Sent Away:
The Long-Term Effects of Slum Clearance on Children

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NBER Summer Institute
Children

Motivation

- More than 25% of the world's urban population live in slums

  (UN-Habitat, 2020)

  - Historically, evictions have been used as a policy instrument (Marx et al., 2013)
  - Authorities have responded with low-income housing on city peripheries
  - Policy trade-off between slum upgrade and relocation to new housing (Lall et al., 2006)
  - High % of dwellers prefer no to move (Barnhardt et al., 2017; Franklin 2019; Picarelli, 2019)

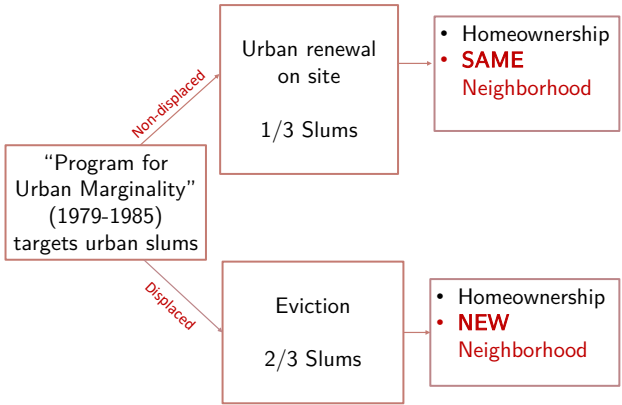
- Little evidence on the long-term effects of moving slum dwellers and effects of new neighborhoods
  - Hard to follow slum dwellers across time
  - Positive effects of moving to low-poverty areas (Chetty et al., 2016; Chyn, 2018)
  - Mechanisms are less understood: Schools, peers, infrastructure? Disruption versus place

    (Chyn and Katz, 2021; Mogstad and Torsvik, 2021)

This project

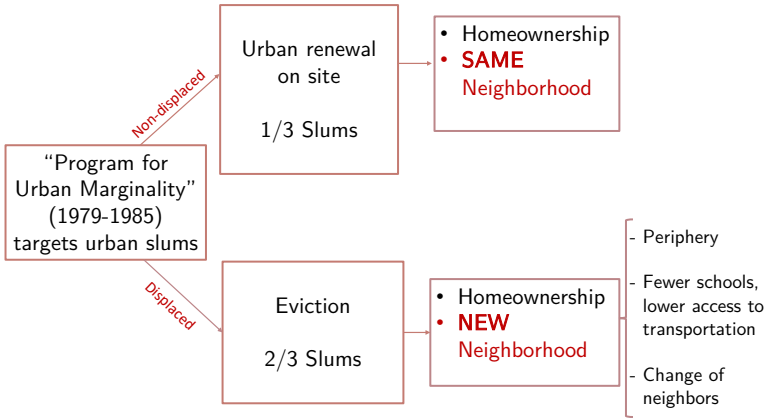
- **Research Question:** What are the long-term effects on income and education of moving to a peripheral (high-poverty) neighborhood?
  - What are the mechanisms that explain these effects?
- **This paper:** Urban Renewal and Slum Clearance Program
  - Occurred in Santiago between 1979 and 1985 during the Chilean dictatorship
  - High urban poverty, low provision of housing, 15% pop. living in slums
  - *Forced* eviction of entire slums and *relocation* of families to low-income areas
- There is variation in the types of intervention

Natural experiment research design



- Key aspects of this intervention:
  - Displaced end up in **worse** quality neighborhoods
  - Intervention occurs in groups (by slum)

Natural experiment research design



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  - Intervention occurs in groups (by slum)

Natural experiment research design

- For families eviction is as good as random
  - Eviction was determined by authorities based on urban conditions
  - Density, geographic location, price of land: Compute probability of displacement at slum level

- Identification strategy: Compare displaced and non-displaced children from slums with the same probability of being displaced
  - Displaced and non-displaced families look similar (but not identical) at baseline
  - Propensity score matching at the slum level: no differences in observables

- Data: Archival records of 16,934 homeowners between 1979 and 1985
  - Match children through birth certificates
  - Match individuals to administrative data on earnings and schooling from 2007 to 2019

Preview of findings

1. Displacement reduces children's long-run outcomes
   - Displaced children have 0.81 $\downarrow$ years of schooling and 21% $\downarrow$ high school graduation
   - Displaced children earn **9%** $\downarrow$ income
   - Null employment effects, but 7% $\uparrow$ informality

2. Displacement effects vary by age at intervention
   - Negative effects on formal earnings are larger for children < 13
   - Largest effect for children < 6: earnings and college attendance

3. **Mechanisms:** Children's earnings respond to changes in location attributes at baseline
   - Distance from origin, neighborhood size and home value explain average displacement effect
   - Transportation improvements: Access to subway in adulthood reduces the earnings gap

Literature Review

- Slum clearance and urban renewal
  - Collins & Shester (2013); Marx et al. (2013); Takeuchi et al. (2008); Lall et al. (2006); Galiani et al. (2016); LaVoice (2020); Michaels et al. (2021); Harari & Wong (2024); Barnhardt et al. (2016); Picarelli (2019); Perlman (1976, 2010)

  → This paper: Follow displaced and non-displaced slum families across time

- Inter-generational mobility and neighborhood effects
  - Ludwig et al. (2013); Chetty et al. (2016); Pinto (2021); Davis et al. (2021)
  - Quasi Experiments: Deryugina & Molitor (2021); Nakamura et al. (2021); Chyn (2018)
  - Developing countries: Camacho et al. (2021); Carrillo et al. (2021)
  - Mechanisms: Damm & Dustmann (2014) (crime); Laliberté (2020) (schools); Derenoncourt (2019) (public investment); Abel (2019) (social cohesion); Kain (2004), Haltiwanger et al. (2020) (spatial mismatch)

  → This paper: Children of all ages + group displacement + assignment to locations

- Forced migration
  - Becker et al. (2020); Nakamura et al. (2021); Bauer et al. (2013)

  → This paper: Displacement within national boundaries

Outline

1. Evictions Program
2. Data Collection
3. Empirical Methodology
4. Main results on earnings and schooling
5. Mechanisms
6. Conclusions

Evictions Program:
The Program for Urban Marginality 1979-1985

Eviction policies 1979-1985

- Slums were squatter settlements originated through land invasions
  - Poor settlements located all over the city, unhealthy and overcrowded units
  - 15% of population of Santiago lived in slums (Census 1970, 1982)
  - Average slum had 250 families, 5.2 members/family
  - No new settlements after coup d'etat in 1973

- The **Program for Urban Marginality** was designed to
  (Ex. Order 2552)
  - Increase the supply of public housing
  - Increase homeownership where families could afford a unit

Eviction policies 1979-1985

- In 1979, 50,000 families in 340 slums were targeted for intervention:

Intervention	**Location**	Property Right	Type of dwelling	Public Services	Cost for family
Non-displaced (1/3) (Urban Renewal)	**Same**	Yes	Starting Kit (*) or Apartment	Yes	10-25%
Displaced (2/3) (Evicted)	**New (periphery)**	Yes	Apartment or house	Yes	10-25%

(*) Starting kit includes a living room, a bathroom and a kitchen.

- Families moved in groups and were ***assigned*** a destination project
  - Ministry of Housing determined supply of units
  - Housing projects assigned based on availability
  - Families paid for the units in installments (12-25 years)

Assignment to treatment as a function of urban renewal

- The most common causes for clearance and relocation were (MINVU, 1984)
  - Overcrowding, risky location, private property, public road, price of land

	Displaced mean (1)	Non-displaced mean (2)	Difference (3)
A. Slums' attributes			
Families	191.86	220	-28.14 (30.72)
Area in hectares	3.52	4.17	-0.66 (0.78)
Families/hectare	77.49	67.7	9.79 (11.95)
Military name	0.12	0.17	-0.05 (0.04)
Elevation	586.47	581.89	4.58 (26.34)
Slope	3.01	2.54	0.46 (0.26)*
Close to river or canal (<100 mts)	0.07	0.04	0.03 (0.03)
Flooding risk	0.10	0.02	0.08 (0.06)
B. Census districts attributes			
Log surrounding prices	14.82	14.73	0.09 (0.10)
Population's schooling	7.93	7.05	0.88 (0.50)*
Unemployment rate	0.18	0.21	-0.03 (0.01)*
Number of schools	4.04	4.42	-0.39 (0.57)
Distance to CBD	10.27	10.45	-0.18 (0.90)
Number of slums	107	137	244
Number of municipalities	14	14	14

Notes: Clustered standard errors by municipality in parenthesis. 10%*, 5%**, 1%***.

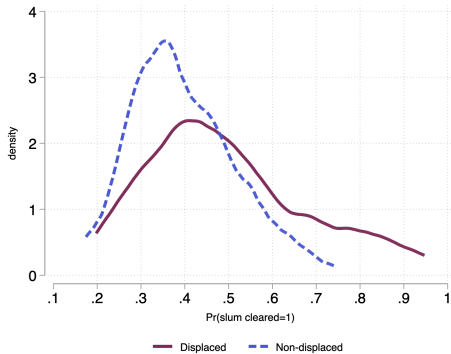


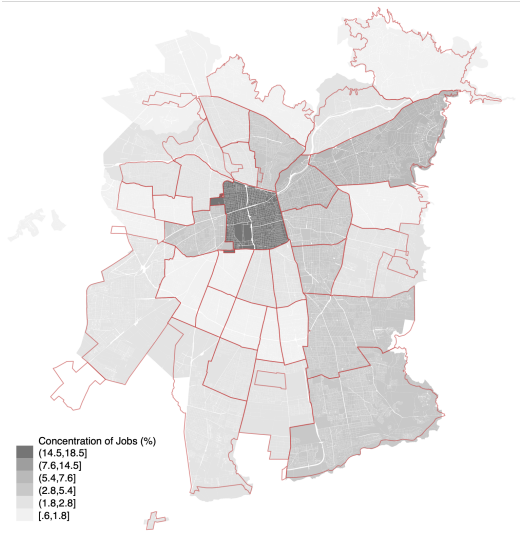
Figure: Probability of slum relocation

Example of a slum and neighborhoods of destination

Moving day in the news

Source: Hidalgo (2019)

Eviction policies 1979-1985 Distribution of slums by treatment



(a) Slums before 1979

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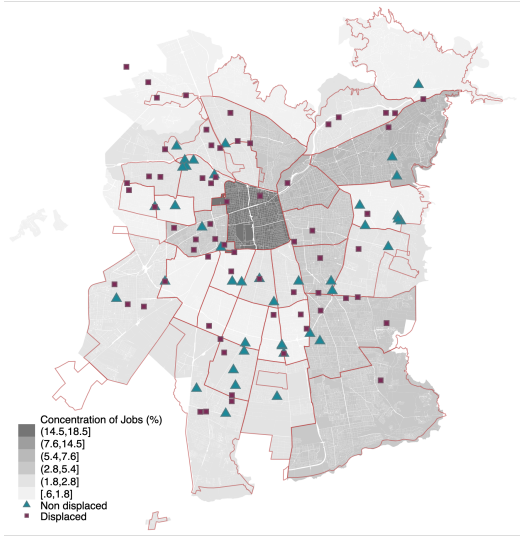

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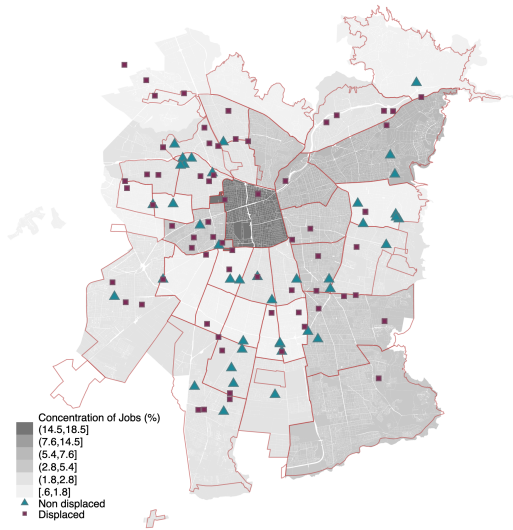

