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# Caregiving responsibility and adult children's migration: evidence from public long-term care insurance in China

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## ABSTRACT

The Chinese government issued public long-term care insurance (LTCI) in 2016 in response to its rapidly ageing population and the rising need for long-term care (LTC). Using nationally representative survey data, this paper investigates the intergenerational effect of LTCI on adult children's location choice. Leveraging a difference-in-differences (DID) approach, we find that parents' LTCI coverage decreases parents' perceptions of utilizing future care from children by 9.9% points and lowers adult children's rate of living in the same city by 3.9% points. The annual average benefit of migration associated with insuring both parents is approximately \$29. Additionally, the increased geographical mobility is more pronounced in offspring with heavier caregiving burdens. Our findings provide new evidence on the spillover effect of LTCI on geographical mobility, demonstrating a new perspective when evaluating the benefits of old-age support policies in a developing country.

## KEYWORDS

Long-term care insurance; intergenerational effect; caregiving responsibility; geographical mobility

## JEL CLASSIFICATION

I15; I18; J14; R23



## I. Introduction

The recent significant global demographic shift towards ageing demands urgent attention from policymakers. As disability rates and health risks escalate with age, the rapid growth of the elderly population highlights a rising demand for long-term care (LTC). By 2021, OECD countries allocated an average of 1.8% of their GDP on LTC, taking 18.5% of the total expenditures on healthcare. In the absence of governmental subsidies, the costs of LTC for households are high in two ways. On average, the expenses are 2.1 times more than the median income of the elderly in OECD countries.<sup>1</sup> From the perspective of opportunity costs, there will be costs of LTC in terms of reduced labour supply and worsened health among family caregivers (Han, Liu, and Zheng 2025; İmrohoroğlu and Zhao 2018; Lei et al. 2022; Maestas, Messel, and Truskinovsky 2024; Wen and Huang 2024).

One typical endeavour of governments to address LTC risks is long-term care insurance (For instance, in Japan, Germany, the US, and Singapore, which are all developed countries). In 2016, China, a developing


country experiencing one of the fastest transitions towards population ageing, reformed its medical insurance system by introducing public long-term care insurance (LTCI). Selected cities were designated as pilot sites for this initiative. By 2023, 49 cities had established public LTCI programs, covering 183 million participants and generating a fund pool of 24.36 billion yuan (approximately \$3.48 billion dollars).<sup>2</sup> In this paper, we focus on this specific old-age support policy and investigate its spillover effects on the younger generation regarding location choice.

Our attention to the intergenerational effects on location choice can be important from two perspectives. First, from an academic perspective, a growing literature has documented the spillover effects of LTCI, stressing its extensive influences on labour supply, health conditions, and consumption (H. Chen and Ning 2022; Fu et al. 2017; Geyer and Korfhage 2015; Han, Liu, and Zheng 2025; Lei et al. 2022; Liu, Ma, and Zhao 2023). Nevertheless, discussions on migration are rare (Coe, Goda, and Van Houtven 2023). It remains to be empirically investigated whether such a policy will affect the

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<sup>1</sup>OECD (2023), 'Long-term care spending and unit costs', in *Health at a Glance 2023: OECD Indicators*, OECD Publishing, Paris. DOI: <https://doi.org/10.1787/36e18bb7-en>.

<sup>2</sup>National Healthcare Security Administration. 2023 National Healthcare Security Development Statistical Bulletin.

 Supplemental data for this article can be accessed online at <https://doi.org/10.1080/00036846.2025.2596282>.

living arrangements of adult children. Second, from the policymaker's perspective, labour mobility is of economic value, especially in developing countries such as China, where regional inequality is a vital contributor to overall income inequality (Lin, Wang, and Zhao 2004). For example, according to the National Bureau of Statistics, the average annual income in Shanghai in 2024 is 88,366 yuan (approximately \$12,624), while in Gansu, an inner province in northwestern China, the average annual income is 26,612 yuan (approximately \$3,800). The large income gap has long been a key driver of migration decisions (Zhu 2002). According to the National Bureau of Statistics, the number of internal migrants in 2010 was 221 million, rising to 376 million by 2020. Suppose such an old-age support policy can promote geographical mobility. In that case, it will indicate economic returns for households and inform another aspect to evaluate the cost and benefits of such a social scheme.

Leveraging four waves of the China Health and Retirement Longitudinal Study (CHARLS), we examine whether adult children's location choice is responsive to their parents' LTCI coverage. We adopt a difference-in-differences (DID) framework similar to that seen in Lu, Wang, and Zhu (2019) to identify the reallocation effect of LTCI. The results show that LTCI significantly decreases the percentage of adult children living in the same city as their parents by 3.9% points, suggesting a significant intergenerational effect of LTCI. Parental expectations of receiving care from adult children by those with LTCI are 9.9% points lower than those without LTCI, further exposing an underestimated effect of LTCI. In addition, we conduct a trade-off analysis between caregiving responsibilities and migration. The results show that without the expectation of providing care, the probability of adult children living in the same city as their parents is reduced by 25.4% points. We roughly estimate that the average benefit of migration brought about by insuring both parents is approximately 207 yuan (approximately \$29) per year, which is enough to cover the cost of providing LTCI for one beneficiary. We also conduct a series of

heterogeneity analyses on parental health conditions, number of siblings, and hukou to offer further evidence on the reallocation effect of LTCI.

Our study contributes to three strands of literature. First, this paper is, to our knowledge, among the first to examine the reallocation effects of LTCI. Accumulating evidence illustrates the effects of LTCI on households: LTCI is found to extensively and intensively promote employment, encourage consumption, as well as improve health conditions for family members (Ameriks et al. 2020; L. Chen, Fan, and Chu 2019; Coe, Goda, and Van Houtven 2023; Fu et al. 2017; Geyer and Korfhage 2015, 2018; Han, Liu, and Zheng 2025; İmrohoroğlu and Zhao 2018; Lei et al. 2022; Liu, Ma, and Zhao 2023; Luo et al. 2024). Nevertheless, the evidence on the reallocation effects of LTCI is limited (Coe, Goda, and Van Houtven 2023). Using the Health and Retirement Study (HRS) data and an IV approach, Coe et al. find that parental LTCI lowers children's co-residence rates by 82% in the U.S. However, whether this reallocation effect takes place on a city level is not investigated, with the external validity in the context of China also not known.

More broadly, this paper adds to the growing literature highlighting the intergenerational effects of public old-age support policies. For example, Barczyk and Kredler (2018) examined LTCI options and suggested its crowding-out effect on the provision of informal care. Shen (2024) further revealed that daughters would benefit more from parents' LTCI by gaining full-time working possibilities. Our findings echo the spirit of their results, stressing the prevalence of unintended intergenerational effects of governments' policies targeting the elderly.

Third, this paper provides a causal exploration into the impact of caregiving responsibilities on migration. Concerns about geographical mobility drive researchers to investigate predictors of younger generations' living patterns. Family features and individual characteristics, such as gender, marital status, birth order, education level, job opportunities, culture, etc. are important predictors of co-residence (Arnault and Juin 2021; Chan and Ermisch 2015; Compton and Pollak 2015; Giuliano 2007; Konrad et al. 2002; Rainer and

Siedler 2012). Nevertheless, due to endogeneity, the extent to which caregiving responsibilities influence living arrangements is ambiguous. Fortunately, the long-term care insurance (LTCI) pilot program in China provides an exogenous policy shock that allows us to examine the impact of alleviated caregiving responsibilities. Exploiting this exogenous policy shock, we provide direct evidence of the influence of caregiving responsibility on migration.

