Pensions, Migration, and Three-Generation Family Reorganization

Evidence from Rural China

Yang Li Xinhao Dong

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Simon Fraser University

Question

By **2015**, **277 million** rural workers had left for cities, leaving behind an estimated **61 million** left-behind children. In **2016**, China completed the urban–rural pension integration, raising the rural benefit floor by **27%**. For the first time, grandparents received a guaranteed income.

Where do grandparents end up?
Where do adult children go?
Who raises the grandchildren?

Quick Answer

Grandparents become more available as caregivers.
Adult children gain more migration flexibility.
Grandchildren spend fewer months with their parents.

Why Does This Matter?

Rural families face a hard trade-off: migrate to cities and earn **3 times** more, or stay to care for children and aging parents.

Pensions ease that trade-off. We know two things:

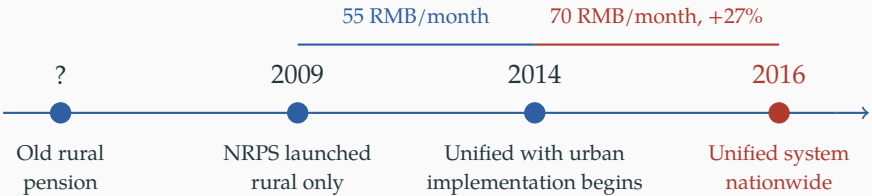
- They improve **elderly welfare**. Huang & Zhang 2021, *AEJ: Applied*
- They let **adult children migrate** more freely. Gai et al. 2025, *Econometrica*

But the chain stops there. No paper has followed it to the **grandchildren**.

Who cares for them when parents leave?
What happens to the grandchildren?

This paper follows that chain to the grandchildren, using **three independent datasets** with converging evidence.

Pension Reform Setting



- **Why 2016?** 2009: province-by-province, timing varies.
  2014: legislated but still staggered.
  2016: all provinces unified, the first clean nationwide boundary.
- **70 RMB** $\approx$ **30%** of the rural poverty line, guaranteed and unconditional. In 2014, 70 million rural residents lived below that line.
- **Eligibility:** age ≥ 60 + rural hukou. Province add-ons vary widely (CV = 38.6%).

Three-Generation Model: Setup

Grandparent g: pension P; upward transfers $T(P)$ crowd out; grandchild care b_g costly:

$$c_g = P + T(P) - \theta b_g, \quad T'(P) < 0,\ \theta > 0,\ b_g'(P) > 0$$

As $P \uparrow$: transfers fall and care rises — grandparent own consumption *may fall*.

Adult child a: migrates iff $\Delta > 0$ (β: altruism weight; q: local care quality):

$$\Delta(P,q) = \underbrace{\Delta w}_{\text{wage gain}} - \underbrace{\kappa}_{\text{cost}} - \underbrace{\Omega(P)}_{\substack{\text{care burden at origin} \\ \Omega'(P)<0}} + \underbrace{\beta\,\Delta H(P,q)}_{\text{child-outcome gain}}$$

$\Omega(P)$: cost of leaving parents/children behind — falls as pension P rises.

Grandchild k: $H(e,\ t_p,\ b_g)$ (e: child endowment; t_p: parent time; b_g: GP care).

Migration $\Rightarrow t_p \downarrow$ but $b_g \uparrow$ — grandparent absorbs the gap.

Three-Generation Model: Predictions

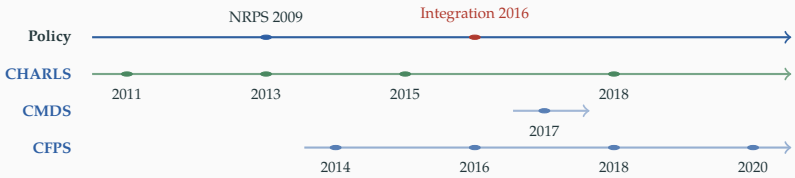
$$\pi(P) = \Pr[\Delta(P, q) > 0], \qquad \frac{d\Delta}{dP} = -\Omega'(P) + \beta \frac{\partial \Delta H}{\partial P} > 0 \quad \Rightarrow \quad \pi(P) \text{ rises with } P$$

Prediction	Mechanism	Test
GP care ↑	pension replaces transfers; GP redirects toward care (c_g may fall)	**CHARLS**: grandchild care ↑
Migration flexibility ↑	care constraints on adult child ease	**CMDS**: child-carrying ↑
Parent time ↓	household reallocates work and care	**CFPS**: months w/ parents ↓

Diagnostic: family-network responses should be stronger among elderly *with* children, and weaker among those without. ✓

Each link is identified separately. The claim is joint consistency with the model, not a single end-to-end causal estimate.

