

The effects of social pensions on monetary and time transfers among the poor: Evidence from Peru ^{*}

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* Las opiniones expresadas en este estudio corresponden a los autores y no deben ser atribuidas al BCRP.

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 Effects at the level of the individual

 Effects at the level of the household

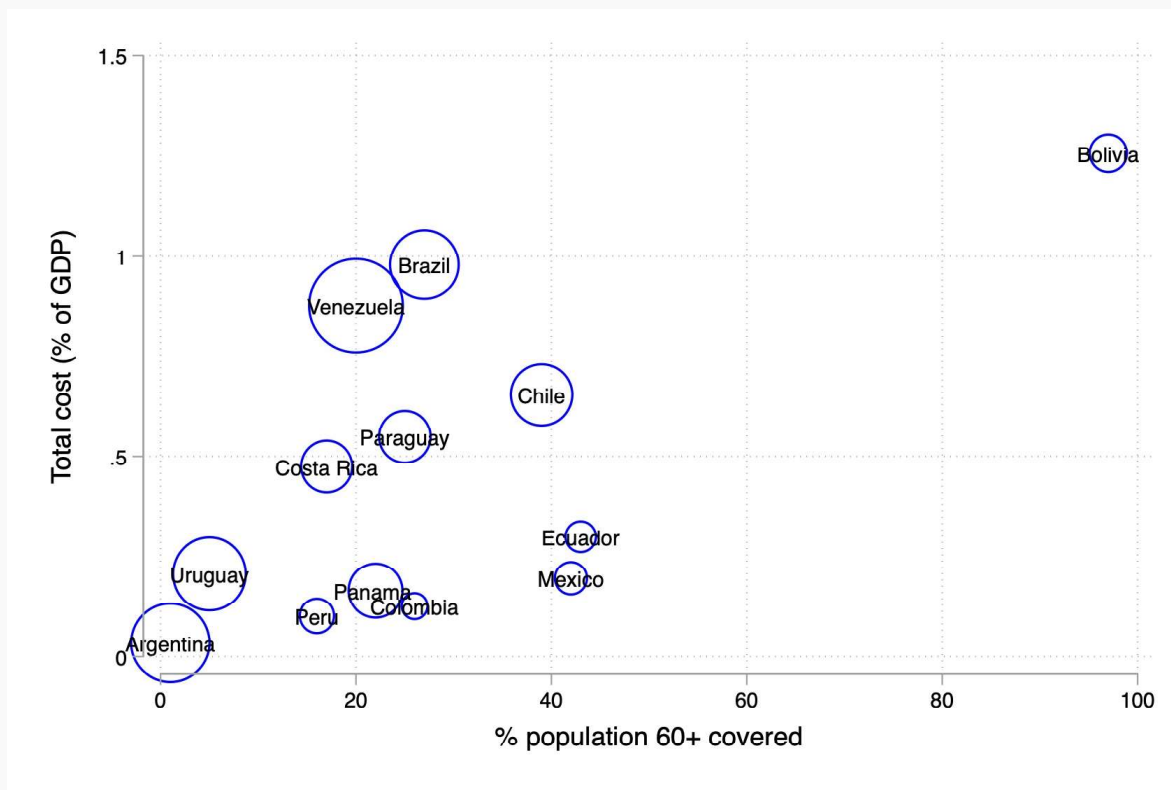
5. Conclusions

Introduction

Motivation (1)

- Social pensions (*non-contributory pensions*) are transfers to elderly poor individuals who have no other pension. They are mostly means-tested, but there are also universal programs
- Many countries in Latin America have implemented these programs during the last 20 years
- Social security participation is low (large informal sector) thus, social pensions help to fight against old-age poverty
- This policy represents a shift in social protection strategy in the region – social assistance
- Diverse effects on individuals and their family: poverty relief, labour supply, savings, health, mortality, etc.

Costs and coverage of social pensions in Latin America (2018)



Notes: The size of the circles represents the value of pensions expressed in USD adjusted by PPP. The data are extracted from the International Social Pensions Database.

