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China' s Middle Class:
Homeownership, Housing Consumption and Affordability

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China's Middle Class: Homeownership, Housing Consumption and Affordability

1. Introduction

In the past decade, China's housing policy and housing market have experienced dramatic change. Since 1998, housing reform focusing on the privatization of the state owned housing stock and market provision of housing have contributed significantly to the emergence and growth of middle class in China. The definition of "middle class" is still controversial in literature, and there is no official government definition across various nations. However, many studies seek to define "middle class" both qualitatively and quantitatively. The "middle class" may be viewed as the broad group of people in contemporary society who fit socioeconomically between the working class and upper class. This socioeconomic class usually achieved tertiary education, hold professional qualifications, have secure job and homeownership, and have special social status and cultural identification. In addition, quantitative studies are also conducted to identify "middle class". These studies are often based on the survey of household income and expenditure. Birdsall *et al.* define the middle class as those households between 75 and 125 percent of median per capita income.ⁱ Based on the household survey from 13 developing countries, Banerjee and Duflo (2007) define the "middle classes" as those whose daily consumption per capita is between \$2 and \$4 or between \$6 and \$10.ⁱⁱ Combined household income quintile data from Census Bureau with survey responses, Cashell identifies the "middle class" in US as those households with income in the middle quintile between \$36,000 and \$57,660 in a narrowest view or a more generous definition based upon the three middle quintiles of households with incomes

between \$19,178 and \$91,765.ⁱⁱⁱ Easterly defines the “middle class” as those lying between the 20th and 80th percentile on the consumption distribution.^{iv} The economist magazine characterizes the middle class as those people who have about 1/3 of their income left to be disposed after paying for basic food and shelter.^v

The extensive literature provides us references to quantitatively identify the middle class in China. The term “middle class” is different from the term “middle income”. However, the household income distribution would contribute to the definition of the middle class. Using the data from large-sample Urban Household Survey in 2007 conducted by the National Bureau of Statistic of China (NBS), this paper seeks to define the middle class according to household income distribution and investigate how well the Chinese middle class has fared relatively as a result of Chinese housing reform. It will focus on the middle class group’s homeownership, housing consumption, and housing affordability issues. This analysis will have implications for a set of housing policies that will lead to a strong housing market and sustainable economic growth in China.

2. Income distribution in Urban China

We analyze the data of Urban Household Survey collected by National Bureau of Statistics of China for 256 prefecture level cities in 2007 and find that variation of income among urban households covers a wide range. By ranking nearly 250,000 urban households in the survey sample by income and put them in the order of deciles, we find that the average annual income ranges from 9,288 RMB in the lowest 10th percentile to 13,7679 RMB in the highest percentile with an overall average of 43,350 RMB for the entire sample size of 249,777 observations of the urban households reported in the survey (see Table 1). The median

household income varies from 9,600 RMB in the lowest 10th percentile to 109,600 in the highest 10th percentile with an overall median household income of 32,400 RMB.

Table 1. Average income for ten percentile income groups, 2007

Income groups	Average income (RMB/year)
lowest 10%	9288
2 nd 10%	14902
3 th 10%	19842
4 th 10%	24526
5 th 10%	29765
6 th 10%	35649
7 th 10%	42117
8 th 10%	51640
9 th 10%	67167
highest 10%	137679

However, China has demonstrated a spatial disparity in economic bases and growth rates across nations. The East Coast and big cities have been exceeding the Mid-west and Northeastern regions in economic performance and income growth in the past three decades. Figure 1 reveals that the household median incomes among 256 cities do not show a classical normal distribution. It ranges from 13,200RMB in HeGang City (鹤岗) in Heilongjiang Province to 80,000RMB in Dong Guan City (东莞) in Guangdong Province with an average of 27,600RMB and a median of 30,333RMB for the sample cities. Nearly 60 percent of cities among 256 prefecture-level cities **have median household** income below 30,000RMB. Only 7 cities in the sample have a median household income of 60,000 RMB or above. It demonstrates that spatial differences shall be addressed when we discuss income distribution and consumption and wealth patterns in China.