The rest of the paper is organized as follows. Section II introduces the institutional background. Sections III and IV describe the data and methodology. Sections V provide empirical results, followed by heterogeneity analyses in section VI. Section VII concludes.

## II. Institutional background

### LTCI introduction

The healthcare system in China relies primarily on informal care; one reason for the underutilization of formal care is its affordability since it represents a direct out-of-pocket payment. To address this issue, the central government announced the first wave of long-term care insurance pilot programs in 15 cities in 2016, with 20 other cities in Shandong and Jilin Provinces becoming pilot cities in the latter two years. A second wave of 14 pilot cities was announced in 2020. Prior to 2023, 49 cities had participated in the public LTCI program, with 183 million people being covered and an income of 24.36 billion yuan (approximately \$3.48 billion) in that year.<sup>3</sup> The annual premium was approximately 180 yuan per capita (approximately \$26).

LTCI was initially targeted at Urban Employee Basic Medical Insurance (UEBMI) participants as an insurance auxiliary to public medical insurance.<sup>4</sup> It was later extended to urban and rural residents in some pilot cities. However, in most cities, eligibility for LTCI remains limited to participants in UEBMI.

Unlike Urban Resident Basic Medical Insurance (URBMI) and New Cooperative Medical Insurance (NCMI), which target unemployed citizens and rural residents, UEBMI provides an individual account for each participant and considers the length of contribution years. If the number of contribution years reaches 30 years for males or 25 years for females, then participants will be insured for life, including their eligibility for LTCI.

With respect to LTCI, reimbursement eligibility depends on both insurance participation and disability status. Specifically, LTCI coverage in China is determined by two main factors: (1) whether the individual resides in a pilot city, and (2) whether the individual holds medical insurance that meets the local eligibility requirements. Once an insured individual living in a pilot city becomes disabled, they are eligible for LTCI reimbursement. In some cases, LTCI benefits are similar to medical insurance, meaning that participants only receive reimbursement when they are ill and hospitalized.<sup>5</sup>

The policy options for LTCI include subsidies for formal nursing home care, formal home care provided by institutions, and informal home care. LTCI pays a fixed percentage of costs depending on care providers, with the overall reimbursement rate ranging from 50% to 90%. Typically, the reimbursement rate for home services is higher than that for either community-based services or nursing home services.

Although the reimbursement rate varies across cities according to local economic development, LTCI is generally generous to insured elderly individuals. According to estimates from the National Healthcare Security Administration, in 2021, 1.52 million people received compensation, and the average reimbursement per beneficiary was 1,292 yuan (approximately \$185) per month. The average wage was only 1,636 yuan (approximately \$234) per month per capita that year, which was slightly higher than the compensation. For those elderly individuals without formal employment before retirement, their average monthly pension was only 188 yuan (approximately \$27).

<sup>3</sup>National Healthcare Security Administration. '2023 National Healthcare Security Development Statistical Bulletin'. [https://www.nhsa.gov.cn/art/2024/7/25/art\\_7\\_13340.html](https://www.nhsa.gov.cn/art/2024/7/25/art_7_13340.html) (July 25, 2024).

<sup>4</sup>China has three types of national medical insurance plans operating within distinct pools, which are Urban Employee Basic Medical Insurance (UEBMI), Urban Resident Basic Medical Insurance (URBMI), and New Cooperative Medical Insurance (NCMI). URBMI and NCMI are less generous in reimbursement rates, with much lower premiums.

<sup>5</sup>In practice, disability status – and thus whether an individual will receive LTCI benefits – is determined according to a set of criteria, primarily the Barthel Activities of Daily Living (ADL) index.

### **Literature on LTCI in China**

A growing body of literature has examined the effects of China's LTCI pilot program, employing quasi-experimental designs to explore its wide-ranging impacts on health, healthcare utilization, consumption, and labour supply. For example, LTCI has been found to improve caregivers' health conditions and reduce recipients' mortality rates (Lei et al. 2022; Luo et al. 2024). In addition, evidence shows that LTCI increases healthcare utilization while reducing out-of-pocket medical expenditures (H. Chen and Ning 2022; Lei et al. 2022). Liu, Ma, and Zhao (2023) further demonstrate that LTCI raises non-health consumption among elderly households, primarily driven by those without disabled members.

Among these impacts, the program's influence on labour supply has attracted the most attention, given China's rapid population ageing (Gruber et al. 2025). Han, Liu, and Zheng (2025) document that LTCI promotes spousal labour supply along both the extensive and intensive margins, likely through reducing informal caregiving hours – a pattern consistent with findings from Japan (Fu et al. 2017). From the perspective of retirement decisions, Yang and Zhao (2025) find that LTCI increases the likelihood of delayed retirement, whereas Ai, Feng, and Zhang (2024) report that it reduces post-retirement labour market participation. Despite these extensive discussions, relatively little attention has been paid to other dimensions of labour supply, such as the geographical choices of workers.

## **III. Data**

### **Data**

The primary data we use are drawn from the China Health and Retirement Longitudinal Study (CHARLS). The CHARLS is conducted by the National School of Development at Peking University, benchmarked against the Health and Retirement Study in the United States, and widely used in health and family support-related studies (Liu, Ma, and Zhao 2023; Luo et al. 2024). The

dataset is a panel that tracks the same respondents over time while incorporating new entrants in subsequent waves. Through face-to-face interviews held with family respondents aged over 45, the CHARLS provides information on individuals, as well as other family members. For each chosen household, one member is randomly chosen as the main respondent, and the respondent's current living spouse is also interviewed and asked to answer the same questions. Questions about their children are also asked in the survey. Information on children, including their marriage status, gender, age, educational background, employment, and residence, is collected in the family information module, where detailed questions on adult children are asked. In this study, we exploit four waves of the CHARLS, namely, 2011, 2013, 2015, and 2018, with each wave comprising approximately 10,000 households.

For our main sample, we focus on adult children of working age (15 – 60 years old). The observation of adult children is treated as the basic unit and then merged with their parental information. Since our research interest lies in the location choice of adult children, particularly whether they choose to live in the same city as their parents do, we first exclude those (1) whose parents migrated to another city during the study period and (2) whose parents' residences are not consistent with their hukou registration city to rule out the possibility that their parents initially migrated. We then restrict our sample to children whose parents were at least 40 years old. 10,285 observations are excluded due to the rules above.

### **Measurement**

#### **Dependent Variable**

The construction of key variables is introduced in this section. The dependent variable of this paper (samecity) exploits the question in the survey 'Where does the child live?' and equals 1 if the child lives in the same city as his or her parents and 0 otherwise.<sup>6</sup> For another outcome variable (caregiving), the CHARLS reports the expected

<sup>6</sup>The CHARLS asks the respondent for each of the living child 'Where does this [child's name] normally live now?' with options including: (1) in this household and economically dependent, (2) in this household but economically independent, (3) another household in the same village/neighbourhood, (4) another village/neighbourhood in the same city, (5) another city, or (6) abroad.

use of care in the future by asking, ‘Who would be willing and able to help you over a long period if you needed help with basic daily activities such as eating or dressing in the future?’ If either children, children’s spouses, or grandchildren are reported as being expected to care for the individual in the future, the caregiving variable is given a value of 1 and 0 otherwise.