- Social pensions affect private transfers of money
 - Reduction of transfers from family members living in other households
 - Increase of transfers given to family members living in other households
- Social pensions may reduce labour supply and recipient's labour income
 - But, other family members move into the household
 - Disposable household income per capita (a) could reduce via an increase in household size and reduction in recipient's labour income; or (b) it could increase due to the labour income of other household members
- Recipients may also shift their time allocation: less labour, and more home care activities (e.g. childcare) [with gender heterogeneity]
- The effectiveness of the social pension could be limited due to shifts in income composition, or it could be enhanced if it facilitates income-pooling in the household

- Impact of Peru's social pension program **Pension 65** on private transfers of money and time among the elderly poor
- Exploit baseline survey data (**ESBAM**) matched with admin data specifically designed to evaluate the program with RDD
- Use of RDD that exploits discontinuity around the official eligibility welfare index of the program to identify the **intention-to-treat (ITT) effects**
- Crowding-out effect on private transfers of **70% (97% for men)**
- Substantial increase in childcare provision among men only (**from 1 to 7 hours a week**)
- Increase in the number of young children (0-5 y.o.) in the household
- Reduction in time spent on leisure activities for men
- No evidence that the program loses effectiveness due to **↑** in household size and **↓** of elderly labour income and family transfers. There is also no evidence that the transfer facilitates income pooling

1. Related literature
2. The *Pension 65* program
3. Data and empirical strategy
4. Results
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- Effects of social pensions:
 - Effects on children: increase in *weight per height* of female children (South Africa: Duflo 2000, 2003); increase of school enrolment (South Africa: Edmonds 2006, Mexico: Gutierrez et al. 2016); reduction of child labour supply (South Africa: Edmonds 2006); reduction of teenager labour supply (Mexico: Juarez & Pfutze 2015)
 - Increases in family size and number of co-residing children (Mexico: Aguila et al. 2020)
 - Improvement in access to healthcare services (Mexico: Aguila & Casanova 2019, Aguila et al. 2015; Peru: Bernal et al. 2022)
 - Reduction of mortality (Chile: Miglino et al. 2023; Peru: Valderrama & Olivera 2023; Mexico: Barham & Rowberry 2013)
 - Improvement in subjective well-being (Mexico: Galiani et al. 2016; Peru: Bando et al. 2020; Paraguay: Bando et al. 2022)
 - Reduction of depression symptoms (Mexico: Galiani et al. 2016, Salinas-Rodríguez et al. 2014; Peru: Bando et al. 2020; China: Chen et al. 2019)

- Effects more related to our study:
 - Nikolov and Bonci (2020) provide extensive review of crowding-out effects of social pensions on private monetary transfers in developing countries
 - Crowding-out effects on private transfers (South Africa: 30% in Jensen 2003; Mexico: 37% in Amuedo-Dorantes & Juarez 2015, 87% in Juarez 2009; Taiwan: 39% in Fan 2010)
 - Reduction of savings (Mexico: Amuedo-Dorantes et al. 2019)
 - Women eligible to the South Africa's social pension program become the primary decision-maker in the household (Ambler 2016)
 - Reduction in labour supply (Brazil: Carvalho Filho 2008, 2010; South Africa: Ardington et al. 2009, Ranchhod 2007)
 - Increase in childcare provision among elderly rural men (China: Li et al. 2018)

