China Economic Review 49 (2018) 210–228

Contents lists available at ScienceDirect

China Economic Review

journal homepage: www.elsevier.com/locate/chieco

Urbanization and risk preference in China: A decomposition of self-selection and assimilation effects☆

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ARTICLE INFO

Keywords:
Risk aversion
Migration
Urbanization
Assimilation
Self-selection

JEL classification:
P25
R23
D1
J61
Q5

ABSTRACT

This paper posits that urbanization reshapes individuals' risk preference by exerting self-selection and assimilation effects. Taking advantage of the unique Hukou system in China, we innovate a quasi-experiment method to elicit the two effects, employing the 2013 wave dataset of the Chinese General Social Survey (CGSS). We find strong evidence supporting our two-effect theory, and the magnitudes of both effects are sizable and similar in scale. The assimilation effect reduces the migrant's risk aversion measurement by 0.606, while the self-selection effect reduces it by 0.715 on average. Overall, urbanization improves migrants' risk appetite, and mediated by this improvement, migrants are more likely than their rural peers to engage in economic activities under uncertainty, as indicated by the evidence that presents when we apply the two-effect theory to investigate how a household decides on risky financial asset investment.

1. Introduction

Urbanization is effectively embodied in waves of migration from rural to urban areas. Inevitably, such an economic and social transformation has profound effects on individuals' behavioral attributes. This paper focuses on the context of China and considers how urbanization is involved in individuals' risk preference, which underpins economic decisions under uncertainty. Departing from previous and sparse literature on this theme, we decompose and quantify two effects, namely, self-selection and assimilation effects, on the individual's risk preference in the context of urbanization, using a novel quasi-experiment econometric strategy. Furthermore, we apply the two-effect theory to household decisions on investment in risky financial assets.

The previous literature mainly addresses the self-selection effect of urbanization on risk preference. It partially describes what risk preferences are like for individuals who choose to migrate out of rural areas. Earlier literature (Stark & Levhari, 1982; Stark & Lucas, 1988; Rosenzweig & Stark, 1989) argues that risk aversion in agricultural production is an important motivation impelling a portion of family members to move to non-agricultural industries, aimed at risk sharing with the rural household. Nguyen, Raabe, and Grote (2015) presents supportive evidence for this argument from developing countries finding that migration to jobs outside of rural areas helps mitigate the losses from risks in or shocks to a family's agricultural production. More recent literature (e.g., Jaeger et al., 2010; Dohmen et al., 2011; Akgüc, Liu, Tani, & Zimmermann, 2016) finds that less risk-averse family members tend to migrate out of rural

☆ The National Natural Science Foundation of China (Nos. 71673281, 71172014) supports this work financially. A previous version of this paper was presented in the 2016 Workshop on Urbanization and Infrastructure in Asia organized by the Asian Development Bank Institute, and we benefited enormously from comments by Liu Zhiqiang (discussant); Belton Fleisher (session chair); Yan Zhang; and other workshop participants. Special thanks to Jing Zhang for motivating this paper. We also acknowledge the substantial contribution of Aoran Wang to this version.

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http://dx.doi.org/10.1016/j.chieco.2017.04.009
Received 11 August 2016; Received in revised form 28 February 2017; Accepted 26 April 2017
Available online 29 April 2017
1043-951X/

areas more often. Jaeger et al. (2010) use a German Socio-Economic Panel dataset and find that those who are more willing to take risks migrate. Akgüc et al. (2016) present similar evidence employing the Rural Household Survey (RHS) of the RUMiC 2009 dataset of China. However, the literature has not yet reached consensus on the self-selection argument. For instance, Hao, Houser, Mao, and Villeval (2014) use a field experiment method to elicit risk preference in China. They find that the difference of risk preference between migrants and non-migrants is insignificant under state uncertainty. This also motivates us to re-examine the self-selection effect of urbanization on risk preference using a large dataset from China.

However, the extent to which urbanization reshapes risk preference remains a gap in the research. Urbanization supplies migrants with new and more opportunities to work and learn (e.g., Lucas, 2004; Bacolod, Blum, & Strange, 2009), exposes them to new neighborhoods (e.g., Glaeser, 1999; Henderson, 2005), inspires them with more and intensive competition (e.g., Hao et al., 2014), and places them in a more unfamiliar, uncertain, and unknown world than their rural environment (e.g., Akay, Bargain, & Zimmermann, 2012; Henderson, 2010; Nguyen et al., 2015). All these changes engendered by urbanization have the potential to reshape the migrant's risk preference, at least to some extent, to reach an adaption balance. In this paper, we term such an effect the assimilation effect. Clearly, assimilation needs time to build. Only after the migrants live in an urban area for some time will the assimilation effect of urbanization on risk preference manifest. The main purpose of this paper is to decompose and quantify the self-selection and assimilation effects of urbanization on individuals' risk preference.

In fact, some literature in fields other than urbanization has provided supporting evidence on the reshaped risk preference. This validates indirectly the relevance of our notion of the assimilation effect. Earlier literature on uncertainty (e.g., Pratt & Zeckhauser, 1987; Kimball, 1993; Eekhoudt, Gollier, & Schlesinger, 1996) argues that the presence of uninsurable background risk increases the individual's risk aversion. More recently, Gollier (2000) and Guiso and Paiella (2008) have found that income uncertainty and liquidity constraints are associated with increases in risk aversion. Interestingly, Guiso, Sapienza, and Zingales (2014) find evidence that emotional responses to scary experiences alter the individual's risk preference, and they use the 2008 financial crisis as the context for this point. Individuals' risk preference is not invariant, but adapts to fundamental changes. Urbanization is a complex economic-social transformation engendering fundamental changes that could reshape an individual's risk preference.

China sets up an ideal context to explore the self-selection and assimilation effects of urbanization on an individual's risk preference. As the largest developing economy in transition, China is undergoing grand and rapid urbanization. China's urbanization is unique with respect to the Hukou system. It divides the large number of migrants into two parts: one with Hukou change from rural identity to urban identity (hereafter Hukou-changed migrants or Hukou migrants), and the other a floating population living in urban areas but who maintain a rural identity. It is estimated that by 2025, China will have a total of 250 million floating migrants (Yusuf & Saich, 2008). This system lends us a unique opportunity to design quasi-experiments to decompose the two effects of urbanization on risk preference. A portion of migrants' Hukou identities are changed passively due to exogenous events, particularly land expropriation by the local governments for the purpose of urbanization. Obviously, the group of migrants with passively changed Hukou bear no self-selection effect. The difference of their risk preference from that of their rural-stayer peers provides evidence that the difference did exist and measures the assimilation effect of urbanization on risk preference. On the other hand, the floating migrants who are newcomers to urban areas are not immediately assimilated, hence the difference in their risk preference from that of their rural-stayer peers measures the self-selection effect of urbanization on risk preference. Equipped with these experimental designs, we employ the Chinese General Social Survey (CGSS) 2013 dataset to run estimations. This dataset is rich in demographic, household, personal, and especially social-environmental information, which is all required in exploring risk preference shaping.

We use the Chetty's (2003) classic method to measure risk aversion. A preliminary analysis of risk preference differences across groups of urban natives, Hukou migrants, floating migrants, and rural stayers, indicates that risk aversion increases gradually along this sequence. Equivalently, the urban population, regardless of Hukou identity, is significantly more risk-loving than the rural population in China.

Our central estimates present strong evidence supporting the decomposition of self-selection and assimilation effects of urbanization on individuals' risk preference. The passively Hukou-changed migrants and the new floating migrants are both significantly less risk averse than rural stayers. The difference between the absolute risk aversion of the former and that of the rural stayers, namely, 0.606, quantifies the assimilation effects of urbanization on individuals' risk aversion. The difference between the absolute risk aversion of the latter and that of the rural stayers, namely, 0.715, quantifies the self-selection effects of urbanization on individuals' risk aversion.

We also apply the pair-matched treatment estimation to address the sample asymmetry issue of the classified subgroups and to elicit purer effects of urbanization. We match untreated rural stayers in pairs to the treated groups of passively Hukou-changed migrants (hereafter, passive Hukou migrants) and floating migrant newcomers, and then run treatment-effect estimations for self-selection and assimilation effects separately. The pair-matched treatment estimations present similar evidence to our main results.

Furthermore, we test the self-selection and assimilation effects on the household's risky financial assets investment decisions. Using the standard method testing mediation effect, we find evidence suggesting that the self-selection and assimilation effects of urbanization mediates changes in individuals' risk preference, which leads to changes in household investment in risky assets.

To ensure the reliability of our evidence, we run an array of robustness checks. Firstly, taking advantage of the ample information in the dataset, we compose the benchmark group of rural stayers in a slightly and reasonably alternative manner. Re-estimations indicate that our main results are robust. Secondly, the distribution of risk aversion measurement displays a long right-swing tail. We apply a right-hand-side truncation to risk aversion to mitigate the impact of outliers. The results are consistent with our main results. Finally, definitions of various types of migrants are, in fact, subtle. We slightly and reasonably alter the definitions of passive Hukou migrants and new floating migrants and find that our evidence remains.

In the small body of literature, Akgüc et al. (2016) is perhaps the study most similar to ours. Our study is different in three ways. Above all, we quantify both assimilation and self-selection effects of urbanization on risk preference, while Akgüc et al. (2016) largely focus on the latter effect. Secondly, we employ a quantitative measurement of risk aversion based on Chetty's (2003) classic method taking advantage of the detailed and classified income information in the CGSS dataset. Instead, Akgüc et al. (2016) use an ordered answer from 0 to 10 to the question of risk attitude directly as the proxy of risk preference. This ordered value renders it difficult to quantify the difference of risk aversion across groups. Our measurement, numerical in nature, is free of this difficulty. Thirdly, we create a novel quasi-experiment method to quantify the effects in a clean manner that circumvents endogeneity issues. This essentially departs from Akgüc et al. (2016).

Our contribution to the literature is twofold. Conceptually, we identify the two effects, namely, self-selection and assimilation effects of urbanization on individuals' risk preference. This improves substantially on the previous literature, which focuses on the self-selection effect only. More importantly, our evidence suggests that the assimilation effect is not only significant in econometrics but also plays a pivotal role in economic decisions. Methodologically, we use a novel quasi-experiment method to quantify the two effects taking advantage of the unique Hukou system in China. This method circumvents endogeneity issues and hence presents cleaner estimations. Moreover, this method also provides an alternative approach to the assimilation literature, which is an emerging theme attracting increasing research attention.

The policy implications of our results are fourfold. The first is that it encourages the role of local governments in nurturing entrepreneurship. Our evidence indicates that migrants to urban areas are more risk-seeking than their peers and hence have larger risk-bearing potential to set up their own businesses. However, many migrants lack necessary knowledge, experience, and management skills to start their enterprise. Local governments should provide special training programs to improve migrants' human capital and ultimately unleash their entrepreneurial potential.

