

# EMPLOYMENT, DEMOGRAPHIC CHANGE AND WELL-BEING

## AVOIDING POVERTY AMONG THE ELDERLY IN AGING POPULATIONS

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# Population Aging and the Policy Research Agenda

- The challenges posed by population aging span research areas in macro, micro, international, public sector, health and labor economics.
- The arc of my work is related to micro topics in labor, health and public sector economics
  - Influence of health status and vulnerability of the elderly on the migration decisions of children (Giles and Mu, 2007).
  - Consequences of differences in “retirement systems” across urban and rural, and formal and informal workers (e.g. Giles, Wang and Zhao, 2010; Cai, Giles, O’Keefe and Wang, 2012; Giles et al, 2012).
  - Interaction between population aging and rural to urban migration.
- Ongoing work involving long-term collaborations, with EAP and the SPL-GP in the Bank, and with a growing family of international researchers working on HRS-type surveys.

# Opposing Motivations for Pension “Reform” in Middle and Low Income Countries

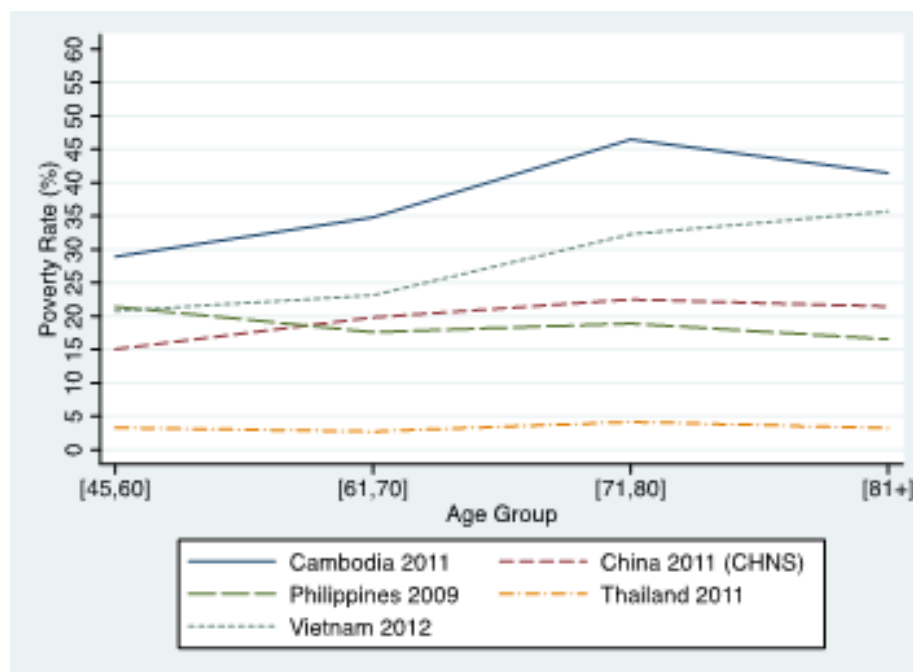
- Reduce Vulnerability to Poverty and Promote Shared Prosperity
  - Two retirement systems:
    - Formal - Civil servants and formal sector workers: Pension
    - Informal - Informal sector, small scale enterprises, agriculture: Savings and family support
- Addresses Stresses Created by Populations Aging
  - Aging of populations implies that burdens could rise (both fiscal burdens for formal, and strain on families for informal).
  - Migration of young adults may lead to lack of support for rural elderly.
- Solutions?
  - Reduce risk of poverty in old age among “informal” sector workers.
  - Raise the “retirement age” in formal sector? Or reduce disincentives to later retirement. Facilitate “gradual retirement”

# Motivations

- Income Poverty Among Elderly is Still Common in EAP, and is Dominated by Rural Poverty.

# Across Many of the Countries in EAP, Considerable Income Poverty Rates Among Rural Elderly

Income Poverty Head Count,  
2011 - 2012



Note: Poverty based on EAP Standardized Household, CHNS, SES and VHLSS is defined as per capita daily income (2005 PPP \$) less than \$1.25 /day.

Source: Giles and Huang (2014). Background Paper for the EAP Aging Report (2015).

# Motivations

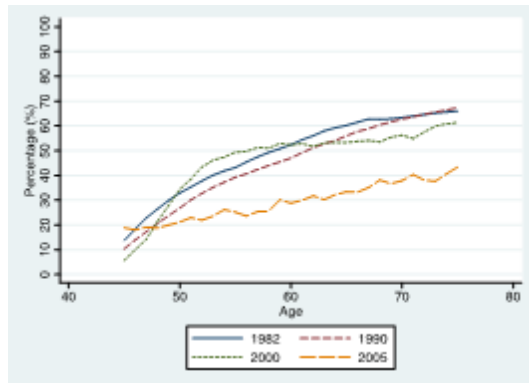
- Income Poverty Among Elderly is Still Common in EAP, and is Dominated by Rural Poverty
- Will introducing “social pensions” reduce poverty without crowding out private support and distorting the labor supply decision?
- What is the case for a pension covering the informal sector? (Part 1)
- For Some, Well-Being in Old Age May Require Continued Employment
- Concerns Over Too Much “Early Retirement” (Part II)
  - With population aging, one may worry about rising support ratios due to demographic change and exacerbated by earlier retirement.
  - Understand factors contributing to earlier retirement in order to facilitate longer working lives (skills, policy, vs institutions)

# Private Transfers and Poverty

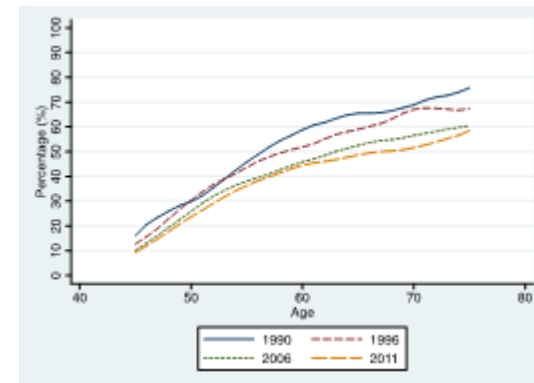
- In much of East Asia, private (financial and in-kind) transfers and co-residence with adult children reduce vulnerability to poverty.
- In China and Thailand, as with Korea earlier, we observe sharp declines in co-residence patterns...

# Co-Residence w/Adult Children Long Viewed as Social Safety Net, Declines with Development & Migration

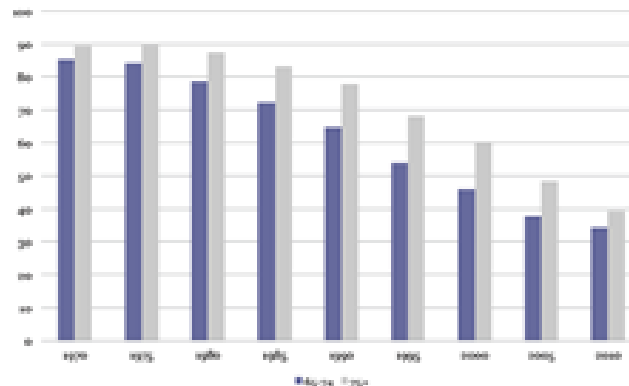
China



Thailand



Korea



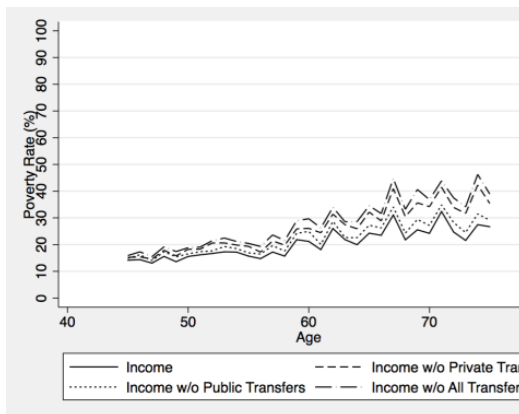


# Private Transfers and Poverty

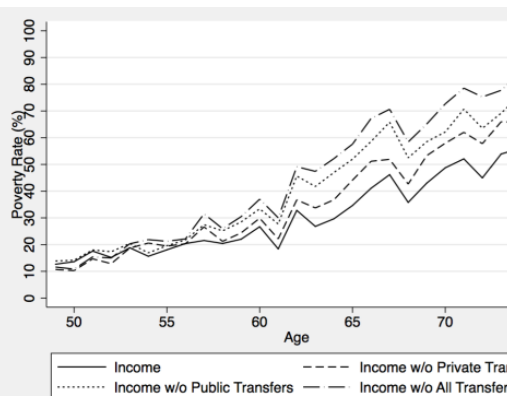
- In much of East Asia, private (financial and in-kind) transfers and co-residence with adult children reduce vulnerability to poverty.
- In China and Thailand, as with Korea earlier, we observe sharp declines in co-residence patterns...
  - Declining co-residence may reflect preferences for privacy
  - Also occurs with adult child migration, which may lead to greater vulnerability.
- **Importance of Private Transfers:**
  - An accounting exercise: Income poverty rates before and after public and private transfers
  - Do private transfers respond to low income? Would they be crowded out by support for the poor or a social pension?

