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Working Paper

Formal and Informal Debt in China: Evidence from the 2014 Hukou Reform

IZA Discussion Papers, No. 17990

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Suggested Citation: Xu, Lei; Tani, Massimiliano; Zhu, Yu; Wen, Xin (2025) : Formal and Informal Debt in China: Evidence from the 2014 Hukou Reform, IZA Discussion Papers, No. 17990, Institute of Labor Economics (IZA), Bonn

This Version is available at:
https://hdl.handle.net/10419/325048

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ISSN: 2365-9793

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ABSTRACT

Formal and Informal Debt in China: Evidence from the 2014 Hukou Reform

We investigate the impact of China's 2014 hukou reform - a major change allowing migrants living in small and medium-sized cities of less than 5 million people to apply for urban residence - on formal and informal borrowing at a time of rapid economic transformation. We find that the hukou policy change has predominantly increased natives' access to finance, especially through informal sources, and for investments in housing. We also find that the policy affects households differently according to education level, with more educated households borrowing more to capitalise on rising asset prices driven by the 'additional' urban population created by the policy.

JEL Classification: D14, G51
Keywords: hukou reform, formal and informal debt, migrants

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1. Introduction

China's *hukou* system, a rigid household registration framework introduced in 1958 to exclude the rural population from public goods located in the cities as well as welfare and entitlements (Chan, 2010), has had profound influences on inequality between rural and urban *hukou* holders across several dimensions including employment opportunities (An et al., 2024), access to healthcare (Liu, 2005), free compulsory education for children (Zhou & Cheung, 2017), and access to finance (Li, 2023; Mallick & Zhang, 2019). With reference to finance, residents in rural areas face restricted access to formal credit markets (Li, 2023), a structural limitation that results in lower investment rates compared to their urban counterparts (Li & Qian, 2018). Such different access to credit contributes to higher wealth inequality between urban and rural *hukou* holders.

Since 1978, progressive reforms to the *hukou* system have been introduced as China began transforming from a centralised to a market-oriented economy (Zhang et al., 2019). One of the most influential reforms is the 2014 *hukou* reform, which eased migrants' ability to obtain urban *hukou* in cities with a resident population under 5 million.[1] The reform essentially enabled rural *hukou* holders to apply for, and obtain, the urban *hukou* in the city they lived in, resulting in access to public services, education for their children, medical care, and housing support (Song, 2014).

The 2014 reform is significant in the context of China's economic growth and the rapid development of its domestic capital market. In general, access to credit is difficult in low- and middle-income countries (Cai et al., 2018; Dong et al., 2012; Harrison et al., 2022; Li et al., 2018), as the pool of savings available for credit is small relative to demand. As a result, individuals commonly borrow informally from family and friends rather than through the formal banking system to overcome their credit constraints and fulfil their investment choices.

Though China's economic growth has produced substantial savings, which are collected and redistributed through the banking system, it remains unclear whether the 2014 *hukou* reform has actually influenced migrants' and urban natives' financing sources. In principle, the reform improved access to financing for migrants able to become urban residents. In turn, the newly gained access to local public goods and income support has likely improved migrants'

[1] Since 1978, the administration of the *hukou* system has been decentralised.

credentials and creditworthiness in the eyes of prospective lenders, perhaps enabling them to tap into formal sources of finance to carry on their investment plans: was this the case?

We address this question by offering insights into how relaxing the barriers to internal migration has influenced the sources of borrowing and the borrowing outcomes of migrants and urban natives using two waves of the China Household Finance Survey (CHFS; 2013 and 2017, respectively) – arguably one of the most detailed surveys on the financial circumstances and choices of Chinese individuals and households. The empirical analysis is based on a triple-difference (difference-in-difference-in-differences or DDD) method, whereby migrants and natives residing in cities with resident populations under five million serve as the treatment and control groups respectively, while those in larger cities constitute the second reference group. To account for heterogeneity, we explore how the effects differ by education level – an established criterion influencing savings and investment choices.

Although the lifting of the *hukou* restriction targeted migrants, the results show that the 2014 reform predominantly benefited native households (who historically enjoyed, and possibly could readily demonstrate, better credit scores and collateral to lenders), enabling them to take advantage of favourable economic conditions for investments especially in real estate in response to surging housing demand driven by population growth. This growth was triggered by both the 'conversion' of rural *hukou* holders into urban citizens and the arrival of new post-reform migrants. The reform led to increased borrowing also in informal debt by existing native homeowners seeking to invest more in housing.

We also find that natives with higher levels of education benefited the most from the reform. Entrepreneurs with more education, especially those located in small cities, were also more likely to increase business borrowing from banks, particularly if they had started businesses during the period examined.

By benefiting those who were already likely to be in a better position (e.g. higher credit scores) to take advantage of the accelerated urbanisation that followed the 2014 *hukou* reform, the policy change produced some unintended consequences in relation to its original objective - namely increasing, instead of reducing, income inequality between rural and urban *hukou* holders.

With reference to the existing literature, this paper aims to make two contributions. First, it extends the growing body of *hukou* policy-related research that has so far focused on the labour market effects of this reform (An et al., 2024; Liu et al., 2024), household consumption (Deng & Yu, 2021; Huang & Chen, 2022; Tseng & Hsiao, 2022) and entrepreneurial activity in

agriculture (Turvey et al., 2010; Wu et al., 2016) by examining its impact on household finances. Second, by leveraging the change to the *hukou* system, it contributes to the finance literature by analysing the causal impact of an institutional change that affected asymmetrically credit market participants.

The rest of the paper is organised as follows. Section 2 introduces the *hukou* reform and formulates a set of hypotheses. Section 3 presents the data, the analytical samples, and the outline of the empirical model based on the DDD framework. Sections 4, 5 and 6 present the baseline results, heterogeneity analysis, and robustness checks, respectively. Finally, Section 7 concludes.

2. Background and Hypotheses

2.1. Institutional background and the 2014 *hukou* reform

The *hukou* system is one of the defining features of Chinese society. Originating in the 1950s, when China's economy was organised under a centrally planned system, it was designed to control population flows and maintain social stability (Song, 2014). In response to the increased rural-to-urban migration following the economic reforms since 1978, the Chinese government has gradually relaxed *hukou* restrictions to enhance labour market flexibility and increase the rate of non-agricultural employment (Wang et al., 2021). By 2014, an estimated 274 million rural migrants were working in Chinese cities, accounting for 36% of the total urban workforce. These migrants were generally denied full access to local social benefits, healthcare, and free compulsory education for their children. Those services were instead enjoyed by the natives with local urban *hukou* by virtue of their birth location.

In large cities, the new point-based system for *hukou* registration remains primarily determined by age, education, skills, employment, investment, local home purchase, and social security payment of workers (Zhang et al., 2019). However, this system differs from that of small or medium-sized cities with fewer than five million local urban residents (An et al., 2024), where the Chinese central government mandated, with the National New-type Urbanisation Plan (2014-2020), to facilitate the conversion of rural *hukou* to urban *hukou* (*Nong-Zhuan-Fei*).[2]

[2] Following Gu and Jie (2024) and China's new-type urbanisation plan, we define a large city as one with over 5 million urban residents, while a city with less than 5 million urban residents is defined as a small city. The CHFS provided the 2013 large city sample size upon request, enabling us to identify it using provincial information and the city's sample within the province.