Secondly, financial institutions need to innovate to accommodate migrants' business-financing needs. The dominant form of formal financing in China is asset-based loans. However, these loans are virtually inaccessible to risk-seeking migrants who want to set up their own businesses. Hence, novel solutions to smooth the financial constraints are needed. At the current stage of China's financial market development, we recommend (1) innovate a special sector in the banks to serve this niche market; and (2) modify P2P lending platforms to encompass this niche market.

Thirdly, the larger appetite of migrant households for risky financial assets suggests that financial markets could be more proactive to satisfy such needs. Common incentive policies, such as preferential taxation, subsidies, and other forms of financial support to stimulate innovation in the financial market are all possible policy options to consider.

Fourthly, in the process of intra-regional urbanization, passive Hukou migrants are free of self-selection effects in risk appetite formation. Accordingly, building up channels of assimilation should be at the heart of policies to nurture the entrepreneurship of passive Hukou migrants. Training and webbing them into urban entrepreneur networks are policy options.

The rest of this paper is arranged as follows. Section 2 frames our hypotheses on the basis of relevant theories. Section 3 specifies our econometric models and describes the dataset we use. Section 4 presents evidence of the two effects and their estimations. Section 5 applies the two-effect theory to household decisions on risky financial asset investment. Section 6 checks the robustness of our main results, and Section 7 concludes.

2. Theories and hypotheses

In the same vein as the literature on self-selection in international migration (e.g., Borjas, 1987; Chiswick, 1999; Gibson & McKenzie, 2009), internal migration from rural to urban in the process of urbanization in China places the migrants in situations of much greater uncertainty than staying in rural areas. The benefits of migration are contingent on the volatile job market conditions of the migrant host cities (Kennan & Walker, 2011) and how human capital and working skills of migrants match available job opportunities (Borjas, Bronars, & Trejo, 1992; Chiswick & Miller, 2009). Todaro (1969) argues that the expected urban-rural wage differential, which incorporates the possibility that the peasant migrant will be hired in modern urban industries determines migration, not the real wage differential. The net gain of migration, i.e., the benefits of migration minus the fixed cost of migration and the benefits forgone when staying rural, is thus a “lottery”, as termed by Heitmueller (2005). With all things equal, risk aversion matters for the migrant's expected utility of such a lottery. Clearly, less risk aversion leads to a larger certainty equivalence in the lottery. It follows immediately that when urbanization supplies uncertain but more profitable job opportunities, a separation equilibrium emerges where more risk-loving peasants select themselves out to pursue the opportunities of migration due to the larger expected utility, while risk-averse peasants choose to stay. Hence, we have

Hypothesis 1. Migrants from rural to urban areas are more risk-loving than rural stayers.

In the meantime, migrants from rural to urban areas experience fundamental transformations with respect to living, working, education, and culture, and hence are exposed to assimilation effects by the urban world according to the “Melting Pot” theory (Gordon, 1961; Alba & Nee, 1997; Cleveland, Laroche, Pons, & Kastoun, 2009). While previous literature agrees that the local environment of the host cities affects the personal traits of migrants (e.g., Dohmen, Falk, Huffman, & Sunde, 2012), how assimilation affects migrants remains controversial. In a celebrated paper questioning the traditional melting-pot theory, Bisin and Verdier (2000) model cultural transmission as a mechanism of socialization. They separate the vertical or direct socialization within the family from the “oblique” socialization from outside the family, and they assume both are effective in transmitting cultural values. Under some conditions, the technology of family socialization is more efficient than outside socialization, and when the values transmitted from inner and outside the family differs, the game reaches a family inherited value persistence equilibrium rather than assimilated values.

Bisin and Verdier (2000) succeed in explaining why to the assimilation of certain immigrant minorities along ethnic and religious traits fails. Under Bisin and Verdier's (2000) framework, the assimilation effect of urbanization on risk preference of migrants is unclear, provided that it is deemed a personal trait with a cultural root. On one hand, migrants are subject to the original rural family's socialization technology of culture transmission; on the other, they are exposed to outside socialization from the local urban environment. When the former socialization dominates, migrants' risk aversion differs insignificantly from that of rural stayers; otherwise, it differs.

Furthermore, Chiswick (1978) conceptualizes “economic assimilation” and uses it to explain the convergence of the earnings of immigrants towards the earnings of local natives (Adsera & Chiswick, 2007; Izquierdo, Lacuesta, & Vegas, 2009; and Blau, Kahn, & Papps, 2011 are among the recent studies). In essence, this theory claims that after residence for a certain length of time, migrants become accustomed to the local labor market and their human capital accumulates. Accordingly, the economic assimilation theory predicts that the risk preference of migrants would be reshaped to imitate that of urban natives, and is differentiated from rural stayers provided that risk aversion is treated largely as a personal trait with an economic root.

In summary, we form Hypothesis 2 to test. Given supporting evidence for this hypothesis, the economic assimilation theory of risk aversion by urbanization is largely supported. If failed, the acculturation of risk aversion in the balance of vertical and oblique socialization could be a plausible explanation. Hypothesis 2 is as stated follows:

Hypothesis 2. The risk preference of the rural-to-urban migrant is assimilated to the local urban peers.

Combining Hypotheses 1 and 2 forms our two-effect theory of urbanization on migrants' risk preference. In short, our theory argues that the effect of urbanization on the migrant's risk preference is decomposed into two components, namely, self-selection effect and assimilation effect. We next seek the empirical evidence and the quantifications of these components.

3. Empirical strategy, econometric model specification, data, and variables

3.1. Empirical strategy and econometric model specification

Migrations from rural to urban areas embody effectively the process of urbanization. The difference in the risk preferences of migrants from that of their rural stayer peers captures the effects of urbanization on an individual's risk preference development. Following this rationale and taking advantage of the unique Hukou system in China, we classify China's rural and urban population into four groups, namely urban natives, Hukou migrants, floating migrants without Hukou identity change, and rural stayers. Furthermore, Hukou migrants are subgrouped into passive Hukou migrants due to exogenous events such as land expropriation by the local government for the purpose of urbanization and active Hukou migrants due to their own efforts, such as by going to university. Fig. 1 displays the classification. Passive and active Hukou migrant subgroups are denoted as H_A and H_B respectively in the figure. This classification enables us to design two experiments to capture the self-selection and assimilation effects of urbanization on an individual's risk preference separately.

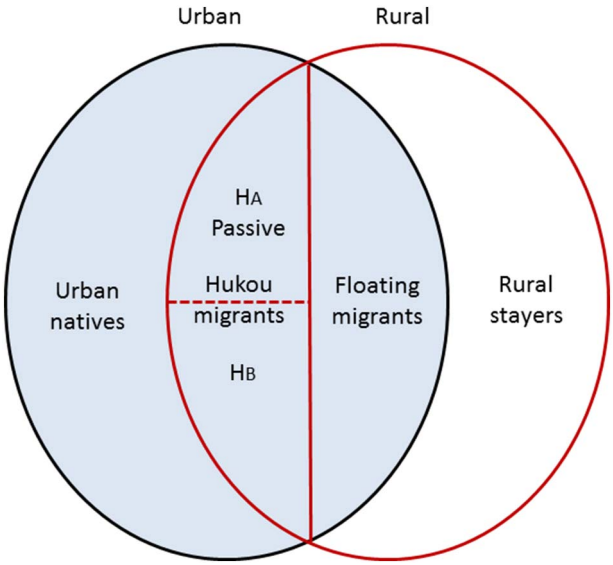

Fig. 1. Population space and the classification of migrants in China. Notes: This figure displays the population space and the classification of migrants according to the unique Hukou system in China. The grey space circle covers the urban-living population, including, in turn, urban natives, Hukou migrants, and floating migrants. Furthermore, Hukou migrants are classified into two categories, namely, passive Hukou migrants due to exogenous events such as land expropriation, which are denoted as H_A and H_B respectively in the figure. The *ex ante* rural population space includes not only rural stayers but also floating and Hukou migrants. However, in the process of urbanization, the *ex post* population space with a rural identity covers floating migrants and rural stayers only. Since the identities of the Hukou migrants changes to urban *ex post*, they compose rural population *ex ante* but switch to urban population *ex post*.

Since the identity change of passive Hukou migrants is due to exogenous forces rather their own choices and efforts, they are free of self-selection effect. Passive migrants reshape their risk preference through the assimilation effect engendered by urbanization according to the theories underpinning Hypothesis 2. Hence, passive Hukou migrants carry the assimilation effect only. It follows immediately that the gap in risk aversion between passive Hukou migrants and their rural stayer peers measures the assimilation effect in a clean manner.

On the other hand, the floating migrant newcomers are clean carriers of the self-selection effect and are practically clear of the assimilation effect. Above all, they choose by their own volition, i.e. *self-select*, to migrate to urban areas rather than to stay in rural areas. Hence, their risk preference relative to their rural-stayer peers carries the self-selection effect. Furthermore, the assimilation effect is not formed immediately, but rather needs time to accumulate. The newcomers' exposure to urban living is too short to breed such an assimilation effect. Hence, the newcomers are clear of the assimilation effect. Accordingly, the gap in risk aversion between the floating migrant newcomers and their rural stayer peers quantifies the self-selection effect in a clean manner.

In econometrics, our main model carrying out the above experiments is specified as follows:

$$arra_{ij} = \alpha + \beta_g X_{ij}^g + \phi_1 Z_{ij}^p + \phi_2 Z_{ij}^h + \mu_j + \varepsilon_{ij}, \tag{1}$$

where $arra_{ij}$ is the absolute risk aversion measurement of individual i in place j based on Chetty's (2003) method and normalized by personal income; X_{ij}^g is our central variable, namely, the corresponding dummy variable characterizing the grouping of the population of interest; Z_{ij}^p and Z_{ij}^h are controls of personal and household attributes respectively; μ_j represents the county or province fixed effects, which effectively controls heterogeneity in the sample and other potential latent factors that could influence risk preference, such as local culture; and ε_{ij} accounts for residuals.

Specifically, in the two experiments designed above, X_{ij}^g is the dummy for the passive Hukou migrants versus rural stayers when estimating the assimilation effect, while X_{ij}^g is the dummy for the floating migrant newcomers versus rural stayers when estimating the self-selection effect. Detailed definitions of these dummies are in the Section 3.3. Moreover, we employ the robust estimation method of the standard errors to yield robust estimates of the test statistics.

Furthermore, we subject our results to the clustering estimation of the standard errors to correct the possible residual correlation across observations (Petersen, 2009; Cameron, Gelbach, & Miller, 2011). Our data has two possible levels of clustering, namely, county and province levels. According to Cameron et al. (2011), we use the provincial clustering level as it nests the county level.

3.2. Data

We employ the 2013 wave CGSS (Chinese General Social Survey) dataset in this paper. Three merits make this dataset advantageous in exploring our theme.

