

The Impact of Housing Market Activities on the Inequality of Economic Opportunities in China

*Ming-Hsuan Lee**

Associate Professor
Department of Political Economy
National Sun Yat-sen University

Abstract

This study empirically examines the impact of housing market activities on the income structure of Chinese households and, based on the findings, draws inferences on the impact of housing market activities on the equality of economic opportunities faced by Chinese citizens. We establish a panel dataset consisting of 31 provinces from 2000 to 2011 and adopt a dynamic panel data model with system GMM (Generalized Method of Moments) estimators as the empirical strategy. The results show that among urban households, the booming housing market in China caused a larger increase in the share of property and investment-related income than wage and business income by 20% to 30%, implying that economic opportunities were more skewed to the rich. Conversely, among rural households, the booming housing market caused greater growth in wage and household operation incomes, implying more equal economic opportunities.

Keywords: Housing Market, Income Structure, Economic Opportunities, China

* Ming-Hsuan Lee is an associate professor at the Department of Political Economy, National Sun Yat-sen University, Taiwan. She received her Ph.D. degree in economics from Boston University. Her research interests include development, social and economic inequality, and economy of Taiwan and China. Mailing Address: 70, Lienhai Rd., Kaohsiung, 804, Taiwan. Tel.: (886) 7-5252000. E-mail address: mhlee@mail.nsysu.edu.tw

I. Introduction

China has witnessed a rapid growth in its housing market and a furious upsurge in its housing prices over the last two decades. The high housing prices brought a booming housing market and economic prosperity to Chinese society; however, it also raised the issue of greater inequality in economic opportunities among citizens of different economic statuses.

Economic opportunity, based on the International Development Research Center, can be defined as the opportunity to participate in economic activities, pursue better paid and productive jobs, and accumulate assets (IDRC 2018). The concern for greater inequality in economic opportunities in China came from two venues. First, the Chinese government disposed land to real estate developers, which then either sold the land to other institutions and profited from the transactions or constructed housing projects and profited from the housing sales. The real estate developers who were able to obtain the land and enjoy a share of real estate profits were mainly those who had a connection (*guanxi*) with government officials. It is very common for real estate developers to recruit retired government officials or former state-owned enterprises managers to exploit their influences and connections. Some real estate developers were even former state-owned enterprises managers themselves. The strong bond between government officials and developers corroborated their privileges, and together they grabbed a large share of economic benefits generated by real estate development. Not only did these privileged ones enjoy more economic opportunities than others in the society, their descendants (commonly known as the “officialings” or *guan er dai* and “rich second generation” or *fu er dai*), through the intergenerational transfer of wealth, status, and power, were also able to occupy superior positions and enjoy tremendous economic opportunities compared to the rest of the population of similar ages (Goodman 2015).

Second, the high housing prices also made real estate an appealing investment target. Households with economic affluence bought and sold real estate, profited from the price difference, and enjoyed capital gains. Some households also accumulated real estate for rental purposes and collected rental income. These property and investment-related income sometimes exceeded earnings from the labor market and became the primary source of income for some households (Chen and Qiu 2011; Piketty 2014). The quick profits also attracted numerous Chinese enterprises, from enterprises in traditional industries, such as the Hangzhou Wahaha Group, to high-tech industries, such as the video game developer Shanda Group, to invest in the real estate market in 2013 (朱以師 2013; 新浪科技 2013). The rising housing prices generated huge profits for the population with economic affluence and,

consequently, put these privileged individuals and their descendants in advantageous economic positions with greater economic opportunities. As suggested in Piketty (2014), whenever the rate of return on housing capital is significantly and durably higher than the growth rate of the economy, inheritance and wealth originating in the past grows more rapidly, even without labor, than wealth stemming from work. Lee (2013) empirically identified that the ratio of non-wage income to wage income was the main cause of income inequality in urban China. Conversely, households with limited fortunes or households that cannot afford housing were excluded from real estate investment and were even hurt by housing prices. Scholars often observe that poor or young households with no properties are forced to reduce certain consumption practices and save more to catch up with the housing prices (Xia and Yin 2007; Chen and Qiu 2011; Yan and Feng 2012; Xie et al. 2012). Such consumption may very well include the investment associated with upward social mobility, such as advanced education or social and networking activities. As a result, poor households are further constrained by housing prices and unable to invest in other aspects, whereas wealthy households are able to accumulate more advantages.

However, the argument can also run the other direction. It is argued that, although the booming housing market seemed to make the rich richer, it also created a large number of business opportunities for venture creation, which provided individuals with ambitions to pursue higher economic statuses. The booming housing market also created a large number of employment opportunities, especially low-skilled jobs, which provided economic opportunities for people (especially those of a low-income class) to improve their economic statuses. Hence, the booming real estate market may have actually contributed to more equal economic opportunities among citizens. Housing and construction sectors have usually been seen as one of the main engines of economic growth because they generate both backward and forward linkage effects and stimulate investments in related industries, including raw materials, housing and construction, architecture, design, home appliances, and consumer products (Dhonte et al. 2000; Ahuja 2004, 15-25; Cosculluela-Martínez and de Frutos 2013). In particular, most of the employment opportunities created centered on traditional manufacturing industries and demanded relatively low skills; therefore, they were more inclined to provide economic opportunities to the vast population in the low-income class.

As a result, we are interested in empirically examining whether the booming housing market in China has created a society with more equal economic opportunities or more unequal economic opportunities. The empirical finding can thus provide reference to policy makers regarding the potential positive and negative impacts of promoting the housing industry. However, a challenge in conducting an empirical test is the lack of indicators that directly measure the equality of economic opportunities in a society. As an alternative, we examine the changes in the structure of household income brought about by the housing

market activities and, based on the findings, infer the impact of housing market activities on economic opportunities in China. The National Bureau of Statistics of China divides household income into four categories: wage income, business income, property income, and transfer income. Wage income refers to wages and salaries from labor market activities. Business income comprises income from self-employed production activities, such as opening shops/restaurants, vendors, family workshops, and private businesses. Wage income and business income are returns on production activities and are typically viewed as “earnings” (Lin and Chu 2003). Property income includes income generated from personal property (such as interests and dividends), real property (such as rent), and capital gains.^① According to the 2012 *China Urban Life and Price Yearbook*, rental income was the largest part of property income, accounting for 53%. Transfer income comes from various types of sources, including governments, employers, other organizations, and individuals. For urban households, the National Bureau of Statistics of China also reports additional sources of income: income from selling properties, which includes income from selling houses and other household articles, and debit and credit income, which includes holdings and sales of financial assets such as savings, loans, savings insurance, and securities. Property income, income from selling properties, and debit and credit income are associated with assets and investments and thus can be viewed as “investment-related income”.

Employment opportunities and business opportunities created by the housing market would be reflected in “earnings”(wage income and business income), whereas capital gains and rental income generated from investing in the real estate market would be reflected in “investment-related income”(property income, income from selling property, and debit and credit income). As a result, if housing market activities mainly led to increases in investment-related income, we infer that high-income households or privileged households benefited more from the booming housing market and that high housing prices likely resulted in greater inequality in economic opportunities. Conversely, if the housing market activities led to a greater increase in earnings, we can infer that the booming housing market provided economic opportunities for people (especially those of low-income class) to improve their economic statuses, which likely resulted in greater equality in economic opportunities.^②

註① Income from selling real properties was not included in the “property income” and was included in “income from selling properties”. Income from selling financial assets are included in “debit and credit income”.

註② We acknowledge the possibility that high-income households or privileged households may exploit their connections and influences and obtain significant amounts of wage income and business income. However, we argue that the size of the privileged class in China was small compared to the rest of the population and that wage income and business income still represented a major channel of upward social and economic mobility for the vast majority of Chinese people.

We establish a dynamic panel dataset utilizing data from the *China Statistical Yearbooks*, *China Statistical Yearbook of Price and Urban Household Survey*, and *China Rural Household Survey Statistical Yearbook* of various years to empirically test the impact of housing market activities on income structure. The data consist of 31 provinces/municipalities/ autonomous regions and spans from 2000 to 2011. The methodology employed was a dynamic panel data model with system generalized method of moments (GMM) estimators, which is able to account for potential problems of endogeneity stemming from reverse causality between housing market activities and income structure. The findings of this study can deepen our knowledge regarding the influences of housing market activities on a country economy and society wise.