The 2014 *hukou* reform, targeting small cities, hence aimed to reduce disparities between migrants and urban citizens by expanding access to public and social services from local urban *hukou* holders to all residents, subject to conditions such as stable employment, and contributions to social insurance schemes (Vortherms & Liu, 2022).

2.2. Theoretical Framework and Hypotheses

Research consistently shows that racial minorities are less likely to receive mortgage approvals and face higher borrowing costs and reduced access to credit (Clarke & Rothenberg, 2018; Hanson et al., 2016). Similarly, gender discrimination in the credit market has been documented, with female entrepreneurs experiencing lower loan approval rates and higher interest rates (Hansen & Rand, 2014; Muravyev et al., 2009). The case of China is no different as migrants typically encounter additional obstacles in the credit market, as the *hukou* system constitutes a form of institutional discrimination (e.g., Small & Pager, 2020).

In China's case, there are also marked disparities in financial inclusion between rural and urban areas, as well as between large and small cities (Li, 2023; Mallick & Zhang, 2019). Chen & Jin (2017) document that while half of the population has access to credit, fewer than 20% of them can access formal credit. Li & Qian (2018) show that urban residents are more likely to invest than non-urban residents, with investment levels increasing with the educational attainment of couples. This suggests that household investment decisions are influenced by the institutional features of urban residency and family structure. Wu (2004) argues that the institutional constraints imposed by the *hukou* system place migrants at a housing disadvantage in urban areas—a factor that supersedes other socioeconomic influences.

Empirical research shows that low-wealth individuals are often unable to start businesses because they cannot access credit, and these constraints also limit business development, expansion, and operations (Evans & Jovanovic, 1989; Hvide & Møen, 2007). Typical factors contributing to liquidity constraints include the lack of collateral, poor credit history, and imperfect information (Bakhtiari et al., 2020). Migrants facing labour market discrimination often earn lower incomes and lack full social welfare benefits, which leads them to rely on informal borrowing from friends and relatives — often the only option for them. Holding a rural *hukou* likely limits migrants' access to formal credit in urban areas (Ye et al., 2024). Jin et al. (2024) show that only rural *hukou* applicants with the best credit ratings or with connections to credit providers, such as state-owned companies or individuals with substantial

assets, can secure bank financing. For other borrowers, such as those with limited income and resources, accessing formal credit is challenging (Harrison et al., 2022) due to complex application procedures, high interest rates, low loan size (if granted) and short duration (Basha et al., 2023). In the case of businesses, small and medium-sized enterprises struggle to obtain bank loans unless they can provide significant collateral, and they generally lack access to the capital market (Basha et al., 2023). These difficulties typically lead entrepreneurs and households alike to rely on informal sources of debt (Ayyagari et al., 2010).

The 2014 *hukou* reform was expected to have positive effects on employment, income, and economic growth when analysed using the "dual labour market" model that prevails in China (see Boeri, 2011, for a survey). As a result, one might expect to observe increased demand for consumer credit, particularly from formal channels, to finance purchases of housing properties and durables, holding the supply side of consumer credit constant.

The limited empirical evidence based on the 2014 *hukou* reform is generally consistent with the theoretical predictions. For instance, propensity score matching estimates show that *Nong-Zhuan-Fei* (rural-to-urban *hukou* conversion) status is associated with a 2.4% higher per capita household consumption relative to comparable rural households in the CHFS 2013 and 2015 waves (Wang et al., 2021). Using the China Family Panel Studies from 2012 to 2018 and a triple-difference approach, Ye et al. (2024) show that migrant households significantly increased their investments in their children's education, mainly through higher in-school expenditures. An et al. (2024), however, find the 2014 *hukou* reform resulted in significant declines in incumbent migrants' wages in small cities relative to that in large cities, whereas the impact on natives' wages was positive. Lin et al. (2024) find that locals in smaller cities are less tolerant of wealth gaps and express higher perceptions of unfairness after the exposure to the 2014 *hukou* reform.

The literature highlights two main pathways through which migrants can establish roots in urban host areas. The first is homeownership, reflecting a strong cultural preference for housing investments (Wu & Zhang, 2018). As migrant households frequently face affordability constraints, especially in urban areas where housing prices exceed their financial capacity and borrowing limits, they are more likely to incur debt to finance home purchases. Here, in addition to *hukou* status, education can play a significant role, as higher educational attainment normally opens the door to better quality and paid jobs.

The second is entrepreneurship, which overcomes some of the labour market discrimination experienced by migrants. However, migrant entrepreneurs often have limited social capital and

start-up funding compared to local residents (Liu et al., 2019), making access to finance critical for their business endeavours.

Given the above, we advance the following hypotheses:

Hypothesis 1*:* The 2014 *hukou* reform increases the likelihood of holding debt, particularly among individuals with higher educational attainment.

Hypothesis 2*:* The 2014 *hukou* reform increases the probability of migrants borrowing from formal financial institutions.

Hypothesis 3*:* The 2014 *hukou* reform reduces the likelihood of migrants relying on informal borrowing sources.

3. Data and Identification

We use data from the China Household Finance Survey (CHFS). This is a comprehensive and nationally representative dataset that collects socio-economic and financial data that covers demographics, debt, income, consumption, assets, insurance, and other variables at individual, household, and community levels.[3] CHFS is administered by the Southwestern University of Finance and Economics and is conducted biennially. Since 2011, it has been implemented in 7 rounds, with 2011, 2103, 2015, 2017, and 2019 available for public use. The sampling range of the CHFS is continuously expanding, with the 2019 wave covering 34,643 households, 1,360 village/neighbourhood-level communities, 343 counties, and 29 provinces. CHFS adopts a stratified three-stage probability proportion to size random sample design. [4]

We primarily utilise 2013 and 2017 CHFS to generate a two-wave panel dataset for the empirical analysis.[5] We restrict the sample to families with an identical respondent aged from 25 to 60 in both 2013 and 2017 waves. After excluding missing values, we have an analytical sample with 9654 individuals from 4827 families. Among these families, 4040 households are native residents whose *hukou* registration has always matched their residential location, while 787 households are migrants whose *hukou* registration differs from their current residence or originates from another location.

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[3] https://chfs.swufe.edu.cn/dczx/dczx.htm.

[4] In the first stage, the counties ranked by local GDP per capita are selected as primary sampling units (PSU); in the second stage, communities are chosen from the selected counties as the PSU; in the last stage, households are systematically selected from the selected communities with equal probability (Gan et al., 2014).

[5] The 2011 wave is not used because its measurement of business debts is different from later waves. The 2014 *hukou* policy implementation overlapped with the 2015 CHFS wave in some specific provinces. Thus, it is hard to tell whether the survey was conducted before or after the policy implementation.

