Married with children?

The effect of income shocks on family arrangements

Dante Sanchez Torres

Graduate Institute of International and Development Studies

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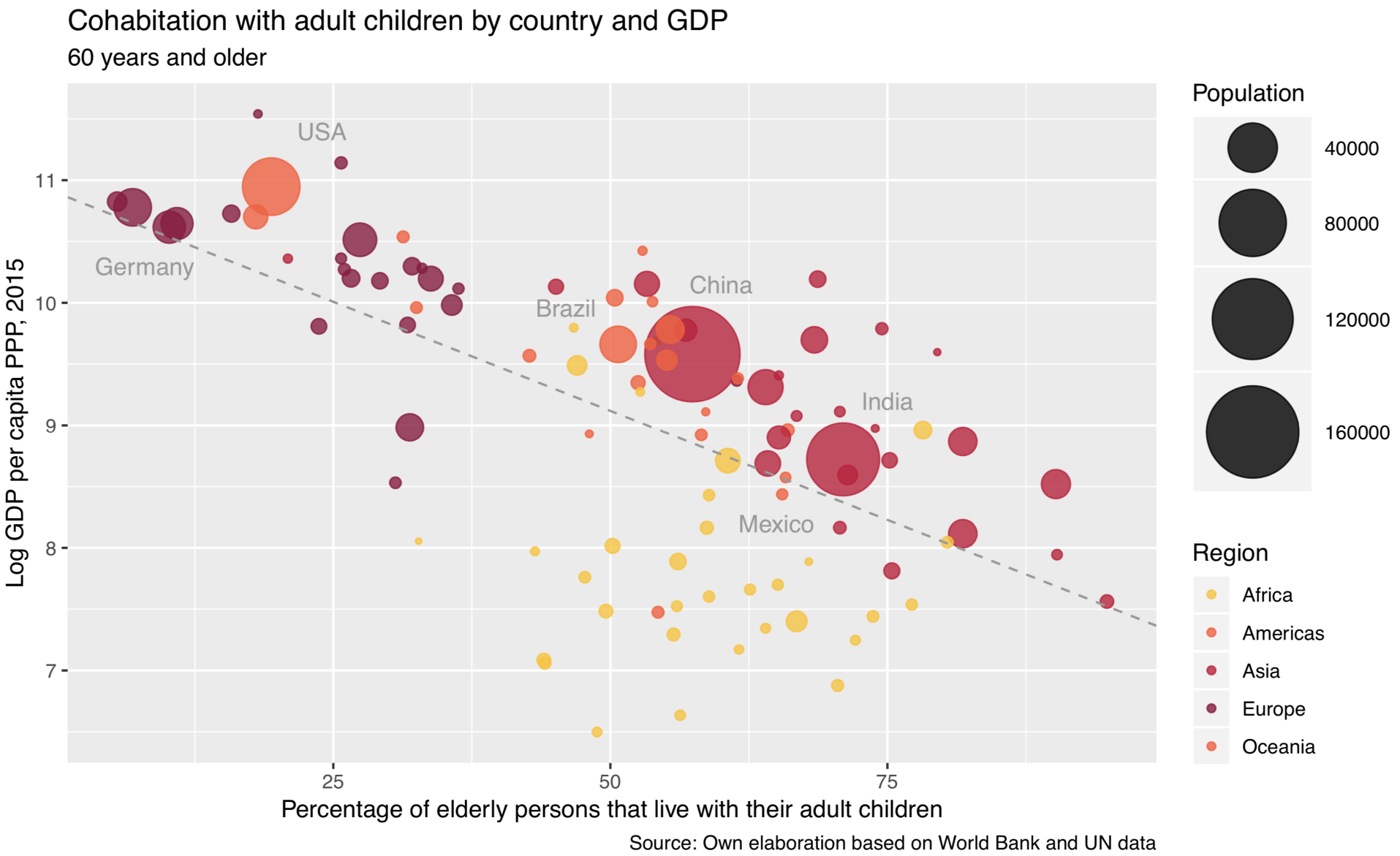

Cohabitation with adult children by country and GDP
60 years and older
USA
Germany
China
Brazil
India
Mexico
11
10
9
8
7
Log GDP per capita PPP, 2015
25
50
75
Percentage of elderly persons that live with their adult children
Population
40000
80000
120000
160000
Region
Africa
Americas
Asia
Europe
Oceania
Source: Own elaboration based on World Bank and UN data

Is it possible to alter through an income shock, the cohabitation decision of elderly people?

