Housing and Stratum Identification in Urban China

LIU Lin, ZHANG Wenhong
School of Sociology and Political Science,
Shanghai University, P. R. China, 200444

Abstract As the housing price has been on the rise, the housing issue has been increasingly prominent, and the effect on stratum identification has deepened. Depending on the data of "Survey of the Expo 2010 and Social Quality in Shanghai", this paper studies the impact of housing on stratum identification, and the influence factors of the housing problem. The results show that: the role of housing on stratum identification is extremely significant; educational background, work unit, occupation, and income also influence on the respondents' stratum identification; income as an important economic factor plays a significant role on home ownership, housing area, and housing quality; however, the impact of work unit and occupation are non-significant.

Key words Stratum Identification, Home ownership, Housing Area, Housing Quality

Introduction

As clothes, food, shelter and travel are the four elements for life, housing is an important problem whether common people can lead a peaceful and content life or not. According to the Shanghai Statistical Yearbook 2011, the average prices of commercial residential houses in Shanghai in main years can be calculated with commercial residential house sales volume in main years, and that the average price of commercial residential houses in Shanghai has increased by 10,834.44 yuan from 2000 to 2010 (see chart 1). In the Blue Book of China's Economy 2011 compiled by Chinese Academy of Social Sciences, an analysis on the state of China's real estate and corresponding control measures in 2010 and 2011 is undertaken. According to the

book, the housing price-to-income ratio of national urban residents in 2010 is 8.76, which indicates an increase of 0.46 when compared with that of 2009, and that a common urban resident family would have to spend a mount of money earned with 8.76 years without eating and drinking if they want to buy a suite. Besides that, the book has particularly pointed out that 85% families in China could not afford a house. As the housing price has been on the rise, the housing issue has been increasingly prominent.

Chart 1

Average Prices of Commercial Residential Houses in Shanghai in Main Years

(yuan / m^2)

The primary function of houses is providing human beings with a place that keeps out wind, rain and coldness while providing warmness, safety and stability. However, in a hierarchical society, housing is a mark or symbol for social status. After housing commoditization and privatization as a part of economic system reform in China, houses or real estate has become an important asset of the public who have regarded house renting and selling as significant methods for making money. As a result, the economic status of house owners has been promoted to a higher degree (Li Qiang, 2010). Therefore, housing, especially the influence of housing on social

stratification, has become an issue worth studying.

A Review of Housing and Social Stratification

The housing issue, which is closely related to social stratification, is an important perspective for studying wealth gap and class stratification and has attracted attention from scholars in early time. As housing reform is undertaken in an increasingly profound way, housing is increasingly important to the stratification system.

Friedrich Engels used to analyze the social residential space model of Manchester when the city was in 1840s, and discussed the social stratification problem of Britain from residential space division (Liu Jingming & Li Lulu, 2005). According to Paul Fussell, differences in housing styles among Americans are indicating differences among social classes, and the social status can be figured out through analyzing the housing (Paul Fussell, 1983). In Saunders's opinion, housing has become more and more important in current society as it can divide social classes in a more accurate way than occupation, and it is more important to observe someone's housing than his occupation (Saunders, 1984).

According to Rex and Moore, though the housing to some extent relies on someone's income and therefore relies on the state of someone in the labor market, it is also impossible that individuals under the same labor circumstance may have different methods for gaining houses and those methods have made the competition for urban classes be different from the competition on work place. Through connecting housing with social occupational classes for the first time, Rex and Moore have come up with the idea that housing is indicating the professional ability of the owner and the concept of "housing class". Housing class is defined as that people who are on the top of job ladder are living in top houses and those on the bottom are living in poor houses (Rex & Moore, 1967).

Bian Yanjie and Liu Yongli have undertaken an analysis on urban residential data in the fifth census in China from home ownership, housing area, housing quality and other perspectives. It shows that residents with higher occupational status have significant advantages on the rate of property ownership, purchasing-to-renting ratio

and house purchasing ability. On the other hand, there is a great improvement on housing area and quality since the beginning of 1990s, which is particularly obvious in families of management elites and professional elites. These discoveries illustrate that underlying the successful economic system reform the social stratification mechanism is characterized by system leap and system persistence (Bian Yanjie & Liu Yongli, 2005).

Liu Zuyun and Hu Rong have analyzed the current stratification state of urban Chinese housing resources across three dimensions housing condition, property rights and housing location according to the 2006 Chinese General Social Survey (CGSS2006) data. The study shows that though there are multiple house resources distribution under institutional changes, stratifications on housing condition, property rights and housing location exist among different social classes (Liu Zuyun & Hu Rong, 2010).

The study on social stratification has always been a hot issue in the academic circle and discussions on factors that would influence social stratification have never been stopped. As the housing system reform and housing prices are on the rise, the housing issue has attracted attention from more and more scholars. Among discussions on the relationship between residential space and classes, there are two major ideas that are opposite to each other to certain extent. Of them, one idea is emphasizing that the formation of real social classes and class conflicts should be analyzed by basing on differences among residential types; on the other hand, more studiers hold that reasons for generating different residential types should be analyzed and discussed with other structural separating factors in the public, such as race, income, education and job. In fact however, these two aspects are complementary to each other in the process of forming classes (Liu Jingming & Li Lulu, 2005). Most previous studies in China focused on macro levels —studying the relationship between market transition and housing stratification, and discussing social structural changes resulted from China's social transformation through studying the housing stratification. In later studies, attention should be focused on micro levels—studying the influence of housing problems on people’s subjective class identification and

positioning to make up for the inadequate studies on this field.

