

Reading Notes 3

Zhilin Tang, zt53

Understanding school quality is important not only to parents, but also to house owners, economists, educators, and policy makers. The improvement of school quality can be an output of education policies and an input of house prices, family education investments and overall wealth in one area. For this reason, researchers have long investigated the causal link between school quality and house prices. To obtain a more accurate effect of test scores on house prices, the problem becomes how to deal with endogeneity issue, resulting from omitted variables and reverse causality.

In the paper *Do Better Schools Matter? Parental Valuation of Elementary Education* (1999), author Sandra E. Black borrows some ideas from regression discontinuity design (RDD) to solve omitted variable bias. She replaces neighborhood and school characteristics by a set of boundary dummies and runs regressions using sample of houses near the boundary. Even though neighborhood characteristics can be different for each house, under continuity assumption of RDD, houses that are very close to the boundaries should share similar observed and unobserved neighborhood characteristics. In addition, boundary dummies capture the effects of attending different schools, so the remaining effect is the pure test scores effect on house prices.

Relying on housing price data in Massachusetts from 1993 to 1995 and school quality data assessed by the fourth grade MEAP, the author estimates test score effects using old price function and RD revised price function. Comparing the results, she finds that the estimated coefficient on test scores is 0.035 while using the old price function; the coefficient shrinks to 0.016 while using the RD revised price function and restricting the distances between houses and boundaries. It suggests that 5 percent increase in test scores is associated with 2.3 percent increase in house prices.

In a next step, the author does sensitivity analysis and mainly tests whether "better schools tend to be located in better neighbors". To address this reverse causality concern, artificial attendance boundaries are created to divide each attendance district into control group and treatment group. The result shows that reverse causality is not a significant issue in this paper. The other sensitivity tests are related to two RDD assumptions. The first assumption is the smoothness of being a boundary, that is, areas on the opposite sides of attendance boundaries are in the same neighborhoods. The second assumption is the smoothness of predetermined

characteristics, including racial and age distribution, house quality, and the number of bedrooms. The regression coefficient has no large changes, which implies the author's findings pass all robustness checks.

In conclusion, this paper solves the endogeneity problems that existed in previous research and provides a more accurate effect of test scores on house prices. By utilizing the RDD, the author effectively removes the variation in neighborhoods and schools, avoids the overestimation, finds that parents are willing to pay 2.3 percent more on housing prices for a 5 percent increase in test scores. In future studies, major causes of the score differences are worth exploring for a more targeted policy making.