FRIEDMAN-SOZA, FRIEDMAN, GÁLVEZ, YEVENES UNDERSTANDING WHY SENIORS STAY OR EXIT THE LABOUR MARKET – EVIDENCE FROM THE CHILEAN PENSION REFORM

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Labour participation of elderly

- Sustainability of public finances in light of aging

- Retirement decision depends on the availability of social insurance programs (Gruber & Wise, *1998*; 2004)

- Papers on changes in retirement age (Vestad, 2013) and benefits on elderly labour supply (Blau & Goodstein, 2010; Messe, 2011; Larsen & Pedersen, 2013)

Pension benefits

- Can affect retirement decisions
- But serve more purposes, e.g., poverty alleviation *(here 50% of median equiv disp inc from OECD IDD):*
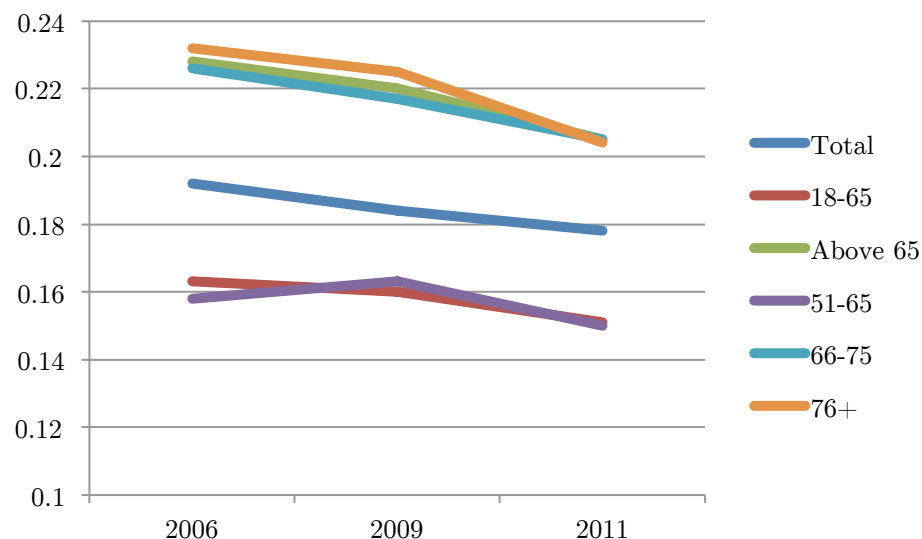
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Rapid increase in life expectancy ...

Life expectancy, 1875 to 2011
Life expectancy at birth is the average number of years a child born would live if current mortality patterns were to stay the same. Shown is life expectancy at birth for both genders.

Our World in Data
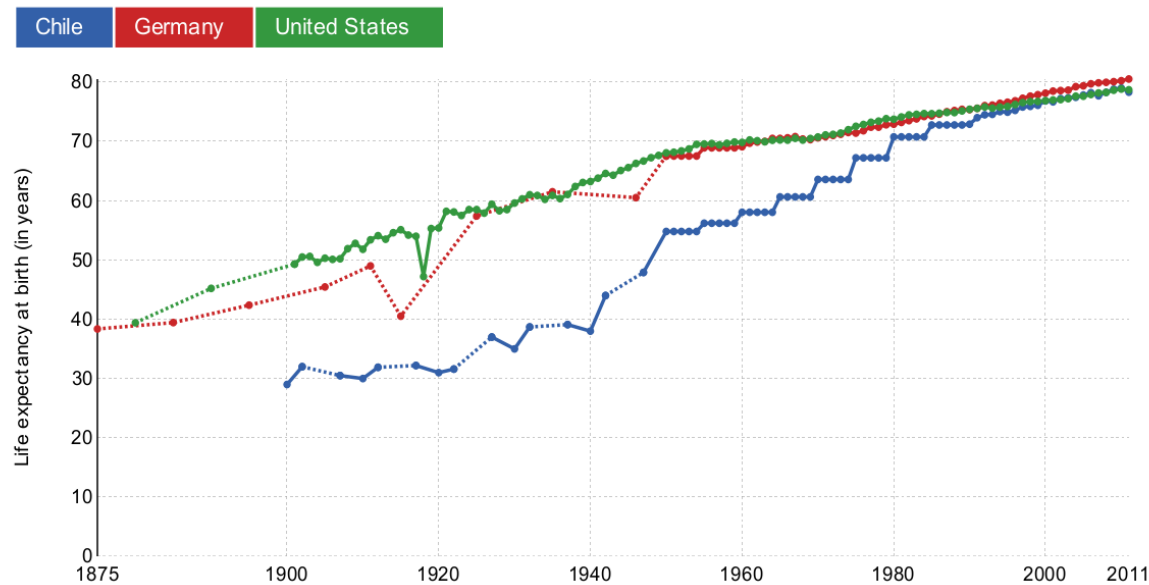
Data source: Clio Infra (life expectancy, both genders)