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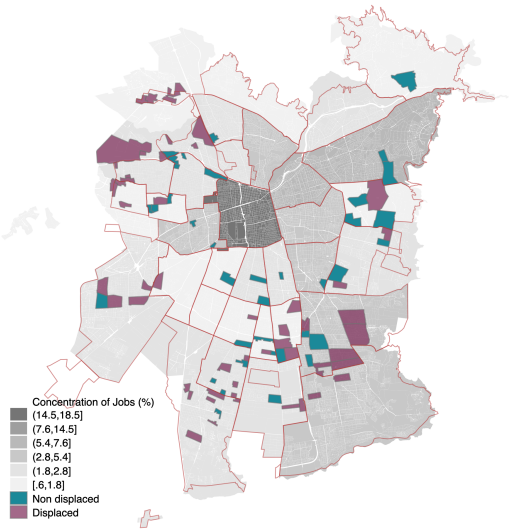

(b) Public Housing after 1985

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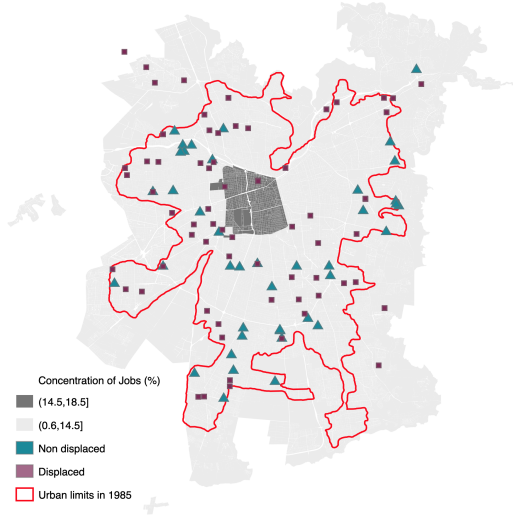

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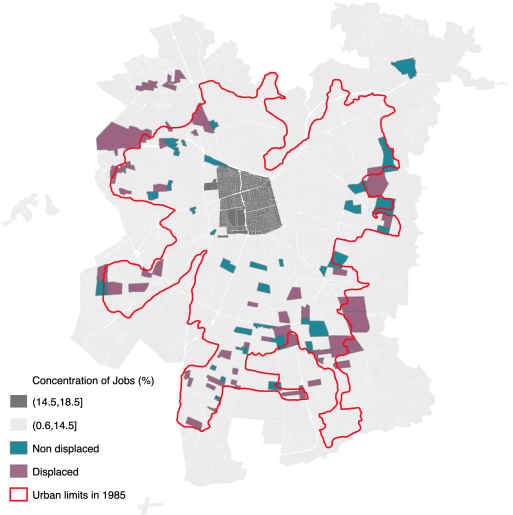
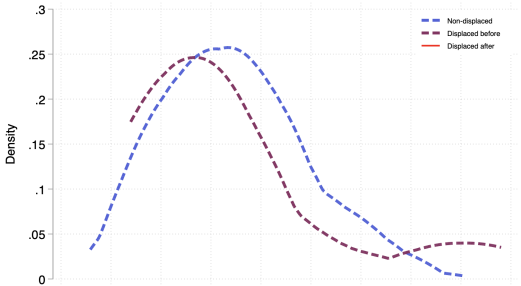


(b) Public Housing after 1985

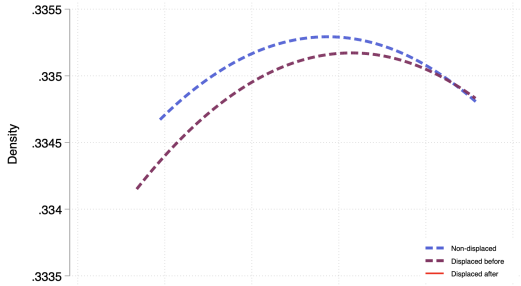
Displaced households moved to lower quality areas

Neighborhood attributes BEFORE relocation

(a) Neighborhood schooling



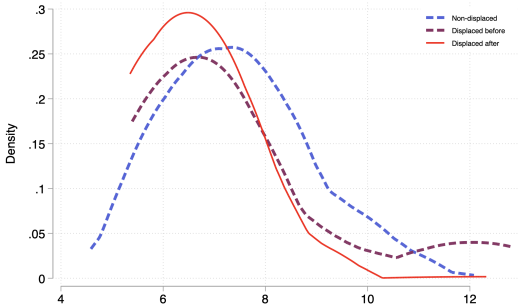
(b) Neighborhood unemployment



Displaced households moved to lower quality areas

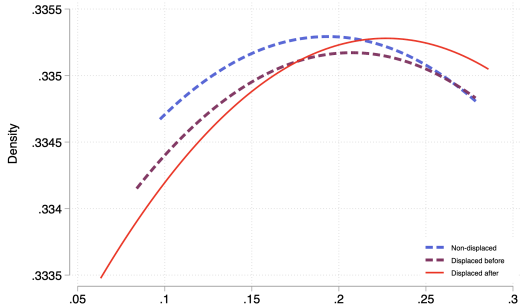
Neighborhood attributes AFTER relocation

(a) Neighborhood schooling



Mean diff. before b(se): -.011 (.86)
Mean diff. after b(se): -1.458 (.616)

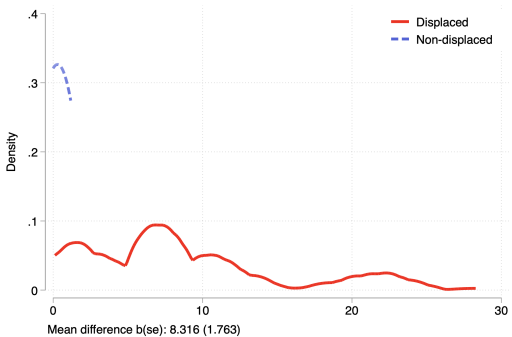
(b) Neighborhood unemployment



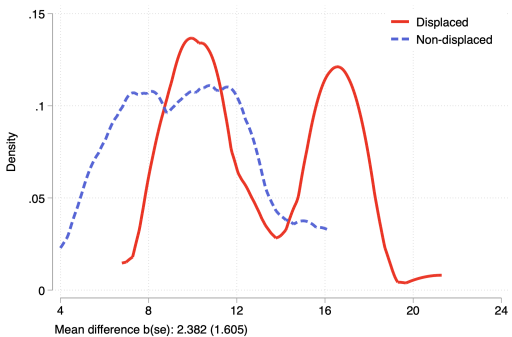
Mean diff. before b(se): .009 (.025)
Mean diff. after b(se): .047 (.025)

Displaced households moved far away

(a) Distance from origin after treatment



(b) Distance to CBD after treatment



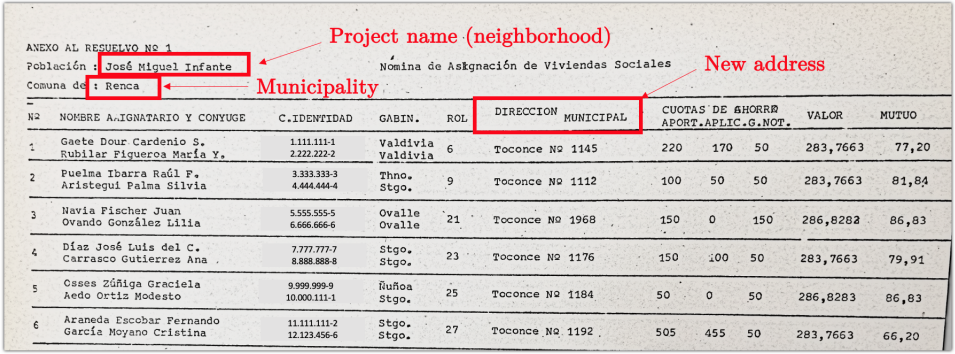
Data Collection

Data and sample description

1. Crosswalk between slums and new projects (neighborhoods)
   - Ministry of Housing Archives, Molina (1986) and Morales & Rojas (1986)
     $\sim$ 40,000 families $\sim$ 36,000 in urban areas

2. Collect and digitize records from Executive Order 2,552
   - Lists of homeowners by **project** of destination
   - Found 18,352 families: 16,934 families with a valid National ID number (NID)

Data digitization: Example of archival records



ANEXO AL RESUELVO Nº 1

Población : José Miguel Infante

Comuna de : Renca

Nomina de Asignación de Viviendas Sociales

Project name (neighborhood)

Municipality

New address

Nº	NOMBRE ASIGNATARIO Y CONYUGE	C.IDENTIDAD	GABIN.	ROL	DIRECCION MUNICIPAL	CUOTAS DE AHORRO APORT.	APLIC.	G.NOT.	VALOR	MUTUO
1	Gaete Dour Cardenio S. Rubilar Figueroa María Y.	1.111.111-1 2.222.222-2	Valdivia Valdivia	6	Toconce Nº 1145	220	170	50	283,7663	77,20
2	Puelma Ibarra Raúl F. Aristegui Palma Silvia	3.333.333-3 4.444.444-4	Thno. Stgo.	9	Toconce Nº 1112	100	50	50	283,7663	81,84
3	Navia Fischer Juan Ovando González Lilia	5.555.555-5 6.666.666-6	Ovalle Ovalle	21	Toconce Nº 1968	150	0	150	286,8282	86,83
4	Díaz José Luis del C. Carrasco Gutierrez Ana	7.777.777-7 8.888.888-8	Stgo. Stgo.	23	Toconce Nº 1176	150	100	50	283,7663	79,91
5	Osses Zúñiga Graciela Aedo Ortiz Modesto	9.999.999-9 10.000.111-1	Ñuñoa Stgo.	25	Toconce Nº 1184	50	0	50	286,8283	86,83
6	Araneda Escobar Fernando García Moyano Cristina	11.111.111-2 12.123.456-6	Stgo. Stgo.	27	Toconce Nº 1192	505	455	50	283,7663	66,20

Family ID	Name	Relation to hh	ID	District	House	Address	Aport.	Aplic.	G.Not	Value
1	Gaete Dour Cardenio S.	1	1.111.111	Valdivia	6	Toconce 1145	220	170	50	283.77
1	Rubilar Figueroa María Y.	2	2.222.222	Valdivia	6	Toconce 1145	220	170	50	283.77

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     $\sim$ 40,000 families $\sim$ 36,000 in urban areas

2. Collect and digitize records from Executive Order 2552
   - Lists of homeowners by **project** of destination
   - Found 18,352 families: 16,934 families with a valid National ID number (NID)

3. Match adults NIDs to their children
   - Matching using birth and marriage certificates
   - 33,669 children ages 0 to 18 at baseline
   - **30,680** children in common support

Final sample

4. Match individuals with admin data
   - Social Household Registry (Registro Social de Hogares, RSH): self-reported income and self-reported schooling between 2007 and 2019
   - Matching rates: Children 82%; Adults 75% ▷

Final sample of children corresponds to

- Children 0 to 18 years old at intervention (1979-1985)
- Aged 25 to 55 between 2007 and 2019
- **25,032** individuals in administrative data with common support

Summary attrition earnings distribution

Empirical Methodology

Research design

Compare displaced and non-displaced children from slums with the same probability of being relocated

- We estimate the following equation:

$$Y_i = \alpha + \beta Displaced_{s\{i\}} + \psi_o + p(X_s) + \psi_o \times p(X_s) + X_i'\theta + \varepsilon_i$$

- where:
  - Y is average outcome for individual i measured in $t \in [2007, 2019]$
  - $s(i)$ indexes the slum of origin for individual i
  - $Displaced_{s\{i\}}$ equals 1 if an individual's family lived in a displaced slum
  - ψ_o are municipality of origin fixed effects
  - $p(X_s)$ are deciles of the propensity score, estimated on X_s, a set of slums' characteristics
  - X_i set of controls at baseline: gender, cohort, year of intervention, and family's characteristics
  - Clustered standard errors by slum of origin

Summary statistics for children at the time of intervention families selection

	All children 0 to 18		
	Non-displaced mean (1)	Displaced mean (2)	Diff. (within p-score) (3)
Female	0.499	0.507	-0.004 (0.011)
Age	8.248	8.131	0.164 (0.413)
Firstborn	0.365	0.366	-0.018 (0.018)
No. Children	3.733	3.865	0.177 (0.070)**
HH age	35.107	34.523	0.025 (0.720)
Female HH	0.303	0.341	-0.049 (0.050)
Married HH	0.846	0.783	-0.018 (0.012)
Indigenous lastname	0.073	0.093	0.009 (0.009)
Mother's schooling[a]	6.211	5.834	-0.022 (0.200)
HH employment	0.431	0.377	0.022 (0.026)
Child mortality (28 days)	0.006	0.004	-0.002 (0.001)
Child mortality (1 year)	0.019	0.021	0.006 (0.004)
Individuals	9,823	20,857	30,680
Families	4,009	8,439	12,448
Slums	39	52	90