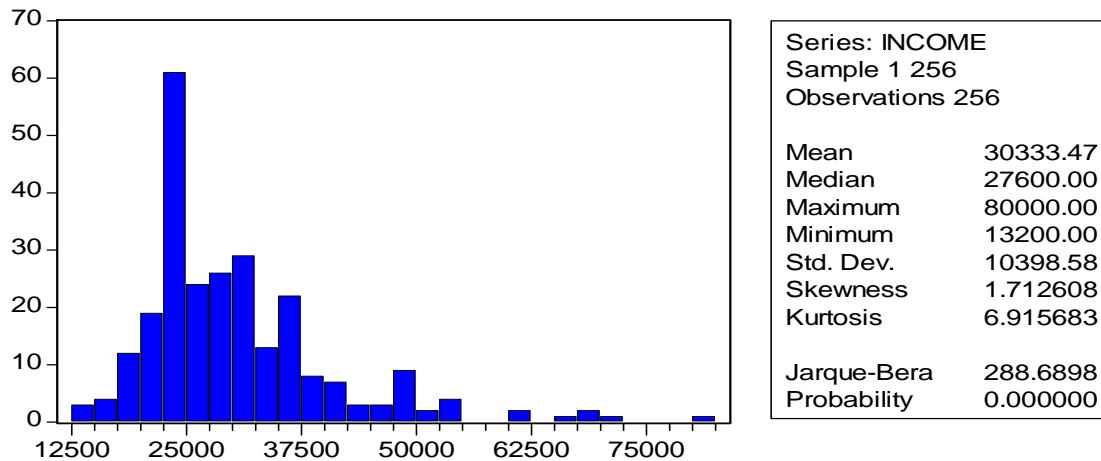


Figure 1. Median Household Income Distribution of 256 prefecture cities in China, 2007

3. Who are the Middle Class in China

What constitutes the middle class is relative, subjective, and not easily defined. We follow Thurow and Birdsall *et al.* to define middle class in China by income approach in a relative sense based upon the distribution of household incomes.^{vi} We use two definitions to identify the middle class in China, one of which is to define the middle class as the households in the 50th and 60th percentile (the middle quintile definition) of annual household incomes (DEFINITION A), the narrowest view of who might be considered middle class. The alternative definition of middle class is for households between 75 and 125 percent of median per capita income (DEFINITION B). Based upon the two definitions above, we will be able to find the characteristics of the middle class in China and their housing consumption in particular.

Table 2 shows that both definitions result in a similar set of characteristics of the China's middle class. The head of the middle class household is about 41.5 years old and household income is about 32,700 RMB, approximately about US\$14,200 after PPP adjustment. The floor area of a typical middle class household is about 83.6 m² and the

average market value of the housing is about 227,000 RMB to 228,000 RMB, about US\$99,000. An annual total household expenditure is in the neighborhood of 23,257 to 23,417 RMB per year for an average of 3 persons per household. It amounts to US\$9 per person per day.

Table 2. Characteristics of Middle Class in Urban China, 2007

	DEFINITION A	DEFINITION B
	AVERAGE	AVERAGE
AGE	41.5	41.6
ANNUAL INCOME	32,734 RMB (US\$14,232)	32,741 RMB (US\$14,235)
HOUSEHOLD FLOOR AREA	83.6 m ²	83.62 m ²
AVERAGE MARKET VALUE OF HOUSING	227,000 RMB (US\$98,790)	228,000 RMB (US\$99,000)
ANNUAL EXPENDITURE	23,257RMB (US\$10,111)	23,417RMB (US\$10,181)
DAILY EXPENDITURE PER PERSON (US\$ PPP)	US\$ 9.2	US\$ 9.3
NUMBER OF HOUSEHOLDS IN THE SAMPLE	48457 (20% of the sample)	66859 (26.7% of the sample)

Note: "DEFINITION A" stands for the households between the 50th and 60th percentile in the income distribution; "DEFINITION B" stands for the households between 75 and 125 percent of median per capita income. US\$ figures are all adjusted by PPP.