... and decreasing fertility

Children per woman (Total Fertility Rate), 1955 to 2015

Total fertility rate (TFR) is the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with age-specific fertility rates of the specified year.
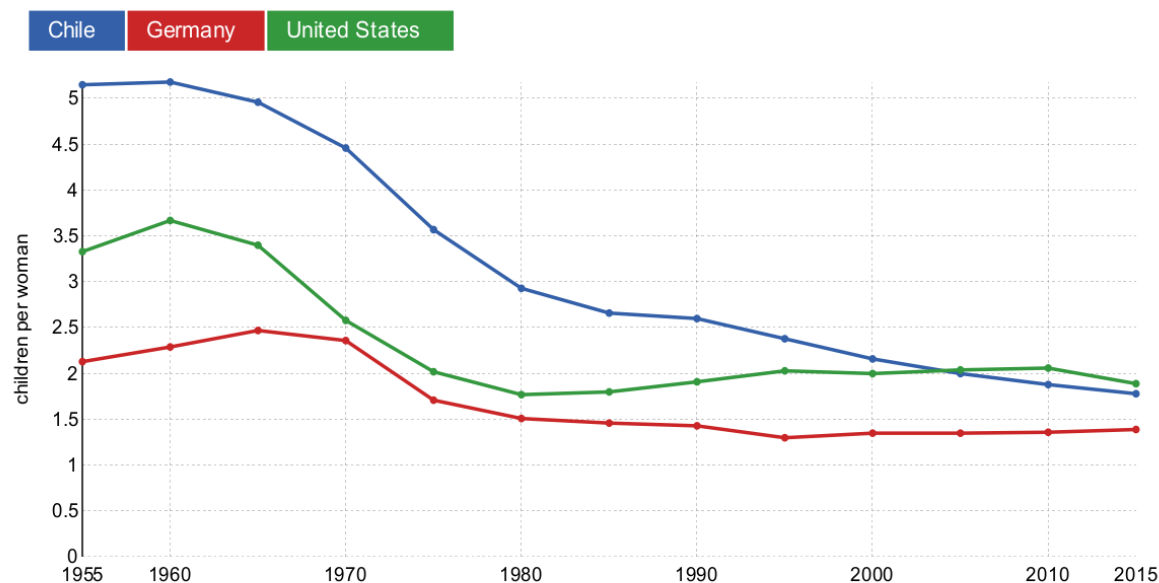
Data source: UN – Population Division (Fertility) – 2015 revision

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Chilean pension system

- $<$2008:
  - Minimum pension if contributed at least 240 months minimum pension
  - In addition "very small and hard to get social assistance benefits" for non-entitled pensioners
- 2008-:
  - PBS (Basic Solidarity Pension): non-contributory minimum pension (120 USD) if household income below 60th income percentile
  - SC (Solidarity Complement): if total pension income $<$500 USD then +120USD

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Social Protection Survey

- Individual panel data
- 5 waves: 2002, 2004, 2006, 2009, 2012
- 16,000 individuals
- Choice: restricted to individuals aged 65-74
- Survey data, including on income (*?*)
- *Information on data quality available?*

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Diff-in-diff

- Years 2009 & 2012 (*but wasn't the reform in 2008?*)
- Treatment group: if in year 2009 retirement benefit $<$ 120 USD aged 65-74 (eligible individuals)
- Control group: all others aged 65-74
- Split by gender: retirement age women $=$ 60; men $=$ 65