### Independent variable

For the LTCI treatment status, it depends on whether parents are from pilot cities and whether they are eligible for LTCI. In our sample, 21 out of 126 prefectural-level cities had introduced LTCI by the time of our last wave of CHARLS, including Qingdao, the only city launching the program before 2015, and 6 cities that introduced LTCI in 2016 and 2017, as well as 14 cities where local governments had launched the program in 2018. Among these cities, all 21 pilot cities provided LTCI coverage for UEBMI enrollees. Of these, 5 cities also covered urban residents enrolled in URRBMI, and 3 cities additionally covered both urban and rural residents enrolled in URRBMI.

We measure the intensity of the treatment according to parents’ eligibility for the local LTCI. We then construct an indicator ( $Eligibility_{ic}$ ) of whether the parent is eligible for LTCI based on local eligibility rules for LTCI and her public health insurance type. Eligibility is determined by parents’ public medical insurance type before retirement and thus becomes irrelevant with time. For each household, we consider both the father’s and the mother’s eligibility for LTCI and take their mean as the measurement for the treatment intensity. Therefore, the treatment intensity of LTCI in our study ( $Elig_{ic}$ ) can take three different values, which are 0, 0.5, and 1.

### Descriptive statistics

Our final dataset is an unbalanced panel comprising 27,550 individuals from 10,602 households

across four waves. Table 1 reports the sample sizes of adult children in each wave, as well as those in the treatment and control groups.

We define children living in a city different from their parents’ registered residence as having changed location, and assign the dependent variable ( $Samecity$ ) a value of 0 in such cases, and 1 otherwise. The main outcome variable ( $Caregiving$ ) is a binary indicator reported by parents on whether they expect their children to provide care in the future. To provide a more comprehensive overview of these dependent variables, we present descriptive statistics for  $Caregiving$  and  $Samecity$  by LTCI status and policy implementation period (Table 2A,B).

The CHARLS includes rich questions about one’s parents, such as age, health condition, marriage, hukou, and educational background. Answers to these questions can be used as control variables because they are found to be correlated with the burden of caregiving. CHARLS also includes detailed questions related to Activities of Daily Living (ADLs), such as whether respondents have difficulty dressing, bathing or showering, eating, getting into or out of bed, using the toilet, or controlling urination and defaecation. Based on these items, we define a respondent as disabled if they report any difficulty in the above activities. The definition of all these variables and their descriptive statistics are displayed in the appendix (Table A1).

## IV. Empirical strategy

### Effects on location choice

To estimate the spillover effects of parental LTCI on adult children’s migration, we leverage a difference-in-differences (DID) approach. This estimation compares an adult child’s location before and after parental coverage of LTCI (the first difference) and the changes in location among counterparts whose parents are not covered by public LTCI (the second

**Table 1.** Number of adult children per wave whose parents live in the pilot cities.

Pilot	Wave				Total
	2011	2013	2015	2018	
Pilot = 0	17,217	19,474	19,405	19,084	75,180
Pilot = 1	3,307	3,907	3,879	3,767	14,860
Total	20,524	23,381	23,284	22,851	90,040

**Table 2.** A: average outcome before and After the implementation (*Samecity*).

Dependent variable: <i>Samecity</i>	LTCI Status = 0		LTCI Status = 1		Mean Difference	t-Value
	N	Mean	N	Mean		
Before implementation	50511	0.765	1978	0.813	−0.048	−4.952***
After implementation	20747	0.768	748	0.805	−0.037	−2.347**

B: Average Outcome Before and After the Implementation ( <i>Caregiving</i> )						
Dependent variable: <i>Caregiving</i>	LTCI Status = 0		LTCI Status = 1		Mean Difference	t-Value
	N	Mean	N	Mean		
Before implementation	48154	0.606	1984	0.615	−0.009	−0.829
After implementation	11098	0.828	470	0.757	0.071	3.951***

difference) during the same period. Our specification can be written in the following form:

$$\begin{aligned} Samecity_{ict} = & \alpha_0 + \alpha_1 Elig_{ic} \times Post_{ct} + \mathbf{X}'_{it} \alpha + \delta_i + \delta_{ct} \\ & + Insurance_i \times \delta_t + \delta_{cohort,t} + \varepsilon_{ict}, \end{aligned} \quad (1)$$

where  $Samecity_{ict}$  indicates whether child  $i$  lives in the same city  $c$  as his or her parents in year  $t$ ;  $Elig_{ic}$  represents the fraction of child  $i$ 's parents eligible for LTCI, which measures the intensity of the treatment.  $\delta_i$  is the individual fixed effects to control for time-invariant unobserved variables at the individual level. Furthermore, we exploit city-by-year fixed effects ( $\delta_{ct}$ ) to capture time trends at the city level, as seen in Lu, Wang, and Zhu (2019). The reason why we do not utilize two-way fixed effects is related to our choice of identification, as location choices are closely related to the dynamic evolution of a city. Thus, it would be more ideal to include city-by-year fixed effects than to include city-level control variables and year-fixed effects.

In our specification, we utilize the difference in location changes between those households affected by LTCI and those not affected. A major concern for the DID strategy is that most pilot cities restrict public LTCI coverage to participants in UEBMI, which offers broader benefits and higher reimbursement rates. Consequently, the migration evolution of children from families with better insurance protection may be systematically different from those whose parents lack adequate insurance. Therefore, we include the interaction between the category of public health insurance and year fixed effects ( $Insurance_i \times \delta_t$ ), which allows for varying time patterns associated

with different health insurance.<sup>7</sup> By adding  $Insurance_i \times \delta_t$  into the regression, it is less likely that our estimates of the reallocation effects are biased. Additionally, we consider different trends between children born in different decades by including cohort-by-year fixed effects ( $\delta_{cohort,t}$ ). Standard errors are clustered at the city level.

### Effects on caregiving expectations

To better understand the relationship between the caregiving burden and location choice, we investigate the relationship between LTCI and caregiving expectations. The empirical model is specified as follows:

$$\begin{aligned} Caregiving_{ict} = & \alpha_0 + \alpha_1 Elig_{ic} \times Post_{ct} + \mathbf{X}'_{it} \alpha + \delta_i \\ & + \delta_{ct} + Insurance_i \times \delta_t + \delta_{cohort,t} + \varepsilon_{ict}, \end{aligned} \quad (2)$$

where  $Caregiving_{ict}$  is a dummy indicating whether parent  $i$  living in city  $c$  expects members from their children's family to provide care in the future.  $\delta_{cohort,t}$  is a cohort-by-year fixed effect that captures different patterns between parents born in different decades. Other variables are defined the same as in Equation (1). Standard errors are clustered at the city level.

### Trade-off between caregiving expectations and location choice

To provide further evidence on the intergenerational spillover of LTCI, we conduct a trade-off analysis as (Ilciukas 2023). First, we instrument child  $i$ 's caregiving burden with a treatment

<sup>7</sup>We distinguish holders of four different types of public health insurance, namely, Urban Employee Basic Medical Insurance, Urban and Rural Resident Basic Medical Insurance, New Rural Cooperative Medical Insurance, and Government Medical Insurance.

assignment dummy, which is defined as the interaction between the fraction of parents eligible for LTCI and the policy dummy. The predicted caregiving responsibility is subsequently regressed on child  $i$ 's location. As before, we include a rich set of fixed effects, including the child's birth cohort, city-year fixed effects, as well as the individual fixed effect. The covariates in Equation (4) are consistent with those described for Equation (3).

$$\text{Caregiving}_{ict} = \alpha_0 + \alpha_1 \text{Elig}_{ic} \times \text{Post}_{ct} + \mathbf{X}'_{it} \alpha + \delta_i + \delta_{ct} + \text{Insurance}_i \times \delta_t + \delta_{\text{cohort},t} + \varepsilon_{ict} \quad (3)$$

$$\text{Samecity}_{ict} = \beta_0 + \beta_1 \widehat{\text{Caregiving}}_{ict} + \mathbf{X}'_{it} \alpha + \delta_i + \delta_{ct} + \text{Insurance}_i \times \delta_t + \delta_{\text{cohort},t} + \varepsilon_{ict} \quad (4)$$

We are interested in  $\beta_1$ . Supposing parents' perceptions of receiving care from their children are consistent with their children, our findings can be interpreted as to what extent alleviated caregiving responsibilities increase the likelihood of moving to a different city. While the estimator cannot be interpreted as the effect of fully relieving the caregiving burden without further assumptions (Dong, Lee, and Gou 2023), it captures the trade-off between the caregiving burden and living arrangement induced by LTCI.