- In the economics of aging and household consumption models literature, the idea of how households make decisions has been widely discussed:
  - Control over resources matter for intra-household allocation (Ambler, 2011 and Duflo, 2003)
  - There is evidence of change in bargaining power through non-contributory pension schemes (Salinas-Rodriguez et al., 2014 and Aguila et al. 2015)
  - Permanent income shocks can influence other household decisions like marital status, labor supply and saving levels (Berniell, 2019 and Bando, Galiani and Gertler, 2017)

- Living arrangements are the result of preferences, constraints and resources of the elderly (Reher and Requena, 2018).
  - Behavioral models have analyzed "push" and "pull" trigger mechanisms described by Wiseman (1980)
  - Attention in the cohabitation decision has focused on inter-temporal choices made before retirement (Bau, 2018) or when the cohabitation is imminent (Cameron and Cobb-Clark, 2001 and Cameron, 2000)
- Marriage and divorce literature has explored household membership and threat points:
  - Provides a framework of the opportunity cost to engage in a bargain situation (McElroy and Homey, 1981)
  - Nash models permit and resolve conflicts among family members and can be expanded to a parent-child setting (McElroy, 1990)

When the elderly parent lives alone, her utility is a function of consumption of public goods (α), consumption of market goods (γ), leisure ($\mathcal{L}$) and the individual specific preferences (θ). The utility equation is conceptualized as follow:

$$U_s^p\left(\alpha^p, \gamma^p, \mathcal{L}^p, \theta^p\right) \tag{1}$$

s.t.

$$\alpha^p \leq, w^p(\varphi^p - \mathcal{L}^p) + \phi^p + \eta \tag{2}$$

The parent's budget constrain considers the time endowment (φ), gross wage rate (w), non-labor income (ϕ) and child's transfer (η)

The utility of the adult child is similar to the parent's function. Following Cameron and Cobb-Clark (2001) parent's care assumption, it is included the parents well-being in the adult child's utility function. Well-being is the time endowment (φ^p) used in classical household consumption models. The child's utility equation is:

$$U_s^c\left(\alpha^c, \gamma^c, \mathcal{L}^c, \varphi^p, \theta^c\right) \tag{3}$$

The transfer is a function of child's altruistic behaviour and premium price that pays for not to engage in a bargaining model (ρ).

$$\begin{aligned} \alpha^c \leq, w^c(\varphi^c - \mathcal{L}^c) + \phi^c - \eta \\ \eta = f(\rho^c, \varphi^p) \end{aligned} \tag{4}$$