Research Problems and Hypotheses

Most traditional studies on social stratification structure are based on that: certain social class or stratum is formed by certain objective social status. Examples of that include class position, occupational status, educational background, property and income, and power. Even for “social prestige” (seems like a subjective evaluation criteria), it is also based on social economy that is inherently including power, educational background, income and other elements (Blau & Duncan, 1967; Featherman, etal., 1975).

Social stratification can be measured with subjective assessments and objective indicators. Subjective assessment refers to a respondent positioning his/her stratum according to the real life conditions, in other words, his/her identification on the stratum he/she belongs to. Besides that, subject assessments and objective indicators are related. Stratum identification by respondents is a very important indicator because their self-evaluation can directly reflect their satisfaction degree of living standards and is therefore worth discussing and studying. When identifying stratums they belong to, people would take many factors into account, such as common indicators like education background, work unit, occupation and income.

Under redistribution system, housing is viewed as welfare and a potential factor for deciding social stratification as it is a sub-factor of work unit and occupation. Under market system, housing is a commodity, and housing distribution is in nature a social stratum differentiation phenomenon—the home ownership, housing area and quality are decided by income, occupation and other stratum variables (Bian Yanjie & Liu Yongli, 2005). In particular, as housing price has increased a lot in recent years, the importance of housing state will be more and more highlighted when people are evaluating their statuses, and become an important factor for stratum identification. To that, two questions have been raised: what factors will people take into account when evaluating their social statuses? Will housing factors have a remarkable influence on the subjective social stratum positioning? And to these questions, two hypotheses

have been proposed in this paper:

Hypothesis 1: home ownership has a significant influence on stratum identification, and home-ownership can dramatically improve the positioning of stratum identification;

Hypothesis 2: the position of stratum identification is related to education, occupation and income, that is, education, along with occupation and income will have a significant influence on stratum identification.

Since the importance of housing issue has been prominent, what features are groups that own houses characterized by? Which groups have big and high-quality houses? According to previous studies, people who can afford houses in good location and of big area size and good quality have a strong purchasing power. In spite of that, purchasing power is closely related to occupation and directly decided by income. In the increasingly developed housing market, home-ownership is indicating individual and family economic power and achievement. The power of purchasing a bigger size and better house is positively related to income of the person or family (Bian Yanjie & Liu Yongli, 2005). In the light of above statement, another two hypotheses are proposed:

Hypothesis 3: home-ownership is related to education, occupation and income, and groups of high educational background, high occupational status and high income have advantages on gaining home ownership.

Hypothesis 4: housing area and quality are related to education, occupation and income, and groups of high educational background, high occupational status and high income have advantages on housing area and quality.

Data, Variables, and Methods

Operationalizing specific ideas and hypotheses is the key to undertake quantitative studies while reasonable variable selection would decide the scientificity and reasonableness of the whole study. The designing process of this study is stated as follow:

1. Data

This study is undertaken by basing on data from “Survey of the Expo 2010 and Social Quality in Shanghai”, which has been conducted by Institute of Social Science Survey, Shanghai University. The data are attained from a large-scale questionnaire investigation using the PPS sampling method from June to July of 2010. The specific sampling steps are: selecting 43 neighborhood committees from 12 districts of Shanghai with PPS method; selecting 30 surveyed households from every selected neighborhood committee according to simple random principle; the investigator selecting appropriate respondents from the selected surveyed households according to their birthdays (those whose birthday are closest to July 1st). Finally, 1203 Shanghai residents (ages range from 18 to 69) who have non-agricultural work experiences were surveyed.

2. Variables

(1) Dependent Variable: stratum identification

As to social stratum positioning by respondents, they was originally classified as super stratum, upper middle stratum, middle stratum, lower middle stratum and bottom stratum; in regression analysis, the super stratum and upper middle stratum are integrated into “upper stratum”, and the bottom stratum and lower middle stratum are integrated into “bottom stratum”, so they are classified into upper stratum, middle stratum and bottom stratum.

(2) Independent Variables

Housing state includes three variables: home ownership, housing area and quality.

Home ownership: refers to a state of owning certain house; it is generated with current home ownership and area size, and total area size of houses owned in Shanghai in the questionnaire. When the current residential house is not owned by the respondents, it will be recorded as " Ownership of no house "(1); when the residential house is owned by the respondents who have ownership only over the house in Shanghai, it will be recorded as “Ownership of only one suite”(2); when the residential house is owned by the respondents who also have ownership over other residential housing areas in Shanghai, it will be recorded as “Ownership of two or

more than two suites” (3).

Housing area: it is a continuous variable consisting of an indicator: how many square meters is the total area size of your house?

