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# How Does the Threshold for Urban Household Registration in China Affect the Willingness of Rural to Urban Migrant Population to Settle Down?

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**Abstract:** The scale of China's floating population is very large, and it is a key group that needs attention in promoting the equalization of basic public services. This study explores the impact and mechanism of adjusting the urban household registration threshold on the acquisition of citizenship status by the "rural-urban" floating population, with the household registration threshold as the link. It was found that the threshold for household registration has an impact on the willingness of rural urban migrant population to settle down from two aspects. On the one hand, a high threshold for household registration implies the unaffordability of obtaining citizenship status for the "rural-urban" migrant population, which has a significant crowding out effect on their willingness to settle down. Moreover, the high skilled "rural-urban" migrant population without housing is more sensitive to the high threshold for household registration. On the other hand, from the perspective of urban scale, the increase in the threshold for household registration has had a crowding out effect on the floating population for Type I large cities, mega cities, and super large cities. The increase in the threshold for settling in mega cities has the strongest crowding out effect on the floating population, which means that as the urban population expands, the welfare benefits enjoyed by the floating population in these cities will decrease, leading them to be more inclined to leave these cities and seek development opportunities in other cities. This study effectively answers how the threshold for household registration affects the willingness of rural urban migrant population to settle, providing mathematical support for urban development.

**Keywords:** threshold for urban household registration; rural urban migrant population's willingness to settle down; IV estimation

## 1. Introduction

In 2023, the permanent urban population of China will be 932.67 million, an increase of 11.96 million from the end of the previous year; The rural permanent population is 477 million, a decrease of 14.04 million; The proportion of urban population to the national population (urbanization rate) is 66.16%. In July 2024, the Third Plenary Session of the 20th Central Committee of the Communist Party of China passed the "Decision of the Central Committee of the Communist Party of China on Further Deepening Reform and Promoting Chinese style Modernization" (hereinafter referred to as the "Decision"), which pointed out the need to improve the system and mechanism for promoting new urbanization. Build a positive interactive mechanism for industrial upgrading, population agglomeration, and urban development. We will promote the system of providing basic public services through permanent residence registration, promote the social insurance, housing security, and compulsory education of accompanying children of eligible agricultural migrants to enjoy the same rights as those of the registered residence registered population in the place of immigration,

and accelerate the citizenization of agricultural migrants. Protect the legitimate land rights and interests of farmers who have settled in cities, safeguard their land contracting rights, homestead use rights, and collective income distribution rights in accordance with the law, and explore the establishment of voluntary and compensated withdrawal methods.With the advancement of urbanization, the function of the registered residence system to prevent the migration of population and labor from rural to urban has been broken, and urban and rural residents can move, live and work freely. However, the rights and interests to enjoy basic public services are still to a large extent recognized as registered residence, which has become a difficult and blocking point in realizing the equalization of public services.

The reform and unfinished adjustment of the registered residence registration system are statistically reflected in the improvement of the urbanization rate of the permanent population and the urbanization rate of the registered residence registration population. In 2021, these two urbanization rates will be 64.7% and 46.7% respectively, that is to say, the urban population according to the standard of permanent residence will be 914 million, while the urban population according to the standard of registered residence will be only 660 million. The difference between the two is for residents who are permanent residents of urban areas but do not have urban household registration, with the largest proportion of "rural-urban" floating population.

Although the implementation of the residence permit system has largely attracted the population to stay in the city for a long time, holding a local residence permit can enjoy basic public services, but owning a local registered residence can obtain a broader range of basic public services. Under the restriction of our country's registered residence system, many people keep going back and forth between cities and rural areas, unable to obtain urban household registration, and there is a phenomenon of "young people coming out and old people returning". In addition, there is a portion of the floating population who have been drifting in cities for a long time without a fixed residence or stable job. These people may not be able to obtain stable living and development opportunities in the city due to restrictions on household registration, economic conditions, and other reasons, so they constantly move between different cities (Zhou Tianyong, 2018).

Existing research has paid little attention to the potential impact of household registration thresholds on the willingness of migrant populations to settle down, with the main challenge being the measurement of household registration thresholds. The threshold for household registration is a comprehensive concept that is difficult to quantify and evaluate simply and directly. At present, the most important and direct way to measure the threshold for household registration is to index and standardize the household registration policy documents of each city, which facilitates comparative analysis of household registration policies between cities (Zhang Jipeng and Lu Chong, 2019). Based on this, the main purpose of this study is to select appropriate substitution variables for the settlement threshold and construct the settlement threshold index, so as to explore the impact and mechanism of the adjustment of the registered residence system represented by the settlement threshold in the supply of basic urban public services on the willingness of rural urban migrants to settle in cities.

## 2. Materials and Methods

*Research Hypothesis*

For the individual "township city" floating population, the factors influencing the settlement decision are complex and diverse. With the advancement of urbanization, the individual's demand and expectation for public welfare attached to the urban registered residence gradually become the primary factor influencing the individual settlement decision. Among them, the threshold of settlement directly affects whether they can obtain registered residence status in the city (Liu Tao et al., 2019). In order to better understand and describe the impact of the settlement threshold on the willingness of "township city" floating population to settle down in the process of registered residence system adjustment, this study refers to existing research (Cl é ment Imbert, Papp, 2020), and assumes that there are different types of migrant labor $i$ in city $j$, and its current effectiveness depends on the sum of its monetary benefits and non monetary benefits:

$$U_{i,j,t} = u_{i,j,m,t} + u_{i,j,n,t} = (w_{i,j,t} - c_{i,j,t}) + (s_{i,j,t} - mc_{i,j,t}) \quad (1.1)$$

Among them, $u_{i,j,m,t}$ represent the monetary benefits required for individuals to settle in the destination city, determined by wage income $w_{i,j,t}$ and living costs $c_{i,j,t}$. $u_{i,j,n,t}$ represent the non monetary benefits required for individuals to settle in the destination city, determined by the level of urban public services $s_{i,j,t}$ and the attractiveness of the destination city $mc_{i,j,t}$. According to Friedman's persistent income hypothesis, under the incentive of pursuing utility maximization, consumers will consider future income stability and growth trends to determine an appropriate level of consumption. At this point, the total utility obtained by the "rural-urban" floating population *i* in the city *j* over the long term is:

$$U_{i,j} = \sum_{t=t_0}^{T} \frac{u_{i,j,t}}{(1+\beta_m)^t} = \sum_{t=t_0}^{T} \frac{(w_{i,j,t}-c_{i,j,t})}{(1+\beta_m)^t} - \frac{c_{t_0,j}}{(1+\beta_m)^T} + \sum_{t=t_0}^{T} \frac{s_{i,j,t}}{(1+\beta_i)^t(1+\delta_j^H)} - \frac{mc_{i,j,t}(1+\delta_j^H)}{(1+\beta_i)^t} \quad (1.2)$$

Among them, $\beta$ is the comprehensive discount rate of the total utility obtained by the "township city" floating population in the long term in each period, $c_{t_0,j}$ is the one-time cost required for the initial migration to city *j*. Wages and living costs are discounted according to the market interest rate $\beta_m$, while the discount rate $\beta_i$ for the level of public services and the attractiveness of the outflow location depends on an individual's emphasis on future long-term development opportunities.

When individuals pay more attention to immediate benefits, they usually pay more attention to the current income level and use monetary income as the main criterion for deciding whether to settle in the destination. In this situation, individuals do not urgently need public services because they are more inclined to pursue immediate material returns, and their demand for long-term welfare is not so urgent. Individuals do not need to stay away from their hometown for a long time or face the choice of leaving their hometown, and the psychological cost is relatively low. At this time, the discount rate $\beta_i$ between the level of public services and the attractiveness of the outflow location is higher.

On the contrary, when individuals place greater emphasis on future long-term development opportunities, they may consider more the challenges and needs they may face in the future. This awareness makes individuals pay more attention to the long-term benefits brought by public services, as they realize the importance of equal access to public services for future quality of life. At this time, individuals are facing an increased willingness to settle in the destination after a long period of distance from their hometown, which affects their consumption decisions and life choices, and increases their psychological costs. At this time, the discount rate $\beta_i$ between the level of public services and the attractiveness of the outflow location is relatively low.

Assuming $\delta_j^H$ is the household registration threshold for city *j*, for individuals, in order to obtain legal identity and enjoy corresponding public services locally, they need to overcome the limitations of the household registration threshold, which are not only formal but also substantive. The restrictions on household registration directly affect the quality of life and welfare level of individuals in the local area. Due to the lack of civic rights, individuals may feel excluded and marginalized, difficult to integrate into local society, and lack a sense of identity and belonging to society. In this situation, individuals need to constantly strive to adapt and adapt to the local environment, while also facing the dilemma of being marginalized and unrecognized, thus facing more psychological challenges and pressure. The burden of psychological costs affects individuals' quality of life and happiness, making their lives in the local area more difficult and increasing uncertainty.