Notes: Clustered standard errors by slum in parenthesis. 10%*, 5%**, 1%***. (a) Only available for children whose mother is in RSH

Summary statistics for children at the time of intervention families selection

	All children 0 to 18 matched to RSH			
	Non-displaced mean (1)	Displaced mean (2)	Diff. (within p-score) (3)	
Female	0.540	0.546	-0.007	(0.008)
Age	8.271	8.043	0.116	(0.400)
Firstborn	0.352	0.360	-0.013	(0.019)
No. Children	3.863	3.886	0.099	(0.075)
HH age	35.194	34.495	0.055	(0.707)
Female HH	0.302	0.336	-0.054	(0.054)
Married HH	0.849	0.786	-0.014	(0.015)
Indigenous lastname	0.078	0.096	0.007	(0.011)
Mother's schooling[a]	6.044	5.783	0.076	(0.221)
HH employment	0.429	0.376	0.023	(0.025)
Child mortality (28 days)	0.007	0.004	-0.001	(0.002)
Child mortality (1 year)	0.019	0.016	0.006	(0.004)
Individuals	7,632	17,400	25,032	
Families	3,564	7,902	11,466	
Slums	39	52	90	

Notes: Clustered standard errors by slum in parenthesis. 10%*, 5%**, 1%***. (a) Only available for children whose mother is in RSH

Results:
Displacement Effect on Labor Market Outcomes

Displaced children earn 9% less than non-displaced in adulthood

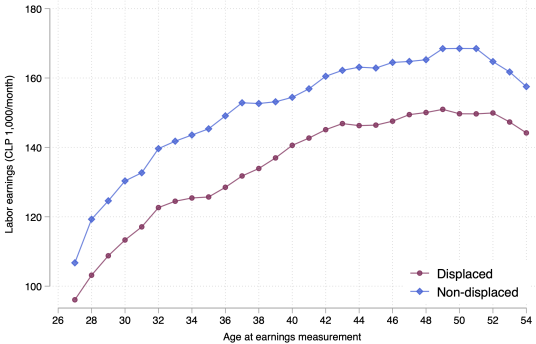
	(1)	(2)	(3)	(4)	(5)
	Outcome: Self-reported earnings (CLP$1,000/month)				
Displaced	-17.635	-17.743	-16.011	-16.315	-14.038
	(3.573)***	(3.424)***	(3.505)***	(3.619)***	(5.384)**
	[4.179]***	[4.036]***	[3.934]***	[3.973]***	[5.145]***
Non-displaced mean	161.995	161.995	161.995	158.300	158.300
Percent effect	**-10.5**	**-10.9**	**-9.9**	**-10.3**	**-8.9**
Adjusted R^2	0.009	0.122	0.122	0.123	0.124
Individuals	25,032	25,032	25,032	25,032	25,032
Municipality of origin FE	✓	✓	✓	✓	✓
Baseline controls		✓	✓	✓	✓
Slum characteristics			✓		
$\hat{p}_s$				✓	
$\hat{p}_s \times \psi_o$					✓

Notes: Regressions for children aged 0 to 18 at baseline that are matched to the RSH, and that report non-missing schooling. All regressions control for year of intervention fixed effects. Baseline controls include the following: female, mother head of household, married head of household, head of household's age, number of children per couple, firstborn dummy, Mapuche last name dummy, and year of birth fixed effects. Slums' characteristics include area, number of families, military name, distance to river, and log of property prices at origin. Propensity score matching results include a full set of municipality of origin fixed effects interacted with the propensity score percentile dummies. Standard errors are clustered by slum of origin in parentheses, and Conley standard errors are in brackets. 10%*, 5%**, 1%***.

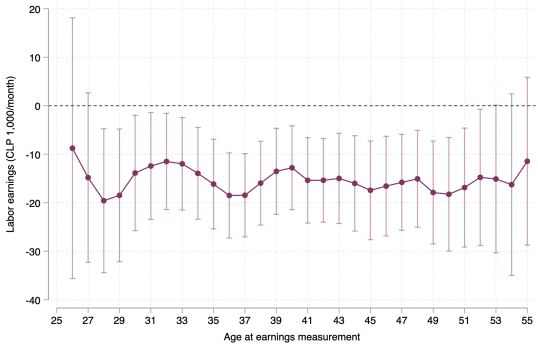
Displacement effect across the age cycle

$$y_i = \sum_{\tau=27}^{54+} \beta_\tau \, Displaced * 1[Age = \tau] + \sum_{\tau=27}^{54+} \delta_\tau \, 1[Age = \tau] + \psi_o \times p_{(}X_s) + X_i' \gamma + u_i$$

(a) Earnings trajectories by age



(b) Displacement effect by age



It is not lower employment but worse employment

	Non-displaced mean (1)	Displacement effect (2)	Percent effect (%) (3)
Employed	0.641	-0.015	-2.3
		(0.012)	
Contract	0.409	-0.068	-16.6
		(0.011)***	
Contribute to SS	0.514	-0.037	-7.2
		(0.013)***	
Temp. worker	0.555	0.063	11.4
		(0.014)***	
Formal earnings ($)	110.845	-17.952	-16.2
		(5.765)***	
Informal earnings ($)	47.455	3.913	8.2
		(2.351)*	
Social security wages ($)	261.850	-56.619	-21.6
		(11.630)***	

Notes: Clustered standard errors by slum of origin in parenthesis 10%*, 5%**, 1%***.

Displacement effect on schooling outcomes

	Non-displaced mean (1)	Displacement effect (2)	Percent effect (%) (3)
Years of education	11.235	-0.813	-7.2
		(0.146)***	
HS graduate	0.639	-0.138	-21.6
		(0.027)***	
Attended tertiary education			
2-year college	0.115	-0.036	-31.3
		(0.008)***	
5-year college	0.051	-0.035	-68.6
		(0.007)***	

Notes: Clustered standard errors by slum of origin in parenthesis 10%*, 5%**, 1%***.

Robustness Checks

- Attrition
  - Attrition in admin. data Lee Bounds ▷
  - Attrition from Archives ▷
- Selection on unobservables

  Oster ▷

  Perm. test ▷
- Different subsamples and leave-one-out

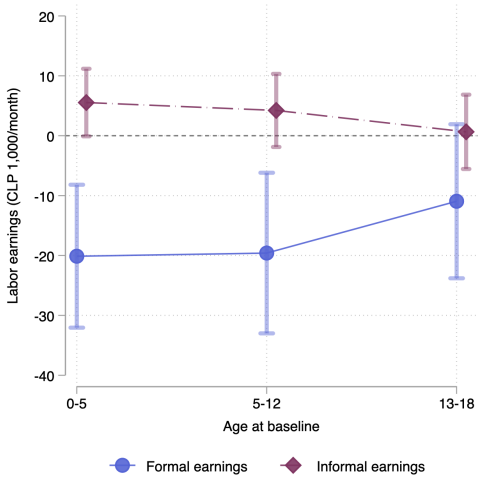
  Subsamples ▷
- Leave-one-out

  Leave-one-out ▷

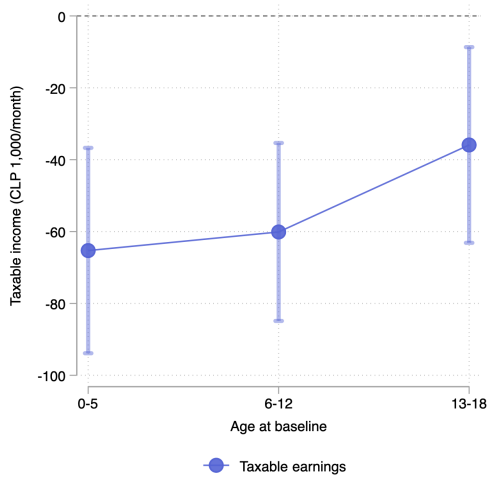
Heterogeneity by age at intervention

Heterogeneity by age at intervention

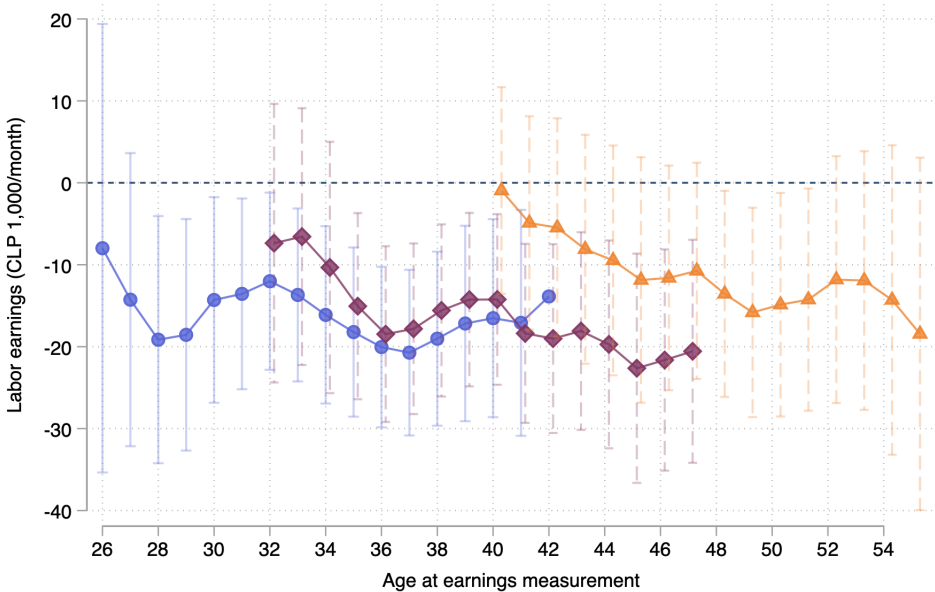
(a) Labor earnings



(b) Taxable earnings



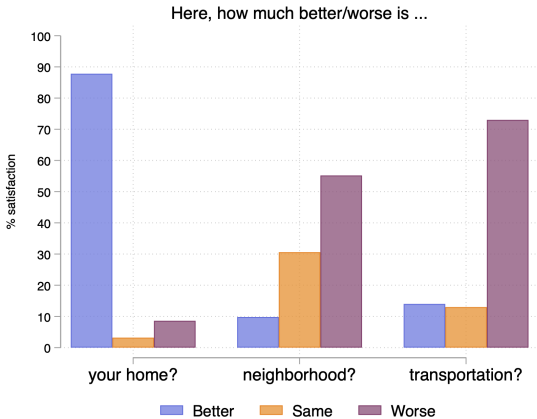
Heterogeneity by age at intervention

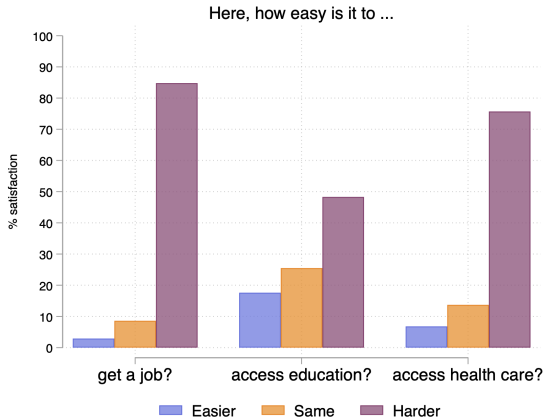


Mechanisms

Moving to dis-opportunity?

Families experienced a reduction in neighborhood quality





Source: Aldunate et al. (1987) surveyed 592 displaced households treated in 1983.