The above calculation is based upon the two definitions used in this current study. Either applying the standard of the 50th and 60th percentile of the income distribution or median per capita income of 75 percent and 125 percent, we find that the middle class in urban China has a per capita annual money income of 10,950 RMB. For this group the daily consumption per capita is US\$3.12 or US\$3.15 using the current exchange rate of 6.8 RMB equal to US \$1. If this figure is adjusted by commonly used purchasing power parity factor at 2.3 RMB to US\$1 as McKinsey Quarterly Report calculated, the daily consumption expenditure per capita may amount to US\$9.23.^{vii} These figures also meet the standard for

the middle classes as those whose daily consumption per capita is between \$2 and \$4 or between \$6 and \$10 proposed by Banerjee and Duflo in their study of 13 developing countries.^{viii} Based upon the information from the existing research, we can reasonably believe that this group of urban Chinese population is compatible with middle class group in most of developing countries in terms of income and daily consumption. Based upon the sample size of this survey data, we can calculate that there are about 39 million to 52 million urban households falling in the category of the middle class, representing about 117 million to 156 million people in the urban China in 2007.

If a consensus reaches that the households whose income is in the 50th percentile and above in the income distribution can be labeled as “middle class” in China, then we can find from the Urban household Survey data that this group accounts for about 60 percent of total urban households with an average income between 29,765 RMB and 137,679 RMB and daily per capita consumption expenditure between 19.8 RMB and 64.4 RMB. After the adjustment of Renminbi purchasing power parity, it is equivalent to household incomes of US\$12,941 and US\$59,860, respectively. The daily consumption per capita is between US\$8.6 and US\$28 after applying PPP factor. Based upon this standard, there are about 117 million urban households, nearly 350 million urban population, falling into the middle class category in 2007.^{ix}

4. Housing Reform and Emerging Middle Class in China

Housing policies are closely linked with the fate of the China’s middle class and have exerted a significant impact upon the size and characteristics of the middle class in China. Historically, housing policies has experienced dramatic changes in the past six decades and was commonly classified into five periods.

Period one: Heavily regulated urban housing markets from 1949 to 1957.

During this period, urban private housing market was heavily regulated by Chinese government characterised with rent control and the confiscation of private properties owned by capitalists and warlords. Shortly after the Peoples' Republic of China was founded in 1949, Chinese government started to transform the largely private housing market in urban area into a socialist system by assuming state ownership of almost all economic assets including housing. Rent control was used by the central government to prevent speculative behaviors and housing inaffordability in a socialist system. During this period of time, private ownership of housing was still the dominant feature of housing tenure in most of Chinese cities.^x The transactions and leasing of privately owned properties were still allowed and there was a high degree of reliance on the private sector to provide housing services to a majority of urban dwellers.^{xi} However, the share of housing provided by the private sector had fallen from nearly 100 percent to 52 percent as a result of socialist transformation of Chinese economy and the housing policies between 1949 and 1957.^{xii} Housing policies during this era led to limited housing investment, shortage of housing supply and deteriorating housing conditions and shrinking housing markets.

Period two: Work unit or Danwei housing system from 1958 to 1977.

The transition from private to public ownership of housing was gradually accomplished through the establishment of the work unit, or danwei, housing system during this period. The establishment of residence registration system commonly known as Hukou by 1958 allowed the Chinese government to divide the entire population into those with urban residence or with rural residence. Urban residents were linked with their work unit, an economic institution in the socialist system. Housing sector became part of the centrally planned economy just like all other sectors such as industries, infrastructure,

education, health care and others. Danwei, or urban residents' work unit, became the vehicle for the central government to control the housing investment, construction, maintenance and to distribute housing as welfare services to employed urban residents. Before the economic reform starting in 1978, urban housing in China was allocated to urban residents as a part of a welfare package offered by their employer (the work unit) according to the employee's office ranking, occupational status, working experience and other merits. Housing construction was largely initiated and financed by various work units and residential land was allocated through the administrative transfer within the central planning system. Under this system where housing market was absent, it was the financial conditions and workplace policy of employees' work units instead of workers' income and other household characteristics that determine the quality and quantity of housing consumption the urban residents may obtain ^{xiii}.