The Pension 65 program

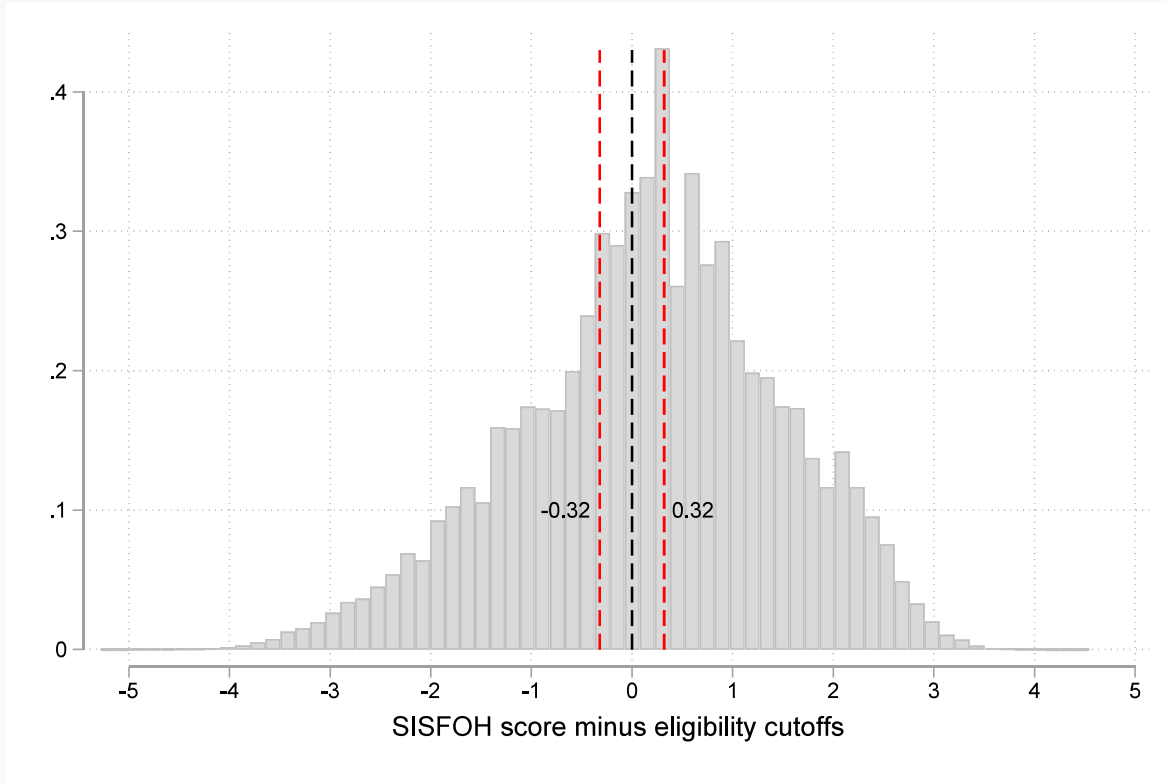
- The goal is improving the living standards of elderly poor individuals
- Implemented in Oct-2011. Roll-out started in the poorest districts of 6 priority regions and then gradually extended
 - 570,000 recipients by 2021 (19% of 65+ population)
 - It costs **0.13%** GDP (average in Latin America is 0.39%)
 - Bi-monthly transfers of 250 Soles (**USD 33** a month), equivalent to:
 - 16.6% and 21.6% of mean and median of household expenditure per capita in Peru (2021)
 - 52-77% of the official extreme monetary poverty line (2021)
 - 27-47% of the official monetary poverty line (2021)
 - **13.2%** of national minimum wage (2021)
 - However, the transfer has not been updated since Oct-2011. The real value fell by 13% until Aug-2015, and by 52% until Aug-2023.

- Eligibility:
 - Aged 65+
 - No receiving any other pension (public or private)
 - Living in a household classified as **extremely poor** by SISFOH (Household Targeting System)
 - It computes a welfare index: the *SISFOH score* (*Indice de Focalizacion de Hogares*)
 - Eligible if *SISFOH score* < cut-off of extreme poverty
- SISFOH:
 - Socio-economic variables: quality of the dwelling (floor, walls, roof), access to water, electricity, sewage, housing overcrowding, type of fuel source, schooling of head of household, maximum level schooling in the household, household assets, health insurance
 - 15 regional cut-offs: based on departments, natural regions and urban/rural areas. They are unknown to the public
 - Algorithm and weights are complex and difficult for individuals to understand