## V. Results

### Adult children's location choice

Table 3 presents our baseline results for Equation (1). We investigate whether adult children whose parents are covered by LTCI are more likely to migrate to other cities. As shown in Column 3,

children from families whose parents are covered by LTCI are 3.9% points more likely to leave the city their parents live in than are children whose parents are not eligible for LTCI; this difference is statistically significant at the 5% level. Considering that the average rate of residing in the same city as one's parents is 77%, our results indicate that the probability of migration is 5.1% greater for children whose parents' risks are covered by LTCI.

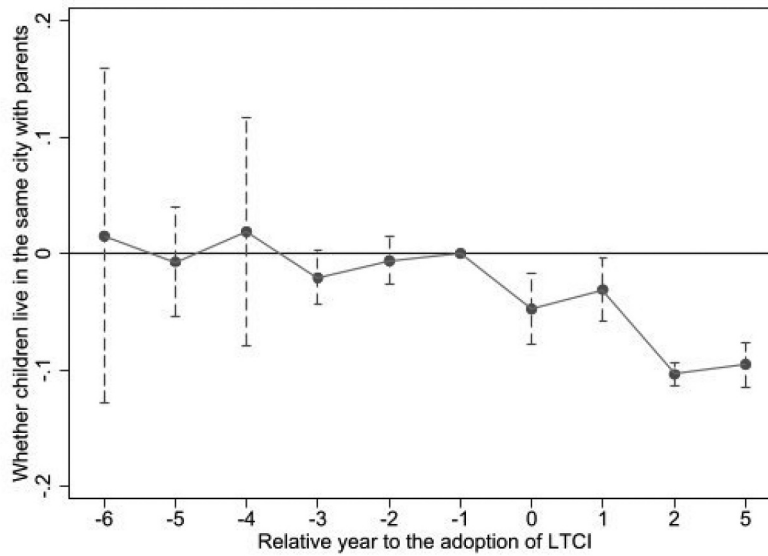
We also examine the confounding influence of other reforms. For example, the goal of the 2014 urban and rural resident pension plan was to build a unified social welfare system. In Column 4, we exclude samples from Qingdao, which is the first pilot city that introduced public LTCI in 2013. In our sample, other pilot cities introduced an LTCI program during the 2016–2018 period. In addition, we can partially eliminate concerns over the staggered DID design since all the treatments took place in the last wave. The estimates remain consistent, suggesting that our results are robust to contemporary reform.

We change the measurement of eligibility in Column 5. Instead of the fraction of parental eligibility, the independent variable is defined as whether LTCI covers either of the parents. Children with either parent insured by LTCI are 2.7% points more likely to move to another city. This effect is roughly halved relative to a fraction measurement and is statistically significant. Together with the results of Equation (3), we show that the spillover effect of insuring parents' LTC risk works not only on an extensive margin but also on an intensive margin. Thus, the reallocation effect is greater for children whose parents are both insured.

**Table 3.** The impact of LTCI on the location choice of children.

	(1) <i>Samecity</i> Without controls	(2) <i>Samecity</i> +Controls on children	(3) <i>Samecity</i> + Controls on parents	(4) <i>Samecity</i> Exclude pilot city before 2015	(5) <i>Samecity</i> Household head covered by LTCI
<i>Elig*Post</i>	-0.042** (0.016)	-0.039** (0.016)	-0.039** (0.016)	-0.036** (0.017)	
<i>Elig_D*Post</i>					-0.027* (0.014)
<i>Controls</i>	N	Y	Y	Y	Y
<i>Insurance-year</i>	Y	Y	Y	Y	Y
<i>Individual</i>	Y	Y	Y	Y	Y
<i>City-year</i>	Y	Y	Y	Y	Y
<i>Cohort-year</i>	Y	Y	Y	Y	Y
Mean Dep. Var.	0.766	0.765	0.765	0.765	0.765
<i>N</i>	69472	69466	69466	69233	69466
<i>adj. R<sup>2</sup></i>	0.604	0.603	0.603	0.603	0.603

Standard errors are in parentheses, and are clustered at city level. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .



**Figure 1.** Dynamic effects of LTCI on location choice. Confidence intervals are at 95% confidence level.

The core assumption of the DID approach is that the migration evolution of the control group can be considered as counterfactual for the treatment group if there were no treatment. To provide further support for the parallel trends assumption and elucidate the duration of the impact, we employ an event study method to show that there was no systematic difference between treatment groups and control groups before the adoption of LTCI, as seen in Beck, Levine, and Levkov (2010). Figure 1 visualizes the event study estimates of LTCI on location choice. Our results show no statistically significant differences in pre-trends between the control group and the treatment group prior to the LTCI pilot program.

### Parents' expected use of care

Since we hypothesize that adult children with lower caregiving burdens migrate more freely, we further supplement our baseline results by showing that implementing LTCI will impact caregiving burdens. Using data on parents, we examine the effect of LTCI on parents' expectations of care. The introduction of LTCI has a sizable effect on the expectation of care (Table 4). After being insured by LTCI, parents are 9.9% points less likely to expect their children to serve as informal caregivers than are those without LTCI. To put this into context, 65% of the parents in our sample expect their children to provide care in the

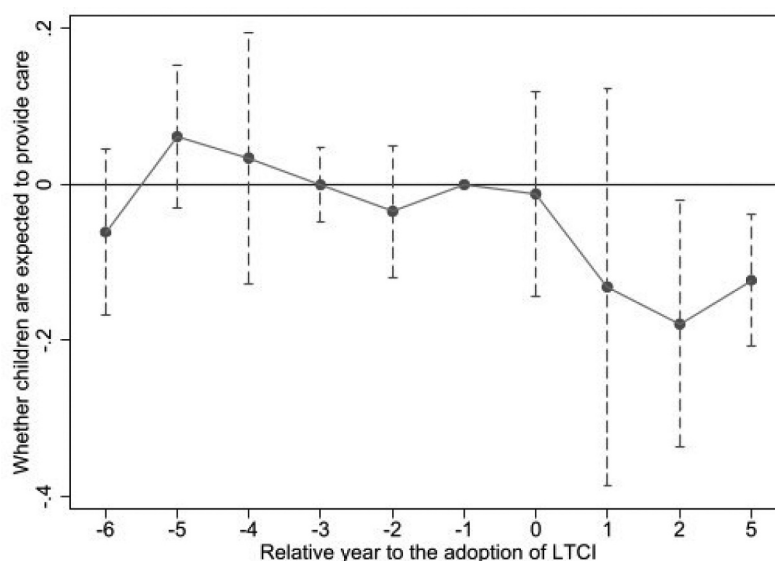
**Table 4.** The impact of LTCI on the expected care use of parents.