As a result, the share of the housing provided by the private sector continued to fall and it dropped to 15 percent in 1977.^{xiv} The private housing construction was almost eliminated in practices and the central government assumed the full responsibility of housing through its central planning system and the distributional channel of Danwai. The socialist welfare housing policy was established.

Period Three: Reform experiments of marketization of housing sector from 1978 to 1997.

Since the beginning of the economic reform in 1978, Chinese government started to bring market forces into the housing sector to reform the state-controlled public housing system. In 1980 Deng Xiao Ping pushed for a housing reform that promotes private ownership and the sales of public housing to urban residents. Rent was raised to market level and private and foreign investments in housing were encouraged. The sale of existing public

housing stocks and newly built housing was introduced nationwide starting in 1988.^{xv} As a result, the nature of housing was transformed from public goods and services as a part of social welfare package enjoyed by employed urban residents to commodities that are privately owned and are largely provided by the private sector with rights to be traded in the market.^{xvi}

Period Four: Development of Housing Markets between 1998 and 2004.

State Council Document No. 23 issued in 1998 terminated direct public housing distribution to workers, the commonly known Danwei Housing system, and introduced cash subsidies for housing to new comers entering into the urban workforces. The government also provided subsidized housing such as affordable housing or public rental housing to selected low and middle income families and relied on the market oriented commercial housing to meet the needs of higher income group with the financial assistance through mortgage financing. As a result, a vigorous urban housing market had been developing rapidly. The employers were allowed to offer housing subsidy to their new employees but not permitted to be involved directly in housing construction, distribution or management.^{xvii} The housing reform policies initiated in 1998 prescribed a basic model of urban housing system promoting home ownership and a multimode of housing services. It encourages the development of the social rental housing (*lianzu fang*) that targets at families with a monthly per capita income below the municipal poverty line and families with a housing living floor space per person less than a minimum standard set by municipal governments. Central government also heavily subsidized affordable housing (*jingji shiyong fang*) targeting the low to middle income urban households for their housing needs. The Chinese government relies on the private sector to provide commercial housing (*shangpin fang*) to satisfy the needs and demand for housing of higher income households. This period has witnessed the rapid development of the urban housing market in China.

Fifth period: Addressing housing affordability and low-income housing from 2005 to the present.

The privatization of public housing and the reliance on market for housing provision unleashed by a series of reform in the housing sector have significantly contributed to the homeownership rate, increased supply of housing and the improved housing quality and conditions for a large number of urban households in China. But the demand for housing as a result of the rapid urbanization, economic growth and speculative behaviors had outpaced the increased supply of housing in the east coastal areas and big cities in China, driving the housing price up drastically. Housing becomes less and less affordable to low and middle income families, urban poor and younger generations who entered the workforce after 1998. The housing problems are gradually becoming a social issue that threatened the stability of urban society and hindering the establishment of harmonious society. As State Council Document No. 24 in 2007 indicated, the Chinese government started to reemphasize social housing provision for the low and middle income urban residents and encourage the provision of smaller housing units with price ceiling and the construction of rental housing.

The housing reform in the most recent years has profound impact on the formation and development of middle class in China. Coupled with the increased income, expenditure and education levels, the middle class in China has also acquired housing and other assets and become an every growing important factor in social, economic and political aspects of urban society in China.

