

# Effect of Property Tax on Optimization and Upgrading of Industrial Structure

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**Abstract** China's economic growth and economic development has entered a new stage, and the optimization and upgrading of industrial structure is the core driving force for China to achieve high-quality economic development during the "14<sup>th</sup> Five-Year Plan" period. Property tax has a conductive effect on the upgrading of industrial structure. Therefore, from the perspective of property tax and industrial structure adjustment and the relationship between them, this study summarizes the relevant research of domestic and foreign scholars. On the basis of the research, the paper puts forward some relevant policy suggestions on improving China's property tax and promoting the optimization and upgrading of China's industrial structure.

**Key words** Property tax, Collection, Industrial structure, Optimization and upgrading

## 1 Introduction

China's economic growth and economic development has entered a new stage. From the perspective of the added value structure of the industry, the proportion of the added value of China's tertiary industry increased from 45.8% to 54.6% from 2006 to 2023, accounting for the largest proportion among the three industries. However, in contrast to the United States, the world's largest economy, the proportion of its tertiary industry in GDP reached 80.6% in 2018, and the gap between the two countries is still huge. In terms of total GDP in 2023, it only accounted for about 65% of the United States, and the gap mainly comes from the tertiary industry. Therefore, in the face of such a realistic situation, the most important thing is to deepen the supply-side reform as the main line, and take the optimization and upgrading of the industrial structure as the core driving force for China to achieve high-quality economic development during the "14<sup>th</sup> Five-Year Plan" stage.

Property tax has a transmission effect on the upgrading of industrial structure. To some extent, property tax can be transformed into the impact of housing prices on industrial structure, because housing prices will directly affect the production costs and investment preferences of local enterprises, and then affect the local industrial structure. In 2011, China launched the pilot reform of property tax in Shanghai and Chongqing. The design of property tax collection scheme has become the focus and difficulty of China's tax reform. In view of this, this paper compares the property tax pilot reform cities and cities that have not carried out pilot project, and studies the impact of property tax collection on the optimization and upgrading of urban industrial structure, aiming to

provide a reference for the future improvement of the property tax system design.

## 2 Research progress and review at home and abroad

### 2.1 Research progress of property tax at home and abroad

In order to accurately and directly display the relevant research on property tax, through the keyword co-occurrence statistical function in the CiteSpace software, after concealing the two core search keywords "property tax" and "house property tax", it is not difficult to find "property tax reform", "tax reform", "real estate", "real estate market", "housing price", "local main tax", "land transfer fee", "income distribution" and other words correspond to large nodes and fonts, and are keywords that are frequently used in this research field (Fig. 1).

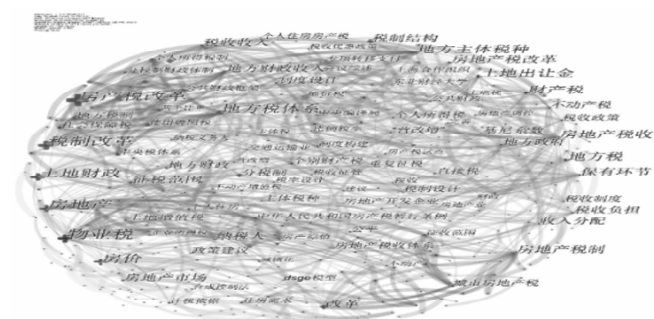


Fig. 1 Frequently used keywords in the research on property tax in CiteSpace

On the basis of keyword co-occurrence visualization, further cluster analysis of keywords is carried out. According to the composition of each category of keywords and on the basis of studying the leading literature of each category, the clusters are merged, and it is found that the existing real estate research hotspots of tax mainly focus on the following two aspects.