# In Some Countries, Private Transfers are Important for Staying Out of Poverty

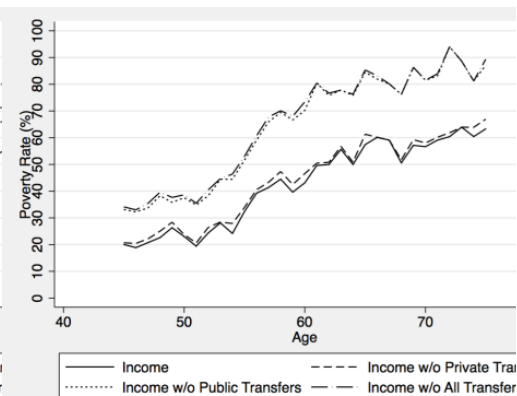
China 2011



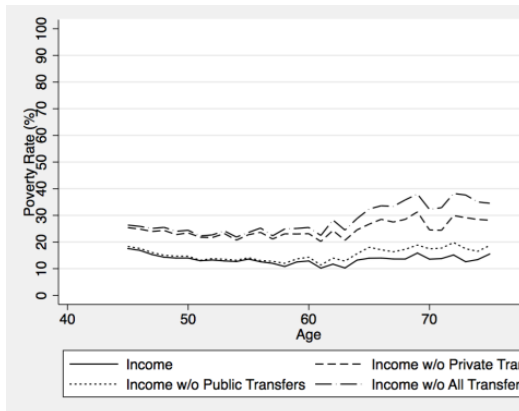
Korea 2010



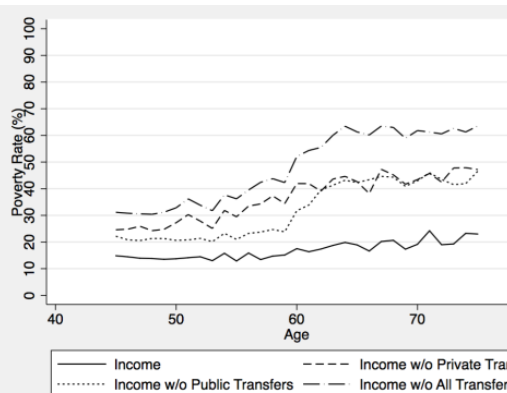
Mongolia 2010



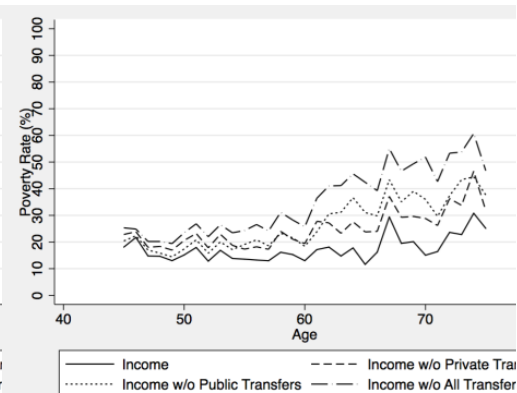
Philippines 2009



Thailand 2011



Vietnam 2012



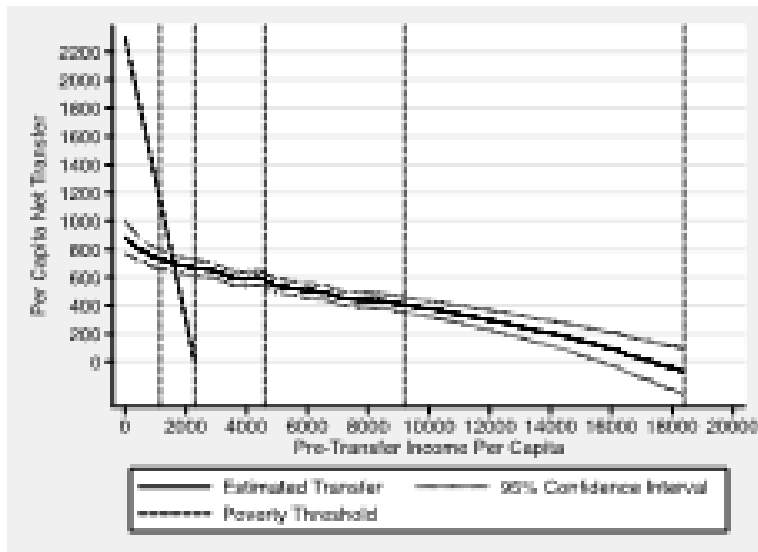
# Are Private Transfers Responsive to Low Income? How Well do They Keep Elderly Out of Poverty?

- Approach developed in Cai, Giles and Meng (JPubE 2006) and used in Giles, Wang and Zhao (2010)
- Examine the extent to which private transfers respond to low income for households with elderly residents.
  - Household survey data
  - Partial linear model, allowing different motives for transfers at different points of the income distribution
  - Address both responsiveness and descriptive evidence on the possibility that a new public transfer might crowd out private transfers.
  - Descriptive evidence of differences for households with migrant versus non-migrant children.

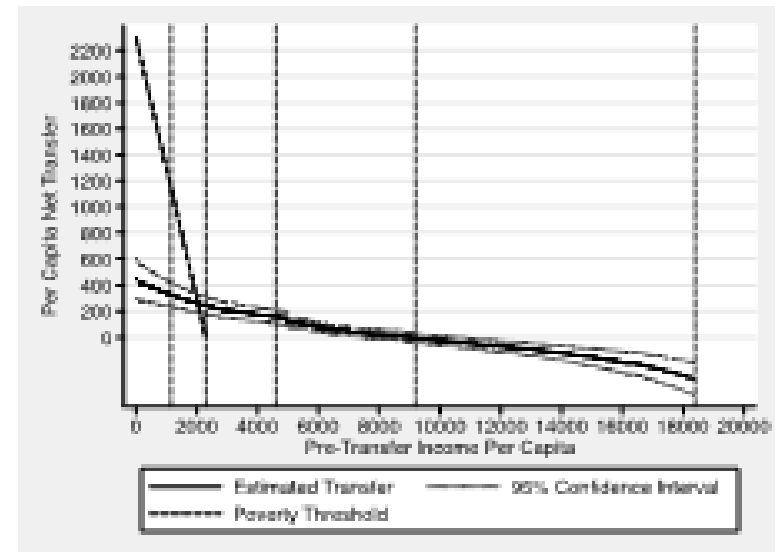
# Evidence on Transfer Responsiveness

## China

with Migrants



no Migrants

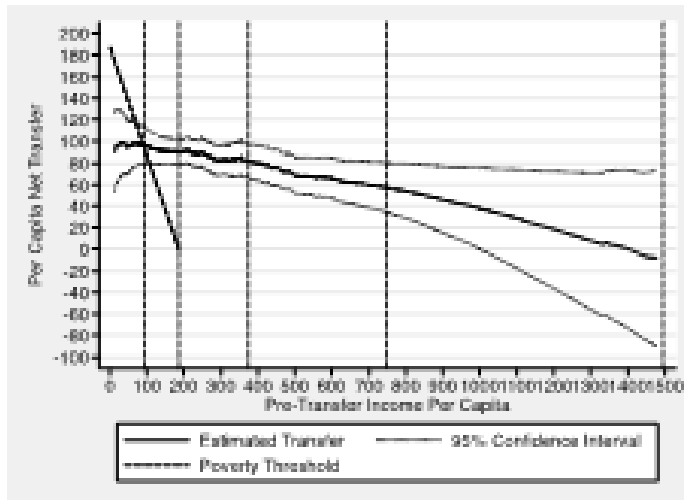


Source: Giles and Huang (2014). Data from China Health and Retirement Longitudinal Study (2011)