At this point, the settlement decision of the "township city" floating population depends on their total utility value $U_{i,j}$ in the city. If and only if $U_{i,j} \geq 0$, the floating population will choose to settle in city *j*.

$$prob(settle = 1/U_{i,j} \geq 0) \propto U_{i,j} \quad (1.3)$$

Assuming all other conditions remain unchanged, the threshold for settling in city *j* is raised. At this point, the monetary benefits of the floating population remain unchanged, while the non monetary benefits increase. The overall utility level decreases, and the probability of the floating population choosing to stay in city *j* decreases. If the total utility in non monetary form decreases to a level that makes the total utility less than zero, then the floating population will be more likely to

choose to leave the city. In this case, raising the threshold for household registration may lead to a weakening of the attractiveness of the floating population to the city, especially when the improvement of public service levels cannot offset the negative impact of the overall decline in utility levels. Based on this, this study proposes hypothesis 1:

Assumption 1: The increase in the threshold for urban household registration will reduce the non monetary utility of the floating population and have a crowding out effect on their willingness to settle down.

In addition, employment discrimination is an important mechanism for the urban settlement threshold to affect the settlement decision of the "township city" floating population, which is mainly reflected in that the "township city" floating population is still restricted from entering certain sectors and industries even though they have the same ability as urban residents due to the lack of local registered residence (Wu Shanshan, Meng Fanqiang, 2019).

In high threshold cities, due to the lack of local registered residence or relevant citizens' rights and interests, many "township city" migrants are often difficult to obtain the same employment opportunities and treatment as local residents. They face issues such as wage inequality, damaged labor rights, and limited career development, which puts them in a disadvantaged position in the labor market. In order to seek better employment opportunities and development space, the rural urban migrant population has to consider choosing cities with relatively low entry barriers for household registration. This kind of mobility not only affects the labor supply and social stability in the place of origin, but also reflects the severity of unequal distribution of employment opportunities and discrimination between cities. Therefore, hypothesis 2 is proposed:

Assumption 2: Urban employment discrimination increases the probability of migrant population moving out, while high levels of employment discrimination catalyze the crowding out effect of high household registration thresholds.

With the increase of skill premium, high skilled migrant population has stronger competitiveness and negotiation ability in the urban labor market. Their professional knowledge and skills not only bring higher production efficiency and innovation capabilities to enterprises, but also put them in a favorable position in salary negotiations and career advancement. Therefore, high skilled migrant populations often receive relatively higher salary levels and better welfare benefits (Dong Zhiqing et al., 2014). With the increasingly prominent position of high skilled migrant population in China's urban labor market, they not only focus on their own basic survival consumption, but also pay more attention to the working environment, development opportunities, and cultural living standards of the destination (Wang Youxing, Yang Xiaomei, 2018). In contrast, high skilled labor pays more attention to long-term development opportunities and therefore has a lower personal discount rate, which means they are more willing to invest and sacrifice for future long-term development. that is to say $\beta_{highi} < \beta_{lowi}$.

On the other hand, real estate serves as an important capital for families to withstand future risks. When the threshold for urban household registration increases, high skilled labor without housing becomes more sensitive to employment discrimination in the job market, directly affecting the quality of life and future development prospects of high skilled labor, leading to greater psychological and economic pressure on them. In contrast, although low skilled labor may also be affected by the increase in household registration thresholds, their utility losses are relatively small due to their lower demand for future development opportunities. They may be more concerned with basic survival issues and short-term income stability, so the impact of employment discrimination is relatively mild. This indicates that $|\Delta\beta_{highi} > \Delta\beta_{lowi}| (\Delta\beta_{highi}\Delta > 0, \Delta\beta_{lowi}\Delta < 0)$.

Therefore, hypothesis 3 is proposed:

Assumption 3: The increase in the threshold for urban household registration has a greater negative impact on the willingness of high skilled labor without housing to settle down. The catalytic effect of employment discrimination is more pronounced for the high skilled "rural-urban" migrant population without housing.

*Model Construction*

Based on the above theoretical analysis and research hypotheses, the following econometric model is established. Due to the binary choice variable of the explanatory variable "rural-urban" floating population's willingness to settle, both OLS and Probit models were used for benchmark regression estimation, and the regression results of the two estimation methods were compared to enhance the reliability of the estimation results. The specific OLS and Probit model settings are shown in equations (1.4) and (1.5):

$$S_{ij} = \alpha_0 + \alpha_1 * OR_j + \alpha_2 * X_{ij} + \delta_j + \varepsilon_{ij} \quad (1.4)$$

$$Pr(S_{ij} = (OR_j, X_{ij}) = F(OR_j, \alpha_1) \frac{exp(\alpha_0 + \alpha_1 * OR_j + \alpha_2 * X_{ij} + \delta_j + \varepsilon_{ij})}{1 + exp(\alpha_0 + \alpha_1 * OR_j + \alpha_2 * X_{ij} + \delta_j + \varepsilon_{ij})} \quad (1.5)$$

Among them, $S_{ij}$ is a binary variable representing the willingness of individual *i* to settle in the destination *j*; $OR_j$, represents the household registration threshold index of city j; The relationship coefficient of the threshold index for household registration, with $\alpha_1$ as the core explanatory variable, is the focus of this study in terms of its significance and positive and negative values. If $\alpha_1$ is negative, it indicates that the increase in the threshold for urban household registration has a suppressive effect on the willingness of "rural-urban" migrant population to settle. $X_{ij}$ is the relevant control variable, and after fully controlling for the relevant variables, it can effectively avoid the endogeneity problem of urban settlement threshold, thus enabling the identification strategy of this study to accurately identify the effect of urban settlement threshold. $\delta_j$ is the fixed effect at the urban level, and $\varepsilon_{ij}$ is the random disturbance term.

*Data and Variable Explanation*

The raw data used in this study mainly consists of both macro and micro data. Firstly, regarding the dependent variable, since only the CMDS2017 data in the public database includes surveys on individual household registration intentions, we have chosen the relevant question from the CMDS2017 survey: "If the local household registration conditions are met, are you willing to move your household registration to the local area. Based on this question, construct corresponding binary variables and mark the answer "willing" as 1, while other answers are marked as 0. The construction of this variable can better understand and analyze individuals' willingness to move into their local household registration.

For the core explanatory variables, relevant years' urban statistical yearbooks, urban socio-economic development bulletins, policy databases, and other data are used to construct the household registration threshold index. Relevant research shows that at present, the registered residence population mainly flows to municipalities directly under the Central Government, provincial capital cities and prefecture level cities, so urban sample selection needs to consider the difference in coverage and development level. In combination with the number and content of settlement documents issued by various regions, a total of 36 cities, including 4 municipalities directly under the Central Government, 5 cities specifically designated in the plan and 27 provincial capital cities, are finally selected as research samples to construct the settlement threshold index. The population and regional distribution of the sample cities in 2017 are shown in Table 1.

**Table 1.** Basic situation of sample cities included in this study in 2017.

| category | city | Province(Region, City) | Totalurbanpopulatio | Totalpopulationof | Regional distribution |
|---|---|---|---|---|---|
| municipality directly under the Central Government | Beijing | Beijing | 2154 | 1865 | North China |
| | Shanghai | Shanghai | 2428 | 2428.14 | East China |
| | Tianjin | Tianjin | 1562 | 1303.84 | North China |

| | | | | | |
|---|---|---|---|---|---|
| | Chongqing | Chongqing | 3124 | 1185.6 | southwest |
| | Guangzhou | Guangdong | 1530.59 | 683.14 | south China |
| | Hangzhou | Zhejiang | 1036 | 396.17 | East China |
| | Wuhan | Hubei Province | 1121.2 | 623.3 | Central China |
| | Chengdu | Sichuan | 1658.1 | 746.22 | southwest |
| | Nanjing | Jiangsu | 850 | 634.84 | East China |
| | Shenyang | Liaoning | 832.2 | 445.26 | northeast |
| | Changsha | Hunan | 839.45 | 384.75 | Central China |
| | Shijiazhuang | Hebei Province | 1103.12 | 332.32 | North China |
| | Zhengzhou | Henan | 1035.2 | 404.25 | Central China |
| provincial capital | Jinan | Shandong | 890.87 | 435.59 | East China |
| | Harbin | Heilongjiang Province | 1076.3 | 415.18 | northeast |
| | Changchun | Jilin | 753.8 | 359.24 | northeast |
| | Xi'an | Shaanxi | 1020.35 | 624.81 | northwest |
| | Fuzhou | Fujian | 780 | 235.47 | south China |
| | Hefei | Anhui Province | 818.9 | 234.48 | East China |
| | Nanchang | Jiangxi | 560.06 | 256.79 | Central China |
| | Kunming | Yunnan | 695 | 402.35 | southwest |
| | Hohhot | InnerMongoliaAutonomousRegion | 313.7 | 140 | North China |
| | Nanning | GuangxiZhuangAutonomousRegion | 734.48 | 241.47 | south China |
| | Taiyuan | Shanxi | 446.19 | 299.85 | North China |
| | Urumqi | Xinjiang | 355.2 | 226.82 | northwest |

