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Reforms to Reduce China's High Household Savings

Yizhi Xu, Fan Zhang, Rongyu Cui, and Ding Hua

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Prepared by Yizhi Xu, Fan Zhang, Rongyu Cui, and Ding Hua*

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ABSTRACT: Household savings in China are markedly higher than in peer economies, which have been channeled into financing excessive investment. This paper examines the structural and cyclical factors contributing to China's elevated household savings. The analysis suggests that low government social spending in rural areas and residency ("Hukou") restrictions in urban areas play a significant role in increasing household savings. In addition, the paper provides evidence that fluctuations in real estate prices significantly impact household savings, both through the wealth effect and the downpayment effect (i.e., need for non-homeowners to save so as to afford downpayments), though the latter channel has weakened after the recent real estate market correction. These findings suggest that further strengthening social safety nets, continuing Hukou reforms, and policies that promote a more efficient transition for the housing market can help reduce household savings and boost private consumption, thus facilitating China's economic rebalancing.

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Contents

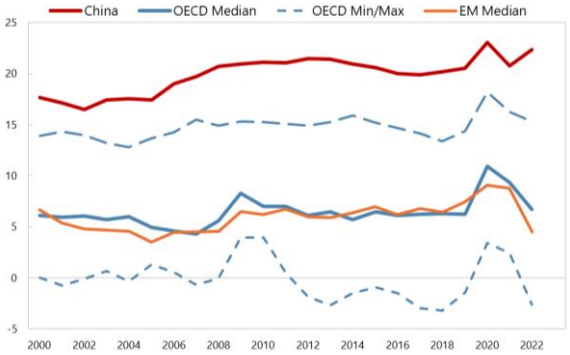
FIGURES

TABLES

1. Introduction

High household savings are a structural feature of the Chinese economy and far exceed the levels in OECD and most EMDE countries (**Figure 1**). The high savings have facilitated the Chinese economy's over-reliance on debt-financed investment which has led to the buildup of vulnerabilities (IMF, 2024). Several factors have been identified in the literature as potential drivers of the high household savings (as a share of GDP) in China, including limited social safety nets and demographic pressures.[1] In recent years, sluggishness in domestic demand and deflationary pressures, in part due to the housing market correction and low consumer confidence, have drawn renewed attention to the high savings rate in China, and raised concerns about domestic and external imbalances (Niemeläinen, 2021; Wright et al., 2024; Gourinchas et al., 2024).

Figure 1. Household Savings Rate
(Percent of GDP)



Sources: China flow of funds; OECD; Haver; IMF staff calculations.
Note: EM includes China, Hungary, India, Kazahkstan, Mexico, Poland, South Africa, and Thailand.

In this context, the 2025 Central Government Work Report and the December 2024 Central Economic Work Conference have both identified stimulating private consumption demand as the top policy priority for China. The authorities have rolled out counter-cyclical fiscal support, such as the equipment trade-in and upgrade programs,[2] and implemented modest strengthening of social safety nets, including increased government contributions to basic pension and healthcare plans.

Against this backdrop, this paper aims to empirically examine the contributions of two key factors in potentially driving China's high household savings—limited social safety nets and the correction in the real estate market—which could shed light on future policy reforms needed to boost consumption. The analysis relies on multiple data sources, including prefecture-level macro indicators, such as urban and rural area household savings rate and government social expenditure, and the most up-to-date household-level survey data. Notably, the household survey data from the China Family Panel Studies (CFPS) covers more than 6,000 urban households biennially from 2010 to 2022. To our knowledge, this paper is the first in the literature that uses the latest 2022 CFPS survey to investigate the most recent trends in household savings and its drivers. In particular, the empirical analysis in this paper attempts to address the following three policy-related questions:

First, what is the impact of government social spending on household savings? We find that government social spending in China remains below that of peer economies and is unevenly distributed across regions. In recent years, social spending in some regions has been further undermined by deteriorating local government fiscal

[1] See detailed survey of literature in Zhang et al. (2018) and Han and Zhang (2022).

[2] Since early 2024, the Chinese government initiated nationwide equipment trade-in and upgrade programs aimed at stimulating consumption and industrial modernization. The programs provide subsidies for the purchase of durable goods, including automobiles, home appliances, electronics, and industrial machinery. In 2024, the central government allocated 150 billion yuan to support these programs. In January 2025, the authorities announced an expansion of these programs to include a broader range of equipment, along with a pre-allocation of 81 billion yuan in new funding to sustain the trade-in programs. The support by the central government was financed by the issuance of ultra-long-term special purpose government bonds (150 billion yuan in 2024 and 300 billion yuan in 2025).

conditions amid the prolonged housing market adjustment and in the aftermath of the pandemic. Prefecture-level analysis, which is based on the annual data covering around 250 prefectures from 2012 to 2022, indicates that a 10 percent increase in government expenditure on social security and healthcare is associated with a reduction in the medium-term rural household savings rate of 0.5 and 0.8 percentage points, respectively, though the impact on urban households is limited. The results from the analysis suggest that targeted measures that raise social spending in prefectures with higher rural population shares would be more effective in boosting consumption. The larger impact of increasing social spending in more rural prefectures potentially reflects the relatively underdeveloped social safety nets in these areas, which lead to elevated precautionary savings to begin with.

Second, does obtaining urban Hukou status and the accompanying social benefits impact urban households' savings? Introduced in 1958, China's Hukou system is a household registration system designed to classify citizens as urban or rural residents. The system excludes migrant households without urban Hukou registrations from fully accessing the social benefits enjoyed by those with urban Hukous, which limits labor mobility and should, in principle, lead to higher precautionary savings by migrant households. In the past ten years, Hukou reforms have resulted in less stringent urban Hukou registration requirements for the migrant population and has narrowed social benefit gaps between urban and rural Hukou households, especially in smaller cities. However, reform progress in larger cities has been slow, where a significant share of the migrant urban population (over 200 million) continue to hold rural Hukous with limited benefits.[3] Household-level regressions based on micro-level household survey data reveals that the savings-to-disposable-income ratio of urban households without an urban Hukou is on average about 6.8 percentage points higher than that of their peers with an urban Hukou. This suggests further Hukou reforms to grant more urban Hukous to migrant households and provide more equitable social benefits to rural Hukou households can reduce excess savings in urban areas.

Third, has the ongoing correction in the real estate market contributed to rising household savings, and if yes, what are the key channels? Household savings are influenced by house price developments mainly through the downpayment channel for non-homeowners and the wealth effect channel for homeowners. In this paper, household survey data is used to disentangle the effects of these two channels, providing insights into how the recent correction in the real estate market has impacted household savings. The analysis finds that the wealth effect has persisted since the start of the real estate market correction in 2021, with a significant negative relationship between homeowners' net housing assets (NHA) to income ratio and their savings rates. However, the downpayment channel has weakened recently, as non-homeowners with low deposits no longer save more for future downpayments and mortgage payments, potentially due to subdued confidence and delayed plans for home purchases amid the protracted real estate market downturn.

The paper contributes to several strands of literature. First, there is a rich literature that investigates drivers of China's high household savings. These drivers include demographic changes (Curtis et al., 2015; Choukhmane et al., 2014; Modigliani and Cao, 2004), weak social safety net protection (He et al., 2018, 2019; Chamon and Prasad, 2010; Blanchard and Giavazzi, 2006), house prices and homeownership (Chen et al., 2016; Wang and Wen, 2011), and income inequality (Zhang and Zhang, 2015; Zhang et al., 2018; Han and Zhang, 2022). This paper is most closely related to Zhang et al., (2018) and Han and Zhang (2022) that comprehensively study many of these factors driving China's elevated household savings. The analysis in this paper uses a variety of datasets, including prefecture level as well as household surveys, to uncover the latest trends of these drivers

[3] As of 2023, 27 percent of the residents in urban areas held rural Hukou, which represents 17.8 percent of total population in China.

and their relationships with household savings, especially after COVID-19 and the correction in the real estate market. These developments were not covered in earlier papers, and this paper contributes to the literature in this respect. In addition, this paper includes novel empirical analysis on the structural drivers of China's household savings, including (1) prefecture-level analysis that examines the medium-term impact of government social spending on savings, as well as how the impact differs across prefectures with different demographic vulnerabilities, and (2) household-level analysis that investigates the role of the Hukou system and past Hukou reforms in affecting urban household savings.

Second, this paper also contributes to the literature that disentangles the macro-financial linkages between the real estate market and household consumption. The impact of house prices on household wealth and consumption has been widely studied across various countries. Household consumption is found to be asymmetrically related to house price movements in Korea (Lee, 2023), while in the US, they are found to comove when financial markets are more developed and when liquidity constraints present (Iacoviello, 2011). For China, most of the literature focuses on the relationship between housing prices and household consumption and saving behavior during the two decades of the property boom until 2021. Earlier findings by Wang and Wen (2012) indicated that rising house prices could not explain the high household savings rate using data up to 2010. Later studies that focus on China found that higher housing prices have positive wealth effects and consumption implications under certain conditions, such as the level of development of the property finance market, the level of the price-to-income ratio (Dong et al, 2016), types of homeownerships (Chen et al, 2020), and the level of mortgage borrowing (Qi et al, 2023). However, this paper is the first to use household-level data to study the housing market downturn since 2021 and its implications for household savings. We aim to provide insights by disentangling the wealth effect and the downpayment effect, including how these have changed since 2021 amid the prolonged weakness in the property sector.

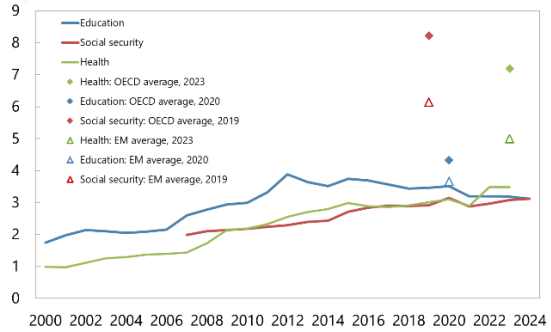
The rest of the paper is structured as follows. Section 2 analyzes the medium-term impact of government social spending on household savings. Section 3 studies the role of urban Hukou and Hukou reforms in affecting urban households' saving behavior. Section 4 takes a deep dive into the real estate market's wealth effect and downpayment effect on household savings. Finally, Section 5 concludes with a summary of our findings and their policy implications.