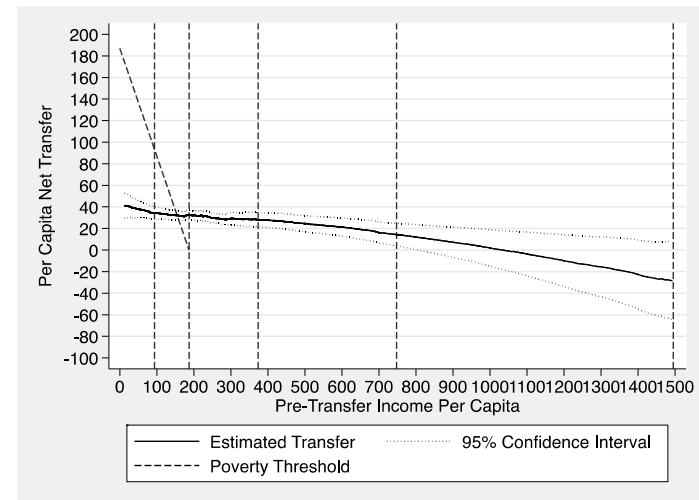
# Evidence on Transfer Responsiveness

## Indonesia

with Migrants



no Migrants

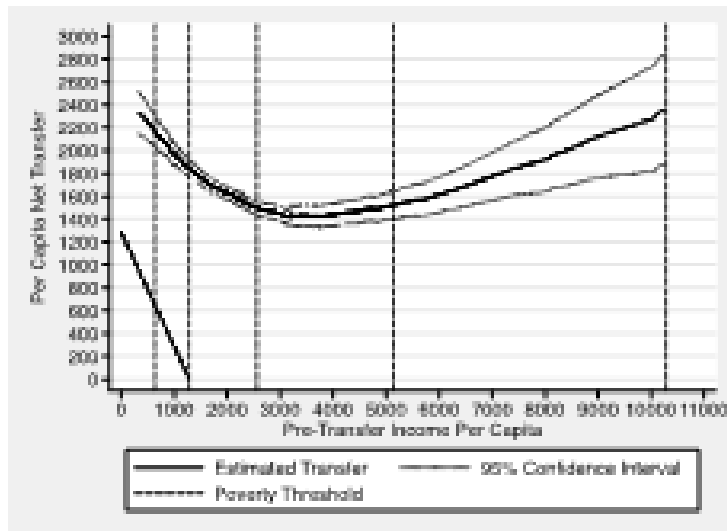


Source: Giles and Huang (2014). Data from Indonesian Family Life Survey (2007)

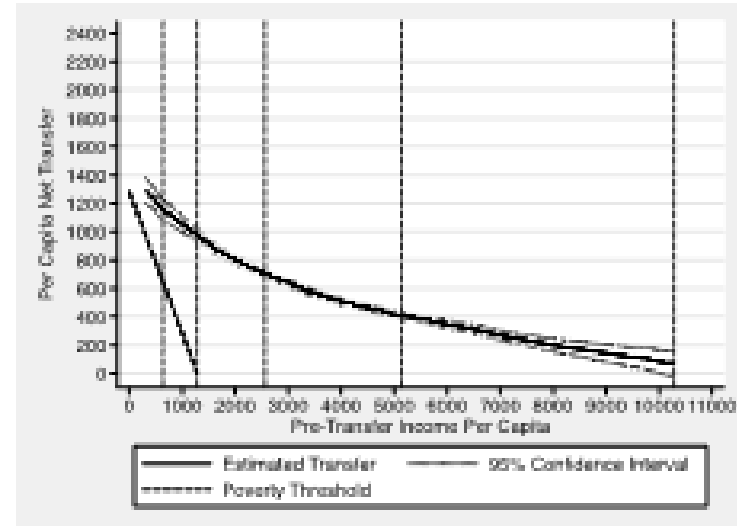
# Evidence on Transfer Responsiveness

## Thailand

with Migrants



no Migrants



Source: Giles and Huang (2014). Data from Thai Social and Economic Survey (2011)

# Transfer Derivatives Suggest Little Potential for Crowding Out a Public Transfer

Estimated Transfer Derivatives for Elderly Households in Poverty

		$\frac{1}{2}$ Poverty Line	Poverty Line
China	w/ Migrants	-0.07	-0.02
	w/o Migrants	-0.11	-0.09
Indonesia	w/ Migrants	-0.06	-0.03
	w/o Migrants	-0.04	-0.01
Thailand	w/ Migrants	-0.73	-0.34
	w/o Migrants	-0.29	-0.32

Conclusion: Introducing a pension for informal sector can improve well-being without overly distorting private support decisions.

Source: Giles and Huang (2014). Data from CHARLS (2011), IFLS (2007) and Thai SES (2011)

# Demographic Transition to Smaller Families Does Not Necessarily Lead to Less Financial Support

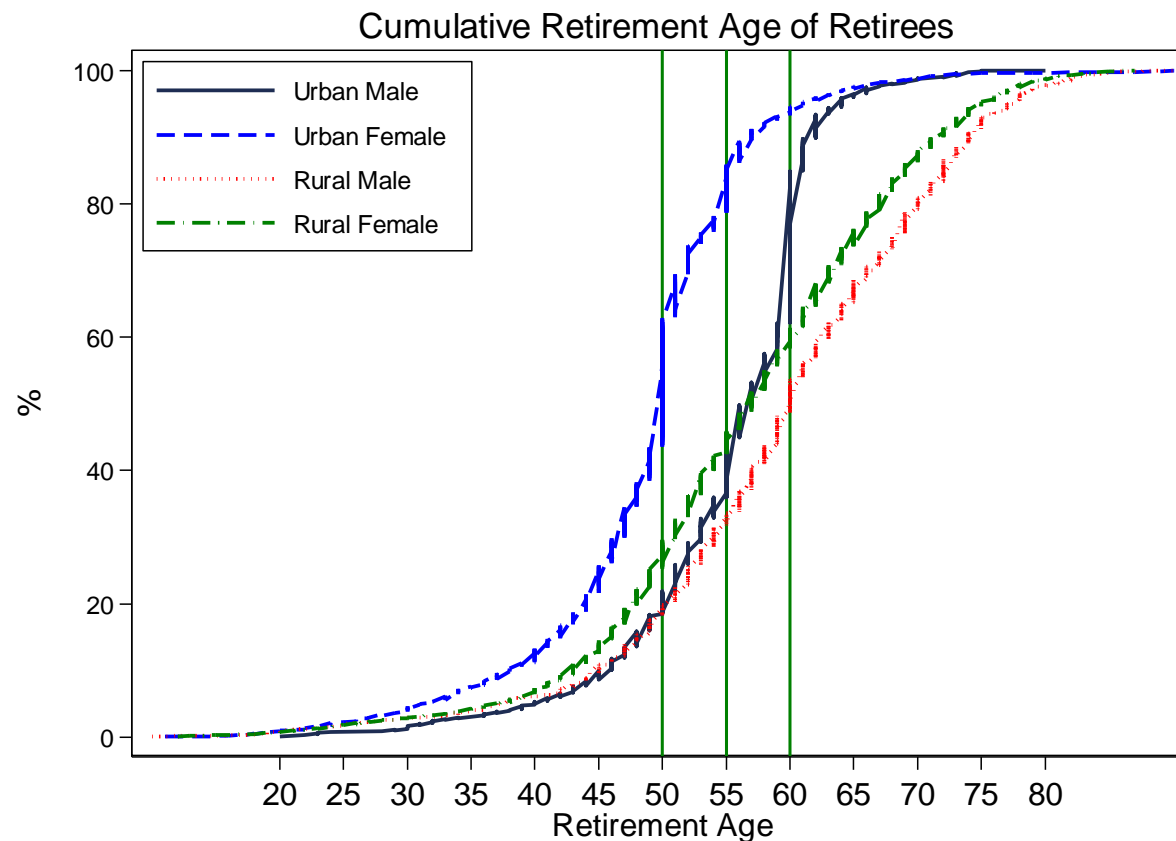
- We observe poverty among the elderly, but...
- Transfers Increasing in
  - Years of education of adult children
  - Number of adult children
  - Coefficients on both are substantially larger in magnitude for families with migrants, than families lacking migrants
- Demographic transition to smaller family size suggests reduced transfers
- “Higher Quality” children more than compensate for decline in family size.