| | | | | | |
|---|---|---|---|---|---|
| | Guiyang | Guizhou | 497.14 | 216.72 | southwest |
| | Lanzhou | GansuProvince | 379.09 | 196.12 | northwest |
| | Xining | Qinghai | 238.71 | 126.89 | northwest |
| | Haikou | Hainan | 232.79 | 120.8 | south China |
| | Yinchuan | NingxiaHuiAutonomousRegion | 229.31 | 109.97 | northwest |
| | Lhasa | Xizang | 72.07 | 31.95 | southwest |
| Planned single city | Dalian | Liaoning | 700.2 | 404.67 | northeast |
| | Qingdao | Shandong | 949.98 | 417.87 | East China |
| | Ningbo | Zhejiang | 854.2 | 212.55 | East China |
| | Xiamen | Fujian | 429 | 226.01 | south China |
| | Shenzhen | Guangdong | 1343.88 | 1343.88 | south China |

Data source: "2018 China Urban Statistical Yearbook".

In terms of constructing the household registration index, the current urban household registration system implemented in China can be mainly divided into admission system and points system. The admission system refers to the requirement for individuals to meet specific conditions or standards to obtain urban household registration, usually including requirements for education, work experience, social security, and other aspects. The talent introduction policy has been favored by major cities in recent years, and the frequent "talent wars" also reflect the institutional differences in the settlement of talents at different levels in cities.

The points system is a major household registration policy implemented in super large and mega cities in recent years, and generally has a higher threshold compared to the admission system. You need to apply to accumulate specific points before you can settle down. Currently, the main points rules are age, education level, years of social security payment, and continuous residence period. These two systems each have their own advantages and disadvantages. The admission system is relatively clear, but there may be overly strict restrictions; The points system is more flexible, but it is also susceptible to human factors.

To quantitatively evaluate the settlement threshold index, this study constructs the settlement threshold index evaluation system based on four secondary indicators, including residential settlement, employment settlement, investment settlement and investment settlement, eight tertiary indicators and 23 tertiary indicators. The smaller the settlement threshold index, the greater the openness of registered residence registration.

Among them, "residential settlement" refers to obtaining the settlement qualification by having a legal and stable residence in the local area, which is one of the basic conditions for registered residence access. There are two three-level indices for "residential settlement", namely rental settlement and home purchase settlement. "Employment settlement" refers to obtaining the settlement qualification through legal and stable employment in the local area, which is one of the basic conditions for registered residence access. There are two three-level indices for "employment and household registration", namely ordinary employment and talent introduction. 'Investment

settlement' refers to obtaining the qualification to settle down by investing or starting a business locally. "Residency and settlement" refers to obtaining the qualification of settlement by joining relatives with local registered residence. There are three three-level indicators, namely, husband and wife joining, parents joining and children joining.

The evaluation system of China's urban household registration threshold index is shown in Table 2. Due to space limitations, the complete rule calculation can be obtained by private message to the author.

In terms of indicator calculation, this study uses $x_i$ as the i-th single indicator (i=1, 2, 3, 4) that constitutes the secondary index $x$, representing four secondary indices: residential settlement index, employment settlement index, investment settlement index, and refuge settlement index. To eliminate the influence of different measurement units between indicators and ensure the horizontal comparability of index results, a dimensionless method is adopted to uniformly process the indicators.

For linear indicators such as purchase amount and investment amount, the per capita GDP is adjusted and then the extreme value method is used to standardize the data of each indicator, projecting it onto the interval [0,1]. The calculation method is as follows:

$$x'_{ij} = \frac{[\frac{x_{ij}}{GDP_{ij}} - min\frac{x_{ij}}{GDP_{ij}}]}{max\frac{x_{ij}}{GDP_{ij}} - min\frac{x_{ij}}{GDP_{ij}}} \quad (1.6)$$

Among them, $x_{ij}$ represents the raw data of the jth city in the i-th single indicator of the secondary indicator $x$, $GDP_j$ is the per capita GDP of the city $j$, $min\frac{x_{ij}}{GDP_{ij}}$ is the minimum value of the indicator, $max\frac{x_{ij}}{GDP_{ij}}$ is the maximum value of the indicator, and the standardized data is obtained after processing. Score non-linear indicators such as educational background, professional skills, and job title requirements by setting classification criteria.

**Table 2.** Evaluation System of China's Urban Settlement Threshold Index.

| First level indicator | Second level indicator | Third level indicator |
|---|---|---|
| Residential Settlement Index | Purchase and household registration index | Purchase amount |
| | | Requirements for social security payment |
| | | Other requirements |
| | Rental settlement index | Residence duration |
| | | Requirements for social security payment |
| | | Other requirements |
| Employment and household registration index | General Employment Index | Tax amount |
| | | Requirements for social security payment |
| | | Age requirement |
| | | Other requirements |
| | | Educational background |
| | Talent Introduction Index | Requirements for social security payment |
| | | Age requirement |
| | | Other requirements |
| Investment Settlement Index | Investment Settlement Index | Investment amount |
| | | Requirements for operating years |
| | | Other requirements |
| Joining the household registration index | Marriage household registration index | Marriage age requirement |
| | | Other requirements |

| | |
|---|---|
| Children's household registration index | Age requirement<br>Other requirements |
| Parental household registration index | Age requirement<br>Other requirements |

Note: The weight of the evaluation system is calculated using a combination of Delphi method and Analytic Hierarchy Process; The evaluation basis comes from the magic weapon of Peking University and the registered residence policy information published on the official websites of local governments.

Finally, through the urban settlement threshold index evaluation system, the registered residence policies of sample cities are evaluated and calculated to form the final ranking. The specific scores are shown in Table 3. It can be seen that Beijing, Shanghai, Guangzhou and Shenzhen are areas where registered residence is strictly controlled. Beijing's settlement threshold index is 0.95, which is the city with the highest settlement threshold among the sample cities. Shanghai's settlement threshold index score is 0.776, which is second only to Beijing, followed by Shenzhen, Guangzhou and Tianjin.

Among municipalities directly under the Central Government, Chongqing ranks 22nd with a low threshold for settlement. The possible reason is that since 2010, as a pilot area for comprehensive reform of balancing urban and rural development, Chongqing has launched the reform of the registered residence system with migrant workers as the main target, and gradually established an open registered residence system based on relatively loose access conditions for settlement and a reasonable urban and rural interest protection system.

**Table 3.** Ranking of threshold index for household registration in sample cities.

| City | Region | Geographic Distribution | Total Urban Population (Thousands of people) | Settlement Threshold Index |
|---|---|---|---|---|
| Beijing | Beijing | North | 1865 | 0.95 |
| Shanghai | Shanghai | East | 2428.14 | 0.776 |
| Shenzhen | Guangdong | South | 1343.88 | 0.626 |
| Guangzhou | Guangdong | South | 683.14 | 0.599 |
| Tianjin | Tianjin | North | 1303.84 | 0.487 |
| Xiamen | Fujian | South | 226.01 | 0.465 |
| Chengdu | Sichuan | Southwest | 746.22 | 0.428 |
| Hangzhou | Zhejiang | East | 396.17 | 0.395 |
| Wuhan | Hubei | Central | 623.3 | 0.369 |
| Dalian | Liaoning | Northeast | 404.67 | 0.277 |
| Nanjing | Jiangsu | East | 634.84 | 0.253 |
| Ningbo | Zhejiang | East | 212.55 | 0.217 |
| Kunming | Yunnan | Southwest | 402.35 | 0.188 |
| Haikou | Hainan | South | 120.8 | 0.155 |
| Chongqing | Chongqing | Southwest | 1185.6 | 0.152 |
| Urumqi | Xinjiang | Northwest | 226.82 | 0.148 |
| Lhasa | Tibet | Southwest | 31.95 | 0.137 |
| Lanzhou | Gansu | Northwest | 196.12 | 0.134 |
| Hefei | Anhui | East | 234.48 | 0.13 |
| Qingdao | Shandong | East | 417.87 | 0.126 |
| Changsha | Hunan | Central | 384.75 | 0.126 |
| Shenyang | Liaoning | Northeast | 445.26 | 0.119 |
| Yinchuan | Ningxia | Northeast | 109.97 | 0.114 |
| Xining | Qinghai | Northeast | 126.89 | 0.088 |