2. Impact of Government Social Spending on Household Savings

2.1. Stylized Facts

Government social spending in China continues to lag behind peer economies. Although social spending on healthcare, social security, and education as a share of GDP has doubled since the early 2000s, it remains markedly below the averages of both OECD member countries and EMDE peers (**Figure 2**). In particular, healthcare and social security spending are only about 3.5 and 3.1 percent of GDP, respectively, significantly lower than the OECD's averages of 7.2 and 8.2 percent of GDP and the emerging markets' averages of 5.0 and 6.1 percent.[4] Insufficient social expenditures, particularly those targeting the vulnerable populations (e.g., rural and elderly populations), could potentially increase households' precautionary savings as they build buffers to guard against future adverse shocks.

Figure 2. Cross-Country Comparison of Government Social Spending
(Percent of GDP)



Sources: OECD; EBA; CEIC; IMF staff calculations.

In addition, government spending on social welfare has been unevenly distributed across city tiers in China, with the gap in per-capita spending further widening in recent years (**Figure 3, Panel 1**). As of 2022, annual total per capita social spending on healthcare, social security, and education in the four Tier-1 cities (which amount to 5.8 percent of the population) was more than double the average in the rest of the country, reflecting better social benefits and higher living costs in these major cities which include Beijing, Shanghai, Shenzhen and Guangzhou. Unlike per-capita spending, the ratio of total social spending to GDP is higher in lower-tier cities compared to their higher-tier peers, as the gap in GDP per capita between high-tier and low-tier cities is even more substantial than the gap in social spending per capita (**Figure 3, Panel 2**). Since more than 90 percent of social spending is funded by the local governments (Duesterberg and Aibel, 2024), social spending imposes substantially higher fiscal burden on the LGs in certain regions.

Recently, tighter fiscal conditions may have exerted downward pressure on social spending in highly indebted regions with particularly weak social safety nets. Prefecture-level data shows that LGs with higher public debt-to-GDP ratios saw a rapid increase in social spending during the 2010s. However, lower revenues amid the COVID-19 lockdown and the real estate sector downturn have strained highly leveraged LGs, leading to a reduction in social spending as a share of GDP (**Figure 3, Panel 3**).[5] Consequently, spending on social safety

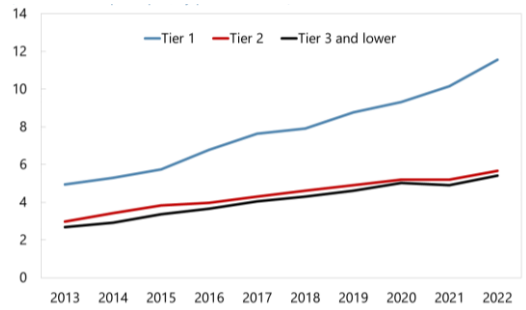
[4] Using a broader definition of government social security spending, which includes both general public budget and social security fund expenditure, China's social security spending reached about RMB 7.6 trillion, or 5.6 percent of GDP (see 2024 Statistical Bulletin on Human Resources and Social Security Development). This ratio remains below the averages of both OECD member countries and EMDE peers.

[5] Despite high indebtedness, LGs with higher debt-to-GDP ratio continue to allocate a larger share of GDP on social spending compared to their peers. This trend is likely driven by the fact that a significant portion of LG social expenditures are mandated by the central government (e.g., basic pension and medical insurance, nine-year compulsory education, minimum livelihood guarantees (Dibao), etc.), leaving limited space to reduce LGs' social spending despite much elevated total debt burden (Wingender, 2018).

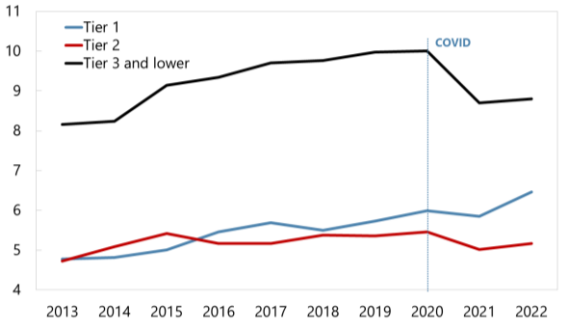
nets has been compromised in some particularly vulnerable regions with high rural population shares (**Figure 3, Panel 4**).

Figure 3. Government Social Spending

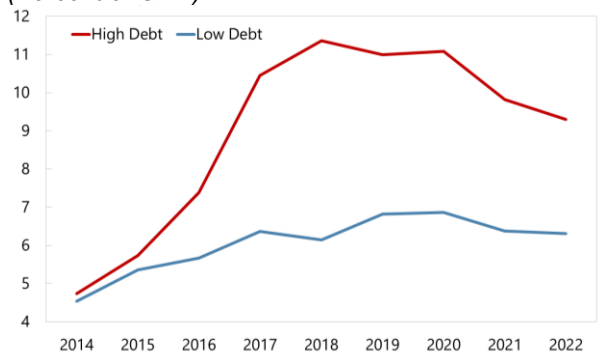
1. Government Social Spending by Prefecture Tiers
(Thousand RMB per capita)



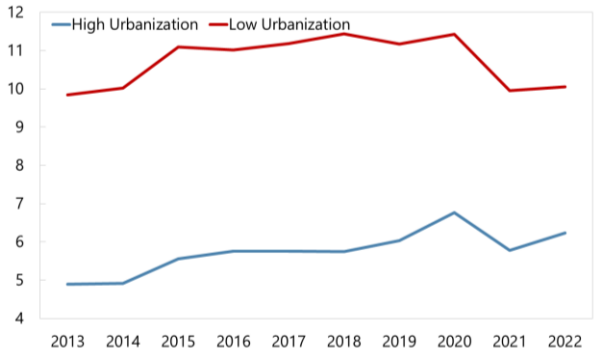
2. Government Social Spending by Prefecture Tiers
(Percent of GDP)



3. Government Social Spending by LG Debt-to-GDP Ratio
(Percent of GDP)



4. Government Social Spending by Prefecture Urbanization Rate
(Percent of GDP)



Sources: OECD; IMF External Sector Report; CEIC; IMF staff calculations.

Notes: High-debt and high-urbanization prefectures are identified based on whether the prefecture-level official local government debt-to-GDP ratio and urban population to total population ratio in a certain year are respectively higher than the median across all observable prefectures in that year. Government social spending includes expenditure on social security, healthcare, and education.

2.2. Prefecture-Level Analysis

2.2.1. Data and Sample

To examine the medium-term impact of government social spending on household savings, we rely on prefecture-level household and fiscal data from CEIC, which are sourced from the National Bureau of Statistics and local statistics bureaus. The analysis is based on annual data from 2012 to 2022 and covers approximately 240 prefectures out of the total 293 prefecture-level cities in China. Our main analysis is conducted separately on urban and rural subsamples, with slightly better data coverage for urban areas. All prefecture-level variables, except for saving rates, are winsorized at the 0.5 percent level.

Annex Table A1 reports the summary statistics of prefecture-level variables included in the analysis. The key variables of interest are household savings rate and government social spending. Household savings rate is defined as the difference between household disposable income and consumption expenditure, divided by household disposable income. As shown in Annex Table A1, household saving rates are consistently higher in urban areas, both on average and across all quartiles. This trend reflects mainly higher income levels in urban areas, although potentially weaker safety nets in rural areas also kept rural household savings rate at a high level. As mentioned above, there is a notable gap in government social spending across prefectures, with the inter-quartile range amounting to RMB 0.5-0.8 thousand per person per year for social security, healthcare, and education.

2.2.2. Local Projections Analysis and Results

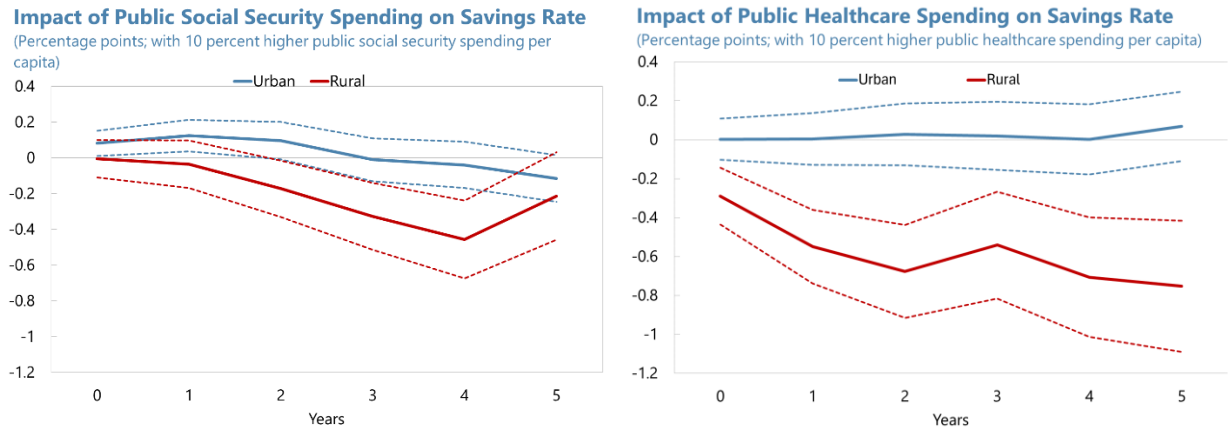
To investigate the hypothesis that higher social spending is associated with a lower household savings rate, we use the following prefecture-level panel fixed-effects local projections specification:

$$\Delta SavingsRate_{i,area,t+h} = \beta_{1,h}\, log\left(Spending_{i,t}^{SS}\right) + \beta_{2,h}\, log\left(Spending_{i,t}^{Health}\right) + \beta_{3,h}\, log\left(Spending_{i,t}^{Edu}\right) + \beta_{4,h} X_{i,area,t} + \gamma_i + \gamma_t + \varepsilon_{i,h} \qquad \forall\, h = 1,2,\dots 5 \qquad (1)$$

where $area \in \{urban, rural\}$, the dependent variable is the cumulative change in household savings rate in prefecture i from year $t-1$ to $t+h$, and the key explanatory variables include the logarithm of social spending on social security, healthcare, and education. The specification also controls for a vector of prefecture-level characteristics such as house price-to-income ratio (different for urban and rural subsamples), house price growth, GDP per capita, and the first lag of household savings rate to isolate the finding from other confounding effects such as housing affordability, housing market cycles, income levels, and autocorrelation, respectively. Finally, prefecture- and year-fixed-effects are included to account for time-invariant prefecture characteristics and national macro factors. The coefficients of interest are $\beta_{1,h}, \beta_{2,h}, \beta_{3,h}$, with negative and significant coefficients indicating that higher government social spending on social security, healthcare, or education in year t is followed by a reduction in household savings rate from t to $t+h$.