Data and empirical strategy

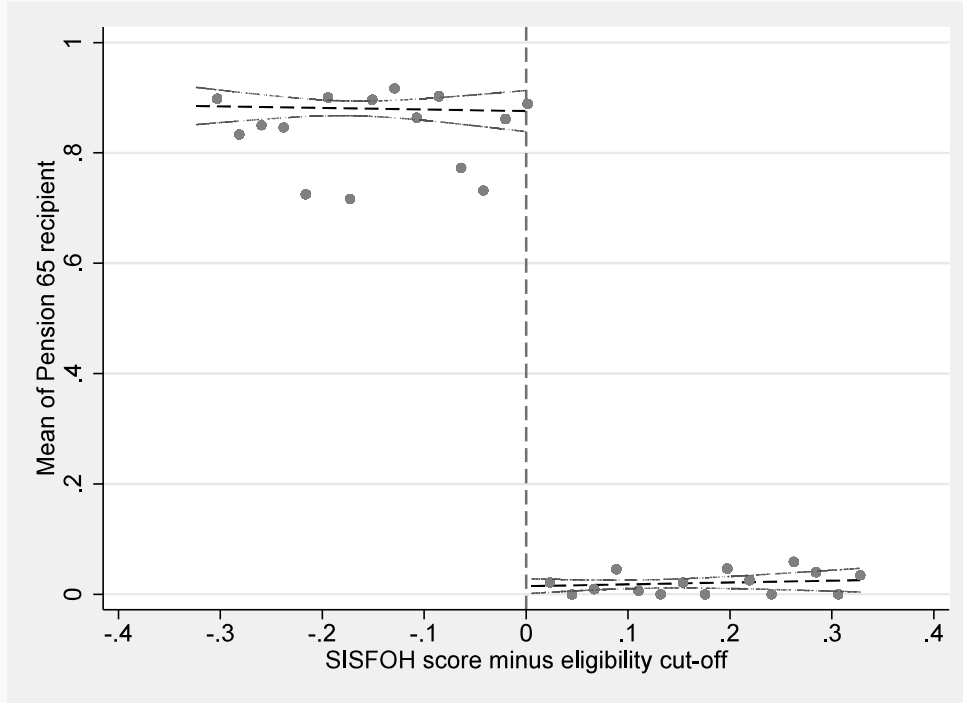
- ESBAM: The Survey of Health and Well-being of Elderly Individuals
 - (a) **Baseline** Oct-Nov/2012; (b) Follow-up Jul-Sep/2015
 - Survey designed to assess the impact of Pension 65 with RDD
 - Sample of individuals aged 65-80 in 12 out 24 regions of Peru
 - **Sample size 2015: 3,494** (eligible=2,278; ineligible=1,216)
 - Includes variables of objective and subjective health, anthropometric measures, healthcare utilisation and various socio-demographic variables
- Sample framework
 - Very local sample framework: households are ± 0.3 SD located around the threshold for extreme poverty
 - Sample design with two-stage random selection: (1st) geographic clusters and (2nd) households with at least one older adult in each family
 - Running variable $z = \text{SISFOH score} - \text{extreme poverty threshold}$

National distribution of SISFOH scores (2012/2013)



Notes: This figure plots the national distribution of the running variable, that is the SISFOH score minus eligibility cutoffs (histogram bars). The vertical red lines indicate the maximum and minimum values (bandwidth) found for the running variable in the ESBAM sample. The sampling framework correspond to observations located within this bandwidth. The data come from the SISFOH census of 2012/2013.

Probability of receiving Pension 65



Notes: The graph plots the probability of receiving a transfer from Pension 65 at any time between the baseline and the follow-up survey as a function of the running variable (SISFOH score minus eligibility cutoffs). The dots denote averages for 15 bins each side of the cut-off (dashed line). Observations to the left (right) of the cut-off are eligible (ineligible) for the programme. The dotted lines indicate predicted linear regressions at each side of the cut-off. The confidence intervals correspond to 95% confidence levels.

$$y_i = \beta_0 + \beta_1 \text{elig}_i + \beta_2 z_i + \beta_3 z_i \text{elig}_i + \varepsilon_i \quad (1)$$