Displaced families were assigned to **worse** quality neighborhoods

Location Attributes by Census District	Non-displ. mean (1)	Displaced mean at destin. (2)	Difference (within munic.) (3)	
Schooling HH	7.24	6.59	-0.69	(0.28)**
Unemployed HH	0.18	0.22	0.02	(0.01)**
HS Dropout students	0.33	0.36	0.04	(0.03)
Schools/1000 students	1.19	0.64	-0.87	(0.86)
Pub. Schools/1000 stud.	1.00	0.58	-0.69	(0.85)
Priv. Schools/1000 stud.	0.18	0.06	-0.15	(0.11)
Care Centers/1000 HH	0.01	0.01	0.01	(0.01)
Hospitals/1000 HH	0.03	0.01	-0.01	(0.02)
Distance to CBD (km)	7.95	9.84	2.49	(1.17)**
Commuting time (min)[a]	42.25	47.47	5.06	(2.14)**
Surrounding property prices [b]	14.80	14.56	-0.30	(0.15)**
Home value	256.5	222.03	-35.8	(10.85)***
Observations			30,680	
Slums			90	

Notes: (a) Measured at the municipality level. Within difference corresponds to the coefficient of *displaced* in equation (1) conditional on municipality of origin fixed effects. Robust standard errors in parenthesis. 10%*, 5%**, 1%***.

Displacement effect and mediating mechanisms

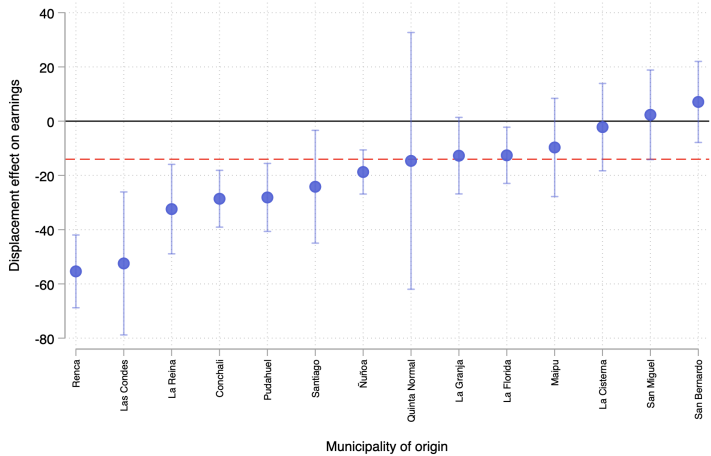
- Displacement is a bundle of treatments
  - Disruption of networks
  - Home value varies by location
  - Lower-quality services
  - Less access to transportation and jobs
- Displacement can affect children through their parents
  - Reduction in families' socioeconomic status (relative to non-displaced)
  - Higher parents' mortality
- We exploit differences in destination attributes
  - Families did not choose where to go ▷

Displacement effect and spillovers

Outcome:	Self-reported labor earnings			Years of schooling		
	(1)	(2)	(3)	(4)	(5)	(6)
Displaced	-14.038**	-13.796**	-12.650**	-0.813***	-0.698***	-0.804***
	(5.384)	(5.585)	(5.193)	(0.146)	(0.133)	(0.140)
Non-displaced $< 1km$		3.291			1.565***	
		(9.877)			(0.235)	
Non-displaced $< 1.5km$			11.475			0.072
			(16.005)			(0.534)
R^2	0.128	0.128	0.128	0.116	0.116	0.116
Non-displaced mean	158.300	156.643	156.624	11.235	11.189	11.189
Observations	25,032	25,032	25,032	25,032	25,032	25,032

Distribution of displacement effects on labor earnings by municipality of origin

$$y_i = \sum_{o=1} \beta_o Displaced_{s\{i\}} * 1[Origin = o] + \hat{p}(X_s) \times \psi_o + X'_{io}\theta + \varepsilon_i$$

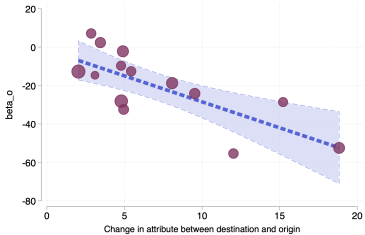


Notes: The figure shows regressions stratified by municipality of origin. The sample includes children who were 0 to 18 years old at the time of the intervention, matched to the RSH, and from municipalities with both displaced and non-displaced populations. The number of municipalities of origin is 14. Baseline controls include the following: female, mother head of household, married

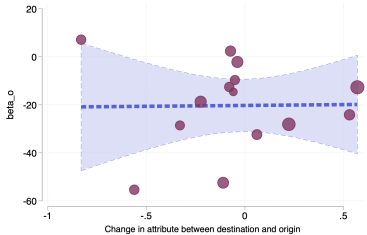
Determinants of displacement effect on earnings

- How does the displacement effect correlate with changes in location attributes?

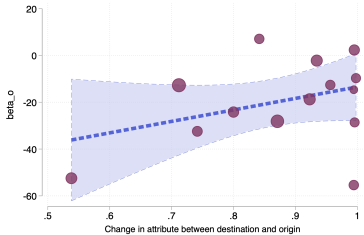
(a) Distance from origin (km)



(b) Δ number of schools per student



(c) Share of original slum community

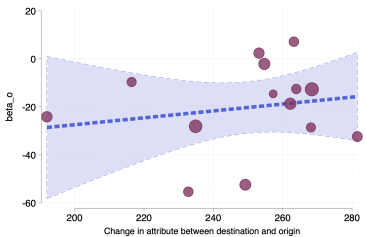


Notes: The figures plot displacement coefficients on self-reported labor income stratified by municipality of origin, against average changes in location attributes by municipality of origin. Regressions for children who were 0 to 18 years old at baseline that are matched to the RSH data that report non-missing schooling, from municipalities with displaced and non-displaced populations. The number of municipalities of origin is 14. Baseline controls include the following: female, mother head of household, married head of household, head of household's age, number of children, father Mapuche, firstborn dummy, year of birth fixed effects, and year of intervention fixed effects. Correlations are weighted by the number of observations in each cell (number sample children in municipality of origin).

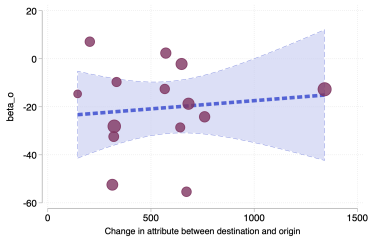
Determinants of displacement effect on earnings (cont')

- How does the displacement effect correlate with changes in location attributes?

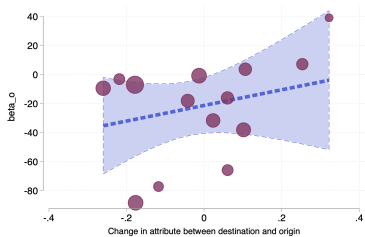
(a) Home value (UF index)



(b) Neighb. size (units/project)



(c) Δ log(property prices)



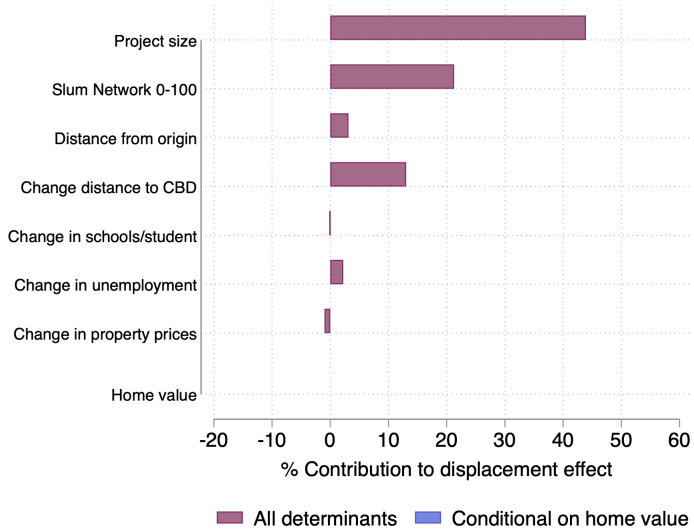
Notes: The figures plot displacement coefficients on self-reported labor income stratified by municipality of origin, against average changes in location attributes by municipality of origin. Regressions for children who were 0 to 18 years old at baseline that are matched to the RSH data that report non-missing schooling, from municipalities with displaced and non-displaced populations. The number of municipalities of origin is 14. Baseline controls include the following: female, mother head of household, married head of household, head of household's age, number of children, father Mapuche, firstborn dummy, year of birth fixed effects, and year of intervention fixed effects. Correlations are weighted by the number of observations in each cell (number sample children in municipality of origin).

Displacement effect and change in location attributes on earnings

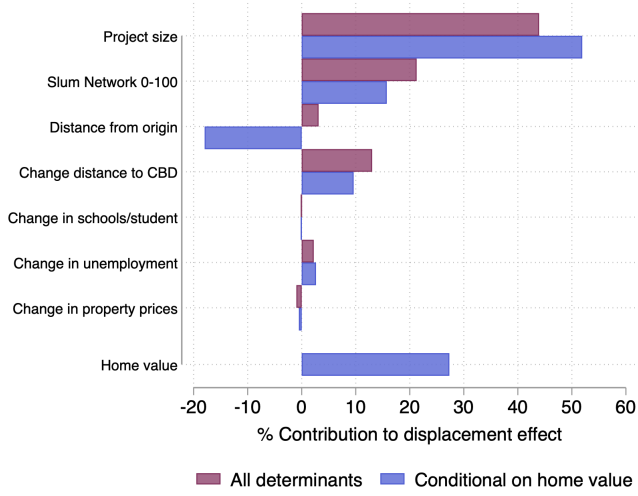
Outcome	Self-reported labor earnings (2007-2019)				Auxiliary
	(1)	(2)	(3)	(4)	(5)
Displaced	-14.038**	-1.830	-1.798	-3.499	
	(5.384)	(8.935)	(8.711)	(8.973)	
Project size (#units)		-0.011***	-0.011***	-0.013***	560.567***
		(0.003)	(0.004)	(0.004)	(94.341)
Share network (0-100)		0.132*	0.177*	0.131	-16.872***
		(0.075)	(0.105)	(0.111)	(3.785)
Distance from origin (km)		-0.181	-0.044	0.253	9.970***
		(0.464)	(0.561)	(0.615)	(1.394)
Δ# schools/child			1.239	1.618	0.013
			(1.673)	(1.961)	(0.134)
ΔDistance to CBD (km)			-0.533	-0.393	3.433***
			(0.702)	(0.741)	(0.754)
ΔUnemployment (0-100)			-0.258	-0.307	1.200
			(0.522)	(0.520)	(1.100)
ΔProperty prices (log)			2.782	1.463	0.050
			(3.289)	(3.379)	(0.086)
Home value (UF)				0.107*	-35.852***
				(0.061)	(10.852)
Non-displaced mean			158.300		
Adj. R^2	0.124	0.125	0.125	0.125	
Percent effect (%)	**-8.9**	**-1.2**	**-1.1**	**-2.2**	
Observations	25,032	25,032	25,032	25,032	25,032

Notes: This table shows results for coefficients β and γ from regression $Y_i = \alpha + \beta Displaced_{s\{i\}} + \gamma \Delta Attribute_o + \psi_o + X_i'\theta + \varepsilon_i$. All changes in attributes (Δ) are measured at the census district level, which corresponds to a smaller level of aggregation than municipalities. Clustered

Decomposition of displacement effect on earnings (Gelbach, 2016)



Decomposition of displacement effect on earnings (Gelbach, 2016)



Place effects in adulthood: Current locations

- In 2017, **60%** of families remain in same municipalities, **41%** in same neighborhood
  - 6.5% of families sold their house after 25 years, 13.4% of houses had been inherited by children
  - By 2017, displaced households are 35% more likely to live somewhere else, but close to original assignment
  - 26% of children live in assigned neighborhood, 44% in assigned municipality, but live in poorer neighborhoods as adults

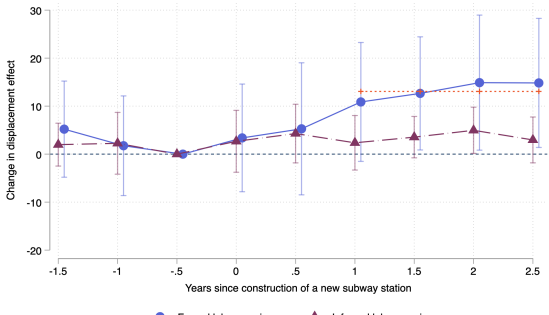
Long-term locations between 2017 and 2019