| | | | | |
|---|---|---|---|---|
| Xi'an | Shaanxi | Northeast | 624.81 | 0.087 |
| Changchun | Jilin | Northeast | 359.24 | 0.085 |
| Zhengzhou | Henan | Central | 404.25 | 0.077 |
| Harbin | Heilongjiang | Northeast | 415.18 | 0.058 |
| Taiyuan | Shanxi | North | 299.85 | 0.055 |
| Guiyang | Guizhou | Southwest | 216.72 | 0.049 |
| Shijiazhuang | Hebei | North | 332.32 | 0.026 |
| Nanning | Guangxi | South | 241.47 | 0.026 |
| Hohhot | Inner Mongolia | North | 140 | 0.017 |
| Jinan | Shandong | East | 435.59 | 0.017 |
| Fuzhou | Fujian | South | 235.47 | 0.011 |
| Nanchang | Jiangxi | Central | 256.79 | 0.008 |

Note: The data is sourced from the 2018 China Urban Statistical Yearbook, and the total urban population is based on data from 2017.

In the selection of control variables, the individual level variables with high correlation with the threshold of the registered residence system ensure that the research results are more reliable and accurate. At the same time, the characteristics of urban economic development highly related to the urban registered residence policy were averaged and matched to the 2017 CMDS sample as a control variable. In order to better control other influencing factors, more accurately evaluate the impact of the household registration threshold on the willingness of migrant population to settle, and improve the credibility and scientificity of research conclusions.

It should be noted that when considering the cost of living, the level of housing prices in different regions may have differences in individuals' perception and choices. This heterogeneity issue may lead to differentiated behavior among migrant populations when choosing housing due to the influence of housing prices in different regions. Therefore, when studying the utility of housing costs, it is necessary to consider the heterogeneous impact of housing price levels in different regions, in order to have a more comprehensive understanding of the settlement choice behavior of the floating population. Wu Xiaoyu et al. (2014) and Zhang Li et al. (2017) used absolute housing prices to measure the average difficulty of urban labor purchasing housing, but urban absolute housing prices cannot comprehensively measure the difficulty of sample urban migrant population purchasing housing, leading to corresponding problems.

Unlike existing research, this study takes the affordability of individual housing as the starting point and introduces the concept of relative housing prices as a measure of housing prices, attempting to more accurately consider the difficulty of purchasing a house. Relative housing price refers to the ratio of the average housing price to the personal monthly income of the respondents, taking into account not only the housing price level but also their personal income level, in order to more accurately evaluate the affordability of different respondents in purchasing a house. The average housing price is calculated based on the total sales and total sales area of residential properties in prefecture level cities in the CEIC China Economic Database. Personal monthly income data is sourced from the 2017 CMDS database, and the logarithm of relative housing prices is used in the specific regression process. At the same time, according to the research purpose, when selecting the sample for analysis, the target sample is limited to the population flowing from rural areas to cities. After data matching and filtering, 66123 valid samples were obtained.

**Table 4.** Descriptive statistics.

| Variable | | N | Mean | Std | Min | Max |
|---|---|---|---|---|---|---|
| Explained variable | Willingness | 66123 | 0.42 | 0.49 | 0 | 1 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Core explanatory variable | Residence Threshold Index | 66123 | 0.71 | 0.28 | 0.08 | 0.95 |
| Individual level | Gender | 66123 | 0.51 | 0.50 | 0 | 1 |
| | Age | 66123 | 36.90 | 10.56 | 16 | 97 |
| | Marital | 66123 | 0.16 | 0.37 | 0 | 1 |
| | Education | 66123 | 3.35 | 1.07 | 1 | 7 |
| | Ethnic | 66123 | 0.91 | 0.28 | 0 | 1 |
| | Property | 55133 | 6.16 | 2.61 | 1 | 12 |
| | Income_P | 55133 | 4355.29 | 3590.35 | 0 | 100000 |
| | Range | 66123 | 1.56 | 0.66 | 1 | 3 |
| | Duration | 66123 | 7.08 | 5.93 | 1 | 65 |
| | Reason | 66123 | 2.20 | 4.45 | 1 | 32 |
| | Time | 66123 | 1.94 | 1.83 | 1 | 80 |
| Family level | Income_F | 66119 | 7212.92 | 5537.00 | 0 | 200000 |
| | Income_E | 66121 | 3747.40 | 2912.15 | 50 | 100000 |
| | Monthly household expenditure | 66123 | 918.82 | 1216.83 | 0 | 50000 |
| | Families to live with | 66123 | 3.11 | 1.18 | 1 | 10 |
| Control variable | housing | 23785 | 0.58 | 0.49 | 0 | 1 |
| | Child education | 36437 | 0.35 | 0.48 | 0 | 1 |
| | Medical | 66123 | 0.01 | 0.11 | 0 | 1 |
| | Social security | 66123 | 0.48 | 0.50 | 0 | 1 |
| | GDP | 66123 | 98760.70 | 30550.96 | 54808 | 183544 |
| | Tertiary | 66123 | 59.00 | 9.42 | 44.395 | 80.605 |
| | density | 66123 | 757.69 | 549.54 | 18 | 2276 |
| | Growth | 66123 | 3.01 | 7.40 | -8.76 | 25.18 |
| | Employees | 66123 | 57.90 | 11.13 | 37.46 | 82.09 |
| | Health centers | 66123 | 294.98 | 211.28 | 28 | 888 |
| City level | Fixed assets | 66123 | 66100000 | 44700000 | 6018121 | 182000000 |
| | Wage | 66123 | 23500000. | 28000000. | 14146443 | 102000000 |
| | Working staff | 66123 | 227.07 | 202.70 | 12 | 754 |
| | Expenditure | 66123 | 22000000 | 22700000 | 1983183 | 75500000 |
| | Revenue | 66123 | 16500000 | 19000000 | 791623 | 66400000 |
| | Price | 53340 | 1.12 | 0.70 | -2.38 | 5.056 |
| | Education spending | 66123 | 3031476 | 2874441 | 315243 | 9645817 |
| | RD Staff | 64540 | 1116354 | 106511 | 219 | 397281 |
| | College students | 66123 | 543.69 | 211.46 | 233 | 1005 |
| | Average house price | 64547 | 18692.6 | 16448.3 | 5223 | 58064 |

## 3. Results

*Benchmark Regression*

Table 5 presents the impact of urban household registration thresholds on the willingness of rural urban migrant population to settle down. In models m1 and m4 of Table 5, no control variables were introduced. At this point, the regression results show that the coefficient of the urban household registration threshold is negative and statistically significant at the 1% level. The regression results without introducing control variables more directly demonstrate the impact of urban household

registration threshold on the willingness of migrant population. On this basis, models m2 and m5 introduce control for individual, household, and urban characteristic variables in the inflow area. At this time, the threshold for urban household registration still has a significant negative impact on the willingness of "rural-urban" migrant population to settle.

This result indicates that even considering other variables at the individual, household, and urban levels, the increase in the threshold for urban household registration still significantly reduces the willingness of the floating population to settle down. In models m3 and m6, while controlling for urban fixed effects, the results still show a negative impact of the urban settlement threshold on the willingness of "rural-urban" migrant population to settle. This conclusion is statistically significant even after excluding potential omitted variables at the individual, household, and urban levels. Based on the regression results of various models, it can be found that as the threshold for urban household registration increases, the willingness of migrant population to settle shows a gradually decreasing trend, which is consistent with the expected results of hypothesis 1 in this study.