Living together vs living alone

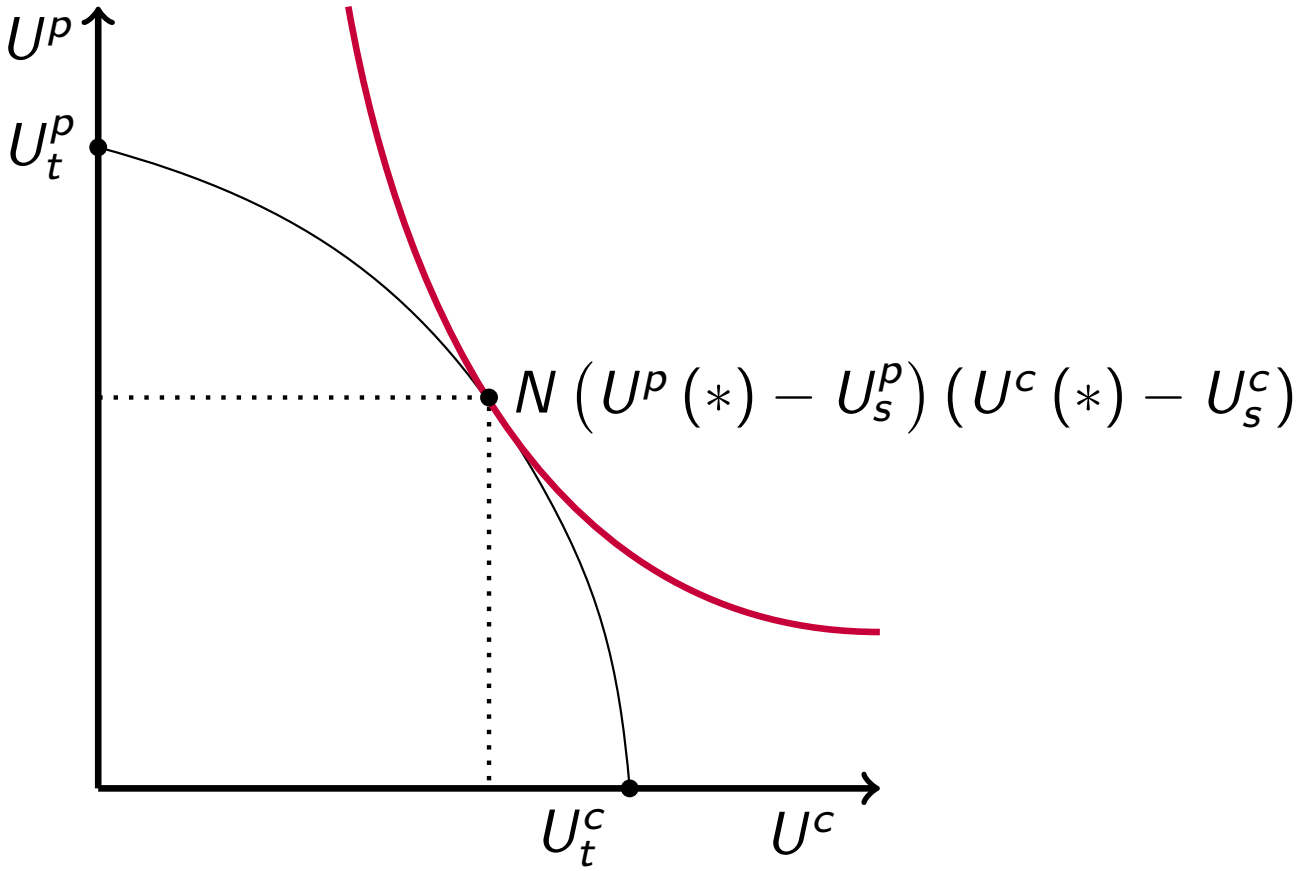