The effects of government social security and healthcare spending on household savings over the medium-term are presented in **Figure 4**, with full regression results reported in **Annex Table A2**. As the results suggest, a 10 percent increase in government expenditure on social security and healthcare is associated with a reduction in rural household savings rate of 0.5 and 0.8 percentage points, respectively, five years after the spending hike. Despite the significant effect of government social spending on rural households' savings, the medium-term impact on urban households is negligible, possibly reflecting better access to social benefits in the urban area to begin with. Finally, as shown in **Annex Table A2, Panel B**, the impact from an increase in government spending on education turns out to be short-lived in the rural sub-sample and becomes insignificant 3 years after the spending hike. This is likely due to the fact that government spending on social security and healthcare is more relevant in insuring against future shocks, thus having a larger and more durable impact on precautionary saving motives. These findings are aligned with the literature that demonstrates a significant near-term correlation between government social spending on healthcare and rural household savings in China (e.g., Han and Zhang, 2022).

Figure 4. Impact on Household Savings Rate Following an Increase in Social Spending



Source: CEIC; IMF staff calculations.

Note: The figure shows estimates for equation (1) for different horizons. The impulse responses show the impact on urban and rural household savings rate following a 10 percent increase in public spending on social security (LHS) and healthcare (RHS). Dashed lines indicate the confidence bands with 90 percent confidence. Standard errors are clustered at the prefecture-level.

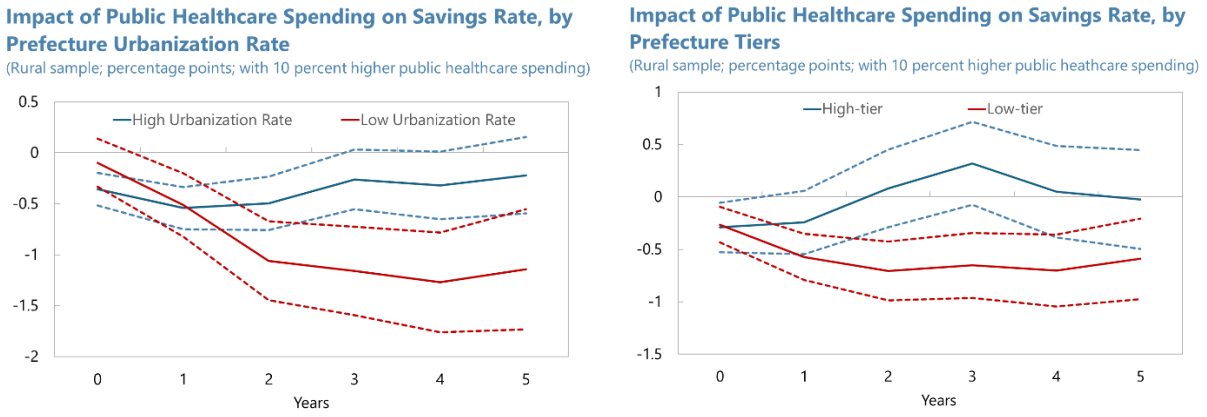
Next, we examine heterogeneity across prefectures in the effectiveness of government social spending in reducing household savings. In particular, we test whether prefectures with more vulnerable populations see bigger declines in savings following an increase in social spending. Our hypothesis is that the population residing in prefectures with low urbanization rates or those in lower tier cities are more vulnerable to future adverse shocks due to lower economic development and limited public health or elderly care facilities. Hence, increasing social spending in those regions could contribute to more significant reductions in household precautionary savings. To tackle this question, we run local projections that include interaction terms between government social spending and a dummy variable that distinguishes prefectures based on urban population shares or prefecture-city tiers. The local projections specification is as follows:

$$\begin{aligned}\Delta SavingsRate_{i,area,t+h} &= \beta_{1,h}\, log\left(Spending_{i,t}^{SS}\right) + \beta_{2,h}\, log\left(Spending_{i,t}^{Health}\right) + \beta_{3,h}\, log\left(Spending_{i,t}^{Edu}\right) \\ &+ \beta_{4,h}\, log\left(Spending_{i,t}^{SS}\right) \times Vul_i + \beta_{5,h}\, log\left(Spending_{i,t}^{Health}\right) \times Vul_i + \beta_{6,h}\, log\left(Spending_{i,t}^{Edu}\right) \times Vul_i \\ &+ \beta_{7,h} X_{i,area,t} + \gamma_i + \gamma_t + \varepsilon_{i,h} \qquad (2)\end{aligned}$$

where Vul_i is a time-invariant dummy variable which indicates whether the population in prefecture i is vulnerable. As mentioned above, the vulnerable indicators are based either on the urbanization rate (i.e., urban-population-to-total-population ratio) or prefecture tiers. In the exercises, the vulnerability dummy is set to one if a prefecture's historical average of urbanization rate falls below the sample median or if a prefecture does not belong to the Tier 1 or Tier 2 prefecture groups.[6] Otherwise, the dummy is set to zero.

[6] Tier 1 prefectures include Beijing, Shanghai, Guangzhou, and Shenzhen. Tier 2 prefectures include Tianjin, Chongqing, all provincial capital cities, and another four sub-provincial prefecture cities (Dalian, Ningbo, Qingdao, and Xiamen).

Figure 5. Impact on Rural Household Savings Rate in Prefectures with High vs. Low Vulnerability



Source: CEIC; IMF staff calculations.

Note: The impulse responses show the impact on rural household savings rate in percentage points with a 10 percent increase in public spending on healthcare. The red lines indicate the impact on low urbanization rate prefectures (LHS panel) and on low-tier prefectures (RHS panel), respectively, which are derived as $\beta_{2,h} + \beta_{5,h}$ from equation (2). The blue lines show the impact on high urbanization rate prefectures and high-tier prefectures and are indicated by $\beta_{2,h}$. Dashed lines indicate the confidence bands with 90 percent confidence. Standard errors are clustered at the prefecture-level.

Figure 5 presents the impact of health-related social spending on rural household savings based on estimates for equation 2 (see full results in **Annex Table A3**). As the left-hand side panel shows, increasing social spending on health is associated with lower household savings in both high- and low-urbanization-rate prefectures, although the effect is more pronounced and persistent in the latter group where populations are more vulnerable. A 10 percent increase in health-related social spending is followed by a decrease in rural household savings rate by up to 1.3 percentage points in the low-urbanization-rate prefectures, a full percentage point higher than the effect in high-urbanization rate prefectures. Similarly, as the right-hand side panel shows, the impact of social spending on household savings in low-tier prefecture cities is more substantial and persistent as well. These findings are consistent with the prior that government support on households' healthcare-related benefits could effectively reduce precautionary savings for the more vulnerable populations.

2.2.3. Caveats and Robustness Tests

The prefecture-level analysis is subject to two main caveats. First, while we have data on rural and urban household savings rate for each prefecture, government social spending data is available only for the prefecture as a whole without detailed information on allocations between rural and urban areas. Consequently, our results should be interpreted as the impact on household savings rates in urban or rural areas following an increase in government social spending across the entire prefecture. Second, in the baseline specification (1), local government social spending is endogenous to various unobservable prefecture-level characteristics that may also impact household savings. This endogeneity could bias the estimated relationship between social spending and household savings. Although this concern is to some extent mitigated with the inclusion of prefecture- and time-fixed-effects as well as prefecture-level controls, the key findings should still be interpreted

as an association between government social spending and household savings rather than as definitive causal relationship.[7]

The annex offers two additional robustness tests. First, we re-run the baseline local projections with a strictly balanced panel. As **Annex Table A4, Panel A** shows, higher spending related to social security and health remains robust in reducing rural household savings. Second, we test if the growth rate in social spending also matters in reducing household savings. **Annex Table A4, Panel B** suggests that results are robust to specifying the social spending levels as growth rates instead of log levels.

2.2.4. Quantification of Aggregate Impact

Using estimated coefficients from local projections, two policy scenarios are developed to compare annual fiscal costs and five-year ahead impact on private consumption and savings.[8] In the first scenario, the current level of government spending on social security and healthcare is doubled in all prefectures. The total fiscal cost per year is 3.0 percent of GDP, with a cumulative increase in consumption over a five-year horizon reaching 2.4 percentage points of GDP and a decline in the savings rate of 1.5 percentage points of GDP. In the second scenario, which targets only prefectures with higher-than-median rural population shares, doubling social spending results in an additional fiscal cost of only 1.0 percent of GDP, while a cumulative increase in consumption over a 5-year horizon of 1.8 percent of GDP and a decline in savings rate of 1.1 percentage points of GDP. The second scenario is more targeted and yields a higher impact on private consumption per unit of fiscal cost, as the current level of social spending in high rural share prefectures is significantly lower, and increasing social spending in these regions tends to have a larger impact on rural households' savings. Therefore, well-targeted measures to increase social spending in rural areas can help boost private consumption while minimizing fiscal costs.