**Table 5.** The regression results of threshold and intention of settling down.

| Variable | 被解释变量："乡-城"流动人口落户意愿 | | | | | |
| | ols | | | probit | | |
| | m1 | m2 | m3 | m4 | m5 | m6 |
| Residence Threshold Index | -0.466*** | -0.409*** | -0.409*** | -1.217*** | -1.150*** | -1.150*** |
| | (-70.56) | (-7.18) | (-6.93) | (-66.94) | (-7.02) | (-6.98) |
| Individual level control variables | No | Yes | Yes | No | Yes | Yes |
| Control variables at household level | No | Yes | Yes | No | Yes | Yes |
| City-level control variables | No | Yes | Yes | No | Yes | Yes |
| City fixed effects | No | No | Yes | No | No | Yes |
| Constant | 0.748*** | -2.269*** | -2.269*** | 0.648*** | -7.515*** | -7.515*** |
| | (-148.79) | (-2.98) | (-2.89) | (-47.1) | (-3.43) | (-3.44) |
| N | 66,123 | 7,874 | 7,874 | 66,123 | 7,874 | 7,874 |
| R2 / Pseudo R2 | 0.07 | 0.125 | 0.125 | 0.0517 | 0.0964 | 0.0964 |

z-statistics in parentheses *** $p<0.01$,** $p<0.05$,* $p<0.1$.

*Endogenous Problems*

There is a certain degree of correlation between the household registration threshold represented by the urban household registration threshold index in benchmark regression and the household registration intention of the "rural-urban" floating population, but this correlation lacks independence and exogeneity. Firstly, there may be a causal relationship between the threshold for urban household registration and the willingness of rural urban migrant population to settle down. On the one hand, when setting the threshold for household registration, cities need to consider the willingness of "township city" floating population to settle, and raising the threshold for household registration in the destination will reduce the willingness of floating population to settle. On the other hand, the increase in the willingness of floating population to settle in the destination will also affect the formulation of household registration policies. There may already be various differences between cities with low willingness to settle and cities with high willingness to settle. There is a correlation between increasing and decreasing the threshold for settling, and it cannot be accurately inferred that lowering the threshold for settling has reduced the willingness to settle. This may be due to the natural environment, public services, political status and other resource endowments of the province where the low willingness to settle is located. Cities with high threshold for settling often have strong economic strength, concentrated industrial distribution, and perfect public services, and have a stronger ability to absorb non local populations.

Therefore, the threshold for urban household registration may be influenced by various internal factors during the formulation and adjustment process, making the relationship between the threshold index and the willingness of rural urban migrant population to settle complex and ambiguous. This endogeneity issue makes it difficult to simply consider the urban household registration threshold index as a single factor to explain the household registration choices of the floating population. Secondly, there may be omitted variables that affect the threshold index for urban household registration and the willingness of "rural-urban" migrant population to settle, which may potentially impact the formulation and implementation of urban household registration policies, and thus affect the choice behavior of migrant population. In addition, the threshold index for urban household registration is quantified based on the provisions of urban documents, and there are problems such as missing original policy documents (Zhang Jipeng, 2020).

In response to potential endogeneity issues, this study utilized the instrumental variable method to address them. Following the research approach of Acemoglu et al. (2001), the 1997 grain production was selected as the instrumental variable for the urban settlement threshold index. The rationality of using 1997 grain production as an instrumental variable for urban household registration threshold needs to meet two important conditions.

Firstly, the instrumental variable must be related to the dependent variable (urban household registration threshold). In this case, the 1997 grain production must be able to influence changes in the threshold for urban household registration, ensuring that the instrumental variables are correlated with the causal relationship of the research focus. If there is a direct or indirect correlation between grain production and the threshold for urban settlement, then this instrumental variable can be considered a reasonable tool.

Secondly, instrumental variables must be independent of other influencing factors beyond the dependent variable. That is to say, the impact of grain production in 1997 on the threshold for urban household registration cannot be related to factors outside the threshold through other means. This independence ensures that the instrumental variables satisfy the exogeneity assumption of the instrumental variables, which can be used to alleviate endogeneity issues.

When using the 1997 grain production as an instrumental variable for urban household registration threshold, it is necessary to ensure that it meets the above two conditions to ensure the effectiveness and rationality of the instrumental variable. Only in this way can we effectively use instrumental variable methods to study the impact of urban settlement thresholds on the willingness of "rural-urban" migrant population to settle, and thus draw accurate and reliable conclusions.

On the one hand, the argument for the correlation between historical grain production and household registration thresholds can be understood by analyzing the impact of historical grain production on urban development, population migration, and government policies. Cai Fang et al. (2001) found that there was a significant correlation between the planned migration population of each city from 1952 to 1998 and the per capita grain production of the previous year.

This means that a city's food production largely determines its population carrying capacity. The grain output of the city not only reflects the level of local agricultural production, but also directly affects the threshold of registered residence of the city. Although its influence will weaken with the increase of time span, part of the influence will continue. The abundance of grain production may directly affect the growth and distribution patterns of urban population, thereby influencing the government's policy-making in urban planning and management. These policies may include the establishment of urban residency thresholds, which are government requirements and restrictions on the settlement of migrants in cities. Abundant grain production usually attracts more population into cities, as they provide more employment opportunities and living conditions. This population mobility may lead to population growth and structural changes in cities, thereby affecting the government's thinking and implementation of urban household registration policies. The government may adjust the threshold for urban household registration based on changes in urban population and demand, in order to maintain social order and economic stability in the city.

On the other hand, the exogeneity of instrumental variables requires that historical grain production has no direct correlation with the willingness of rural urban migrant population to settle

down. The per capita grain production in 1997 contained some exogenous natural factors, such as geographical conditions, which would not directly affect the household registration decisions of the "rural-urban" floating population in recent years. It could only affect the household registration threshold and thus affect the willingness to settle, resulting in strong exogeneity.

The regression results of the instrumental variables of household registration threshold and household registration intention are shown in Table 6. Models m1 to m4 are the regression results of 2SLS and IV Probit using 1997 grain production as the instrumental variable. In the first stage regression, the dependent variable is the urban household registration threshold. At this time, the 1997 grain production in the city is positively correlated with the current household registration threshold, and the F-value of the first stage regression is much greater than 10, with Prob>F=0.0000, which satisfies the correlation hypothesis of instrumental variables and indicates that there is no weak instrumental variable problem.

The p-values in both Durbin test and Wu Hausman test are greater than 0.1. In the second stage regression, the dependent variable is the willingness of migrant population from rural to urban areas to settle down. At this point, the estimated results indicate that after using the 1997 grain production as an instrumental variable, the impact of the household registration threshold on the willingness of the "rural-urban" migrant population to settle is still statistically significant at the 1% level.

After using instrumental variables to alleviate endogeneity issues, the marginal effect of household registration threshold on household registration intention was -1.983, slightly higher than the basic regression results. Compared with the regression results of the OLS and Probit models that include individual, household, and city level control variables, the impact of the estimated urban household registration threshold index using IV Probit on individual household registration intention is still significant, indicating that the increase in household registration threshold has a crowding out effect on the household registration intention of the "rural-urban" floating population. Hypothesis 1 still holds true.

**Table 6.** Estimation results of instrumental variables of threshold and willingness to settle.

|  | 2SLS | | IV-Probit | |
|---|---|---|---|---|
| Variable | m1 | m2 | m3 | m4 |
| First stage regression | Explained variable: Hukou threshold | | | |
| IV(Per capita food production in 1997) | 0.0687*** | | 0.0687*** | |
|  | 0.00064 | | 0.00064 | |
| F Value | 135.67 | | 146.83 | |
| Second stage regression | Explained variable: the intention of "rural-urban" floating population to settle down | | | |
| Settlement threshold |  | (0.07379** |  | -1.983*** |
|  |  | 0.0534 |  | 0.1479 |
| Constant |  | 2.6225*** |  | 5.6703*** |
|  |  | 0.57910 |  | 1.5951 |
| Urban control variable | Yes | Yes | Yes | Yes |
| Household control variable | Yes | Yes | Yes | Yes |
| Individual control variable | Yes | Yes | Yes | Yes |
| Urban fixed effect | Yes | Yes | Yes | Yes |
| AR |  | 179.56*** |  | 189.42 *** |
| Wald |  | 179.63*** |  | 190.42*** |
| Durbin |  | 34.57 |  | 41.30 |
| Wu-Hausman |  | 34.58 |  | 41.40 |
| N | 40,854 | 40,855 | 40,856 | 40,857 |
| R-squared | 0.9155 | | 0.9155 | |

z-statistics in parentheses *** p<0.01,** p<0.05,* p<0.1.

*Robustness Test*

In Table 6, the second stage regression of instrumental variables shows a negative relationship between the threshold for household registration and household registration intention. However, the model has certain difficulties in simulating the process of generating household registration intention among the "rural-urban" floating population, and the regression results may still be unstable. To verify the robustness of the regression results, this study distinguished the range of migration and changed the sample size. The results still confirmed the conclusion of the benchmark regression, that is, the increase in the threshold for urban household registration has a significant negative impact on the willingness of "rural-urban" migrant population to settle.