We start the empirical analysis by documenting changes in debt patterns between 2013 and 2017 by type of debt (for investment in housing or business) and type of source (formal and informal), reflecting the impact of the *hukou* reform. By 'informal', we identify all channels of finance other than banks.

Figure 1 illustrates changes in debt structure in large and small cities before and after the 2014 *hukou* reform. Both city types experienced significant reductions in informal business and housing debt. Possible explanations include significant improvements in household income and financial capacity, as well as the introduction of policy regulations during this period. According to data from the National Bureau of Statistics of China, GDP per capita rose from 40,431 RMB in 2012 to 66,726 RMB in 2018, while annual disposable income increased from 16,510 RMB to 28,228 RMB. These income gains likely reduced households' reliance on borrowing. [6] Additionally, in July 2015, the Chinese government issued its first guidance policy on Internet finance, which introduced comprehensive regulations on online borrowing and lending activities. This policy may have curtailed the growth of online loans and contributed to the overall decline in household total debt and informal debt, as reflected in the positive changes in business and housing debt from formal sources shown in the figure.

However, the increase in formal business and housing debt was more pronounced in large cities. These trends suggest that the *hukou* reform facilitated a shift from informal to formal debt across both city types, but the transition was more substantial in large cities, underscoring disparities in access to formal financial markets, in line with the findings from Li (2023).

[6] https://data.stats.gov.cn/easyquery.htm?cn=C01

Figure 1. The percentage of having debts.

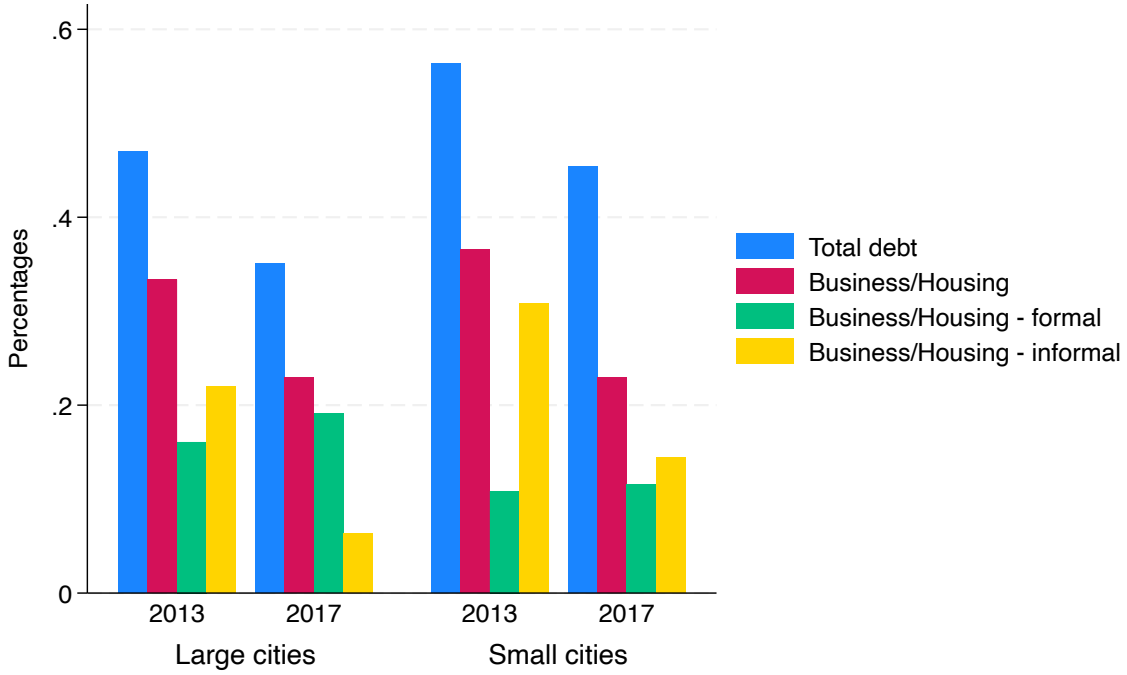


Table 1 explores various types of debt by borrowing purpose and source, focusing on the level of education as a key differentiator—since individuals with higher education are more likely to access better-paying jobs and hold stronger credit profiles than those with limited opportunities. Table 1 shows a decline from 2013 to 2017 in the proportion of households holding debt across all education levels in both small and large cities. Specifically, the share of households with total debt, business or housing debt, and informal debt sources significantly decreased following the 2014 reform. On the other hand, despite the lack of statistical significance, the percentage of households with business and housing debt from formal sources increased, especially among respondents with a diploma or higher qualification in both city categories. In large cities, individuals with compulsory education experienced the largest decline in the propensity to hold total debt, business or housing debt, and especially business or housing debt from informal sources.

It is worth noting that households with differential educational backgrounds present distinctive patterns. In small cities affected by the *hukou* reform, better-educated households significantly reduced their reliance on informal debt compared to less-educated households. This trend is less pronounced in large cities. Increased access to the banking system appears to benefit individuals with more widely accepted credentials—such as type of employment, income level, repayment capacity, and existing assets.

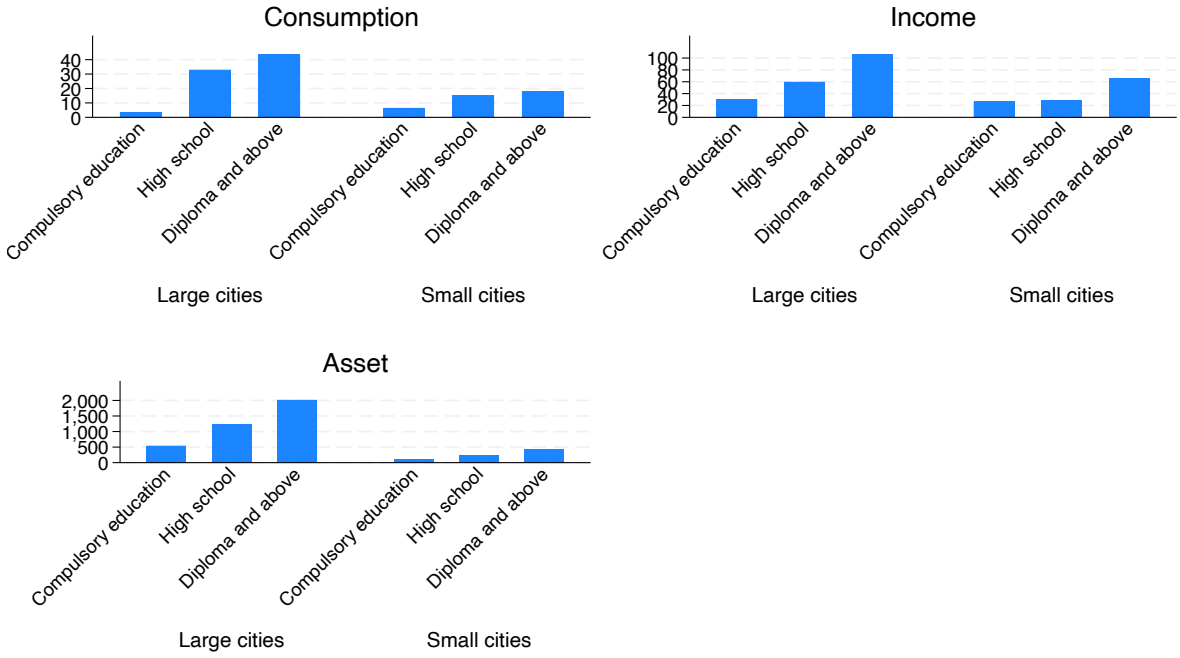
Table 1. The mean of having debts varied by qualifications.

