

A small amount can make a big difference
The effect of the New Rural Social Pension Insurance
program on retirement and old-age labor supply

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Introduction



Introduction



- Aging population: by the end of 2014, the population aged 60 or over was more than 212.4 million, i.e., 15.5% of the whole population.
- Work until very advanced age. Davis-Friedmann described this phenomenon as Ceaseless Toil.

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Research Question

Can the ungenerous New Rural Social Pension Insurance program change the “ceaseless toil” pattern of retirement in China?

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First Findings

Enrolling in the pension program will increase the retirement probability by 9.7%, increase the likelihood to have a retirement plan by 3.4%, and decrease the weekly working hours by 9 hours.

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The New Rural Social Pension Insurance Program

- General information: It was introduced in 2009, when 320 out of 2858 counties joined the program as a pilot. In 2010, 518 new counties entered followed by 1076 counties in 2011.¹ By the end of 2012, it expanded to nationwide.

¹Ministry of Human Resources and Social Security of the PRC.

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- Rural poverty line: 2,300 CNY in 2011. The average per person annual consumption was 3742.4 CNY per year for families with income in the lowest income group.

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Dependent Variable y_{it} can be:

- Retirement status R_{it} is a dummy variable. If individual i did not engage in any agriculture work for more than 10 days in the previous year, did not work for at least 1 hour in the previous week, is not currently laid-off, and did not search for a new job in the past month, then we say individual i is retired.

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Random Effect Model with Instrumental Variable

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- The weekly labor supply H_{it} is a continuous variable representing the labor supply condition of the workers.
- The retirement plan P_{it} is a dummy variable representing the individual i 's concept about retirement. For people not retired yet, the question *at what age do you plan to stop working* is asked. If they plan to keep working as long as they are physically able to, then $P_{it} = 0$, otherwise, if a retirement age is provided, $P_{it} = 1$.

Random effect Model with Instrumental Variable

Main Explanatory variable:

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- The monthly pension income for those participants.

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- Duration of the pension program at community level.
- Income categories of the children
- Province level GDP, federal revenue and expenditure on social welfare.

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Control variables include the demographics, financial situation, occupation, medical insurance, family structure, district and wave dummies.

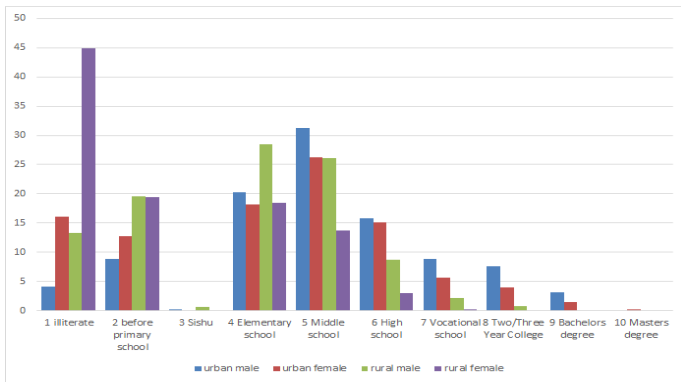
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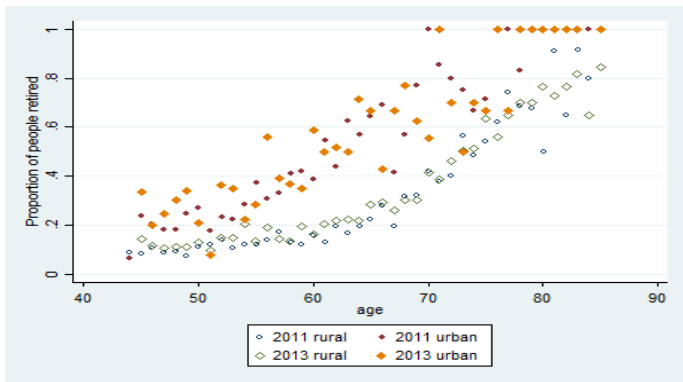
Data in this paper is from a biennial survey of the China Health and Retirement Longitude Study. It is a nation-wide survey covering approximately 10,000 households, 17,500 individuals aged 45 or older in 150 counties in the years 2011 and 2013.

The work, retirement, and pension module of the questionnaire is the main module being used.