Firstly, the CGSS dataset is a nation-wide survey jointly conducted by the Department of Social Development Research and the Development Research Center of the State Council and Renmin University of China starting from 2003 onwards. The 2013 wave surveyed 11,438 individuals in total, almost half in rural and half in urban areas, covering 127 counties in 28 provinces (including the 4 municipalities of China). Extensive coverage and strict sampling procedures ensure the representativeness and quality of the data.

Secondly, the dataset has rich information on demography, migration, labor market participation, income, household and personal attributes, household financial portfolio, social attitudes, etc. It sufficiently meets the data requirement to execute our econometric estimations. It documents in detail the information on Hukou status and its transfer, which enables us to carry out the experiments to quantify the two effects. More importantly, it includes detailed information on the labor and non-labor income of individuals, which is required for the application of Chetty's (2003) classic method to yield risk aversion measurement. Such classified income information of individual rather than household is rare in other datasets on China.

Finally, the dataset records household investment in risky financial assets, especially stocks and funds. This lends us an opportunity to extend our two-effect theory of urbanization on risk preference to real applications, as risk preference underpins such investment decisions under uncertainty.

Unfortunately, we are unable to form a panel dataset over past CGSS surveys, because it is not a fixed-point survey and hence the interviewees/respondents vary across waves of the survey[1]. Despite the limitations to forming a panel dataset, the 2013 wave of CGSS provides abundant information on the timing of relocation of the migrants in urban areas, which lends us advantages to grouping migrants into active and passive Hukou migrants and floating migrants. CGSS is renowned in its rich information regarding the relocations of migrants, as witnessed in the previous literature[2].

[1] CGSS has used three sets of samples. Specifically, the 2003–2006 sample used 5 sampling frames with respect to city type and geography and a four-stage random sampling method, and the sample covered 125 counties and 10,000 individuals in total. The 2008 wave only covered 6000 interviewees. The third sample (2010) applies a three-stage random sampling method and covers 12,000 interviewees across 100 counties and 5 metropolises. Moreover, across each wave of surveying, the sampling frame is reviewed and updated, and the interviewees are reselected in a random manner. Therefore, it is hardly meaningful to form a panel dataset across the CGSS surveys.

[2] For instance, Hu, Xu, and Chen (2011) and Wang and Zhou (2017). Hu et al. (2011) use 2006 CGSS data to study permanent migrants and find that a higher probability of obtaining stable jobs and earing higher incomes makes them more adaptable to urban environments compared to temporary migrants. Wang and Zhou (2017) use 2003 CGSS data to find long-term negative effects of the “send-down movement” during the Chinese Cultural Revolution on forced migrants' marriage, social networks, and happiness.

3.3. Variables

3.3.1. Risk preference

Our measurement of individuals' risk aversion is based on Chetty's (2003) classic method and is further normalized by personal income. Specifically, the relative risk aversion coefficient of an individual is computed using Eq. (2):

$$R = -\left(1 + \frac{wl}{y}\right)\frac{\varepsilon_{l,y}}{\varepsilon_{l^c,w}}\Big/\left(1 - \left(1 + \frac{y}{wl}\right)\mu_{c,l}\right), \tag{2}$$

where R is the relative risk aversion coefficient, w and y are labor income and non-labor income respectively, l is labor supply in terms of working hours, c is consumption, $\mu_{c,l}$ stands for complementarity between consumption and labor supply, and $\varepsilon_{l,y}$ and $\varepsilon_{l^c,w}$ are income elasticity and compensated elasticity of the labor supply respectively.

The values for individual w and l are collected directly from the dataset, and y equals total income, also available in the dataset, minus w. It is noteworthy to mention that the questionnaire on labor and income is the same for all respondents, regardless of whether they are located in urban or rural areas, and the interviewers are all trained, experienced, and ready to explain the meanings of the terms to the respondents if they feel confused. This ensures, at best, an attempt to avoid bias in comparing risk aversion across groups.

Consistent with Chetty (2003), we also assume additive utility, which renders zero for the complementarity between consumption and labor supply $\mu_{c,l}$.

Income elasticity $\varepsilon_{l,y}$ and *uncompensated* elasticity $\varepsilon_{l,w}$ are computed as follows. In the first step, we find marginal changes of labor supply with respect to marginal changes in y and w, i.e., $(\partial l/\partial y)$ and $(\partial l/\partial w)$, by relating l to y and w with other controls (including age, education, ethnicity, number of children) using a Tobit specification, following Eissa and Hoynes (1998) and Friedberg (2000). Next, we specify the individual's income elasticity $\varepsilon_{l,y}$ by $(\partial l/\partial y) \times (y/l)$; and *uncompensated* elasticity $\varepsilon_{l,w}$ by $(\partial l/\partial w) \times (w/l)$. The compensated elasticity $\varepsilon_{l^c,w}$ is computed using Eq. (3) given by Chetty (2003):

$$\varepsilon_{l^c,w} = \varepsilon_{l,w} - \frac{wl}{y}\varepsilon_{l,y}, \tag{3}$$

In our estimations, the absolute risk aversion, which is Chetty's relative risk aversion normalized by personal income, is employed as the left-hand variable.

3.4. Population grouping

The grouping of population, according to individual Hukou status and living area, is central in our experiments. China has maintained a residence (Hukou) system since 1958, which poses limits on the mobility of the migration from rural to urban areas. People have been able to relocate in rural or urban areas since China's reform and openness at the end of 1970s, but migrants without identity change cannot fully access public services in urban areas.

We include respondents living in rural areas at the moment of interview in the rural stayer group.

Urban natives include respondents born in urban areas and who have been living in urban areas, as well as those who acquired urban Hukou identities and who have kept them for more than 13 years (i.e., acquired before the year 2000).

The group of floating migrants consists of peasants with Nongye (agricultural) Hukou identity but who have been on leave from their rural hometowns and who have worked temporarily in urban areas. Clearly, their Nongye Hukou makes it unlikely that they will become permanent urban residents largely due to the high living costs in urban areas.

The Hukou-changed migrants, who have transferred from Nongye to urban Hukou identities, are divided into active and passive Hukou migrants. In CGSS, the information about how interviewees obtain their urban Hukou identities makes it possible to differentiate the two kinds of Hukou-changed migrants. The difference between the two groups lies in whether they migrate on their own initiative or passively accept the identity changes. Specifically, Hukou migrants whose Hukou transfer was due to land expropriation by the local government for the purpose of urbanization and marriage with urbanites are assigned to the passive subgroup H_A (passively Hukou-changed migrants). In China, rural families subject to land expropriation are compensated by resettlement subsidies, job training in non-agricultural industries, and urban Hukou. Basically, the H_A group hosts passive recipients of Hukou changes and hence they are free of self-selection effects.

Other Hukou migrants, whose Hukou transfer was due to their own efforts such as by going to college, and employment, are labeled as H_B (actively Hukou-changed migrants).

Finally, the floating migrant newcomers are those who left their hometown for the first time in or after 2012. That is, the time span of the newcomers' living in urban areas was fewer than 2 years before being interviewed.

3.4.1. Controls

Consistent with the literature on the determinants of risk attitude, we control for personal, household, and parents' attributes. Regarding personal attributes, we control age, age squared, gender, height, physical health, education, marital status, and political association.

According to Bonin, Constant, Tatsiramos, and Zimmermann (2009, 2012), an individual's age has a non-linear effect on her/his risk preference. They find an individual's risk aversion increases with age before a threshold but decreases after that. Hence, we

control both age and its square and expect a positive coefficient on age and a negative coefficient on its square.

Previous evidence indicates that men are more risk tolerant than women (e.g., Borghans, Heckman, Golsteyn, & Meijers, 2009; Carson & Gneezy, 2009). As such, we use the dummy of male to control gender and expect a negative coefficient.

As health status and physical profile affect an individual's attractiveness in the labor market, they could have an impact on an individual's attitude towards risk-taking. We use height and health rating to represent these two potential controls, expecting negative coefficients on both.

Education could have two counter-effects on the shaping of an individual's risk preference. On one hand, education endows an individual with analytical and managerial skills to face risks; on the other, education might make an individual more alert to risks. The former might result in less risk aversion, while the latter could lead to more aversion. We use education degree to represent this control, but its expected impact is indeterminate.

Marriage results in more risk tolerance in China (Akgüc et al., 2016). Accordingly, a dummy of married is used as the control and a negative coefficient is expected.

Political association could potentially motivate an individual's risk attitude either due to the party's ideology or the concomitant social network expansion. We use the individual's affiliation with China's Communist Party as the proxy of this control, but its expected impact is indeterminate.

We use family size and the number of children under 18 years old to control the impacts of household attribute. A large family could have more opportunities to form risk-sharing, which has the potential to affect how the member of the household perceives risk. The number of children indicates the family's financial burden. A heavy burden could result in more risk aversion. Therefore, we expect a negative coefficient on family size and a positive coefficient on number of children.

Parents' attitude towards risk could be transmitted to shape the next generation's risk preference, according to the direct socialization theory (Bisin & Verdier, 2000). As the data to measure parents' risk attitudes is unavailable, we employ both the mother's and the father's education level to proxy this control. Due to the counter effects of education on risk attitudes, the expected impact of these two controls is indeterminate.

Table 1 details the variable definitions and Table 2 presents the summary statistics. The size of the sample used in our estimations depends on the availability of the data to compute risk aversion. Ultimately, we have a usable sample of 5420 respondents. Among the respondents are around 39%, 19% and 42% urban natives, migrants, and rural stayers in turn. Our sample is symmetrically distributed around age and height, as indicated by the almost identical median and mean of the two variables. This symmetry makes our estimation free of bias with respect to these critical aspects of a population. Moreover, the sample covers an extensive age range from 20 to 87. These statistics verify the randomness of the sampling and the representativeness and quality of the sample data.

Table 1
Variables and definitions.

Variables	Definition
Left-hand side variable	
arra	Absolute risk aversion measurement based on Chetty's (2003) method and personal income.
Right-hand side variables	
unative	Urban natives include born urbanites and those who have acquired the urban Hukou more than 13 years (i.e., before the year 2000).
hmigra	Hukou migrants are those who has transferred from a Nongye (i.e. agricultural) identity to an urban Hukou identity and living in urban. To form exclusive grouping, this category includes migrants after and in 2000.
nhmigra	Floating migrants include peasants with Nongye (agricultural) Hukou on leave from their hometown, and now living in urban.
rstayer	Rural stayers are those living in rural at the moment of interview and with a Nongye Hukou.
hamig	The passive Hukou migrants due to land expropriation and marriage.
newnhm	The new comers of floating migrants whose living in urban were less than 2 years.
age	Respondent's age.
agesq	Age square.
male	Male = 1.
han	Han ethnicity = 1; other = 0.
edu	Education degree: 1 = obtain no school education; 6 = primary school; 9 = middle school; 12 = high school; 13 = technical school; 15 = junior college; 17 = bachelor; 20 = master and above.
phyhth	Self reported health status: 1 = very bad health; 2 = bad health; 3 = neither good or bad; 4 = good health; 5 = very good health.
party	Political association with Communist party membership = 1.
married	Married = 1.
height	The logarithm of height.
fsize	Family size, i.e. number of family members.
childnum	Number of children under 18 years old.
faedu	Father's education degree: 1 = obtain no school education; 6 = primary school; 9 = middle school; 12 = high school; 13 = technical school; 15 = junior college; 17 = bachelor; 20 = master and above.
moedu	Mother's education degree: 1 = obtain no school education; 6 = primary school; 9 = middle school; 12 = high school; 13 = technical school; 15 = junior college; 17 = bachelor; 20 = master and above.