Housing quality: it is a continuous variable consisting of three indicators: whether there is an absence of indoor water-flashing toilet or not; whether there is an absence of bathtub or shower enclosure or not; whether there are quality problems on the building or not. Add the three items to get a final point: 1 point means all of the three problems are existing; 2 points means two of the three problems are existing; 3 points means only one of the three problems is existing; 4 points means none of the three problems is existing.

Educational background: they are originally divided into: never accept any formal education; primary school; junior high school; senior high school; junior college; college, postgraduate degree and above. To guarantee the effectiveness of statistical analysis in regression analysis, the educational backgrounds of the respondents are classified as: junior high school and lower; senior high school; junior college; college and above.

Work unit: government; state-owned enterprise; state-owned institution; collective enterprise; individual enterprise; private enterprise; foreign-funded/joint venture enterprise; corporate enterprise. Among them, the collective enterprise, individual enterprise, private enterprise, foreign-funded/joint venture enterprise and corporate enterprise are integrated into nonpublic-owned unit. In regression analysis, all of them are integrated into government and state-owned institution, state-owned enterprise and nonpublic-owned unit.

Occupation: professional technician; manager of government; manager of public institutions; manager of enterprises; commercial staff; service staff; person in the field of agriculture, forestry, animal husbandry and fishery; industrial worker; unclassified occupation. In regression analysis, occupations of respondents are divided into: industrial worker; manager of government, state-owned institutions and enterprise; commerce and service staff; professional technician and unclassified occupation. Among them, person in the field of agricultural, forestry, animal

husbandry and fishery is included in the unclassified occupation.

Table1 Description of Classified Variables

Variable	Sample（%）	Variable	Sample（%）
Gender		**Occupation**	
Male	49.13	Industrial worker	14.35
Female	50.87	Manager of government, state-owned institution and enterprise	4.41
N	1203	Office clerk	22.64
		Commerce and service staff	31.29
Household Registration Status (*hukou*)		Professional technician	23.25
Shanghai	80.47	Unclassified occupation	4.06
Non-Shanghai	19.53	N	1157
N	1193		
		Annual Household Income	
Marital status		Low income (60,000 yuan and below)	52.38
Having spouse	74.65	Middle income (60,000 to 200,000 yuan)	36.41
Mateless	25.35	High income (200,000 yuan and above)	10.31
N	1203	N	1203
Educational Background		**Stratum Identification**	
Junior high school and lower	28.1	Bottom stratum	54.83
Senior high school	30.92	Middle stratum	40.6
Junior college	19.87	Upper stratum	4.58
College and above	21.11	N	1202
N	1203		
		Home ownership	
Work unit		Ownership of no house	28.12
Nonpublic-owned unit	49.35	Ownership of only one suite	59.15
State-owned enterprise	37.34	Ownership of two or more than two suites	12.73
Government and state-owned institution	13.31	N	1202
N	1157		

Annual household income: it is originated from "what's the total income in your family last year after excluding all tax cost?" According to statistical data and

the result of this investigation on subjective social stratum, annual household incomes are divided into: 60,000 yuan and below is regarded as “low income”; 60,000 to 200,000 yuan is regarded as “middle income”; 200,000 yuan and above is regarded as “high income”.

(3) Control Variables

Age: it is a continuous variable attained through calculating year of birth of certain respondent; this investigation was conducted in 2010, so age=2010-year of birth.

Household registration status (*hukou*): they are original classified as Shanghai registration, non-Shanghai registration, Shanghai residence permit, person from Hong Kong, Macao and Taiwan, foreign person and others. To guarantee the effectiveness of the statistical analysis in regression, household registration types are divided into: Shanghai registration and non-Shanghai registration.

Marital status: they are originally classified as unmarried, married, divorced and widowed. In regression analysis, the unmarried, divorced and widowed are integrated into “mateless” while the married is described as “having spouse”.

Table 2 Description of Continuous Variables

Variable	N	Mean	Standard Deviation	Minimum	Maximum
Age	1203	43.65	13.74	18	69
Housing Area	1202	61.05	35.25	5	210
Housing Quality	1202	3.49	0.89	1	4

3. Analyzing methods and models

(1) Multinomial logistic regression

In this paper, multinomial logistic regression method is applied (Powers and Xie, 1999). As an extension of binary logistic regression, multinomial logistic regression is consisting of a group of logistic equations. When one category of multiple categorical variable is regarded as baseline category, a baseline category contrast will be formed. The specific approach is: selecting the baseline category; then contrast its probability with that of other categories. Take an example, in the regression analysis on subjective

stratum identification; we usually regard the bottom stratum as the baseline category. To study how a group of independent variables (X) influence the probability of social stratum positioning, use P1 and P2 as probabilities of positioning oneself in the middle stratum and upper stratum, and that multinomial logistic regression equation formed thereby is:

$$\begin{cases} \log(p_1/p_j)=\alpha_1+\beta_1 X \\ \log(p_2/p_j)=\alpha_2+\beta_2 X \end{cases}$$

(2) Multiple linear regression

Another modal involved in this paper is multiple linear regression method. It is used for undertaking regression analyses on two continuous variables: housing area and housing quality. Firstly, establish multiple linear regression models for “housing area” and “housing quality”; secondly, establish an equation to express the relationship among housing area, gender, age, square of age, *hukou*, marital state, education background, work unit, occupation and annual household income as shown in the follow:

Housing area = a + b1 * gender + b2 * age + b3 * square of age + b4 * *hukou* + b5 * marital status + b6 * education background + b7 * work unit + b8 * occupation + b9 * annual household income + ε1

Housing quality = A + B1 * gender + B2 * age + B3 * square of age + B4 * *hukou* + B5 * marital status + B6 * education background + B7 * work unit + B8 * occupation + B9 * annual household income + ε2

In the equations, a and A are standing for an intercept and ε1 and ε2 are random errors unexplained by the models. The coefficients (from b1 to b9 and from B1 to B9) in the equations are indicating the influence of gender, age, square of age, *hukou*, marital status, education background, work unit, occupation and annual household income on current housing area and quality respectively.

Results

This paper has focused on the relationship between housing and stratum identification, and discussed the influence of home ownership on stratum

identification. Through studying the importance of home-ownership for modern, the author has studied the people have own houses, and further found out factors that influence on home ownership, housing area and housing quality.

1. Stratum identification and home ownership

In this paper, three stratums (bottom stratum, middle stratum and upper stratum) in stratum identification are modeled respectively for studying the influence of housing on stratum identification. Please see the three models as shown in table 3. Besides control variables, other variables are also involved in studying the impact of housing.

Model 1: besides gender, age, square of age, *hukou* and marital status, this model only add the variable “housing” for indicating the effect of housing on stratum identification. Model 1 focuses on home ownership of respondents, that is, whether respondents have own houses and the number of houses they owned. In other words, this model is the influence of home-ownership and the number of owned house(s) on stratum identification. From this model, we can illustrate that: compared with identifying oneself as “bottom stratum”, the odds ratio of people who have ownership of only one suite identifying themselves as the middle stratum is 1.539 times as much as people who do not have ownership of any house identifying themselves as the middle stratum; the likelihood of people who have ownership of two or more than two suites regarding themselves as the middle stratum is 3.051 times that of people who do not have ownership of any house; the possibility of people who have ownership of two or more than two suites considering themselves as belonging to the upper stratum is 7.327 times larger than people who do not have ownership of any house; and all of the probabilities are significant at the level of 1%. As a result, it is clear that the home-ownership and the number of owned houses have a significant influence on stratum identification.

Model 2: upon model 1, other variables included in this model are educational background, work unit and occupation. Through observing changes of home ownership impact, the author has discovered that: compared with identifying oneself as belonging to “bottom stratum”, the odds ratio of people who have ownership of

only one suite identifying themselves as the middle stratum is 1.490 time as much as people who do not have ownership of any house; the possibility of people who have ownership of two or more than two suites regarding themselves as the middle stratum is 2.849 times that of people who do not have ownership of any house; the likelihood of people who have ownership over two or more than two suites considering themselves as belonging to the upper stratum is 5.562 times larger than people do not have ownership of any house; Though the odds ratios in this model are lower than those in model 1, they are still significant at the level of 1%.

Model 3: upon model 2, this model has included annual household income that has been divided into “low income”, “middle income” and “high income”. Through observing changes on home ownership influence, the author has found that: compared with identifying oneself as belonging to “bottom stratum”, the odds ratio of people who have ownership of only one suite identifying themselves as the middle stratum is 1.420 time as much as people who do not have ownership of any house identifying themselves as the middle stratum, and it is significant at the level of 10%; the probability of people who have ownership of two or more than two suites regarding themselves as the middle stratum is 2.415 times that of people who do not have ownership; the likelihood of people who have ownership of two or more than two suites considering themselves as belonging to the upper stratum is 4.207 times larger than people who do not have ownership of any house; the latter two odds ratios are still significant at the level of 1% and the three odds ratios are lower than those in above two models.

In conclusion, though different variables are included when comparing the above three models, the home ownership is always significantly effecting on stratum identification, which means the home-ownership and the number of owned houses are dramatically influencing stratum identification. Hypothesis 1 has been proved that home ownership significantly influences on stratum identification, and home-ownership can dramatically improve the positioning of stratum identification. Under market system, house has become an important standard for evaluating economic status and a mark of wealth and status, never a symbol of work unit welfare.

In social stratum consciousness, housing has become more and more important. In addition, there is no significant difference between the odds ratio of people who have ownership of only one suite and people who do not have ownership of any house identifying themselves as the upper stratum in the three models, reason for which may be that only a few people from the two groups identifying themselves as belonging to upper stratum. It has verified the importance of housing on stratum identification from another perspective.

