Public Income Support, Decisions to Work, and Health of Lower-Income Older Adults

Emma Aguila

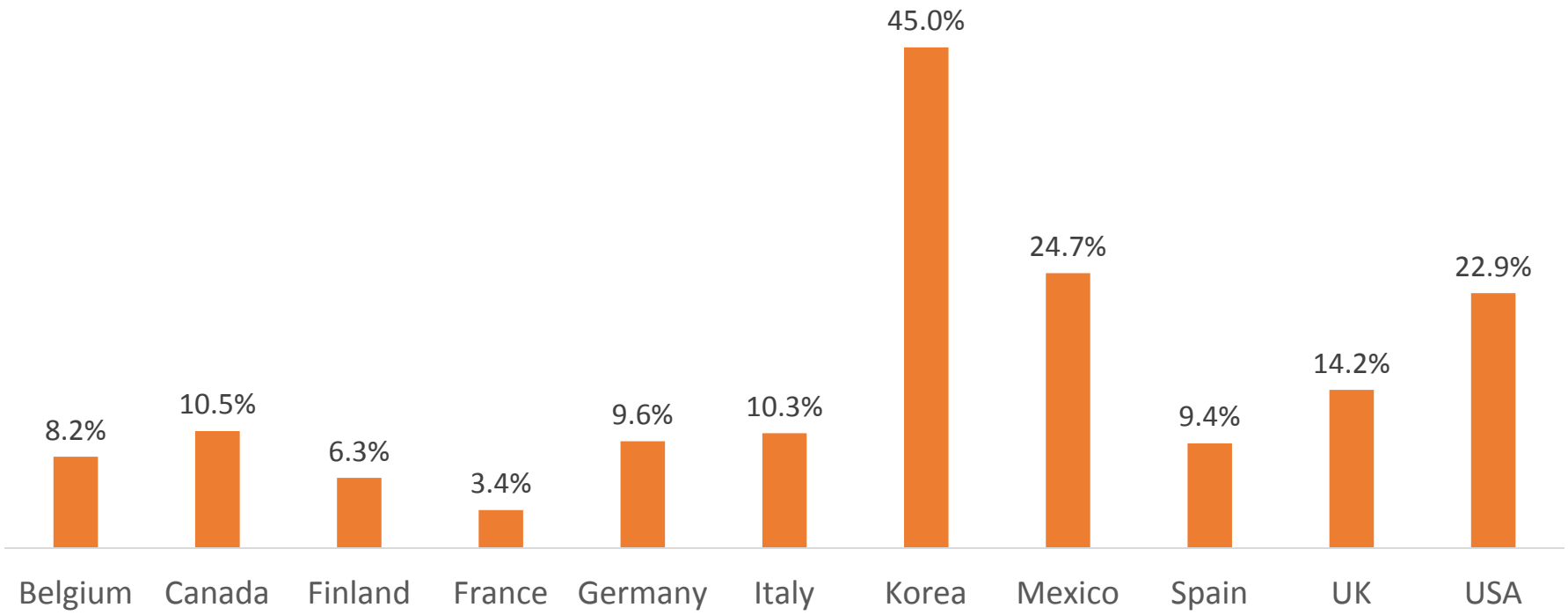
University of Southern California (USC)

Planning Meeting on Work, The Workplace, and Aging

National Academy of Sciences

September 6, 2019

Poverty Rates Among Older Adults (66+)



Poverty measured as having less than half the median household income for the total population
OECD, 2016

Public and Private Income Support Programs

Policies during working life

- **Mandatory contributions** to a social security system
- **Voluntary contributions** to an individual retirement account

Safety net policies during retirement

- **Non-contributory pensions** designed to alleviate poverty in old age (e.g. SSI)

Public and Private Income Support Programs

Policies during working life

Mandatory contributions to a social security system

Voluntary contributions to an individual retirement account

Safety net policies during retirement

Non-contributory pensions designed to alleviate poverty in old age (e.g. SSI)