	(1) Caregiving Without controls	(2) Caregiving Add control variables	(3) Caregiving Exclude pilot cities before 2015
<i>Elig*Post</i>	-0.099* (0.053)	-0.099* (0.052)	-0.102* (0.055)
<i>Controls</i>	N	Y	Y
<i>Insurance-year</i>	Y	Y	Y
<i>Individual</i>	Y	Y	Y
<i>City-year</i>	Y	Y	Y
<i>Cohort-year</i>	Y	Y	Y
Mean Dep.	0.647	0.647	0.647
Var.			
<i>N</i>	58740	58740	58522
<i>adj. R<sup>2</sup></i>	0.244	0.244	0.244

Standard errors are in parentheses and are clustered at city level. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

future; this effect indicates that LTCI coverage decreases the rate of expecting to receive informal care from one's children by 15.3%. This result aligns with the conclusion of H. Chen and Ning (2022), who found that the introduction of LTCI decreases the probability of informal care among nondisabled elderly by 5.2% points, supporting that the LTCI exhibited an impact on older adults even before the onset of disability.

Additional robustness checks are conducted to ensure the reliability of our results. We check the robustness by changing the standard error of cluster levels, changing the fixed effects, adding control variables, and using subsamples. Results are reported in the appendix, remaining consistent with our baseline.



**Figure 2.** Dynamic effects of LTCI on expected use of care. Confidence intervals are at 95% confidence level.

The parallel trend assumption is tested using an event study approach, and the results are visualized in Figure 2. There is no significant differential trend in caregiving expectations between parents covered by LTCI and those not, partially alleviating concerns about unobserved variables that may lead to different trends between the control and treatment groups.

### Trade-off between location choice and caregiving expectations

The trade-off results are reported in Table 5. Using the fixed effects model, Column 1 reports the relationship between caregiving expectations and location choice. Column 2 shows the first-stage result based on Equation (3). Column 3 presents the 2SLS estimates. The findings show that for children without caregiving responsibilities, the probability of living in the same city with one's parents is 25.4% points less than that of children with caregiving responsibilities. This effect is quite sizable since it indicates that caregiving responsibilities raise the likelihood of living in the same city as parents by 33.1%.

### Cost-benefit analyses

Since there is an opportunity cost of staying in the same city as one's parents, we make a back-of-the-

**Table 5.** Caregiving expectations-location choice trade-off.

	(1) Samecity FE	(2) Caregiving First stage	(3) Samecity 2SLS
Caregiving	0.010* (0.005)		
Elig*Post		-0.116* (0.063)	
Predicted Caregiving			0.254*** (0.085)
Controls	Y	Y	Y
Individual	Y	Y	Y
City-year	Y	Y	Y
Cohort-year	Y	Y	Y
N	61057	75190	61057
adj. R <sup>2</sup>	0.590	0.241	0.590

Standard errors are in parentheses, and are clustered at the city level.  
\* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

envelop exploration of how much that cost is. We concentrate on only observable returns to migration in this section, and we measure the return using income as seen in Lagakos et al. (2020). Column 3 of Table 6 provides a simple regression between location and the couple's income. Controlling demographic features, adult children living together with their spouses in another city annually earn 5,298 yuan (approximately \$757) more than those living in their hometowns do. Taking Tables 2 and 5 together, the average benefits LTCI induced by 'freeing' young people to migrate to other cities are approximately 207 yuan (approximately \$29) per year.<sup>8</sup> This benefit is enough to cover the cost of providing LTCI for one

<sup>8</sup>The introduction of LTCI increases the migration rate by 3.9% points according to Table 2. The annual benefit is roughly estimated as  $5298 \times 3.9\% = 206.6$  yuan.

**Table 6.** The relationship between location choice and income.

	(1) <i>Income</i>	(2) <i>Income</i>	(3) <i>Income</i>
<i>Samecity</i>	−5626.060*** (868.414)	−5588.286*** (869.751)	−5298.559*** (913.144)
<i>Controls</i>	N	N	Y
<i>Cohort-year</i>	Y	Y	Y
<i>Individual</i>	Y	Y	Y
<i>City-year</i>	Y	Y	Y
<i>Gender-year</i>	N	Y	Y
<i>N</i>	48736	48732	45754
<i>adj. R<sup>2</sup></i>	0.474	0.474	0.489

Standard errors are in parentheses and clustered at the city level. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

participant but not enough to provide for both parents.

### Discussion about other potential channels

We study the reallocation effect of LTCI on the younger generation, which is driven by the reduction in parental care expectations. Yet, there are several other potential mechanisms through which parental LTCI affects adult children's location. First, LTCI might change the transfer pattern within generations since parents depend less on their children for old-age support, and this transition may give rise to children working outside. Second, there might be a shift in filial piety norms that requires less of children's companionship. Third, LTCI may reduce informal care burdens by improving parental health conditions, thus increasing children's likelihood of migration.

To address these concerns, we run regressions of the treatment of LTCI on indicators of the three aspects mentioned above. Specifically, for the measurement of transfer patterns, we collect data on parents' yearly regular money support and in-kind support for their children, as well as regular money and in-kind payments received from their children. The filial piety norms are characterized using a series of dummies indicating whether children pay visits at a certain frequency. The informal care burden is proxied based on parents' self-reported health conditions, and poorer health suggests heavier caregiving burdens.

None of these indicators yield significant results regarding the introduction of LTCI (Table 7). These results are also consistent with the literature. Wu et al. (2024) fail to find connections between

**Table 7.** Discussions about other potential channels of LTCI on location choice.

	(1) <i>Money support</i>	(2) <i>In-kind support</i>	(3) <i>Money received</i>	(4) <i>In-kind received</i>
<b>Panel A: Transfer Pattern</b>				
<i>Elig*Post</i>	−482.535 (635.764)	48.944 (334.794)	−424.368 (730.229)	−14.293 (54.326)
<b>Panel B: Filial Piety Norms</b>				
<i>Elig*Post</i>	−0.048 (0.048)	−0.021 (0.059)	0.058 (0.049)	−0.002 (0.029)
<b>Panel C: Informal Care Burden</b>				
<i>Elig*Post</i>	−0.022 (0.027)	−0.030 (0.027)	0.053 (0.036)	−0.001 (0.024)
<i>Controls</i>	Y	Y	Y	Y
<i>Insurance-year</i>	Y	Y	Y	Y
<i>Individual</i>	Y	Y	Y	Y
<i>City-year</i>	Y	Y	Y	Y
<i>Cohort-year</i>	Y	Y	Y	Y

Standard errors are in parentheses and clustered at the household level. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

intergenerational support and parental care expectations. Also, Lei et al. (2022) show that the association between LTCI and better health is mainly driven by people who have care needs and is sensitive to the duration of LTCI. Therefore, it is unlikely that those could perform as valid mechanisms to impact adult children's location choice further.

## VI. Heterogeneity analysis

Our findings indicate that LTCI reduces parents' expectations for children to provide care, thereby alleviating caregiving obligations and enabling adult children to migrate. To further substantiate this mechanism of reduced expected caregiving burden, we conduct a series of heterogeneity analyses.

First, because disabled parents are less likely to adjust their care arrangements, we compare adult children with parents in different health conditions. We expect migration to be more likely when parents remain relatively healthy. Second, we examine heterogeneity by sibship size, with particular attention to only-child families. As the only child has no siblings with whom to share caregiving responsibilities (Zhang and Goza 2006), the reallocation effect of LTCI should be especially pronounced in such families. Finally,

we distinguish between rural-origin and urban-origin children. Given that rural areas in China face substantial shortages of formal care infrastructure, leading to heavier reliance on informal family care (Feng et al. 2020; M. Li et al. 2013), we anticipate that the reallocation effect will be stronger among rural-origin children.