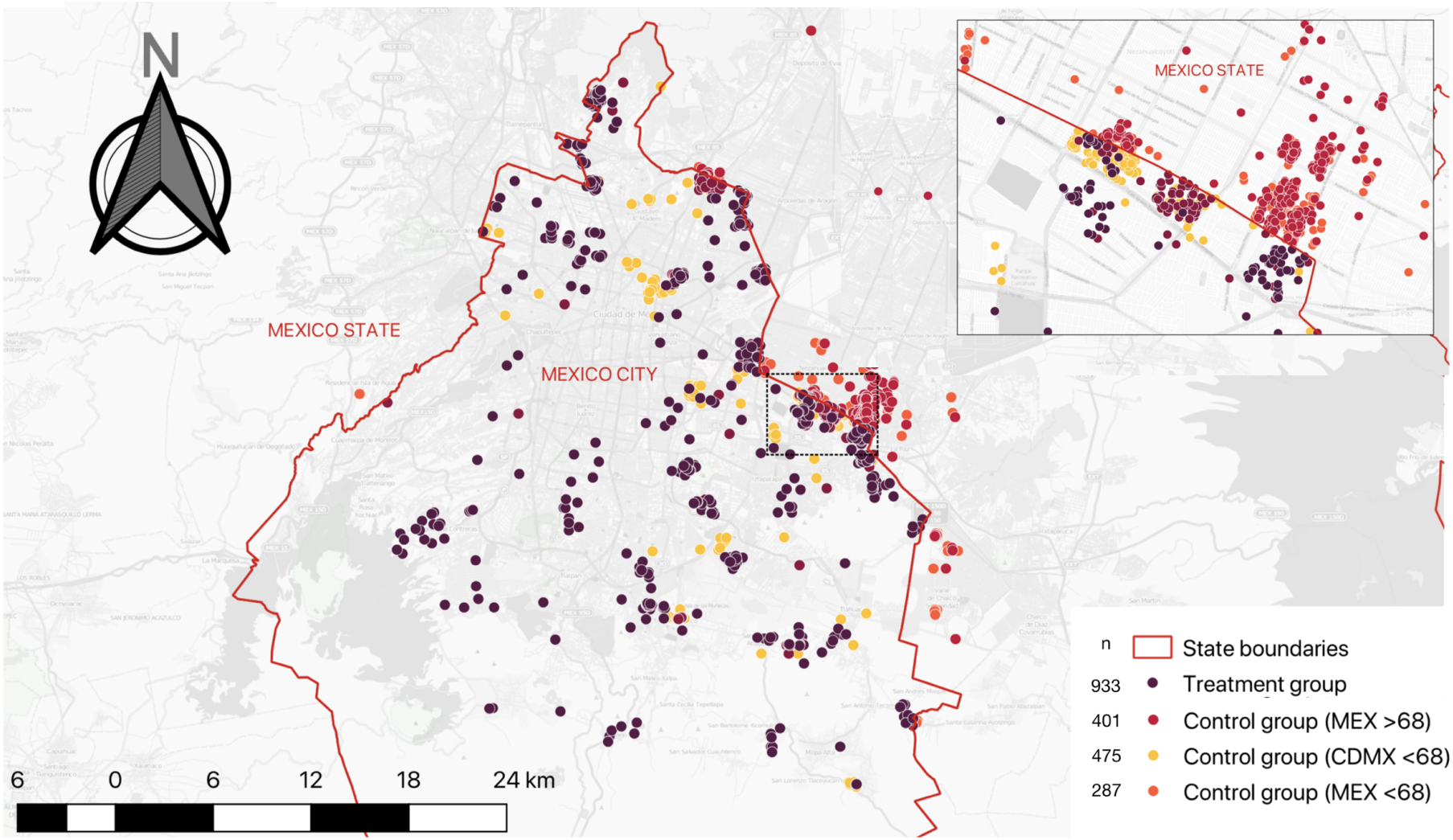