**2.1.1 Feasibility of property tax collection.** Scholars at home

and abroad have launched heated discussions on whether to levy property tax. Foreign scholars Simon and Netzer, as representatives of traditional views, are opposed to property tax collection. They studied the impact of tax increases on the local real estate market, and believed that the introduction of property taxes is not conducive to the reduction of local real estate stock<sup>[1-2]</sup>. Brueckner JK and Song Y discussed the relationship between property tax and urban expansion, and the research results showed that the distortion caused by property tax is not conducive to urban spatial expansion. Most domestic scholars oppose the collection of property tax from the perspective of the irrationality and limitations of the design of the property tax system<sup>[3-4]</sup>. For example, Liu Jianwen discussed China's property tax reform from the perspective of the reform path, and believed that China's current property tax reform has flaws in the legitimacy of following the administrative pilot path, which is inconsistent with the modern concept of national governance<sup>[5]</sup>. There are four types of problems: the nature of property tax is unclear, the scope of collection is too small, the scale of income increase is limited, and the legislative procedure is lacking.

However, there are also many scholars in the academic circles who hold a positive attitude towards the collection of property tax. The research of Hamilton effectively excluded the change of housing stock caused by the change of property tax level, and the results showed that "full capitalization" can convert property tax into an interest tax<sup>[6]</sup>. Since then, research by Ladd showed that property taxes and local public service expenditures are capitalized into the value of the house. This research result also verifies Hamilton's belief that the existence of fiscal capitalization is sufficient to make property tax an interest tax at the local level<sup>[7]</sup>. Therefore, these foreign scholars believe that property tax is a non-distorted tax, and give positive affirmation to property tax.

**2.1.2 Impact of property tax collection.** The research on the impact of property tax is mainly carried out from the following three perspectives: the impact of property tax on housing prices; the impact of property tax on local fiscal revenue; the impact of property tax on income distribution.

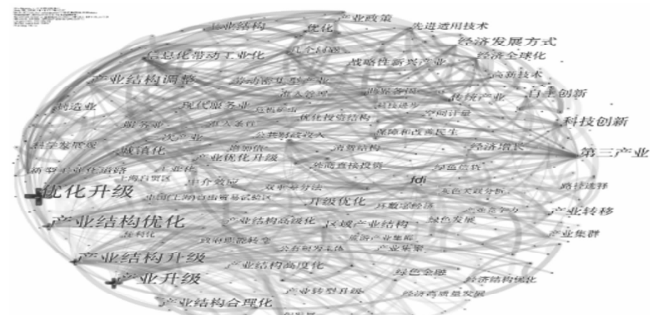
(i) What attracts the most attention from scholars is the impact of property tax on housing prices. The general literature believes that property tax plays a significant role in reducing housing prices. Starting from the theoretical model of property tax, housing price and rent, Zhang P *et al.* deduced the path and mechanism of property tax affecting housing price and rent<sup>[8]</sup>. The results showed that in China's case, if the effective property tax rate is 0.5%, and the property tax revenue is not used to increase public services, then the tax may cause housing prices to fall by 8.3% to 12.5%. If the property tax revenue is used for basic public services, the decline in housing prices will be as small as 1.7% to 2.5%, but rents may rise by 6.7% to 20%. There are also a small number of scholars who believe that property taxes will lead to rising housing prices. In addition, some scholars believe that the role of property tax in regulating housing prices is very limited. Peng Haorong regarded housing as a pure investment object to infer the determinants of housing prices, and selected panel data from 35 cities from the perspective of supply and demand to ana-

lyze the impact mechanism of property tax on real estate prices. The results showed that property tax reduced sales area, construction area and developer investment, but did not significantly change housing prices<sup>[9]</sup>.