3. Role of Hukou and Hukou Reforms

3.1. Background

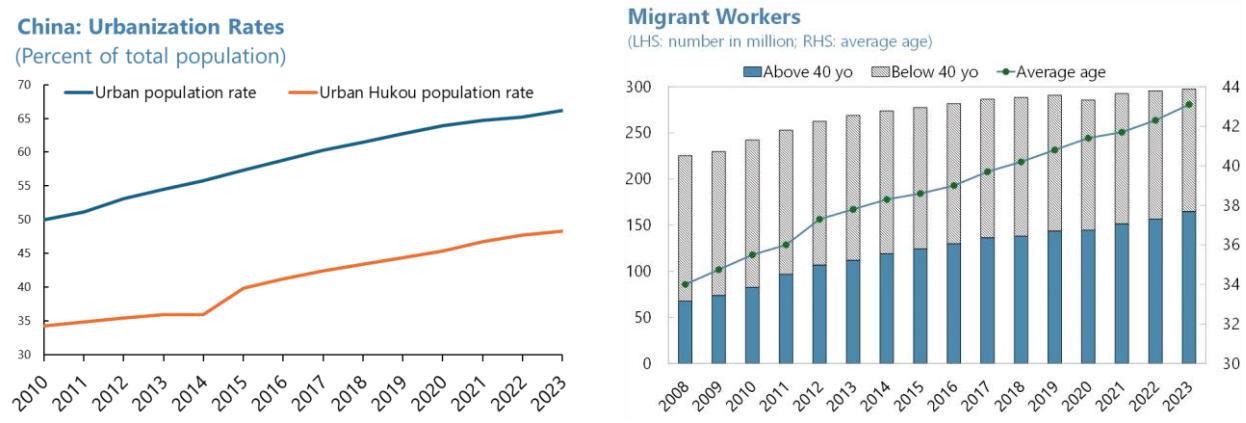
Initially established in 1958, the Hukou system in China was designed to manage the distribution of urban and rural populations across regions, which resulted in restricted labor mobility and uneven access to public services. Over the past 40 years, China's fast growth and extensive infrastructure development has led to substantial rural-to-urban migration. As a result, the urban population share reached nearly 70 percent by 2023. However, a sizeable portion of urban residents (200 million) still hold rural Hukous, which excludes them from fully accessing the social benefits enjoyed by those with urban Hukous, thus raising their incentive for

[7] We have also tested and confirmed the robustness of the results using Bartik shift-share instrumental variables (IVs). The IV is constructed based on the methodology of Bartik (1991) and Goldsmith-Pinkham et al. (2020), which interacts the national growth rate of general government fiscal expenditure on health with each province's exposure to public health expenditure (proxied by each province's share of population aged 65 and above). This instrument is well-suited for addressing endogeneity, as national-level fiscal expenditure shocks are exogeneous to province-specific unobserved factors affecting the household savings. In addition, the interaction with provincial exposure isolates regional variation in the external shocks, enabling credible identification.

[8] The five-year ahead annual impact on consumption is calculated as a cumulative sum of local projection impact over the five-year horizon, assuming the increase in social spending will be permanent throughout the projection horizon. The impact for each subgroup (rural and urban households in high- and low-urbanization-rate prefectures) are derived from prefecture-level difference-in-difference local projections, where government social spending per capita is interacted with the prefecture-level high-urban-population-share dummy.

precautionary savings (**Figure 6, Panel 1**).[9] In addition, the migrant population has become older on average, potentially adding further to the incentive to save for retirement and to fund unexpected health spending amid inadequate pension benefits and health insurance, respectively (**Figure 6, Panel 2**).

Figure 6. Urban Population Profile and Migrant Workers



Sources: CEIC; IMF staff calculations.

China has implemented substantial reforms to its Hukou system as well as the social benefits for rural Hukou households since the early 2000s, aiming to address the challenges posed by rapid urbanization and significant social inequities. The Hukou reforms over the past two decades have primarily focused on two key areas. First, the Hukou registration restrictions in small- and medium-sized cities have been gradually relaxed, especially after 2014 when the State Council advocated for the abolition of the rural-urban distinction. Currently, Hukou restrictions have been fully lifted in cities with populations of less than 3 million, while a point-based system, which factors in education, employment, and social contributions, is still being used in large cities to evaluate urban Hukou eligibility. Second, efforts have been made to equalize social benefits in certain regions for all urban residents regardless of Hukou status, including to promote compulsory education, employment services, basic pension and medical coverage, and housing security.[10] However, despite the progress, disparities between urban and rural Hukou households persist in large cities due to strict residency rules for purchasing a home and accessing education, employment, and social security benefits.[11]

[9] Rural Hukou households living in urban areas receive worse pensions (longer contribution period and lower benefits), face barriers for access to compulsory and college education, have more limited opportunities for employment, and have stricter requirement for home purchases in mega cities, etc.

[10] In a recent case in 2023, Zhejiang province announced a major Hukou reform across all cities except for the capital city, Hangzhou, enabling households to access full social benefits throughout the province for all registered family members, including dependent children and parents.

[11] For home purchase, both Hukou registrations and certain years of social security contributions or personal income tax payments are required. In terms of social security, rural Hukou residents are not included in the Urban Employee Pension, which has a shorter contribution period and better benefits. High school students from migrant families are required to take college entrance exams in their Hukou registered prefectures, which usually have significantly lower college acceptance rates than Tier 1 cities such as Beijing and Shanghai.

3.2. Household-Level Analysis

3.2.1. Data and Sample

Our household-level analysis relies on the China Family Panel Studies (CFPS), a nationally representative longitudinal survey conducted by Peking University's Institute of Social Science Survey (ISSS). This biennial survey, spanning from 2010 to 2022 across 31 provinces, provides the most up-to-date and comprehensive information on households' consumption and saving behaviors, social safety net coverage (including pension and medical insurance plans), and demographic characteristics. In each round of the survey, the sample covers between 13,000 to 17,000 individuals from over 6,000 urban households. The latest survey, conducted in 2022, was published in November 2024. To our knowledge, this paper is the first in the literature to use the 2022 CFPS data to analyze recent trends.

Annex Table A5 reports the summary statistics of household-level variables derived from the CFPS, which are used throughout the rest of the paper. In this section, the two key variables of interest are the savings rate of urban households and the Hukou status dummy. The savings rate is calculated as the difference between urban households' disposable income and their annual expenditures, which is then divided by disposable income. In the empirical tests, savings rate observations are winsorized at the 10 percent level and excluded if any of them are below -200 percent. The urban Hukou status dummy variable is set to 1 for households with non-agricultural or residential registrations, and 0 for those with agricultural registrations.

Other household characteristics are also examined or controlled for in the analysis. For instance, the household survey data allows us to distinguish between new urban Hukou households and existing urban Hukou households. The former are defined as those who have changed their Hukou registration locations since birth and currently hold urban Hukou. Furthermore, since our empirical analysis also sheds light on the role of pensions, we categorize households based on whether household heads—either as a pensioner or a contributor—are covered by pensions.[12] Finally, other household characteristics that drive household savings and are frequently cited in the literature, such as education (of the head of the household), total income, debt-to-income ratio, household size, and age (household head), are controlled for in the analysis.

3.2.2. Empirical Analysis and Results

Household-level panel regressions are employed to examine the main hypothesis that Hukou status has historically been a significant determinant of urban household savings. The hypothesis is based on the premise that access to social benefits differ substantially between the urban Hukou and rural Hukou groups, thereby contributing to higher precautionary savings among the latter. For the main household-level analysis, we rely on the following panel fixed-effects regression specification:

$$SavingRate_{i,t} = \beta_1 UrbanHukou_{i,t} + \beta_2 Pensions_{i,t} + \beta_3 Controls_{i,t} + \gamma_{province-year} + \gamma_{industry} + \varepsilon_{i,t} \quad (3)$$

[12] As depicted in Annex Table A5, based on household heads' pension coverage, about 74 percent of the whole urban household sample is covered by pensions. The coverage is higher if the calculation is based on whether any family members in the household are covered by pensions (around 80 percent), or among the urban households subsample whose heads are pensioners (around 90 percent). The actual pension coverage may be higher than the ratio implied by the CFPS survey due to possible misreporting by respondents (i.e., those who are covered or eligible mistakenly selected "no pension coverage").

where the dependent variable is household i's savings rate in year t, and the explanatory variables include households' urban Hukou status dummy, pension dummy, and other household-level controls as elaborated in Section 3.2.1. As in the literature (e.g., Zhang et al., 2018), the baseline specification controls for province-year fixed effects for households' registered locations and industry fixed-effects for household heads' employment. Therefore, the estimated coefficients should be interpreted as the difference in savings rates between urban Hukou and rural Hukou households within the same province-year after controlling for the industry in which the household head works and other controls.

Table 1. The Impact of Urban Hukou and Urban Pensions on Urban Household Savings Rate

VARIABLES	(1)	(2)	(3)
Urban Hukou	-7.03***		-7.88***
	(0.82)		(0.85)
New urban Hukou		-10.09***	
		(1.55)	
Existing urban Hukou		-6.80***	
		(0.82)	
NUP reform			-3.69*
			(2.06)
Urban Hukou x NUP reform			6.07**
			(2.22)
Pension	-2.06***	-2.06***	-1.82***
	(0.56)	(0.56)	(0.54)
Education	-1.39***	-1.38***	-1.32***
	(0.10)	(0.10)	(0.11)
ln(income)	32.51***	32.53***	32.49***
	(0.82)	(0.82)	(0.81)
Debt-to-income ratio	-11.36***	-11.34***	-11.36***
	(0.86)	(0.86)	(0.85)
Household size	-3.54***	-3.54***	-3.54***
	(0.23)	(0.23)	(0.23)
Age	-0.14	-0.15	-0.10
	(0.15)	(0.15)	(0.13)
Age^2	0.45***	0.46***	0.42***
	(0.14)	(0.14)	(0.13)
Observations	30,033	30,033	30,033
R-squared	0.21	0.21	0.21
Industry FE	Yes	Yes	Yes
Province-Year FE	Yes	Yes	Yes

Source: CFPS 2012-2022.

Note: This table reports the estimated coefficients from regression specification (3) based on the full urban sample of the CFPS from 2012-2022. Column (1) presents the baseline estimates, Column (2) presents the estimates from a variant of specification (3) that includes new urban and existing urban dummies (the former are defined as those who have changed Hukou registration locations since birth and currently hold urban Hukou, while the latter are those who have held the urban Hukou at the same registration location since birth), and Column (3) reports the estimates from a specification that interacts the urban Hukou dummy is interacted with the dummy that indicates the New-type Urbanization Plan (NUP) pilot cities since their announcement years. All other variables are defined in Section 3.2.1. Standard errors are clustered at the province-level. *p<0.1; **p<0.05; ***p<0.01.