Table 1: Elders participating in the labour force aged 65-74

		Control 2009	Control 2012	Treatment 2009	Treatment 2012
Per cent Working	Men	39.43	40.44	53.29	40.22
	Women	15.08	12.79	10.71	5.15

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Estimated equation

$$y_i = \theta_{t(i)} + \lambda_{c(i)} + \delta D_{j(i)c(i)} + X_i' \beta_1 + \varepsilon_i \qquad (1)$$

- DV: In this period, in which of the following conditions were you ➔ =1 if participating in labour market (1-3*?*)
  1. Working
  2. Looking for a job
  3. Looking for a job for the first time
  4. Inactive
- Controls:
  - Age (continuous)
  - Self-reported health status (dummy "having very bad health")
  - Geographic location (six categories)

Main results

- Decrease in labour market participation treatment relative to the control

Table 2: Econometric Results

	Men		Women	
Year (2012)	0.067	***	0.027	***
	(0.002)		(0.001)	
Treatment	0.116	***	-0.023	***
	(0.002)		(0.001)	
Interaction	-0.124	***	-0.095	***
	(0.005)		(0.002)	
Controls				
Age	-0.029	***	-0.007	***
	(0.000)		(0.000)	
Health	-0.123	***	-0.082	***
	(0.002)		(0.001)	
Geographic Location	X		X	
Constant	2.517	***	0.669	***
	(0.021)		(0.013)	

Standard errors in parentheses. *** Significant at 1% level.

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Sensitivity tests

- Leaving out men & women with 0 pension benefits in 2009:
  - Effect males halves, women slightly increases/unaffected
  - *So significant part of the effect for males is that it makes retirement more attractive*
- Leaving out women aged 60-64:
  - Effect sign flips, "[...] reflecting that women with low retirement benefits are forced to work more at older age while waiting to apply for the PBS pension"
  - *Wouldn't we expect a null result?*

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Conclusions

- Poverty alleviation among elderly by non-contributory pension minimum reduces elderly labour force participation

- Future research on potential other effects (incl. labour market behaviour more heavily taxed employees)

More discussion of literature

- *Changes in social insurance schemes affect these retirement decisions*
  - *Unemployment insurance (e.g., Lammers et al., 2012)*
  - *Disability insurance (e.g., Gruber & Kubik, 1997)*
  - *Early retirement (e.g., Euwals et al., 2010)*
  - *Pension benefits (e.g., this paper; Staubli & Zweimuller, 2013 on Austria; Lalive & Staubli, 2015 on Switzerland; Mastrobuoni, 2009 and Behaghel & Blau, 2010 on the U.S.; Atalay & Barrett, 2015 on Australia; Berkel & Borsch-Supan, 2004 on Germany)*
- *Not clear what paper adds to existing studies*
  - *Retirement is made more attractive – seems because gov't has poverty alleviation in mind*
  - *No changes in retirement age as well*

Why is this country case interesting?

- *Middle-income country?*
- *Informal sector? More self-employment?*
- *Labour force participation among elderly?*

Not enough information on policy change:

- *Below 60th of median?*
- *Means-testing at individual or household level?*
- *Other means tests or requirements, e.g. assets?*
- *Are retirees allowed to work still?*
- *Can we distinguish between PBS and SC? Is the analysis addressing both?*

Comments on estimation

- *What is the econometric model? Do the assumptions hold? Why no individual fixed effects? Model fit?*

- *Common trend assumption? Why not use more waves and conduct placeto tests?*

- *DV: how defined? Self-employed? Searchers? Intensive margin? 100% take-up is assumed – true?*

- *Information on months/years of contribution? Change treatment group to people who made insufficient contributions*

- *Indep var: polynomial/semi-parametric age effects? Retirement affects health, making latter endogenous*

Comments on interpretation

- *Size of found effects: comparable to generally reported in the literature?*

- *Author concludes that the costs of implementing this system are "[...] higher than that associated to paying for the transfer". But no information actual costs? How many people?*