# “Retirement” and the Informal Sector: Would new Pensions Create Disincentives for Work?

- Administrative versus Economic Retirement?
  - Exit from work is strongly associated with formal retirement and pension receipt for workers in formal sector.
  - Mandatory retirement of employees in civil service and formal sector work creates an additional bias against work (e.g. China, Vietnam, civil service elsewhere)

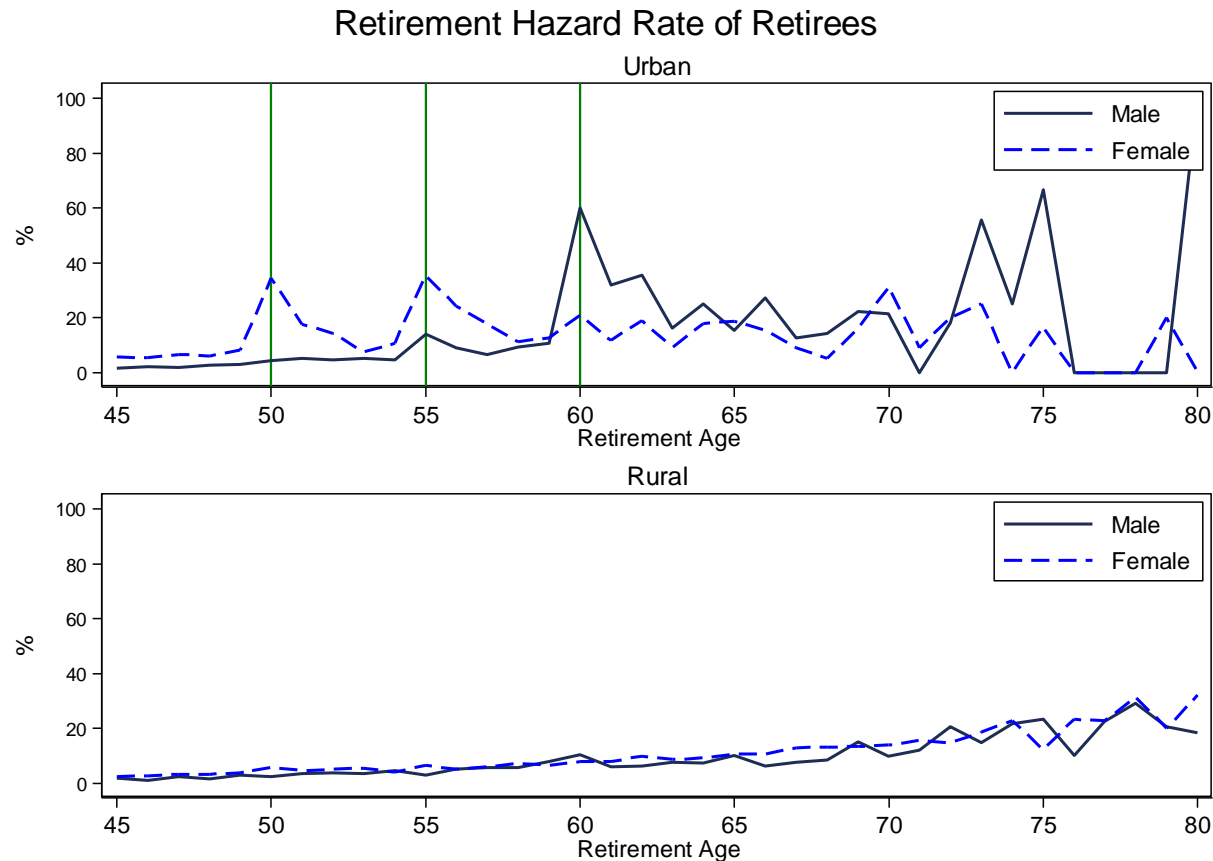
# Discontinuities in Timing of Retirement at China's Mandatory Retirement Ages



- Retirement jumps at mandatory retirement ages

Source: Giles, Lei, Wang and Zhao

# Retirement Hazards for China's Urban and Rural Residents



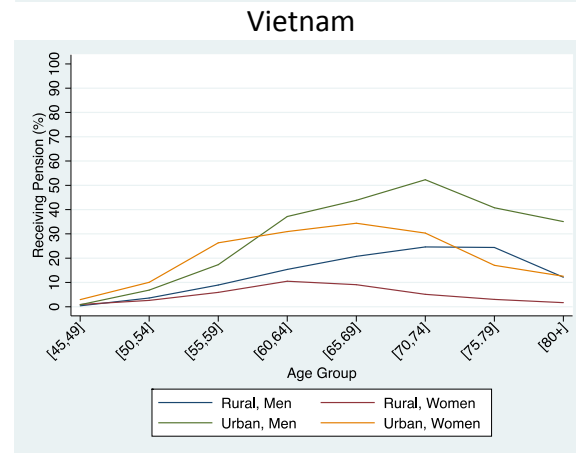
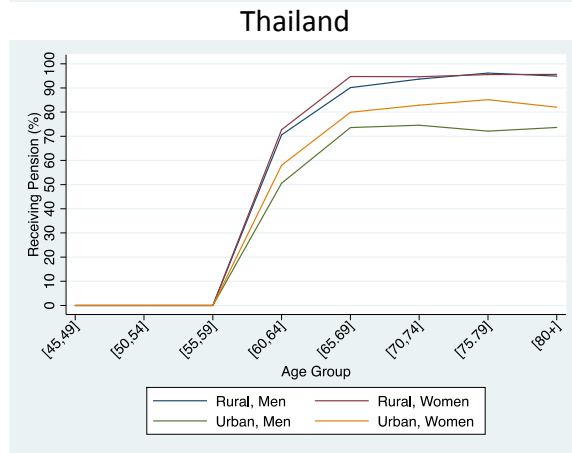
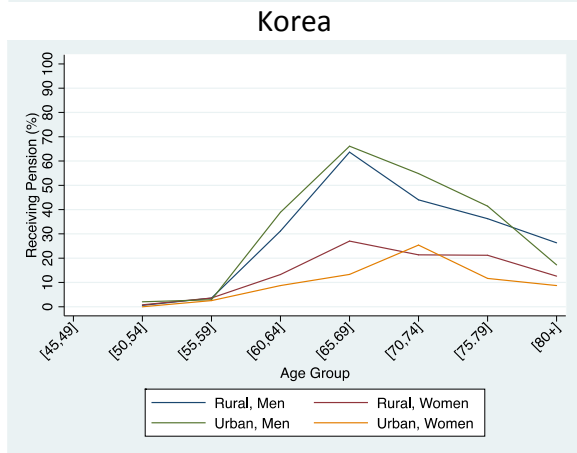
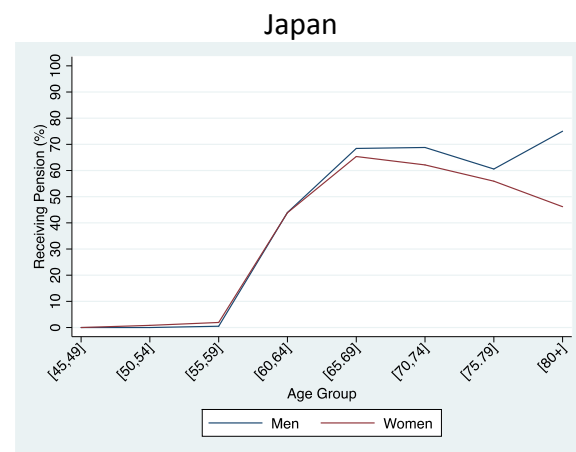
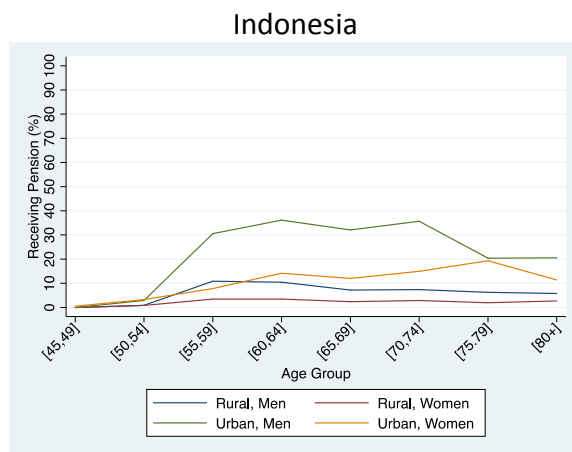
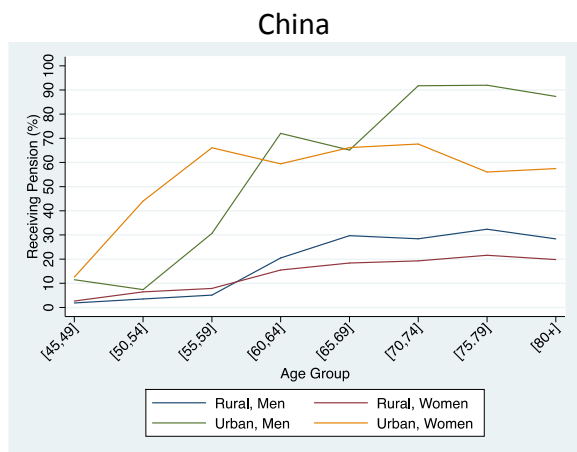
- Spikes of exit from work at mandatory retirement ages for urban workers:
  - Urban men at 60, women at 50 and 55
- Smooth retirement for rural people

Source: Giles, Lei, Wang and Zhao with data from CHARLS (2011).