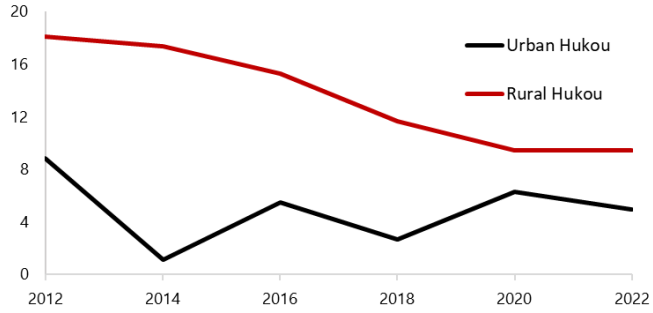
Table 1 reports the regression results for **equation (3)**, estimated using the whole CFPS sample from 2012 to 2022. The analysis yields three key findings. First, urban households who possess urban Hukous tend to save significantly less, with their savings rate about 7.0 percentage points lower than their rural Hukou peers (**Table 1, Column 1**). This suggests that Hukou status is a crucial driver for household savings, even after accounting for pension coverage and other household characteristics.

Second, new urban Hukou households—those who have migrated from other registration cities and have acquired a new urban Hukou—tend to save even less than households who have always had their urban Hukou registered in the current cities. In particular, new urban Hukou households have an average savings rate which is almost 10.1 percentage points lower than rural Hukou households, compared to a difference of around 7.0 percentage points for existing urban Hukou households. This is possibly because new urban Hukou households have accumulated high savings before obtaining the current urban Hukou, which combined with their expectation of receiving greater social benefits in the future given their new urban Hukou status, reduces the incentive to save (**Table 1, Column 2**). This underscores an important policy implication that further Hukou reforms could have a substantial marginal effect in reducing urban household savings.

Third, the pension coverage of the head of the household influences urban household savings. As both columns in **Table 1** show, households whose heads are enrolled in pensions save significantly less than their peers without a pension, and the difference is even larger for those enrolled in the public sector, SOEs, or large private entities' pensions.

In **Annex Table A6**, we conduct robustness tests by incorporating household fixed effects (Panel A) and re-running the analysis with a strictly balanced sample, including only households surveyed in all years from 2012 to 2022 (Panel B).[13] These tests affirm the robustness of the key findings.

Figure 7. Urban Households Savings Rate After Accounting for Household Characteristics
(Percent of disposable income)



Sources: China Family Panel Studies; IMF staff calculations.

Note: The chart is based on the regression results presented in Table 2. It presents median savings rate among urban Hukou households and rural Hukou households, after controlling for pension scheme coverage and other household characteristics.

The household analysis also reveals that rural Hukou households' savings rate has declined over the past decade, although the gap with urban Hukou households remains significant. Cross-sectional regressions presented in **Table 2** indicate a diminishing disparity in savings rate between urban and rural Hukou households from 2012 to 2022.[14] The regressions show that the savings rate gap between the two groups peaked in 2014, with urban Hukou households saving approximately 11.8 percentage points less than rural Hukou households. Since then, the gap has progressively narrowed, with urban Hukou

[13] Including household fixed effects means that the Hukou coefficient is only identified using data on households whose Hukou status has shifted from rural to urban at some point during the sample. This significantly reduces the variation in the data, though the fact that the urban Hukou coefficient remains negative and significant is reassuring.

[14] Table 2 presents the estimated coefficient β_1 of the following cross-sectional regression, which is a variant of equation (3): $SavingRate_i = \alpha + \beta_1 UrbanHukou_i + \beta_2 Pensions_i + \beta_3 Controls_i + \gamma_{province} + \gamma_{industry} + \varepsilon_i$. A negative and significant estimate of β_1 suggests a significantly lower savings rate of urban Hukou households.

households saving 3.2 percentage points less than their rural Hukou peers in 2022. Based on the estimated coefficients in **Table 2**, **Figure 7** plots the trends in median savings rates for urban and rural Hukou households, respectively, after accounting for heterogeneities in other household characteristics. The figure shows the narrowing gap between the two groups is primarily driven by a sustained decrease in savings rate of rural Hukou households, while the savings rate of urban Hukou households has remained relatively stable.

Table 2. The Impact of Urban Hukou on Urban Household Savings Rate

	Year of the survey subsample					
	2012	2014	2016	2018	2020	2022
Urban hukou	-7.69***	-11.83***	-7.60***	-7.50***	-2.64*	-3.20**
	(2.19)	(1.81)	(1.54)	(1.52)	(1.60)	(1.57)
Province FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,796	5,197	5,559	6,077	4,606	4,803
R-squared	0.28	0.20	0.21	0.18	0.20	0.17

Source: CFPS 2012-2022.

Note: This table reports the estimated difference in savings rates between urban Hukou households and rural Hukou households in cross-sectional regressions during 2012-2022. Similar as the baseline specification (3), the dependent variable is household savings-to-disposable-income ratio, while the control variables include pension scheme dummies, education, income, household debt-to-income ratio, household size and age. Province- and industry-fixed-effects are included. All the variables are defined in Section 3.2.1. Standard errors are clustered at the province-level. *p<0.1; **p<0.05; ***p<0.01.

The sustained decline in the savings rate among rural Hukou households highlights the positive impact of Hukou reforms that have been implemented to date, including more equitable access to social benefits and increasingly relaxed urban Hukou registration requirements for migrant rural Hukou households in smaller cities. Nonetheless, despite the progress made in reducing the savings gap between urban and rural Hukou households, the difference remains significant in the 2022 sub-sample (**Table 2**). This suggests rural Hukou households continue to maintain notably higher precautionary savings since access to social benefits remain limited in major cities. Therefore, reforms that aim to close such gaps, either through lifting urban Hukou registration restrictions on migrant households or further enhancing rural Hukou households' social benefits, could substantially reduce the aggregate savings rate.

3.3. Prefecture-Level Event Studies: New-Type Urbanization Plan

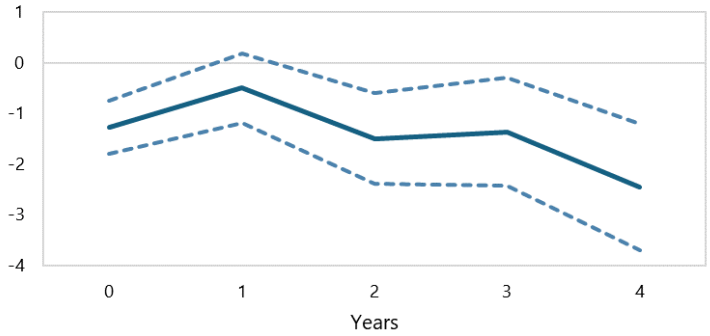
Next, we present evidence from a complementary event study analysis that exploits a nationwide Hukou reform program and show that liberalizing urban Hukou registration requirements can significantly contribute to a decline in the savings rate of urban households. The reform program studied is the New-type Urbanization Plan (NUP), which is a nationwide program launched in 2014 that sought to facilitate China's urbanization. The program was rolled out with the goal of issuing 100 million new urban Hukous to rural migrants and increase the share of urban Hukou households from 35 percent in 2014 to 45 percent by 2020. The NUP included three batches of 236 pilot cities (both prefecture-level cities and county-level cities) announced during 2014-2016. The NUP provides a unique opportunity for a natural experiment, since it allows us to observe the effects of a large-scale Hukou-related policy intervention on household savings decisions.

The following panel local projections specification is used to test the impact of the NUP on urban households' savings rate:

$$\Delta SavingsRate_{i,urban,t+h} = \beta_{1,h} NUP_{i,t} + \beta_{2,h} \log\left(Spending_{i,t}^{SS}\right) + \beta_{3,h} \log\left(Spending_{i,t}^{Health}\right) + \beta_{4,h} \log\left(Spending_{i,t}^{Edu}\right) + \beta_{5,h} Controls_{i,t} + \gamma_i + \gamma_t + \varepsilon_{i,h} \quad (4)$$

where $NUP_{i,t}$ is a dummy variable that is equal to 1 if prefecture i became an NUP designated pilot city in year t. All other explanatory variables, including government social spending and other prefecture-level controls, are identical to those in equation (1) in Section 2.2.2. A negative $\beta_{1,h}$ indicates that prefectures that were part of the NUP saw a bigger decline in household savings compared to prefectures that were not.

Figure 8. Event Studies: NUP's Cumulative Impact on Savings Rate
(*Percent; years after NUP pilot city designation)*



Sources: CEIC; IMF staff calculations.

Note: This chart presents the estimated trend of urban area household savings rate following the announcement of NUP designations. The coefficient is estimated based on equation (4). Standard errors are clustered at the prefecture-level. Dashed lines indicate the 90 percent confidence interval.

As illustrated in **Figure 8**, the impulse response indicates a significant and persistent decline in urban household savings rate following the announcement of NUP pilot city designation. Specifically, the medium-term cumulative decline in urban households' savings rate is estimated at about 2.5 percentage points, providing further evidence regarding the effectiveness of Hukou reform in reducing household savings.

Finally, we employ the CFPS household-level survey data and test if at the micro-level the NUP hukou reform program help reduce the urban household savings rate. The test follows the difference-in-difference specification as exhibited below:

$$SavingRate_{i,t} = \beta_1 UrbanHukou_{i,t} + \beta_2 NUP_{city,t} + \beta_3 UrbanHukou_{i,t} \times NUP_{city,t} + \beta_4 Pensions_{i,t} + \beta_5 Controls_{i,t} + \gamma_{province-year} + \gamma_{industry} + \varepsilon_{i,t} \quad (5)$$

where $NUP_{city,t}$ is a dummy that is set to 1 if the survey year t is at least 2 years after household i's registered prefecture is designated as an NUP pilot prefecture-level city. As reported in **Table 1 Column 3**, the average urban household savings rate decreased by 3.7 percentage points after the NUP designation, suggesting the positive effect of the comprehensive Hukou reform on reducing overall urban household savings. Moreover, as indicated by the positive and significant coefficient associated with the interaction term, the NUP helped

mitigate the savings rate gap between urban Hukou and rural Hukou household savings rate. This is likely because the program has substantially eliminated the barriers for Hukou conversions in the pilot cities, reducing the difference in precautionary saving motives between the two groups i.e. even households that still hold non-urban Hukous in NUP designated cities save less given expectations that they will be able to access social services available to urban Hukou holders in the future.