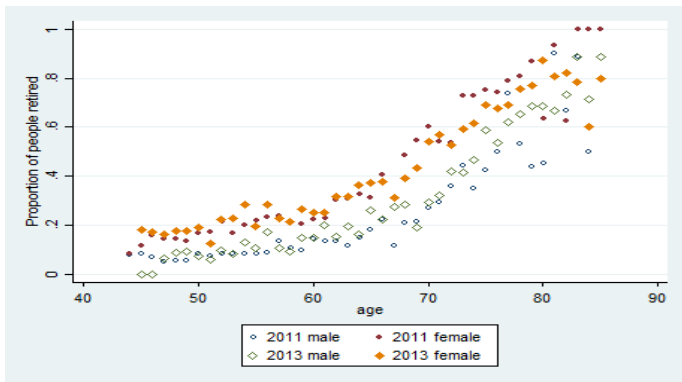
Education background of the sample



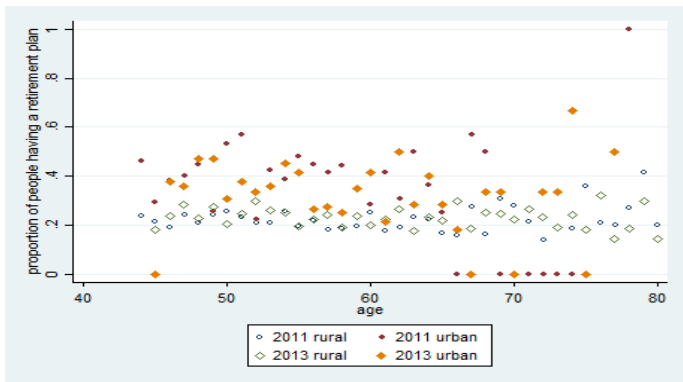
Retirement situation urban vs. rural



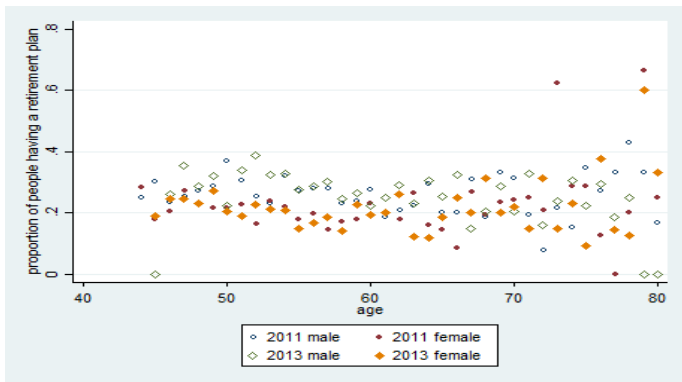
Retirement situation male vs. female



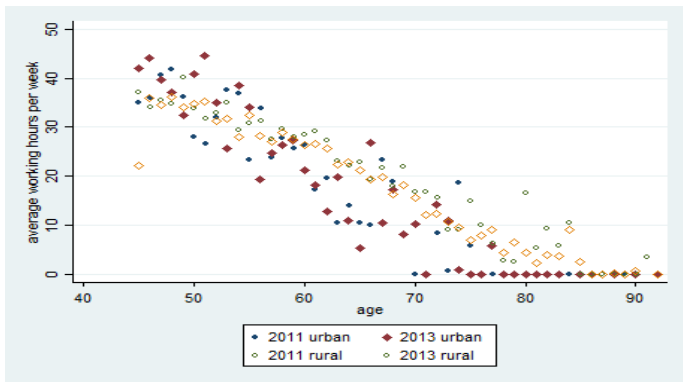
Retirement Planning urban vs. rural



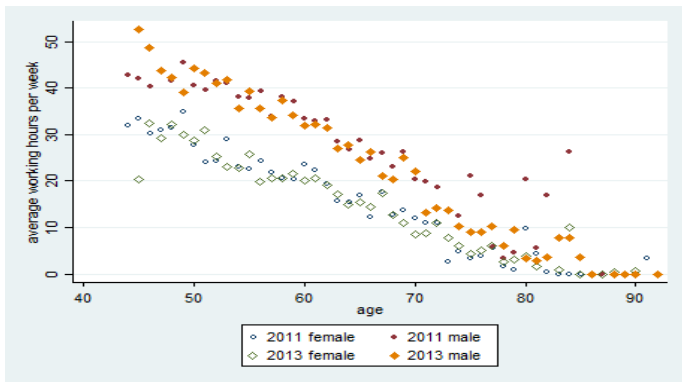
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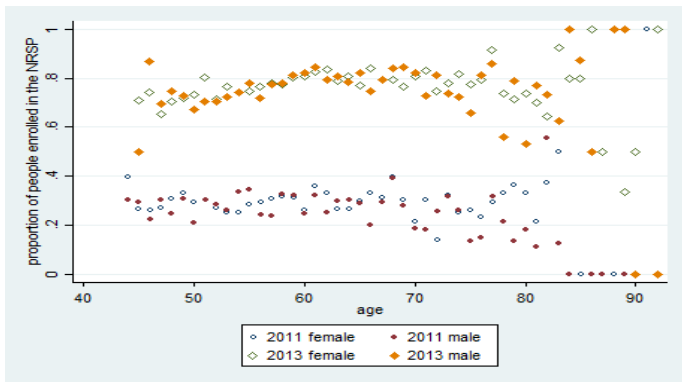
Average Weekly Working Hours urban vs. rural



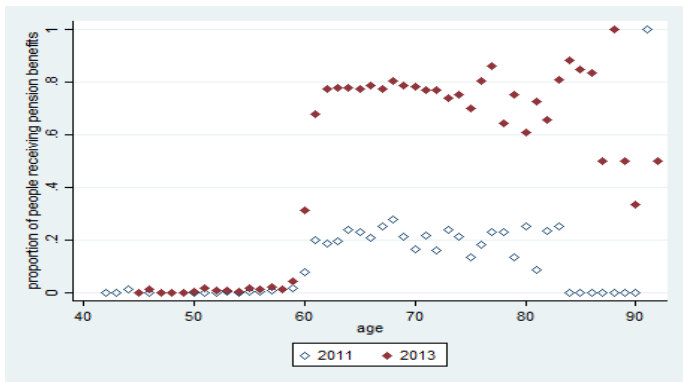
Average Weekly Working Hours male vs. female



Proportion of people enrolled in the NRSPI program



Proportion of people receiving pension benefits



The sample average of the main variables

	rural	overall	urban
<hr/>			
<i>Dependent variables</i>			
plan retirement (%)	22.47	23.74	37.28
retired (%)	20.58	22.67	39.42
weekly working hours (H)	26.86	26.87	26.93
<hr/>			
<i>Pension</i>			
new rural pension(%)	52.56	50.20	31.36
monthly pension income NRSPI (CNY)	82.74	86.69	140.37
<hr/>			
<i>Demographics</i>			
male (%)	46.87	46.48	43.37
agri-hukou (%)	98.75	95.75	71.71
age (years)	58.86	58.65	57.01
<hr/>			