# “Retirement” and the Informal Sector: Would new Pensions Create Disincentives for Work?

- Administrative versus Economic Retirement?
  - Exit from work is strongly associated with formal retirement and pension receipt for workers in formal sector.
  - Mandatory retirement creates from civil service and formal sector work can create an additional bias against work (e.g. China)
- Retirement Patterns in East Asia
  - Differences in patterns of labor supply over time mirror differences in formalization (of employment and of pension systems)
  - Labor supply of East Asia’s older workers tends to be higher than Europe, but this reflects higher incidence of informal employment and self-employment

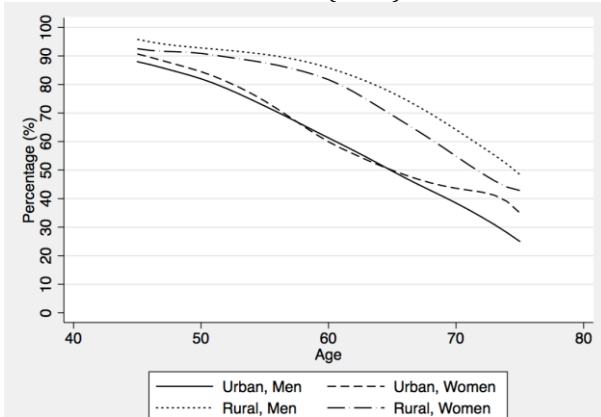
# Across East Asia, Significant Differences in Shares of Urban and Rural Workers Receiving a Pension



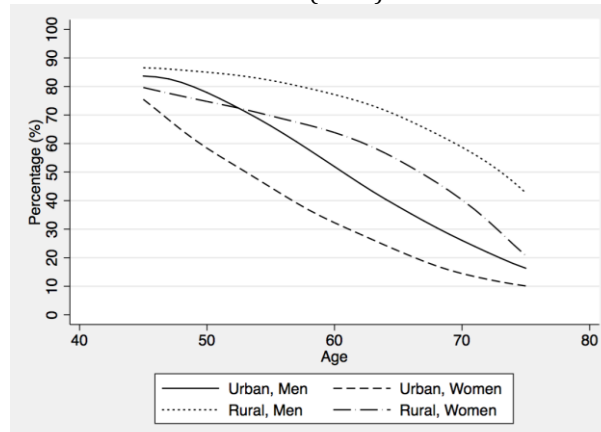
**Sources:** China Health and Retirement Longitudinal Study 2011 (CHARLS 2011), Indonesia Family Life Survey 2007 (IFLS 2007), Japanese Study of Aging and Retirement 2011 (JSTAR 2011), Korean Longitudinal Study of Aging 2010 (KLoSA 2010), Thailand Household Socio-Economic Survey 2011 (SES 2011), Vietnam Household Living Standards Survey 2012 (VHLSS 2012), and Philippines Family Income and Expenditure Survey 2009 (FIES 2009).

# Across the Region Rural Residents Continue to Work until Older Ages

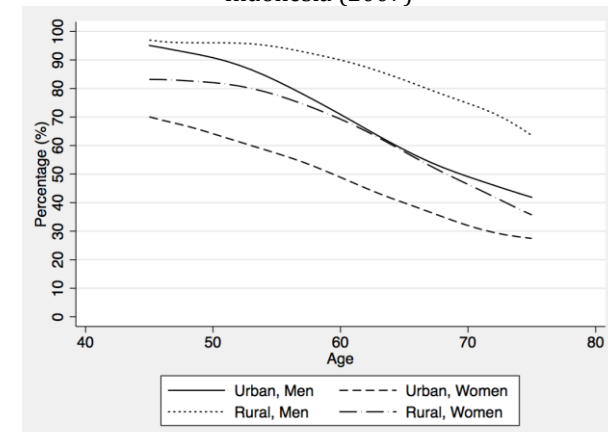
Cambodia (2011)



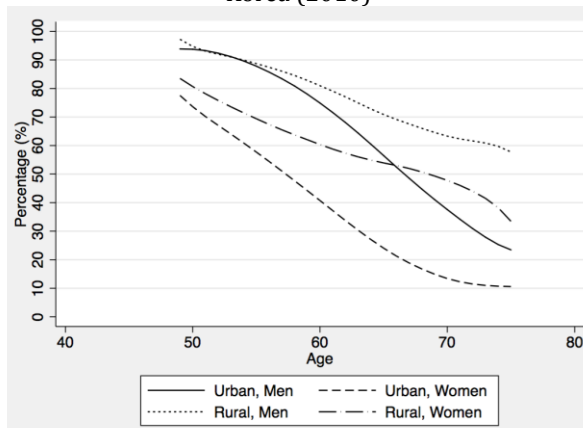
China (2011)



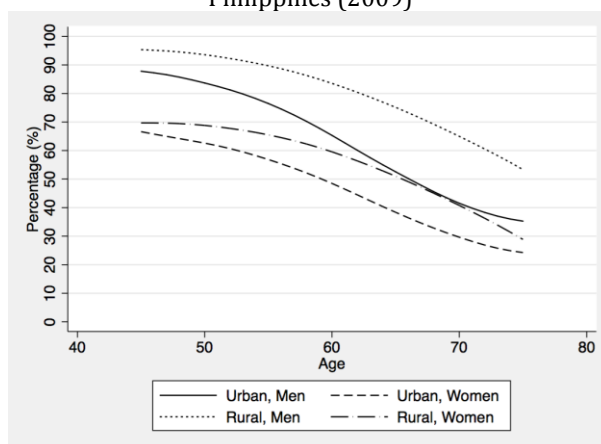
Indonesia (2007)



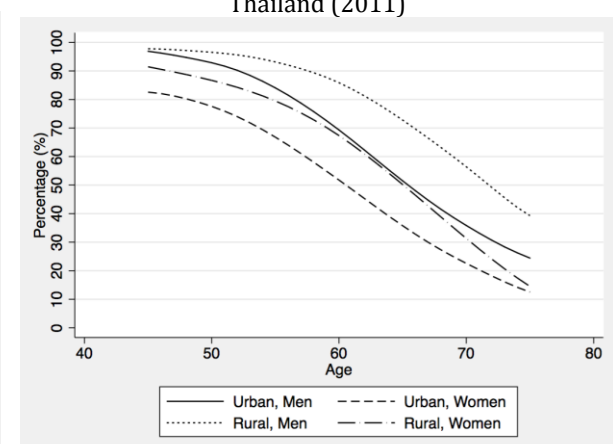
Korea (2010)



Philippines (2009)