4. The Real Estate Market and Household Savings

4.1. Background and Conceptual Underpinning

The real estate sector in China expanded significantly since the early 2000s, accounting for approximately 20 percent of the country's GDP after taking into account linkages across other sectors. At the same time, China's household wealth is increasingly related to home prices as the homeownership rate is among the highest globally, with over 90 percent of households owning properties (Clark, Huang, and Yi, 2021). However, rising vulnerabilities in the real estate market, coupled with the collapse in household confidence amid the pandemic lockdowns, have led to sharp decline in property sales and a correction in house prices. As of 2024, residential property sales measured by floor space sold and secondary market house prices have declined by over 40 percent and 10 percent, respectively, from the peak in 2021.

Although the literature has provided evidence that house prices affect household savings in China through multiple channels (e.g., Zhang et al., 2018), most studies have primarily focused on the period corresponding to the real estate market boom, and few of them have empirically disentangled the various channels. In this section, we rely on household-level survey data to study channels through which the property sector impacts household savings, particularly in the context of the recent real estate market correction. Our empirical analysis will be guided by the premise that developments in the real estate market can significantly drive household savings through the following two channels:

- **Downpayment channel:** This channel affects the savings behavior of potential home buyers, particularly those who do not currently own any properties. Falling housing prices could reduce the incentive to save, as the required amount of downpayment decreases. However, this relationship could be dampened amid a housing market slump if potential home buyers opt to delay their plan of home purchase, thereby diminishing the motivation to save for downpayment.
- **Wealth effect channel:** Changes in house prices can impact the level of household wealth associated with real estate, thereby changing homeowners' consumption and savings behavior. As such, corrections in house prices or a more pessimistic outlook for future house price growth can lead to reduced household consumption demand and increased savings.

To disentangle these two housing-related channels affecting household savings, we use data from the biannual CFPS urban household survey spanning from 2012 to 2022. We test the following two hypotheses in this section: first, homeowners who see a decline in their property-related net worth tend to consume less and therefore save more; second, comparing to homeowners, non-homeowners exhibit higher savings rates, and particularly those with lower deposits. While the first hypothesis could provide evidence for the wealth effect channel, the second hypothesis supports the existence of the downpayment channel for non-homeowners at the extensive (need for non-homeowners to save more) and intensive (need for non-homeowners with less

cash deposits to save even more) margins. In addition, we also employ the difference-in-difference specification to test if the magnitudes of the two channels have changed during the real estate market correction since 2021.

4.2. Empirical Analysis and Results

The following baseline specification is estimated to disentangle the wealth and downpayment effects:

$$SavingsRate_{i,t} = \beta_1 log\ (income_{i,t}) + \beta_2 NHA_{i,t} + \beta_3 Deposit_{i,t} + \beta_4 Non\_homeowner_{i,t} + \beta_5 Deposit_{i,t} \times Non\_homeowner_{i,t} + \tau_i + \tau_t + \epsilon_i \quad (6)$$

The specification includes both homeowners' housing-related net worth and non-homeowners' bank deposit holdings, while controlling for household income, household-fixed-effects, and year-fixed-effects. In particular, $NHA_{i,t}$ is the net housing asset to income ratio of household i in year t, which serves as a proxy for property-related household wealth and is calculated by subtracting the household's net mortgage balance from the value of their currently owned properties,
then dividing the result by household income (i.e., $NHA_{i,t} = \left(Property\_Value_{i,t} - Mortgage\_Balance_{i,t}\right)/ Income_{i,t}$).[15] The household wealth effect on saving is captured by the test of $\beta_2 < 0$, which indicates that a decline in housing related net worth is associated with higher savings. To account for the savings behavior of non-homeowners, the coefficient for the non-homeowner dummy is tested for $\beta_4 > 0$, which supports non-homeowners' stronger saving motive at the extensive margin. Besides, our analysis distinguishes non-homeowners with high versus low cash holdings and tests if the downpayment channel also presents at the intensive margin ($\beta_5 < 0$).

Column 1 of Table 3 presents the results for the panel regression specification (6) without the post-2021 dummy, while **Column 2** includes the interactions of the post-2021 dummy with the key variables of interest to test whether the wealth and downpayment channels have changed during the housing market correction. We find that both the wealth effect and downpayment channels are significant drivers of household savings, though the downpayment channel has weakened since the start of the real estate market correction in 2021, potentially reflecting households' decision to delay home purchases.

As shown in **Column 1 of Table 3**, urban households' NHA-to-income ratio was significantly associated with their savings rate. Based on the estimated coefficient, a 0.5 standard-deviation decline in NHA-to-income ratio (which is equivalent to a decline in house price of approximately 20 percent) is associated with an increase in urban household savings rate of 0.35 percentage points.[16] When the NHA-to-income ratio is interacted with the post-2021 dummy in **Column 2**, the interaction term is not significant, suggesting that the wealth effect channel has been persistent throughout the sample period and has not weakened after the start of the property market correction in 2021.

The regression analysis also confirms the presence of the downpayment channel, although it appears to be weakening. As illustrated in **Column 1 of Table 3**, the savings rate of urban non-homeowners is about 2.8 percentage points higher than that of their homeowner peers, suggesting a general motive among non-

[15] The summary statistics of variables in equation (5) are included in Annex Table A5. The net housing asset to income ratio is winsorized at the threshold of 500. The result remains robust if the threshold is lowered to 200 or 100.

[16] The impact is estimated as the product of one standard deviation of the NHA/income ratio and the coefficient in Table 3 (0.020).

homeowners to save more for future downpayments (extensive margin). Furthermore, households with lower deposit ratios also tend to save more given less accumulated financial wealth. As shown in **Column 1 of Table 3**, the interaction term between non-homeowners and the deposit-to-income ratio is negative, indicating that non-homeowners with higher deposit balances see a larger decline in their savings (intensive margin). That is, for a non-homeowner, savings increase by about 1.3 percentage points more compared to a homeowner, for a one-unit decrease in bank deposit-to-income ratio (i.e., the difference in deposit is equivalent to the annual income). However, since 2022 (**Column 2**), such downpayment-related savings motive for non-homeowners with less deposit holdings have significantly weakened, as the coefficient for the triple interaction term suggests a complete offset of the downpayment channel related to households' deposits. This may provide evidence to support a recent trend of delayed home purchases by non-homeowners, since some of them with lower cash deposit are less inclined to save for a downpayment.

Table 3. Housing Market Wealth and Downpayment Effects on Urban Household Savings

CFPS Urban Household Savings Rate

	(1)	(2)
Log(Total income)	16.969***	16.935***
	(0.368)	(0.370)
NHA to income ratio	-0.020***	-0.020***
	(0.006)	(0.006)
Deposit to income ratio	-0.196***	-0.139*
	(0.068)	(0.071)
Dummy for non-homeowner	2.778***	3.070***
	(0.738)	(0.790)
Deposit to income ratio x Dummy for non-homeowners	-1.283***	-1.443***
	(0.251)	(0.279)
NHA to income ratio x 2022dummy		0.010
		(0.033)
Deposit to income ratio x 2022dummy		-0.583***
		(0.206)
Dummy for non-homeowner x 2022dummy		-1.833
		(1.516)
Deposit to income ratio x Dummy for non-homeowners x 2022dummy		1.060*
		(0.602)
Household FE	Yes	Yes
Time FE	Yes	Yes
Observations	31,905	31,905
R-squared	0.105	0.106

Source: CFPS 2012-2022

Note: This table reports the estimated coefficients from regression specification (6) based on the full urban sample of the CFPS from 2012-2022. Column (1) presents the baseline estimates. Column (2) presents the estimates with an alternative specification that includes interactions with the 2022 dummy. Standard errors are clustered at the household level. *p<0.1; **p<0.05; ***p<0.01

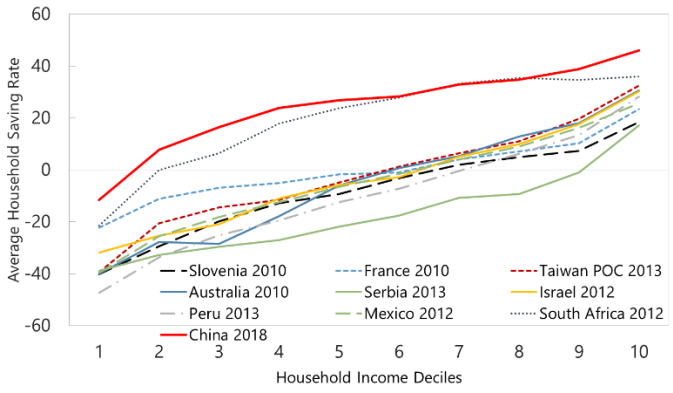
5. Conclusion

This paper empirically examines the following key factors potentially driving China's high household savings: limited social safety nets, the gap in access to social benefits due to the Hukou system, and the ongoing correction in the real estate market. The analysis utilizes multiple data sources in China, including prefecture-level indicators, such as government social expenditure, alongside the most up-to-date household-level survey data.

The analysis shows that the weak social safety net in China remains a key factor for high household savings. Insufficient government spending on social welfare in regions with high rural population shares has resulted in higher precautionary savings. Specifically, prefecture-level data from 2012 to 2022 indicates that a doubling of government expenditure on social security and healthcare is associated with the medium-term rural household savings rate declining by 4.8 and 5.9 percentage points, respectively, and the effect is stronger for vulnerable populations (i.e., those residing in lower tier cities and for regions with lower urban population share). Meanwhile, complementary analysis based on the household-level survey data shows urban migrants with rural Hukous tend to save more than their urban Hukou peers. The gap in savings rate between the two Hukou groups has narrowed in the past decade, potentially reflecting recent reforms. However, a significant gap still remains, suggesting that Hukou registration still plays an important role in driving saving decisions.

The paper also examines the impact of the recent real estate market correction on household savings by disentangling two main channels: the downpayment channel for non-homeowners and the wealth effect channel for homeowners. The analysis reveals that the wealth effect has persisted since the real estate market correction began in 2021, with a significant negative relationship between homeowners' net housing assets to income ratio and their savings rates. However, the downpayment channel has weakened recently, as non-homeowners with low deposits no longer save more for future downpayments and mortgage payments, potentially due to subdued confidence and delayed plans for home purchases amid the prolonged real estate market downturn.