5. Homeownership and Housing Consumption

Since 1998, the privatization of housing sector has benefited a large number of households and many families can purchase houses from their work units and housing markets based upon their demand and income level. As a result, homeownership rate, an

important measure of the conditions of housing markets in a country, has increased considerably. We follow the international standard by defining the homeownership rate as the ratio of owner occupied housing units to total housing units. Based upon the 2007 Large Sample Household Urban Survey data, we found that the owner-occupied homeownership rate reached 82.3% in 2007 in China, exceeding many developed countries including U.S. (about 67%). Like many other countries, the owner occupied homeownership rate in China is highly correlated with household income as well.

As a result, according to the Urban Household Survey Data (See Table 3), the middle income class in China has an owner occupied homeownership rate reaching 83.5% according to Definition A and 83.6% based on Definition B, a 1.2 to 1.3 percentage points higher than the average ownership rate of all the households for the sample. In addition, housing consumptions of the middle class in China has reached about 83.6 m² floor area on average per household under either of the two definitions, indicating a significant improvement of housing consumption since the beginning of economic reform in 1978.

Table 3. Homeownership for middle class and all the households

	owner occupied homeownership rate
Middle class_definition A	83.5%
Middle class_definition B	83.6%
Whole population	82.3%

The middle class households in China has also benefited from rapid increase of housing value of a dwelling a majority of urban residents. The median housing value of all the households in the sample ranges from 130,000 RMB for the lowest 10 percent of household income to 644,000 RMB for the highest 10 percent of the wealthy household, with a median value of 228,000 RMB (equivalent to US\$99,000 adjusted by PPP factor). It

shows that the housing becomes a significant share of wealth and assets for many households in urban China. As compared with the national average of this figure, the housing value of a dwelling occupied by middle class group ranges from 227,000 to 228,000 on average, depending upon the definition, a bit below the average housing value of all the households in the sample of 281,000 RMB. It is likely that the high income groups are more likely to own a house and its market value are disproportionately much higher. As a result, the middle class as defined in this paper may comparatively have a lower average market value of the house than that of all households in the sample.

6. Housing Affordability Facing Middle Class in China

The housing reform starting in 1998 has resulted in a rapid growth of the commodity housing market in China, a high homeownership rate and housing consumption measured by housing floor areas in a typical city, but also led to rapid increase in housing price, particularly in the east coastal region and big cities in China. The consequence is that many urban households, lower income families in particular, find the housing in China less affordable. To measure the housing affordability, we apply the commonly used method to compute the ratio of a house value to household income (PIR). The housing price to income ratio (PIR) is the basic affordability measure for housing in a given area. It is often calculated as the ratio of median house prices to median household income.

According to the Global Urban Observatory (GUO) of UN-HABITAT, PIR is one of urban indicator. UN-HABITAT regards ratios of 3 to 5 as “normal” or satisfactory. Demographia conducts housing affordability survey annually that covers more than 200 markets in Australia, Canada, Ireland, New Zealand, the United Kingdom and the United

States. PIR is an important indicator to evaluate housing affordability across cities or countries. Housing affordability is rated as 4 categories based upon the value of PIR. If PIR is equal to or greater than 5.1, the rating is “Severely Unaffordable”. If PIR ranges from 4.1 to 5.0, the rating is “Seriously Unaffordable”; If PIR ranges from 3.1 to 4.0, the rating is “Moderately Unaffordable”; If PIR is equal to or below 3.0, the rating is “Affordable”.^{xviii}

Based upon the survey data, we calculated the PIR ratio for the middle class under the DEFINITION A and DEFINITION B and found out that the price income ratio for middle class for the two definitions are 5.11 and 6.97, respectively. Both of the two figures exceed the international standard of 3.0 and fall into the categories of “severely unaffordable.” It suggests that the middle class in China is experiencing a housing affordability problem and the price income ratio has exceeded the international standard for affordability. Housing has become severely unaffordable to Chinese middle class, who has to spend more than five times of annual income to purchase dwelling for their family. This finding indicates that the current housing conditions in China are hurting middle income group in China, lowering the standard of living for middle class as well as the urban poor, affecting the future prospects of emerging middle class and hindering the further growth of a strong middle class in China.