Firstly, the robustness test for distinguishing the flow range. The CMDS 2017 data covers the mobility range of the sample individuals. This study subdivided the sample based on whether the mobility range is inter provincial mobility, which better reflects the trade-off between benefits and risks in the choice of settlement for rural urban migrant population. The regression results of the sub samples given in 7indicate that the core dependent variable still maintains a high level of significance, consistent with the baseline regression results.

**Table 7.** Robustness test results to distinguish flow ranges.

| Variable | Explained variable: the intention of "rural-urban" floating population to settle down | | | |
| --- | --- | --- | --- | --- |
| | 2SLS | | IV-Probit | |
| | Cross-province | Non-trans-provincial | Cross-province | Non-trans-provincial |
| | m1 | m2 | m3 | m4 |
| Settlement threshold | -0.4867*** | -0.8894*** | -1.319*** | -2.393*** |
| | 0.0674 | 0.1065 | 0.1901 | 0.2942 |
| Urban control variable | Yes | Yes | Yes | Yes |
| Household control variable | Yes | Yes | Yes | Yes |
| Individual control variable | Yes | Yes | Yes | Yes |
| Urban fixed effect | Yes | Yes | Yes | Yes |
| Constant | -0.142*** | 4.225*** | -1.776*** | 9.9420*** |
| | 0.7312 | 0.9879 | 2.0508 | 2.7184 |
| N | 21974 | 18880 | 21974 | 18880 |

z-statistics in parentheses *** $p<0.01$,** $p<0.05$,* $p<0.1$.

Secondly, replace the sample size test. Specifically, three methods of data extraction are used: deleting samples that have not been clearly selected, selecting samples of working age, and selecting samples of the new generation. Firstly, delete samples that have not made clear choices. In the previous benchmark regression, the selection method for whether the dependent variable is willing to move into the household registration was to assign a value of 1 for willingness and 0 for both unwillingness and uncertainty. After data cleaning, the total sample size was 66123, of which 16758 were selected as "not well thought out", accounting for 25.34% of the total sample size. This indicates that about a quarter of the floating population is still hesitating about whether to stay or leave their destination, and has not made a clear decision. Considering that the willingness of this floating population may have a certain impact on the regression results, in order to ensure the reliability of the results, samples that were selected as "not well thought out" were excluded, and regression analysis was only conducted on the "rural-urban" floating population who chose "willing" and "unwilling", in order to more accurately evaluate the impact of urban settlement thresholds on the settlement willingness of the "rural-urban" floating population and improve the credibility of the

research results. Secondly, the rural urban migrant population aged 55 and below is the main force in the household based migrant population. Therefore, the population aged 16-55 was selected as the sample for regression analysis. Thirdly, as a representative group of the new generation of rural urban migrant population, the post-80s and post-90s generations are selected for regression analysis. The regression results of both 2SLS and IV Probit models show that increasing the threshold for household registration will reduce the willingness to settle, indicating that the conclusions obtained from the benchmark model in the previous section are robust.

**Table 8.** Robustness test results of replacement sample size.

| Variable | Explained variable: the intention of "rural-urban" floating population to settle down | | | | | |
|---|---|---|---|---|---|---|
| | Remove samples without a clear decision | | Sample of working age 16-55 years | | Age group samples from 80 to 90 | |
| | 2SLS | IV-Probit | 2SLS | IV-Probit | 2SLS | IV-Probit |
| | m1 | m2 | m3 | m4 | m5 | m6 |
| Settlement threshold | -0.123*** | -1.431** | -0.4793*** | -0.438*** | -0.7597** | -2.643** |
| | (0.9472) | (0.1894) | (0.0949) | (0.593) | (0.9091) | (0.4052) |
| Urban characteristics | Yes | Yes | Yes | Yes | Yes | Yes |
| Family characteristics | Yes | Yes | Yes | Yes | Yes | Yes |
| Individual characteristics | Yes | Yes | Yes | Yes | Yes | Yes |
| Fixed effect | Yes | Yes | Yes | Yes | Yes | Yes |
| Constant | 5.6965*** | 6.1202*** | 9.725*** | 1.776*** | 3.4701** | 2.756*** |
| | (0.8126) | (0.1335) | (0.5358) | (2.051) | (0.9224) | (0.8924) |
| N | 5855 | 5855 | 5669 | 5669 | 2500 | 2500 |

z-statistics in parentheses *** p<0.01,** p<0.05,* p<0.1.

## 4. Discussion

*Mechanism Analysis*

The impact mechanism of urban household registration threshold on the willingness of "rural-urban" migrant population to settle is relatively complex, and this study believes that one important impact mechanism is employment discrimination. The increase in the threshold for urban household registration may lead to intensified discrimination against migrant populations in cities, thereby affecting their willingness to settle down. Due to the existence of household registration thresholds, migrant populations may face higher employment difficulties and lower social status, which may lead to discrimination and exclusion against them by urban residents. This discrimination not only affects the quality of life of migrant populations, but also their sense of identity and belonging to the city, which in turn affects whether they choose to settle in the city. In addition, the threshold for urban household registration may also affect the employment opportunities of migrant workers in the city. Due to the existence of barriers, migrant workers may face more employment restrictions and uncertainties, and can only engage in low skilled, low paying jobs, unable to fully unleash their potential and abilities. This employment discrimination will affect the retention rate of migrant population in the city.

On the basis of Zhang Li et al. (2016), this study measures employment discrimination by using the ownership type of employment units for "rural-urban" floating population, mainly reflecting the

opportunities for "rural-urban" floating population to enter units within the system. Among them, the units within the system include party and government organs, state-owned enterprises and institutions, and collective units, while the units outside the system include individual private enterprises, foreign-funded joint ventures, etc. Specifically, if the "rural-urban" floating population is currently employed within the system, it is assigned a value of 1; otherwise, it is assigned a value of 0. From Table 9, it can be seen that after controlling for other variables, compared to "rural urban" migrant households with lower levels of employment discrimination, "rural urban" migrant households with higher levels of employment discrimination are more inclined to move out of and into the cities where they come from. At the same time, the interaction term between the threshold for household registration and the level of employment discrimination is negative, indicating that the increase in the level of employment discrimination in the place of residence of the "rural-urban" floating population will expand the crowding out effect of the threshold for household registration on their willingness to settle, supporting hypothesis 2. Employment discrimination has expanded the crowding out effect of the urban household registration threshold on the willingness of rural urban migrant population to settle down.

**Table 9.** Hukou threshold and hukou intention: Mechanism analysis of employment discrimination.

| Variable | 被解释变量："乡-城"流动人口落户意愿 | | | |
|---|---|---|---|---|
| | OLS | Probit | 2SLS | IV-Probit |
| | m1 | m2 | m3 | m4 |
| Settlement threshold | -0.4808*** | -1.3004*** | -0.7871*** | -2.0956*** |
| | (0.0285) | (0.0792) | (0.0594) | (0.1632) |
| Settlement threshold # Employment discrimination | -0.0237* | -0.0079* | -0.0493* | -0.0585*** |
| | (0.0348) | (0.1067) | (0.0351) | (0.1076) |
| Employment discrimination(Within the system =1) | 0.0089* | 0.0739 | 0.0085* | 0.0283** |
| | (0.02516) | (0.0802) | (0.0254) | (0 .0807) |
| Urban control variable | Yes | Yes | Yes | Yes |
| Household control variable | Yes | Yes | Yes | Yes |
| Individual control variable | Yes | Yes | Yes | Yes |
| Urban fixed effect | Yes | Yes | Yes | Yes |
| Constant | 0.3631 | -1.0758*** | 3.4385*** | 6.9154*** |
| | (0.3722) | (1.0246) | (0 .6421 | (1.7632) |
| N | 30362 | 30362 | 30362 | 30362 |
| Pseudo/R-squared | 0.1067 | 0.0837 | 0.1033 | 0.9205 |

z-statistics in parentheses *** p<0.01,** p<0.05,* p<0.1.

*Heterogeneity Analysis*

Real estate, as a significant household capital, also has a significant impact on the settlement decisions of rural urban migrant populations. Table 10 reports the heterogeneous effects of settlement thresholds on the settlement decisions of rural urban migrant populations with and without housing in the local area. The regression analysis of housing heterogeneity in Table 10 shows a significant heterogeneity in the impact of household registration thresholds on both households with and without housing among the "rural-urban" floating population.