Table 3
Coefficients for three Multinomial Logistic Regression Models of Determinants of Stratum Identification

	Model 1		**Model 2**		**Model 3**	
Variable	Middle odds ratio (SE)	Upper odds ratio (SE)	Middle odds ratio (SE)	Upper odds ratio (SE)	Middle odds ratio (SE)	Upper odds ratio (SE)
Gender[1]	0.649***	0.601*	0.592***	0.519**	0.602***	0.564*
	(0.0826)	(0.177)	(0.0792)	(0.161)	(0.0817)	(0.179)
Age	0.916**	0.913	0.951	0.973	0.934*	0.901
	(0.0356)	(0.0795)	(0.0388)	(0.0901)	(0.0387)	(0.0855)
Square of Age	1.001*	1.001	1.000	1.001	1.001	1.001
	(0.000428)	(0.000947)	(0.000447)	(0.000998)	(0.000454)	(0.00103)
Hukou[2]	1.242	0.811	1.100	0.703	1.064	0.640
	(0.250)	(0.382)	(0.235)	(0.340)	(0.231)	(0.314)
Marital status[3]	1.491**	1.282	1.421*	1.373	1.328	1.233
	(0.278)	(0.557)	(0.273)	(0.592)	(0.259)	(0.541)
Housing State[4]						
Ownership of only one suite	1.539**	2.073	1.490**	1.708	1.420*	1.531
	(0.266)	(0.943)	(0.269)	(0.792)	(0.260)	(0.710)
Ownership of two or more than two suites	3.051***	7.327***	2.849***	5.562***	2.415***	4.207***
	(0.730)	(3.813)	(0.710)	(2.975)	(0.614)	(2.302)
Educational Background[5]						
Senior high school			1.155	3.268**	1.111	3.140**
			(0.205)	(1.730)	(0.200)	(1.685)
Junior college			1.596**	5.783***	1.445	5.225***
			(0.354)	(3.499)	(0.327)	(3.229)
College and above			2.514***	14.21***	1.932***	8.598***
			(0.584)	(8.674)	(0.466)	(5.437)
Work unit[6]						

State-owned enterprise			0.821	0.346**	0.861	0.422**
			(0.134)	(0.146)	(0.143)	(0.182)
Government and state-owned institution			1.842***	2.147*	1.923***	2.685**
			(0.408)	(0.900)	(0.433)	(1.169)
Occupation[7]						
Manager of government, state-owned institution and enterprise			2.413**	0.612	1.968*	0.486
			(0.914)	(0.523)	(0.759)	(0.429)
Office clerk			1.396	0.942	1.224	0.896
			(0.342)	(0.527)	(0.305)	(0.513)
Commerce and service staff			1.617**	0.574	1.571**	0.537
			(0.367)	(0.336)	(0.360)	(0.323)
Professional technician			1.467	0.428	1.314	0.367
			(0.369)	(0.265)	(0.335)	(0.235)
Unclassified occupation			0.875	1.226	0.850	1.134
			(0.360)	(0.961)	(0.353)	(0.919)
Annual Household Income[8]						
Middle income					1.828***	1.288
					(0.271)	(0.494)
High income					3.088***	8.019***
					(0.778)	(3.514)
Constant	3.636*	0.354	0.753	0.0260*	0.927	0.106
	(2.763)	(0.609)	(0.631)	(0.0513)	(0.789)	(0.211)
Pseudo R^2	0.0367		0.0859		0.1092	
N	1,146		1,146		1,146	

Notes:

Independent variable is stratum identification, and the omitted category is bottom stratum

Significant levels are ***P<0.01, **P<0.05, and *P<0.1

1 the omitted category is female
2 the omitted category is non-Shanghai
3 the omitted category is mateless
4 the omitted category is ownership of no house
5 the omitted category is junior high school and lower
6 the omitted category is nonpublic-owned unit
7 the omitted category is industrial worker
8 the omitted category is low income

2. An analysis on factors that influence stratum identification

From comparisons among the three models, it is not difficult to find out that the influence degree of housing would decline when other factors are added into the models. The finding indicates that some other factors, besides home ownership, are

also influencing stratum identification.

Educational background: from model 2 and model 3, educational background has a significant influence on stratum identification. It is discovered in model 3 that: compared with identifying oneself as belonging to “bottom stratum”, the odds ratio of college and above graduate identifying themselves as the middle stratum is 1.932 time as much as junior high school or below graduate identifying themselves as the middle stratum; the probability of senior high school graduate identifying themselves as the upper stratum is 3.140 times that of junior high school graduate; the likelihood of junior college graduate regarding themselves as the upper stratum is 5.225 times larger than junior high school or below graduate; the possibility of college or above graduate considering themselves as belonging to the upper stratum is 8.598 times as much as junior high school or below graduate. The discovery shows that educational background is positively related to stratum identification, and a higher educational degree will result in positioning as belonging to a higher stratum.

Work unit: it is discovered from model 2 and model 3 that work unit is closely related to stratum identification. From model 3, we can discover that compared with identifying oneself as belonging to “bottom stratum”, the odds ratio of people who are working in government and state-owned unit identifying themselves as the middle stratum is 1.923 time as much as people in nonpublic-owned unit identifying themselves as the middle stratum; the probability of people in state-own enterprises regarding themselves as the upper stratum is 42.2% that of people in nonpublic-owned unit; the possibility of people in government and state-owned unit considering themselves as belonging to the upper stratum is 2.685 times larger than people in nonpublic-owned unit. The discovery shows that work unit would influence stratum identification, and people who are working in government and state-owned unit have a significant advantage on stratum identification.