	Year 2013			Year 2017			Difference between year 2013 and 2017		
	Compulsory education	High school	Diploma and above	Compulsory education	High school	Diploma and above	Compulsory education	High school	Diploma and above
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: large city									
Total debt	0.475	0.363	0.551	0.289	0.255	0.509	-0.185***	-0.109***	-0.041
	(0.500)	(0.482)	(0.498)	(0.454)	(0.437)	(0.501)	[0.032]	[0.040]	[0.043]
Business or housing debt	0.336	0.240	0.408	0.152	0.150	0.382	-0.183***	-0.090***	-0.026
	(0.473)	(0.428)	(0.492)	(0.360)	(0.358)	(0.487)	[0.028]	[0.034]	[0.042]
Business or housing debt	0.077	0.105	0.330	0.086	0.127	0.367	0.009	0.022	0.037
from formal sources	(0.267)	(0.307)	(0.471)	(0.281)	(0.334)	(0.483)	[0.018]	[0.028]	[0.041]
Business or housing debt	0.289	0.176	0.146	0.079	0.049	0.060	-0.210***	-0.127***	-0.086***
from informal sources	(0.454)	(0.382)	(0.354)	(0.271)	(0.216)	(0.238)	[0.025]	[0.027]	[0.026]
Observations	453	267	267	453	267	267	906	534	534
Panel B: small city									
Total debt	0.574	0.491	0.584	0.472	0.364	0.469	-0.103***	-0.128***	-0.114***
	(0.495)	(0.500)	(0.493)	(0.499)	(0.481)	(0.500)	[0.014]	[0.027]	[0.032]
Business or housing debt	0.360	0.313	0.445	0.214	0.182	0.343	-0.145***	-0.131***	-0.102***
	(0.480)	(0.464)	(0.497)	(0.411)	(0.387)	(0.475)	[0.012]	[0.023]	[0.031]
Business or housing debt	0.074	0.116	0.263	0.078	0.116	0.298	0.004	0.000	0.035
from formal sources	(0.261)	(0.320)	(0.441)	(0.268)	(0.320)	(0.458)	[0.007]	[0.017]	[0.029]
Business or housing debt	0.328	0.234	0.296	0.164	0.091	0.100	-0.164***	-0.144***	-0.196***
from informal sources	(0.469)	(0.424)	(0.457)	(0.370)	(0.287)	(0.300)	[0.012]	[0.020]	[0.025]
Observations	2,676	674	490	2,676	674	490	5,352	1,348	980

Notes: The data is from 2013 and 2017 CHFS. Standard deviations are given in parentheses. Standard errors are given in squared parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Difference = the mean in year 2017 – the mean in year 2013. A *t*-test is applied.

To further explore the effect of policy change on household finance, we visualise the changes in income, consumption and assets in Figure 2: these are larger in families with highly educated respondents (diplomas or above) located in large cities. Better-educated households have much larger increases in income, consumption, and assets in large cities compared to their counterparts in small cities.

Figure 2. The changes in consumption, income, and assets between 2013 and 2017.



Note: Values for assets, income, and consumption are reported in thousands of RMB.

To estimate the impact of the *hukou* reform on debt holding, we employ a DDD strategy to allow the treatment effect to vary with the level of education of households. [7]

The policy allows migrants to transfer their rural *hukou* to cities with urban residents under 5 million. Accordingly, the treatment group includes cities with fewer than 5 million urban residents, while the control group consists of large cities with populations exceeding 5 million as of 2014 when the reform.

We utilise the following functional form for the empirical framework:

[7] We first perform Triple-Difference to study the policy effects of *hukou* reform in household debts, with results shown in Appendix Table A. 1. The *hukou* policy does not have an effect on the household debt holding decisions, as indicated by the insignificant coefficients of the interaction term – Small city × Post 2015.

$$y_{it} = \alpha_0 + \alpha_1 post_{it} + \alpha_2 treat_{it} + \alpha_3 educ_i + \alpha_4 treat_{it} \times post_{it} + \alpha_5 educ_i \times post_{it} + \alpha_6 treat_{it} \times educ_i + \alpha_7 educ_i \times treat_{it} \times post_{it} + Ind_i + Year_t + \mu_{it}$$

where y_{it} is the dependent variable representing household debt choices.

The variable $treat$ is set to 1 for small cities with urban populations under 5 million, with large cities serving as the reference group. The variable $post$ is 1 after the policy is implemented, and 0 otherwise. $educ_{it}$ represents the respondent's education level, coded as 1 for compulsory education, 2 for high school, and 3 for a diploma or higher. We allow for individual and year fixed effects.

Using residents in large cities as the comparison group to capture the common trend, changes in debt levels among residents in small cities are captured by α_4. Specifically, α_4 captures the average treatment effect on household debt decisions for the treated group after the *hukou* reform. To allow the average treatment effect to vary by the level of education, we relax the assumption of homogeneity in borrowing behaviour and introduce a triple interaction term. Thus, α_7 captures the heterogenous effect of the reform across different educational levels in small cities. We identify the impact of the *hukou* policy change on debt holdings by comparing households in large cities with those in small cities where the policy was implemented. To further investigate the effect of *hukou* reform, we also conduct an analysis by migration status.

However, we cannot fully rule out the potential influence of migrant outflows from large cities following the policy change, which may have altered the demographic composition and thereby affected debt patterns. In addition, data limitations prevent us from examining pre-reform trends, as only one wave of data is available before 2014. This limitation is mitigated in part by implementing a test for omitted variable bias (see Oster, 2019; Diegert et al., 2022) to assess the extent to which unobserved factors may influence the estimates obtained.

4. Baseline results

We begin by examining the impacts of the *hukou* reform across four different groups of people defined by occupation and migration status. The estimates in Table 2 illustrate the heterogeneous effects of the *hukou* reform on debt holdings across educational levels. For native non-entrepreneurs, the reform significantly increased the likelihood of holding debt by 10.3 percentage points, as indicated by the positive and significant coefficient on the interaction term - Small × Post 2015 in column 1. However, families with a high school diploma in small cities were 17.5 percentage points less likely to have debt following the reform, as indicated in

the significant and negative coefficient of the three-way interaction term - High school × Small × Post 2015. Families with higher education (diploma or above) in small cities experienced 22.3 percentage points reduction in the likelihood of holding debt, reflected in the significant and negative coefficient of the three-way interaction term - Diploma and above × Small × Post 2015. Conversely, columns 2, 3, and 4 show no significant policy effect for entrepreneurs or migrant non-entrepreneurs, regardless of educational level. The unexpected outcomes of the *hukou* policy raise questions about the broader public benefits of the *hukou* reform. Contrary to expectations, obtaining local *hukou* status does not improve migrants' access to the credit market. Instead, the policy change has significantly increased the debt levels among native residents.