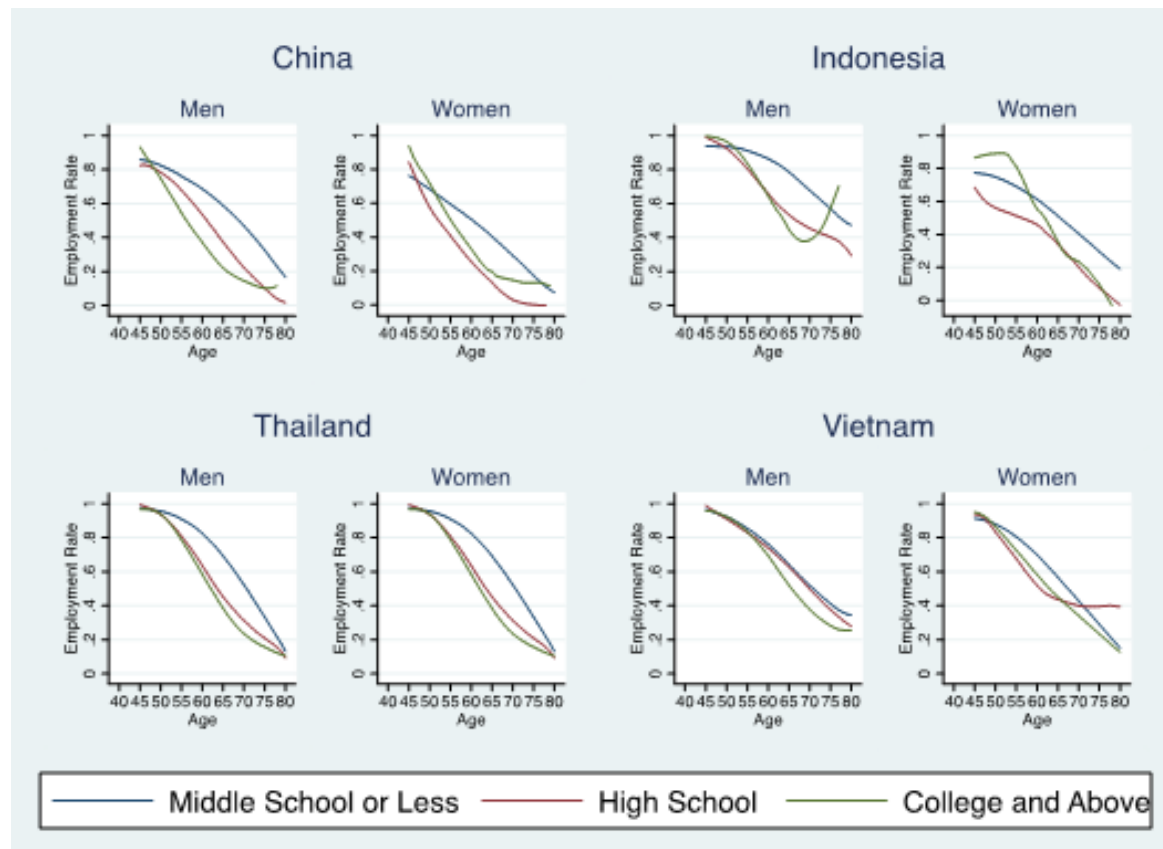


Thailand (2011)

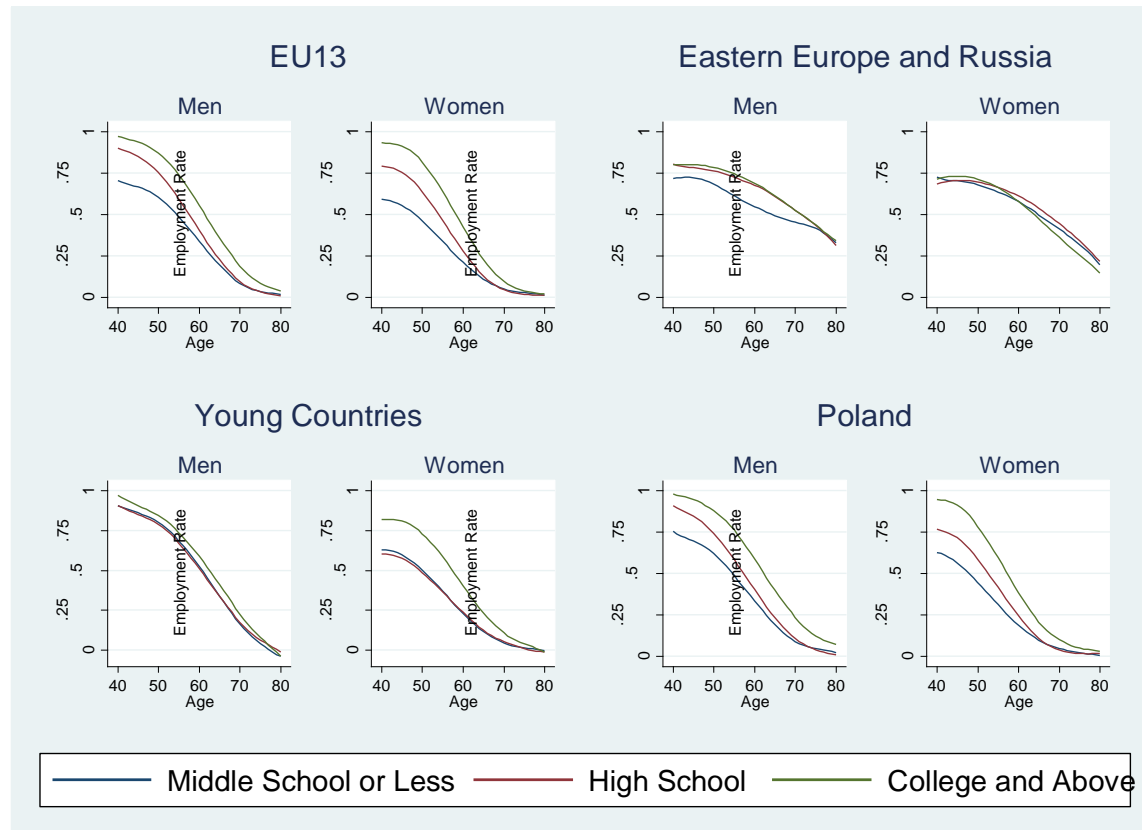


Source: Giles, Huang and Yu (2014).

# In Developing East Asia, Individuals w/ Higher Education Tend to “Retire” Earlier



# In ECA, where Pension Systems Offer Broader Coverage, Educated More Likely to Work Longer



Note: EU13: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia; Eastern Partnership and Russia: Georgia and Russian Federation; Young Countries: Kyrgyz Republic and Turkey. Source: LFS 2010.



# A Simple Model of the Retirement Decision

- Labor Supply Decisions Driven by
  - Need for Income (Access to a Pension, Wealth)
  - Capacity for Work (Health Status)
  - Opportunity Costs of Time (Value of labor/time in alternative, non-market uses)
- In Urban Areas
  - Households are Wealthier and Many People have Pension Income at a Relatively Young Age
- In Rural Areas
  - Households Poorer, Few Elderly have Pension Income
- Health Status (Own or Spouse)
- Preferences

# Preview of Findings

- Pension receipt strongly associated with exit from work in urban China and Indonesia ... but less so in Japan and Korea
  - Strong disincentives to work beyond retirement age are common in the region
- Physical and instrumental functioning (health status) tends to be more important for predicting exit from work in rural areas of China and Indonesia
- Childcare and eldercare responsibilities have some association on labor supply (w /caveats)
- Correlation of husband and wife work status. Raising women's age of benefit receipt may lead to increased labor force participation of men (Cribb, Emmerson and Tetlow, 2013).
- Gradual retirement? Japan and Korea, yes, and in the informal sector out of necessity.

# Correlates of Employment - China

	Urban		Rural	
	Men	Women	Men	Women
Pension	-0.23***	-0.10***	-0.01	-0.01
ADL Unable (Z-Score)	-0.04***	-0.02***	-0.07***	-0.03**
IADL Unable (Z-Score)	-0.02***	0.00	-0.02**	-0.01**
Elderly Res (>80)	0.00	0.01	-0.02	-0.01
Young Children (< 6)	0.01	-0.04*	0.02*	-0.02**
Spouse Working	0.18***	0.16***	0.16***	0.20**

Source: CHARLS (2011). Suppressed covariates include: Age, Age-Squared, Marital Status, Education Level Indicators, Spouse ADLs and IADLs, Spouse Pension Receipt, Ln (1+value of housing wealth), county fixed effects.

# Correlates of Employment, Indonesia

	Urban		Rural	
	Men	Women	Men	Women
Pension	-0.15***	0.03	-0.14***	-0.04
ADL Unable (Z-Score)	-0.04***	-0.04***	-0.05***	-0.05***
IADL Unable (Z-Score)	-0.05***	-0.03***	-0.08***	-0.03***
Elderly Res (>80)	-0.03	-0.02	-0.05	-0.07*
Young Children (< 6)	0.00	0.00	0.01	-0.02
Spouse Working	0.08***	0.09***	0.08***	0.08***

Source: IFLS (2007). Suppressed covariates include: Age, Age-Squared, Marital Status, Education Level Indicators, Spouse ADLs and IADLs, Spouse Pension Receipt, Ln (1+value of housing wealth), county fixed effects.

# Correlates of Employment, Korea

	Urban		Rural	
	Men	Women	Men	Women
Pension	-0.04	-0.04	-0.04	-0.02
ADL Unable (Z-Score)	-0.03	0.01	-0.09	0.01
IADL Unable (Z-Score)	-0.05*	-0.04***	-0.04*	-0.01*
Elderly Res (>80)	0.03	-0.02	-0.07***	-0.02
Young Children (< 6)	0.04	-0.15***	0.02	-0.03
Spouse Working	0.25***	0.22***	0.05***	0.04***

Source: KLoSA (2011). Suppressed covariates include: Age, Age-Squared, Marital Status, Education Level Indicators, Spouse ADLs and IADLs, Spouse Pension Receipt, Ln (1+value of housing wealth), county fixed effects.