Public and Private Income Support Programs

Policies during working life

Mandatory contributions to a social security system

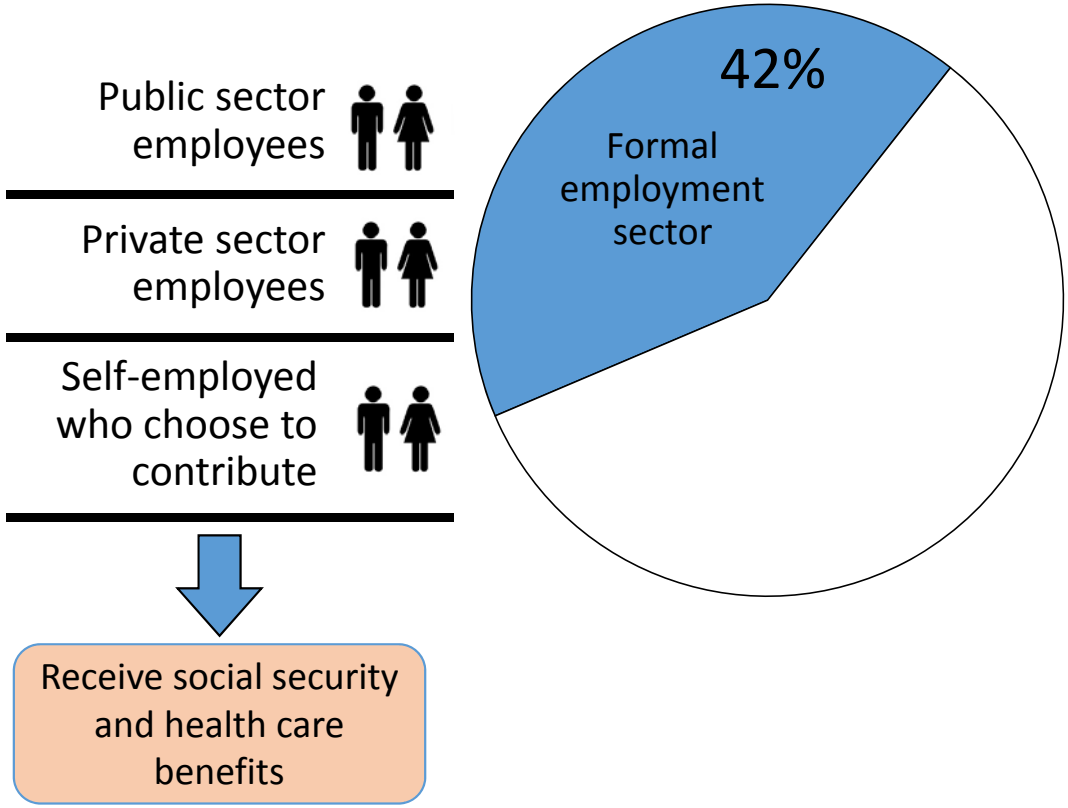
Voluntary contributions to an individual retirement account