Table 2. The impact of the *hukou* policy on debt holding

Dependent variable: Holding a debt (Yes = 1)	Non-entrepreneurs		Entrepreneurs	
	Natives	Migrants	Natives	Migrants
	(1)	(2)	(3)	(4)
Small city × Post 2015	0.103***	0.083	0.165	0.012
	(0.04)	(0.08)	(0.16)	(0.20)
High school × Post 2015	0.143**	0.046	0.098	-0.142
	(0.06)	(0.11)	(0.28)	(0.26)
Diploma and above × Post 2015	0.145**	0.118	-0.147	0.180
	(0.06)	(0.10)	(0.30)	(0.41)
High school × Small city × Post 2015	-0.175***	-0.050	0.003	0.476
	(0.06)	(0.14)	(0.30)	(0.34)
Diploma and above × Small city × Post 2015	-0.223***	-0.179	0.244	-0.009
	(0.07)	(0.12)	(0.32)	(0.48)
Age	0.080***	0.056	-0.044	0.186*
	(0.02)	(0.05)	(0.11)	(0.11)
Age-squared	-0.001***	-0.000	-0.001	-0.000
	(0.00)	(0.00)	(0.00)	(0.00)
Constant	-1.418**	-1.680	3.627	-6.850
	(0.56)	(1.57)	(3.74)	(5.00)
N	6694	1208	440	148

Notes: Standard errors in parentheses and clustered at the household level; *** *p<0.01,* ** *p<0.05,* * *p<0.1*. All specifications include individual and time fixed effects. The following regressions follow the same specification.

5. Heterogeneity

Although migrants can primarily assimilate and establish roots in host cities through entrepreneurship (Wen et al., 2024; Manuel, 2024) and homeownership (Liu et al., 2017; Zhang & Yan, 2022), they still face institutional discrimination—such as restricted access to credit markets. This can hinder both business formation and housing investments, as migrant households tend to face higher borrowing costs and lower mortgage approval rates (Clarke & Rothenberg, 2018; Hanson et al., 2016). Migrant entrepreneurs often lack social capital and

acceptable collateral, resulting in lower loan approval rates and higher interest rates compared to local residents (Brown et al., 2021; Muravyev et al., 2009).

Given these barriers, we assess whether the *hukou* policy reform had varying effects on entrepreneurs versus non-entrepreneurs, and conduct a heterogeneity analysis to examine how the policy impacted debt holdings across these groups. To better understand the nature of borrowing behaviour, we also analyse the types of debt held across different demographic segments in the following tables. We begin the analysis by focusing on types of debt and examine the possible influence of the 2014 *hukou* policy shift by comparing different groups based on their entrepreneurial status and homeownership.

Entrepreneurs

Entrepreneurs usually use their business assets and credits as collateral to obtain financing. Therefore, we first test the impact of *hukou* reform on business debt among entrepreneurs, with results shown Table 3. We distinguish between entrepreneurs who were already established before the *hukou* reform and those who started businesses during the policy change.

While the reform didn't have a significant impact on existing entrepreneurs, both native residents and migrants became more likely to incur business debt through formal channels after the reform. The reform significantly increased the likelihood of business debt among new native entrepreneurs (Panel B), particularly bank debt, by 14.8 percentage points (column 1) and 7.9 percentage points (column 2). In addition, we find that the heterogeneous effects of the reform varied by education level. In Panel A, highly educated native entrepreneurs in small cities were less likely to hold bank business debt, as indicated by the statistically significant negative coefficient for the interaction term - Diploma and above × Small × Post 2015 in column 2. Among migrant entrepreneurs (columns 4 - 6), the reform significantly increased the likelihood of holding the business debt of educated migrants, with the interaction term Diploma and above × Small × Post 2015 showing positive and significant effects. Specifically, the reform increased the probability of business debt by 51.8 percentage points (column 4), bank business debt by 42.5 percentage points (column 5), and informal business debt by 35 percentage points (column 6). Table 3 illustrates the positive effects of the *hukou* reform for both natives and migrants. The changes introduced by the *hukou* policy have enabled more migrants to secure business debt through formal financial channels, facilitating the establishment of new businesses.

Table 3. The impact of the *hukou* policy on business debt holding among entrepreneurs

	Natives			Migrants		
	Holding business debt	Holding formal business debt	Holding informal business debt	Holding business debt	Holding formal business debt	Holding informal business debt
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Entrepreneurs in 2013 and 2017						
Small city × Post 2015	0.033	0.040	0.020	-0.161	-0.055	-0.190
	(0.10)	(0.10)	(0.05)	(0.14)	(0.11)	(0.13)
High school × Post 2015	-0.263	0.048	-0.161	-0.044	0.340*	-0.215
	(0.17)	(0.17)	(0.13)	(0.32)	(0.18)	(0.31)
Diploma and above × Post 2015	0.368*	0.396*	0.191	-0.124	-0.122*	-0.029
	(0.22)	(0.23)	(0.16)	(0.12)	(0.06)	(0.11)
High school × Small city × Post 2015	0.138	-0.087	0.095	0.317	-0.276	0.510
	(0.19)	(0.18)	(0.15)	(0.37)	(0.23)	(0.34)
Diploma and above × Small city × Post 2015	-0.312	-0.411*	-0.110	0.518**	0.425**	0.350*
	(0.23)	(0.23)	(0.18)	(0.23)	(0.21)	(0.20)
Age	0.164**	0.092	0.133*	0.166	0.137	0.129
	(0.08)	(0.09)	(0.07)	(0.12)	(0.16)	(0.10)
Age-squared	-0.000	-0.000	-0.000	-0.002	-0.002***	0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	-6.509**	-3.367	-5.519*	-3.924	-1.259	-5.913
	(3.11)	(3.87)	(2.96)	(5.73)	(6.53)	(4.44)
N	440	440	440	148	148	148
Panel B: New entrepreneurs in 2017						
Small city × Post 2015	0.148**	0.079***	0.091	0.218**	0.170*	0.047
	(0.06)	(0.02)	(0.06)	(0.10)	(0.09)	(0.06)
High school × Post 2015	-0.050	0.002	-0.053	-0.004	-0.001	-0.002
	(0.05)	(0.01)	(0.05)	(0.02)	(0.01)	(0.01)
Diploma and above × Post 2015	-0.050	-0.002	-0.047	0.136	0.117	0.013
	(0.05)	(0.01)	(0.05)	(0.11)	(0.11)	(0.03)
High school × Small city × Post 2015	-0.028	-0.002	-0.027	0.047	-0.164*	0.212
	(0.07)	(0.04)	(0.06)	(0.19)	(0.09)	(0.17)
Diploma and above × Small city × Post 2015	0.000	0.068	-0.089	0.030	0.005	0.096
	(0.09)	(0.07)	(0.06)	(0.20)	(0.19)	(0.12)
Age	0.001	0.011	-0.012	0.075	-0.057	0.145
	(0.04)	(0.03)	(0.03)	(0.19)	(0.10)	(0.16)
Age-squared	0.000	-0.000	0.000	0.000	0.000	0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	-0.029	-0.378	0.409	-3.860	2.138	-6.349
	(1.30)	(1.00)	(0.84)	(7.43)	(3.33)	(6.44)
N	596	596	596	132	132	132

Notes: Standard errors in parentheses and clustered at the household level; *** *p<0.01,* ** *p<0.05,* * *p<0.1*. All specifications include individual and time fixed effects. The following regressions follow the same specification.