The rest of this study is arranged as follows: section 2 reviews the process of China's housing reform and discusses the related literature; section 3 describes the data and the methodologies; section 4 presents the empirical results regarding the impact of the housing market on income structures; and section 5 concludes the study.

II. Background and Literature Review

A. China's Housing Reform

(A) Urban Housing

Prior to the 1980s, under the socialist welfare system, housing provisions in China were the responsibility of the state, especially for those employed directly by the State (Wang 1995). Most urban residents relied on the government or the public institutions that employed them to provide housing. However, problems such as numerous housing shortages, insufficient investment/supply, an unfair distribution, the low rent system, and poor management were commonly criticized. Faced with these serious problems, the Chinese government strived to find new forms of housing provision. Commercialization of housing was seen as a major solution for relieving these problems (Wang and Murie 1996). In April 1980, Deng Xiao Ping delivered a speech on urban housing, and this statement guided the housing reform in the following decades:

...urban residents should be allowed to buy houses, or to build their own houses. Not only new houses could be sold, old ones could be sold too (Deng 1980).

The message in Deng's speech was clear: housing had become a "commodity" or a

“product” that can be produced by the private sector and bought and sold on the market. Afterwards, China started launching a series of new housing policies designed to reform the public-sector-dominated housing system in China and convert “public housing” into “private housing”. Two of the important practices included “subsidized sale” and “rent reform to promote sales”.

“Subsidized sale” was implemented in 27 provinces in 1983 and offered an opportunity for individual buyers to pay one-third of the total price of either newly built housing or the houses they occupied. The other two-thirds were to be subsidized by the employer (usually a public enterprise or institution) of the buyer and by the city government (State Economic Reform Commission 1983). However, this policy created huge financial burdens for employers; in addition, because of a lack of a transparent price mechanism, the price of a house was often set deliberately low. Soon, this policy raised concerns about injustice and was abolished. (Xia and Yin 2007)

“Rent reform to promote sales,” a new strategy that was later implemented in 1988, included two major parts: adjusting (raise) rents in the public sector and introducing a housing subsidy for all public-sector employees by promoting the sale of public-sector housing (old and new). Because of the increase in rent, housing authorities had more money for repairs, maintenance and management (Tang and Xie 1992). Along with rent changes, this reform plan encouraged public-sector workers to buy the houses they occupied. Standard sale prices were proposed. Tenants were required to pay a minimum of 30 percent of the price at the time of purchase; the remaining part was to be paid through installments over a period of 10 to 15 years. People occupying larger houses in the old system would pay higher rent. Eventually, these families would be encouraged to move from their houses into small, affordable ones (Wang and Murie 1996).

In 1991, the Chinese government further established a compulsory housing saving system to increase each household’s housing purchasing power. The system required all employed urban residents to save part of their salary through the work unit as long-term housing savings. The employer (whether public or private) had to contribute a similar proportion to the employee’s account each month. The savings would be held by a bank, which could lend the money only for housing development.

To make up for the insufficient sources of public housing, the Chinese government also encouraged the private sector to participate in the supplying of housing. The privatization and commercialization of housing brought a booming housing market to China in 1992~1993. Real estate developers became thriving occupations, and gross investment in the real estate market grew by 117.6% in 1992 (Xia and Yin 2007).

In 1996, at the Central Economic Working Conference, China officially announced the housing industry as a new engine of economic growth and granted full support for its

development (China Institute for Reform and Development 2014). In the meantime, the Chinese government instituted an urban commercial housing transaction market in almost every city. In 1998, subsidized housing within state-owned enterprises and government ministries was completely abolished. Workers were encouraged to utilize their savings alongside the housing subsidies they received on a once-and-for-all basis to purchase their own homes or pay rents closer to market rates (Mak et al. 2007). The housing market in China completely transitioned to a commercialized market in which market demand and supply determine the price and the quantity of housing.

From 1980 to 1998, China's housing reform completed the revolutionary transition from a state-sponsored welfare housing provisioning system to an open commodity housing market (Chen et al. 2011).

(B) Rural Housing

Following the land reform carried out in the 1950s in rural China that aimed to collectivize agriculture, Chinese peasants' ownership of land and houses gradually changed into collective ownership of the land; peasants only had the right to use their homestead. In the meantime, the right to use a homestead could not be purchased, sold, rented, or mortgaged. House ownership and the right to use a homestead could not be divided under natural conditions (Meng 2005).

Without being influenced much by the wave of commercialization of urban housing in 1980s, the State Council issued and revised *The Regulation of Rural Land for Construction* in 1982 and 1988 and issued the *Law on Land Management* in 1986. The new regulations explicitly stated that rural land in China was owned by collectives and noted the subjects, the process of application and approval, the criteria, and the basic rules of rural land use concerning the right to use a homestead (Chang et al. 2014). It established the principle that the right to use a rural homestead must be applied with the rural family as a unit and clearly noted that a rural family can own the right to use only one homestead (Liu 2006; Chang et al. 2014). In addition, according to article 63 of the *Law on Land Management*, the free circulation of rural homesteads was banned in China, and rural homestead could be circulated only within the members of the village collective.

The regulations on rural land and the ban on the free circulation of rural homesteads have remained effective up to the present and have continuously raised heated debates among scholars. Many voices have called for a free market for rural homesteads. Wang and Sun (2006) argued that many rural farmsteads stayed idle because the legal holders of the homesteads worked or settled in cities, which demonstrated an example of inefficient resources utilization. Chang et al. (2014) also argued that the ban on the free circulation of

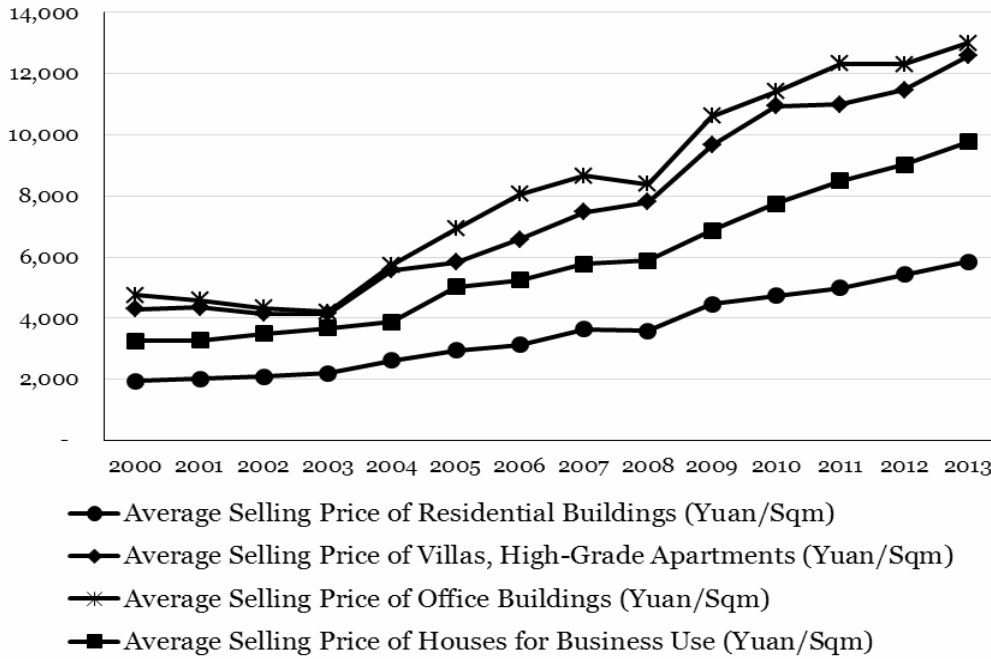
rural housing went against realizing coordinated development of urban and rural areas, as well as the reasonable circulation of urban and rural resources. Furthermore, a free market for rural homesteads would offer peasants opportunities to accumulate property income and improve their economic statuses. However, other scholars believe that current regulations on rural homesteads provide protection to peasants. Chang (2005) and Gao (2014) both argued that under the current system, every rural family can have a piece of a homestead for free of charge, which forms a part of social security from the government and provides peasants the ultimate support for subsistence (a place to live at least, for example). If the ban on the free circulation of rural housing were removed, real estate developers, corporations, and people with power and connections would be winners again, and powerless peasants would definitely be the losers (Meng 2005). Xiwen Chen, the vice director of the Office of the Central Leading Group on Rural Work, stated explicitly in a media interview in 2015 that “Urban housing is much more expensive than rural homesteads. Once peasants sell off homesteads, where else can they find a place to live?” (涂重航 2015)

Due to the ban on the free circulation of rural homesteads, there is no official housing transaction market in rural areas. Nonetheless, to a large extent, the right to use a homestead is subject to a secret circulation exchange in rural areas (Chang et al. 2014). However, these under-the-table transactions are not protected by law; thus, disputes are frequent. Given that a free market for rural homesteads is still not an option, a sound legal framework thus is imperative to solve the various issues on rural land-using.