# Correlates of Employment, Japan

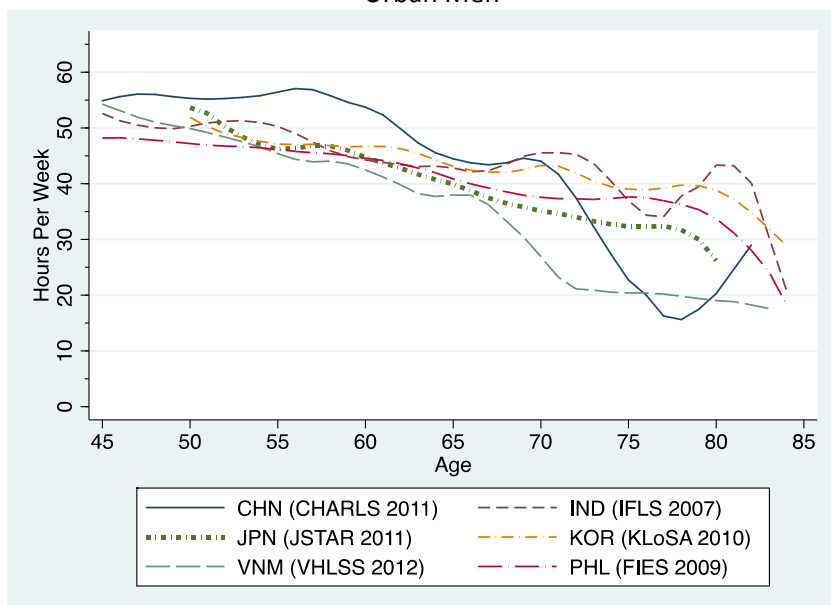
	Men	Women
Old Age Pension	-0.04	0.01
Other Social Insurance Benefits	-0.17***	-0.10***
ADL Unable (Z-Score)	-0.07***	-0.06***
IADL Unable (Z-Score)	-0.03***	-0.01
Elderly Res (>80)	0.01	-0.01
Young Children (< 6)	-0.01	-0.06
Spouse Working	0.15***	0.23***

Source: JSTAR (2011). Suppressed covariates include: Age, Age-Squared, Marital Status, Education Level Indicators, Spouse ADLs and IADLs, Spouse Pension Receipt, Ln (1+value of housing wealth), county fixed effects.

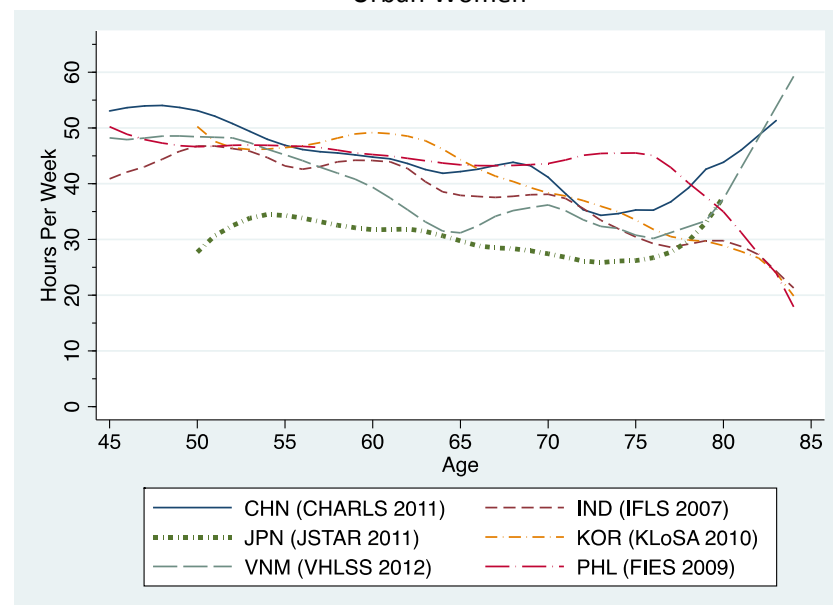
# Do We Observe Gradual Retirement?

## Hours of Work Conditional on Working (Urban Residents)

Urban Men



Urban Women



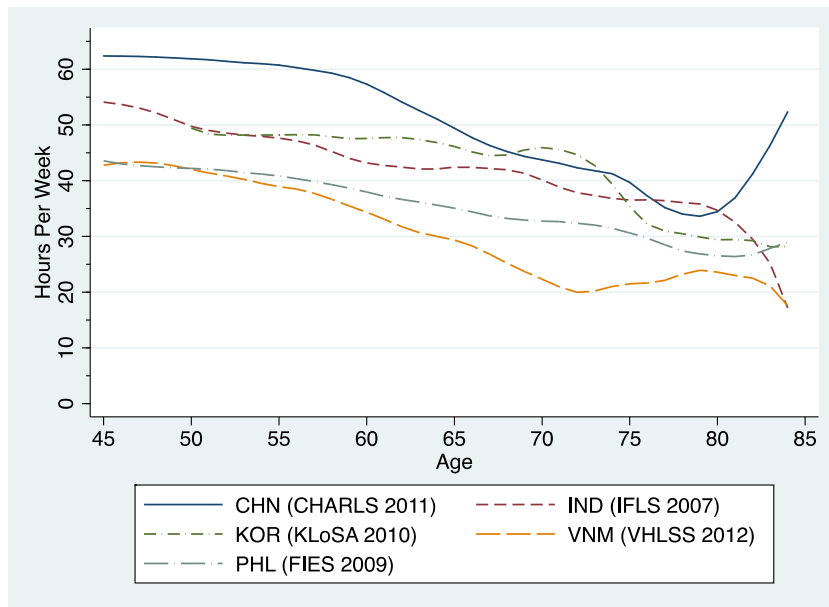
**Note:** In defining “employment” here, for CHARLS 2011, IFLS 2007, JSTAR 2011, KLoSA 2010, VHLSS 2012 and FIES 2009, we include those who have worked for more than one hour weekly on average.

**Sources:** China Health and Retirement Longitudinal Study 2011 (CHARLS 2011), Indonesia Family Life Survey 2007 (IFLS 2007), Japanese Study of Aging and Retirement 2011 (JSTAR 2011), Korean Longitudinal Study of Aging 2010 (KLoSA 2010), Vietnam Household Living Standards Survey 2012 (VHLSS 2012), and Philippines Family Income and Expenditure Survey 2009 (FIES 2009).

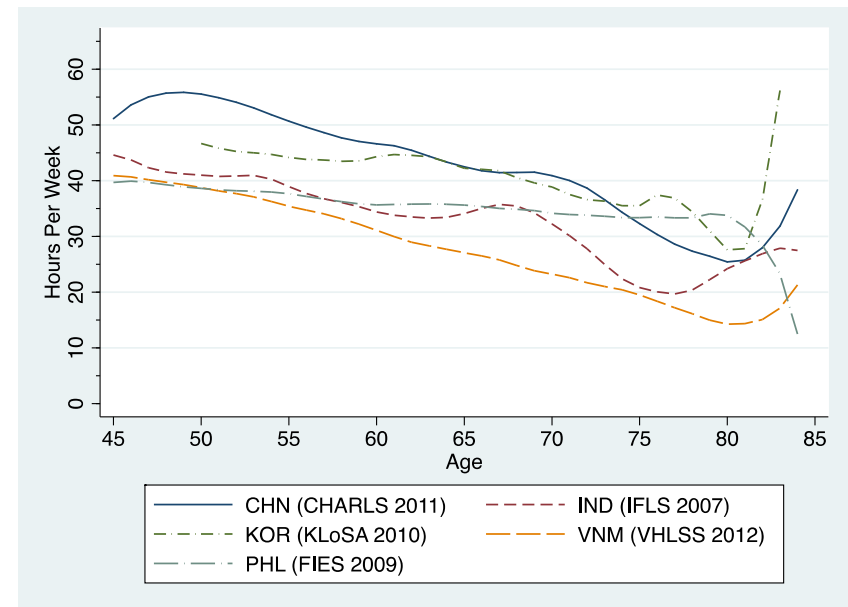
# Decline of Work More Gradual in Rural Areas, but Still More Hours of Work

## Hours of Work Conditional on Working (Rural Residents)

Rural Men



Rural Women



**Note:** In defining “employment” here, for CHARLS 2011, IFLS 2007, JSTAR 2011, KLoSA 2010, VHLSS 2012 and FIES 2009, we include those who have worked for more than one hour weekly on average.

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# Will a new Pension Alter Incentives?

## Evidence from China's New Rural Pension Program (Giles, Zhang and Zhao, 2014).

- Labor supply models show correlations, roll out of China's NRPP offers an “experiment”
- Will extending social pensions to populations that have not been covered lead to a decline in labor force participation or activity?
- Policy Motivations
  - Close gap between urban and rural, formal and informal “retirement systems”
  - Provide protection against poverty in old age.

# Other Potential Effects

- Reducing income risk may increase efficiency in labor and land use
- May facilitate structural shift out of agriculture
  - Secure source of income may make elderly more willing to transfer land, perhaps to more productive uses.
  - Secure elderly income may facilitate further movement of adult children out of agriculture
  - Later...migration of elderly adults?