Occupation: from model 2 and model 3, occupation does not have a significant influence on stratum identification. Model 3 told us that: compared with identifying oneself as belonging to “bottom stratum”, odds ratio of managers of government, state-owned institution and enterprise identifying themselves as the middle stratum is

1.968 time as much as industrial workers identifying themselves as the middle stratum; the probability of commerce and service staffs regarding themselves as the middle stratum is 1.517 times that of industrial workers; there is no significant difference among different occupations in considering themselves as belonging to the upper stratum. Therefore, occupation has certain influence on identifying as “middle stratum”, but no influence on identifying as “upper stratum”.

Income: categorize all annual household incomes into “low income”, “middle income” and “high income”. It is discovered from model 3 that : compared with identifying oneself as belonging to “bottom stratum”, odds ratio of people who attain “middle income” identifying themselves as the middle stratum is 1.828 times as much as people who attain “low income” identifying themselves as the middle stratum; the probability of people who earn “high income” regarding themselves as the middle stratum is 3.088 times that of people who earn “low income”; the possibility of people who achieve “high income” considering themselves as belonging to upper stratum is 8.019 times larger than people who only achieve “low income”. As a consequence, annual household income is positively related to stratum identification, and a higher annual household income would result in identifying as belonging to a higher stratum.

In summary, besides housing factors, other variables that are related to stratum identification include: educational background, work unit, occupation and income, among which educational background and income have significant influence on stratum identification while work unit and occupation having less obvious influence on stratum identification. The conclusion partly proves the validity of hypothesis 2 that positioning of stratum identification is related to education, occupation and income though it is significantly related to educational background and income while less obviously related to work unit and job.

3. An analysis on factors that influence housing state

To have a future study on housing state, the author has analyzed home ownership, housing area and housing quality with a view to find out factors that influence housing state, and study characteristics of the groups that have ownership of certain house(s), especially have good houses. Table 4 has presented another three models

established by focusing on home ownership, housing area and housing quality respectively.

As to home ownership, model 4 is for studying groups that “have ownership of no house”, “have ownership of only one suite” and “have ownership of two or more than two suites”. From model 4, it is not difficult to find that: compared with people who do not have ownership of any house, the odds ratio of people who are registered in Shanghai owning only one suite is 10.77 times as much as people who are not registered in Shanghai owning only one suite; the probability of people who are registered in Shanghai having two or more than two suites is 50.25 times that of people who are not registered in Shanghai. Since the housing price in Shanghai is very high, it is natural that non-Shanghai resident cannot afford a house in Shanghai. Therefore, *hukou* has a significant influence on the number of owning house(s). Compared with people who do not have ownership of any house, the possibility of people who are having spouse owning only one suite is 2.202 times larger than people who are having no spouse owning only one suite; the likelihood of people who are having spouse possessing two or more than two suites is 2.987 times as much as people who are “mateless”. As a result, marital state has a significant influence on home-ownership. As house ownership has become essential for getting married, more and more people have regarded “home ownership” as a precondition of getting married, so marriage is effecting on housing state dramatically. Compared with people who do not have ownership of any house, the odds ratio of junior college graduate having only one suite is 2.665 times as much as junior high school or below graduate; the probability of junior college graduate owning two or more than two suites is 4.419 times that of junior high school or below graduate. That indicates the impact of educational background on house attaining. Annual household income has a significant influence on home ownership, and a higher income will result in more houses owned; income is positively related to the number of houses owned. It’s worth noting that work unit and occupation do not significantly effect on house attaining, which has again proved that a house is a commodity and a mark for economic status, never a symbol for welfare from work unit under market system. The discovery has

proved the invalidity of relationship between occupational status and home ownership in hypothesis 3. Meanwhile, the hypothesis that home-ownership is related to education and income is proved, high educational degree and high income would significantly effect on home ownership.

Table 4
Coefficients for Three Regression Models of Determinants of Housing

Variable	Model 4 (Multinomial) Only one suite odds ratio (SE)	Model 4 (Multinomial) ≥2 suites odds ratio (SE)	Model 5 (OLS) Housing Area Coefficient (SE)	Model 6 (OLS) Housing Quality Coefficient (SE)
Gender[1]	0.820	0.655*	0.402	0.044
	(0.139)	(0.155)	(1.968)	(0.053)
Age	1.024	0.933	-0.772	-0.001
	(0.0536)	(0.0668)	(0.606)	(0.016)
Square of Age	1.000	1.001	0.009	0.000
	(0.000581)	(0.000787)	(0.007)	(0.000)
Hukou[2]	10.77***	50.25***	8.616***	0.089
	(2.392)	(31.13)	(2.858)	(0.077)
Marital status[3]	2.202***	2.087**	17.240***	0.062
	(0.489)	(0.676)	(2.766)	(0.075)
Educational Background[4]				
Senior high school	1.210	1.482	2.154	0.113
	(0.260)	(0.495)	(2.607)	(0.070)
Junior college	2.665***	4.419***	13.677***	0.351***
	(0.786)	(1.839)	(3.297)	(0.089)
College and above	1.493	1.938	16.171***	0.421***
	(0.451)	(0.845)	(3.523)	(0.095)
Work unit[5]				
State-owned enterprise	1.693**	1.386	-0.978	0.076
	(0.352)	(0.395)	(2.441)	(0.066)
Government and state-owned institution	1.401	1.320	3.473	0.028
	(0.403)	(0.496)	(3.243)	(0.088)
Occupation[6]				
Manager of government, state-owned institution and enterprise	0.897	0.977	4.323	-0.020
	(0.439)	(0.595)	(5.598)	(0.151)
Office clerk	1.363	0.745	5.241	0.055