B. Housing Prices and Societal Changes

Following the commercialization of its urban housing market, China's housing prices grew in a rapid and monotonic way. Figure 1 indicates that the average selling prices of different properties have increased since 2000. The price per square meter for office buildings was the highest, followed by villas and high-grade apartments, houses for business use, and residential buildings. There was a slight downturn during the financial crisis in 2008; however, after the implementation of the stimulus plan in 2008 and 2009 (including a tremendous quantitative easing), housing prices resumed their growth speed. On average, prices increased by approximately 300% from 2000 to 2013. For example, the average selling price of villas and high-grade apartments rose from RMB \$4,288 per square meter in 2000 to RMB \$12,591 per square meter in 2013, and the average selling price of residential buildings rose from RMB \$1,948 per square meter in 2000 to RMB \$5,850 per square meter in 2013.

Figure 1 Average Selling Price of Various Properties in China, 2000~2013



Source: China Statistical Yearbooks.

The prices in Figure 1 are national averages. In large cities, the average selling prices of residential buildings were much higher and grew even more rapidly. Table 1 shows the housing price of each province and the housing prices of major cities in the province. In 2004, the highest selling price of residential buildings was in Shenzhen (a major city in Guangdong province) at RMB \$6,385 per square meter, followed by Shanghai at RMB \$5,761 per square meter and Beijing at RMB \$4,747 per square meter. By 2013, the selling prices of residential buildings in the three cities rose to \$23,427, \$16,192, and \$17,854, respectively, an almost 400% increase. In the meantime, the selling price in Shenzhen was almost three times as high as the average selling price in Guangdong province. The selling prices in other cities were also higher than their province averages, indicating that the housing market boom was centered in large cities.

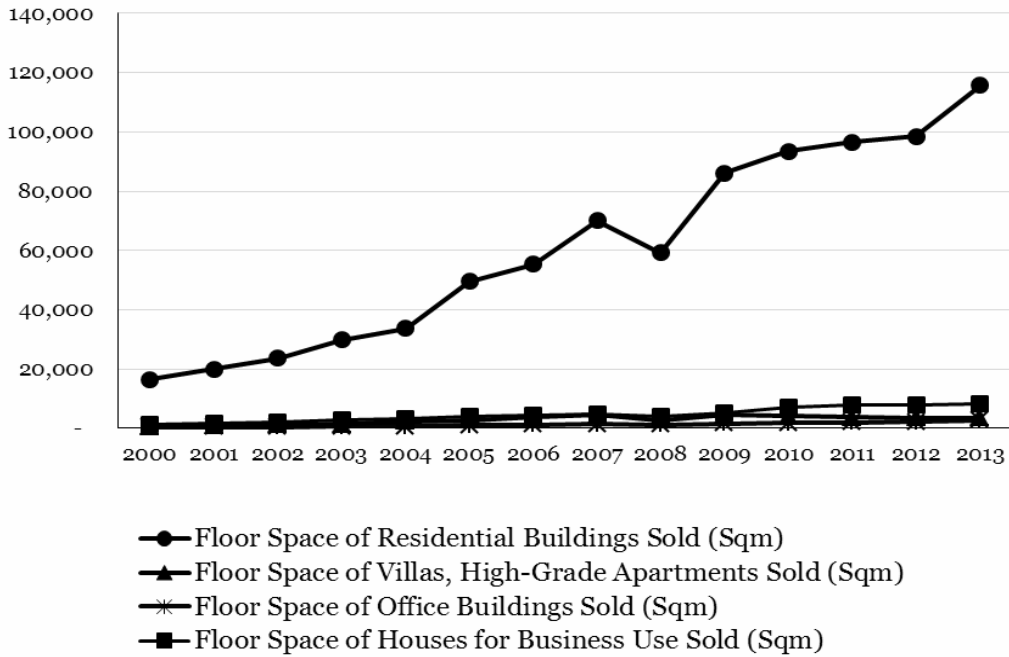
Figure 2 shows that the transactions in China’s booming real estate market centered on residential buildings. For example, in 2002, the floor space of residential buildings sold was 23,702 square meters, 85.6% of the total floor space sold. In 2013, the floor space of residential buildings sold was 115,723 square meters, which was equivalent to 88.5% of the total floor space sold.

Table 1 Comparison of Average Selling Prices of Residential Buildings: Major Cities and Province-Wide (Yuan/Square meter)

Province	Province-wide average selling price (2013)	Major Cities in the Province	Average Selling Price in the City (2013)	Average Selling Price in the City (2004)
Beijing	17,854	Beijing	17,854	4,747
Tianjin	8,390	Tianjin	8,390	2,950
Hebei	4,640	Shijiazhuang	4,943	1,534
Shanxi	4,211	Taiyuan	6,668	2,333
Inner Mongolia	3,863	Hohhot	4,631	1,430
Liaoning	4,918	Shenyang	6,074	2,852
		Dalian	7,859	2,973
Jilin	4,228	Changchun	5,729	2,119
Heilongjiang	4,435	Harbin	5,884	2,215
Shanghai	16,192	Shanghai	16,192	5,761
Jiangsu	6,650	Nanjing	11,078	3,098
Zhejiang	11,016	Hangzhou	14,679	3,884
		Ningbo	11,405	3,026
Anhui	4,776	Hefei	6,084	2,271
Fujian	8,618	Fuzhou	10,155	2,463
		Xiamen	14,551	3,768
Jiangxi	4,905	Nanchang	6,639	2,429
Shandong	4,797	Jinan	7,013	2,831
		Qingdao	7,987	2,747
Henan	3,835	Zhengzhou	6,587	2,004
Hubei	4,847	Wuhan	7,238	2,463
Hunan	3,908	Changsha	5,759	1,775
Guangdong	8,466	Guangzhou	13,954	4,356
		Shenzhen	23,427	6,385
Guangxi	4,219	Nanning	6,155	2,482
Hainan	8,633	Haikou	7,342	2,215
Chongqing	5,239	Chongqing	5,239	1,573
Sichuan	5,086	Chengdu	6,708	2,224
Guizhou	3,735	Guiyang	4,488	1,643
Yunnan	4,176	Kunming	5,615	2,437
Xizang	3,883			
Shaanxi	4,991	Xi'an	6,435	2,394
Gansu	3,684	Lanzhou	5,520	2,084
Qinghai	3,957	Xining	4,380	1,536
Ningxia	3,917	Yinchuan	4,524	1,923
Xinjiang	3,949	Urumqi	5,858	1,797

Source: China Statistical Yearbooks.

Figure 2 Floor Space of Various Properties Sold in China, 2000~2013



Source: China Statistical Yearbooks.

The rise in housing prices has led many scholars to examine its determinants, and factors from both the demand side and the supply side have been identified (see Section 1). Societal changes brought by the rising housing prices, such as changes in saving behaviors, the marriage rate, and fertility, were also examined. For instance, the rising housing prices forced poor or young households to reduce consumption and save more to catch up with the housing prices. This led to a welfare loss for residents, with the mid-low income households suffering the most (Chen and Qiu 2011). The high cost of housing also prevented marriage decisions among young people and reduced fertility among married couples (Hong 2012; Li et al. 2012). Furthermore, scholars even observed that the high housing costs increased the competitive pressure among single males in the marriage market and pushed households with sons to increase savings to improve their sons' relative attractiveness for marriage (Wei and Zhang 2011).