- y_i is the outcome of interest (e.g. receive private transfer (=1) or not (=0))
- z_i is the *SISFOH score* minus eligibility cut-offs
- elig_i is an indicator for the program eligibility, it is 1 when $z_i < 0$, and 0 otherwise
- β_1 is the coefficient of interest, which we can estimate with OLS
- However, the amount of private transfers received by the household is conditional on the existence of such transfer, leading to a censored type outcome. Thus, we employ Tobit models for this type of outcomes
- We cluster errors at the Primary Sample Unit (PSU) to deal with design uncertainty (Abadie et al. 2020)

Results

Effects of Pension 65 on monetary transfers

Variable	Effect	Std Err	P-value	Control	N
Transfer amount (Soles)					
Transfers received from other households in the country	-18.34	12.41	0.14	33.63	1,823
Transfers received from other households abroad	-12.32**	5.94	0.04	7.87	1,280
Total transfers received from other households	-29.79*	15.55	0.06	42.57	1,441
Transfer indicator (1/0)					
Transfers received from other households in the country	-0.21**	0.08	0.01	0.37	1,750
Transfers received from other households abroad	-0.05**	0.03	0.05	0.04	1,315
Total transfers received from other households	-0.29***	0.09	0.00	0.42	1,280

Notes: The table reports the ITT estimates for various outcomes (Equation 1). The models use triangular kernel, local polynomial and the optimal bandwidth for point estimation as suggested by Calonico et al., 2015. The column *Effect* contains the ITT effects of the program, whereas the column *Control* reports the constant of the ITT regression, showing the variable mean for control applicants at the cut-off. The standard errors (and p-values) correspond to robust biased-corrected estimations and are clustered by the Primary Sampling Unit (PSU) of the sampling framing. * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$ indicate statistically significance levels according to clustered standard errors. The unit of analysis is the individual. The monetary variables are expressed in monthly Soles of 2015.

Effects of Pension 65 on time transfers

Variable	Effect	Std Err	P-value	Control	N
Time transfers in weekly hours					
Working	0.37	5.04	0.94	20.24	1,313
Cooking activities	-0.23	1.39	0.87	6.13	1,862
Housekeeping	0.34	0.58	0.56	2.01	1,349
Care and making of clothes	-0.13	0.40	0.75	0.77	1,472
Childcare	4.15**	1.72	0.02	1.80	1,365
Home management and organisation	0.30	0.24	0.21	0.04	1,363
Time with family and/or social activities	-1.68	4.06	0.68	8.03	3,430
Using of free time for leisure activities	-4.34**	2.12	0.04	9.75	3,156
Caring for gardens and animals	3.11**	1.28	0.02	1.59	1,236
Volunteering	-1.40**	0.57	0.01	0.62	454
Time transfer indicator (1/0)					
Working	0.05	0.12	0.69	0.62	765
Cooking activities	0.02	0.08	0.83	0.68	1,433
Housekeeping	0.01	0.07	0.86	0.78	3,484
Care and making of clothes	0.02	0.10	0.87	0.43	1,321
Childcare	0.18**	0.07	0.01	0.16	1,741
Home management and organisation	0.15**	0.07	0.04	0.14	3,437
Time with family and/or social activities	-0.04	0.10	0.67	0.67	3,111
Using of free time for leisure activities	-0.15	0.12	0.21	0.87	634
Caring for gardens and animals	0.08	0.11	0.45	0.42	1,337
Volunteering	-0.14*	0.08	0.08	0.14	646

Effects of Pension 65 on support and help

Variable	Effect	Std Err	P-value	Control	N
Support from/to other households (1/0)					
Receive company	-0.27**	0.14	0.05	0.44	649
Receive emotional support	-0.18**	0.09	0.04	0.79	1,337
Give company	-0.40***	0.13	0.00	0.49	494
Give emotional support	-0.01	0.08	0.90	0.87	3,447
Help provided in the household (1/0)					
Provide finance help to the household	0.12*	0.06	0.06	0.67	3,163
Provide help with household chores	0.08	0.08	0.30	0.79	1,363
Provide help with childcare	0.16**	0.08	0.03	0.23	1,878
Provide advice	0.10	0.07	0.16	0.87	1,392