(ii) The impact of property tax on local fiscal revenue has also attracted the attention of academic circles at home and abroad. Theoretically speaking, the collection of property tax will directly bring about an increase in local government fiscal revenue. Taking the United States as an example, research by Alm showed that local governments in the United States usually rely on several sources of their own income, including personal income tax, sales tax, and local property tax, the main source of which is property tax<sup>[10]</sup>. The property tax in the United States has a significant effect on increasing national and local tax revenue<sup>[11]</sup>. McCluskey and Plimmer studied the property tax systems of Eastern and Central European countries and found that although this tax has potential fiscal revenue capacity, it is underutilized in Central and Eastern European countries<sup>[12]</sup>. There are few pilot cities of property tax in China, and the start time is relatively late. Therefore, the data about the effect of property tax on local fiscal revenue are generally obtained through estimation or simulation. For example, since the income increase scale of property tax reform depends mainly on changes in the tax base and tax rate level, the research group of the Ministry of Finance estimated the property tax under different tax rates and explored the impact of property tax reform on local financial resources. The results showed that property tax revenue will become a channel to broaden the fiscal revenue of local governments, especially in the developed eastern provinces, the scale of revenue is relatively large, which will greatly increase the financial resources of grassroots governments<sup>[13]</sup>. Xie Jinghua found that under the background of tax reform, the local fiscal revenue system is facing the problem of hollowing out of the main tax, and it is necessary to innovate and build a local main tax system with equal emphasis on individual income tax and property tax<sup>[14]</sup>. Some scholars have also confirmed this conclusion through empirical evidence. For example, Zhang Xiaomei took Hefei City as an example to study the impact of property tax reform on local finance through empirical methods, and concluded that property tax has the potential to become the main local tax in the long run<sup>[15]</sup>.

(iii) As a kind of fiscal tax, property tax has an impact on income distribution, and it has also been widely discussed. Foreign academic circles have two views on whether property tax has the role of adjusting income distribution. One point of view is that from the perspective of the "benefit theory" of property tax, FischeI believed that if consumers can move freely within various jurisdictions, property tax will not have a distorting effect, and at the same time, it will not affect the income redistribution between communities<sup>[16]</sup>. Another point of view is that property tax has the effect of adjusting the income gap. For example, Mieszkowski believed that property tax is a capital tax, its tax burden is progressive, and can play a role in adjusting the income gap. There is also great controversy in domestic academic circles about whether property tax can adjust income distribution<sup>[17]</sup>. Zhan Peng and Li Shi estimated the redistribution effect of property tax based on

**2.2 Research progress at home and abroad on the optimization and upgrading of industrial structure** Through the keyword co-occurrence statistical function in CiteSpace software, the keyword co-occurrence map in the research field of industrial structure optimization and upgrading is drawn (Fig. 2). Taking the full-text database of China National Knowledge Infrastructure (CNKI) as the research data source, after hiding the two keywords of "industrial structure optimization and upgrading" and "industrial structure", it can be seen that the core hot spots revolve around "industrial structure optimization" and "industrial structure upgrading".



On the basis of keyword co-occurrence visualization, further cluster analysis of keywords is carried out. According to the composition of keywords in each category and on the basis of studying the frontier literature of each category, the clusters are merged, and it is found that the existing research hotspots on industrial structure optimization and upgrading mainly focus on the following two aspects.

pacts on the economic structure of national industries from the perspective of the quantitative relationship between scientific and technological activities in Inner Mongolia and the adjustment of the economic structure of national industries in Inner Mongolia<sup>[21]</sup>. From the perspective of labor factors, Zhao *et al.* constructed a panel data fixed-effect model to study the impact of the employment mobility of graduates from China's "double first-class" colleges and universities on the optimization and upgrading of industrial structure. The results showed that the flow of "double first-class" college graduates plays a positive role in the upgrading of provincial industrial structure<sup>[22]</sup>.

**2.2.2** Evaluation criteria and measurement of industrial structure optimization and upgrading. In terms of evaluation criteria, the existing literature generally carries out evaluation from two dimensions; rationalization of industrial structure and upgrading of industrial structure. Zhou Zhenhua described the path and goal of industrial structure optimization from the two perspectives of rationalization and intensification<sup>[23]</sup>. There is diversity in the evaluation criteria and index setting of industrial structure rationalization. Zhou Zhenhua used the input-output analysis method to measure the balance and coordination of industrial structure according to the "industrial balance standard"<sup>[24]</sup>. Gan Chunhui used the redefined Theil index to measure the rationalization of industrial structure. There is no unified standard in the academic circles for the upgrading of industrial structure<sup>[25]</sup>.