	Probability of living in ...			Distance	% Poor
	assigned municipality	assigned neighborhood	municipality of origin	from assigned neighborhood	in current neighborhood
	(1)	(2)	(3)	(4)	(5)
A. Adults in RSH					
Displaced	0.030	-0.186	-0.162	1.719	0.033***
	(0.126)	(0.134)	(0.129)	(1.651)	(0.009)
Non-displaced mean	0.599	0.536	0.599	4.260	0.509
Percent effect	**5.0**	**-34.7**	**-27.0**	**40.4**	**6.5**
Observations	10,392	10,392	10,392	8,952	10,392
B. Children in RSH					
Displaced	0.057	-0.123	-0.131	1.880	0.026***
	(0.105)	(0.083)	(0.091)	(1.935)	(0.007)
Non-displaced mean	0.436	0.343	0.422	6.550	0.499
Percent effect	**13.1**	**-35.9**	**-31.0**	**28.7**	**6.8**
Observations	12,968	12,968	12,968	11,017	12,968

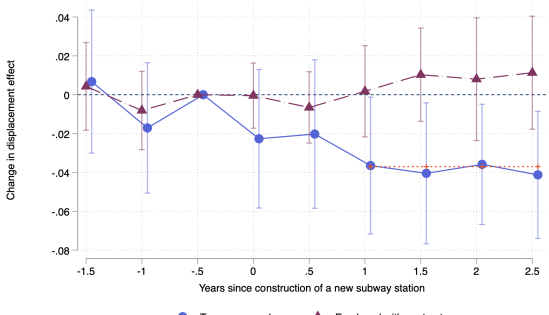
Notes: Regressions for children aged 0 to 18 at baseline, and their parents that are matched to the RSH, and report non-missing schooling. Standard errors clustered by municipality of origin in parenthesis. 10%*, 5%**, 1%***. All regressions control for year of intervention fixed effects. Baseline controls include the following: female, mother head of household, married head of household, head of household's marital status unknown, age of mother at birth, number of siblings, firstborn dummy, and year of birth fixed effects. The row labeled as "Percent effect" stands for "percentage variation with respect to non-displaced mean."

Displacement effect and access to transportation in adulthood

$$Y_{it} = \alpha + \beta Displaced_{s\{i\}} + \gamma_1 Subway_{\lambda\{\tau\}} + \gamma_2 Displaced_{s\{i\}} \cdot Subway_{\lambda\{\tau\}} + \psi_o + X_i'\theta + \delta_t + \varepsilon_{it}$$



(a) Labor earnings (CLP$1,000/month)



(b) Type of employment

Conclusions

Conclusions

- This paper shows evidence of the long-term effects of moving and growing up in a peripheral and high-poverty neighborhood
  - Children have lower adult-income, lower education, and higher informality
  - Home value does not compensate earnings loss
  - Place effects: Social interactions and segregation explain most of displacement effect
- Discussion: Policy alternatives?
  - UN-Habitat (2015): *"Forcible slum clearance and involuntary relocation have demonstrated to fail and have far-reaching negative impacts. Successful projects prioritize upgrading slums in situ..."*
  - Upgrade is not always an option, relocation policies should take into account distance, infrastructure and compliance rates

Appendix Tables and Figures

“2000 trips to the new home"

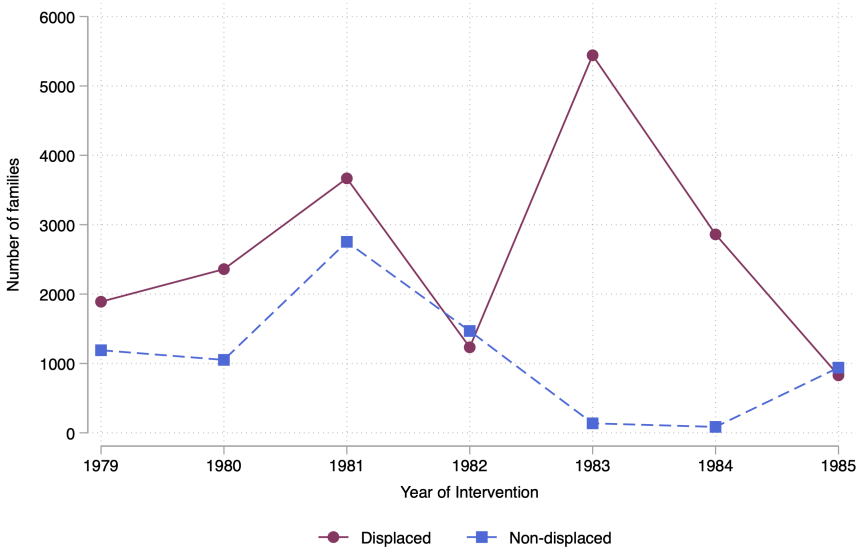
Figure: Revista *El Cabildo*, 1983.

“Coordinated action, where various institutions intervened, allowed to move in record time 15,000 people and their belongings to definitive houses."

▷ Back

Number of families treated per year

▶ Back



Probability of finding a slum in archives

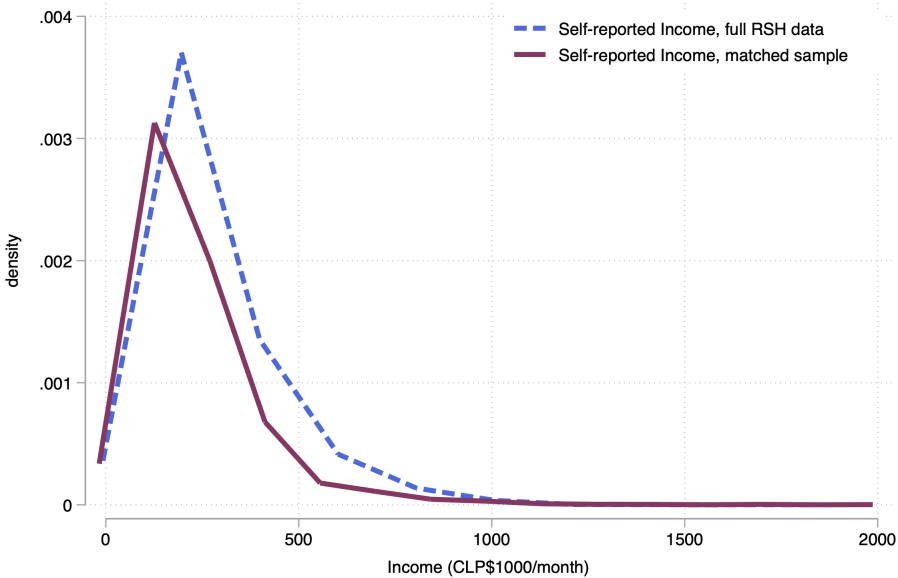
▷ Back

Outcome	1[Found in Archives]					
	(1)	(2)	(3)	(4)	(5)	(6)
Displaced	0.122**	0.113**	0.120*	0.114**	0.154	0.127*
	(0.057)	(0.046)	(0.059)	(0.049)	(0.100)	(0.072)
Schooling by munic.		-0.020		-0.019		
		(0.013)		(0.012)		
Families (per 10 units)			0.002**	0.003**	0.003	0.002*
			(0.001)	(0.001)	(0.003)	(0.001)
Displaced*Families					-0.002	
					(0.003)	
R^2	0.111	0.020	0.125	0.042	0.127	0.195
Mean	0.280	0.280	0.280	0.280	0.280	0.280
Observations	367	367	367	367	367	367
Municipality of origin FE	✓		✓		✓	✓
Municipality of destination FE						✓
P-val. F stat. Municip. of origin	0.003		0.004		0.004	0.013
P-val. F stat. Municip. of destin						0.028

Notes: Each observation corresponds to a slum-destination pair. Data from archives were harmonized with data in Morales and Rojas (1986) and Molina (1986). Schooling by municipality corresponds to the average rate of schooling of adult population measured by municipality of origin (Census 1982).

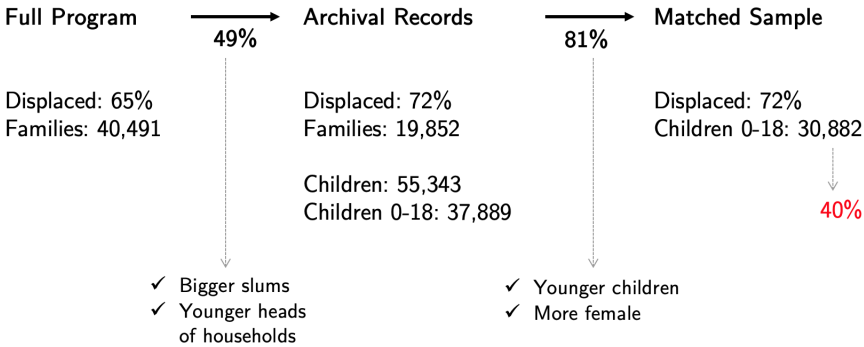
Distribution of Labor Income across samples

▷ Back



Data collection: Final sample

▷ Back



Summary Statistics for Families

▷ Back

Variables	Full Sample			Families with Children		
	Displaced mean	Non-displaced mean	Difference (within municip.)	Displaced mean	Non-displaced mean	Difference (within municip.)
Demographics at baseline						
Head of Household age	35.59	37.30	-0.79	33.95	35.61	-0.78*
			(0.64)			(0.44)
Wife age	34.06	35.77	-0.61	32.30	34.05	-0.73*
			(0.67)			(0.42)
Husband age	35.39	37.01	-0.89	34.25	35.77	-0.75
			(0.66)			(0.49)
Female HH	0.35	0.35	0.00	0.31	0.32	-0.01
			(0.02)			(0.02)
Married HH	0.74	0.78	-0.05**	0.78	0.83	-0.06***
			(0.01)			(0.01)
Widowed HH	0.02	0.02	0.00	0.01	0.01	0.00
			(0.00)			(0.00)
Mapuche HH	0.05	0.04	0.02**	0.05	0.05	0.02***
			(0.01)			(0.01)
# Children	2.25	2.30	-0.07	2.67	2.72	-0.04
			(0.06)			(0.08)
No children	0.11	0.11	0.01			
			(0.01)			
Age youngest child	6.14	7.07	-0.45	5.30	6.06	-0.30
			(0.32)			(0.23)
Age oldest child	10.96	12.22	-0.87**	10.16	11.32	-0.73**
			(0.39)			(0.34)
Age of woman at first child	21.7	22.32	-0.07	21.7	22.32	-0.07
			(0.24)			(0.24)
Female's schooling (corrected)	6.10	6.20	-0.34	6.18	6.26	-0.30
			(0.25)			(0.25)
Male's schooling (corrected)	6.71	6.51	-0.07	6.75	6.65	-0.07
			(0.29)			(0.24)
Observations	13,519	5,468	18,987	10,942	4420	15,362

Assignment Location Attributes and *Displaced* Families characteristics at treatment

▷ Back

Location Atributtes	Adults' Years of Schooling	Unempl. rate	# schools/ 1000 stud.	# Pub. schools/ 1000 stud.	# Priv. schools/ 1000 stud.	# Primary Care Cent./1000HH	# Hospitals/ 1000HH	Distance to Subway	Distance from Origin
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
HH's age	0.002	-0.001	-0.002	-0.002	-0.001	-0.004*	-0.003	-0.001	-0.002
	(0.001)	(0.002)	(0.003)	(0.002)	(0.004)	(0.002)	(0.002)	(0.001)	(0.001)
Female HH	-0.005	0.015	0.029	0.025	0.034	0.036	0.021	0.007	0.008
	(0.029)	(0.024)	(0.034)	(0.029)	(0.044)	(0.024)	(0.018)	(0.013)	(0.014)
# children	-0.055**	0.030	-0.006	0.006	-0.050***	0.025	0.011	-0.002	0.016
	(0.022)	(0.021)	(0.009)	(0.008)	(0.017)	(0.027)	(0.010)	(0.011)	(0.014)
Married HH	-0.002	0.009	-0.013	-0.010	-0.022	0.013	-0.014	0.006	-0.018
	(0.024)	(0.022)	(0.022)	(0.021)	(0.022)	(0.018)	(0.024)	(0.014)	(0.020)
Marst Unknown	0.087	-0.060	-0.003	-0.018	0.058*	-0.035	-0.042	0.025	-0.031
	(0.055)	(0.042)	(0.018)	(0.016)	(0.032)	(0.035)	(0.036)	(0.032)	(0.043)
Mapuche HH	0.015	-0.007	-0.053	-0.043	-0.071	-0.028*	-0.022	-0.007	-0.002
	(0.020)	(0.018)	(0.056)	(0.048)	(0.067)	(0.016)	(0.033)	(0.022)	(0.022)
Mother's Education	-0.005	0.004	0.001	0.001	0.001	0.003	0.001	0.001	0.004**
	(0.004)	(0.003)	(0.003)	(0.002)	(0.004)	(0.003)	(0.002)	(0.001)	(0.002)
R^2	0.556	0.613	0.506	0.609	0.261	0.665	0.613	0.872	0.745
Observations	10,830	10,830	10,830	10,830	10,830	10,830	10,830	10,830	10,830
Test of joint significance of baseline controls + mother's schooling									
F	1.947	0.854	0.520	0.778	3.392	1.611	2.027	1.323	5.746
$p > F$	0.102	0.537	0.789	0.593	0.010	0.175	0.090	0.274	0.000
Municipality of origin FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year of Intervention FE	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes: Clustered standard errors at municipality level. 10%*, 5%**, 1%***. Attributes in columns 1, 2 and 3 are measured at the census district level in 1982, when census data is available, while schools, hospitals and subway measures correspond to data from 1985.