Data



Perspective	Data	Main outcomes
Elderly	**CHARLS**	Pension receipt/income; outpatient OOP; grandchild care
Parents / migrants	**CMDS** $\times$ NBS panel	Childcare burden; first migration with children; origin-province pension generosity
Grandchildren	**CFPS** + **CEPS**	Parent-child co-residence; grandparent links; child welfare outcomes

CHARLS: China Health and Retirement Longitudinal Study; **CMDS**: China Migrants Dynamic Survey; **CFPS**: China Family Panel Studies; **CEPS**: China Education Panel Survey; NBS: National Bureau of Statistics provincial pension panel.

Empirical Strategy

Generation	Data	Outcomes	Design
Causal identification			
Grandparent g	**CHARLS**	Pension income; outpatient OOP; grandchild care	age-60 RD-DID
Grandchild k	**CFPS**	Months with father / mother	age-60 RD-DID
Supporting evidence — consistent with model			
Adult child a	**CMDS**	Childcare burden; first migration with children	province OLS

Shared identification design (CHARLS + CFPS):

$$Y_{igt} = \alpha + \beta\,(\text{Eligible}_g \times \text{Post}_t) + \gamma_i + \delta_t + f(\text{Age}_g) + \varepsilon_{igt}$$

$\text{Eligible}_g = \mathbf{1}[\text{GP age} \geq 60]$; $\text{Post}_t = \mathbf{1}[t \geq 2016]$; individual FE + year FE + age polynomial.
Diagnostic: Transfer channel concentrates among elderly with children — rules out a pure income effect.

CMDS is descriptive: province OLS, 31 observations, used to characterize migration patterns.

Grandparents: Where Does the Pension Go?

Outcome	Coef.	p	Interpretation
First stage			
Pension receipt	$+0.182$	$< .001^{***}$	pension take-up rises
Pension income	$+561$ RMB	$.002^{**}$	pension income rises
Not on themselves			
Outpatient OOP	-236 RMB	$.026^{*}$	formal outpatient spending falls
Transfers to adult children	-0.124	.592	no full-sample increase
On the grandchildren			
Grandchild care	$+0.082$	$.022^{*}$	grandparents step in

Pension income rises, but **formal outpatient spending falls**.
The strongest behavioral response is **more grandchild care**.

Transfer result is the full local RD-DID estimate; the next slide decomposes it by family structure.

Family-Channel Diagnostic

Diagnostic split by family structure; not the same pooled RD-DID estimand as the previous slide.

Outcome	With children	No children	Read
log(pension income)	$+1.377^{***}$	$+1.395^{**}$	first stage holds for both
log(outward transfers)	-0.476^{***}	-0.345 ns	family-specific ✓
Hospitalization	-0.017 ns	-0.023 ns	not robust to controls
log(total income)	$+0.047$	$+0.888^{***}$	no-child income rises
log(total consumption)	-0.095^{***}	-0.020	no-child spending does not rise

Both groups receive more pension income.
Among elderly **with children**, transfers fall, consistent with grandparent resources being redirected inward.
Among elderly **without children**, income rises sharply but consumption does not rise, consistent with an **income-consumption gap** rather than family reallocation.

Diagnostic only: no-children group is small and not a clean counterfactual. The income-consumption gap is suggestive of precautionary saving / retained resources, not a direct savings estimate. With-children $N \approx 12{,}600$; no-children $N \approx 350$.

Parents / Migrants: A Dynamic Process

CMDS is migrant-conditional; CFPS is the rural-origin family stock.

Share of migrant parents living with children: first migration vs. current migration

33.4% $\xrightarrow{+26.9\text{pp}}$ **60.3%**

Outcome	Data	Coef.	p
GP has adult child at home / nearby	CFPS	$+0.047$	.035**
Childcare burden at origin	CMDS	-0.050	.005***
First migration with children	CMDS	$+0.057$	.012**
Any parent outside county	CFPS	-0.331	.014**
Any parent outside province	CFPS	-0.112	.222

CMDS margin Among migrants, higher pension generosity is associated with more child-carrying.

CFPS margin Adult children are more often home / nearby, and less often outside county. This fits circular or short-distance work rather than permanent city settlement.

CMDS robustness COVID check

Grandchildren: Fewer Months with Parents

CFPS age-60 RD-DID, covariate-adjusted

Outcome	Coef.	p
Months with father	-1.548	.011**
Months with mother	-1.783	.003***
Father absent >1 month	+12.6 pp	.039**
Mother absent >1 month	+14.2 pp	.018**

CFPS captures rural-origin grandchildren: **1.5–1.8 fewer months per year** with each parent after a grandparent crosses age 60.

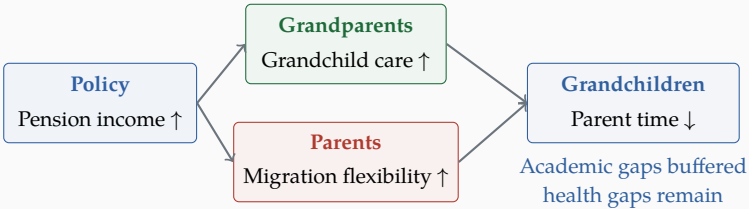
Reconciliation CMDS asks whether selected migrant parents bring children; CFPS asks how much parent time children receive in rural-origin families.

