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Reading Notes Three

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Reading Notes on Do Better Schools Matter

Economists have long been interested in but yet had imprecise understanding about the value of better schools. Initial efforts had been put in directly deriving a causal link between one's education quality and his earnings, which only roused great controversy among debaters. To quell the controversy, researchers found an alternative strategy which focuses on how parents value school quality. This is achieved by establishing a causal relationship between higher house price and its location near better schools. However, this alternative has endogeneity problems form reverse causality and omitted variables and thus leads researchers largely overestimate the value of better schools. By comparing houses on opposite sides of and close attendance district boundaries, this paper can control unobserved neighborhood characteristics and thus isolate the relationship between test scores and house prices. This paper therefore gets a more precise estimation of the value of beeter schools. which is approximately half of that estimated by a traditional approach.

This paper differs from traditional method in that it replaces neighborhood characteristics with a set of boundary dummies that indicate houses that share (on either side) an attendance district boundary. By doing this, this paper addresses both types of omitted variables existed in the traditional method (factors vary at the region level and unobserved neighborhood characteristics).

Because it is special in its methodology, this paper selects samples in a rigorous way. Firstly, the data only covers several counties which are all suburbs of Boston to eliminate varying factors at the regional value (from 1993 to 1995). Secondly, sample includes only school districts that have at least two elementary schools that overlap grades to provide variation for estimation. Moreover, four school districts with intradistrict choice programs are excluded since in these districts, housing prices do not reflect school quality. Finally, school districts whose attendance district boundaries were either poorly defined or not available are excluded. Also, those school districts whose attendance district boundaries are clearly divided by any large stretch of land were excluded. The rigorously chosen sample, combined with the revised methodology, enables this paper to address the endogeneity problem.

As for the results, the paper firstly estimates by the traditional method to set it as an upper

bound for comparison. Under traditional specification, all else equal, an increase of 1 point in the test score would increase house price by 3.5 percent. Then, this paper estimated with boundary dummies using the sample of houses located within 0.35, 0.20, 0.15 miles from the nearest boundary respectively, with critical assumption that the houses on opposite sides of the boundary but within one-third of a mile are similar in all respects except the elementary school the child attends (This assumption is also verified to be true in this paper afterwards). All three coefficients are similar to each other and are approximately one-half of the value estimated by the traditional approach, indicating the actual value of better schools is approximately half of traditional estimation. Specifically, under the most rigorous specification (using the sample of houses located within 0.15 miles from the nearest boundary), a 5 percent increase in elementary school test scores leads to approximately 2.1 percent higher of the marginal resident's willingness to pay.

Apart from estimation, this paper did a series of sensitivity tests to address some concerns and test results do support the conclusion that the difference of house price are due to the differences in elementary schools instead of other factors. One major concern is that if better schools are in better neighborhoods, these results could be picking up progressions in neighborhoods from worse to better that are correlated with elementary school test scores. This paper tests this by setting two regressions to compare. The first includes a "*hi*" dummy variable (using samples from both sides of boundaries and setting "*hi*" = 1 if the house is on the side of the boundary which has higher average test scores) and an artificial "*hi*" control variable (using samples that only on one side cross but with the same distance span). Results show that the "*hi*" dummy variable is positive and significant while the artificial "*hi*" control variable is insignificant, indicating the house price difference does reflect differences in test scores.

One limitation of this paper may lies in its special methods and highly selective data, which probably is hard to be applied to research in other regions. The second limitation is not confined to this paper only but also shared by this family of research: it still does not establish a direct link between one's education quality and his later career outcomes. Parents' value for schools is still something different from school's return to one person.