	rural	overall	urban
<i>Occupation</i>			
farming (%)	90.06	85.32	47.39
government (%)	2.04	2.78	8.64
firm (%)	4.10	5.56	17.23
other employed (%)	10.33	10.95	15.85
self-employed (%)	8.16	9.70	22.01
<i>Financial situation</i>			
annual household income (CNY)	13415.31	13820.05	17057.69
financial asset (CNY)	6023.04	6757.36	12631.51
financial liability (CNY)	2842.67	3251.17	6518.91

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The effect of the NRSPI program on retirement

	(1)	(2)	(3)
	retirement status	weekly working hours	retirement planning
pension enrollment	0.097*** (0.026)	-9.028*** (1.828)	0.034** (0.014)
male	-0.124*** (0.007)	4.118*** (0.525)	0.044*** (0.009)
No. never married sons	-0.016** (0.007)	1.960*** (0.503)	-0.024*** (0.008)
Observations	17231	12444	12164
Wald chi2	3158.513	5559.984	429.205
Prob > chi2	0.000	0.000	0.000

The coefficients on the other control variables are omitted from the report.

Simple comparison: the average minimum hourly wage in China was 11.73 CNY². in 2014. The average pension benefit of 87 CNY per month worths about 7.4 hours of work. The average reduced number of working hours per month is around $9 \times 4 = 36$.