Figure: Parent and adult child Nash bargaining solution

Data: Pension Alimentaria para Personas Adultas Mayores de 68 años

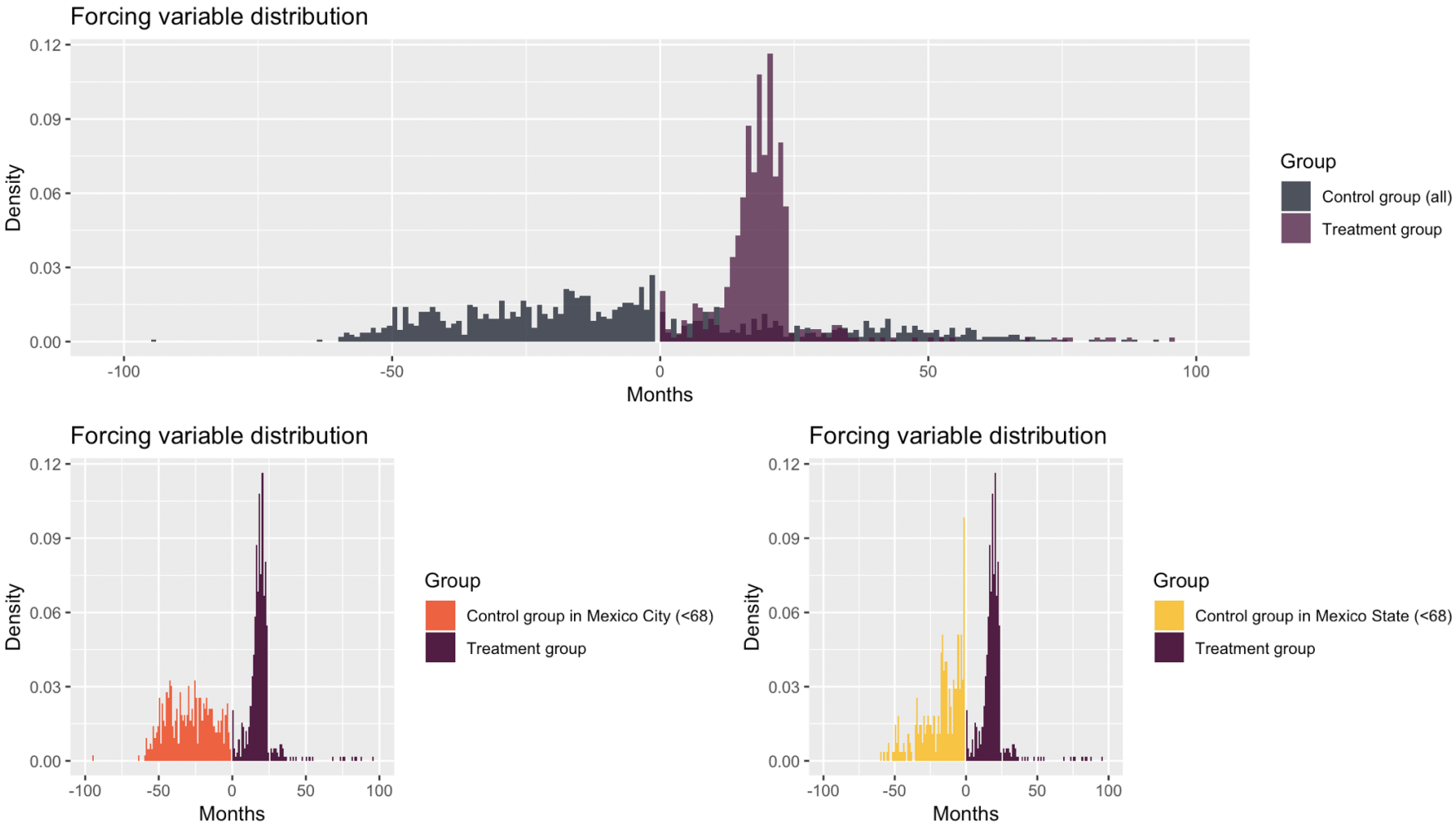


Data comes from a household survey collected in 2018. The sample size is 2,409 beneficiaries and non-beneficiaries from Mexico City and Mexico State.

- Introduced by Thistlethwaite and Campbell in 1960, the RDD is a methodological approach that aims to estimate the treatment effect in non-experimental settings.

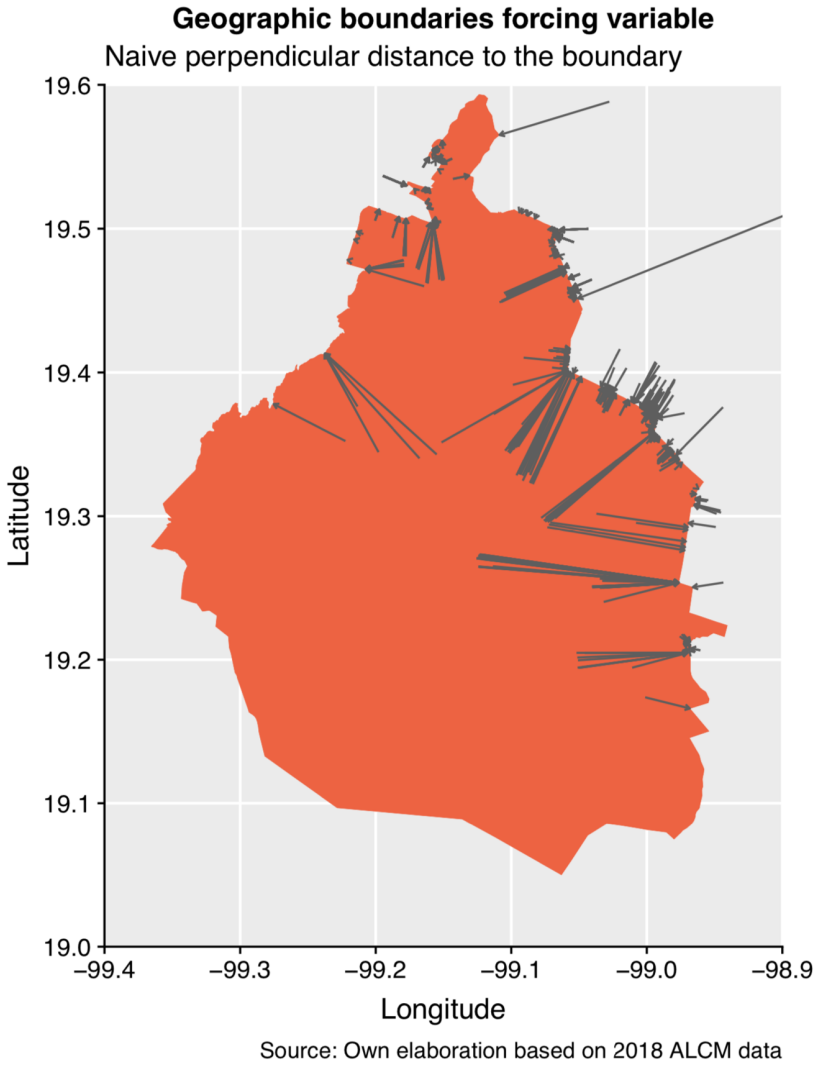
$$Y_i = (1 - T_i) * Y_i(0) + Y_i(1) = \begin{cases} Y_i(0) & \text{if } X_i < c \\ Y_i(1) & \text{if } X_i \geq c \end{cases} \quad (5)$$