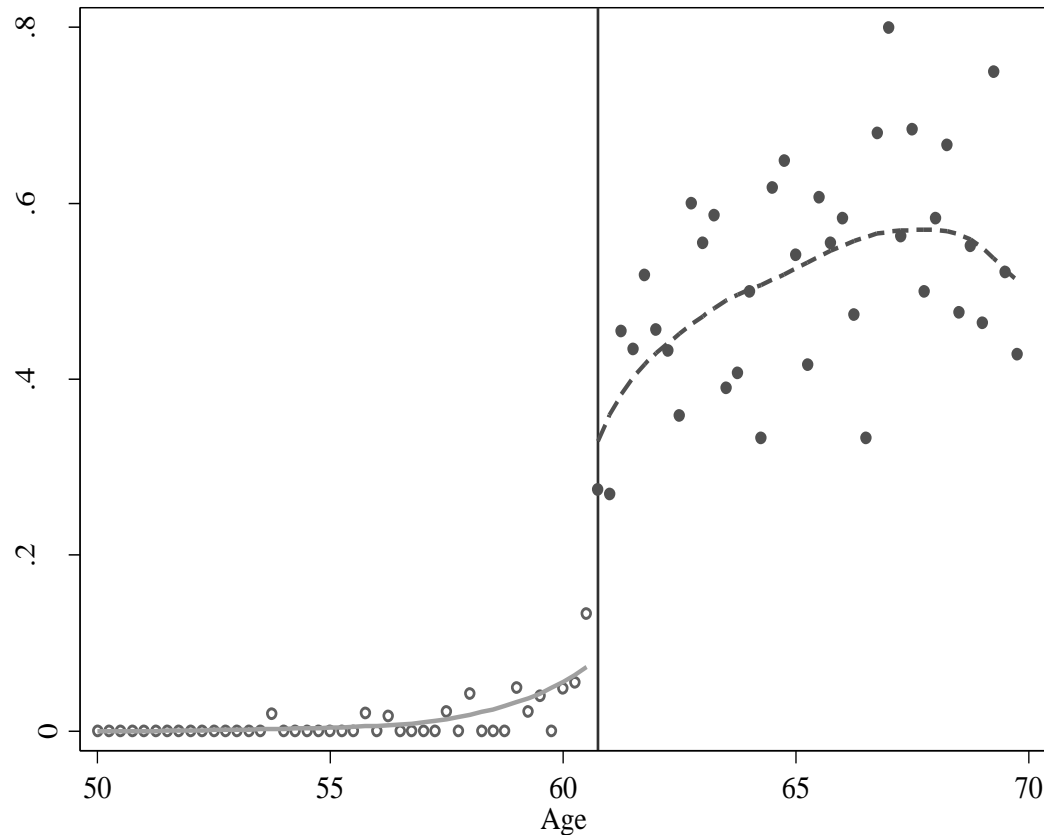
# NRP Program Features

- Pilot started in September 2009.
- Enroll working population over age 16, excluding students and individuals covered by urban employee pensions (voluntary enrollment).
- The NRPP is funded by individual and collective contributions and government subsidies, w/ annual individual contributions at five grade levels (100, 200, 300, 400 and 500 yuan/year).
- After fifteen years of participation, the minimum pension benefit is 55 yuan/month at age 60. Those already over 60 may receive a benefit. Originally required child participation, but this has changed.
- Rolled out in stages, and available everywhere as of September 2012.
- Merged w/ Urban Residents' Pension in 2014.

# The CHARLS Data Set

- China Health and Retirement Longitudinal Survey (CHARLS), 2011-12 National Baseline survey data.
- One of a family of health and retirement surveys (HRS, SHARE, LASI, IFLS, KLoSA, JSTAR)
- 2008 Pilot supported by EAP, 2011 and 2013 national waves receive partial support from KCP (and US NIH/NIA, China NSF)
- Select different sub-samples depending on identification strategy:
  - RD estimates: we restrict the sample to those rural communities where the NRRP was implemented.
  - Placebo test in those communities where it was not yet implemented.

# Age Eligibility and Receipt of NRPP Benefit



Notes: Lowess smoothed with the default bandwidth (0.8). Sample is restricted to people with rural hukou and in communities that already have the new rural pension program, and excludes the few residents enrolled in other pension programs. The vertical line denotes age 60.75, which is used as the cutoff point.

# Age Eligibility on NRPP Benefit Receipt (LPM)

	Dependent Variable: Receiving Pension Benefits	
	Age Bandwidth	
	+/-5	+/-10
Age $\geq$ 60.75	0.35***	0.32***
	(0.04)	(0.04)
Piecewise linear function of age	Yes	-
Polynomial function of age	-	4 <sup>th</sup> Order
F-Statistic	83.2	58.5
Observations	1590	2774

Source: Giles, Zhang and Zhao (2014) using data from CHARLS (2011). \*\*\*  $p < 0.01$ , \*\*  $< 0.05$ , \*  $< 0.1$ . Sample is restricted to respondents with rural residence and living in communities with the NRPP. All models control for completion of middle school, whether married and living with spouse, and existence of any ADL or IADL difficulties

# Effects of Receiving Pension Benefits on Various Outcomes

	Age Bandwidth	
	+/-5	+/-10
Poverty Status (HH PC Income < 1196)	-0.25**	-0.20
“Retired” (not working = 1)	0.26**	0.25**
Weekly Hours Worked	-5.87	-11.1
Net Private Transfer Received>0	-0.28*	-0.28
Net Private Transfer Received ('000s)	-1.05	-0.76
Standardized CES-D (Depression)	-0.45	-0.56*
Piecewise linear function of age	Yes	-
Polynomial function of age	-	4 <sup>th</sup> Order

Source: Giles, Zhang and Zhao (2014) using data from CHARLS (2011). \*\*\*  $p < 0.01$ , \*\*  $< 0.05$ , \*  $< 0.1$ . Sample is restricted to respondents with rural residence and living in communities with the NRPP. All models control for completion of middle school, whether married and living with spouse, and existence of any ADL or IADL difficulties

# Placebo Test (Estimated for Respondents in Communities Not Yet Receiving NRPP)

	Age Bandwidth	
	+/-5	+/-10
Poverty Status (HH PC Income < 1196)	-0.01	0.02
“Retired” (not working = 1)	0.03	0.03
Weekly Hours Worked	-0.31	-0.39
Net Private Transfer Received>0	0.06	0.04
Net Private Transfer Received (‘000s)	0.40	0.36
Standardized CES-D (Depression)	0.08	0.04
Piecewise linear function of age	Yes	-
Polynomial function of age	-	4 <sup>th</sup> Order

Source: Giles, Zhang and Zhao (2014) using data from CHARLS (2011). \*\*\*  $p < 0.01$ , \*\*  $< 0.05$ , \*  $< 0.1$ . Sample is restricted to respondents with rural residence and living in communities with the NRPP. All models control for completion of middle school, whether married and living with spouse, and existence of any ADL or IADL difficulties



# NRPP: Additional Results

- *In “Non-Poor” Communities:* Stronger and more significant at reducing depression.
- *In “Poor” Communities:* Stronger effect on poverty reduction, and weakly significant declines in hours worked (but not probability of retirement).
- *Among Individuals with Physical Functioning Limitation:* Increase in out of pocket outpatient expenditures.
- *Among the Healthy:* Stronger effects on retirement and reduced probability of receiving transfers.
- *“Structural Change” Outcomes:* No change in rental of land, migration of children, or migration of elderly.

# Summary Findings on NRPP (so far)

- A low subsidized pension help to alleviate poverty and reduce vulnerability among the elderly.
- Relatively modest effects on some outcome measures reflects the fact that the basic pension (55 RMB/month) is quite low.
- Even with this modest pension, however, our results suggest significant impacts on work activity.
  - Age of eligibility? (Not politically feasible to set above 60)
  - A reasonable trade off? Those exiting work after receiving NRPP may tend not to be particularly productive.
  - Perhaps more important to reduce disincentives for high human capital “elderly” to exit from work?

# Work in Progress

- CHARLS biannual survey, with special topic surveys.
- Identify effects of migration on rural elderly well-being and support (both financial and instrumental)
  - Migration and access to instrumental care (input into LTC work with WB China colleagues)
  - Giles and Mu (2007) show that return migration influenced by parent illness (entails significant economic costs to adult children, who don't provide care until parents are highly disabled)
- How does adult child migration influence labor supply decisions? (China, Vietnam, Indonesia)
- Longer term effects of introducing a rural pension in China (e.g., land transfer and migration).