Notes: The main groups, namely, urban native (*unative*), Hukou migrants (*hmigra*), floating migrants (*nhmigra*) and rural stayers (*rstayer*) form the population space. Passive Hukou migrants (*hamig*) is a subgroup of Hukou migrants, and new comers of floating migrants (*newnhm*) is a subgroup of floating migrants. These sub-groupings are employed to elicit assimilation and self-selection effects respectively.

Table 2
Summary statistics.

	N	Min	Median	Mean	Max	S.D.
arra	5420	0.010	0.5	1.330	62.3	2.750
unative	5420	0	0	0.395	1	0.489
hmigra	5420	0	0	0.121	1	0.326
hamig	5420	0	0	0.041	1	0.197
nhmigra	5420	0	0	0.075	1	0.263
newnhm	5420	0	0	0.012	1	0.111
rstayer	5420	0	0	0.428	1	0.495
age	5420	20	46	47	87	12.600
agesq	5420	400	2116	2363	7569	1242
male	5420	0	1	0.599	1	0.490
han	5420	0	1	0.914	1	0.280
edu	5420	1	9	9.680	20	4.460
phyhth	5420	1	4	3.930	5	0.982
party	5420	0	0	0.108	1	0.311
married	5420	0	1	0.846	1	0.361
height	5420	4.16	5.110	5.110	5.260	0.050
fsize	5420	1	3	3.170	12	1.330
childnum	5420	0	1	1.500	8	1.040
faedu	5420	1	6	5.590	20	4.340
maedu	5420	1	1	4.140	20	3.920

4. Empirical results

4.1. A preliminary analysis

Fig. 2 displays the density of risk aversion measurement (truncated at 2.5 on the right side) across the four main groups, namely, urban natives, Hukou migrants, floating migrants, and rural stayers, with their respective means. The means read 0.3650, 0.4408, 0.3812, and 0.8769 for the four groups in turn. A vivid pattern exhibits that the density shapes and means of urban natives are clustered closely to those of the two migrant groups while departing dramatically from those of the rural stayers. This provides preliminary supportive evidence for the two central hypotheses.

Table 3 tests the differences of groups in pairs using the rural-stayer group as the baseline. Model (1) reports a significantly positive coefficient on the grouping variable, which equals 1 for urban natives, 2 for Hukou migrants, 3 for floating migrants, and 4 for rural stayers. This suggests that risk aversion increases significantly along the sequence of our grouping. Clearly, rural stayers are the most risk-averse among the four groups. Urban populations are significantly more risk-loving than rural populations. These results are consistent with the literature (e.g., Rosenboim, Shavit, & Shoham, 2010). Models (2) and (3) provide corroborating evidence. The significantly negative coefficient on the urban-native dummy in Model (3) suggests that the risk aversion measurement of urban natives is, on average, 0.360 less than that of rural stayers given county fixed effect and other factors controlled. Similarly, the decreased risk aversion is also true for the urban population, including urban natives and migrants.

Focusing on the two sub-groups of migrants, we find strong evidence in Models (4) and (5) supporting that their risk preference

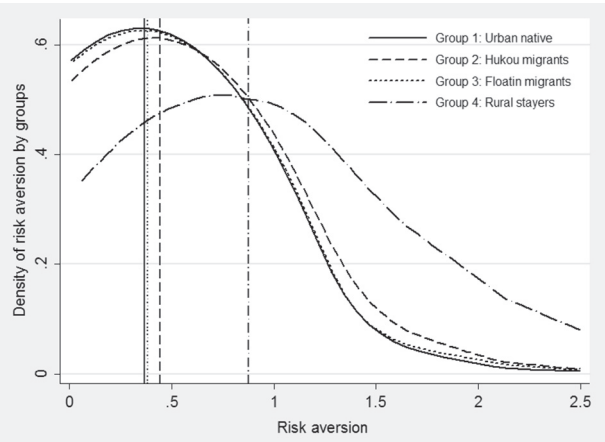

Fig. 2. The density of risk aversion across groups. Notes: This figure displays the densities of risk aversion measurements across 4 groups of urban natives, Hukou migrants, floating migrants and rural stayers, and respective means of the groups. The density of risk aversion is measured by kernel density estimation, using Epanechnikov kernel function with the half-width of the kernel specified as 0.5.

Table 3
Test the difference of risk aversion across the four main groups.

	(1)	(2)	(3)	(4)	(5)	(6)
group	0.139***					
	[3.28]					
urban		−0.295***				
		[−3.75]				
unative			−0.360***			
			[−3.28]			
hmigra				−0.394**		
				[−2.31]		
nhmigra					−0.501***	−0.058
					[−2.99]	[−0.92]
age	−0.204***	−0.209***	−0.214***	−0.227***	−0.230***	−0.128**
	[−5.93]	[−6.16]	[−6.18]	[−5.73]	[−5.82]	[−2.47]
agesq	0.002***	0.002***	0.003***	0.003***	0.003***	0.001**
	[6.10]	[6.20]	[6.27]	[5.90]	[6.09]	[2.55]
male	−0.501***	−0.485***	−0.517***	−0.636***	−0.664***	−0.379***
	[−5.82]	[−5.71]	[−4.93]	[−5.29]	[−4.97]	[−2.97]
han	0.512	0.513	0.595	0.889*	0.761	0.366
	[1.37]	[1.37]	[1.50]	[1.71]	[1.61]	[1.57]
phyhth	−0.335***	−0.329***	−0.352***	−0.405***	−0.392***	−0.173*
	[−4.91]	[−4.76]	[−4.96]	[−4.75]	[−4.60]	[−1.76]
party	0.109	0.136	0.066	0.324**	0.053	0.294
	[1.12]	[1.43]	[0.65]	[2.03]	[0.27]	[0.79]
married	−0.314**	−0.299**	−0.379**	−0.380*	−0.487**	−0.068
	[−2.40]	[−2.29]	[−2.38]	[−1.79]	[−2.15]	[−0.57]
height	−2.364***	−2.562***	−2.704***	−4.652***	−4.430***	−0.95
	[−2.73]	[−3.01]	[−2.92]	[−3.48]	[−3.39]	[−0.36]
edu	−0.066***	−0.064***	−0.077***	−0.072***	−0.076***	−0.037*
	[−5.43]	[−5.54]	[−5.35]	[−4.47]	[−4.41]	[−1.89]
fsize	−0.007	−0.012	−0.04	−0.015	−0.02	0.133*
	[−0.16]	[−0.28]	[−0.95]	[−0.26]	[−0.41]	[1.69]
childnum	0.256***	0.262***	0.278***	0.242***	0.238**	0.031
	[3.20]	[3.34]	[2.82]	[2.71]	[2.40]	[0.37]
faedu	−0.014*	−0.015*	−0.007	−0.024**	−0.023*	−0.039**
	[−1.90]	[−1.94]	[−0.79]	[−1.99]	[−1.66]	[−2.24]
maedu	0.012	0.005	0.004	−0.005	−0.019	0.006
	[1.34]	[0.52]	[0.34]	[−0.30]	[−1.02]	[0.64]
cons	18.346***	20.046***	21.324***	31.439***	30.797***	8.747
	[3.84]	[4.36]	[4.23]	[4.36]	[4.34]	[0.61]
County fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N	4708	4708	3700	2979	2673	1008
R-sq	0.279	0.28	0.287	0.252	0.257	0.161

Notes: This table reports results of testing risk aversion difference across the four main groups, namely, urban natives, Hukou migrants, floating migrants and rural stayers. Combining urban natives and migrants forms the urban group. Model (1) documents estimation results using the grouping variable (*group*) as the central regressor of interest. The grouping variable (*group*) equals 1 for urban natives, 2 for Hukou migrants, 3 for floating migrants and 4 for the rural stayers. Models (2) to (6) report the results comparing risk aversion of urban residents vs. rural stayers; urban natives vs. rural stayers; Hukou migrants vs. rural stayers; floating migrants vs. rural stayers; and Hukou vs. floating migrants, in turn. The variable *urban* stands for urban residents, including urban natives (*unative*), Hukou-changed migrants (*hmigra*) and floating migrants without Hukou change (*nhmigra*). Others are control variables. *age* and *age* are individual's age and age square respectively. *male* is a dummy gender variable. *han* stands for han ethnicity. *phyhth* is self-reported health status. *party* stands for political association. *married* stands for marital status. *height* is the logarithm of individual's height. *edu* is individual's education degree. Household characteristics are controlled by variables *fsize, childnum, faedu* and *moedu*. *fsize* is family size, *childnum* is number of children under 18 years old, and *faedu* and *moedu* are father's and mother's education degree respectively. All the results have county fixed effects controlled and use a robust standard error estimation clustered at province level. Robust standard errors are reported in parentheses. *, **, and *** denote significance at the 0.1, 0.05, and 0.01 level, respectively.

departs significantly from that of rural stayers, as indicated by the sizable and significantly negative coefficients on the Hukou migrant and floating migrant dummies. Furthermore, given the controls for county fixed effects, the risk preference difference between the two types of migrants is rendered insignificant. This result implies that the two effects of urbanization on an individual's risk preference are both evident, near in magnitude, and therefore cannot be biased.

Moreover, Table 3 also supplies meaningful regularities on other determinants of risk aversion in the context of China. The significantly negative and positive coefficients on age and age-squared suggest that risk aversion varies with age and changes over the life-cycle in a nonlinear pattern (similar to Jianakoplos & Bernasek, 1998). Men are more risk-loving than women, as indicated by the negative coefficient on the male dummy. This echoes the evidence in the literature (e.g., Borghans et al., 2009; Croson & Gneezy, 2009; Dohmen et al., 2011). The coefficients on the human-capital variables, including health, height, and education, are all significantly negative. They suggest that a healthier body makes it possible to take more risks, and that education broadens risk tolerance. Married couples have expanded capacity to venture than single people. However, a family's vertical impacts of parents on

Table 4
Results on self-selection effect.