Safety net policies during retirement

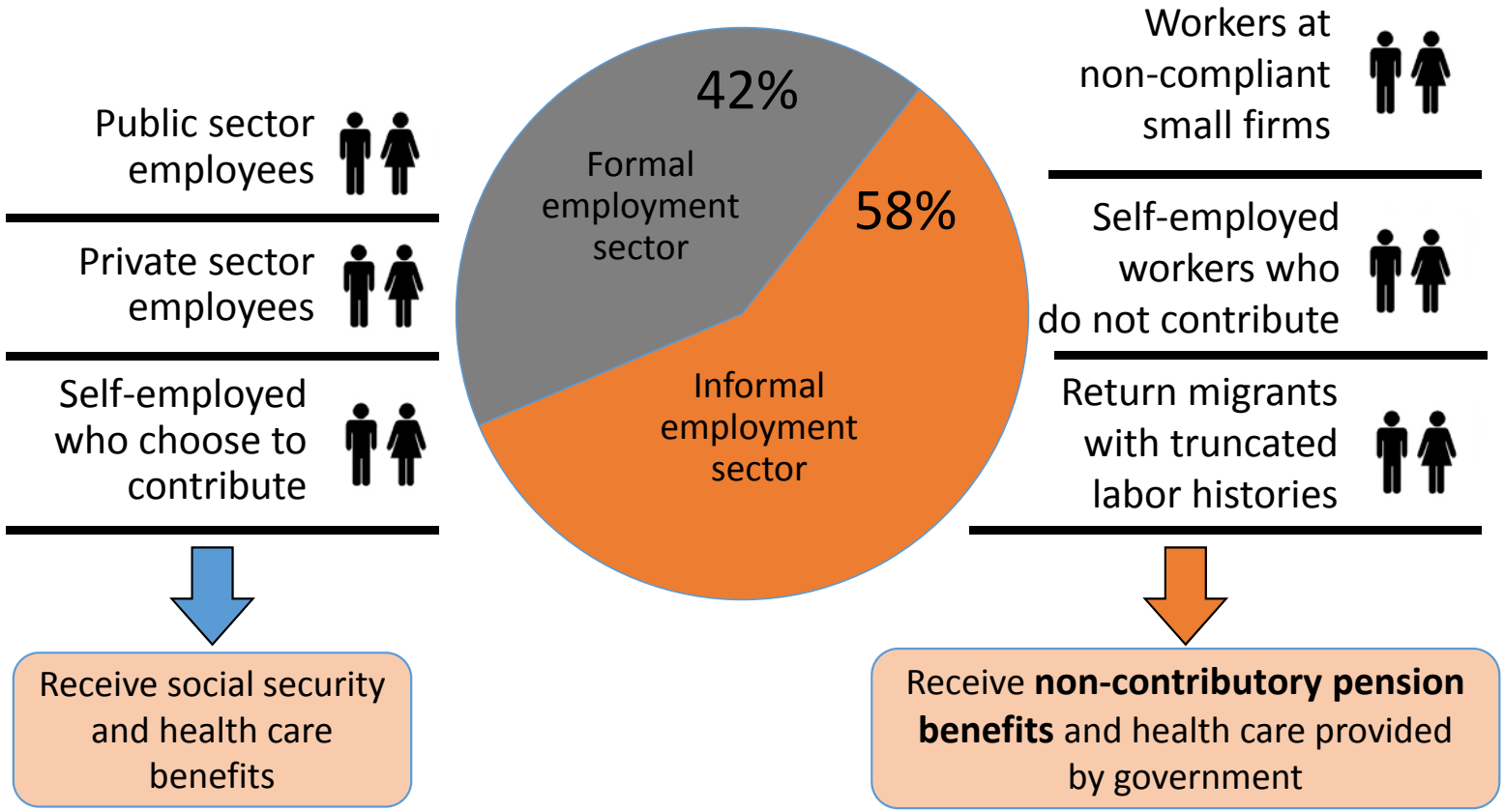
Non-contributory pensions designed to alleviate poverty in old age (e.g. SSI)

More Than 40 Low- and Middle-Income Countries Have Introduced Non-Contributory Pensions for Older Adults

There Are No Universal Social Security Benefits in Mexico



There Are No Universal Social Security Benefits in Mexico



Informal sector in the US

- Some examples of informal sector occupations are: babysitters, house cleaners, gardeners, agricultural workers, construction workers
- The informal sector in the US is estimated to be 11-20% of the labor force
- Mainly includes women, Blacks, and Hispanics [Smith Nightingale and Wandner, 2011]

Previous Literature Non-contributory Pensions

- Research across several countries find that non-contributory pensions reduce poverty and inequality (e.g. Case and Deaton, 1998; Delgado and Cardoso, 2000; Schwarzer and Querino, 2002; Pestieau and Dethier, 2010)

- There is less conclusive evidence on the effects on health and well-being for older adults in these programs