The impact of housing market activities on inequality in economic opportunities has also drawn intense discussions. On the one side, a booming housing market may trigger the growth of upstream and downstream industries and generate employment and business opportunities (李荆華 1992; 萬蓬勃 2008; Cosculluela-Martínez and de Frutos 2013), thereby leading to a spread of economic opportunities. Conversely, a booming housing market also implies higher housing prices, which may motivate investments in the real estate

market among households with economic affluence, but it also may put households with limited wealth or without properties in even more difficult economic conditions. Capital gains obtained from real estate investment, as well as the intergenerational transfer of wealth and power among wealthy households, may lead to a wider divergence in economic opportunities faced by wealthy and poor households (Chen and Qiu 2011; Piketty 2014; Goodman 2015). Many studies have documented that family inheritances, whether it is tangible wealth or intangible power and connections, are crucial for economic opportunities in China (Henley et al. 1999; He 2000; Bian 2002; Goodman 2015).

Therefore, the question of whether the booming housing market has led to more or less equal economic opportunities among Chinese households is a question worth examining. However, relatively little empirical evidence has been provided so far. To fill this void in the literature, this study empirically examines the impact of rising housing prices on the income structure of Chinese households and, based on the findings, draws inferences on the relationship between housing market activities and equality in economic opportunities in China. The findings of this study can be a reference for policy makers worldwide regarding the factors impacting economic opportunities and the venues towards more equal economic opportunities.

III. Data and Methodology

The data employed in this study are drawn from the 2001 to 2012 *China Statistical Yearbook* (CSY), *China Statistical Yearbook of Price and Urban Household Survey* (CSYPUHS), and *China Rural Household Survey Statistical Yearbook* (CRHSSY). The CSYPUHS and CRHSSY report the income structures of urban households and rural households in each province. For urban households, the CSYPUHS provides information on “household income,” which is divided into four categories: wage income, business income, property income, and transfer income. The CSYPUHS also provides information on additional sources of income: “income from selling properties” and “debit and credit income”. For rural households, however, the CRHSSY reports only the total “household income” and the four categories (wage income, household operation income, property income, and transfer income).^③ Other sources of income are not provided. The CSY provides information regarding the housing market variables, as well as other economic and social variables. We examine the impact of housing market activities on the income

註③ Household operation income includes income from activities in agriculture, forestry, animal husbandry, fishery, manufacturing, construction, transportation, post and telecommunications, wholesale, retail and catering, social service, culture, education, and health.

structures of both urban households and rural households.

Table 2 shows the income structure of urban households in China. We listed the four categories of household income in columns (1) to (4) and the two additional sources of income in columns (5) to (6). Column (7) reports the sum of earnings from production activities (wage income and business income). Column (8) reports the sum of investment-related income (property income, income from selling properties, and debit and credit income). Columns (9) and (10) display the share of earnings and investment-related income, respectively. Clearly, earnings from production activities, especially wage income, remained the primary source of income for Chinese urban households. However, the importance of investment-related income continued to rise over time. In column (9), we can see that the share of earnings fell from approximately 60% in 2000 to approximately 55% in early 2010s, whereas the share of investment-related income increased from approximately 21% in early 2000s to approximately 26% in early 2010s, implying that the income structure of Chinese urban households became more diverse.

Table 2 Average Income Structure of Urban Households

Year	(Yuan per person)									
	Household Income				Additional Income		Earnings	Investment-related Income	Share of Earnings	Share of Investment-Related Income
	Wage Income	Business Income	Property Income	Transfer Income	Income from Selling Properties	Debit and Credit Income				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
2000	4,481	246	128	1,441	21	1,553	4,727	1,702	60.06%	21.63%
2001	4,830	274	118	1,669	38	1,661	5,104	1,817	59.42%	21.15%
2002	5,740	332	102	2,003	48	2,019	6,072	2,169	59.27%	21.17%
2003	6,410	404	135	2,112	87	2,462	6,814	2,684	58.69%	23.12%
2004	7,153	494	161	2,321	177	2,831	7,647	3,169	58.21%	24.12%
2005	7,798	680	193	2,651	156	2,986	8,478	3,335	58.61%	23.06%
2006	8,767	810	244	2,899	206	3,749	9,577	4,199	57.43%	25.18%
2007	10,235	941	349	3,385	159	4,264	11,176	4,772	57.81%	24.68%
2008	11,299	1,454	387	3,928	139	4,153	12,753	4,679	59.71%	21.91%
2009	12,382	1,529	432	4,515	390	5,681	13,911	6,503	55.80%	26.09%
2010	13,708	1,714	520	5,092	271	6,542	15,422	7,333	55.38%	26.33%
2011	15,412	2,210	649	5,709	141	7,139	17,622	7,929	56.37%	25.36%

* Earnings = Wage Income + Business Income.

Investment-related income = Property Income + Income from Selling Properties + Debit and Credit Income.

Source: China Statistical Yearbooks.

However, in Table 3, we can observe that as the income structure of Chinese urban households became more diverse, there were differences between the rich and the poor. Table 3 reports income structures by income groups in 2011. Low- and middle-income households,

Table 3 Average Income Structure of Urban Households by Income Groups, 2011

(Yuan per person)

	First Decile	Second Decile	Second Quintile	Third Quintile	Fourth Quintile	Ninth Decile	Tenth Decile
Household Income							
Wage Income	5,007	7,882	10,365	14,060	18,747	25,126	39,817
Business Income	812	1,149	1,427	1,615	2,149	3,170	8,325
Property Income	102	143	208	376	652	1,125	3,462
Transfer Income	1,899	2,578	3,882	5,390	7,511	9,794	12,857
Additional Income							
Income from Selling Property	17	12	44	61	109	359	796
Debit and Credit Income	2,369	2,740	3,952	5,617	8,461	12,941	23,232
Earnings	5,819	9,031	11,792	15,675	20,896	28,296	48,142
Investment-Related Income	2,488	2,895	4,204	6,054	9,222	14,425	27,490
Share of Earnings	57.0%	62.3%	59.3%	57.8%	55.5%	53.9%	54.4%
Share of Transfer Income	24.2%	21.9%	24.4%	25.1%	25.8%	24.9%	19.9%
Share of Investment-Related Income	24.4%	20.0%	21.1%	22.3%	24.5%	27.5%	31.1%
Expenditure for Purchasing and Building House	94	137	261	450	695	1,423	3,778

Source: China Statistical Yearbooks.

such as households from the first quintile to the fourth quintile, relied mostly on earnings and transfer income. The share of earnings ranged from 56% to 62%, and the share of transfer income ranged from approximately 24% to 25%. The share of investment-related income was only approximately 20% to 23%. Conversely, although high-income households also relied mostly on earnings (but the share of earnings was approximately 54%, lower than the shares of households in other groups), the importance of investment-related income was more substantial. The share of investment-related income was approximately 28% and 31% for households in the ninth and tenth deciles, respectively, which was much higher than the share of investment-related income of households in the low- and middle-income groups. The actual amounts of investment-related income of high-income households were also much greater than the amounts of investment-related income of other households. For example, the amount of average investment-related income of households in the tenth decile, RMB \$27,490, was 11 times as high as the amount of average investment-related income of households in the first decile, RMB \$2,488. Obviously, investment-related income was a

more important source of income for high-income households than middle- and low-income households. In the last row of Table 3, we can further see the difference in purchasing power in terms of housing among households of different income groups. The average expenditure for purchasing and building the houses of households in the tenth decile was RMB \$3,778, which was 40 times as high as the expenditure of households in the first decile (RMB \$94).

Table 4 shows the income structure of rural households from 2000 to 2013 in China. Clearly, earnings from production activities were the primary source of income for rural households. The share of earnings took up to 94% of the total income in 2000 and remained high at 88% in 2013. Within the reported earnings, household operation income was the primary source; however, the share of household operation income decreased and the importance of wage income increased over time. Specifically, the share of household operation income fell from 63.34% in 2000 to 42.64% in 2013; the share of wage income grew from 31.17% in 2000 to 45.25% in 2013. This change may be associated with the industrialization of rural China and the presence of a substantial amount of non-farm employment opportunities in the countryside. The share of property income, although fairly small, displayed an uprising trend and increased from 2% in 2000 to 3.29% in 2013.