Determinants of Attrition from Archives

Back

Variable	Full Sample			Displaced			Non-displaced			Diff-Diff
	In Arch.	Not in Arch.	Diff.	In Arch.	Not in Arch.	Diff.	In Arch.	Not in Arch.	Diff.	(Displ*Found)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Displaced	0.57	0.42	0.14**							
			(0.06)							
# Families	257.11	168.74	77.91***	243.12	133.60	99.17***	269.10	194.54	85.02	47.43
			(25.91)			(29.33)			(63.75)	(87.56)
Land use (hectares)	4.2	3.82	0.59	3.43	3.34	0.42	5.50	4.11	1.44	-1.03
			(0.46)			(0.64)			(1.06)	(1.16)
A. Location characteristics at origin										
Schooling HH	7.57	7.37	0.08	7.85	7.90	-0.12	7.25	7.00	0.00	-0.36
			(0.31)			(0.43)			(0.37)	(0.36)
Rural	0.03	0.02	0.01	0.04	0.02	0.02	0.01	0.02	-0.01	0.02
			(0.02)			(0.02)			(0.01)	(0.02)
#Schools per municipality	0.64	0.71	-0.02	0.68	0.75	-0.04	0.57	0.68	-0.04	0.01
			(0.05)			(0.05)			(0.06)	(0.05)
#Health Care Centers	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.00	0.00
			(0.00)			(0.00)			(0.00)	(0.00)
Distance to subway	4.82	6.10	-0.42	4.88	6.08	-0.56	4.78	6.11	-0.62	-0.29
			(0.49)			(0.66)			(0.63)	(0.83)
Distance to downtown	9.75	10.77	-0.30	9.48	10.71	-0.59	10.25	10.78	-0.13	-0.72
			(0.58)			(0.69)			(0.67)	(0.74)
Observations	99	222	321	65	108	173	34	114	148	321
Slums			251			124			148	251
Projects			195			48			148	195

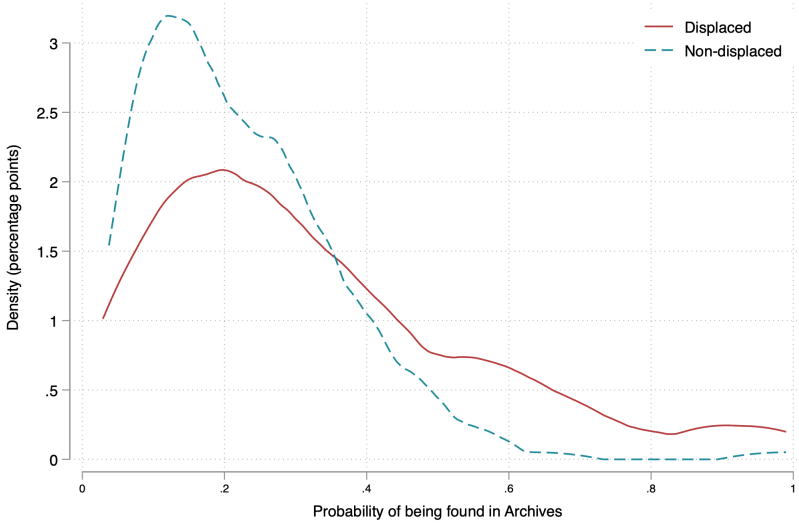
Determinants of attrition from Archives

Back

Variable	Full Sample			Displaced			Non-displaced			Diff-Diff
	In Arch.	Not in Arch.	Diff.	In Arch.	Not in Arch.	Diff.	In Arch.	Not in Arch.	Diff.	(Displ*Found)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
B.Location characteristics at destination										
Schooling HH	6.82	6.83	-0.02	6.54	6.59	-0.08	7.25	7.00	0.00	-0.20
			(0.15)			(0.20)			(0.37)	(0.41)
Rural	0.03	0.03	0.01	0.04	0.03	0.03	0.01	0.02	-0.01	0.03
			(0.02)			(0.03)			(0.01)	(0.03)
#Schools per municipality	0.54	0.66	-0.08*	0.51	0.63	-0.12*	0.57	0.68	-0.04	-0.07
			(0.04)			(0.06)			(0.06)	(0.06)
#Health Care Centers	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.00	0.00
			(0.00)			(0.00)			(0.00)	(0.00)
Distance to subway	5.37	6.75	-1.11***	5.91	7.62	-1.58**	4.78	6.11	-0.62	-0.36
			(0.37)			(0.51)			(0.63)	(0.85)
Distance to downtown	11.29	12.08	-0.65	12.25	13.84	-1.22	10.25	10.78	-0.13	-0.43
			(0.62)			(0.79)			(0.67)	(1.02)
C. Project characteristics										
#Slums	3.86	3.66	-0.01	6.13	7.38	-1.65**	1	1		-1.98
			(0.37)			(0.65)				(0.72)
Fragmentation (HHI)	6636.41	7079.23	-249.12	3992.28	2988.21	1254.44**	10000	10000		1469
			(423.98)			(420.27)				(467.15)
#Families per project	549.69	442.45	-77.78	778	789.35	-56.37	269.10	194.54	85.02	-105.18
			(51.30)			(0.64)			(63.75)	(124.33)
Observations	99	222	321	65	108	173	34	114	148	321
Slums			251			124			148	251
Projects			195			48			148	195

Probability of finding a slum in archival data

Back



Results robust to controlling for neighboring non-displaced slums

Back

Outcome	Self-reported labor earnings			Taxable wages		
	Baseline			Baseline		
	(1)	(2)	(3)	(4)	(5)	(6)
Displaced	-21.207***	-21.362***	-21.857***	-31.967**	-34.360***	-29.458*
	(7.133)	(5.879)	(8.213)	(13.661)	(12.902)	(17.250)
Non-displaced $< 0.5km$		-3.372			-52.077*	
		(14.373)			(29.462)	
Non-displaced $< 1km$			-1.617			6.248
			(9.996)			(23.381)
R^2	0.134	0.134	0.134	0.057	0.057	0.057
Observations	19,953	19,953	19,953	19,953	19,953	19,953

Notes: Propensity score regressions for children aged 0 to 18 at baseline that are matched to the RSH data and that report non-missing schooling. Bootstrapped standard errors with 200 replications in parenthesis. 10%*, 5%**, 1%***. This table splits the non-displaced group at baseline into two: Non-displaced without a displaced slum nearby (omitted category, and non-displaced with a displaced slum around 1 km or less. All regressions control for year of intervention fixed effects. Baseline controls include the following: female, mother head of household, married head of household, head of household's age, number of children, firstborn dummy, father Mapuche, and year of birth fixed effects.

Lee bounds for displacement effect on earnings

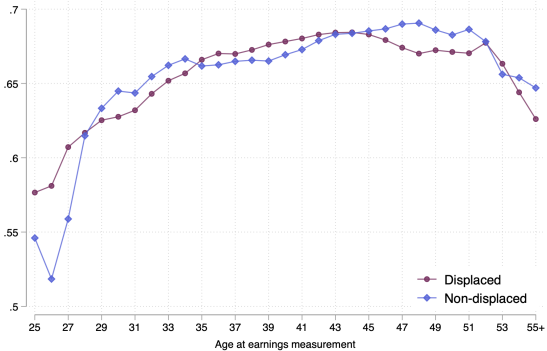
Back

Model	OLS (1)	OLS (2)	Inv-pscore (3)	P-score (4)	P-score (5)
Panel A.	Outcome: Self-reported earnings (CLP$1,000/month)				
Displacement effect	-17.635	-17.743	-15.696	-15.013	-14.038
	(3.573)***	(3.424)***	(3.600)***	(3.414)***	(5.384)**
Upper bound	-5.069	-6.566	-9.138	-4.030	-2.427
	(4.081)	(3.779)*	(3.873)**	(3.662)	(5.669)
Lower bound	-49.680	-47.934	-49.742	-44.892	-47.178
	(2.901)***	(2.847)***	(3.431)***	(3.309)***	(5.858)***
Imbens and Manski (2004) CI	[-56.045, -11.169]				
Selected Individuals	23,814	23,814	23,814	23,814	23,814
Baseline controls		✓	✓	✓	✓

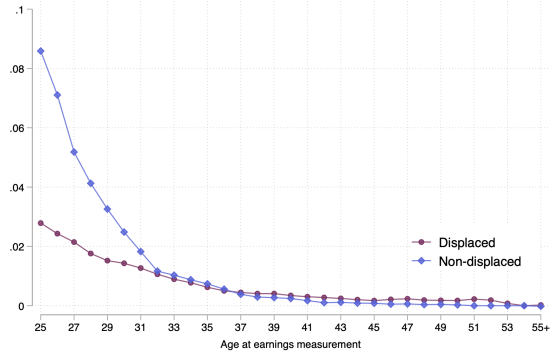
Displacement effects across the age cycle

Back

$$y_i = \sum_{\tau=24}^{55} \beta_\tau \, Displaced * 1[Age = \tau] + \sum_{\tau=24}^{55} \delta_\tau 1[Age = \tau] + \psi_o + X'_{it}\gamma + u_i$$



(a) 1[employed]



(b) 1[in school]

Causes of death and pre-existing conditions

▷ Back

	Mothers		Fathers	
	Non-displaced mean	Difference (within munic.)	Non-displaced mean	Difference (within munic.)
Age of death	69.33	-0.93***	66.90	-1.03**
		(0.37)		(0.37)
Death after 65	0.66	-0.04***	0.62	-0.05**
		(0.01)		(0.02)
Heart disease and stroke	0.21	-0.01	0.20	-0.03**
		(0.01)		(0.01)
Violent death	0.00	0.00	0.01	0.005
		(0.00)		(0.004)
Pre-existing conditions				
Cancer	0.22	-0.02	0.19	-0.01
		(0.02)		(0.01)
Diabetes	0.04	0.00	0.03	-0.01**
		(0.01)		(0.00)
High Blood Pressure	0.08	0.00	0.06	0.00
		(0.01)		(0.01)
Cirrhosis	0.02	0.01	0.04	0.00
		(0.00)		(0.01)
Smoking	0.01	0.00	0.02	0.00
		(0.00)		(0.00)
Alcoholism	0.01	0.00	0.02	0.01**
		(0.00)		(0.00)
Observations (Individuals)		5,090		7,298

Notes: Within difference correspond to the coefficient of *Displaced* in equation (1) with municipality of origin, year of intervention and cohort fixed effects. Clustered standard errors by municipality of origin in parenthesis. 10%*, 5%**, 1%***.