Experimental Design and Implementing a Non-contributory Pension Program

- We conducted 3 RCT's with treatment and control groups interviewed before and after the intervention in the State of Yucatan, Mexico
- Analyzed different implementation designs—monthly or bimonthly (every two months) payment—of the program
- $550 pesos per month ($78 USD PPP) to adults age 70+ in Yucatan, Mexico
  - Equivalent to 28% of the minimum wage or 55% of median household income
  - Only conditional on age
  - Uncorrelated with any other observable or unobservable characteristics
- Funded by: National Institute on Aging (NIA), the Government of the State of Yucatan, and RAND

Evaluation Study Is Called Escuchar, or "Listen"

- Baseline survey before the intervention and follow-up interviews approx. every 6 and 18 months
- Data collection includes in-person interviews, biomarkers, and anthropometric measurements
- Community level surveys: prices, community infrastructure, economic activity, and macro shocks
  - All the questions are translated into Spanish and Mayan
  - Bilingual interviewers (Spanish and Mayan)
  - We conducted a census of 65,553 households
  - Interviewed in 16,195 households
  - Visited 1,987 grocery stores and other establishments

ESCUCHAR

Evaluación Socioeconómica y de Salud de la Población de la Tercera Edad

Questionnaire Adapted from HRS and MHAS

- CAPI (Computer Assisted Interviewing) survey: household and personal income, wealth, food and durables expenditure, OOP health expenditures, health care utilization, life satisfaction, labor supply, cognitive abilities, family transfers, self reported health status, and objective health measures including:

Anthropometric

- Height
- Weight
- Waist circumference
- Arm circumference
- Arm length
- Height to the knee

Biomarkers

- Blood pressure
- Pulmonary capacity
- Grip strength
- Balance test
- Walking speed
- Blood test for Anemia
- Dried Blood Spot: HbA1c, CRP, and Triglycerides

Empirical Methods

- Difference-in-differences OLS methods controlling for demographic characteristics yield virtually the same results as the difference-in-differences of the means:

$$Y_{it} = \alpha + \beta_1 W2_t + \gamma T_i \quad + \theta_1 \left(T_i \quad \times W2_t\right) + \varphi X_{it} + \varepsilon_{it}$$

- We obtain similar results with propensity score matching controlling for the same demographic characteristics and bootstrapping standard errors
- Characteristics of attriters/deceased are similar in both towns

Results Six Months After

- Income Sources
  - Reduction in work for pay (4.5 pp)
  - Family Transfers: there is a reduction in family transfers, but there is not a complete crowding out (51.3%)
- Health outcomes
  - Improvement in lung function (8.1%)
  - Reduction in anemia (10.2%)
- Health Care Utilization
  - Increase in number of doctor visits (22.1%) and buying medicines
- Food Availability
  - Improvement in food availability
  - Reduced number of hunger spells

Published: Aguila, Emma, Arie Kapteyn, and James P. Smith. 2015. "Effects of Income Supplementation on Health of the Poor Elderly: The Case of Mexico." *Proceedings of the National Academy of Sciences* 112 (1): 70–75

Difference-in-Differences of the Means

Variable	Treatment Baseline	Treatment Follow-up	Difference Treatment	Control Baseline	Control Follow-up	Difference Control	Diff-in-Diff of Means	Holm critical value by group
Food Availability								
Often run out of food last three months (never-always [1-4])	1.559	1.370	-0.189	1.446	1.429	-0.017	-0.172***	0.017
Often hungry (never-always [1-4])	1.408	1.168	-0.239	1.275	1.154	-0.121	-0.118***	0.025
Not eat all day (never-always [1-4])	1.253	1.065	-0.188	1.140	1.100	-0.040	-0.148***	0.050
Health Care Utilization								
Visited doctor (yes-no [1-0])	0.415	0.524	0.109	0.456	0.473	0.018	0.092***	0.017
Number of doctor visits	1.077	1.281	0.204	1.183	1.095	-0.089	0.293**	0.025
Bought no medicines since are too expensive (yes-no [1-0])	0.240	0.125	-0.115	0.177	0.142	-0.035	-0.08***	0.013
Health Outcomes								
Hemoglobin level is low	0.537	0.505	-0.033	0.542	0.565	0.022	-0.055*	0.025
Maximum peak expiratory flow (l/min)	233	265	32.100	249	262	13.100	19.100***	0.017
Income								
Work for pay last month (yes-no [1-0])	0.165	0.121	-0.045	0.148	0.148	0.000	-0.045**	0.010
Monthly family transfers (pesos)	298.000	242.000	-55.800	154.000	251.000	96.900	-153.000**	0.017