Table 4 Income Structure of Rural Households

Year	Per Capita Income (Yuan)	Earnings			Share of Property Income	Share of Transfer Income
		Share of Wage Income	Share of Household Operation Income	Subtotal		
2000	2,253	31.17%	63.34%	94.51%	2.00%	3.50%
2001	2,366	32.62%	61.68%	94.30%	1.99%	3.71%
2002	2,476	33.94%	60.05%	93.99%	2.05%	3.97%
2003	2,622	35.02%	58.78%	93.80%	2.51%	3.69%
2004	2,936	34.00%	59.45%	93.45%	2.61%	3.93%
2005	3,255	36.08%	56.67%	92.75%	2.72%	4.53%
2006	3,587	38.33%	53.83%	92.16%	2.80%	5.04%
2007	4,140	38.55%	52.98%	91.53%	3.10%	5.37%
2008	4,761	38.94%	51.16%	90.10%	3.11%	6.79%
2009	5,153	40.00%	49.03%	89.03%	3.24%	7.72%
2010	5,919	41.07%	47.86%	88.93%	3.42%	7.65%
2011	6,977	42.47%	46.18%	88.65%	3.28%	8.07%
2012	7,916	43.55%	44.63%	88.18%	3.15%	8.67%
2013	8,896	45.25%	42.64%	87.89%	3.29%	8.82%

Source: China Statistical Yearbooks.

We can observe that urban and rural areas display distinct changes in income structure: investment-related income became a more important source of income among urban

households, especially high-income households, whereas wage income became a more important source of income among rural households. As a result, we intend to investigate whether the booming housing market in urban areas and the dichotomy of urban and rural housing policies were associated with changes in income structures of urban and rural households. From these results, we can draw an inference on the impact of housing market activities on equality of economic opportunities in China.

Dynamic Panel Data Model

To examine how the housing market activities impacted the income structure of Chinese households, we specify a dynamic panel data model and estimate the following equation for urban households and rural households:

$$incstruc_{it} = \beta_0 + \beta_1 \cdot incstruc_{i,t-1} + \beta_2 \cdot housing_{it} + \gamma \cdot Z_{it} + \delta_i + \varepsilon_{it} \quad (1)$$

where i denotes provinces and t denotes years. The dependent variable is income structure, denoted by *incstruc*. We use two alternative variables to measure the income structure of urban households: the ratio of property income to earnings (*urban_incstruc_1*) and the ratio of investment-related income to earnings (*urban_incstruc_2*). The former measure incorporates property income only, whereas the latter measure incorporates a wider range of investment-related income.^④ For rural households, we use the ratio of property income to earnings as the measure of income structure (*rural_incstruc*). The greater (smaller) these ratios are, the greater (smaller) is the inclination of income structure toward property income or investment-related income. Note that equation (1) incorporates the lag term of *incstruc* as one of the independent variables, which enables us to capture the dynamic of income structure over time and study the adjustment process of income structure (Bun and Sarafidis 2013).

The independent variable of main interest is *housing*, representing housing market activities. We measure housing market activities from three dimensions: the average selling price of residential buildings (*housing_price*), the per capita floor space of residential buildings sold (*housing_quantity*), and the total output value of building construction as a percentage of provincial GDP (*housing_tov*). A positive β_1 indicates that the booming housing market has led to a greater increase in property income or investment-related income than in earnings, and high-income households, which have greater purchasing power in terms of housing investment (as shown in Table 3), were likely to benefit more from the housing

註④ The first measure of income structure (*urban_incstruc_1*) was adopted to facilitate the comparison of estimation results between urban and rural households.

market activities. Conversely, a negative β_1 indicates that the booming housing market has led to a greater increase in earnings than in property income or investment-related income, and all households (especially low-income households) have obtained opportunities to improve economic statuses.

Z is the set of control variables. We controlled for three variables related to the progress of economic development: the income level, measured by per capita GDP (*gdppc*), and the industrial structures, *industry* and *service*, measured by the share of GDP in the industry sector and the share of GDP in the service sector, respectively, to capture possible changes in income structure due to economic development. It has been suggested in previous studies that as economic development (especially industrialization) progresses, wage income should be commonplace in societies because most people are not self-employed (Bibb and Form 1977; Bian 2002; Juwei and Dewen 2004). In addition, the Chinese government has been orchestrating venture creation to encourage innovation and as a buffer for unemployment. These small and new ventures contributed to the growth of both the industry and service sectors, and this part of industrial change may have also contributed to a greater growth in business income. We also controlled for the education level (*edu*) in the regression, measured by the percentage of the population with a high school degree or higher. We expect that education would lead to a greater growth in earnings and provide more equal economic opportunities.

We employed the system GMM estimators proposed by Arellano and Bover (1995) and Blundell and Bond (1998) to estimate equation (1). First, the presence of the lagged dependent variable in the regressors gave rise to autocorrelation. In the system GMM, the lagged dependent variable is instrumented with its past values to solve the problem of autocorrelation. Additionally, there might be reverse causality between housing market activities and income structure. For instance, a greater increase in investment-related income might encourage more investment into the housing market, leading to a booming housing market. Failure to correct for the endogeneity problem caused by this reverse causality may result in inconsistent estimators. The system GMM estimator copes with the endogeneity problem by employing the lagged value of the endogenous regressor (in our case, *housing*) as an instrument to solve the endogeneity problem (Lio et al., 2011). Following the suggestions of Rodman (2009), we used the second lag of *housing* as its instrument and the first and second lags of the control variables as their instruments in the system GMM estimation.

The detailed definition of variables and descriptive statistics are reported in Table 5. We observe that income structures and housing market conditions in each province are quite diverse. The income structure of urban and rural households and the three housing market variables display relatively large variations because their standard deviations are relatively

large compared to the means. The maximum values of *urban_incstruc_1* and *urban_incstruc_2* are 4 and 5 standard deviations away from the mean, and the maximum value of *rural_incstruc* is also 5 standard deviations away from the mean. Especially among urban households, the maximum value of *urban_incstruc_2* being 1.13 indicates that the amount of investment-related income was even more than earnings for some households. As we further check the dataset, a number of provinces have *urban_incstruc_2* greater than or close to 1, including Beijing, Shanghai, Fujian, and Ningxia. Among the three housing market variables, the highest housing price was \$17,852, which was 5 standard deviations away from the mean; the maximum values of *housing_quantity* and *housing_tov* were 4 and 5 standard deviations away from the mean, respectively. The control variables *gdp* and *edu* also have relatively large standard deviations compared to the means, with maximum values 4 and 5 standard deviations away from the means, respectively. This implies large variations in the income level and education background across provinces as well.

Table 5 Variable Definitions and Descriptive Statistics

Variable	Definition	Mean	Std. Dev.	Min.	Max.
Urban households:					
<i>earnings</i>	Wage income + business income	10,976	5,921	3,250	35,552
<i>investment-related income</i>	Property income + income from selling properties + debit and credit Income	4,095	3,232	817	20,326
<i>urban_incstruc_1</i>	Urban households: property income/earnings	0.025	0.017	0.0001	0.097
<i>urban_incstruc_2</i>	Urban households: investment-related income /earnings	0.408	0.171	0.054	1.130
Rural households:					
<i>earnings</i>	Wage income + business income	4,306	2,527	1,162	13,962
<i>rural_incstruc</i>	Rural households: property income/earnings	0.033	0.025	0.0001	0.157
<i>housing_price</i>	The average selling price of residential buildings (Yuan per square meter)	3,996	2,832	1,158	17,852
<i>housing_quantity</i>	The floor space of residential buildings sold per person (Square meter)	0.67	0.41	0.04	2.12
<i>housing_tov</i>	The total output value of construction of buildings as a percentage of GDP	0.11	0.06	0.03	0.40
<i>gdppc</i>	Gross domestic product per capita of the province	28,518	18,837	4,011	97,609
<i>edu</i>	The percentage of population with degrees of high schools or above.	0.09	0.06	0.01	0.41
<i>industry</i>	The share of the industry sector.	0.48	0.08	0.22	0.62
<i>service</i>	The share of the service sector.	0.40	0.08	0.28	0.77

Source: China Statistical Yearbooks.

IV. Empirical Results: Housing Market and Income Structure

A. The Housing Market and Income Structure

Table 6 reports the estimation results for urban households. Models (1) to (3) report the results of the regressions using *urban_instruc_1* as the dependent variable, and models (4) to (6) report the regression results for the regressions using *urban_instruc_2* as the dependent variable. Table 7 reports the estimation results for rural households.

