

Abstract

Spatial Implications of the Current Chinese Land-tenure System and Impacts of Property Tax Reform

Our proposed research will examine the spatial incentives inherent in the land-tenure system for both the public sector and the private development sector. The analysis will be based on standard urban models of land development and local public finance in the institutional context of local planning in Chinese urban areas. Within this context, we will use local data on development process, infrastructure investment, fiscal conditions, and real estate market characteristics to explore the role that the land tenure system plays in shaping urban development. Based on our urban and public finance framework, and by contrasting Chinese outcomes with those in Hong Kong and the US, we will examine the potential spatial impacts of significant changes to the land tenure system such as the introduction of a property tax. This analysis should provide key inputs into the current discussions in China about changes in the structure of local public finance.

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2. Calendar of Activities

1.	Project commences	Jan 2016
2.	Review literature and collect secondary data	Jan - Mar
3.	Examine transaction cost scenarios	Jan - April
4.	Interview key informant interviews, including development professional, real estate agents, appraisers, etc.	Feb - Jun
5.	Develop economic model	Feb - Mar
6.	Examine housing development and conveyance process in selected cities	Apr - May
7.	Identify relevant cases in Hong Kong and the US	Feb - May
8.	Refine economic model	Mar - Jun
9.	Test spatial pattern and fiscal outcomes on various inputs	May - Aug
10.	Discuss possible behavioral changes	Jun - Jul
11.	Prepare draft report	Aug - Oct
12.	Project concludes	Nov

3. Detailed Budget

The proposed project has a total budget of \$47,000 over a period of eleven (11) months. The amount Lincoln will cover is \$33,000 (\$25,000 on personnel costs and \$8,000 on fieldwork and travel). The University of Hong Kong will provide an in-kind support of \$3,000 in personnel costs. The applicants will provide in-kind support of \$10,000 and \$1,000 for uncompensated hours and travels respectively. The applicants, their research associate(s), and research partners at University of Hong Kong will commit at least 600 hours in this project. No fringe benefit or overhead is involved.

	Lincoln Share	In-kind Match	Total
Personnel			
Voith, Pro Director	\$10,000	\$5,000	\$15,000
Wong, Co-director	\$10,000	\$5,000	\$15,000
Research Associate	\$5,000		\$5,000
Subtotal personnel	\$25,000	\$10,000	\$35,000
Travel & Fieldwork			
Trips to China and Hong Kong	\$8,000	\$1,000	\$9,000
In-kind support from University of Hong Kong			
Research on transaction costs		\$3,000	\$3,000
TOTAL	\$33,000	\$13,000	\$47,000

4. Project Description

Objective and Specific Research Question

This research will examine the spatial implications of the current Chinese public land leasehold tenure system and the potential impacts of proposals to restructure the real estate-related levies through the introduction of a property tax system. There has been a significant amount of research on China's land tenure system, its implications for local public finance and investment, and the ability to sustain local public services.¹ In addition, the limited property tax pilot programs in Shanghai and Chongqing, as well as issues with local debt, peri-development, incomplete property rights, and market imperfections have brought the land tenure system under scrutiny.² Research to date has not, however, focused on the role of the land tenure system in shaping the spatial patterns of urban development, nor have the potential spatial implications of proposed tax changes in the land tenure system been examined.

Our proposed research will examine the spatial incentives inherent in the land-tenure system for both the public sector and the private development sector. The analysis will be based on standard urban models of land development and local public finance in the institutional context of local planning in Chinese urban areas. Within this context, we will use local data on development process, infrastructure investment, fiscal conditions, and real estate market characteristics to explore the role that the land tenure system plays in shaping urban development. Based on our urban and public finance framework, and by contrasting Chinese outcomes with those in Hong Kong and the US, we will examine the potential spatial impacts of significant changes to the land tenure system such as the introduction of a property tax. This analysis should provide key inputs into the current discussions in China about changes in the structure of local public finance.³