Figure 9. Distributions of Urban Household Savings
(Percent)



Sources: Lexembourg Income Study; IMF staff calculations.

Note: The savings rate is calculated as the median within each decile.

The authorities have taken important steps to improve the social safety net, although there remains a significant scope for further reforms which could meaningfully lower the household savings rate. Fiscal social spending has doubled over the past two decades but remains well below that of peers. Further increases in social spending, particularly by LGs with heightened fiscal vulnerabilities, may become increasingly challenging. Since the early 2010s, waves of Hukou reforms have been initiated to address the social benefit gaps between migrant and urban Hukou households. Nonetheless, full liberalization of the Hukou system has only been implemented in cities with urban populations under 3 million. Restrictions on obtaining an urban Hukou or fully accessing social benefits remain in place in larger cities, where about half of the country's population resides. Further Hukou reforms may encounter resistance amid concerns about large cities' capacity to provide adequate social benefits and the potential loss of rural Hukou benefits (e.g., rural land rights and dividends) for the migrant population.

Finally, reducing aggregate household savings requires a comprehensive package that addresses high savings among not only low-income but also wealthy households. As Figure 9 shows, the households with high income tend to save more, with the savings rate of the top deciles also above their peers in most other economies. Given still strong housing-related wealth effects, addressing the problems in the housing market may help reduce the savings rate of higher-income households.

In line with the 2024 China Article IV Consultation Staff Report, the findings in this paper provide the following granular implications for future policy priorities regarding reducing household savings:

- First, further increasing social spending to align with international peers can help reduce high household savings. As illustrated in this paper, increasing social spending in prefectures with higher shares of rural population could generate a larger reduction in the household savings rate. As such, given the fiscal constraints faced by LGs, prioritizing social spending that is targeted towards rural households should be a priority.
- Second, in urban areas, gradual and further Hukou reforms are warranted to reduce the social benefit gap between migrant and urban Hukou households. As the Hukou reforms remain incomplete in major cities (above 3 million population), further liberalizing Hukou registration restrictions and providing more equitable social benefits to households regardless of Hukou status should be the priorities.
- Finally, as the downward correction in the housing market mainly impacts household savings through the wealth effect channel, measures to facilitate a more efficient and less costly transition in the real estate sector can also help boost consumption and reduce household savings.

Table A1. Prefecture-Level Analysis Summary Statistics

VARIABLES	No. of obs	Mean	Std. Dev.	1st quartile	median	3rd quartile
Urban HH savings rate (% of disposable income)	2,962	35.22	7.205	30.99	35.46	39.76
Rural HH savings rate (% of disposable income)	2,463	24.23	10.43	18.09	24.74	31.01
Gov't spending on social security (1,000 RMB)	2,950	1.369	0.732	0.870	1.215	1.666
Gov't spending on healthcare (1,000 RMB)	2,751	0.919	0.390	0.643	0.874	1.125
Gov't spending on education (1,000 RMB)	3,239	1.770	0.827	1.272	1.615	2.025
Growth rate of house price (%)	3,021	3.894	2.942	1.802	3.578	5.511
Urban house price to income ratio (% of disposable income)	2,977	18.32	7.651	14.13	16.51	20.19
Rural house price to income ratio (% of disposable income)	2,651	40.18	16.26	30.69	36.74	45.28
GDP per capita (RMB 1,000)	3,324	57.44	33.40	33.73	48.49	71.54
Urbanization rate (%)	2,791	57.69	14.32	47.32	55.79	66.17

Sources: CEIC; NBS, provincial bureau of statistics; and IMF staff calculations.

Table A2. Local Projections Regressions: The Impact of Government Social Spending on Household Savings

Panel A. Rural Sample

VARIABLES	(1) Year T+0	(2) Year T+1	(3) Year T+2	(4) Year T+3	(5) Year T+4	(6) Year T+5
Log(Govt_Spending_SS)	-0.004	-0.035	-0.172*	-0.327***	-0.455***	-0.213
	(0.063)	(0.080)	(0.096)	(0.114)	(0.132)	(0.149)
Log(Govt_Spending_Health)	-0.290***	-0.549***	-0.677***	-0.540***	-0.706***	-0.753***
	(0.088)	(0.114)	(0.144)	(0.166)	(0.186)	(0.205)
Log(Govt_Spending_Edu)	-0.206*	-0.346**	-0.381**	-0.194	-0.093	-0.172
	(0.115)	(0.149)	(0.178)	(0.201)	(0.228)	(0.257)
House Price to Disposable Income Ratio	-0.018	-0.038	-0.039	-0.002	0.034	0.119***
	(0.021)	(0.027)	(0.031)	(0.037)	(0.042)	(0.046)
ΔHouse Price	0.021	0.065	0.081	-0.061	-0.103	-0.383***
	(0.060)	(0.076)	(0.091)	(0.106)	(0.124)	(0.138)
GDP_Per_Capita	-0.032***	-0.068***	-0.086***	-0.045*	-0.064**	-0.124***
	(0.012)	(0.015)	(0.020)	(0.024)	(0.030)	(0.038)
ΔSavings_Rate (t-1)	-0.182***	-0.184***	-0.303***	-0.346***	-0.286***	-0.328***
	(0.023)	(0.029)	(0.034)	(0.037)	(0.040)	(0.043)
Observations	1,565	1,493	1,329	1,163	1,001	838
R-squared	0.321	0.319	0.465	0.563	0.626	0.713
Prefecture FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table shows local projections estimates on the impact of social spending on rural household savings with equation (1). The three key explanatory variables are Govt_Spending_SS, Govt_Spending_Health, Govt_Spending_Edu, which are defined as the natural logarithm of government spending on social security, healthcare, and education, respectively. The estimated coefficients of these three variables are standardized to depict the cumulative impact on household savings rate following a 10 percent increase in social spending. Standard errors are clustered at the prefecture-level. *p<0.1; **p<0.05; ***p<0.01.

Panel B. Urban Sample

VARIABLES	(1) Year T+0	(2) Year T+1	(3) Year T+2	(4) Year T+3	(5) Year T+4	(6) Year T+5
Log(Govt_Spending_SS)	0.082*	0.126**	0.096	-0.010	-0.039	-0.115
	(0.042)	(0.053)	(0.063)	(0.073)	(0.078)	(0.080)
Log(Govt_Spending_Health)	0.003	0.005	0.028	0.020	0.002	0.069
	(0.065)	(0.080)	(0.096)	(0.106)	(0.109)	(0.108)
Log(Govt_Spending_Edu)	-0.049	-0.070	-0.127	-0.250**	-0.263**	-0.274**
	(0.066)	(0.082)	(0.097)	(0.108)	(0.112)	(0.112)
House Price to Disposable Income Ratio	-0.040	-0.015	0.075*	0.129***	0.125***	0.119**
	(0.028)	(0.034)	(0.040)	(0.045)	(0.047)	(0.048)
ΔHouse Price	-0.029	-0.044	-0.148***	-0.121**	-0.054	-0.068
	(0.033)	(0.040)	(0.047)	(0.052)	(0.053)	(0.053)
GDP_Per_Capita	-0.001	-0.011	-0.009	0.014	0.028*	0.043**
	(0.008)	(0.010)	(0.013)	(0.015)	(0.017)	(0.018)
ΔSavings_Rate (t-1)	-0.239***	-0.263***	-0.329***	-0.368***	-0.465***	-0.445***
	(0.020)	(0.024)	(0.029)	(0.032)	(0.032)	(0.031)
Observations	2,812	2,711	2,494	2,289	2,097	1,895
R-squared	0.170	0.187	0.248	0.302	0.394	0.484
Prefecture FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table shows local projections estimates on the impact of social spending on urban household savings with equation (1). The three key explanatory variables are Govt_Spending_SS, Govt_Spending_Health, Govt_Spending_Edu, which are defined as the natural logarithm of government spending on social security, healthcare, and education, respectively. The estimated coefficients of these three variables are standardized to depict the cumulative impact on household savings rate following a 10 percent increase in social spending. Standard errors are clustered at the prefecture-level. *p<0.1; **p<0.05; ***p<0.01.

Table A3. Local Projections Regressions: Difference-in-Difference Analysis with Government Spending and Prefecture Vulnerability

Panel A. High vs. Low Urbanization Rates of Prefectures (Rural Sample)

VARIABLES	(1) Year T+0	(2) Year T+1	(3) Year T+2	(4) Year T+3	(5) Year T+4	(6) Year T+5
Log(Govt_Spending_SS)	0.021	-0.003	-0.114	-0.253**	-0.415***	-0.128
	(0.070)	(0.089)	(0.107)	(0.122)	(0.141)	(0.159)
Log(Govt_Spending_SS) x Low_Urban_Rate	-0.111	-0.141	-0.101	-0.090	0.051	-0.023
	(0.112)	(0.143)	(0.171)	(0.192)	(0.217)	(0.245)
Log(Govt_Spending_Health)	-0.356***	-0.542***	-0.494***	-0.260	-0.321	-0.220
	(0.097)	(0.125)	(0.158)	(0.177)	(0.201)	(0.226)
Log(Govt_Spending_Health) x Low_Urban_Rate	0.258*	0.030	-0.565**	-0.897***	-0.949***	-0.923**
	(0.153)	(0.199)	(0.242)	(0.269)	(0.304)	(0.369)
Log(Govt_Spending_Edu)	-0.229*	-0.566***	-0.900***	-0.550**	-0.400	-0.393
	(0.128)	(0.164)	(0.197)	(0.218)	(0.244)	(0.274)
Log(Govt_Spending_Edu) x Low_Urban_Rate	-0.124	0.364	1.242***	1.340***	1.064***	0.885**
	(0.192)	(0.249)	(0.297)	(0.327)	(0.369)	(0.431)
Observations	1,600	1,521	1,352	1,180	1,010	840
R-squared	0.321	0.316	0.455	0.570	0.635	0.709
Prefecture Controls	Yes	Yes	Yes	Yes	Yes	Yes
Prefecture Controls	Yes	Yes	Yes	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table shows local projections estimates on the impact of social spending on rural household savings with equation (2). The three key explanatory variables are Govt_Spending_SS, Govt_Spending_Health, Govt_Spending_Edu, which are defined as the natural logarithm of government spending on social security, healthcare, and education, respectively. Low_Urban_Rate is a dummy variable that is equal to 1 if prefecture's historical average of urbanization rate falls below the sample median. The estimated coefficients of these three variables and their interactions with the low urbanization rate dummy are standardized to depict the cumulative impact on household savings rate following a 10 percent increase in social spending. Standard errors are clustered at the prefecture-level. *p<0.1; **p<0.05; ***p<0.01.