Though housing is a key family asset, often comprising a large share of total household wealth (Chen et al., 2020), in the absence of sufficient capital, it can serve as valuable collateral for both formal financial institutions and private lenders (Fan et al., 2022). As entrepreneurs may be more likely to leverage housing assets to obtain funding for business startups and operations, we also test whether the reform influenced entrepreneurs' debt for housing investments and present the results in Table 4. The reform doesn't appear to have had a significant effect on entrepreneurs' debts for real estate investments. While entrepreneurs may have the financial capability to purchase property, the *hukou* status doesn't seem to have led to substantial investment in real estate. Instead, as indicated in Table 3, well-educated migrant entrepreneurs may prefer to allocate their credit towards enhancing their business operations by increasing their business-related debt holdings.

Table 4. The impact of *hukou* policy on housing debt holding among entrepreneurs

	Natives			Migrants		
	Having a housing debt	Having a formal housing debt	Having an informal housing debt	Having a housing debt	Having a formal housing debt	Having an informal housing debt
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Entrepreneurs in 2013 and 2017						
Small city × Post 2015	-0.085	0.022	-0.062	-0.126	-0.076	0.056
	(0.13)	(0.11)	(0.10)	(0.19)	(0.13)	(0.16)
High school × Post 2015	0.053	0.069	0.034	-0.070	-0.258	-0.095
	(0.19)	(0.10)	(0.17)	(0.23)	(0.22)	(0.22)
Diploma and above × Post 2015	-0.303	-0.132	-0.129	0.324	0.339	0.240**
	(0.26)	(0.20)	(0.20)	(0.27)	(0.27)	(0.10)
High school × Small city × Post 2015	0.050	-0.026	0.032	0.447	0.398	0.278
	(0.21)	(0.11)	(0.18)	(0.32)	(0.30)	(0.30)
Diploma and above × Small city × Post 2015	0.466	0.247	0.182	0.049	-0.238	-0.056
	(0.31)	(0.22)	(0.24)	(0.41)	(0.40)	(0.16)
Age	-0.038	-0.062	0.057	0.235**	0.025	0.181
	(0.13)	(0.08)	(0.09)	(0.12)	(0.10)	(0.12)
Age-squared	0.000	-0.000	0.001	-0.000	-0.001	0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	1.165	3.264	-3.586	-8.743*	1.585	-7.535
	(5.59)	(3.52)	(3.41)	(5.12)	(3.76)	(5.59)
N	440	440	440	148	148	148
Panel B: New entrepreneurs in 2017						
Small city × Post 2015	0.042	0.053	0.002	-0.208	-0.368*	0.045
	(0.14)	(0.10)	(0.12)	(0.22)	(0.19)	(0.17)
High school × Post 2015	-0.014	0.005	-0.026	0.071	-0.137	0.212*
	(0.22)	(0.10)	(0.21)	(0.16)	(0.14)	(0.11)
Diploma and above × Post 2015	0.348	0.227	0.133	0.074	-0.070	0.229
	(0.23)	(0.23)	(0.16)	(0.29)	(0.24)	(0.20)

High school × Small city × Post 2015	0.085	0.004	0.080	0.345	0.661**	-0.201
	(0.23)	(0.11)	(0.22)	(0.26)	(0.27)	(0.22)
Diploma and above × Small city × Post 2015	-0.038	-0.208	-0.023	0.280	0.326	-0.115
	(0.26)	(0.26)	(0.19)	(0.34)	(0.30)	(0.27)
Age	0.022	0.056	-0.046	0.029	0.067	0.050
	(0.08)	(0.05)	(0.07)	(0.15)	(0.15)	(0.11)
Age-squared	0.001	-0.000	0.001	0.000	-0.001	0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	-1.954	-2.401	0.527	-0.789	-1.072	-2.369
	(2.81)	(1.69)	(2.34)	(4.78)	(5.32)	(3.27)
N	596	596	596	132	132	132

Notes: Standard errors in parentheses and clustered at the household level; *** *p<0.01,* ** *p<0.05,* * *p<0.1*. All specifications include individual and time fixed effects.

Further analysis focusing on the timing of entrepreneurship is reported in Appendix Table A.2. Panel A shows the results for families with entrepreneurs active in both 2013 and 2017, while Panel B focuses on families with new startups during the *hukou* reform. The results indicate that *hukou* reform had no significant effect on entrepreneurs' likelihood of holding business or housing debt, as evidenced by the insignificant coefficients for the three-way interaction term - Diploma and above × Small × Post 2015 across Columns 1–6 in both Panel A and Panel B.

Non-entrepreneurs

For non-entrepreneurs, we primarily focus on housing debts. Table 5 presents the results for non-entrepreneurs who owned homes in both 2013 and 2017 (Panel A), and those who became new homeowners in 2017 (Panel B). No significant policy effects are observed among migrant non-entrepreneurs who were already homeowners, as reported in Panel A of Columns 4 – 6. For native non-entrepreneurs, the *hukou* reform increased debt among those living in small cities, with heterogeneous effects by education level. On average, the reform increased the housing debt holding by 6-8%, primarily due to increased recourse to informal debt.

Higher-educated homeowners in small cities were 11.8 percentage points less likely to hold housing debt, as shown by the negative coefficient for the interaction term - Diploma and above × Small × Post 2015 in Panel A, Column 1, due to reduced holdings of informal debt. Among native non-entrepreneurs who owned homes in both 2013 and 2017, the *hukou* reform reduced the likelihood of informal housing debt, predominantly for higher-educated families in small cities by 18.5 percentage points, as shown in Panel A of Column 3.

The results in panel B indicate that homeownership among migrants increased following the *hukou* reform. However, this increase in debt holding was predominantly facilitated through

informal channels, highlighting the challenges migrants face in accessing formal credit markets. This is reflected in the significant and positive coefficients in Columns 4 and 6 in panel B. Additionally, native homeowners have also increased their debt holdings, capitalising on the rise in migration and the subsequent surge in housing prices. It is important to note that this increase in debt holding among natives was similarly driven by informal channels. In addition, highly educated families were the main beneficiaries of the 2014 reform. This likely reflects the fact that they were more likely to be employed, may have accumulated sufficient capital for down payments and relied less on informal funding from their relatives or friends. In addition, analyses of the Chinese Housing Provident Fund (CHPF), a salary-based contribution system for home purchases and rentals for employees (Tang & Coulson, 2017), help explain the lower reliance on informal sources of housing debts. This fund provides long-term savings for home purchases, providing necessary capital for housing and low-interest housing loans, relieving the financial burden in home purchasing, and enhancing homeownership (Tang & Coulson, 2017; Zhou, 2020). The amount of CHPF contributions largely depends on salary, meaning high-income workers make higher monthly contributions.