Conceptual Framework and Main Hypotheses

The land tenure system as practiced in Chinese urban areas entails three key features 1) significant up-front leasing fees for development rights; 2) significant funding of local public infrastructure based on these fees, and 3) limited recurrent revenues generated from the developed parcel once developed. In addition, there has been a strong emphasis on using revenues collected through leasing fees to promote GDP growth.⁴ Finally, while land leases span relatively long time periods, they are not permanent, and the outcome of disposition of the rights at expiration is unclear, especially when

¹ 李亢 2010. 《我国城市土地供给双轨制研究》 郑州大学硕士论文; 谢戈力 2011. 《土地参与宏观经济调控的理论与实践》 武汉理工大学博士论文; Wu, Jian. 2009. "From a Legal Perspective to See the Evolution and Transformation of Land Tenure Institutions in China," *Frontiers of Economics in China*, 4(4): 568-600; Deng, Feng. 2000. *Leasehold, Ownership, and Urban Land Use*, Doctoral dissertation, University of Southern California; Hong, Yu-hung & Diana Brubaker. 2010. "Integrating the Proposed Property Tax with Public Leasehold System," In *China's Local Public Finance in Transition*. Eds. Joyce Y. Man and Yu-Hung Hong; Wen, Guanzhong James & Jinwu Xiong. 2014. "The Hukou and Land Tenure Systems as Two Middle Income Traps—The Case of Modern China," *Frontiers of Economics in China*, 9(3): 438–59.

² 李永刚 2015. 中国房产税制度设计研究——基于沪渝试点及国际经验借鉴视角 《经济体制改革》 No. 1: 180-4; 李振伟 2014. 《我国房地产税制改革研究》 中共中央党校博士论文; 吴贻龙 2014. 《重庆市房产税试点存在问题及改进研究》 重庆大学硕士论文; World Bank & Development Research Center of the State Council PRC. 2014. *Urban China: Toward Efficient, Inclusive, and Sustainable Urbanization*, "Chapter 4: China's Urbanization and Land: A Framework for Reform"; Asian Development Bank. 2014. *Property Taxation in the People's Republic of China*.

³ 孙阿凡、杨遂全 2015. 差别税收: 我国住房房产税困境突破之关键 《税务与经济》 No. 5: 87-93; Elosua, M., et al. 2013. "Urbanisation in China: The impact of the tax-sharing system and the definitions of new strategies." *UrbanChina working paper no. 1* ; World Bank & Development Research Center of the State Council PRC. 2014. *Urban China: Toward Efficient, Inclusive, and Sustainable Urbanization*, "Chapter 6: Financing Urbanization"; Brys, B. et al. (2013), "Tax Policy and Tax Reform in the People's Republic of China", *OECD Taxation Working Papers*, No. 18.

⁴ World Bank. 2014. *Urban China: Toward Efficient, Inclusive, and Sustainable Urbanization*, "Chapter 6: Financing Urbanization"; Li, Yong. 2005. *Institutional Analysis of Land Use Policies in China under the Transition Economy: With Reference to Rural to Urban Land Conversion in Guangzhou*. Doctoral dissertation, Hong Kong Polytechnic University.

property rights are limited in many aspects.⁵ When examined in the context of standard urban economic location models, these features are likely to have important spatial implications.

Since a significant part of its revenues is contingent upon the continued sale of land development rights, local governments have a strong incentive to develop new parcels.⁶ Investing in transportation and other infrastructure outside the developed areas reinforces the local government's ability to enhance the transaction values of development rights. On the other hand, because the development rights are purchased primarily through one time payments, the local government has less incentive to make investments in developed area because the continued growth in land value has little impact on future revenues. Thus there are incentives to expand land consumption, potentially beyond efficient levels.