Oster (2019) bounds: Displacement effect under different assumptions on selection on unobservables

Back

Outcome	R^2 max	$\hat{\delta}$	δ	$\hat{\beta}^*$
Labor Earnings	1.3	-9.101	1	-15.706
	1.3		2	-17.403
	1.3		3	-19.131
	3	-1.371	1	-25.723
	3		2	-38.932
	3		3	-54.061
Taxable wages	1.3	-17.263	1	-60.454
	1.3		2	-64.373
	1.3		3	-68.385
	3	-2.709	1	-83.809
	3		2	-115.608
	3		3	-153.899
Years of Schooling	1.3	-16.983	1	-0.868
	1.3		2	-0.924
	1.3		3	-0.981
	3	-2.633	1	-1.202
	3		2	-1.666
	3		3	-2.242

Slums' characteristics do not predict children's earnings

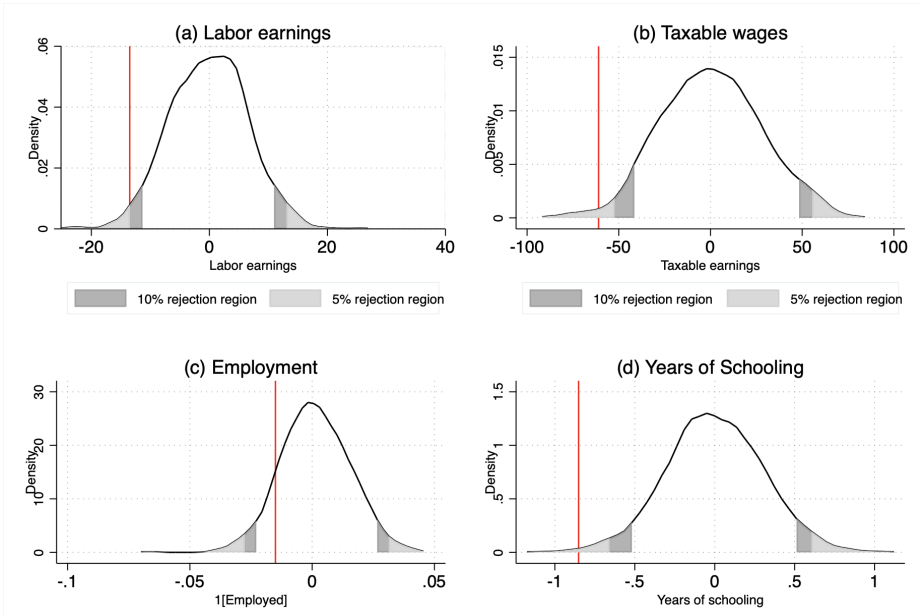
Back

Outcome	Labor Income (1)	Labor Income (2)	Labor Income (3)	Labor Income (4)
Size (# families)	0.039		0.025	
	(0.047)		(0.050)	
Area (hectares)	-2.906		-1.240	
	(3.632)		(3.759)	
Military Name	-3.435	0.330	1.049	6.112
	(7.320)	(7.174)	(7.864)	(8.444)
Distance to river	-6.109	2.639	-3.618	8.611
	(3.715)	(6.204)	(4.046)	(7.931)
Density (fam/hect)		0.047		0.007
		(0.075)		(0.093)
Municipality of Origin FE	✓	✓	✓	✓
Mother's schooling			✓	✓
R^2	0.116	0.116	0.112	0.111
p-value joint significance	0.2864	0.917	0.719	0.506
Observations	164,610	156,292	146,139	138,936

Notes: This table reports regressions of labor earnings on a set of slums' characteristics in the sample of non-displaced children. Clustered standard errors at municipality of origin level. 10%*, 5%**, 1%***. All regressions include year of intervention fixed effects. Baseline controls include: female, mother head of household, single head of household, number of siblings, first-born dummy, and cohort fixed effects. P-value of joint significance corresponds to the joint hypothesis that all slum characteristics do no predict the outcome.

Results robust to permuting treated clusters

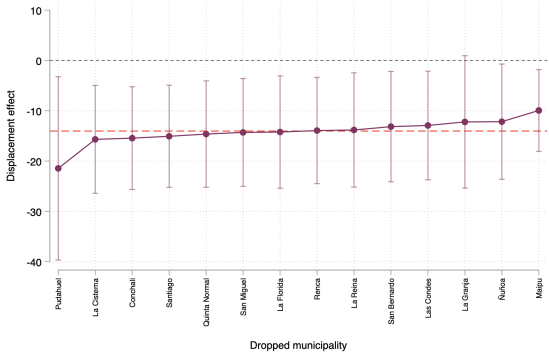
▷ Back



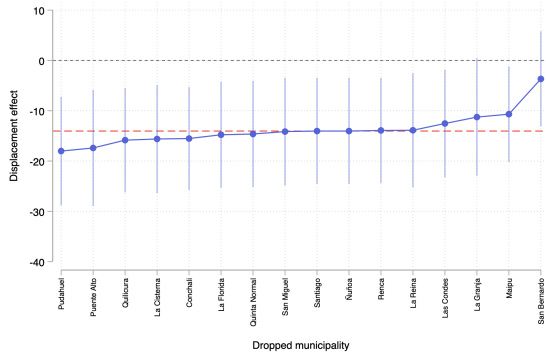
Results robust to dropping each municipality once from sample

▷ Back

Figure: Displaced coefficient on Labor Income



(a) Municipalities of origin



(b) Municipalities of destination

Results robust to dropping municipalities that only expelled/only received families

▷ Back

	(1) Baseline	(2) W/o muni. expelled	(3) W/o muni. received	(4) W/o both
Outcome:		Labor Income CLP$1,000		
Displaced	-15.314**	-14.779**	-17.528**	-17.698**
	(6.098)	(6.597)	(8.058)	(8.248)
R^2	0.127	0.123	0.132	0.130
N	620,329	409,228	399,293	343,781
Outcome:		1[Employed]		
Displaced	0.002	0.006	-0.003	-0.002
	(0.014)	(0.015)	(0.017)	(0.017)
R^2	0.108	0.109	0.108	0.111
N	620,329	409,228	399,293	343,781
Outcome:		Years of Schooling		
Displaced	-0.643***	-0.641***	-0.820***	-0.833***
	(0.137)	(0.149)	(0.139)	(0.142)
R^2	0.114	0.118	0.128	0.129
N	30,882	20,464	20,042	17,252
Municipality of origin FE	✓	✓	✓	✓
Baseline Controls	✓	✓	✓	✓

Notes: Regressions for children aged 0 to 18 at baseline and matched to RSH. Clustered standard errors at the municipality level. 10%*, 5%**, 1%***. All regressions include year of intervention fixed effects. Baseline controls include: female, mother head of household, single head of household, number of siblings, first-born dummy, and cohort fixed effects.

Results robust to attrition from Archives

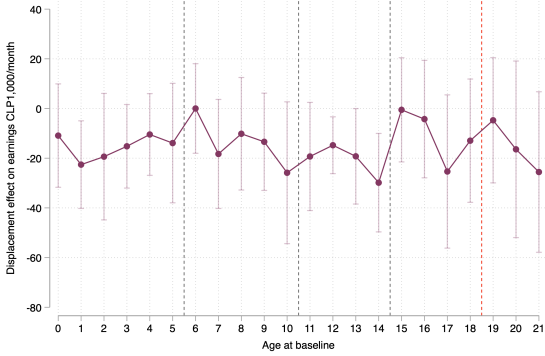
▷ Back

	(1) Baseline	(2) Polynomial	(3) Polynomial	(4) Polynomial	(5) Re-weight RSH match. rate
Outcome:			Labor Income		
Displaced	-15.314**	-14.177**	-13.610**	-15.458**	-15.195**
	(6.098)	(6.782)	(6.515)	(5.968)	(6.089)
Non-displaced mean	155.24	155.42	155.42	155.42	165.2
R^2	0.127	0.127	0.127	0.127	0.128
Outcome:			1[Employed]		
Displaced	0.003	0.004	0.005	0.004	0.004
	(0.009)	(0.017)	(0.016)	(0.017)	(0.014)
Non-displaced mean	0.670	0.670	0.670	0.670	0.695
R^2	0.108	0.108	0.108	0.108	0.114
Outcome:			Years of Schooling		
Displaced	-0.643***	-0.633***	-0.614***	-0.639***	-0.640***
	(0.137)	(0.155)	(0.144)	(0.135)	(0.138)
Non-displaced mean	11.37	11.37	11.37	11.37	11.37
R^2	0.114	0.114	0.115	0.115	0.114
P-score polynomial	0	1	2	3	0
Municipality of origin FE	✓	✓	✓	✓	✓
Year of displacement FE	✓	✓	✓	✓	✓

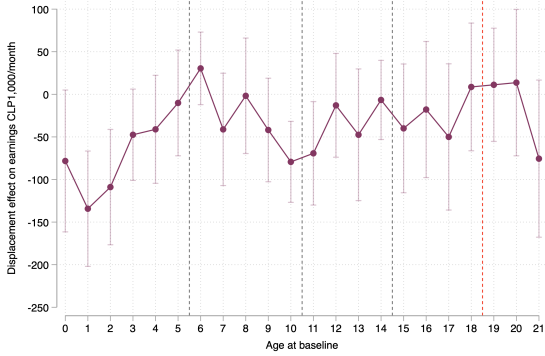
Notes: Regressions for children aged 0 to 18 at baseline and matched to RSH. Clustered standard errors by municipality of origin. 10%*, 5%**, 1%***. All regressions include year of intervention fixed effects. Baseline controls include: female, mother head of household, single head of household, number of siblings, first-born dummy, and cohort fixed effects. Columns 2 to 4 include as a control an estimate of the probability of finding a slum in the archival data. Column 5 re-weights the data by the inverse the probability of being found in RSH data as a function of demographics.

Figure: Displacement effect by age at intervention and structural break

(a) All labor earnings (2007-2019)



(b) Taxable earnings (2016-2019)



Notes: Regressions for children who are 0 to 21 years old the time of intervention and are matched with the RSH or the GRIS data. Standard errors clustered by municipality of origin. Controls include the following: female, mother head of household, firstborn dummy, single head of household, number of siblings, mapuche last-name, cohort fixed effects, and time fixed effects. The figure plots the displacement coefficient and its 95% confidence interval resulting from estimating equation (1) stratified by age at intervention. Dotted black vertical lines indicate that

Summary statistics for children aged 0 to 18 at baseline

▷ Back

	Full sample (1)	In RSH (2007-2019) (2)	In GRIS (2016-2019) (3)	P(in RSH) (4)	P(in GRIS) (5)
Displaced	0.796	0.807	0.790	0.039***	-0.019**
	[0.403]	[0.395]	[0.408]	(0.012)	(0.009)
Female	0.506	0.545	0.447	0.126***	-0.156***
	[0.500]	[0.498]	[0.497]	(0.006)	(0.007)
Age	8.188	8.127	7.868	-0.003****	-0.008***
	[4.860]	[4.877]	[4.790]	(0.001)	(0.001)
No. children	3.873	3.919	3.788	0.011***	-0.014***
	[1.817]	[1.831]	[1.751]	(0.002)	(0.002)
Firstborn	0.364	0.355	0.372	-0.013**	0.014*
	[0.481]	[0.479]	[0.483]	(0.006)	(0.008)
Oldest sibling	11.698	11.725	11.354	0.000	0.001
	[5.792]	[5.814]	[5.707]	(0.001)	(0.001)
Youngest sibling	5.191	5.150	5.025	0.002*	-0.001
	[4.216]	[4.201]	[4.121]	(0.001)	(0.002)
HH age	34.804	34.810	34.577	0.000	0.001
	[7.152]	[7.168]	[7.042]	(0.001)	(0.001)
Female HH	0.318	0.315	0.298	-0.006	-0.028***
	[0.466]	[0.464]	[0.458]	(0.009)	(0.009)
Married HH	0.794	0.795	0.807	-0.013**	0.023**
	[0.405]	[0.403]	[0.395]	(0.006)	(0.011)
Father Mapuche	0.050	0.053	0.053	0.036***	0.027*
	[0.219]	[0.224]	[0.224]	(0.010)	(0.014)
Treated before 1982	0.534	0.525	0.536	-0.021***	-0.001
	[0.499]	[0.499]	[0.499]	(0.008)	(0.007)
Died before 2007	0.006	-	-	-0.822***	-0.636***
	[0.076]	-	-	(0.009)	(0.016)
Individuals	24,277	19,953	16,030	24,277	24,277
Matching rate		82.2%	66.0%	82.2%	66.0%

Notes: The table shows summary statistics for children aged 0 to 18 at baseline. Column (1) reports summary statistics for the full sample, column (2) for children matched at least once to the RSH, and column (3) for children matched at least once to the GRIS. Columns (4) and (5) estimate a linear regression of the probability of being found in the RSH or the GRIS (correspondingly), on a full set of demographics at baseline, treatment (displacement), probability of dying before 2007, and municipality of origin fixed effects. Standard errors are bootstrapped with 200 replications in parentheses. 10%*, 5%**, 1%***. Standard deviations are in brackets. Adjusted R^2 for regressions in (4) and (5) are 0.065 and 0.054 correspondingly. (a) Mother's years of schooling is observed in the sample of mothers found in the RSH and conditional on a mother being alive after year 2007.