Table 5. The impact of the *hukou* policy on housing debt holding among non-entrepreneurs

	Natives			Migrants		
	Having a housing debt	Having a formal housing debt	Having an informal housing debt	Having a housing debt	Having a formal housing debt	Having an informal housing debt
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Non-entrepreneurs who are homeowners in both 2013 and 2017						
Small city × Post 2015	0.069*	-0.007	0.082**	-0.006	0.071	-0.024
	(0.04)	(0.02)	(0.03)	(0.09)	(0.05)	(0.09)
High school × Post 2015	0.174***	0.033	0.130***	-0.106	-0.041	-0.059
	(0.06)	(0.04)	(0.05)	(0.11)	(0.08)	(0.09)
Diploma and above × Post 2015	0.111*	-0.015	0.128**	0.103	0.001	0.086
	(0.06)	(0.05)	(0.05)	(0.10)	(0.08)	(0.09)
High school × Small city × Post 2015	-0.179***	-0.035	-0.149***	0.154	-0.006	0.175
	(0.06)	(0.04)	(0.06)	(0.14)	(0.09)	(0.12)
Diploma and above × Small city × Post 2015	-0.118	0.031	-0.185***	-0.067	0.005	-0.132
	(0.07)	(0.06)	(0.06)	(0.13)	(0.10)	(0.11)
Age	0.069***	0.015	0.054***	0.001	0.017	-0.018
	(0.02)	(0.01)	(0.02)	(0.04)	(0.03)	(0.04)
Age-squared	-0.001***	-0.000	-0.001***	0.000	-0.000	0.001
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	-1.396***	-0.262	-1.135**	-0.571	-0.219	-0.219
	(0.49)	(0.26)	(0.47)	(1.44)	(0.76)	(1.43)
N	6162	6162	6162	1000	1000	1000
Panel B: Non-entrepreneurs who are new homeowners in 2017						

Small city × Post 2015	-0.091	-0.075	-0.043	0.424**	-0.004	0.428**
	(0.11)	(0.10)	(0.10)	(0.20)	(0.03)	(0.19)
High school × Post 2015	-0.104	-0.015	-0.088	0.296	0.323	0.111
	(0.14)	(0.13)	(0.11)	(0.22)	(0.22)	(0.14)
Diploma and above × Post 2015	0.071	-0.124	0.125	0.204	0.270*	-0.033
	(0.24)	(0.08)	(0.24)	(0.16)	(0.15)	(0.09)
High school × Small city × Post 2015	0.166	0.011	0.174	-0.648*	-0.363	-0.444
	(0.17)	(0.14)	(0.15)	(0.33)	(0.22)	(0.29)
Diploma and above × Small city × Post 2015	-0.004	0.224	-0.203	-0.135	0.324	-0.556**
	(0.28)	(0.17)	(0.24)	(0.31)	(0.24)	(0.21)
Age	-0.033	-0.033	0.002	0.104	0.041	0.130
	(0.05)	(0.04)	(0.05)	(0.13)	(0.12)	(0.08)
Age-squared	0.001	0.000	0.000	-0.002*	-0.001	-0.001
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	0.456	1.013	-0.453	-1.058	0.467	-3.506
	(1.69)	(0.92)	(1.54)	(4.50)	(4.07)	(2.61)
N	222	222	222	92	92	92

Notes: Standard errors in parentheses and clustered at the household level; *** *p<0.01,* ** *p<0.05,* * *p<0.1.* All specifications include individual and time fixed effects.

6. Robustness check

We conducted several robustness tests to support the findings in the main results. First, to address potential omitted variables, we utilise the methods developed by Oster (2019) and Diegert et al. (2022), respectively, shown in Table 6.[8] The results in panel A of column 1 indicate that the influence of unobserved variables would need to be at least 78.7% as large as that of observed variables to negate the observed *hukou* reform effect and its educational heterogeneity. The estimate of δ ($R^2_{max} = 1.3\,R^2$) is the ratio of unobserved to observed heterogeneity required to invalidate the regression coefficients of interest in column 1 of panel B. This ratio is consistently above the critical threshold of 1, as discussed by Oster (2019), supporting that the results are indeed robust to unobserved heterogeneity.

Table 6. Coefficients stability

Holding a debt (Yes = 1)		Non-entrepreneurs		Entrepreneurs	
		Natives	Migrants	Natives	Migrants
		(1)	(2)	(3)	(4)
Panel A: Endogenous controls (Diegert et al., 2022)					
Breakdown point	Small city × Post 2015	82.90%	76.60%	77.50%	3.17%
	High school × Small city × Post 2015	78.70%	25.50%	1.39%	79.30%

[8] Oster's (2019) test assumes that omitted variables are exogenous to the control variables, a condition that is often challenging to meet. In contrast, the method developed by Diegert et al. (2022) accommodates omitted variables that may be endogenous to the control variables, offering a more flexible approach to addressing this limitation.

	Diploma and above × Small city × Post 2015	96%	52.40%	32.20%	2.64%
Panel B: Exogenous controls (Oster, 2019)					
δ (when $R^2_{max} = 1.3R^2$)	Small city × Post 2015	25.953	1280.565	29.472	2.741
	High school × Small city × Post 2015	22.488	18.273	0.492	4.298
	Diploma and above × Small city × Post 2015	50.217	21.339	195.726	1.836

Notes: For details on these two methodologies and examples, see Oster (2019) and Diegert et al. (2022), respectively.

To assess the robustness of our inferences within the Rubin causal model framework (Xu et al., 2019), we applied a method that quantifies the susceptibility of causal inferences to unmeasured confounding, using the Stata command '*konfound*'. The results, presented in Table 7, indicate the extent to which bias would need to influence an estimate to alter the study's conclusions. [9] In Column (1), at least 29.72% of the observed cases would need to be replaced with cases showing no effect to invalidate the coefficient for Small × Post 2015.

For High school × Small × Post 2015 and Diploma and above × Small × Post 2015, the required replacement thresholds are 48.36% and 36.76%, respectively. Similarly, the thresholds for Columns (2) – (4) demonstrate that a substantial proportion of cases with no effect would need to be replaced with cases at the threshold of inference to sustain the conclusion. These high thresholds indicate the robustness of our results, reinforcing the validity of the empirical evidence presented.

Table 7. Percentage of bias to invalidate or sustain an inference

	Non-entrepreneurs		Entrepreneurs	
	Natives	Migrants	Natives	Migrants
	(1)	(2)	(3)	(4)
Small city × Post 2015	29.72%	48.31%	48.81%	97.01%
High school × Small city × Post 2015	48.36%	15.65%	99.56%	29.35%
Diploma and above × Small city × Post 2015	36.76%	20.69%	61.80%	99.10%

Notes: the command '*konfound*' is used to obtain the percentage of bias.