²<http://www.china-briefing.com/news/2014/06/11/complete-guide-minimum-wage-levels-across-china-2014.html>

The heterogeneity effect of the pension enrollment

	(1) retirement status	(2) weekly working hours	(3) retirement planning
<i>age</i>			
≥ 60	0.150*** (0.045)	-10.621*** (2.982)	0.028 (0.022)
< 60	0.078*** (0.030)	-7.817*** (2.268)	0.042** (0.019)
<i>gender</i>			
male	0.044 (0.036)	-8.376*** (2.786)	0.051** (0.021)
female	0.140*** (0.037)	-9.701*** (2.388)	0.018 (0.019)
<i>education background</i>			
illiterate	0.128*** (0.050)	-11.838*** (3.313)	0.042* (0.024)
up to primary school	0.113*** (0.040)	-10.325*** (2.858)	0.046** (0.021)
above primary school	0.034 (0.043)	-5.215 (3.385)	0.018 (0.029)

The effect of the expected/received pension benefits

	(1) retirement status	(2) weekly working hours	(3) retirement planning
<i>financial situation</i>			
below median	0.213*** (0.057)	-11.692*** (3.638)	0.032 (0.023)
above median	0.031 (0.024)	-5.823*** (1.914)	0.016 (0.019)
<i>family structure</i>			
have no son	0.064 (0.084)	-15.017** (5.953)	0.066 (0.042)
have no daughter	0.036 (0.046)	-10.402*** (3.643)	0.007 (0.028)
have both	0.112*** (0.034)	-8.571*** (2.233)	0.031* (0.017)

The effect of the expected/received pension benefits

	(1) retirement status	(2) weekly working hours	(3) retirement planning
pension income (thousand)	-1.162*** (0.436)	-1.292 (27.195)	1.350** (0.559)
male	-0.125*** (0.014)	5.117*** (0.954)	0.079*** (0.020)
No. never married sons	-0.014 (0.014)	1.464* (0.872)	-0.067*** (0.018)
Observations	5033	3612	3620
Prob > chi2	0.000	0.000	0.000

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The effect of the expected/received pension benefits

	(1) retirement status	(2) weekly working hours	(3) retirement planning
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Negative correlation between retirement probability and pension contribution.

↓

Negative correlation between retirement probability and pension income.

Including those in the urban side in the regression

	(1) retirement status	(2) weekly working hours	(3) retirement planning
pension enrollment	0.073*** (0.024)	-8.166*** (1.729)	0.024* (0.014)
urban	0.185*** (0.012)	-1.554 (0.948)	0.036** (0.016)
male	-0.134*** (0.007)	3.892*** (0.499)	0.037*** (0.008)
No. never married sons	-0.016** (0.006)	1.579*** (0.481)	-0.023*** (0.008)
Observations	19475	13682	13331
Wald chi2	4343.903	6238.954	721.406
Prob > chi2	0.000	0.000	0.000

Including those in the urban side in the regression

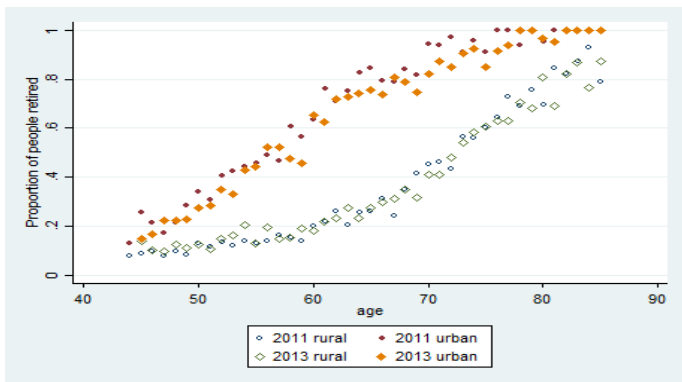
	(1) retirement status	(2) weekly working hours	(3) retirement planning
pension income (thousand)	-0.836** (0.335)	-12.775 (19.960)	1.151*** (0.417)
urban	0.244*** (0.033)	-1.111 (2.548)	-0.132** (0.053)
agri-hukou	0.056 (0.051)	4.173 (4.039)	-0.060 (0.079)
male	-0.132*** (0.014)	4.801*** (0.953)	0.083*** (0.020)
No. never married sons	-0.021 (0.013)	1.626* (0.847)	-0.065*** (0.018)
Observations	5364	3795	3799
Prob > chi2	0.000	0.000	0.000