- More recent theoretical RDD developments have emphasized on the importance to preserve the original nature of the outcome variable (Xu, 2017)
- The main novelty in the empirical strategy is the combination of multiple scores: age and geographical distance to the state boundaries

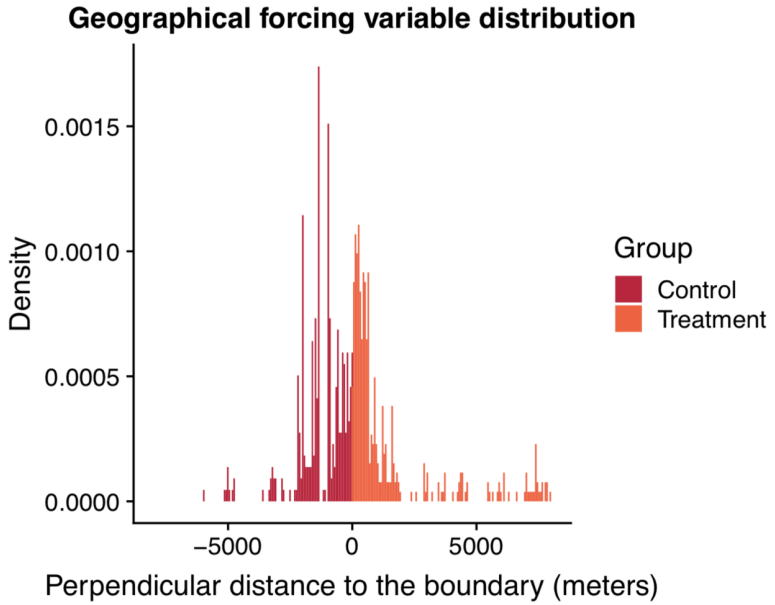


The program is a non-targeted, non-contributory pension scheme that transfers monthly payments of 62 USD to people older than 68 years who live in Mexico City. This threshold is used to estimate an age forcing variable (months) ...