### 3 Conclusion

To sum up, although the research on property tax has started for a short period of time in China, the academic circles have also paid full attention to it. Under China's specific national conditions, according to the situation of the property tax pilot, the design and function of the property tax system have been studied. Generally, there is a positive attitude towards the domestic property tax reform. With regard to the optimization and upgrading of industrial structure, scholars have carried out rich research based on different perspectives. The initial theoretical research on industrial structure is basically from abroad. At present, there is no unified standard in the evaluation criteria and measurement methods of industrial structure optimization and upgrading, and there are different opinions among scholars. In addition, it is worth noting that although the existing literature has done some research on the impact of property tax, the research on the relationship between property tax and industrial structure optimization and upgrading is very scarce and needs to be enriched.

## References

- [1] SIMON HA. The incidence of a tax on urban real property[J]. The Quarterly Journal of Economics, 1943, 57(3): 398–420.
- [2] NETZER D. Economics of the property tax[J]. Economics of the property tax, 1966.
- [3] BRUECKNER JK, KIM HA. Urban sprawl and the property tax[J]. International Tax and Public Finance, 2003, 10(1): 5–23.
- [4] SONG Y, ZENOU Y. Property tax and urban sprawl: Theory and implications for US cities[J]. Journal of Urban Economics, 2006, 60(3): 519–534.
- [5] LIU JW, CHEN LC. On the legal construction of the property tax reform

- path[J]. *Law Journal*, 2014, 35(2): 1–12. (in Chinese).
- [6] HAMILTON BW. Capitalization of intrajudicial differences in local tax prices[J]. *The American Economic Review*, 1976, 66(5): 743–753.
- [7] LADD HF. Local government tax and land use policies in the United States[J]. *Books*, 1998.
- [8] ZHANG P, HOU Y, LI B. Impacts of property tax levy on housing price and rent: Theoretical models and simulation with insights on the timing of China adopting the property tax[J]. *China Finance and Economic Review*, 2021, 10(3): 47–66.
- [9] PENG HR, JIANG YQ, XIANG YH. Empirical analysis of the impact mechanism of property tax on real estate prices[J]. *Statistics and Decision-Making*, 2022, 38(4): 165–168. (in Chinese).
- [10] ALM J, BUSCHMAN RD, SJOQUIST DL. Rethinking local government relief on the property tax[J]. *Regional Science and Urban Economics*, 2011, 41(4): 320–331.
- [11] LEVINSON A. America's regressive wealth tax: State and local property taxes[J]. *Applied Economics Letters*, 2021, 28(14): 1234–1238.
- [12] MCCLUSKEY WJ, PLIMMER F. The creation of fiscal space for the property tax: the case of Central and Eastern Europe[J]. *International Journal of Strategic Property Management*, 2011, 15(2): 123–138.
- [13] LIU SX, ZHU CC, ZHANG XD, *et al.* Analysis of resource tax and property tax reform and their impact on local finance[J]. *Financial Research*, 2013(7): 47–52. (in Chinese).
- [14] XIE JH. Research on the reconstruction of local fiscal revenue system under the background of tax reform[J]. *Economic Research Reference*, 2016(72): 14–19. (in Chinese).
- [15] ZHANG XM. Property tax reform, local fiscal revenue and residents' tax burden[J]. *Statistics and Decision-Making*, 2013(10): 173–176. (in Chinese).
- [16] FISCHER WA. Property taxation and the Tiebout model: evidence for the benefit view from zoning and voting[J]. *Journal of Economic Literature*, 1992: 171–177.
- [17] MIESZKOWSKI P. Integration of the corporate and personal income taxes; the bogus issue of shifting[J]. *FinanzArchiv/Public Finance Analysis*, 1972(H.2): 286–297.
- [18] ZHAN P, LI S. Resident property tax and income inequality in China[J]. *Economics Dynamics*, 2015(7): 14–24. (in Chinese).
- [19] HUANG X. The mechanism, conditions and reform direction of property tax adjusting income distribution[J]. *Western Forum*, 2014, 24(1): 38–45. (in Chinese).
- [20] WANG Q, ZHANG GZ. Optimization and upgrading of industrial structure to meet the needs of consumption growth: Based on SDA structure decomposition technology [J]. *Economic Research Reference*, 2017(13): 41–50. (in Chinese).
- [21] HAO W, LI ST. An empirical study on the relationship between scientific and technological innovation and the optimization and upgrading of industrial structure in minority areas: Taking Inner Mongolia Autonomous Region as an example[J]. *Science and Science and Technology Management*, 2009, 30(9): 194–196, 199. (in Chinese).
- [22] ZHAO Y, HE F, FENG Y. Research on the industrial structure upgrading effect of the employment mobility of graduates from China's "double first-class" colleges and universities[J]. *Sustainability*, 2022, 14(4): 2353.
- [23] ZHOU ZH. Securities market and industrial structure adjustment[J]. *Financial Research*, 1992(12): 9–13, 64. (in Chinese).
- [24] ZHOU ZH. On Industrial Structure Optimization [M]. Shanghai: Shanghai People's Publishing House, 1992: 26–29. (in Chinese).
- [25] GAN CH, ZHENG RG, YU DF. The impact of China's industrial structure changes on economic growth and fluctuation[J]. *Economic Research*, 2011, 46(5): 4–16, 31. (in Chinese).