### Health conditions

First, we examine whether this reallocation effect of LTCI differs with various health risks. If the expectation of caregiving affects adult children's migration, then one would naturally question when such an effect occurs. Since we do not observe the entire trajectories of adult children, we cannot directly answer what will happen before the expectation becomes an immediate reality. Alternatively, we conduct a heterogeneity analysis by dividing the samples into five subgroups according to their parents' self-reported health conditions. Adult children whose parents report better health are believed to be not engaged in caregiving.

Figure 3 reveals that the reallocation effect of LTCI prevails when families face lower health risks, and is limited for families who are already in need of LTC. This finding aligns with the implications of our baseline model, emphasizing that the reallocation effect occurs before the onset of LTC. Once parents require LTC, the shortage of formal

caregivers substantially restricts the migration opportunities available to their adult children.

To further illustrate this result, Table A3 reports the results comparing the reallocation effect and the expectational care change effect of LTCI from families of disabled parents and non-disabled parents, respectively. We find that in families without disabled parents, LTCI lowers parents' expectations for children to care for them and increases the likelihood of adult children migrating. For families with disabled parents, no such effects are found.

### Number of siblings

To further provide evidence for the channel of the caregiving burden, we investigate the heterogeneous effect of LTCI on children with different numbers of siblings. It is assumed that being the only child in the family indicates a more intense caregiving burden because there is no sibling with whom to share it (Checkovich and Stern 2002). The results in Table 8 are in line with our hypothesis. Children without siblings are 7.3% points more likely to move to another city when their parents' LTC risks are insured, which dominates the reallocation effect of LTCI. Column 2 indicates that insuring parents' LTC risks will lead to a slightly greater willingness to migrate for children with siblings; however, this difference is not statistically

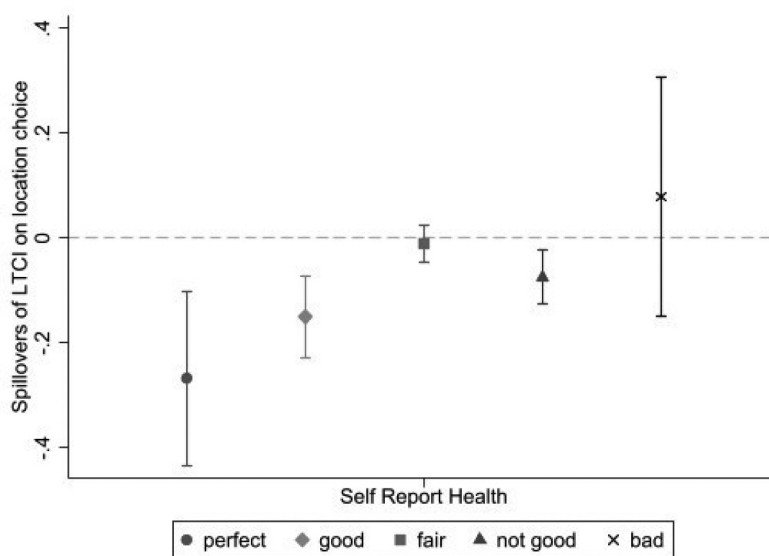


Figure 3. Heterogeneity effect of LTCI on families with different health risks. Confidence intervals are at 95% confidence level.

**Table 8.** Heterogeneity between adults with varied number of siblings.

	(1) Samecity Without siblings	(2) Samecity Only one sibling	(3) Samecity More than two siblings
<i>Elig*Post</i>	-0.073* (0.044)	-0.018 (0.025)	0.002 (0.027)
<i>Controls</i>	Y	Y	Y
<i>Insurance-year</i>	Y	Y	Y
<i>Individual</i>	Y	Y	Y
<i>City-year</i>	Y	Y	Y
<i>Cohort-year</i>	Y	Y	Y
<i>Gender-year</i>	Y	Y	Y
<i>N</i>	3814	14496	28650
<i>adj. R<sup>2</sup></i>	0.619	0.626	0.613

Standard errors are in parentheses, and are clustered at city level. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

significant. One potential explanation for this phenomenon is that caregiving expectations tend to be less clearly defined in families with multiple children, rendering individuals with siblings less sensitive to the introduction of LTCI.

### Agricultural background

Table 9 reports the heterogeneous reallocation effect of LTCI between rural and urban citizens. Children's hukou is initially inherited from their parents and can later be modified on the basis of their employment or marital status. If their parents have agricultural hukou, then children are likely to live in rural areas for some time. Table 9 shows that the reallocation effect occurs mainly in rural areas, where children with agricultural backgrounds migrate to other cities when their caregiving responsibilities are reduced. This result aligns with the reality that elderly people in rural areas lack social security and that their children experience substantial pressure to

**Table 9.** Heterogeneity between parents with and without agricultural hukou.

	(1) Samecity Agricultural Hukou	(2) Samecity Non-agricultural Hukou
<i>Elig*Post</i>	-0.057** (0.027)	-0.009 (0.016)
<i>Controls</i>	Y	Y
<i>Insurance-year</i>	Y	Y
<i>Individual</i>	Y	Y
<i>City-year</i>	Y	Y
<i>Cohort-year</i>	Y	Y
<i>Gender-year</i>	Y	Y
<i>N</i>	58569	10582
<i>adj. R<sup>2</sup></i>	0.599	0.656

Standard errors are in parentheses and are clustered at the city level. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

support them during their advanced years. Thus, this reallocation effect is much greater in the younger generation with agricultural backgrounds.

## VII. Conclusion

Understanding the impact of parental LTC risks on the younger generation is important due to the current demographic transition. By utilizing CHARLS (2011–2018) data, this paper estimates the impact of caregiving expectations on children's location choices. Conducting a trade-off analysis, we estimate the causal relationship between caregiving and location choice.

Our results indicate that coverage by LTCI significantly reduces parents' perceptions of utilizing care from children in the future, with magnitudes of approximately 9.9% points. With the alleviation of caregiving burdens, adult children are more likely to move to another city by approximately 3.9% points. Linking this result to the migration returns, we roughly estimate that the average annual benefits of LTCI are 207 yuan (approximately \$29) per child, which is enough to cover the cost of providing LTCI for one beneficiary. Furthermore, the trade-off between caregiving obligations and children's migration probability is 25.4% points.

Such results join the discussion in prior literature focusing on the intergenerational spillover effects of LTCI. Some studies predict that adult children can benefit from parental LTCI from the perspective of a lighter caregiving burden (Bergeot, Ferrari, and Gao 2024), and higher wages (Shen 2024). In our study, we focus on the location arrangement of adult children, and we show that adult children are freer to migrate once their parents' LTC risks are insured. Our results echo the findings of Coe, Goda, and Van Houtven (2023), but differs from theirs in two ways. 1) Identification strategies, where we exploit the unique institutional background, the introduction of the LTCI pilot program in China as a quasi-experiment. 2) Compared with their findings, we demonstrate that this reallocation effect can occur on a city-wide scale, albeit with a much milder magnitude.

Our findings stand in contrast to the well-documented 'job lock' effect of medical insurance. Prior studies have shown that employment-based

health insurance ties workers to a single job and location (Gruber 2000; Madrian 1994; Stroupe, Kinney, and Kniesner 2001). Similar evidence is found in China, where the expansion of public medical insurance in rural areas discouraged residents from seeking employment outside their hometowns (Qin, Pan, and Liu 2014; Wang et al. 2022). In contrast, we find that LTCI – introduced as a supplement to medical insurance – facilitates the migration of the next generation. This divergence arises because the benefits of parental LTCI are exogenous to adult children, whereas enrolment in public medical insurance is endogenous to individuals' own location choices. As a result, coverage under LTCI lowers the implicit costs of migration for adult children, thereby enabling greater geographic mobility.