Effects of Pension 65 on transfers by gender

Variable	Women			Men		
	Effect	Control	N	Effect	Control	N
Monetary transfers (Soles)						
Received from other hhs abroad	-5.72	3.73	656	-17.46*	10.46	717
Total received from other hhs	-12.41	29.23	1,430	-50.58*	51.95	734
Transfer indicator (1/0)						
Received from other hhs in the country	-0.18*	0.36	881	-0.24**	0.36	944
Received from other hhs abroad	-0.05	0.03	635	-0.06*	0.04	732
Total received from other hhs	-0.25**	0.42	647	-0.23**	0.36	944
Time transfers (weekly hours)						
Childcare	2.33	2.99	819	5.98***	1.02	713
Time with family and/or social activities	4.02	6.35	328	-9.65*	13.69	339
Time transfer indicator (1/0)						
Childcare	-0.00	0.25	1,595	0.29***	0.00	931
Home management and organisation	0.14*	0.11	1,595	0.15*	0.18	1,848
Time with family and/or social activities	0.28*	0.62	313	-0.15	0.72	1,003
Using of free time for leisure activities	0.11	0.75	225	-0.43***	0.94	347
Volunteering	0.00	0.03	1,595	-0.16**	0.15	715
Support from/to other hhs (1/0)						
Receive company	-0.21*	0.39	1,361	-0.24	0.38	360
Give company	-0.33***	0.48	667	-0.16	0.35	1,772
Help provided in the household (1/0)						
Provide finance help to the household	0.09	0.59	1,375	0.14*	0.74	1,890
Provide help with child care	-0.05	0.31	872	0.33***	0.14	778

Effects at the level of the household

Effects of Pension 65 on household disposable income

Variable	Effect	Std Err	P-value	Control	N
a. Labour income (cash)	-22.11	49.58	0.66	170.71	1,495
b. Labour income (in-kind)	7.70	6.14	0.21	2.85	528
c. Non-labour income	-50.47	30.72	0.10	61.51	386
d. Transfers received from other households	-21.52*	12.62	0.09	31.65	1,162
e. Transfers given to other households	4.99	3.56	0.16	0.64	1,132
f. Public transfers from Pension 65	46.53***	7.09	0.00	1.30	2,790
g. Public transfers from Juntos	1.24	1.34	0.36	2.71	2,420
Household disposable income (a+b+c+d-e+f+g)	-58.37	81.01	0.47	286.43	1,033

Effects of Pension 65 on household income and transfers

Variable	Effect	Std Err	P-value	Control	N
Transfers					
Transfers received from other households in the country	-12.31	9.26	0.18	24.89	1,409
Transfers received from other households abroad	-8.54*	4.83	0.08	5.95	1,162
Total transfers received from other households	-21.52*	12.62	0.09	31.65	1,162
Transfers given to other households	4.99	3.56	0.16	0.64	1,132
Income					
Labour income (cash) of the elderly	-86.28***	31.56	0.01	102.44	996
Labour income (in-kind) of the elderly	3.66	4.41	0.41	1.44	391
Labour income (cash and in-kind) of the elderly	-68.16**	27.66	0.01	94.66	1,166
Labour income (cash) of other household members	26.97	45.90	0.56	86.98	1,493
Labour income (in-kind) of other household members	1.54	3.99	0.70	-1.29	1,199
Labour income (cash and in-kind) of other household members	31.46	45.67	0.49	85.58	1,509
Total labour income (cash) of the household	-22.11	49.58	0.66	170.71	1,495
Total labour income (in-kind) of the household	7.70	6.14	0.21	2.85	528
Total labour labour income (cash and in-kind) of the household	-23.59	51.52	0.65	175.77	1,498

Effects of Pension 65 on household composition

Variable	Effect	Std Err	P-value	Control	N
Size and composition					
Number of members	0.93**	0.39	0.02	2.84	1,519
Number of women	0.39*	0.24	0.10	1.48	2,670
Number of men	0.93***	0.32	0.00	1.29	391
Age groups					
Children (0-5 y/o)	0.39***	0.14	0.01	0.04	367
Children (6-11 y/o)	0.16	0.11	0.16	0.19	2,586
Children (12-17 y/o)	0.10	0.08	0.24	0.20	2,743
Young adults (18-29 y/o)	0.21**	0.10	0.04	0.25	2,822
Middle-aged adults (30-59 y/o)	0.26*	0.14	0.07	0.57	2,822
Older adults (60+ y/o)	0.20	0.12	0.11	1.47	1,037