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## References

- [1] ZHANG ES. Adjustment of administrative divisions and regional gap: Taking Hainan province as an example[J]. *Economic and Management Research*, 2012, (1): 54–61. (in Chinese).
- [2] WANG XB, NIE HF. Adjustment of administrative divisions and economic growth[J]. *Managing the World*, 2010, (4): 42–53. (in Chinese).
- [3] CHEN Z. The impact of prefecture-level adjustment of administrative divisions on regional economic development: Taking Sichuan Province as an example[J]. *Economic Geography*, 2006, 26(3): 418–421. (in Chinese).
- [4] MAO JX *et al.* Research on adjustment of administrative divisions of urban agglomeration based on regional economic coordination: Taking Beibu gulf urban agglomeration in Guangxi as an example[J]. *Business Research*, 2009(4): 60–64. (in Chinese).
- [5] BAI XH. adjustment of administrative divisions and urban industrial spatial change in the process of urbanization: An empirical study taking Hangzhou City, Zhejiang Province as an example[J]. *China Soft Science*, 2008(9): 65–73. (in Chinese).
- [6] JIANG Y, ZHONG CB. Research on the impact of adjustment of administrative divisions on the equalization of basic public services: From the perspective of medical care and education[J]. *China Development*, 2023, 23(2): 55–66. (in Chinese).
- [7] GAO LL, SUN HM. How the adjustment of administrative divisions affects regional economic growth: Evidence from the adjustment of administrative divisions above the prefecture level in China[J]. *Economic System Reform*, 2015(5): 66–71. (in Chinese).
- [8] YUAN DM, WEI HK. Research on the mechanism and effect of opening to the outside world to promote industrial agglomeration: Theoretical analysis and empirical test based on China[J]. *Finance and Trade Economics*, 2011(12). (in Chinese).
- [9] SUN XY, WU KC. Strategic conception of flattening administrative structure in contemporary China: Taking the system of city governing counties as an example[J]. *Chinese Administration*, 2004(3): 79–87. (in Chinese).
- [10] HE D, LI J. Review of China's regional development planning and policies since 2009[J]. *East China Economic Management*, 2011, 25(3): 36–34. (in Chinese).
- [11] LIU F. The Spatial Correlation Impact of "Partitions of Chaohu" on the Economic Development of Hemawu [D]. Hefei: Hefei University of Technology, 2017. (in Chinese).
- [12] HE Y, WANG RS, WANG YJ. Chaohu Lake ecological restoration strategy and guidelines for Hefei urban space development[J]. *Beijing Planning and Construction*, 2013, 6(6): 10–16. (in Chinese).