Table 6 Estimation Results: Housing Market and Income Structure

	ln (<i>urban_instruc_1</i>)			ln (<i>urban_instruc_2</i>)		
	(1) GMM	(2) GMM	(3) GMM	(4) GMM	(5) GMM	(6) GMM
ln (<i>urban_instruc</i>) (t-1)	0.719*** (0.026)	0.748*** (0.030)	0.718*** (0.030)	0.790*** (0.051)	0.813*** (0.052)	0.834*** (0.050)
ln (<i>housing_price</i>)	0.323*** (0.093)			0.209** (0.097)		
ln (<i>housing_quantity</i>)		0.208** (0.094)			0.131*** (0.037)	
ln (<i>housing_tov</i>)			0.155* (0.091)			0.072 (0.069)
ln (<i>gdppc</i>)	-0.290 (0.219)	0.035 (0.073)	-0.231** (0.040)	-0.212* (0.123)	-0.125** (0.063)	0.007 (0.052)
<i>edu</i>	-0.018 (0.248)	-0.391* (0.227)	-0.485** (0.213)	-0.497 (0.343)	-0.266 (0.315)	-0.310 (0.347)
<i>industry</i>	-0.533 (0.444)	-1.315*** (0.559)	-1.155* (0.679)	-0.799* (0.539)	-0.121 (0.416)	-0.277 (0.514)
<i>service</i>	-1.198** (0.541)	-0.723 (0.668)	-1.197* (0.667)	-0.349 (0.442)	-0.178 (0.396)	-0.176 (0.399)
Hansen Test	Chi2 (188) =28.7	Chi2 (188) =27.3	Chi2 (188) =21.4	Chi2 (156) =29.1	Chi2 (156) =26.9	Chi2 (156) =29.3
AR (1) Test	Z=-3.26***	Z=-4.00***	Z=-4.48***	Z=-3.5***	Z=-3.58***	Z=-3.37***
AR (2) Test	Z=-1.19	Z=-1.10	Z=-1.08	Z=-1.37	Z=-1.37	Z=-1.23
Observations	403	403	403	339	339	339

Note: Numbers in parenthesis are standard errors. Statistical Significance level: *** 1% ** 5% * 10%

Source: China Statistical Yearbooks.

Table 7 Estimation Results: Housing Market and Income Structure

	ln (<i>rural_inestruc</i>)		
	(7) GMM	(8) GMM	(9) GMM
ln (<i>rural_inestruc</i>) (t-1)	0.548*** (0.181)	0.492*** (0.183)	0.470*** (0.179)
ln (<i>housing_price</i>)	-0.222 (0.193)		
ln (<i>housing_quantity</i>)		-0.008 (0.060)	
ln (<i>housing_tov</i>)			-0.247* (0.134)
ln (<i>gdppc</i>)	0.286 (0.222)	0.179 (0.154)	-0.175 (0.107)
<i>edu</i>	0.158 (0.209)	-0.153 (0.331)	-0.089 (0.282)
<i>industry</i>	-0.564 (0.705)	-1.221* (0.675)	-1.690* (0.928)
<i>service</i>	-2.162** (0.909)	-2.844*** (1.069)	-3.336*** (1.269)
Hansen Test	Chi2 (188) =24.3	Chi2 (188) =26.1	Chi2 (188) =24.7
AR (1) Test	Z=-2.73***	Z=-2.74***	Z=-2.69***
AR (2) Test	Z=0.96	Z=0.94	Z=0.94
Observations	403	403	403

Note: Numbers in parenthesis are standard errors.

Statistical Significance level: *** 1% ** 5% * 10%

Source: China Statistical Yearbooks.

Models (1) to (3) show that the three different measures of housing market activity generated very similar results for urban households. A higher housing price was associated with a greater growth in property income than in earnings. The coefficient *housing_price* is statistically significant in model (1) and is 0.323, which indicates that when the housing price increases by one percent, the resulting growth rate in property income will be greater than the growth rate in earnings by 32.3%.^⑤ Similarly, a more active housing market, i.e., provinces with a larger amount of floor space of residential buildings sold, was also associated with a greater increase in property income than earnings. The coefficient of *housing_quantity* in model (2) is positive and statistically significant (0.208) , suggesting that the growth rate of property income was greater than the growth rate of earnings by 20.8% when more housing was sold. Lastly, when we used the total output value of the

註⑤ $\partial \ln(\text{urban_instruc_1}) = \partial \ln\left(\frac{\text{propertyincome}}{\text{earnings}}\right) = \partial \ln(\text{property income}) - \partial \ln(\text{earnings}) = \text{the growth rate of property income} - \text{the growth rate of earnings}$

building construction to measure housing market activity, we also obtained a positive association between the output value and the income structure inclined to property income. The coefficient of *housing_tov* in model (3) is 0.155 and statistically significant, indicating the growth rate of property income was greater than the growth rate of earnings by 15.5% when the construction industry grew by one percent.^⑥

The estimation results in models (4) to (6) are consistent with the results in models (1) to (3). The coefficient *housing_price* is 0.209 in model (4) and is statistically significant, indicating that the growth rate of investment-related income was greater than the growth rate of earnings by 20.9% when the housing price rose by one percent. The coefficient of *housing_quantity* is 0.131 in model (5) and is also statistically significant, suggesting that the growth rate of investment-related income was greater than the growth rate of earnings by 13.1% when more housing was sold. The coefficient of *housing_tov* is 0.072 in model (6), but it was not statistically significant. We notice that the coefficients in models (4) to (6) are relatively smaller than their counterparts in models (1) to (3). We infer that because a wider range of investment-related income was included to measure income structure in models (4) to (6) (including property income, income from selling properties, and debit and credit income), the slower growth of other sources of income might have offset the growth in property income; thus, the coefficients are smaller. From this comparison, we can also infer that the booming housing market generated the greatest impact on property income, compared to other sources of investment-related income.

In the previous discussion, we documented that a booming housing market may have two different effects on income structure: it can increase the return on housing capital and lead to a greater growth in property income or investment-related income; it can also create business opportunities and employment opportunities and lead to a greater growth in

註⑥ To better understand the impact of housing market activities on the amount of investment-related income and earnings, we also estimated equation (1) using the natural log of investment-related income and the natural log of earnings respectively instead of the ratio of the two income. The results showed that increases in housing market activities are associated with greater increases in investment-related income and are associated with smaller increases in earnings. For example, the estimation result of the regression of investment-related income on housing price is given by:

$$\text{Investment related income}_t = 0.773 \cdot \text{Investment related income}_{t-1} + 0.291 \cdot \text{housing price}_t + \dots$$

(0.065) (0.118)

And the estimation result of the regression of earnings on housing price is given by:

$$\text{Earnings}_t = 0.931 \cdot \text{Earnings}_{t-1} + 0.040 \cdot \text{housing price}_t + \dots$$

(0.018) (0.022)

The numbers in the parenthesis are standard errors. The coefficient of housing price in the regression of investment-related income (0.291) is greater than the coefficient of housing price in the regression of earnings (0.040). Similar results were obtained when we used housing quantities and total output values to represent housing market activities.

earnings. The findings of our estimation suggest that the former effect dominated the latter effect and that the booming housing market in China has led to a greater growth in investment-related income and property income than in earnings. This result implies that high-income households were likely to have benefited more from the development of the housing market in China, and economic opportunities may have become more skewed to high-income households and their descendants.

Conversely, we obtain completely different results for rural households. In models (7) and (8), the coefficient of *housing_price* and the coefficient of *housing_quantity* are negative but not statistically significant. In model (9), the coefficient of *housing_tov* (-0.247) is negative and statistically significant, suggesting that growth in the housing construction industry has caused earnings of rural households to grow faster than property income; the growth rate of earnings was greater than the growth rate of property income by 24.7%. This result indicates that the income structure of rural households was influenced by booming housing activities in a different direction. The booming housing activities have brought a greater increase in earnings and provided economic opportunities to all rural households. We offer two possible interpretations for this contrasting result. First, due to the dichotomy of urban and rural housing policies and the ban on the free circulation of rural homesteads, there is no official housing transaction market in rural China. Although under-the-table transactions are common in black markets for rural housing, the housing boom and the speculation and investment activities still mostly centered on urban properties and thus have a relatively limited impact on the property income of rural households. Second, the boom in housing and construction projects in urban areas created a large number of non-farm employment opportunities that demanded mostly low-skilled workers. These opportunities may have attracted residual rural laborers to participate in production lineups, leading to a substantial growth in earnings.