Parents labor market outcomes

▷ Back

	(1)	(2)	(3)	(4)
Outcome:	1[Employed]	Total Income	Labor Income	Retirement Income
Panel A.		All head of households in RSH		
Displaced	0.059***	-12.603***	1.914	-24.621***
	(0.014)	(2.530)	(3.657)	(4.065)
Non-displaced mean	0.385	100.05	77.35	72.43
R^2	0.230	0.308	0.204	0.151
N	275,811	275,811	275,811	275,811
Individuals	14,947	14,947	14,947	14,947
Panel B.		Parents younger than 65 yo		
Displaced	0.036***	-14.281***	-8.796*	-17.151***
	(0.013)	(3.050)	(4.841)	(3.527)
Non-displaced mean	0.602	105.64	128.23	33.19
R^2	0.127	0.304	0.158	0.080
N	120,648	120,648	120,648	120,648
Individuals	9,905	9,905	9,905	9,905
Panel C.		Parents older than 65 yo		
Displaced	0.056***	-12.904***	1.636	-24.926***
	(0.016)	(2.603)	(3.473)	(4.207)
Non-displaced mean	0.286	97.52	53.78	90.61
R^2	0.156	0.320	0.148	0.066
N	155,163	155,163	155,163	155,163
Individuals	12,252	12,252	12,252	12,252
Municipality of origin FE	✓	✓	✓	✓
Baseline Controls	✓	✓	✓	✓

Notes: Regressions for head of households matched RSH data. Clustered standard errors by municipality level. 10%*, 5%**, 1%***. Controls include: female head of household, married head of household, marital status unknown, age at intervention, and cohort fixed effects. All regressions include year of intervention fixed effects.

Selection in Sample of Parents (Head of Households) ▷ Back

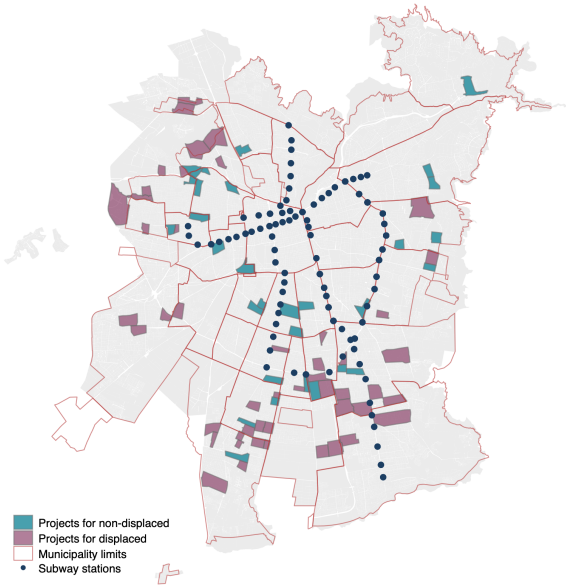
	Full Sample	In RSH (2007-1019)	P(found in RSH
Households	19,852	14,993	
Matching rate		75.5%	
Displaced	0.724	0.711	0.007
	[0.448]	[0.442]	(0.008)
Died before 2007	0.14	0.00	-0.882***
	[0.350]	[0.00]	(0.005)
Demographics at displacement			
Female	0.34	0.37	0.071***
	[0.47]	[0.48]	(0.006)
Age	35.52	35.59	0.000
	[9.79]	[7.83]	(0.000)
# Children	2.25	2.30	0.009***
	[1.79]	[1.63]	(0.001)
Married HH	0.74	0.76	0.080***
	[0.43]	[0.43]	(0.010)
Marst unknown	0.10	0.10	0.042***
	[0.29]	[0.30]	(0.007)

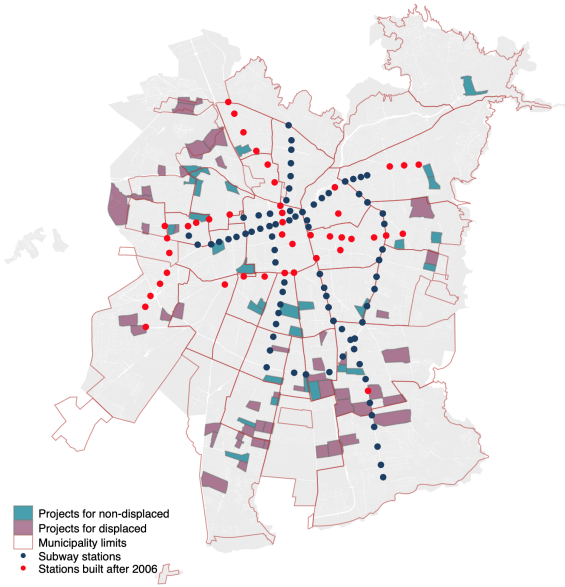
Displacement Effect for children born to treated families

▷ Back

- Children born 1 to 5 years after the intervention
  - Have lower informal earnings
  - Have lower educational attainment
  - Have lower school attendance during high-school

Subway stations in Santiago 2007-2019 ▷ Back





Attrition Rates by 2016

▷ Back

Outcome	Greater Santiago (1)	Same Municipality (2)	Same Neighborhood (3)	Neighboring Municipality (4)	Municipality of Origin (5)
Panel A. Children aged 0 to 18 at baseline					
Displaced (N=24,242)	0.888	0.584	0.425	0.089	0.026
Non-displaced (N=10,245)	0.888	0.581	0.409	0.091	0.581
Within Difference	-0.005	-0.016	0.003	-0.015	-0.586***
	(0.010)	(0.028)	(0.036)	(0.015)	(0.026)
Panel B. Head of Households					
Displaced (N=9,384)	0.889	0.673	0.606	0.054	0.027
Non-displaced (N=4,067)	0.884	0.705	0.574	0.052	0.705
Within Difference	0.005	-0.021	0.041	-0.010	-0.703***
	(0.008)	(0.029)	(0.048)	(0.013)	(0.026)

Notes: Individuals with a valid address in 2016. The outcomes correspond to the probability that place of residence is located in each of the geographic units listed in the first row of this table. Within difference corresponds to a regression of each outcome on a displacement dummy, conditional on year of intervention fixed effects and municipality of origin fixed effects. Clustered standard errors by municipality of origin in parenthesis. 10%*, 5%**, 1%***.

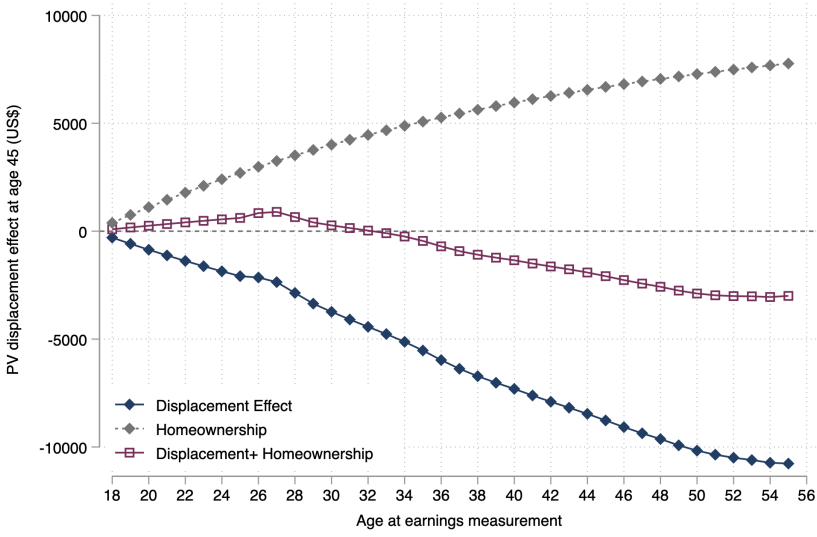
Neighborhood Characteristics today

▷ Back

Outcome	Labor Income (1)	Employment (2)	Quintile (3)	Formal Employment (4)	Schooling (5)
Panel A. Children Sample, N=207,099, Individuals=27,727					
Displaced	-9.129	0.012***	-0.837*	-0.011	-0.255*
	(5.808)	(0.004)	(0.466)	(0.007)	(0.132)
R^2	0.102	0.085	0.101	0.076	0.076
Non-displaced mean	211.76	0.64	55.98	0.37	9.62
Panel B. Projects Sample, N=596, Neighborhoods=110					
Displaced	-10.662	-0.077	-1.703	-0.103*	-0.411
	(28.268)	(0.056)	(1.767)	(0.052)	(0.276)
R^2	0.363	0.494	0.509	0.402	0.450
Non-displaced mean	231.08	0.69	54.59	0.41	10.92
Panel C. Greater Santiago Sample, N=26,282, Neighborhoods=2,104					
Displaced	6.484	-0.006	-3.230***	-0.015	0.171
	(18.247)	(0.024)	(0.686)	(0.024)	(0.160)
Non-displaced	-0.137	0.073***	-3.189***	0.054**	0.379**
	(9.926)	(0.021)	(0.907)	(0.021)	(0.148)
R^2	0.253	0.071	0.170	0.038	0.256
Other neighborhoods mean	222.56	0.63	57.22	0.37	10.36

Present value of displacement effect at age 45

▷ Back



Between and within municipality displacement Effects

▷ Back

Outcome	Labor Income	1[Employed]	Years of Schooling
	(1)	(2)	(3)
Displaced within same munic.	-15.338*	-0.002	-0.559***
	(7.642)	(0.017)	(0.125)
Displaced to different munic.	-15.301**	0.004	-0.688***
	(6.078)	(0.015)	(0.160)
R^2	0.127	0.108	0.114
Observations	620,329	620,329	30,882
Municipality of origin FE	✓	✓	✓
Baseline Controls	✓	✓	✓

Notes: Regressions for children of ages 0 to 18 at baseline and matched to RSH data. Clustered standard errors at the municipality level in parenthesis. 10%*, 5%**, 1%***. All regressions control for year of intervention fixed effects. Baseline controls include: female, mother head of household, married head of household, head of household's marital status unknown, age of mother at birth, number of siblings, birth order, and year of birth fixed effects.

Displacement effect in sample from 1979 to 1982

▷ Back

Outcome	Labor Income	1[Employed]	Years of Schooling
	(1)	(2)	(3)
Displaced	-16.265**	0.006	-0.594***
	(7.784)	(0.017)	(0.125)
R^2	0.129	0.112	0.118
Observations	417,789	417,789	20,839
Municipality of origin FE	✓	✓	✓
Baseline Controls	✓	✓	✓

Notes: Regressions for children of ages 0 to 18 at baseline and matched to RSH data. Clustered standard errors at the municipality level in parenthesis. 10%*, 5%**, 1%***. All regressions control for year of intervention fixed effects. Baseline controls include: female, mother head of household, married head of household, head of household's marital status unknown, age of mother at birth, number of siblings, birth order, and year of birth fixed effects.

Discussion: Total loss for children ▷ Back

- Use age estimates to compute the present value of total loss of earnings neighb. attrition in 2016
- By the age of 45 total income loss $>$ cost of housing unit
  - PV of total loss = US$9,000 (lower bound) PV
  - Aggregate loss = 17 subway stations (US$20 mm/each)
  - Aggregate loss = Maintenance of 360 primary schools per year
- Comparison with other settings elasticities

Comparison to other settings

▷ Back

Study	Setting	% Δ Earnings	% Δ Neighborhood Quality	$\lvert Elasticity \rvert$
	(1)	(2)	(3)	(4)
Chetty et al. (2016) (1)	MTO (children 7 to 13 in Exp. group)	+14%	-34% (Poverty)	0.41
Chyn (2018) (2)	Public Demolition in Chicago	+16%	-22.2% (Poverty)	0.72
Barnhardt et al. (2016) (3)	Housing Lottery Ahmedabad (India)	-14.5%	-37.5% (Urbanicity) – -8.1% (Housing Value)	0.38–1.8
This paper (4)	Program for Urban Marginality (Chile)	-9.9%	-9.5% (Schooling)	1.04

Notes: (1) Tables 2 and 3; (2) Tables 2 and 3; (3) Tables 5 and 6; (4) Tables 4 and 5.