	Panel A: rural stayers as baseline		Panel B: urban natives as baseline	
	(1)	(2)	(3)	(4)
newnhm	−0.882***	−0.715***	−0.111*	−0.108
	[−4.41]	[−2.92]	[−1.77]	[−1.44]
age	−0.248***	−0.226***	−0.040***	−0.036***
	[−5.88]	[−5.49]	[−2.84]	[−2.88]
agesq	0.003***	0.003***	0.000***	0.000***
	[6.56]	[5.86]	[2.78]	[3.04]
male	−0.370**	−0.691***	−0.009	−0.036
	[−2.14]	[−4.84]	[−0.25]	[−1.27]
han	0.236*	0.890*	−0.042	0.003
	[1.69]	[1.71]	[−0.72]	[0.05]
edu	−0.079***	−0.085***	−0.038***	−0.033***
	[−3.58]	[−4.43]	[−7.40]	[−5.32]
phyhth	−0.470***	−0.411***	−0.052**	−0.042*
	[−5.57]	[−4.64]	[−2.22]	[−1.92]
party	0.235	0.13	−0.007	−0.044*
	[0.98]	[0.60]	[−0.25]	[−1.91]
married	−0.572**	−0.526**	−0.115***	−0.102**
	[−2.12]	[−2.07]	[−2.89]	[−2.44]
height	−9.761***	−5.104***	−1.017**	−0.642**
	[−5.08]	[−3.61]	[−2.40]	[−2.22]
fsize	0.015	−0.021	0.027	0.03
	[0.26]	[−0.40]	[1.26]	[1.48]
childnum	0.218**	0.232**	0.056*	0.016
	[2.54]	[2.22]	[1.74]	[0.41]
faedu	−0.032**	−0.022	−0.007**	−0.005
	[−1.97]	[−1.47]	[−2.15]	[−1.60]
maedu	−0.014	−0.023	−0.003	0
	[−0.67]	[−1.01]	[−0.86]	[0.17]
County fixed effects	No	Yes	No	Yes
cons	59.276***	34.286***	7.291***	4.962***
	[5.95]	[4.41]	[3.33]	[3.16]
N	2389	2389	1445	1445
R-sq	0.206	0.243	0.168	0.293

Notes: This table reports results on the self-selection effects, testing Hypothesis 1. Panel A runs models testing the risk aversion of the new comers of floating migrants (*newnhm*), whose living in urban was less than 2 years (i.e., migrated after 2012), relative to the baseline of rural stayers; while Panel B runs relative to the baseline of urban natives. Other explanatory variables are explained as follows. *age* and *agesq* are individual's age and age square respectively. *male* is a dummy gender variable. *han* stands for han ethnicity. *phyhth* is self-reported health status. *party* stands for political association. *married* stands for marital status. *height* is the logarithm of individual's height. *edu* is individual's education degree. Household characteristics are controlled by variables *fsize, childnum, faedu* and *moedu*. *fsize* is family size, *childnum* is number of children under 18 years old, and *faedu* and *moedu* are father's and mother's education degree respectively. Models (1) and (3) use robust standard error estimations without controlling county fixed effects. Models (2) and (4) use clustered standard error estimations at the province level with county fixed effects further controlled. Robust standard errors are reported in parentheses. *, **, and *** denote significance at the 0.1, 0.05, and 0.01 level, respectively.

risk preference are not evident, which implies that the economic assimilation of risk aversion has more explanatory power in China. Finally, more children under 18 lead to family's reluctance to take risks, as indicated by the significantly positive coefficient on the number of children.

4.2. Main results: evidence and estimations of the two effects

4.2.1. Self-selection effect

Table 4 reports estimation results on the self-selection effect. Panel A uses the rural-stayer group as the baseline, while Panel B uses the urban-native group as the baseline. The central variable of interest is the dummy (*newnhm*) of the floating migrant newcomers. The estimations in Panel A quantify the self-selection effect. The estimated coefficient on the newcomer dummy is sizable and significantly negative. This presents compelling evidence supporting Hypothesis 1 that the more risk-loving of the rural group select themselves out and migrate to cities to exploit uncertain but lucrative opportunities. Quantitatively, the magnitude of the coefficient on the dummy suggests that the self-selection effect is sizable; on average, it reduces the risk aversion measurement by 0.715 given the controlled unobservable local factors.

4.2.2. Assimilation effect

Table 5 reports estimation results on the assimilation effect. Similarly, Panel A uses the rural-stayer group as the baseline, while Panel B uses the urban-native group as the baseline. The central variable of interest is the dummy (*hamig*) of the passive Hukou

Table 5
Results on assimilation effect.

	Panel A: rural stayers as baseline		Panel B: urban natives as baseline	
	(1)	(2)	(3)	(4)
hamig	−0.669***	−0.606***	0.193**	0.1
	[−4.58]	[−4.10]	[2.54]	[1.60]
age	−0.249***	−0.226***	−0.066***	−0.061***
	[−6.05]	[−5.60]	[−3.64]	[−3.64]
agesq	0.003***	0.003***	0.001***	0.001***
	[6.72]	[5.96]	[3.50]	[3.53]
male	−0.375**	−0.689***	−0.085*	−0.138***
	[−2.26]	[−4.94]	[−1.88]	[−3.14]
han	0.205	0.876*	−0.027	0.02
	[1.52]	[1.70]	[−0.40]	[0.29]
edu	−0.076***	−0.080***	−0.041***	−0.031***
	[−3.55]	[−4.29]	[−6.66]	[−5.16]
phyhth	−0.461***	−0.405***	−0.058**	−0.048**
	[−5.70]	[−4.76]	[−2.55]	[−2.18]
party	0.24	0.146	−0.021	−0.055**
	[1.09]	[0.71]	[−0.76]	[−2.18]
married	−0.557**	−0.511**	−0.121**	−0.109*
	[−2.16]	[−2.06]	[−2.08]	[−1.98]
height	−9.107***	−4.552***	−0.613*	−0.01
	[−4.98]	[−3.29]	[−1.70]	[−0.03]
fsize	0.013	−0.028	0.023	0.023
	[0.23]	[−0.56]	[1.07]	[1.18]
childnum	0.229***	0.238**	0.093	0.047
	[2.70]	[2.34]	[1.40]	[0.71]
faedu	−0.032**	−0.021	−0.010***	−0.007**
	[−2.08]	[−1.42]	[−2.58]	[−2.04]
maedu	−0.009	−0.015	−0.003	−0.001
	[−0.44]	[−0.70]	[−0.73]	[−0.36]
County fixed effects	No	Yes	No	Yes
cons	55.931***	31.438***	5.874***	2.291
	[5.89]	[4.14]	[3.16]	[1.31]
N	2524	2524	1598	1598
R-sq	0.208	0.244	0.168	0.246

Notes: This table reports results on assimilation effects, testing Hypothesis 2. Panel A runs models testing the risk aversion of the passive Hukou migrants (*hamig*) relative to the baseline of rural stayers; while Panel B relative to the baseline of urban natives. Other explanatory variables are explained as follows. *age* and *agesq* are individual's age and age square respectively. *male* is a dummy gender variable. *han* stands for han ethnicity. *phyhth* is self-reported health status. *party* stands for political association. *married* stands for marital status. *height* is the logarithm of individual's height. *edu* is individual's education degree. Household characteristics are controlled by variables *fsize, childnum, faedu* and *moedu*. *fsize* is family size, *childnum* is number of children under 18 years old, and *faedu* and *moedu* are father's and mother's education degree respectively. Models (1) and (3) use robust standard error estimations without controlling county fixed-effects. Models (2) and (4) use clustered standard error estimations at the province level with county fixed effects further controlled. Robust standard errors are reported in parentheses. *, **, and *** denote significance at the 0.1, 0.05, and 0.01 level, respectively.

migrants. The estimations in Panel A quantify the assimilation effect, while the results in Panel B present direct evidence of Hypothesis 2. Economically, we find that the risk aversion of the passive Hukou migrants has no significant difference from that of urban natives, as indicated by the insignificant coefficient on the dummy in Model (4) where county fixed effects are controlled. Meanwhile, the very significant and negative coefficients on the dummy in Panel A suggest that the risk preference of the passive Hukou migrants departs substantially from that of the rural stayers. With these two pieces of evidence combined, Hypothesis 2 is strongly supported. Quantitatively, the magnitude of the coefficient on the dummy in Panel A suggests that the assimilation effect is sizable. On average, the assimilation effect reduces the risk aversion measurement of the passive Hukou migrants by 0.606 relative to the rural stayers when the unobservable local factors are controlled.

4.2.3. Economic assimilation or acculturation?

Interestingly, Table 5 presents evidence of the economic assimilation effect on risk preference rather than acculturation effect by urbanization. Above all, the family socialization technology of vertical transmission of risk preference is inefficient in China, as indicated by the very small and, in most cases insignificant in coefficients on the parents' impact, which is proxied by the education levels of the parents. Furthermore, cultural beliefs are unobservable factors that are lumped in with the county fixed effects. The coefficients on the dummy of passive Hukou migrants shrinks, but slightly from 0.669 to 0.606 (less than 10%), after the cultural factors are controlled. This suggests that the assimilation effect on the risk preference of the migrants by urbanization is largely an economic phenomenon rather than a sort of acculturation.

Table 6
T-test of the difference of means between the pair-matched samples along the controls.

	New comer vs. rural stayer						Passive Hukou vs. rural stayer					
	Nearest neighbor			Within caliper			Nearest neighbor			Within caliper		
	Treated	Control	p ¿ t	Treated	Control	p ¿ t	Treated	Control	p ¿ t	Treated	Control	p ¿ t
age	36.448	35.466	0.673	38.000	37.388	0.813	46.219	46.301	0.939	46.505	46.710	0.848
agesq	1481.5	1411.5	0.729	1606.9	1553.7	0.816	2265.7	2266.2	0.996	2291.0	2299.7	0.933
male	0.707	0.810	0.196	0.735	0.776	0.643	0.438	0.411	0.563	0.444	0.421	0.627
han	0.948	0.897	0.302	0.939	0.918	0.698	0.927	0.922	0.857	0.925	0.921	0.857
phyhth	4.121	4.259	0.375	4.061	4.163	0.560	4.037	4.110	0.404	4.019	4.098	0.371
party	0.103	0.069	0.512	0.082	0.082	1.000	0.114	0.123	0.768	0.098	0.112	0.637
married	0.621	0.431	0.041	0.694	0.510	0.064	0.822	0.863	0.239	0.822	0.883	0.076
height	5.116	5.122	0.424	5.116	5.115	0.890	5.098	5.093	0.198	5.098	5.093	0.257
fsize	2.448	2.328	0.605	2.592	2.490	0.693	3.269	3.429	0.225	3.266	3.425	0.237
childnum	0.897	0.724	0.349	1.020	0.857	0.423	1.269	1.301	0.650	1.285	1.332	0.506
edu	10.276	9.328	0.154	9.857	9.082	0.287	10.068	9.936	0.704	9.907	9.808	0.775
faedu	6.655	6.707	0.938	6.306	6.408	0.891	6.219	6.306	0.828	6.098	6.257	0.693
maedu	4.603	5.621	0.112	3.980	5.000	0.111	4.251	4.416	0.629	4.122	4.322	0.552

Notes: This table reports the t-tests of the means of the matched treated and untreated groups along all control variables employed to form the matches. Control variables *age* and *age* are individual's age and age square respectively. *male* is a dummy gender variable. *han* stands for han ethnicity. *phyhth* is self-reported health status. *party* stands for political association. *married* stands for marital status. *height* is the logarithm of individual's height. *edu* is individual's education degree. Household characteristics are controlled by variables *fsize, childnum, faedu* and *moedu*. *fsize* is family size, *childnum* is number of children under 18 years old, and *faedu* and *moedu* are father's and mother's education degree respectively. The left half part reports the results of matched new comers of floating migrants (treated) and rural stayers (untreated), under the nearest neighbor method and the nearest neighbor method within a caliper of 0.01, respectively. And the right half part reports the results of matched passive Hukou migrants (treated) and rural stayers (untreated), under the nearest neighbor method and the nearest neighbor method within a caliper of 0.01, respectively. p-Values are reported under the "p ¿ t" columns.