From a private sector perspective, there are potentially offsetting incentives to centralize and create excessive density at the parcel level. Because land use fees are primarily up-front payments, developers can increase the density of development without increasing their tax liability, providing an incentive for dense use of the land. Moreover, developers can increase the density of development if the market supports the investment without additional tax liability. (Note that this is similar to tax abatement programs that exist in some US cities such as Philadelphia.) The incentive to reinvest is partially offset by the uncertainty about future property rights after the initial term of development is exhausted. Moreover, the incentive for private reinvestment may be reduced over time because of externalities generated by the local government focus on selling new land rights. Specifically, we hypothesize that:

1. The current system has a significant public incentive to develop land;
2. Local public investments increase the supply of developable land;
3. The public sector has little incentive to enhance the value of existing development;
4. The current system has strong private incentive to densely develop individual parcels;
5. There are incentives for disinvestment as properties approach the end of their lease term;
6. The impacts of future reform are confounded by opposing public and private incentives, incomplete institutions, unpriced market imperfections, all of which lead to inefficient allocation of land and capital.

Efforts to change the land tenure system will inevitably result in reshaping incentives for both the public and private sectors. Introduction of a residential property tax, for example, will ideally provide a steady stream of revenue for the local government absent additional sales of development rights. With periodic reassessment, the local government's revenue would also be a function of the path values of existing developments, providing an incentive to pursue policies that enhance the existing stock of buildings.

From the private sector perspective, the introduction of a property tax should be expected to adversely affect value as the tax can be capitalized. Yet without major reform, the existing institutional arrangement is likely to inhibit full capitalization and as a result of efforts to avoid the taxation by

⁵ Brueckner, J. K. & Somik V. Lall. "Cities in Developing Countries," In *Handbook of Regional and Urban Economics*, 5: 1399-455; Man, Joyce Yanyun and Yu-hung Hong. 2010. Eds. *China's Local Public Finance in Transition*. Lincoln Institute of Land Policy.

⁶ 丁咚 2014. 《走出“土地财政”困局的地方财政可持续发展研究》东华大学硕士论文; 侯星宇 2014. 《财政分权下地方政府“土地财政”困境及出路》云南财经大学硕士论文; Wu Qun, et al. 2015. "The Incentives of China's Urban Land Finance," *Land Use Policy*, 42: 432-42; Shen et al. 2015. "The Business Cycle Implications of Land Financing in China," *Economic Modelling*, 46: 225-37; Du, Jinfeng & Richard Peiser. 2014. "Land Supply, Pricing and Local Governments' Land Hoarding in China," *Regional Science and Urban Economics*, 48: 180-9; Zhang, Y., Barnett, S., 2014. Fiscal Vulnerabilities and Risks from Local Government Finance in China. *IMF Working Paper No. 14-4*.

shifting capital or through rent seeking behaviors. The potential induced inefficiencies resulting from a tax system must be weighed against the long term consequences of changing the local governments' incentives. The spatial implications of changing tax structure in the context of tax avoidance are more complex, and require a sophisticated understanding of the planning, political and economic context to be well understood. Dr. Wong's insights will be particularly valuable in helping develop economic models and empirical analysis that appropriately represents the Chinese urban development environment.

Our analysis will evaluate these spatial and efficiency implications of the land tenure system and potential modifications through comparisons with Hong Kong and US systems that have experienced a variety forms of property tax abatements and exemptions, expiration of public leases *en masse*, and diminishing property tax revenues in communities failing to conduct reassessment.

Methodology and Data Sources

The methodology in this proposal is to develop a standard urban model of land development and local public finance economic conceptual framework that integrate current theories in land value capitalization, nature of property tax, fiscal impact, and value capture. This model will be enhanced with a deeper understanding of the institutional context in Chinese urban areas through our fieldwork.

Information will be collected regarding China's development process, housing conveyance practice, and the operation of real estate-related fees and charges. Such information will be based on secondary sources from official statistics (used with caution) and fieldwork data in China on behaviors of major players involved in land development, mainly collected through key informant interviews. Key informants include development professionals, real estate agents, appraisers, tax accountants, and homebuyers.