Welfare relevance In CEPS, grandparent co-residence is associated with smaller academic gaps, while health gaps remain.

CEPS is associational only. CFPS controls: grandparent gender and education.

Summary

What we find



- **Not a pure income effect:** responses concentrate among elderly *with* children.
- **Not welfare-neutral:** academic gaps are buffered, but health gaps persist.
- **New:** policy documents name migration facilitation as a goal. We trace the chain to grandchildren.

Interpretation

The reform is consistent with facilitating rural migration, but it also reshapes caregiving: grandchildren spend fewer months with parents, while grandparents become more available as caregivers.

Future work: long-run grandchild outcomes; heterogeneity by pension generosity and local care infrastructure.

Thank you!

Questions?

Appendix

A1: CHARLS First Stage

Outcome	Coef.	p	Note
Pension receipt	$+0.182$	$<.001$***	eligibility works
Pension income	$+561$ RMB	.002**	income rises
Outpatient OOP	-236 RMB	.026*	formal care spending falls
Transfer given	-0.124	.592	no significant increase
Grandchild care	$+0.082$	.022*	grandparents step in

Design: CHARLS age-60 RD-DID, rural elderly only.

A2: CHARLS Parallel Trends

Variable	Window	p	Result
hosp_any	2011→2013	.408	✓ Pass
log_tgiv	2011→2013	.330	✓ Pass
h_gkcare	2013→2015	.426	✓ Pass

A3: Retirement Check: Pre-2016 RD

Age 60 may also proxy for informal retirement. Before the reform, this margin should not generate jumps in the outcomes.

Pre-2016 age-60 RD falsification

Outcome	Coef.	p	Years
Grandchild care	-0.025	.196	2013–15
$\log(1 + \text{transfers})$	$+0.121$	.279	2011–15
$\log(1 + \text{outpt. OOP})$	$+0.022$	.741	2011–15
Outpatient visit	-0.009	.462	2011–15
Hospitalization	$+0.009$	.367	2011–15
Working	-0.010	.408	2011–15
Work hours	$+0.218$	.798	2011–15

No pre-2016 discontinuity appears for care, transfers, utilization, logged OOP, or labor supply.

Raw outpatient OOP has a pre-2016 right-tail discontinuity, but it disappears under log, asinh, winsor 99%, and winsor 95% transformations.

A4: Retirement Check: Labor Supply

If the main estimates were driven by retirement at age 60, labor supply should fall sharply at the age-60 $\times$ post-reform margin.

Post-reform RD-DID on labor supply

Outcome	Coef.	p
Working	$+0.044$	.126
Total work hours	$+0.304$	.880
asinh(work hours)	$+0.026$	.712
Work weeks	-0.471	.740
Individual earnings (RMB)	-243	.719
asinh(earnings)	-0.066	.805

Labor supply does not fall at the age-60 cutoff after the reform.

A5: Family-Channel Diagnostic

Outcome	With children	No children	Read
log pension income	$+1.377^{***}$	$+1.395^{**}$	first stage in both
log transfer given	-0.476^{***}	-0.345 ns	family channel
Hospitalization	-0.017 ns	-0.023 ns	weak after controls

Controlled diagnostic: baseline covariates interacted with post.
The no-children group is diagnostic only, not a clean counterfactual.

A6: CMDS Single-Control Robustness

31 province-level controls entered one at a time: GDP, per-capita income, urbanization, fiscal revenue, education spending, etc.

Outcome	Sign stable	Significant at 10%
Childcare burden	31/31 ✓	71%
First with children	31/31 ✓	65%

A7: CFPS Parallel Trends

Variable	p	Result	Note
mother_lt11	.648	✓ Pass	
any_lt11	.835	✓ Pass	
father_lt11	.096	† Borderline	2014 categorical coding vs. 2016 continuous months

Mother and any-parent tests are clean; father is borderline due to measurement changes.

A8: CFPS Bandwidth Robustness

Bandwidth	Father months	Mother months
± 2	-3.058^{***}	-2.890^{***}
± 3	-3.934^{***}	-4.139^{***}
± 5	-1.389^{**}	-1.608^{***}
± 7	-0.646	-1.046^{**}
± 10	$+0.029$	-0.410

Outcomes are months lived with father and mother per year.
The local effect is strongest near the age-60 cutoff and attenuates with wider bandwidths.

Main slide uses covariate-adjusted ± 5 estimates: father -1.548 months, mother -1.783 months.

A9: COVID Calibration

Window	Sample	Effect	Note
2016→2018	Rural, BW= ± 5	$+0.047$**	Clean window
2016→2020	Full, BW= ± 10	$+0.188$***	COVID return migration

The 2020 estimate is about $4\times$ larger.
Use 2016→2018 as the clean pension window: true effect $\approx +4.7$ pp.