Table 7
Treatment-effect estimations for self-selection and assimilation effects.

Self-selection effect						Assimilation effect					
Nearest neighbor			Within caliper			Nearest neighbor			Within caliper		
Treated	Control	Difference	Treated	Control	Difference	Treated	Control	Difference	Treated	Control	Difference
0.85	1.661	−0.811***	0.861	1.683	−0.822***	0.495	1.89	−1.395***	0.526	2.016	−1.489***
		[0.350]			[0.353]			[0.541]			[0.528]

Notes: This table reports the estimation of the treatment effects regarding risk aversion. The treatment and control groups are pair-matched using the nearest neighbor and within caliper methods respectively. Standard errors are reported in parentheses. *, **, and *** denote significance at the 0.1, 0.05, and 0.01 level, respectively.

4.2.4. Pair-matched treatment estimations

Despite the robust errors estimation justified by clustering at the province level and controlling for county fixed effects, the estimations in Tables 4 and 5 must still be viewed with caution due to the asymmetric samples of the subgroups. To correct for this potential issue, we use a pair-matched method to estimate the treatment effect. This method elicits the self-selection and assimilation effects. Specifically, we employ two commonly used matching methods, namely, nearest neighbor matching and nearest neighbor within a caliper of 0.01. The first step matches the untreated rural stayers in pairs with the treated groups of passive Hukou and floating migrant newcomers, respectively. All the controls are used as the criteria to match the pairs. Table 6 reports that the pair-matched samples are insignificantly different along all the controls, as the p-values of the t-tests of the means are larger than 0.10, except in two cases in which they are larger than 0.05. In the second step, the treatment effect (ATT) is estimated. Table 7 reports that the ATTs of the newcomer group are −1.3948 and −1.4894 under nearest and caliper methods respectively; while ATTs of the passive Hukou-migrant group are −0.8112 and −0.8218 respectively under the two matching methods. These ATTs are all significant at the 1% level. Clearly, pair-matched treatment schemes yield even larger estimations of self-selection and assimilation effects than the above results without loss of significance.

5. Application to household investment in risky financial assets

Household investment in risky financial assets is a typical decision under uncertainty depending on the risk preference of the main members of the family (Croson & Gneezy, 2009)[3]. We shed new light on the migrant's choice of risky financial assets through the lens of our two-effect theory of urbanization on an individual's risk preference. It is noteworthy that betting activities, such as horse racing

[3] Earlier literature, such as Jianakoplos and Bernasek (1998) and Pålsson (1996), uses the proportion of risky assets in a household's wealth to measure risk attitude.

Table 8
Migrant's behavior of investment in risky financial assets.

	(1)	(2)	(3)
arra	−1.066***		
	[−3.37]		
hamig		1.020***	
		[6.42]	
newnhm			0.887***
			[3.75]
cong	0.350***	0.620***	0.637***
	[6.76]	[5.55]	[4.86]
trust	0.022	0.049	0.099
	[0.64]	[0.56]	[0.98]
insu	0.590***	0.258	0.174
	[8.11]	[1.19]	[0.61]
cons	−2.063***	−4.395***	−4.500***
	[−8.01]	[−12.19]	[−10.39]
N	4678	3423	3144

Notes: This table reports the results testing the behavioral hypothesis of the migrants' investment in risky financial assets. The dependent variable is a dummy of the household ownership of risky financial assets. It equals 1 if the household owns any stock, stock fund, futures or share warrantees. The explanatory variables include risk aversion (*arra*), Hukou-passively-changed migrants (*hamig*), new comers of floating migrants (*newnhm*) and three newly added variables. The newly added variables are explained as follows. We sum the answers to all the questions about individual's cognitive capacity from A49 to A52 in CGSS 2013 to generate the variable *cong*. The questions about individual's cognitive capacity include individual's ability of speaking and listening mandarin and English. The variable *trust* measures how the respondent trusts in others. And *insu* measures ownership of commercial insurance. The t statistics are in brackets; *, **, and *** denote significance at the 0.1, 0.05, and 0.01 level, respectively.

and gambling, also relate to risk preference directly (e.g. Jullien & Salanie, 2000), but such activities are illegal in China and hence CGSS has no documentation of them.

According to our theory, urbanization exerts self-selection and economic assimilation effects on the migrant's risk preference and ultimately reshapes a more risk-loving appetite. The passive Hukou migrants and the floating migrant newcomers are fairly pure carriers of the assimilation and self-selection effects respectively. Therefore, we expect that (1) behaviorally, both carriers are more likely to invest in risky financial assets than rural stayers; and (2) economically, increased risk-loving preference provides a powerful explanation of such behaviors. It is worth mentioning that, comparing the likelihood of investment in risky assets between urban natives and rural stayers is trivial due to obvious gaps in wealth, information, and financial service accessibility. However, migrants and rural stayers are evenly matched in this risky asset investment game. It is unclear that migrants invest more than their rural peers.

Table 8 tests the above behavioral hypothesis. Using a Probit specification, we relate risky asset ownership to risk aversion measurement with other controls. We find a sizable and significantly negative coefficient on the risk aversion measurement in the benchmark model (1). This presents strong evidence of the presumption that risky household financial asset investment is a decision under uncertainty depending on the risk preference of the main family member. The more risk averse the main family member is, the less likely it is that the household will own risky assets. Models (2) and (3) relate the ownership of risky assets to the dummies of passive Hukou migrants and floating migrant newcomers respectively, and both models are estimated relative to rural stayers. The large and very significant positive coefficients on both dummies indicate that, relative to the rural stayers, the two types of migrants, carriers of assimilation and self-selection effects respectively, are significantly more likely to invest in risky assets with other factors controlled. This presents compelling evidence for our behavioral hypothesis.

Next, Table 9 presents evidence supporting our economic hypothesis on the mediation and moderation effect of risk preference changes on risky investment behavior. Following the standard three-step approach (e.g., Baron & Kenny, 1986) to test the mediation and moderation effect, we estimate an additional two sets of equations aside from our central results on the self-selection and assimilation effects on risk aversion by urbanization, as presented in Tables 4 and 5 respectively. From our central results, we know that urbanization is a channel reshaping migrants' risk preferences. Consequentially, we need a discernable shrinkage of the magnitude of the coefficients on risk aversion from the baseline specification relating risky asset ownership to risk aversion, to the contrasting specification relating risky asset ownership to risk aversion, and dummies of passive and new migrants. Furthermore, the interactions of the dummies and risk aversion with other factors must be controlled. Such shrinkage presents persuasive evidence that urbanization reshapes risk preference, and due to this reshaped risk preference, migrants alter investment behaviors when it comes to risky assets.

Model (1) in Table 9 replicates the result in Table 8 forming a benchmark for the latter results. Using the full sample, the coefficient on risk aversion is as large as 1.066. Models (2) and (5) are the first set of additional estimations of baseline results for the passive Hukou migrants and the floating migrant newcomers relative to the rural stayers, respectively. The coefficients on risk aversion are −0.615 and −0.539, respectively. Both are significant at least at a 5% level. The magnitude decreases substantially relative to the benchmark 1.066, largely due to the sample shrinkage. Models (3) and (6) are the second set of additional estimations, which add dummies of passive Hukou migrants and floating migrant newcomers respectively. After these additions of explanatory variables, we find further substantial shrinkage of the coefficients on risk aversion, from −0.615 to −0.445 and from −0.539 to

Table 9
Test the mediation effect of the risk preference changes exerted by urbanization in migrant's investment in risky assets.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
arra	−1.066***	−0.615**	−0.445*	−0.244*	−0.539**	−0.434*	−0.380*
	[−3.37]	[−2.10]	[−1.77]	[−1.67]	[−2.00]	[−1.84]	[−1.80]
hamig			0.779***	1.372***			
			[4.11]	[4.46]			
haar				−1.500**			
				[−2.45]			
newnhm						0.772***	1.127**
						[3.00]	[2.45]
newar							−1.029
							[−0.94]
cong	0.350***	0.679***	0.646***	0.649***	0.575***	0.516***	0.513***
	[6.76]	[5.01]	[4.67]	[4.61]	[4.23]	[3.46]	[3.37]
trust	0.022	0.114	0.122	0.108	0.210**	0.198**	0.199**
	[0.64]	[1.27]	[1.24]	[1.08]	[2.29]	[2.03]	[2.05]
insu	0.590***	0.058	0.009	−0.034	0.091	0.084	0.073
	[8.11]	[0.22]	[0.03]	[−0.13]	[0.30]	[0.28]	[0.25]
cons	−2.063***	−3.993***	−4.260***	−4.346***	−4.073***	−4.048***	−4.075***
	[−8.01]	[−9.13]	[−9.53]	[−9.83]	[−8.14]	[−7.79]	[−7.78]
N	4678	2514	2514	2514	2379	2379	2379

Notes: This table reports the results testing the mediation effect of risk preference changes exerted by urbanization in migrant's investment in risky assets. The dependent variable is a dummy of the household ownership of risky financial assets. It equals 1 if the household owns any stock, stock fund, futures or share warrantees. The explanatory variables include risk aversion (*arra*), Hukou-passively-changed migrants (*hamig*), new comers of floating migrants (*newnhm*) and interactions between migrant group and risk aversion. The *haar* is the interaction term of *hamig* and *arra*, and *newar* is the interaction term of *newnhm* and *arra*. Other three newly added variables are explained as follows. We sum the answers to all the questions about individual's cognitive capacity from A49 to A52 in CGSS 2013 to generate the variable *cong*. The questions about individual's cognitive capacity include individual's ability of speaking and listening mandarin and English. The variable *trust* measures how the respondent trusts in others. And *insu* measures ownership of commercial insurance. The t statistics are in brackets; *, **, and *** denote significance at the 0.1, 0.05, and 0.01 level, respectively.