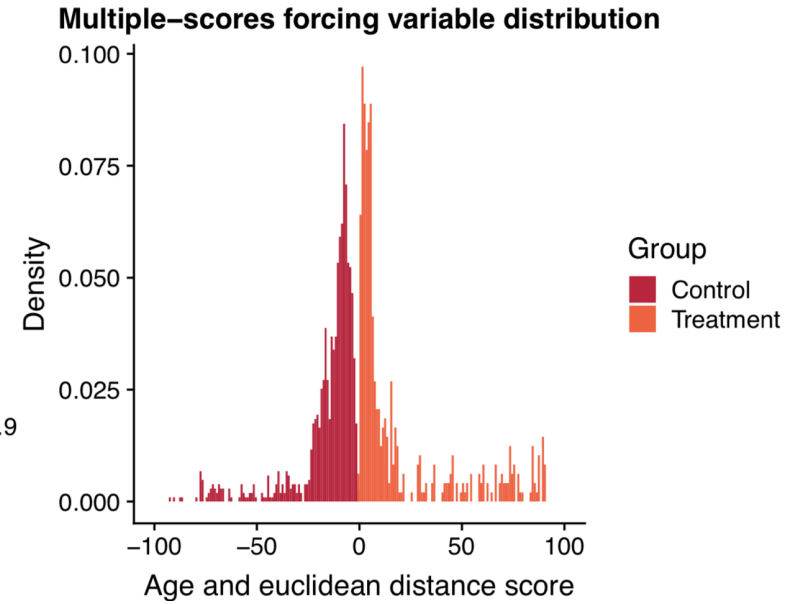
... and a geographical forcing variable



Source: Own elaboration based on 2018 ALCM data

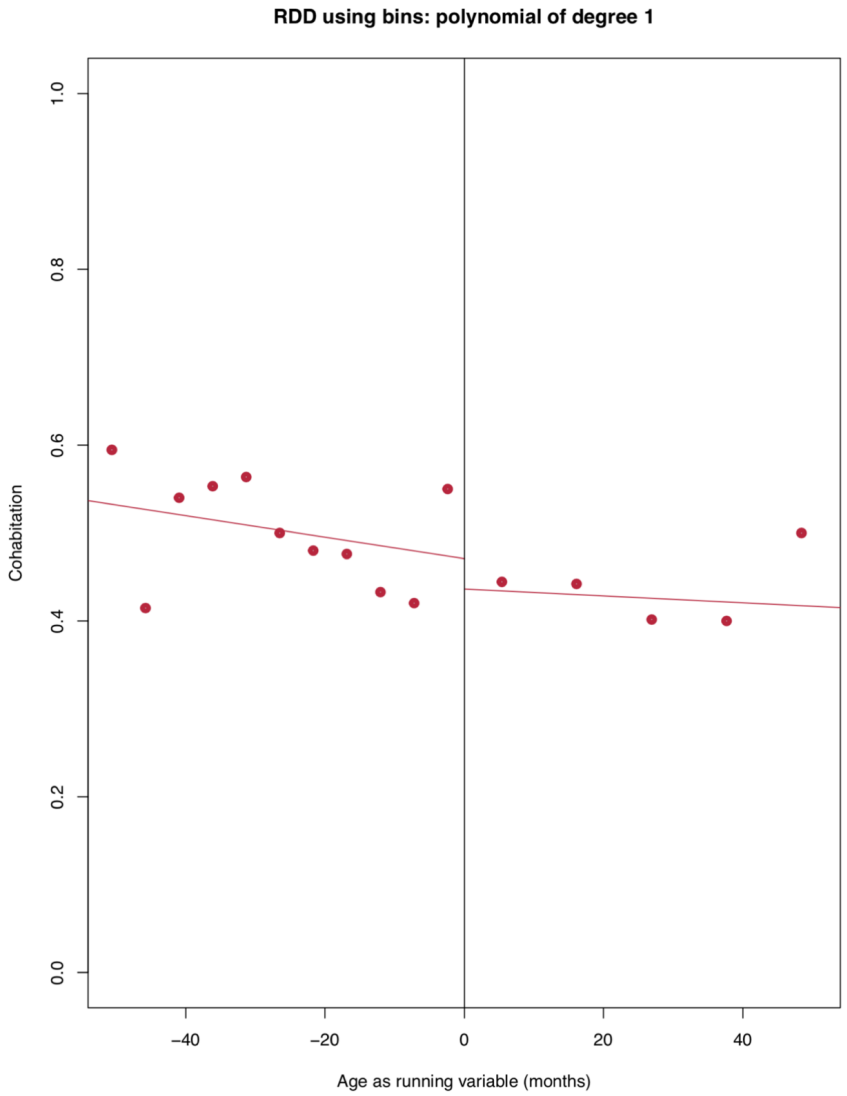


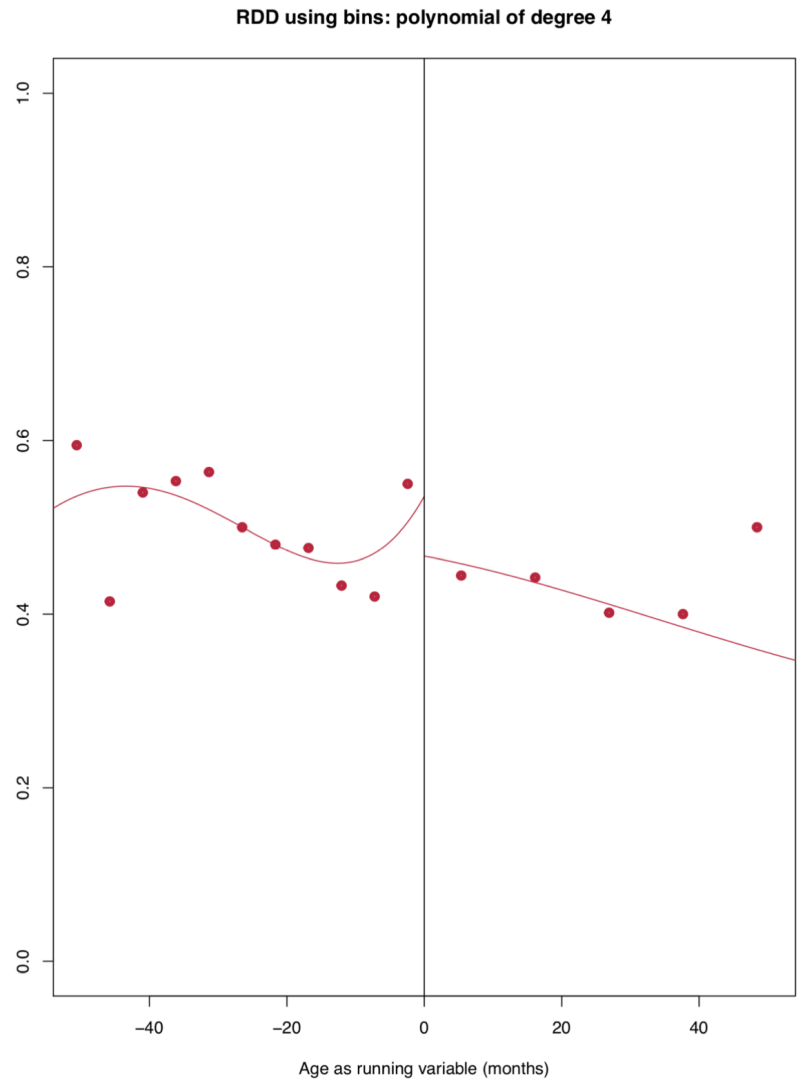
Perpendicular distance to the boundary (meters)



Age and euclidean distance score

RDD plots





Binary outcomes aggregate the data in bins along the forcing variable so it can be treated as a continuous variable in the bandwidth estimation. The trade-off in this case is a smaller sample available.

Table: Cohabitation with adult children

Control group (running variable)	Age group	McCrary test	Polynomial regression (IK-BW criterion)		Randomization inference (CTV-BW criterion)	Multilogit (Xu-BW criterion)
		(1)	(2)	(3)	(4)	(5)
Mexico City and Mexico State	Younger	0.48	-0.17	-0.15	-0.05*	-0.03
Age running variable	68		(0.12)	(0.12)	{0.08}	{0.59}
Mexico City	Younger	0.10	-0.14	-0.12	-0.07**	-0.06
Age running variable	68		(0.14)	(0.14)	{0.03}	{0.85}
Mexico State	Older	0.00	-0.16	-0.15	-0.11	-0.07*
Geographical running variable	68		(0.10)	(0.09)	{0.16}	{0.10}
Mexico City and Mexico State	All	0.00	-0.05	-0.06	-0.05	-0.04**
Age and Geographical running variables			(0.05)	(0.05)	{0.22}	{0.02}
Covariates			No	Yes	Yes	No

(1)Manipulation of the Running Variable test ,(2) and (3) Polynomial of degree one with robust standard errors [in square brackets], (4) Finite sample P-value in curly brackets and (5) Optimal bandwidth estimated using Xu(2017) estimator criterion.

Overall the evidence suggests a decrease in the cohabitation of elderly parents with the adult children as a result of the income shock. Nevertheless the sensitivity of the results to the threshold (placebo test) and the covariates used should be highlighted

Internal bias (manipulation) in the program enrollment procedures presents a possible threat to the validity of the results

Expand more evidence on cohabitation practices in the context section

Present data on Mexico and a developed country on the evolution of cohabitation across cohorts

Improve the theoretical model

Explore two different initial conditions before the income shock. When the parent already lives with his/her adult child and when she/he still lives alone

Replicate the results in another data-set

Using a panel data from a similar intervention data, implemented in the municipalities of Valladolid and Motul in the Yucatan State, estimate more parameters relevant to the study