Once the local data on development patterns, infrastructure investment, fiscal condition, and a variety of forms of property rights is collected, we will adapt standard urban models to evaluate how the current land tenure system influences spatial development. Then we will contrast Chinese outcomes with those in Hong Kong and the US to explore how possible reform in the urban land taxation will shape future development patterns and local fiscal conditions.

Prior Experience of Applicants

Dr. Voith is a Faculty Fellow of the Institute for Urban Research at the University of Pennsylvania (Penn IUR). Voith's prior research experience includes impacts of tax structure on development patterns, land value of capitalization of local taxes and services, the impact of infrastructure in land valuation and development, and the roles of fiscal federalism in shaping patterns of metropolitan development. His work has addressed both commercial and residential real estate markets as well as the interactions of transportation investments real estate markets. Voith's work includes research published in scholarly journals as well as a significant amount of local fiscal, tax, and real estate analysis produced for commercial purposes.

Dr. Wong has researched public leasehold system (awarding-winning dissertation, "Zoning Control and Property Rights in Hong Kong"), enterprise zone tax incentives (award-winning doctoral dissertation), fiscal impact analysis, and urban public finance. He is a Research Fellow of Cornell's Clarence S. Stein Institute and an Associate of the Ronald Coase Center for Property Rights Research (the Coase Center) at University of Hong Kong. Dr. Wong is also a leading planning historian, focusing on redevelopment and regional planning. His publication includes, "Searching for Modern and Humanistic Planning in China," "The Planning Connection between Clarence Stein and

Liang Sicheng,” and “Architects and Planners in the Middle of a Road War” all appear in peer-reviewed journals.

Expected Results

Our research focuses on the spatial pattern of current land tenure system and how it changes upon potential reforms. Our analysis will develop findings on:

1. The theoretical implications of the land tenure system for spatial development patterns;
2. Evidence on the spatial distribution of development in select Chinese urban areas
3. Temporal patterns in Chinese urban development
4. Evidence of the impact of the land-tenure system on development patterns
5. Likely impacts of reform on the future spatial patterns of urban development.

The results are important for Chinese decision makers in making policy in urban development, regeneration of existing housing stock, and preservation of important farmland. The other important contribution of this research is its model results are capable of capturing impact contingent to different forms of property tax reform, in contrast to prior research that lacks such specificity.

Teamwork

Dr. Voith will take the leading in developing the economic model, and the urban and public finance conceptual framework. He will review econometric literature on land capitalization, property tax, and spatial econometrics. Dr. Wong will be responsible of examining the China’s institutional context, including land tenure system, development process, the practice of real estate related levies, and rent-seeking behaviors in the real estate market. Dr. Voith and Wong will jointly supervise the research associate who will coordinate the key informant interviews and fieldworks in China. Dr. Wong will visit China and Hong Kong where he will work with research partners at the Coase Center.

Partnerships and Collaboration

Dr. Voith is an active participant at Penn IUR, and has participated in national and international research in collaboration primarily with the Penn IUR’s co-directors, Professors Susan Wachter and Eugenie Birch. Other Penn IUR fellows are currently involved in research on China land markets, and our team benefit from that ongoing research. One unique feature of our team is that Dr. Voith has employed over 10 Chinese interns at his firm, Econsult Solutions Inc. (ESI), and currently has one native Chinese employee. Some of ESI’s interns have returned to China to work in the development industry. Dr. Voith and ESI have remained in contact with these former employees and, as part of this project, will seek to have direct interaction with Chinese development professionals to provide on the ground insight into perceptions of the land tenure system and potential implications of changes in the system.

Dr. Wong is an associate of the Coase Center. Dean Chris Webster of the Faculty of Architecture at University of Hong Kong has agreed to collaborate with us and will provide in-kind support. They will assign a post-graduate researcher (master or above) to undertake the research task of identifying relevant case studies and examining transaction costs under various mix of land tenure and property rights arrangements. They will also provide some logistical support like campus lodging, library access, and panel discussion events when we are in Hong Kong. Their in-kind support will be in the amount of at least \$3,000.