	(0.420)	(0.313)	(3.518)	(0.095)
Commerce and service staff	0.812	0.446**	-2.838	-0.041
	(0.217)	(0.175)	(3.238)	(0.088)
Professional technician	1.186	0.704	4.050	-0.051
	(0.373)	(0.304)	(3.637)	(0.098)
Unclassified occupation	2.779**	1.654	9.445*	0.304**
	(1.347)	(1.207)	(5.598)	(0.151)
Annual Household Income[7]				
Middle income	1.413*	3.569***	10.965***	0.196***
	(0.272)	(0.967)	(2.206)	(0.060)
High income	1.532	5.139***	19.529***	0.166*
	(0.487)	(2.072)	(3.503)	(0.095)
Constant	0.0564***	0.0164***	40.115***	2.990***
	(0.0615)	(0.0259)	(12.487)	(0.338)
Pseudo R^2/R^2	0.1935		0.180	0.066
N	1,146	1,146	1,146	1,146

Notes:

Independent variable of Model 4 is home ownership, and the omitted category is ownership of no house

Significant levels are ***P<0.01, **P<0.05, and *P<0.1

1 the omitted category is female

2 the omitted category is non-Shanghai

3 the omitted category is mateless

4 the omitted category is junior high school and lower

5 the omitted category is nonpublic-owned unit

6 the omitted category is industrial worker

7 the omitted category is low income

As to housing area, a multiple linear regression analysis on influence factors of housing area is undertaken in model 5. It is not difficult to discover from model 5 that *hukou*, marital status, educational background and annual household income have significant effect on current housing area size. The current housing area size of people who are registered in Shanghai is 8.616 square meters larger than that of people who are not registered in Shanghai; the current housing area size of people who are "having spouse" is 17.240 square meter larger than that of people who are "mateless", this is closely related to family structure. The current housing area size of junior college graduate is 13.677 square meters larger than that of junior high school or below graduate; the current housing area size of college or above graduate is 16.171 square meters larger than that of junior high school or below graduate; The current

housing area size of families earning “middle income” is 10.965 square meters larger than that of only earn “low income”; the current housing area size of families achieving “high income” is 19.529 square meters larger than that of families only achieving “low income”. In spite of that, work unit and occupation have no dramatic influence on current housing area.

As to housing quality, a multiple linear regression analysis on influence factors that housing quality has been undertaken in model 6. Housing quality is a continuous variable: 1 point stands for poor housing quality, 4 points stands for high housing quality. We can know from model 6 that educational background and annual household income have significant influence on housing quality. Quality of current residential house of junior college graduate is 0.351 point higher than that of junior high school or below graduate; the quality of current residential house of college or above graduate is 0.421 point higher than that of junior high school or below graduate; the quality of current residential house of families earning “middle income” is 0.196 point higher than that of families earning “low income”; quality of current residential house of families achieving “high income” is 0.166 point higher than that of families only achieving “low income”. In spite of that, work unit and occupation do not have dramatic influence on housing quality.

To sum up, major factors that influence on current housing area include *hukou*, marital state, educational background and annual household income, while major factors that influence on the quality of current residential house include educational background and annual household income. The conclusion indicates that high educational degree has certain influence on housing area and quality, and people who attained higher educational degree may have higher requirements of housing. In addition, economic factor (annual household income is a factor that has significant influence) and economic power are determinants on housing condition. On the other hand, work unit, along with occupation and other factors, does not have significant influence on housing area and quality, which has partly proved the validity of hypothesis 4 that housing area and quality are related education and income, and groups of high educational degree and high income have obvious advantages on house

ownership. In spite of that, the relationship between occupation and housing area and quality has not been verified yet.

Conclusion and Further Discussion

As a housing reform has been carried out, housing and social stratification issues have attracted more and more attention from academic circle. This paper is focusing on the relationship between housing and stratum identification to study the importance of housing for social stratification from subjective perceptive. Then a further analysis on many factors that have influence on housing is undertaken while focusing on several factors like education, work unit, occupation and income. Through above analysis, this study has come to conclude that:

Firstly, housing has obvious influence on stratum identification. We can know from above empirical analysis that home-ownership and the number of owned house(s) significant effect on stratum identification. People who own houses are tending to identify themselves as belonging to the higher stratums than those who do not have own houses; people who have ownership of more houses are tending to regard themselves as the higher stratums. Under market system, house has become a commodity and a symbol of economic power that can reflect economic status directly, and therefore important to stratum identification. “Housing” has been considered as an important indicator for stratum identification.