Notes: *** indicates significance at 1%, ** indicates significance at 5%, and * indicates significance at 10% using p-value for regressions and Propensity Score Matching. These estimates are also significant using the Holm-Bonferroni correction for multiple hypotheses testing (last column).

Results on Immediate and Delayed Recall

- Men
  - Increased immediate recall by 0.41 words (16%) from 2.6 words at baseline
  - Larger increase for delayed recall by 0.94 words (39%) from 2.4 words at baseline
- Women
  - Increased immediate recall by 0.64 words (22%) from 2.9 words at baseline
  - Larger increase for delayed recall by 0.91 words (31%) from 2.9 words at baseline
- Some mediating mechanisms

  Health care utilization and food availability

Published: Aguila, Emma, and Maria Casanova. 2019. "Short-Term Impact of Income on Cognitive Function: Evidence from a Sample of Mexican Older Adults." *Journal of Aging and Health*. Online before print

Effects on Caregiver Burden

- We find no effects on number of primary care givers or number of caregiving hours
- Caregiving responsibilities continue to fall on one individual, typically the oldest daughter
- 98 percent of caregivers are unpaid, and this does not change after the income supplement

Published: Aguila, Emma, Mariana López-Ortega, and Sean Angst. 2019. "Do income supplemental programs for older adults' help reduce primary caregiver burden? Evidence from Mexico". *Journal of Cross-Cultural Gerontology*. Online before print

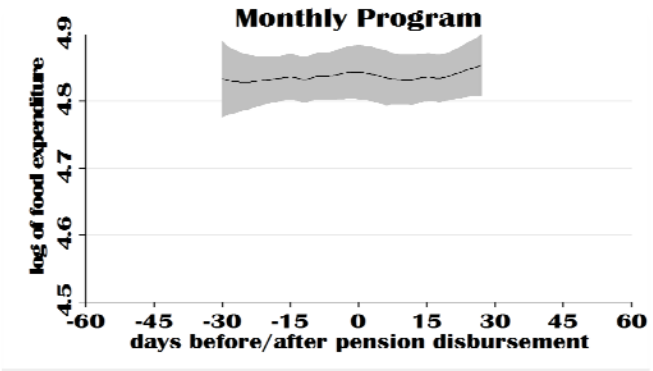
Varying Payment Frequency

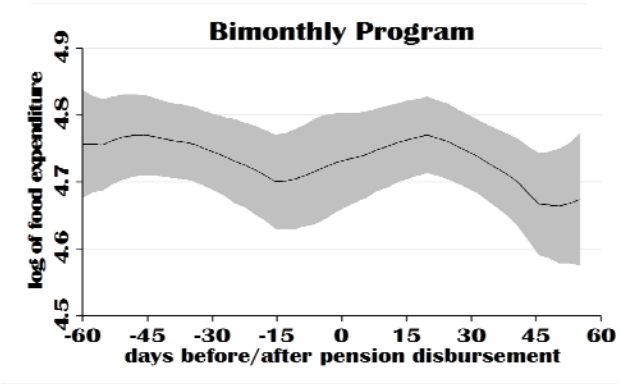
- Monthly vs every two-month (bimonthly) programs

- Evaluation of payment frequency effects approximately 18 months post-intervention

Logarithm of Food Expenditure Per Capita Post Intervention

- Monthly and bimonthly difference is <u>not</u> statistically different at baseline but is post intervention
- Monthly payments appear to be more effective in smoothing food consumption





