School District "Premium" in China – Evidence from Tianjin

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Abstract

Inspired by Black(1999)[1], we are willing to explore the school district "premium" in the price of real estate in China. We have obtained the data of second-hand real estate transaction from 2016-2019 in Tianjin(one of China's Municipalities), and will filter the data with Tianjin's education policies. Finally, we will develop a empirical model to verify the "premium" with all other controls. In our expectation, the school district "premium" effect will be significantly positive.

1 Motivation

Inspired by Black(1999)[1], we get access that parents are willing to pay more for a house in a better attendence district in the United States. So does this exist in China? The answer is yes. Unlike the attendence districts division in the United States, China has more strict policies about school attendence from elementary school to high school, that is, even in a same administrative district, to get the chance to attend one specific school, you must live in specific communities. In other word, you cannot attend the school that do not have your community in their list. In addition, there is always a rank of the promotion rate of schools every year, which is a indicator reflects the school quality. Merged with Chinese parents' traditional attitude towards education, there is a "premium" effect for the school district real estate. Therefore, we are willing to verify the school district "premium" in China with the data of a main city Tianjin.

2 Literature Review

People realize their consumption preference for public goods by selecting a local government by moving, that is, the idea of "voting with their feet" (Tiebout, 1956)[8], which laid a solid foundation for the follow-up study. Housing has the characteristics of strong durability and cannot be moved in space, and housing prices reflect residents' different preferences for public goods (Rothstein, 2006)[7]. Therefore, under the background of unequal distribution of educational resources, high-quality educational resources have a capitalization effect that results in price premiums for houses in school districts (Zhang Hao et al., 2014)[6].

Considering that housing characteristics, community environment, and neighborhood characteristics all have impacts on housing prices, some scholars used instrumental variable models to overcome the problem of omitted variables (Downes and Zabel, 2002[2]; Gibbons and Machin, 2003[5]). However, since it is unable to determine whether the instrumental variables are effective, the research conclusions cannot be fully confirmed. Black (1999)[1] proposed to compare the housing prices on both sides of the school district boundary, eliminating the influences of unobservable variables. This model is extended by Fack and Grenet (2010)[3] and Gibbons et al. (2013)[4] by considering the distance between residences and the boundary.

3 Research Design

3.1 Data

The data we will use is obtained from Lianjia(KE in Nasdaq) from Jan 2016 to Jan 2019, which include the second-hand house transaction in Tianjin. There are 27,432 valid observations for the price and community name. To set up the variables, we will firstly detrend the nominal price to the real price with CPI. And then match the

community name to their districts and all the characteristics may affect price. Moreover, to explore the premium of school district, we will rank from the elementary school to high school and match them to the specific community.

3.2 Baseline empirical model

Our baseline regression will be set as followed:

$$Ln(P) = \beta_0 + \beta_1 * SD + b * Controls + T + \Phi + \epsilon$$

where $Ln(P)$ is the value that take log to the real price of the house; SD is the dummy about school district, if it is in school district, take value 1; $Controls$ include all other variables may affect house price, such as green rate, age of the building, the brand effect of the communities etc.; T is the time fixed effect; and Φ is the district fixed effect. We will run OLS regression in our baseline model.

3.3 Other school districts effects

We will test other effects about the school districts in China by extending the baseline empirical model with interactive terms. The effects will include following perspectives: 1. Which administrative district has the highest school district "premium"? 2. Among elementary school, high school and senior high school, which stage has the highest "premium"?

4 Research Plan

4.1 Data processing 4.1 - 4.10

The data we have includes the price of the houses and the communities they located. Therefore, other variables like the characteristics of the communities may affect price(age of the building, green rate etc.) and the key variables about school districts should be matched from policies and other resource.

4.2 Baseline empirical analysis 4.11-4.20

Run the baseline empirical model. If the coefficients are significant, try the interactive effects and test the sensibility.

4.3 Paper writing 4.20-4.25

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