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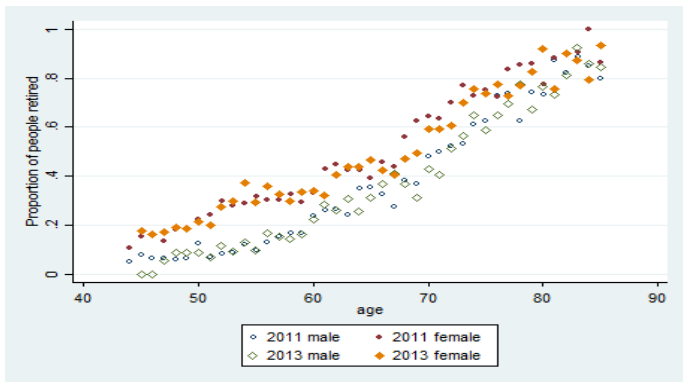
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- Joining the pension program increases the probability of retirement and retirement planning by 9.7% and 3.4%, respectively and leads to a decrease in weekly labor supply by 9 hours.
- This pension program is more meaningful for those with lower education, lower income.
- There are still substantial differences between the rural and urban area.
- We also find that people tend to work more when they have single sons.

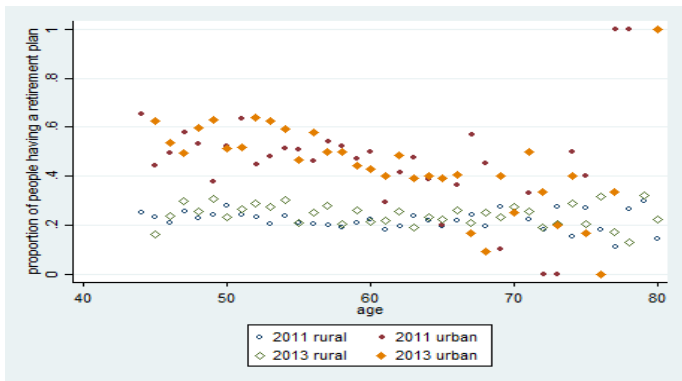
Retirement situation urban vs. rural including those covered by other pension programs



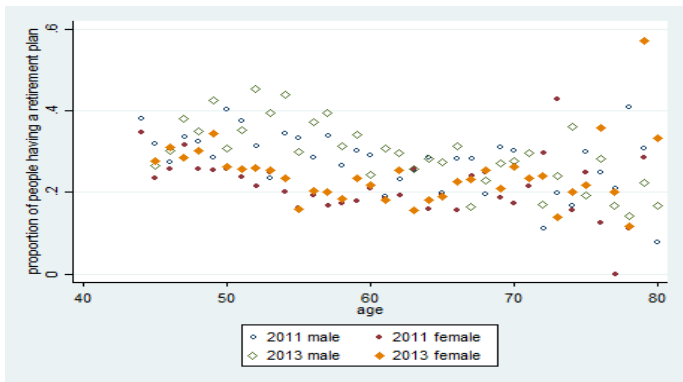
Retirement situation male vs. female including those covered by other pension programs



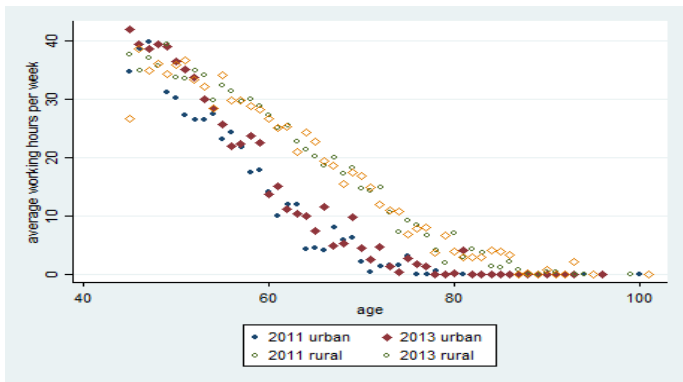
Retirement Planning urban vs. rural including those covered by other pension programs



Retirement Planning male vs. female including those covered by other pension programs



Average Weekly Working Hours urban vs. rural including those covered by other pension programs



Average Weekly Working Hours male vs. female including those covered by other pension programs