−0.434, respectively. Moreover, the coefficients are less statistically significant, at the 10% level. These results suggest that a portion of explanatory power of risk aversion is subrogated by *hamig* and *newnhm*, which embodies assimilation and self-selection effects exerted by urbanization. This presents supporting evidence for the claim that urbanization reshapes migrants' risk preference, rendering them more risk-loving; hence, migrants are more likely to invest in risky assets. In short, urbanization increases risky financial asset investment.

Furthermore, Models (4) and (7) add extra interaction terms the migrant dummy and risk aversion to Models (3) and (6) in turn. We find further shrinkage of the coefficients on risk aversion. This time, they reduce to −0.244 and −0.380, respectively. Both are dramatically smaller than the baseline results in Models (2) and (5). This presents further evidence supporting the hypothesis that urbanization affects the risky investments of households by reshaping risk preference through assimilation and self-selection effects.

6. Robustness checks

6.1. Robustness to alternative grouping of rural stayers

The grouping of the rural stayers plays a critical role in reaching our main results. To check the robustness of our main results, we use an alternative grouping of rural stayers. Instead of grouping the respondents living in rural areas at the moment of interview, we use the information in items A18 and A23 in the questionnaire to group rural stayers. If the respondent has a Nongye (agricultural) Hukou (i.e., answer to A18 is 1) and has never left his/her hometown (i.e., answer to A23 is null), the respondent is classified as a rural stayer. Table 10 reports the results testing the self-selection and assimilation effects under this alternative grouping. We find that the coefficients on the dummies of the floating migrant newcomers and the passive Hukou migrants are all significant at 1% when estimated against the rural-stayer group, and that their magnitudes are of the same scale as our main results presented in Tables 4 and 5. These results reaffirm that the empirical regularity we find on the two effects of urbanization on individuals' risk preference is sound and stable.

6.2. Robustness check under a right-side truncated risk aversion

The distribution of our risk aversion measurement displays a long right-swing tail. As our main results center on this measurement, we check the robustness of our main results by truncating the right tail at 5 and 2.5 in turn. Table 11 reports the results testing the self-selection and assimilation effects under the two schemes. For brevity, Table 11 only displays the estimations relative to the rural-stayer group. Limiting the range of our risk aversion measurement to no larger than 2.5 or 5 does not undermine our main results. In fact, the estimations of the self-selection and assimilation effects become more evident. Sizes of the coefficients on the floating migrant newcomers and the passive Hukou migrants are larger than those in Tables 4 and 5 without loss of statistical

Table 10
Robustness of the self-selection and assimilation effects to the alternative grouping of rural stayers.

	Rural as baseline		Urban native as baseline		Rural as baseline		Urban native as baseline	
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
newnhm	−0.669***	−0.481**	−0.358***	−0.259**				
	[−4.21]	[−2.47]	[−3.06]	[−2.39]				
hamig					−0.489***	−0.413***	0.004	−0.082
					[−3.81]	[−3.40]	[0.05]	[−0.96]
age	−0.233***	−0.217***	−0.102***	−0.083***	−0.235***	−0.217***	−0.116***	−0.100***
	[−6.37]	[−5.90]	[−4.42]	[−3.71]	[−6.55]	[−6.05]	[−4.81]	[−4.32]
agesq	0.003***	0.003***	0.001***	0.001***	0.003***	0.003***	0.001***	0.001***
	[7.12]	[6.21]	[4.13]	[3.77]	[7.27]	[6.34]	[4.50]	[4.32]
male	−0.342**	−0.640***	0.004	−0.05	−0.334**	−0.619***	−0.047	−0.124**
	[−2.33]	[−4.89]	[0.09]	[−1.17]	[−2.36]	[−4.87]	[−0.90]	[−2.34]
han	0.047	0.559	0.04	0.236	0.013	0.54	0.038	0.293*
	[0.36]	[1.15]	[0.40]	[1.53]	[0.10]	[1.10]	[0.40]	[1.68]
edu	−0.090***	−0.090***	−0.056***	−0.046***	−0.089***	−0.088***	−0.057***	−0.046***
	[−4.95]	[−5.28]	[−6.16]	[−4.37]	[−5.01]	[−5.26]	[−6.01]	[−4.21]
phyhth	−0.423***	−0.391***	−0.134***	−0.095**	−0.417***	−0.387***	−0.133***	−0.097**
	[−5.82]	[−5.00]	[−3.57]	[−2.45]	[−5.95]	[−5.09]	[−3.64]	[−2.46]
party	0.226	0.127	0	−0.014	0.247	0.164	−0.005	−0.018
	[1.00]	[0.62]	[−0.01]	[−0.34]	[1.20]	[0.87]	[−0.11]	[−0.47]
married	−0.425*	−0.391*	−0.198***	−0.158***	−0.410*	−0.383*	−0.181**	−0.150**
	[−1.90]	[−1.88]	[−2.76]	[−3.01]	[−1.92]	[−1.89]	[−2.49]	[−2.56]
height	−7.739***	−3.639***	−1.354***	−0.711*	−7.388***	−3.418***	−1.013**	−0.262
	[−4.82]	[−2.95]	[−2.65]	[−1.74]	[−4.79]	[−2.80]	[−2.14]	[−0.53]
fsize	0.006	−0.033	−0.013	−0.002	0.003	−0.035	−0.014	−0.012
	[0.12]	[−0.68]	[−0.40]	[−0.05]	[0.07]	[−0.77]	[−0.43]	[−0.34]
childnum	0.238***	0.247***	0.388***	0.263*	0.253***	0.256***	0.390***	0.286*
	[3.10]	[2.69]	[2.71]	[1.86]	[3.35]	[2.85]	[2.71]	[1.84]
faedu	−0.016	−0.012	−0.006	−0.006	−0.018	−0.013	−0.009*	−0.009*
	[−1.17]	[−0.93]	[−1.19]	[−1.25]	[−1.34]	[−0.96]	[−1.75]	[−1.73]
maedu	−0.019	−0.028	−0.003	0.002	−0.015	−0.022	−0.002	0.002
	[−1.13]	[−1.54]	[−0.61]	[0.40]	[−0.98]	[−1.29]	[−0.46]	[0.28]
County fixed effects	No	Yes	No	Yes	No	Yes	No	Yes
cons	48.299***	26.078***	10.902***	6.532***	46.537***	24.896***	9.471***	4.598*
	[5.82]	[3.84]	[3.92]	[2.77]	[5.84]	[3.72]	[3.64]	[1.70]
N	2950	2950	1566	1566	3088	3088	1686	1686
R-sq	0.209	0.241	0.268	0.418	0.209	0.241	0.242	0.348

Notes: This table reports estimations of self-selection and assimilation effects under alternative grouping of rural stayers. Here, we classify a respondent with Nongye (agricultural) Hukou (according to answer to A18) and that has never left hometown (according to answer to A23) as a rural stayer. Models (1) and (2) report the results comparing risk aversion of new comers of floating migrants (*newnhm*) vs. rural stayers. Models (3) and (4) report the results comparing risk aversion of new comers of floating migrants (*newnhm*) vs. urban natives. Models (5) and (6) report the results comparing risk aversion of passive Hukou migrants (*hamig*) vs. rural stayers. Models (7) and (8) report the results comparing risk aversion of passive Hukou migrants (*hamig*) vs. urban natives. Other explanatory variables are control variables. *age* and *agesq* are individual's age and age square respectively. *male* is a dummy gender variable. *han* stands for han ethnicity. *phyhth* is self-reported health status. *party* stands for political association. *married* stands for marital status. *height* is the logarithm of individual's height. *edu* is individual's education degree. Household characteristics are controlled by variables *fsize, childnum, faedu* and *moedu*. *fsize* is family size, *childnum* is number of children under 18 years old, and *faedu* and *moedu* are father's and mother's education degree respectively. Robust standard errors are clustered at provincial level and reported in parentheses. *, **, and *** denote significance at the 0.1, 0.05, and 0.01 level, respectively.

significance. In sum, our main results are stable when the long tail of the central variable of risk aversion is truncated. Our main results are not due to outliers located in the long right tail but represent the regularity.

6.3. Robustness to alternative definitions of floating migrant newcomers and passive Hukou migrants

Our main results in Tables 4 and 5 employ a strict definition of passive Hukou migrants and a relaxed definition of floating migrant newcomers. The latter is largely due to sample size consideration. Here we make slight modifications to both definitions to check the robustness of our main results.

Our main text defines passive Hukou as transfers due to exogenous events of land expropriation and marriage to urbanites. Here, we relax the definition to include the type 8 of item A20 in the questionnaire, namely, local Hukou reform that changes identities into urban Hukou. Despite the fact that such a Hukou transfer is due to exogenous institutional reform rather than individual choice, our strict definition of passive Hukou migrants in the main text excludes this type, as it is a process by which residents usually remain in their hometown without actually migrating to urban areas. The number of respondents of this special type in our sample is not trivial, numbering as many as 91. Panel A of Table 12 reports the estimation of the assimilation effect under the expanded group of passive Hukou migrants. The coefficient on the passive Hukou migrants is significant at the 1% level, as in our main results reported in Table 5. However, the size of the coefficient reduces to 0.520 from 0.606 in Table 5. As such, the evidence of the assimilation effect

Table 11
Robustness checks of the self-selection and assimilation effects under truncated risk aversion measurement at 2.5 and 5 in turn.