From a broader perspective, our findings relate to the literature on publicly financed old-age policies. In China, a notable example is the pilot program of home- and community-based elderly care services, which establishes elderly care facilities within communities and provides services jointly by firms, hospitals, and the government. Evidence shows that this program improves self-reported health and slows the decline of functional capacities among older adults (He, Wei, and Li 2023; Ping, Hu, and Oshio 2024), while also raising non-durable consumption (R. Chen, Jiang, and Li 2024). Moreover, Q. Li et al. (2024) document that its implementation significantly increases the likelihood of cross-county employment among working-age individuals. Our findings are consistent with this literature, suggesting that publicly financed old-age policies can generate important intergenerational effects through their influence on caregivers.

However, our study does have its limitations. First, when it comes to measuring migration choices, it is essential to note that the children's location is reported by their parents, and the exact city of residence is not available in the data. CHARLS records only the city where the respondent is interviewed, which reflects the parents' permanent address. Additionally, the exact timing of the migration is unknown. The data only indicate whether a child lives in the same city as their parents at the time of the survey. Thus, if a child migrates to another city and subsequently returns home between survey waves, such moves cannot be

captured. This limitation implies that our analysis likely underestimates the reallocation effect of LTCI. Second, given the time window of our dataset and the year the policy was introduced, our findings likely capture a short-term effect. From a broader perspective, LTCI in China plays a role similar to that of industrial policy in the elderly care industry. A comprehensive evaluation of LTCI is left for future research to verify.

With its ongoing demographic transitions, China faces the challenge of its citizens 'wrinkling before becoming rich'. In response to such demographic transitions, our evidence suggests that providing parents with LTCI could lead to greater geographical mobility for adult children before parental care needs occur. This intergenerational impact on migration is new in the literature and provides insights into the design of public welfare plans in a developing country such as China.

### Disclosure statement

The authors report there are no competing interests to declare.

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### Data availability statement

The data supporting the findings of this study are available from the China Health and Retirement Longitudinal Study (CHARLS), which is co-organized by Peking University and Wuhan University. Restrictions apply to the availability of these data, which were used under licence for this study. Data are available at <https://charls.charlsdata.com/index/zh-cn.html> with the permission of the CHARLS team.

### References

- Ai, J., J. Feng, and X. Zhang. 2024. "Long-Term Care Insurance Coverage and Labor Force Participation of Older People: Evidence from China." *China Economic Review* 86:102192. <https://doi.org/10.1016/j.chieco.2024.102192>.

- Ameriks, J., J. Briggs, A. Caplin, M. D. Shapiro, and C. Tonetti. 2020. "Long-Term-Care Utility and Late-in-Life Saving." *Journal of Political Economy* 128 (6): 2375–2451. <https://doi.org/10.1086/706686>.
- Arnault, L., and S. Juin. 2021. "Parental Health and Location Choices of Children." *Gérontologie Et Société* 43165 (2): 179–203.
- Barczyk, D., and M. Kredler. 2018. "Evaluating Long-Term-Care Policy Options, Taking the Family Seriously." *The Review of Economic Studies* 85 (2): 766–809. <https://doi.org/10.1093/restud/rdx036>.
- Beck, T., R. Levine, and A. Levkov. 2010. "Big Bad Banks? The Winners and Losers from Bank Deregulation in the United States." *The Journal of Finance* 65 (5): 1637–1667. <https://doi.org/10.1111/j.1540-6261.2010.01589.x>.
- Bergeot, J., I. Ferrari, and Y. Gao. 2024. "The Effect of Parental Health Shocks on Living Arrangements and Employment." *Health Economics* 33 (12): 2798–2837.
- Chan, T. W., and J. Ermisch. 2015. "Proximity of Couples to Parents: Influences of Gender, Labor Market, and Family." *Demography* 52 (2): 379–399. <https://doi.org/10.1007/s13524-015-0379-0>.
- Checkovich, T. J., and S. Stern. 2002. "Shared Caregiving Responsibilities of Adult Siblings With Elderly Parents." *The Journal of Human Resources* 37 (3): 441–478. <https://doi.org/10.2307/3069678>.
- Chen, H., and J. Ning. 2022. "Public Long-Term Care Insurance Scheme and Informal Care Use Among Community-Dwelling Older Adults in China." *Health & Social Care in the Community* 30 (6): e6386–e6395. <https://doi.org/10.1111/hsc.14080>.
- Chen, L., H. Fan, and L. Chu. 2019. "The Hidden Cost of Informal Care: An Empirical Study on Female Caregivers' Subjective Well-Being." *Social Science & Medicine* 224:85–93. <https://doi.org/10.1016/j.socscimed.2019.01.051>.
- Chen, R., Y. Jiang, and X. Li. 2024. "Community-Based Elderly Home Care Services Policy and Household Consumption Enhancement: Evidence from China." *International Review of Economics & Finance* 96:103620. <https://doi.org/10.1016/j.iref.2024.103620>.
- Coe, N. B., G. S. Goda, and C. H. Van Houtven. 2023. "Family Spillovers and Long-Term Care Insurance." *Journal of Health Economics* 90:102781. <https://doi.org/10.1016/j.jhealeco.2023.102781>.
- Compton, J., and R. A. Pollak. 2015. "Proximity and Co-Residence of Adult Children and Their Parents in the United States: Descriptions and Correlates." *Annals of Economics and Statistics/Annales d'Économie et de Statistique(117/118)* (117/118): 91–114. <https://doi.org/10.15609/annaeconstat2009.117-118.91>.
- Dong, Y., Y.-Y. Lee, and M. Gou. 2023. "Regression Discontinuity Designs with a Continuous Treatment." *Journal of the American Statistical Association* 118 (541): 208–221. <https://doi.org/10.1080/01621459.2021.1923509>.
- Feng, Z., E. Glinskaya, H. Chen, S. Gong, Y. Qiu, J. Xu, and W. Yip. 2020. "Long-Term Care System for Older Adults in China: Policy Landscape, Challenges, and Future Prospects." *The Lancet* 396 (10259): 1362–1372. [https://doi.org/10.1016/S0140-6736\(20\)32136-X](https://doi.org/10.1016/S0140-6736(20)32136-X).
- Fu, R., H. Noguchi, A. Kawamura, H. Takahashi, and N. Tamiya. 2017. "Spillover Effect of Japanese Long-Term Care Insurance as an Employment Promotion Policy for Family Caregivers." *Journal of Health Economics* 56:103–112. <https://doi.org/10.1016/j.jhealeco.2017.09.011>.
- Geyer, J., and T. Korfhage. 2015. "Long-Term Care Insurance and Carers' Labor Supply—A Structural Model." *Health Economics* 24 (9): 1178–1191. <https://doi.org/10.1002/hec.3200>.
- Geyer, J., and T. Korfhage. 2018. "Labor Supply Effects of Long-Term Care Reform in Germany." *Health Economics* 27 (9): 1328–1339. <https://doi.org/10.1002/hec.3663>.
- Giuliano, P. 2007. "Living Arrangements in Western Europe: Does Cultural Origin Matter?" *Journal of the European Economic Association* 5 (5): 927–952. <https://doi.org/10.1162/JEEA.2007.5.5.927>.
- Gruber, J. 2000. "Health Insurance and the Labor Market." *Handbook of Health Economics* 1 (Part A): 645–706. [https://doi.org/10.1016/S1574-0064\(00\)80171-7](https://doi.org/10.1016/S1574-0064(00)80171-7).
- Gruber, J., M. Lin, H. Yang, and J. Yi. 2025. "China's Social Health Insurance in the Era of Rapid Population Aging." *JAMA Health Forum* 6 (4): e251105–e251105. <https://doi.org/10.1001/jamahealthforum.2025.1105>.
- Han, X., Z. Liu, and W. Zheng. 2025. "The Spillover Effect of Long-Term Care Insurance on Spousal Labor Supply: Existence and Mechanisms. Available at SSRN 4715273.
- He, Y., B. Wei, and Y. Li. 2023. "The Impact of Using Community Home-Based Elderly Care Services on Older Adults' Self-Reported Health: Fresh Evidence from China." *Frontiers in Public Health* 11:1257463. <https://doi.org/10.3389/fpubh.2023.1257463>.
- Iliukas, J. 2023. "Fertility and Parental Retirement." *Journal of Public Economics* 226:104928. <https://doi.org/10.1016/j.jpubeo.2023.104928>.
- İmrohoroğlu, A., and K. Zhao. 2018. "The Chinese Saving Rate: Long-Term Care Risks, Family Insurance, and Demographics." *Journal of Monetary Economics* 96:33–52. <https://doi.org/10.1016/j.jmoneco.2018.03.001>.
- Konrad, K. A., H. Künemund, K. E. Lommerud, and J. R. Robledo. 2002. "Geography of the Family." *American Economic Review* 92 (4): 981–998. <https://doi.org/10.1257/00028280260344551>.
- Lagakos, D., S. Marshall, A. M. Mobarak, C. Vernet, and M. E. Waugh. 2020. "Migration Costs and Observational Returns to Migration in the Developing World." *Journal of Monetary Economics* 113:138–154. <https://doi.org/10.1016/j.jmoneco.2020.03.013>.
- Lei, X., C. Bai, J. Hong, and H. Liu. 2022. "Long-Term Care Insurance and the Well-Being of Older Adults and Their Families: Evidence from China." *Social Science & Medicine* 296:114745. <https://doi.org/10.1016/j.socscimed.2022.114745>.
- Li, M., Y. Zhang, Z. Zhang, Y. Zhang, L. Zhou, and K. Chen. 2013. "Rural-Urban Differences in the Long-Term Care of

