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A microsimulation of property tax policy in China☆

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ABSTRACT

China is exploring possible property tax reform to stabilize the booming housing market as well as providing sustainable revenue for the local government. In this paper we develop a theoretical model of property tax reform to decompose potential impacts of property tax reform in China. Then we used the China Family Panel Survey (CFPS) data to conduct a microsimulation model to examine potential impacts and incidences of alternative property tax designs in China. Our analyses suggest that a uniform property tax policy would bring substantially heterogeneous impacts across different income groups as well as different regions, mainly due to the differences in income distribution, housing prices and the degree of the Housing Demolition program. In terms of property tax incidence, our simulation suggests that utilizing tax revenue on the poor's public housing subsidy may mitigate the regressivity; in some case may even increase the overall social welfare. Finally, we use the cross-sectional information in the Chinese Family Panel Survey (CFPS) data to simulate for optimal tax scenarios for each region. Our microsimulation results provide some initial quantitative analysis in the literature and may shed some light on understanding the impacts of future property tax reform in China.

1. Introduction

With the housing boom for the last decade, China has been involved in active discussion about imposing the property tax or real estate tax to stabilize the housing market. Property tax is quite common in many developed countries, as a primary source of tax revenue for the local governments for the provision of local public goods, such as public school, police system and etc. However, in China, property tax still has not been implemented yet, except some real-estate related taxes charged at the point of transaction.

Recently, due to the concern about soaring housing bubble, tight local government budget, rising income gap between the rich who own many houses and the poor who can hardly afford the rent, some pilot reforms of property tax was implemented in Shanghai and Chongqing in 2011. Before these experiments, property tax was just applied to some business buildings or to the foreign companies in China. Right now, whether these pilot programs should be extended to the whole nation is still a highly debated open question. Experiences from the developed world, such as US and OECD countries, have provided some empirical evidences that property tax can play a significant role in controlling the housing price, restraining certain speculative behavior (Kuang et al., 2012).

Therefore, an open question is, if China implement the property tax, how would various households being affected under this new reform? Will they get worse off since their out of pocket money will increase for paying the new tax? If the landlord raise the housing rent, in an inelastic rental market, renters may bear most of the burden, so it is likely

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to be regressive. However, it might not be exactly true, since some poor households may get better off if they are the beneficiaries of extra revenue spent on local public goods. That is, the local government now with more local tax revenue may provide more local public good, like better public primary and middle school, or increase supply of cheaper subsidized housing projects for the poor. Unfortunately, the experiments in the two pilot cities (Shanghai and Chongqing) have not shed much light on potential distributional effects considering such a diverse distribution of rich, medium and poor cities as well as big income gap between the poor and rich in China. Therefore, given the heterogeneity nature of the local property tax policies, how to design a proper property tax reform is also the key to the success of this policy. If we take both equity and efficiency criteria into consideration for the property tax reform, how should we implement the property tax in China?

To address these issues, in this paper we exploit a micro data from the China Family Panel Survey (CFPS) to simulate for possible outcomes of various property tax policies in China. We then use the microsimulation results to compare the effects of various property tax regimes regarding different designs on tax bases, tax rates as well as recycling policies. Our results show that, given China's broad spectrum on the housing market, and increasing gap between the rich and poor, a uniform property tax may not be appropriate for China, it is important to take into account many local factors such as local housing prices, inequality patterns, to design more appropriate tax policies and recycling regimes to achieve better policy outcome in practice.

2. Literature review

The impact of property on property value has been widely studied in the developed countries. Three alternative views of the incidence of property tax have been discussed in the literature: the "traditional view", which argues that the property tax would fully shift forward to consumers in the form of higher housing prices; the "benefit view", which suggests that the property tax is simply a payment for local public services, and finally the so-called "new view" of the property tax, which argues that property tax is implicitly a distortionary tax on the use of capital within a local jurisdiction.

The traditional view dates back to Simon (1943) and Netzer (1966), who took a partial equilibrium approach to analyzing the tax, focusing on the effects of increasing the tax in a local housing market. The burden of the tax is borne by consumers, and the traditional view argues that this entire burden is borne by local housing consumers in the form of higher housing prices, therefore implying that the property tax inefficiently reduces the size of the local housing stock and its burden is borne in proportion to housing consumption.

However, the "benefit view" argues that the property tax is beneficial to the consumers. This view was developed initially by Hamilton (1975, 1976), Fischel (1974) and White (1975), and is reviewed by Hamilton (1983). This view is an extension of the famous Tiebout Model. Tiebout (1956) first mentioned the concept of "voting by feet", which suggests that if consumers are fully mobile, then they will move to the community where their preference patterns are best satisfied. Because of the tax completion among the communities, the local governments have more incentives to supply public goods and lower the tax rate. Tiebout ignored local property taxation and instead assumed the existence of benefit taxes is implicitly in the form of head taxes. Following Tiebout, Hamilton assumed that individuals are sorted into local jurisdictions according to their demands for local public services, and that there are enough local tax expenditure packages to accommodate the heterogenous individual preference. Hamilton argued that such a "perfect capitalization" converts the property tax into a benefit tax, at least in the long run equilibrium (but not at the time when a tax change occurs and is capitalized into property values). Yinger et al. (1988) have found empirical evidence that property taxes and local public service expenditures are capitalized into house values, as predicted by the Hamilton model. The implications of this "benefit view" are striking. First, it means that the property tax is effectively a user charge that is paid in exchange for the benefits of local public service. It is thus a nondistortionary tax. Second, as a benefit tax, the property tax has no effects on the distribution of income.

The "new" view of the property tax, first developed by Mieszkowski (1972), subsequently extended by Zodrow and Mieszkowski (1986), argues that the property tax is a distortionary tax on the local use of capital, which results in a misallocation of the national capital stock across local jurisdictions. Mieszkowski (1972) stressed that the partial equilibrium analyses of the property tax that characterized the traditional view was misleading, since it ignored the fact that the property tax was used by virtually all local jurisdictions and applied to a large fraction of the capital stock. Zodrow and Mieszkowski (1986) suggest that the use of a distorting property tax on mobile capital decreases the level of residential public services.

From the theoretical perspective, higher property tax will lower the property value. Oates (1969) uses the data set of 53 northeastern New Jersey communities for the year of 1960, and finds that the property tax has a negative effect on the property value. Palmon & Smith (1998) follow the work done by Oates, and specify the importance of capitalization; they also find the tax has a negative effect. Bai and Ouyang (2014) exploit the effect of property tax on the housing price, taking advantage of a policy experiment of property taxes in Shanghai and in Chongqing starting from January 2011. The counterfactual housing prices in Shanghai and Chongqing without the tax are estimated by the housing prices of the strongly correlated provinces using a long monthly time series data. They find that the tax lowers the average housing price by 15% in Shanghai.

The decline in property value may further drag down the consumption through the "housing wealth effect". Harberler (1958) first put the property value into a consumption model, and notice that the change of the housing price will change the wealth of the residents. Then the residents will adjust their consumption choice as well. Ludwig and Slok (2002) specify the realized wealth effect and the unrealized wealth effect. Two channels through which the