7. Conclusion

This paper examines the effects of the 2014 *hukou* reform in China on household borrowing decisions, with a particular focus on the relationship between formal and informal credit

[9] For statistically significant effects, the analysis estimates the percentage of observations that must be replaced with cases showing no effect to invalidate the inference. For insignificant effects, it calculates the minimum correlation an omitted variable must have with both the predictor and the outcome to nullify the inference.

sources and differential impacts based on educational attainment. Amid rapid urbanisation and demographic shifts over the past four decades, there have been growing calls to reform the *hukou* system to enhance social justice, urbanisation development, and economic development. Although previous studies indicate that both migrants and natives are significantly impacted by the reform, with migrants experiencing reduced earnings (An et al., 2024; Zhang et al., 2024) and urban natives seeing a positive impact on earnings, our findings suggest that the reform has disproportionately increased access to borrowing among native households, primarily through informal homeowner loans.

The analysis reveals that the impact of the reform varies by educational level, with more educated households typically borrowing less from informal sources. Despite the intended goal of the *hukou* reform to promote social mobility and fairness by granting rural migrants urban *hukou*, these migrants continue to face significant financial market disadvantages post-reform, potentially increasing economic inequalities between them and native urban residents.

The findings are related to the concerns about increased inequality due to the subsequent surge in housing prices. Wealthier households are more likely to benefit from investment-related debt, while poorer households struggle with loan utilisation (Wu et al., 2023). Post-reform, native households have increasingly invested in the housing market, capitalising on rising asset prices. In contrast, rural migrant households possess less housing wealth than their urban counterparts (Liao & Zhang, 2021), and much of this demographic group remains in rental housing (Liu & Liu, 2023). This paper supports the hypothesis that changes in *hukou* status have not significantly enhanced the upward mobility of migrants. Despite the elimination of institutional discrimination, migrants have not increased their investment in housing to capitalise on rising property values. The persistently limited access to credit, particularly among migrants, suggests that other barriers remain even after the abolition of the rural *hukou* status. Furthermore, negative outcomes associated with the policy change, such as reduced earnings (An et al., 2024), may exacerbate wealth inequality among migrants.

Thus, merely removing formal institutional discrimination may not be sufficient to provide migrants with full access to local credit markets. The link between *hukou*, access to public resources, and increasing residential segregation may, in fact, have amplified inequalities between urban natives and rural migrants. Further policies aimed at alleviating the challenges faced by migrants are needed to reduce both income and wealth inequality.

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Appendix

Table A. 1. *Hukou* reform on household debt decision.

Dependent variable: Holding a debt (Yes = 1)	Non-entrepreneurs		Entrepreneurs	
	Natives	Migrants	Natives	Migrants
	(1)	(2)	(3)	(4)
Small city × Post 2015	0.020	-0.005	0.189	0.150
	(0.03)	(0.05)	(0.12)	(0.16)
Age	0.076***	0.059	-0.046	0.065
	(0.02)	(0.04)	(0.10)	(0.10)
Age-squared	-0.001***	-0.000	-0.001	-0.001
	(0.00)	(0.00)	(0.00)	(0.00)
Constant	-1.306**	-1.665	3.650	-1.198
	(0.56)	(1.54)	(3.50)	(4.20)
N	6694	1208	440	148

Notes: Standard errors in parentheses and clustered at the household level; *** *p<0.01,* ** *p<0.05,* * *p<0.1*. All specifications include individual and time fixed effects.

Table A. 2. The impact of the *hukou* policy on housing and business debt holding among entrepreneurs

	Natives			Migrants		
	Holding business/ housing debt	Holding formal business/ housing debt	Holding informal business/ housing debt	Holding business/ housing debt	Holding formal business/ housing debt	Holding informal business/ housing debt
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Entrepreneurs in both 2013 and 2017						
Small city × Post 2015	-0.064	0.017	-0.083	-0.201	-0.135	-0.085
	(0.16)	(0.13)	(0.10)	(0.20)	(0.16)	(0.19)
High school × Post 2015	-0.242	0.068	-0.168	-0.067	-0.086	-0.143
	(0.25)	(0.19)	(0.21)	(0.20)	(0.15)	(0.34)
Diploma and above × Post 2015	0.042	0.208	0.026	0.271	0.233	0.198
	(0.18)	(0.22)	(0.28)	(0.27)	(0.24)	(0.15)
High school × Small city × Post 2015	0.257	-0.091	0.248	0.600*	0.292	0.572
	(0.27)	(0.20)	(0.23)	(0.31)	(0.25)	(0.42)
Diploma and above × Small city × Post 2015	0.070	-0.120	0.101	0.140	-0.146	0.249
	(0.23)	(0.23)	(0.32)	(0.41)	(0.39)	(0.25)
Age	0.008	0.009	0.117	0.347**	0.156	0.270*
	(0.12)	(0.10)	(0.10)	(0.14)	(0.20)	(0.14)
Age-squared	-0.000	-0.001	0.000	-0.001	-0.003***	0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	0.351	1.112	-5.572	-11.322*	0.005	-11.335*
	(4.71)	(4.36)	(3.70)	(6.31)	(8.41)	(5.89)
N	440	440	440	148	148	148
Panel B: New entrepreneurs in 2017						
Small city × Post 2015	0.167	0.138	0.071	-0.162	-0.197	0.034
	(0.16)	(0.10)	(0.14)	(0.23)	(0.21)	(0.17)
High school × Post 2015	-0.069	-0.001	-0.078	0.071	-0.140	0.213*
	(0.23)	(0.10)	(0.22)	(0.16)	(0.14)	(0.11)

Diploma and above × Post 2015	0.303	0.235	0.085	0.184	0.063	0.225
	(0.24)	(0.23)	(0.17)	(0.27)	(0.21)	(0.20)
High school × Small city × Post 2015	0.046	-0.013	0.033	0.561*	0.493*	0.069
	(0.24)	(0.12)	(0.23)	(0.29)	(0.28)	(0.29)
Diploma and above × Small city × Post 2015	-0.085	-0.215	-0.091	0.194	0.116	0.038
	(0.27)	(0.26)	(0.20)	(0.33)	(0.29)	(0.27)
Age	0.004	0.040	-0.057	0.206	-0.024	0.245
	(0.08)	(0.05)	(0.07)	(0.19)	(0.18)	(0.20)
Age-squared	0.001	0.000	0.001	0.000	-0.000	0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	-1.394	-1.976	0.888	-7.973	1.944	-10.236
	(2.99)	(1.67)	(2.56)	(6.66)	(6.08)	(7.83)
N	596	596	596	132	132	132

Notes: Standard errors in parentheses and clustered at the household level; *** *p<0.01,* ** *p<0.05,* * *p<0.1*. All specifications include individual and time fixed effects. The following regressions follow the same specification.