Panel B. High vs. Low Prefecture Tiers (Rural Sample)

VARIABLES	(1) Year T+0	(2) Year T+1	(3) Year T+2	(4) Year T+3	(5) Year T+4	(6) Year T+5
Log(Govt_Spending_SS)	0.067	0.072	0.096	0.103	-0.068	0.337
	(0.128)	(0.161)	(0.188)	(0.200)	(0.214)	(0.230)
Log(Govt_Spending_SS) x Low_Tier	-0.065	-0.099	-0.267	-0.442*	-0.372	-0.631**
	(0.139)	(0.175)	(0.207)	(0.225)	(0.250)	(0.278)
Log(Govt_Spending_Health)	-0.290**	-0.244	0.081	0.320	0.049	-0.023
	(0.143)	(0.182)	(0.225)	(0.239)	(0.265)	(0.286)
Log(Govt_Spending_Health) x Low_Tier	0.025	-0.327	-0.787***	-0.973***	-0.751**	-0.567*
	(0.163)	(0.207)	(0.256)	(0.277)	(0.304)	(0.331)
Log(Govt_Spending_Edu)	-0.209	-0.717***	-1.270***	-1.084***	-0.677**	-0.721*
	(0.195)	(0.245)	(0.291)	(0.313)	(0.344)	(0.379)
Log(Govt_Spending_Edu) x Low_Tier	-0.047	0.419	1.056***	1.173***	0.516	0.484
	(0.224)	(0.285)	(0.338)	(0.365)	(0.405)	(0.453)
Observations	1,600	1,521	1,352	1,180	1,010	840
R-squared	0.318	0.313	0.453	0.579	0.645	0.719
Prefecture Controls	Yes	Yes	Yes	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table shows local projections estimates on the impact of social spending on rural household savings with equation (2). The three key explanatory variables are Govt_Spending_SS, Govt_Spending_Health, Govt_Spending_Edu, which are defined as the natural logarithm of government spending on social security, healthcare, and education, respectively. Low_Tier is a dummy variable that is equal to 1 if a prefecture does not belong to Tier 1 or Tier 2 prefecture-level cities. The estimated coefficients of these three variables and their interactions with the low tier dummy are standardized to depict the cumulative impact on household savings rate following a 10 percent increase in social spending. Standard errors are clustered at the prefecture-level. *p<0.1; **p<0.05; ***p<0.01.

Table A4. Prefecture-Level Robustness Tests

Panel A. Strictly Balanced Sample (Rural Sample)

VARIABLES	(1) Year T+0	(2) Year T+1	(3) Year T+2	(4) Year T+3	(5) Year T+4	(6) Year T+5
Log(Govt_Spending_SS)	0.086	0.076	-0.034	-0.230*	-0.443***	-0.252*
	(0.107)	(0.130)	(0.136)	(0.135)	(0.140)	(0.142)
Log(Govt_Spending_Health)	-0.355**	-0.370**	-0.562***	-0.486***	-0.675***	-0.648***
	(0.149)	(0.180)	(0.188)	(0.186)	(0.194)	(0.196)
Log(Govt_Spending_Edu)	-0.105	-0.456**	-0.441*	-0.218	-0.224	-0.131
	(0.187)	(0.226)	(0.236)	(0.234)	(0.244)	(0.246)
House Price to Disposable Income Ratio	-0.021	-0.024	-0.067	-0.054	-0.004	0.084*
	(0.034)	(0.041)	(0.043)	(0.042)	(0.044)	(0.044)
ΔHouse Price	0.026	0.089	0.334**	0.239*	0.098	-0.223
	(0.103)	(0.124)	(0.130)	(0.129)	(0.134)	(0.135)
GDP_Per_Capita	-0.025	-0.027	-0.017	-0.026	-0.067*	-0.133***
	(0.027)	(0.033)	(0.035)	(0.034)	(0.036)	(0.036)
ΔSavings_Rate (t-1)	-0.177***	-0.216***	-0.312***	-0.292***	-0.285***	-0.329***
	(0.032)	(0.038)	(0.040)	(0.040)	(0.041)	(0.042)
Observations	795	795	795	795	795	795
R-squared	0.314	0.393	0.561	0.660	0.684	0.723
Prefecture FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table shows local projections estimates on the impact of social spending on rural household savings with equation (1). The local projections are conducted with a strictly balanced panel. The three key explanatory variables are Govt_Spending_SS, Govt_Spending_Health, Govt_Spending_Edu, which are defined as the natural logarithm of government spending on social security, healthcare, and education, respectively. The estimated coefficients of these three variables are standardized to depict the cumulative impact on household savings rate following a 10 percent increase in social spending. Standard errors are clustered at the prefecture-level. *p<0.1; **p<0.05; ***p<0.01.

Panel B. Growth in Government Social Spending as Explanatory Variables (Rural Sample)

VARIABLES	(1) Year T+0	(2) Year T+1	(3) Year T+2	(4) Year T+3	(5) Year T+4	(6) Year T+5
Δlog(Govt_Spending_SS)	0.019	0.057	0.089	-0.002	-0.003	0.022
	(0.041)	(0.052)	(0.059)	(0.064)	(0.069)	(0.073)
Δlog(Govt_Spending_Health)	-0.150***	-0.295***	-0.291***	-0.260**	-0.415***	-0.420***
	(0.056)	(0.073)	(0.092)	(0.101)	(0.116)	(0.128)
Δlog(Govt_Spending_Edu)	0.005	-0.314***	-0.411***	-0.358**	-0.245	-0.187
	(0.086)	(0.112)	(0.131)	(0.142)	(0.160)	(0.171)
House Price to Disposable Income Ratio	-0.016	-0.012	0.020	0.060	0.069	0.117**
	(0.022)	(0.028)	(0.033)	(0.039)	(0.045)	(0.049)
ΔHouse Price	0.027	0.011	-0.059	-0.204*	-0.207	-0.429***
	(0.062)	(0.080)	(0.096)	(0.113)	(0.135)	(0.154)
GDP_Per_Capita	-0.024*	-0.055***	-0.079***	-0.053**	-0.052*	-0.119***
	(0.012)	(0.016)	(0.020)	(0.024)	(0.030)	(0.038)
ΔSavings_Rate (t-1)	-0.188***	-0.192***	-0.305***	-0.361***	-0.282***	-0.318***
	(0.024)	(0.030)	(0.035)	(0.039)	(0.043)	(0.045)
Observations	1,458	1,387	1,227	1,061	907	750
R-squared	0.307	0.320	0.465	0.575	0.637	0.731
Prefecture FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table shows local projections estimates on the impact of social spending on rural household savings with equation (1). Three key explanatory variables are Govt_Spending_SS, Govt_Spending_Health, Govt_Spending_Edu, which are defined as the annual change in natural logarithm of government spending on social security, healthcare, and education, respectively. The estimated coefficients of these three variables are standardized to depict the cumulative impact on household savings rate following a 10 percentage points increase in social spending growth. Standard errors are clustered at the prefecture-level. *p<0.1; **p<0.05; ***p<0.01.

Table A5. Household-Level Analysis Summary Statistics

VARIABLES	No. of obs	Mean	Std. Dev.	1st quartile	median	3rd quartile
Savings Rate (%)	30,033	1.76	55.004	-27.63	13.311	42.929
Urban Hukou HHs	30,033	0.517	0.5	0	1	1
New urban Hukou HHs	30,033	0.04	0.195	0	0	0
Existing urban Hukou HHs	30,033	0.478	0.5	0	0	1
Pensions	30,033	0.741	0.438	0	1	1
Education (schooling years)	30,033	9.612	4.556	7	9	12
ln(Total income)	30,033	11.113	0.903	10.597	11.156	11.695
Debt to income ratio	30,033	0.058	0.315	0	0	0
Household size	30,033	3.393	1.672	2	3	4
Age	30,033	47.979	15.397	35	48	60
Net housing asset	26,834	820,220	1,905,957	100,000	300,000	800,000
Net housing asset to income ratio	31,996	8.5	22.7	0.0	3.3	8.5
Bank deposit to income ratio	36,518	1.1	4.3	0.01	0.3	1.1
Homeownership dummy	36,659	0.7	0.5	0	1	1

Table A6. Household-Level Robustness Tests: Role of Urban Hukou

VARIABLES	(1)	(2)
Urban hukou	-1.71*	-6.67***
	(1.00)	(1.67)
Pension	-1.66**	-3.32**
	(0.80)	(1.55)
Other pension	-0.75***	-1.50***
	(0.16)	(0.15)
Education	46.94***	33.69***
	(1.12)	(0.77)
ln(income)	-7.01***	-14.83***
	(1.43)	(2.06)
Debt-to-income ratio	-5.94***	-3.31***
	(0.32)	(0.60)
Household size	-0.26	0.47*
	(0.20)	(0.27)
Age	0.53**	-0.28
	(0.21)	(0.27)
Age^2	-1.66**	-3.32**
	(0.80)	(1.55)
Observations	27,082	8,808
R-squared	0.54	0.23
Strictly Balanced Panel	No	Yes
Industry FE	No	Yes
Province-Year FE	No	Yes
Household FE	Yes	No
Year FE	Yes	No

Note: This table report the robustness test for the results in Table 1 based on the CFPS household survey data during 2012-2022. Column (1) presents the estimates with the full sample and a specification that includes household fixed-effects and year fixed-effects. Column (2) presents the estimates with a strictly balanced panel in which each household is observable in all the 6 rounds of the biennial surveys during 2012-2022. All other variables are defined in Section 3.2.1. Standard errors are clustered at the province-level. *p<0.1; **p<0.05; ***p<0.01.

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