Summarising the effects of Pension 65

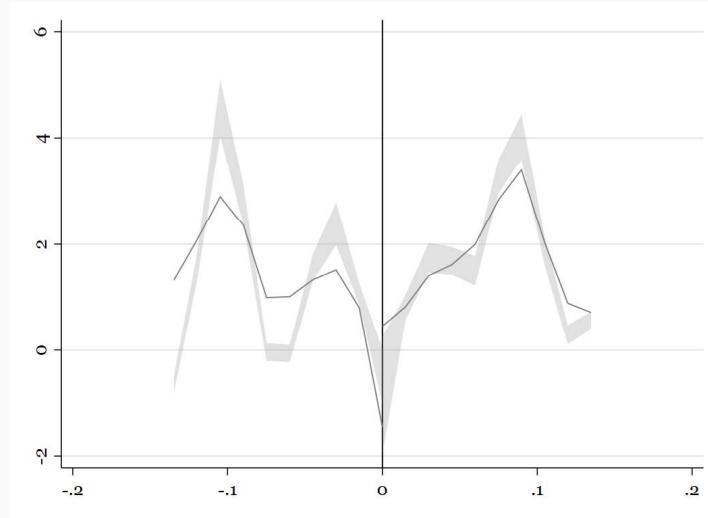
1. Private transfers fall by **70%**. Effect significant only for men (97%)
2. No effect on working hours
3. Substantial increase in childcare hours (from 1.8 to 5.9)
 - **Eligible men increase from 1.0 to 7.0 hours**
 - Eligible women increase from 3.0 to 5.4 hours (no sig.)
4. Likelihood of engaging in leisure activities and volunteering fall for men
5. Women reduce their interactions –receiving or giving company– with people outside the household
6. Increase in household size (0.93, **by 33%**)
 - Concentrated on young children 0-5 y/o and young adults 18-29 y/o
7. No evidence that the program loses effectiveness due to **increase** in household size and **decrease** of elderly labour income and family transfers (captured by disposable household income per capita). There is also no evidence that the transfer facilitates income pooling

Conclusions

Concluding remarks

- Using an RDD and exploiting the discontinuity around the official eligibility welfare index of the Pension 65 program, we identify the ITT effects of this program among the elderly poor
- In line with other studies, we find evidence of crowding-out effects on private transfers
- The program leads to a reallocation of time among eligible people: men substantially increase childcare hours, which is also consistent with an increase in the number of young children
- Although increasing household size, and both declining elderly labour income and private transfers among eligible individuals pose a challenge to the effectiveness of the programme, we find no evidence to support this
- But we also find no effect of the program on household per capita disposable income, so there is no evidence the program has facilitated income-pooling of household members

Appendix: Manipulation test based on density discontinuity



Note: Cattaneo et al. (2018) test. The figure shows a local estimation of the discontinuity of the SISFOH index density around the threshold, using a bandwidth size of 0.045 points of the running variable in the left side of the cutoff and in the right side of the cutoff. No significant discontinuity is found (p -value=0.549). We also apply Bugni and Canay (2021) test and find no discontinuity of the running variable at the cutoff (p -value=0.76).

Appendix: Effects of Pension 65 on covariates

	Effect	S.E.	P-value	Control	Obs.
Woman (1/0)	-0.056	0.086	0.516	0.467	1,340
Age	-0.825	0.840	0.326	74.126	1,393
Years of education	-0.053	0.521	0.918	3.074	3,489
Household head (1/0)	-0.084	0.082	0.306	0.695	1,314

- Covariates are included in the regressions
- Alternative cutoffs (-0.04; -0.02; 0.02; 0.04)
- Donut-hole approach (removing obs neas cutoff) (0.01; 0.04; 0.07; 0.01)