For families with houses, it is easier to meet the urban household registration requirements, and the purchased housing has a certain locking effect on labor families, while also increasing their willingness to settle in the destination. Therefore, the migrant population from rural to urban areas who have houses locally have a higher willingness to settle down. This phenomenon to some extent

reflects the impact of housing on individual decision-making and behavior. Purchased housing means that the family has already solved the housing problem in the destination and has stable living conditions. This stability will make them more inclined to stay in the current city, avoiding frequent moves and housing adjustments, thereby reducing their mobility. In addition, purchasing housing also means that they have established social relationships and living circles in the local area, making it easier for them to integrate into the local society, enjoy various services and resources provided by the city, and further reduce their mobility. The purchased housing also provides them with opportunities for asset preservation and appreciation, making them more willing to stay in the local area, participate in urban development, and achieve long-term personal and family development goals (Foote, 2016).

For families without a house, the increase in the threshold for household registration increases the monetization cost of labor families, reduces disposable income, and puts certain pressure on the family economy. The expanding effect of employment discrimination is more pronounced for the migrant population without housing. In contrast, families without homes may encounter greater difficulties when facing the increased threshold for household registration. Due to the lack of stable housing conditions, these families may face higher thresholds and restrictions when settling down locally, such as financial proof, rental requirements, etc. Combined with the catalysis of employment discrimination, they face more economic pressure and life uncertainty, making it difficult to meet the residency requirements in the city, which in turn affects their quality of life and development opportunities in the city.

At the same time, due to the certain correlation between the conditions for household registration and the conditions for purchasing a house, raising the threshold for household registration will also reduce the possibility of families purchasing a house and settling down locally. The lower willingness of families without houses to settle down due to higher levels of employment discrimination in their place of residence compared to families without houses with lower levels of employment discrimination in their place of residence once again indicates that employment discrimination has a significant catalytic effect on the crowding out of the settlement threshold. When employment discrimination is more severe in a certain region, it will directly affect the willingness of families without houses to settle in that area, leading to a relative increase in the threshold for settling in that region. This crowding out effect not only affects population mobility and talent aggregation in cities, but also has adverse effects on the long-term development of cities.

**Table 10.** Housing heterogeneity.

| Variable | Explained variable: the intention of "rural-urban" floating population to settle down | | | |
|---|---|---|---|---|
| | 2SLS | | IV-Probit | |
| | Have a house | Houselessness | Have a house | Houselessness |
| | m1 | m2 | m3 | m4 |
| Settlement threshold | -0.607 | -0.2302 | -4.623*** | -1.7706*** |
| | (0.2047) | (0.4685) | (0.6023) | (1.2613) |
| Hukou threshold # Employment discrimination | -0.2391*** | -0.4001*** | -0.5172 | -1.348*** |
| | (0.1057) | (0.1198) | (0.385) | (0.3880) |
| Employment discrimination(Within the system =1) | 0.0951 | 0.2423**** | 0.151 | 0.881*** |
| | (0.0829) | (0.0891) | (0.315) | (0.3001) |
| Urban control variable | Yes | Yes | Yes | Yes |
| Household control variable | Yes | Yes | Yes | Yes |
| Individual control variable | Yes | Yes | Yes | Yes |
| Urban fixed effect | Yes | Yes | Yes | Yes |

| | | | | |
|---|---|---|---|---|
| Constant | 11.6095 *** | -7.3690 | 24.3969*** | -21.153 |
| | (2.1125 | (4.7962) | (6.2926) | (12.924) |
| N | 4467 | 1282 | 4467 | 1282 |
| Pseudo/R-squared | 0.8833 | 0.9476 | 0.8833 | 0.9476 |

z-statistics in parentheses *** p<0.01,** p<0.05,* p<0.1.

Furthermore, the "rural-urban" migrant population without housing in the destination city was divided into two sub samples, high skilled and low skilled, for heterogeneity testing. The results are shown in Table 11. It can be seen that the increase in the threshold for household registration has had a significant crowding out effect on the homeless floating population with different skill levels. Both high skilled and low skilled populations are more likely to be influenced and choose to leave the current city when facing higher household registration thresholds. Compared to others, the high skilled rural urban migrant population without housing is more sensitive to the threshold for household registration. When the threshold for household registration increases, the high skilled rural urban migrant population without housing is more likely to be affected and choose to leave the current city. For the high skilled rural urban migrant population without housing, the catalytic effect of employment discrimination is more significant, which is consistent with hypothesis 3. The increase in the threshold for urban household registration has a greater negative impact on the willingness of high skilled labor without housing to settle down, and the catalytic effect of employment discrimination is more pronounced for the high skilled "rural-urban" migrant population without housing. The possible reason for this phenomenon is that the high skilled migrant population without housing has stronger bargaining power when choosing to settle in a city based on their professional skills and knowledge advantages. Especially in the context of increasingly fierce competition for talent among cities, this advantage has become more significant. High skilled rural-urban migrant populations often possess certain professional skills and knowledge backgrounds, and they have relatively high competitiveness in the urban job market. Therefore, when cities raise the threshold for household registration and exacerbate employment discrimination, high skilled migrant populations are more likely to choose to leave their current cities and transfer to other cities with similar economic development levels but lower household registration thresholds compared to low skilled labor.

**Table 11.** 流入地无购房的"乡-城"流动人口技能水平异质性.

| Variable | Explained variable: the intention of "rural-urban" floating population to settle down | | | |
|---|---|---|---|---|
| | 2SLS | | IV-Probit | |
| | Low skill | high skill | Low skill | high skill |
| | m1 | m2 | m3 | m4 |
| Settlement threshold | -0.1052 | 1.5282 | -0.2572 | (0.4123* |
| | (0.5066) | (0.0992) | (1.3581) | (0.8068) |
| Settlement threshold # Employment discrimination | -0.4256*** | -0.1676* | -1.375*** | -1.4735* |
| | (0.1374) | (0.2812) | (0.4381) | (1.2538) |
| Employment discrimination(Within the system =1) | 0.2362** | 0.0991 | 0.8231** | 0.7126 |
| | (0.1051) | (0.1788) | (0.3428) | (0.7905) |
| Urban control variable | Yes | Yes | Yes | Yes |
| Household control variable | Yes | Yes | Yes | Yes |
| Individual control variable | Yes | Yes | Yes | Yes |
| Urban fixed effect | Yes | Yes | Yes | Yes |
| N | 1104 | 178 | 1104 | 178 |

| | | | | |
|---|---|---|---|---|
| Constant | -3.7873 | -16.8356 | -11.7882 | -81.8741 |
| | (5.2724) | (14.0081) | (14.1470) | (61.8114) |
| Pseudo/R-squared | 0.9436 | 0.1812 | 0.9436 | 0.9752 |

z-statistics in parentheses *** p<0.01,** p<0.05,* p<0.1.

*Further Discussion*

In China, big cities have more job opportunities and higher economic vitality, attracting a large number of "rural-urban" migrant population. On the other hand, the cost of living in areas such as housing, education, and healthcare is usually higher. For small and medium-sized cities, employment opportunities are relatively limited, and migrant populations may face greater employment pressure, reducing their willingness to settle in the city. On the other hand, the cost of living in small and medium-sized cities is relatively low, which may be more suitable for a portion of the floating population to settle down (Wu et al., 2020). Therefore, the size of the city may have different impacts on the willingness of rural to urban migrant population to settle down. Given the differences in development paths between large cities and small and medium-sized cities, the impact of raising the threshold for household registration in cities of different sizes on the willingness of rural urban migrants to settle may vary. In order to analyze the heterogeneous impact of household registration thresholds on the willingness of "rural-urban" floating population to settle in cities of different sizes, according to the "Notice of the State Council on Adjusting the Classification Standards for Urban Size" and the "2017 Urban Construction Statistical Yearbook" published by the Ministry of Housing and Urban Rural Development, the sample cities were further analyzed and discussed by dividing them into different sizes. Table 12 reports the classification of sample city sizes.

**Table 12.** Size division of sample cities.

| Classification | Size | Cities (according to the characteristics of the sample data, the time is limited to 2017) |
|---|---|---|
| super city | More than 10 million | Beijing, Tianjin, Shanghai, Shenzhen, Chongqing |
| super-large city | 5 to 10 million | Nanjing, Guangzhou, Wuhan, Xi 'an, Chengdu |
| Type I | 3 to 5 million | Dalian, Shenyang, Changchun, Harbin, Shijiazhuang, Hangzhou, Qingdao, Jinan, Changsha, Zhengzhou, Kunming |
| Type II | 1 to 3 million | Taiyuan, Hohhot, Ningbo, Hefei, Xiamen, Haikou, Nanning, Fuzhou, Nanchang, Urumqi, Yinchuan, Lanzhou, Xining, Guiyang |
| Small city | Under 1 million | Lhasa |

Table 13 reports the regression results of the impact of various household registration threshold indices on the willingness of rural urban migrant population to settle in different city sizes. In type II large cities and metropolitan areas, the impact coefficient of the urban settlement threshold on the willingness of "rural-urban" migrant population to settle is negative. Although the threshold for household registration has a certain negative impact on the willingness of migrant population to settle, it may not be statistically significant due to other factors having a greater impact. In Type I large cities, mega cities, and mega cities, the increase in the threshold for household registration has significantly suppressed the willingness of "rural-urban" migrant population to settle, which may be closely related to factors such as population size, employment opportunities, and living costs in these cities. At the same time, it also indicates that there are differences in attracting and influencing migrant populations among cities of different levels, and the impact of household registration thresholds on the choice and settlement willingness of "rural-urban" migrant populations varies.

