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Reading Note 3

Education is the primary productive force, and school quality becomes a big concern for parents. There has been increasing debate on how to measure the effect of school quality. Previous research has linked how much parents would pay more for a house in areas with better schools with the value of school quality. However, since previous researchers do not fully control the neighborhood characteristics, the results are usually inflated. This paper solves this issue by introducing boundary dummies to eliminate differences in neighborhood characteristics. By understanding the importance of school quality, educators can seek school reforms that lead to better education and real estate investors can make more precise decisions.

Previous research uses the standard hedonic model of supply and different characteristics. House price is related to house characteristics, school and neighborhood characteristics and average test score. However, this method has omitted variable issues because it does not take account of the variables vary at school level, and the variables change over space. The author introduces a better instrument to replace the school and neighborhood characteristics in the equation, which is boundary dummies. When houses are located on two sides and close to the boundary, they have trivial differences other than school quality. Therefore, it could reflect the true effect of school quality on the price of houses.

The sampling data in the analysis covers all transactions of the housing market from 1993 to 1995 in Boston. The proxy for school quality is the average grade of a statewide exam. Firstly, the author assigns each house to the nearest boundary and gets a 181 attendance district boundary. Then the author runs several regressions on school and house characteristics, and the results are consistent with previous literature. However, when adding a boundary fixed effect, the coefficient of test score halved. And this effect is robust no matter the size of the sample. The author also examines the difference in means of house on the opposite sides of the boundary, and concludes that when houses are closer to the boundary, the difference will decrease in both house and neighborhood characteristics. To understand the magnitude of the result, the author compares the percent change in house price as a result of 5% change in test score in simple hedonic regression and with boundary fixed effects. Although the coefficient is still positive, the

estimated amount halved when adding boundary fixed effects, which proves that the simple hedronic model is well inflated.

To guarantee the sensitivity of the result, the author also runs many specification tests. The first regression shows that when roads are excluded, the coefficients do not change significantly, which proves that the opposite sides of the boundary are indeed the same neighborhoods. Then to understand whether better schools correlate with better neighborhoods, the author creates artificial boundaries within the school attendance district as a control group and a hi dummy indicating the better side of the boundary. As a result, the true regression has a significant positive coefficient of hi, but the control group has a zero coefficient, which means that the results are not picking up progression in neighborhoods. Regression 4 to 7 checks the potential difference in neighborhoods and house quality, and all results are not significant, which proves the method is robust.

Based on the analysis, the author concludes that parents indeed care about school quality, and they are willing to pay 2.1 percent more for houses associated with the test scores 5 percent higher than average. This result does not suffer omitted variable issues and provide a robust estimation to sensitivity tests. The key implication is we can use this approach to evaluate the efficiency of the education policies. It also implies that an increase in scores would increase the value of a house. The limitation of this paper could be that it does not examine the possible factors that cause differences in scores, so it is hard to evaluate education policy.