- the Disabled Elderly in China.” *PLOS ONE* 8 (11): e79955. <https://doi.org/10.1371/journal.pone.0079955>.
- Li, Q., Y. Xiao, H. Liu, and C. Zhao. 2024. “Public Elderly Care Services and Labor Supply: Evidence from the Pilot Program of Home and Community-Based Care.” *Economic Research Journal* 59 (12): 186–202.
- Lin, J. Y., G. Wang, and Y. Zhao. 2004. “Regional Inequality and Labor Transfers in China.” *Economic Development and Cultural Change* 52 (3): 587–603. <https://doi.org/10.1086/421481>.
- Liu, H., J. Ma, and L. Zhao. 2023. “Public Long-Term Care Insurance and Consumption of Elderly Households: Evidence from China.” *Journal of Health Economics* 90:102759. <https://doi.org/10.1016/j.jhealeco.2023.102759>.
- Lu, Y., J. Wang, and L. Zhu. 2019. “Place-Based Policies, Creation, and Agglomeration Economies: Evidence from China’s Economic Zone Program.” *American Economic Journal: Economic Policy* 11 (3): 325–360. <https://doi.org/10.1257/pol.20160272>.
- Luo, Y., K. Yuan, Y. Li, Y. Liu, and Y. Pan. 2024. “The ‘Spillover Effect’ of Long-Term Care Insurance in China on Spouses’ Health and Well-Being.” *Social Science & Medicine* 340:116487. <https://doi.org/10.1016/j.socscimed.2023.116487>.
- Madrian, B. C. 1994. “Employment-Based Health Insurance and Job Mobility: Is There Evidence of Job-Lock?” *The Quarterly Journal of Economics* 109 (1): 27–54. <https://doi.org/10.2307/2118427>.
- Maestas, N., M. Messel, and Y. Truskinovsky. 2024. “Caregiving and Labor Supply: New Evidence from Administrative Data.” *Journal of Labor Economics* 42 (S1): S183–S218. <https://doi.org/10.1086/728810>.
- OECD. 2023. *Health at a Glance 2023: OECD Indicators*. Paris: OECD Publishing. <https://doi.org/10.1787/7a7afb35-en>.
- Ping, R., B. Hu, and T. Oshio. 2024. “Evaluating the Impact of a Pilot Programme for Home-and Community-Based Services on Long-Term Care Needs Among Older Adults in China.” *PLOS ONE* 19 (11): e0311616. <https://doi.org/10.1371/journal.pone.0311616>.
- Qin, X., J. Pan, and G. G. Liu. 2014. “Does Participating in Health Insurance Benefit the Migrant Workers in China? An Empirical Investigation.” *China Economic Review* 30:263–278. <https://doi.org/10.1016/j.chieco.2014.07.009>.
- Rainer, H., and T. Siedler. 2012. “Family Location and Caregiving Patterns from an International Perspective.” *Population and Development Review* 38 (2): 337–351. <https://doi.org/10.1111/j.1728-4457.2012.00495.x>.
- Shen, K. 2024. “Who Benefits from Public Financing of Home-Based Long Term Care? Evidence from Medicaid.” *Journal of Public Economics* 236:105151. <https://doi.org/10.1016/j.jpubeco.2024.105151>.
- Stroupe, K. T., E. D. Kinney, and T. J. Kniesner. 2001. “Chronic Illness and Health Insurance-Related Job Lock.” *Journal of Policy Analysis and Management: The Journal of the Association for Public Policy Analysis and Management* 20 (3): 525–544. <https://doi.org/10.1002/pam.1006>.
- Wang, Y., J. Shi, Y. Yao, and W. Sun. 2022. “The Impact of Health Insurance on Job Location Choice: Evidence from Rural China.” *Journal of Comparative Economics* 50 (2): 569–583. <https://doi.org/10.1016/j.jce.2022.01.001>.
- Wen, J., and H. Huang. 2024. “Parental Health Penalty on Adult Children’s Employment: Gender Differences and Long-Term Consequences.” *Journal of Health Economics* 95:102886. <https://doi.org/10.1016/j.jhealeco.2024.102886>.
- Wu, L., T. Xie, W. Guan, and W. Li. 2024. “Impact of Intergenerational Support on Older Adults’ Care Expectations in Rural Areas in China.” *Frontiers in Public Health* 12:1423173. <https://doi.org/10.3389/fpubh.2024.1423173>.
- Yang, T., and Z. Zhao. 2025. “Public Long-Term Care Insurance and Retirement Intentions of Urban Workers: Evidence from China.” *Health Economics* 34 (9): 1537–1559. <https://doi.org/10.1002/hec.4973>.
- Zhang, Y., and F. W. Goza. 2006. “Who Will Care for the Elderly in China?: A Review of the Problems Caused by China’s One-Child Policy and Their Potential Solutions.” *Journal of Aging Studies* 20 (2): 151–164. <https://doi.org/10.1016/j.jaging.2005.07.002>.
- Zhu, N. 2002. “The Impacts of Income Gaps on Migration Decisions in China.” *China Economic Review* 13 (2–3): 213–230. [https://doi.org/10.1016/S1043-951X\(02\)00074-3](https://doi.org/10.1016/S1043-951X(02)00074-3).