It should be noted that the increase in the threshold for household registration has a particularly significant crowding out effect on the rural urban migrant population in mega cities. This crowding

out effect may be influenced by a combination of factors such as population density in mega cities, intense competition in the job market, and cost of living.

As the center of population and resource aggregation, the threshold for settling in mega cities has a crucial impact on the floating population. Although raising the threshold for household registration can help alleviate the population pressure in mega cities to some extent, it may also pose greater difficulties and challenges for individuals who hope to seek development opportunities in mega cities, exacerbate the uncertainty of the floating population, and have an impact on the economic development and labor market supply of cities. Therefore, when formulating the household registration policy for mega cities, it is necessary to comprehensively consider factors such as population mobility, economic development, and social stability to ensure the fairness and sustainability of the policy. At the same time, in order to promote the sustainable development of mega cities, the government should find the best solution between balancing population mobility and urban development, in order to achieve long-term prosperity and stability of cities.

**Table 13.** Heterogeneity of city size.

| Variable | Explained variable: the intention of "rural-urban" floating population to settle down | | | | |
| --- | --- | --- | --- | --- | --- |
| | super city | super-large city | Type I | Type II | Small city |
| | m1 | m2 | m3 | m4 | m5 |
| Settlement threshold | -5.8056** | -0.2316** | -4.6429* | -2.3448 | -1.5184 |
| | (3.7203) | (0.2652) | (1.1125) | (0.1590) | (0.0417) |
| Settlement threshold # Employment discrimination | -0.4077 | -0.3802 | -1.5090** | -0.9363* | -0.0139 |
| | (0.3960) | (0.5126) | (0.8559) | (0.4999) | (0.2291) |
| Employment discrimination | 0.0779 | 0.0062 | 1.3945** | 0.9399** | 0.0120 |
| | (0.1252) | (0.3541) | (0.7424) | (0.4456) | (0.1978) |
| Urban control variable | Yes | Yes | Yes | Yes | Yes |
| Household control variable | Yes | Yes | Yes | Yes | Yes |
| Individual control variable | Yes | Yes | Yes | Yes | Yes |
| Urban fixed effect | Yes | Yes | Yes | Yes | Yes |
| Constant | 51.0576 | -7.7322*** | 15.4081*** | 4.9327*** | 0.0364 |
| | (42.3675) | (2.3297) | (3.4879) | (0.5130) | (0.8048) |
| Regression method | IV-Probit | IV-Probit | IV-Probit | IV-Probit | IV-Probit |
| N | 9,590 | 4,224 | 7526 | 10,066 | 912 |
| Pseudo/R-squared | 0.9247 | 0.9997 | 0.4769 | 0.6257 | 0.1137 |

z-statistics in parentheses *** $p<0.01$,** $p<0.05$,* $p<0.1$.

## 5. Conclusions

This study used macro and micro data analysis to examine the impact of household registration thresholds on the willingness of "rural-urban" migrant population to settle, with a particular focus on whether household registration thresholds have a crowding out effect on this group's acquisition of urban resident status and a catalytic effect on employment discrimination. The regression results show that the higher the threshold level for household registration in the inflow area, the more restrictions and uncertainties it may mean, which reduces the confidence of the floating population in settling in the city for a long time and makes it easier for them to choose to leave the current city. The study also found that employment discrimination may exacerbate the crowding out effect of place of residence, especially for high skilled migrant populations without housing. In cities with high housing prices, the migrant population lacking housing faces greater economic pressure and living difficulties, making it more difficult for them to integrate into the local society and job market, which further exacerbates their tendency to choose to leave the current city. This indicates that high housing prices have become one of the important considerations for rural to urban migrant

populations when choosing cities to settle in. It is worth noting that the research results remain robust after controlling for measurement errors in relative housing prices, sample selection bias, and sample heterogeneity. This means that the research results have high reliability and stability, providing important empirical support for understanding the impact of household registration thresholds on the willingness of rural urban migrant populations to settle.

These findings have certain policy implications for guiding the formulation and optimization of urban household registration policies. The high threshold for household registration means the unaffordability of obtaining urban identity for the "rural-urban" floating population. The rural urban migrant population is an important participant in the process of urbanization, while high skilled talents are the core objects of competition among cities. Therefore, the government has the responsibility to formulate reasonable household registration policies, ensure that the threshold for household registration is within a reasonable range, and improve the level of public services to attract more "rural-urban" floating population to settle down. To provide more stable housing for the "rural urban" floating population without houses through price subsidies, tax reductions, and other means, and weaken the crowding out effect of the household registration threshold.

The reform of the registered residence system is a key move to promote new urbanization, the citizenization of the "township city" floating population, and Chinese path to modernization. It is also an important link in the reform of China's public service supply. The analysis results of this study found that the middle-income "rural-urban" floating population is more willing to reside in cities where the residence permit system is implemented. A high threshold for household registration means that the urban identity cannot be afforded, which has a significant crowding out effect on the willingness to reside. Moreover, the high skilled "rural-urban" floating population without housing is more sensitive to the high threshold for household registration. This shows that the policy path of adjusting the registered residence system to promote the floating population to obtain legal identity is effective. With the deepening of economic system reform, promoting the "township city" floating population to realize citizenization requires a broader and deeper reform of the registered residence system.

On the one hand, there has been a deeper breakthrough in addressing the key issue of providing housing for new city residents. For example, we can consider the linkage reform of rural homestead and urban registered residence, and use rural homestead to replace real estate, so as to further release household consumption capacity. Conditional areas can explore monetary subsidy policies such as rental consumption vouchers, which can be used for both renting and selling, reducing the proportion of housing expenditure for the "rural urban" floating population in consumption expenditure, and revitalizing existing housing. At the same time, establish a long-term "township city" floating population naturalization system to provide a more stable and sustainable urban living environment for the floating population, which is conducive to their better integration into urban society and the realization of their own potential. In addition, corresponding arrangements for the progress of open household registration should be formulated based on the differences in the size and level of different cities, in order to better meet the actual needs and development stages of various regions and promote balanced development between cities. Exploring the establishment of housing finance mutual aid institutions, the formation of housing security banks, and the acquisition of developer inventory in metropolitan areas to achieve optimal allocation of human resources and promote coordinated development of regional economy.

On the other hand, the distribution function of public goods and social welfare carried by the current registered residence system is constantly stripped. Gradually eliminate discriminatory policies and treatment differences between urban and rural registered residence, and establish a unified civil rights and social welfare system. This includes abolishing the discriminatory restrictions imposed by the registered residence system on public goods and services such as education, medical care and employment, and ensuring that all citizens enjoy equal rights and opportunities. We will promote the reform of the registered residence registration system and gradually eliminate the restrictive role of registered residence registration in the distribution of public goods and social welfare. Establish a more inclusive and flexible population management system, allowing people to

freely choose their place of residence and employment, and enjoy corresponding public services and benefits. Simultaneously establish a unified social security system. Including unified systems for pension insurance, medical insurance, unemployment insurance, etc. Ensure that all residents can enjoy the basic social security treatment without being affected by registered residence. In addition, we will strengthen the integrated development of urban and rural areas. Promote coordinated economic and social development between urban and rural areas, and narrow the urban-rural gap. By developing rural economy, improving rural infrastructure, and increasing farmers' income, more rural population can be attracted to stay in the local area or choose to work and live in cities, reducing the "rural-urban" floating population and alleviating the social pressure on cities.

**Appendix A**

The appendix is an optional section that can contain details and data supplemental to the main text—for example, explanations of experimental details that would disrupt the flow of the main text but nonetheless remain crucial to understanding and reproducing the research shown; figures of replicates for experiments of which representative data is shown in the main text can be added here if brief, or as Supplementary data. Mathematical proofs of results not central to the paper can be added as an appendix.

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