	Truncated at 2.5 from (1) to (4)				Truncated at 5 from (5) to (8)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
newnhm	−0.830***	−0.747***			−0.927***	−0.783***		
	[−4.92]	[−3.47]			[−5.07]	[−3.35]		
hamig			−0.683***	−0.612***			−0.719***	−0.653***
			[−5.28]	[−4.46]			[−5.31]	[−4.52]
age	−0.192***	−0.175***	−0.195***	−0.177***	−0.207***	−0.189***	−0.210***	−0.192***
	[−5.46]	[−5.18]	[−5.65]	[−5.30]	[−5.58]	[−5.04]	[−5.76]	[−5.15]
agesq	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***
	[6.48]	[5.96]	[6.65]	[6.07]	[6.40]	[5.67]	[6.54]	[5.75]
male	−0.430***	−0.669***	−0.424***	−0.667***	−0.451***	−0.720***	−0.447***	−0.716***
	[−2.86]	[−4.75]	[−2.96]	[−4.87]	[−2.77]	[−4.78]	[−2.86]	[−4.89]
han	0.056	0.517	0.035	0.516	0.136	0.651	0.114	0.648
	[0.42]	[1.30]	[0.27]	[1.32]	[1.02]	[1.50]	[0.88]	[1.51]
edu	−0.058***	−0.064***	−0.056***	−0.060***	−0.065***	−0.070***	−0.062***	−0.066***
	[−3.05]	[−3.46]	[−3.01]	[−3.36]	[−3.28]	[−3.74]	[−3.23]	[−3.60]
phyhth	−0.410***	−0.372***	−0.401***	−0.368***	−0.415***	−0.366***	−0.408***	−0.363***
	[−6.71]	[−5.18]	[−6.83]	[−5.26]	[−6.15]	[−4.85]	[−6.31]	[−4.96]
party	0.143	0.085	0.156	0.113	0.115	0.032	0.129	0.065
	[0.70]	[0.46]	[0.84]	[0.65]	[0.57]	[0.17]	[0.70]	[0.36]
married	−0.487**	−0.413*	−0.474**	−0.405*	−0.723***	−0.666**	−0.701***	−0.648**
	[−2.16]	[−1.94]	[−2.20]	[−1.92]	[−2.75]	[−2.60]	[−2.78]	[−2.58]
height	−8.578***	−4.977***	−8.028***	−4.442***	−8.953***	−4.963***	−8.374***	−4.440***
	[−5.56]	[−3.13]	[−5.44]	[−2.84]	[−5.62]	[−3.33]	[−5.51]	[−3.02]
fsize	0.009	−0.019	0.009	−0.023	−0.011	−0.041	−0.01	−0.044
	[0.24]	[−0.50]	[0.23]	[−0.60]	[−0.27]	[−1.05]	[−0.28]	[−1.13]
childnum	0.177**	0.171**	0.188***	0.178**	0.197**	0.200**	0.209***	0.208**
	[2.58]	[2.23]	[2.78]	[2.45]	[2.43]	[2.04]	[2.62]	[2.20]
faedu	−0.028*	−0.022	−0.028**	−0.022	−0.034**	−0.027*	−0.033**	−0.026*
	[−1.90]	[−1.59]	[−2.00]	[−1.56]	[−2.21]	[−1.88]	[−2.28]	[−1.79]
maedu	−0.019	−0.023	−0.014	−0.017	−0.014	−0.018	−0.009	−0.012
	[−0.96]	[−1.09]	[−0.79]	[−0.87]	[−0.70]	[−0.86]	[−0.48]	[−0.60]
County fixed effects	No	Yes	No	Yes	No	Yes	No	Yes
cons	51.831***	32.600***	49.053***	29.744***	54.314***	32.943***	51.382***	30.262***
	[6.40]	[3.88]	[6.33]	[3.60]	[6.52]	[4.15]	[6.46]	[3.88]
N	2332	2332	2466	2466	2370	2370	2504	2504
R-sq	0.224	0.266	0.226	0.266	0.227	0.264	0.228	0.265

Notes: This table reports estimation results of the self-selection and assimilation effects subject to robustness checks under right-side truncated risk aversion measurement at 2.5 and 5 in turn. This table only reports the estimation results comparing risk aversion of new comers of floating migrants (*newnhm*) and passive Hukou migrants (*hamig*) vs. the rural-stayer group respectively. Other explanatory variables are explained as follows. *age* and *agesq* are individual's age and age square respectively. *male* is a dummy gender variable. *han* stands for han ethnicity. *phyhth* is self-reported health status. *party* stands for political association. *married* stands for marital status. *height* is the logarithm of individual's height. *edu* is individual's education degree. Household characteristics are controlled by variables *fsize, childnum, faedu* and *moedu*. *fsize* is family size, *childnum* is number of children under 18 years old, and *faedu* and *moedu* are father's and mother's education degree respectively. Robust standard errors are clustered at provincial level and reported in parentheses. *, **, and *** denote significance at the 0.1, 0.05, and 0.01 level, respectively.

remains even when the definition of passive Hukou migrants is relaxed to some extent.

Moreover, our main text uses a definition of floating migrant newcomers who migrated after 2012. That is, their period of residence in an urban area is less than 2 years. We strengthen this definition to be less than 1 year to check the robustness of the results. This stricter definition results in sizable reductions of the sample of newcomers, which is the main reason we opt not to use it in our main results. A floating migrant living in an urban area for less than 1 year is a purer carrier of the self-selection effect than those living in urban areas for fewer than 2 years, and we expect that the self-selection effect in this purer case is smaller than that of our main result in Table 4. Panel B of Table 12 presents the estimation results under the alternative definition of newcomers. We find the coefficient on the newcomers is significant at a 5% level and reduces to 0.662 from 0.715 in Table 4. This result reaffirms the robustness of the self-selection effect.

7. Concluding remarks

In this paper, we devise a decomposition of the self-selection and assimilation effects of urbanization on the individual's risk preference reshaping. This notion of the two effects largely improves on the previous literature, which centers on the self-selection effect alone. We create a novel quasi-experiment method to test and elicit the two effects, exploiting the unique Hukou system of China by grouping migrants. We find strong evidence supporting the decomposition hypotheses. Our quantifications of the two effects

Table 12
Robustness to alternative definitions of passive Hukou migrants and new comers of floating migrants.

	Panel A		Panel B	
	(1)	(2)	(3)	(4)
hamig	−0.514***	−0.520***		
	[−3.68]	[−3.51]		
newnhm			−0.835***	−0.662**
			[−3.42]	[−2.39]
age	−0.252***	−0.229***	−0.250***	−0.227***
	[−6.19]	[−5.61]	[−5.82]	[−5.45]
agesq	0.003***	0.003***	0.003***	0.003***
	[6.83]	[5.99]	[6.50]	[5.85]
male	−0.349**	−0.674***	−0.368**	−0.702***
	[−2.16]	[−4.87]	[−2.09]	[−4.84]
han	0.181	0.859*	0.23	0.917*
	[1.34]	[1.68]	[1.63]	[1.72]
edu	−0.077***	−0.080***	−0.080***	−0.085***
	[−3.68]	[−4.35]	[−3.52]	[−4.30]
phyhth	−0.464***	−0.406***	−0.475***	−0.414***
	[−5.81]	[−4.83]	[−5.58]	[−4.65]
party	0.224	0.133	0.259	0.146
	[1.03]	[0.66]	[1.05]	[0.65]
married	−0.525**	−0.488**	−0.588**	−0.543**
	[−2.08]	[−2.02]	[−2.10]	[−2.07]
height	−9.081***	−4.553***	−9.884***	−5.109***
	[−5.03]	[−3.35]	[−5.10]	[−3.55]
fsize	0.016	−0.025	0.012	−0.025
	[0.30]	[−0.50]	[0.22]	[−0.47]
childnum	0.234***	0.240**	0.221**	0.235**
	[2.79]	[2.35]	[2.56]	[2.22]
faedu	−0.033**	−0.021	−0.031*	−0.02
	[−2.18]	[−1.45]	[−1.92]	[−1.29]
maedu	−0.009	−0.015	−0.014	−0.023
	[−0.48]	[−0.74]	[−0.64]	[−0.98]
County fixed effects	No	Yes	No	Yes
cons	55.851***	31.224***	59.983***	33.744***
	[5.96]	[4.18]	[5.97]	[4.30]
N	2569	2569	2350	2350
R-sq	0.208	0.245	0.204	0.241

Notes: This table reports the robustness checks of the assimilation and self-selection effects using slightly modified definitions of passive Hukou migrants (*hamig*) and new comers of floating migrants (*newnhm*). Panel A estimates the assimilation effect using the enlarged passive Hukou migrants group that additionally includes the answer to question A20 (i.e., the way of changing Hukou status) equal to 8 (i.e., local Hukou reform), while Panel B estimates the self-selection effect using new comers in 2013 only. Other explanatory variables are explained as follows. *age* and *agesq* are individual's age and age square respectively. *male* is a dummy gender variable. *han* stands for han ethnicity. *phyhth* is self-reported health status. *party* stands for political association. *married* stands for marital status. *height* is the logarithm of individual's height. *edu* is individual's education degree. Household characteristics are controlled by variables *fsize, childnum, faedu* and *moedu*. *fsize* is family size, *childnum* is number of children under 18 years old, and *faedu* and *moedu* are father's and mother's education degree respectively. Robust standard errors are clustered at provincial level and reported in parentheses. *, **, and *** denote significance at the 0.1, 0.05, and 0.01 level, respectively.

indicate that they are near to each other. On average, the assimilation effect reduces the risk aversion measurement by 0.606, while the self-selection effect reduces it by 0.715. Overall, urbanization significantly improves the risk appetite of migrants. This increase in risk tolerance makes it more likely that migrants will engage in economic activities under conditions of uncertainty, such as risky financial asset investments, relative to their rural peers. It is economically relevant in explaining household asset allocation and stock market participation in the context of urbanization. Urbanization with changing risk landscapes and socioeconomic structures shapes individual risk perception and preference and stimulates the household's diversified demand for financial assets. Financial markets could be more proactive to satisfy such needs. For instance, individuals facing health risks would have more demand for health insurance; longevity risk requires both sufficient retirement funds and long-term care. All the changes led by urbanization call for in-depth innovations in financial, health, and public service sectors.

Moreover, our results supply in-depth evidence of the several prominent theories of assimilation in the context of China, the world's largest emerging economy. We find little evidence of the vertical socialization of risk attitudes within families in China, and support for the notion that risk preference is more of an economic phenomenon than a cultural one. This sheds new light on policy implications in terms of communication, social learning, and entrepreneurship cultivation. Firstly, economic assimilation indicates the importance of communication and social networks that influence urban residents' (including migrants') perceptions and use of information on labor and financial markets. Our evidence suggests that urban areas form an agglomeration of economy benefiting the competence of labor migrants. Cities and areas with better communication facilities and learning environments are conducive to investments in human capital and improve the quality of labor supply. To this end, local governments need to institute vocational

education and training programs.

Secondly, cities are encouraged to provide more inviting environments to provoke the risk-seeking entrepreneurship of migrants, which constitutes the seeds of economic prosperity and long-run growth. Specifically, formal financial institutions that facilitate direct and indirect financing, patent protection systems, and free talent flows would contribute to nurturing entrepreneurship and would benefit both family business and small- and medium-sized enterprises.

Thirdly, our results indicate that passive Hukou migrants respond to urbanization differently than active Hukou and floating migrants. In the process of intra-regional urbanization, passive Hukou migrants are free of self-selection effects in risk appetite formation. Accordingly, policies to nurture the entrepreneurship of passive Hukou migrants need to focus on the channels of assimilation. Training and webbing them into urban entrepreneur networks are promising policy options.

A few avenues to expand our work in the future are conceivable. As mentioned, entrepreneurship is closely related to risk-bearing capacity. Our two-effect theory of urbanization is likely able to explain how urbanization affects the distribution of entrepreneurial talents. Moreover, our quasi-experiment design is ready for use in analyzing the assimilation effect of other traits, such as individualism vs. collectivism, urban lifestyle, children's nurturing, perception of fairness, and trustworthiness.

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