Secondly, stratum identification is also influenced by educational background, work unit, occupation and income. Besides housing factors, other variables that have influence on social stratification include educational background, work unit, occupation and income in traditional viewpoint. When identifying which stratums they belong to, people would regard economic factors as the primary factors; income and housing are outstanding factors, while occupation and income are inherently related to each other. Meanwhile, “reputation” is also an indicator that cannot be overlooked and is measured with “educational background”, “work unit” and “occupation”. People would take consideration to the important influence of educational degree and occupational prestige when identifying which stratums they

belong to. In a word, stratum identification is influenced by many factors. Under the influence of market economy, economic factors have become more and more important, and housing factors have attracted attention thereby.

Finally, on home ownership, housing area and housing quality, economic factor (income) is playing an important role while work unit and job having less obvious influence. According to analysis in this paper, people who are registered in Shanghai, or having higher educational degree, or high income level have advantages on housing attaining though marital factors are also influencing housing state. Notably, work unit and occupation have less obvious influence on housing, which means work unit and occupation have unobvious influence on whether people have house ownership or not and what kinds of houses they owned. Before the housing reform was undertaken, the major house attaining source is distribution from work unit, so all units and occupations are presenting great influence on individual housing. After the reform, the house commercialization has gradually weakened the influence of work unit and occupation on housing.

In conclusion, stratum identification is influenced by many factors, among which education, work unit, occupation and income are factors that have significant influence and can be categorized into “economic power” and “reputation”. Under the market economy era, economic factors are playing an increasingly important role to stratum identification. With the carrying out of housing reform, house has become a commodity that represents it as a mark of economic power and a symbol for status. As a result, housing is playing a more important role of stratum identification, and has become a significant indicator for evaluating which stratums people belong to. Besides that, economic factor has dramatic influence on home ownership, housing area and housing quality, and work unit factor is playing a less important role with the carrying out of housing reform.

Housing issue, an issue that involves social science, economics, political science, management science and many other fields, requires attention from more scholars by studying from more perspectives. In this paper, the quantitative analysis method is applied with a view to provide certain data support for existing related studies. Due to

data limitations, however, more variables that may effect on stratum identification and housing issue are not included, which has influenced the effectiveness of models. In the process of studying, an issue that can be further discussed is discovered: the influence of difference in *hukou* on house attaining. Through above analysis, it is not difficult to discover that *hukou* has significant influence on home-ownership and housing area, and people who are registered in Shanghai have obvious advantages on the two aspects. To China's urban citizens, there are at least three ways to house attaining: public housing distribution; purchasing commercial houses through market mechanism; participating in Comfortable Housing Projects. In general, immigrants are excluded by mainstream of housing distribution systems, and their housing requirements have been ignored by the recent Urban Housing Reform to a great extent. Since the relation between *hukou* and urban welfares is not fundamentally changed, it is even impossible for immigrants to attain the right of using public houses of Housing Administration Bureaus or work unit. On the other hand, though commercial houses are open to immigrants, the prices are too high to immigrant afford (Wang Weiping & Wang Hansheng, 2002). This means immigrants are in a dilemma that they neither enter the housing distribution system nor undertake the pressure from high prices of commercial houses. As a consequence, housing issue of immigrants is so important that worth further discussing.

REFERENCES

Blau, P. and Duncan, O. D.1967, *The American Occupational Structure*. New York: Wiley.

BianYanjie and Liu Yongl.i. 2005, "Social Stratification, Home Ownership, and Quality of Living: Evidence from China's Fifth Census." *Sociological Studies* (3). (in Chinese)

Featherman, D., Jones, F. &Hauser, R. 1975, "Assumptions of Social Mobility Research in the U.S.: The Case of Occupational Status." *Social Science Research* (4).

Li Bin and Wang Bin. 2010, “The New Approach of Social Stratification in China—the Transfer of Urban Housing Rights.” *Exploration and Free Views*(4):43 (in Chinese)

Liu Jingming and Li Lulu. 2005, “Becoming Stratified: Residential Spaces, Lifestyles, Social Networks and Class Identity: An Empirical Study of Social Stratums in Urban China.” *Sociological Studies* (3). (in Chinese)

Li Qiang. 2010, *Social Stratification in Contemporary China: Measure and Analysis*, Beijing: Beijing Normal University Press (in Chinese)

Liu Zuyun Hu Rong. 2010, “Urban Housing Stratification: An Analysis Based on CGSS 2006 Data.” *Society*,(5): 164-192

Powers, Daniel and Yu Xie. 1999, *Statistic Method for Categorical Data Analysis*, Academic Press Inc.

Paul Fussell. 1983, *Class: A Guide Through the American Status System, Summit Books*, New York:76-96

P. Saunders. 1984, “Beyond Housing Classes: The Sociological Significance of Private Property Rights in Means of Consumption.” *International Journal of Urban and Regional Research* (8): 202-207

Rex. J、R. Moore. 1967, *Race, Community and Conflict: A Study of Sparkbrook*. London：Oxford University Press.

Shanghai Statistical Yearbook, 2011: http://www.stats-sh.gov.cn/tjnj/nj11.htm?d1=2011tjnj/C1705.htm (in Chinese)

Wang Weiping and Wang Hansheng, 2002, “Living in Big Cities: Analysis about Housing Status of Immigrants in Beijing and Shanghai.” *Sociological Studies* (3): 107-108 (in Chinese)