeowners and politicians. Although this paper has strengths, I think it can be improved in two areas. First, the main finding maybe not work in other states because the data is limited to Massachusetts’s three counties. The second is the author excludes some school districts from the sample such as districts with intradistrict choice programs. I think such districts can be studied as a separate section in the paper.