7. Major Findings and Conclusions

This paper attempts to study the size and characteristics of the middle class and its housing consumption in China. It uses the two definitions of the middle class using income approach. The middle class is defined either as the fifth and sixth percentiles of household income among nearly 250,000 households in the sample of 2007 Large Sample Household Survey or alternatively as the 75 percent to 125 percent of median per capita income. We found that the head of the middle class household is about 41.5 to 41.6 years old with an

average household size of 2.99. The annual household income is about 32,700 RMB, an equivalent of US\$14,200 purchasing power. The owner occupied homeownership rate in China reached 82.3% in 2007 for all the households in the sample, while the middle class in China fares even a bit better with a homeownership rate of 83.5%. Chinese homeownership rate exceeds many developed countries, a significant outcome of successful housing reform in China. We also found that the average construction floor area of a dwelling size for middle class households is about 83.6 m², equivalent to 62.7 m² of usable living floor area per household. By calculation, average construction floor area and usable floor living area per capita is 27.9 square meter and 20.9 square meter, respectively, a significant improvement from 6.7 square meter per capita of living area in the late 1970. It indicates the success of privatization of housing market in China since 1998.

Many middle-income households have also enjoyed the benefits of accumulating wealth derived from their homeownership. The average market value of the housing for this group is about 227,000 RMB to 228,000 RMB (that is equivalent to US\$99,000) with an annual total household expenditure ranging from 23,257 RMB to 23,417 RMB per year. The per capita daily expenditure in a typical urban household among the China's middle class has reached to US\$9.2, meeting the international standard for the middle class in many developing countries. If this group of households belongs to the middle class category as we argued, there were about 117 million to 156 million people, representing 20 percent to 27 percent of urban population in China. If it is believed that based upon the daily spending per capita standard of \$US8 to US\$10, thus the China's urban households whose income are above 50th percentile all belong to the middle class. Its size can reach 350 million people in urban China. The evidence from this study demonstrates that there exists a middle class in China and its size and wealth are rapidly rising to catch up with those in the middle class countries.

The rapid growth of housing market in China is also accomplished with high housing price in many cities. The Price-Income Ratio (PIR) for Chinese middle class ranges from 5.1 to 6.9, suggesting that a majority of middle class households in many cities in China are suffering from “Severely unaffordable” problem. It indicates that the housing affordability has become a big problem for Chinese homebuyers, even though it is calculated using the housing stock data. If the newly constructed housing data is used, the housing affordability problem can be much more severe.

This study focuses on a narrow definition of middle class in a relative sense based upon income level. Further research using different types of definitions of middle class may help us understand the middle class in China and their consumption patterns and preferences. The sound policy encouraging the growth of middle class is instrumental in ensuring a sustainable development of a county. It is particularly important for a populous country like China.

ⁱ Birdsall, Nancy, Carol Graham, and Stefano Pettinato, “Stuck In The Tunnel: Is Globalization Muddling The Middle Class?” Brookings Institution, Center on Social and Economic Dynamics WP No. 14, 2000.

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ⁱⁱⁱ Brian W. Cashell: “Who Are the “Middle Class”?, CRS Report for the Congress, March 20, 2007.

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^v “The new middle classes in emerging markets”. The Economist, Feb 12th 2009.

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^{vii} “The Value of China’s Emerging Middle Class,” the Mckinley Quarterly Special Edition, 2006.

^{viii} Abhijit V. Banerjee and Esther Duflo, “What is middle class about the middle classes around the world?”. Massachusetts Institute of Technology, Department of Economics, 2007.

^{ix} This finding is in consistent with the figure estimated by Mckenley Global Institute in 2009 that suggests China’s lower middle class reaching 290 million people, accounting for 44 percent of the urban population by 2011.

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^{xiii} *Ibid*

^{xiv} *Ibid*

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^{xviii} UN-HABITAT, http://ww2.unhabitat.org/programmes/guo/guo_analysis.asp