

**Boundary that Matters?:
Causal Inference of the School Quality Effect on Land Price**

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Abstract

According to the hedonic model, the effect of areal policy such as school quality is reflected, or capitalized, in land prices. The conventional OLS, however, suffers from endogeneity bias, measurement error, and omitted variable bias. To solve these problems, this paper proposes spatial differences-in-differences (DID). We match literally the nearest two sample points in a small block to make a pair. If the two points belong to different school-attendance areas, the pair is a treatment pair. Otherwise, the pair is a control pair. If school quality matters for land price, the variance of pairwise land price gap of the treatment pairs should be larger than that of the control pairs. Another new method, spatial and temporal DID, exploits introduction of school choice program to improve robustness against omitted variable bias. When applying these methods to data of Tokyo, F-test fails to reject the null hypothesis; thus, the capitalization theory is not supported.