To summarize, the housing market boom in China in the last decade has led to a larger increase in the share of property and investment-related income among urban households and a greater growth in earnings among rural households. These findings imply that high-income urban households, which possess greater purchasing power in terms of housing investment, benefited more from the housing market activities, and the economic opportunities were more skewed to the rich. Conversely, rural households were presented with an increasing number of non-farm employment opportunities that provided an alternative way to improve their economic status, in addition to household operations.

B. Control Variables

The coefficients of the lagged dependent variable $incstruc_{t-1}$ in models (1) to (6)

range from 0.7 to 0.8 and are all statistically significant, implying that the income structure displayed a high tendency of persistence and the adjustment process of the income structure of urban households was relatively slow. Conversely, the coefficients of the lagged dependent variable in models (7) to (9) are statistically significant and approximately 0.5, which are much lower than the coefficients in the regression of urban households. This result suggests that the income structure of rural households was more dynamic and changed more rapidly over time.

Regarding the estimation results of the control variables, in the regressions of the urban income structure, the income level displays a negative association with the income structure. The coefficients of *lngdppc* are -0.231, -0.212, and -0.125 in models (3), (4), and (5), respectively, and are statistically significant, indicating that as income rose, earnings rose more rapidly than property income and investment-related income by approximately 20%. The two industrial structural variables, *industry* and *service*, are also significantly negatively associated with the income structure. The coefficients of *industry* are -1.315, -1.155, and -0.799 in models (2), (3), and (4), respectively. The coefficients of *service* are -1.198 and -1.197 in models (1) and (3), respectively. These findings imply that economic development in the last decade, including income growth and industrial changes, generated a large number of employment and business opportunities and thus led to more rapid growth in earnings. This finding is in line with our expectations. Lastly, the educational level was also negatively associated with the income structure. The coefficients of *edu* are -0.391 and -0.485 in models (2) and (3) and are statistically significant. A larger population with a high school degree or above in a province was associated with a greater growth in earnings than property and investment-related income, implying that education was linked to more equal economic opportunities as we expected.

In the regressions of the rural income structure, the income level and education level have no significant associations with income structure. Conversely, the two industrial variables, *industry* and *service*, were significantly negatively associated with income structure. The coefficients of *industry* are -1.221 and -1.690 in models (8) and (9), respectively. The coefficients of *service* are -2.162, -2.844, and -3.336 in models (7), (8), and (9), respectively. We also notice that the impacts of industrial variables on the income structure of rural households were much larger than the impacts on urban households. We infer that the large amount of non-farm employment opportunities created during the course of industrialization may have shifted the income structure toward wage income and made earnings more important.

After each estimation of the dynamic panel data model, we perform the AR (1) and AR (2) tests to determine whether our specification was proper. The values reported for AR (1) and AR (2) are the Z-statistics for first and second order autocorrelated disturbances

in the first-differenced equation. As expected, there is high first-order autocorrelation but no evidence for significant second-order autocorrelation. We also perform the Hansen test to examine whether there were problems of over-identification. The chi-squared statistics of the Hansen tests reported are all insignificant. We can conclude that no problems of over-identification were identified. In sum, our test statistics suggest a proper specification.

V. Conclusions

China has experienced a booming housing market and witnessed a rapid increase in its housing prices in the last two decades. The high housing prices drew a large amount of investments from both individuals and enterprises and created a privileged group of riches. Heated discussions started to focus on the widening rich-poor gap in income and economic opportunities that might result from the high housing prices. However, relatively little empirical evidence has been presented. To deepen our understanding of the impact of housing market activities on equality in the economic opportunities faced by Chinese citizens, this study empirically examines the impact of housing market activities on the income structure of Chinese households and, based on the findings, draws inferences on the impact of housing market activities on economic opportunities.

The estimation results demonstrated that the boom in the housing market in China in the last decade has caused a larger increase in the share of property income and investment-related income among urban households but greater growth in earnings among rural households. For example, when housing prices increase by one percent, the resulting growth rate of investment-related income was greater than the growth rate of earnings by 20.9% for urban households. Conversely, growth in the housing construction industry caused the growth rate of earnings to be greater than the growth rate of property income by 24.7% for rural households. This finding is robust under all three measures of the housing market conditions, as well as two measures of the income structure of urban households. The findings imply that high-income urban households, which possess greater purchasing power in terms of housing investment, have benefited more from housing market activities and that the economic opportunities were more skewed to the rich. Conversely, due to the lack of an official transaction housing market in rural areas, rural households faced more equal economic opportunities and were presented with an increasing number of non-farm employment opportunities (created by urban housing boom) that provided an alternative way to improve their economic status, in addition to household operations.

Our findings illustrate a dilemma faced by policy makers worldwide: promoting the housing industry is like walking on a razor's edge because it leads to growth, but the growth

is uneven. The harm of inequality in economic opportunities is not immediate; rather, it is taking place gradually and has a profound impact. A large portion of the population are trapped in their busy daily lives as “working poor,” which may include people with talent or innovative ideas, striving to buy a house or pay the mortgage. This is bad news to the long-term development of a country because innovative brains and ideas are critical assets in this era of information technology. As a result, the Chinese government must be very careful to find a balance between promoting the real estate industry and keeping the channel of upward mobility clear to give potentially talented individuals sufficient economic opportunities to pursue innovative ideas.

This paper examines the impact of housing market activities on economic opportunities in China using the data from 2000 to 2011. The choice of the timeframe under study was actually due to data availability—the CSYPUHS after 2012 stopped providing detailed information on additional sources of income of urban households, including data on “income from selling properties” and “debit and credit income.” As a result we were unable to employ more recent data in the empirical tests. More detailed data becoming available would greatly facilitate future research. In addition, the data of housing prices used in our estimation are the provincial average housing prices, which largely reflect the housing prices of urban areas. More detailed data of urban and rural housing prices becoming available would also greatly facilitate future research.

* * *

(收件：106年9月21日，接受：107年4月27日)

中國大陸房地產景氣波動對於經濟 機會不平等影響之研究

李 明 軒

(國立中山大學政治經濟學系副教授)

摘 要

本研究檢視中國大陸房地產市場景氣波動對於中國家戶所得結構的影響，並由此結果推論中國大陸房地產景氣波動對於中國人民經濟機會不平等的影響。研究所使用的資料為 2000 年至 2011 年之中國省級追蹤資料，估計方法為動態追蹤資料模型與系統 GMM 估計式 (The Dynamic Panel Data Model with System GMM estimator)。估計結果顯示房地產市場景氣攀升帶動中國城鎮家戶之財產與投資所得上升幅度大於薪資與經營所得之上升幅度，兩者相差幅度達 20%-30%，顯示經濟機會傾向於富有階級，漸趨不平等。相反的，房地產市場景氣攀升帶動中國農村家戶之薪資與經營所得上升幅度大於財產與投資所得的上升幅度，隱含著房地產市場景氣攀升於農村地區所創造的經濟機會較為平均。