Frequency of Payments and Consumption Smoothing

Cyclicality of Food and Beverages Expenditures in Monthly and Bimonthly Programs

Variables	Baseline (placebo)		Post-intervention	
	Monthly Program (Valladolid)	**Bimonthly Program** (Motul)	**Monthly Program** (Valladolid)	**Bimonthly Program** (Motul)
	(1)	(2)	(3)	(4)
Number of days since last payment	-2.005	0.955	1.146	-3.263***
	(2.547)	(1.740)	(1.155)	(1.138)
Observations	1,290	972	2,344	1,356

Notes: Dependent variable is weekly expenditures on food and beverages in 2010 Mexican Pesos. For baseline, columns 1 and 2 correspond to the number of days since the first day of the month (placebo payment date). *** Significant at the 1 percent level

- Conducting a one-sided test, we find coefficients of the monthly and bimonthly programs are the same in baseline but differ in post-intervention

Do Frequency of Payments Matter for Consumption Smoothing?

- Previous studies for the US that have documented households with little savings do not smooth their consumption between paychecks or social security checks

[e.g. Stephens 2003; Stephens 2006; Shapiro 2005; Mastrobuoni and Weinberg 2009]

- Other literature shows poor individuals often face difficulties in saving even for moderate goals [e.g. Banerjee and Duflo 2007]
  - External: i.e. Lack of access to formal saving mechanisms; fear of money being stolen [Dupas and Robinson 2013]
  - Internal: lack of self-control; as evidenced by the demand for commitment-saving devices [e.g. Ashraf et al 2006; Banerjee et al 2015]

Results of Varying the Frequency of Payment

	Monthly Payments	Bimonthly Payments
Work for pay	Similar reduction (51.9%)	Similar reduction (43.2%)
Food Availability	Higher reduction in the frequency of running out of food and hunger spells	Lower reduction in the frequency of running out of food and hunger spells
Health Care Utilization	Elderly are more prone to make doctor visits (26.3%) and to increase the number of visits	No effects
Durable Goods	Lower ownership of durable goods (cell phones, bicycles)	Higher ownership of durable goods (cell phones)

Published: Aguila, Emma, Arie Kapteyn, and Francisco Perez-Arce. 2017. "Consumption Smoothing and Frequency of Benefit Payments of Cash Transfer Programs". *American Economic Review,* P&P 107(5): 430-435.

Results on Frailty

Monthly Payments	Bimonthly Payments
Decrease in frailty for women (17%) Related to improvements in weakness, poor energy, and slow pace	Increase in frailty for women (15%)
No changes in frailty for men	No changes in frailty for men

- We find greater improvements for women than men:
- Women have less access to formal sources of income during retirement

Published: Aguila, Emma, Mariana López-Ortega, and Luis Miguel Gutierrez. 2018. "Non-contributory Pension Programs and Frailty of Older Adults: Evidence from Mexico". *PLOS One*: 13 (11).

Conclusions

- We find statistically significant health effects 6 months after the introduction of monthly program
- We find a reduction in work for pay by older workers
- Improvements in health may allow poor older workers to return to or continue in the labor force
- Frequency of payments matters
- The bimonthly program appears to affect different outcomes

Future Research Needs

- Understand better the dynamics of middle-aged and older workers in the informal sector in the US
- More analysis is needed on medium and long-term health effects and mediating mechanisms of public income support programs for poor older adults
- Analyze whether non-contributory pension programs and universal health care coverage in Mexico increased the number and changed the composition of return migrants from the US (salmon bias hypothesis)

Policy Recommendations

- Fine-tune supplemental income programs by adjusting payment frequency
- Target interventions to the most vulnerable older adults in the labor market (informal sector)
- The informal sector may require income supplemental programs or other interventions (e.g. understand and address barriers to saving for retirement)
- Implement culturally competent interventions: no single policy will improve outcomes of such a diverse group