關鍵詞：房地產市場、所得結構、經濟機會、中國

References

- 人民網 (Chang, S.), 2005 〈物權法：在農村買房，慎之！以農民生計為重〉，
<http://npc.people.com.cn/BIG5/14957/3538792.html>，查閱時間：2018/9/7。People's
 Daily. 2005. "Wuquanfa: zai nongcun maifang, shen zhi! yi nongmin shengji weizhong"
 [Property Law: Buying a House in the Countryside, Be Careful! Focus on Farmers'
 Livelihood]. (September 7, 2018).
- 朱以師，2013，〈宗慶後談娃哈哈進軍商業地產和零售〉，<http://companies.caixin.com/2013-04-01/100508658.html>，查閱時間：2013/4/1。Zhu, Yi-shi. 2013.
 "Zongqinghou tan wahaha jinjun shangye dichan he lingshou" [Zongqinghou Talks
 about Wahaha and Enters Commercial Real Estate and Retail]. (Accessed on April 1,
 2013).
- 李荊華，1992，〈我國房地產市場方興未艾〉，《磚瓦世界》，(19)。Li, J. 1992. "Woguo
 fangdichan shichang fangxing weiai" [China's Real Estate Market is in the Ascendant].
Brick & Tile World (19).
- 涂重航，2015，〈農民賣房就能進城？陳錫文：那是上了大當〉，
<http://politics.people.com.cn/BIG5/n/2015/0313/c1001-26686855.html>，查閱時間：
 2015/03/13。Tu, Zhong-hang. 2015. "Nongmin maifang jiuneng jincheng? chenxiwen:
 nashi shangle dadang" [Can Farmers Go to the City to Sell a House? Chen Xiwen: That
 is a Big Deal]. (September 7, 2018).
- 高雲才 (Gao, Y.)，2014，〈人民日報話說新農村：宅基地，不可以自由買賣〉，
<http://opinion.people.com.cn/n/2014/0817/c1003-25479346.html>，查閱時間：2014/8/
 17。Gao, Y. 2014. "Renmin ribao huashuo xinnongcun: zhajidi, bukeyi ziyou maimai"
 [People's Daily said that the new countryside: homestead, can not be freely traded].
 (Accessed on August 17, 2014).
- 新浪科技，2013，〈盛大進軍房地產：五年前已布局有計劃涉足海外〉，<http://tech.sina.com.cn/i/2013-09-05/21148711498.shtml>，查閱時間：2013/9/5。Xinlang
 keji. 2013. "Chengda jinjun fangdichan: wunian qian yi buju you jihua shezu haiwai"
 [Entering the Real Estate in a Big Way: Five Years Ago, It Has Plans to Set Foot in
 Overseas]. (Accessed on September 5, 2013).
- 萬蓬勃，2008，〈房地產行業的現狀與發展趨勢探討〉，《黑河學刊》，134 (2): 29-30。
 Wan, P. 2008. "Fangdichan xingye de xianzhuang yu fazhan qushi tantao" [Discussion
 on the Status Quo and Development Trend of Real Estate Industry]. *Heihe Journal* 134
 (2): 29-30.
- IDRC. 2018. "Growth and Economic Opportunities for Women." <https://www.idrc.ca/en/initiative/growth-and-economic-opportunities-women> (September 7, 2018).
- Arellano, M., and O. Bover. 1995. Another look at the instrumental variables estimation of

- error-components models. *Journal of Econometrics* 68: 29-51.
- Bian, Y. 2002. "Chinese social stratification and social mobility." *Annual Review of Sociology* 91-116.
- Bibb, R., and W. H. Form. 1977. "The effects of industrial, occupational, and sex stratification on wages in blue-collar markets." *Social forces* 55(4): 974-996.
- Blundell, R., and S. Bond. 1998. "Initial conditions and moment restrictions in dynamic panel data models." *Journal of Econometrics* 87(1): 115-143.
- Bun, M., and V. Sarafidis. 2013. "Dynamic Panel Data Models." In *The Oxford Handbook of Panel Data*, ed. B. H. Baltagi. Oxford University Press.
- Chang, L., Z. TU, C. Cai, M. Dou, and X. Wei. 2014. "A Study on the Right to Use Rural Homestead: Taking Changchun City and the Surrounding Area as the Example." *Frontiers of Legal Research* 2(2): 23-33.
- Chen, J., F. Guo, and Y. Wu. 2011. "One decade of urban housing reform in China: urban housing price dynamics and the role of migration and urbanization, 1995-2005." *Habitat International* 35(1): 1-8.
- Chen, Y., and Z. Qiu. 2011. "How Does Housing Price Affect Household Saving Rate and Wealth Inequality?" *Jingji Yanjiu (Economic Research Journal)* 10: 25-38.
- China Institute for Reform and Development. 2014. "The Difficult Course of China's Housing Reform. Research Report." <http://www.reformdata.org/special/656/> (December 30, 2014).
- Coscolluela-Martínez, C., and R. F. de Frutos. 2013. "Housing investment in Spain: has it been the main engine of growth?." *Applied Economics* 45(14): 1835-1843.
- Deng, X. P. 1980. "Notes of talks with CCP leaders." *Beijing Daily*. (May 16, 1984).
- Dhonte, P., R. Bhattacharya, and T. Yousef. 2000. Demographic Transition in the Middle East-Implications for Growth, Employment, and Housing (No. 2000-2041). International Monetary Fund.
- Goodman, D. 2015. *Class in Contemporary China*. Cambridge, United Kingdom: Polity Press.
- He, Z. 2000. "Corruption and anti-corruption in reform China." *Communist and Post-Communist Studies* 33(2): 243-270.
- Henley, J., C. Kirkpatrick, and G. Wilde. 1999. "Foreign Direct Investment in China: Recent Trends and Current Policy Issues." *The World Economy* 22(2): 223-243.
- Hong, C. 2012. "Does the Variation of House Price Affect the Marriage Rate?" *Contemporary Youth Research* 311(2): 17-23.
- Juwei, Z., and W. Dewen. 2004. "Changes of the Nature in the Problems of Farmer's Income: An Investigation of Farmer's Income Structure and Growth by Regions. *China Rural Survey* 1: 2-13.

- Lee, J. 2013. "A Provincial Perspective on Income Inequality in Urban China and the Role of Property and Business Income." *China Economic Review* 26: 140-150.
- Li, Y., X. Li, and B. Gao. 2012. "The Effect of Housing Price on the Resident Birth Behavior." *Journal of Social Science of Hunan Normal University* 6: 99-103.
- Lin, C. Y., and Y. P. Chu. 2003. "The Impacts of Transfer Income on Income Distribution in Taiwan." *Humanity and Social Sciences* 15(3): 501-538.
- Lio, M.C., M.C. Liu, and Y.P. Ou. 2011. "Can the internet reduce corruption? A cross-country study based on dynamic panel data models." *Government Information Quarterly* 28(1): 47-53.
- Liu, J. 2006. *Theoretical research on land law in China*. Beijing. China: Law Press.
- Mak, S. W., L. H. Choy, and W. K. Ho. 2007. "Privatization, housing conditions and affordability in the People's Republic of China." *Habitat International* 31(2): 177-192.
- Meng, Q. K. 2005. "Argumentation on property law's opening for rural homestead trade." *Law Review* (4).
- Piketty, T. 2014. *Capital in the Twenty-First Century*. Cambridge, MA: Harvard University Press.
- Rodman, D. 2009. "How to do xtabond2: An introduction to difference and system GMM in Stata." *Stata Journal* 9(1): 86.
- State Economic Reform Commission. 1983. "Urban Housing Problems and Reform Proposals." *News Bulletin of the State Economic Reform Commission*, No. 46 (mimeograph).
- Tang, S.H. ,and W.D. Xie. (Ed) 1992. *Housing and Property Hand Book (zhongguo fangdican shiwu quanshu)*. Beijing: Xinshidai Press.
- Wang, C. M., and J. Sun. 2006. "A Tentative Approach to the Transfer of Usufruct of Rural Residence Base." *Humanities & Social Sciences Journal of Hainan University* 24(2).
- Wang, Y. P. 1995. "Public Sector Housing in Urban China 1949~1988: the Case of Xian." *Housing Studies* 10(1): 57-82.
- Wang, Y. P., and A. Murie. 1996. "The Process of Commercialisation of Urban Housing in China." *Urban Studies* 33(6): 971-989.
- Wei, S. J., and X. Zhang. 2011. "The Competitive Saving Motive: Evidence from Rising Sex Ratios and Savings Rates in China (No. w15093)." <http://www.nber.org/papers/w15093> (December 30, 2011).
- Xia, J., and S. Yin. 2007. *Living in China*. Beijing: China Intercontinental Press.
- Xie, J., B. Wu, H. Li, and S. Zheng. 2012. "Housing Price and Consumption in Urban China." *Journal of Financial Research* 6: 13-27.
- Yan, J. H., and L. Feng. 2012. "The Impact of Fluctuations in Housing Prices on Consumption in China." *Journal of Xiamen University (Arts & Social Sciences)* 2: 11.

Ahuja, S. 2004. *Housing: Engine of Economic Growth. Housing Finance in India*. Hyderabad: ICFAI University Press.