Refugees in the Mediterranean: Economic Consequences

Stelios Michalopoulos, Elie Murard, Elias Papaioannou,
Seyhun O. Sakalli, Stelios Karagiannis, Nikos Benos

Motivation & Research Question

- Mass displacement of people is abound throughout history:
    - Jews, ethnic Germans, Hindus and Muslims in the 20th century

- More recently, great number of DP due to civil wars and ethno-religious conflicts: Sudanese, Syrians, and Rohingyans..

- Significant attention has been given to the short-term costs that mass population inflow may cause for the receiving communities.

- Less is known about the long-term effects:

    What are the consequences of mass refugee inflow
    on long-term economic development?

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This paper

- We exploit a natural historical experiment to examine the long-term economic effect of refugee inflows:

  - After the Greco-Turkish war of 1919–1922, 1.2 million Greek Orthodox were forcibly resettled from Turkey to Greece, increasing the host population by more than 20 percent within a few months.

- We build a novel geocoded dataset of refugee settlements

  - Digitalizing historical population censuses in 1920-1928

  - Combining them with modern census microdata in 1971-1991

  - We follow about 11,000 villages over time

- We examine educational and occupational outcomes in refugee and native villages throughout the 20th century

- We focus on comparative economic development in rural areas

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Historical context

- Greece was a poor agrarian country with low state capacity in the 1920s

- The League of Nations intervened to provide immediate relief and establish refugees in productive agricultural work :

    - Arable land parcels and farm inputs were given to refugees

- Given that their resettlement was permanent, refugees were granted the Greek citizenship

- The refugees shared the same religion and often spoke the same language as the host native population.

Summing up: Important investments in the resettlement of refugees that were (quite) culturally similar to natives

Historical narrative

According to Greek historians, the resettlement revealed to be a great economic success, or a "blessing in disguise" (Pentzopoulos, 1962)

Sir John Campbell, the first Vice-Chairman of the League of Nations' Refugee Commission , when visiting Northern Greece in 1930 :

"*The aspect of the country has entirely changed; Everywhere one sees the cheerful red roofs of the colonization settlements, full of bustling activity, and showing obvious signs of comfort, and in many cases prosperity. The results are due, in the first place, to the courage, energy, the capacity for work, which characterize the mass of refugees.*"

League of Nations, Offcial Journal, 11th Year, NO.6 (June 1930), Annex 1211, "Twenty-Fourth Quaterly Report of the Commission", No. C 559 M.210. 1929 II[F.727], p 712.

Empirical approach

- We use a Diff-in-Diff approach, examining variations in educational and occupational outcomes

    - Across birth cohorts (born from 1880 to 1971)

    - Between refugee and native villages

    - Using as control the cohorts too old to be affected by the 1923 forced displacement.

- We compare rural villages in close proximity, within the same province (local labor market)

Preview of the results

We find that, relative to native villages, refugee villages in rural areas:

- Invested more in education during the second half of the century

- Experienced greater structural transformation, leaving farming to specialize in manufacturing

- These changes are driven by higher intergenerational mobility

We find empirical support for the "uprootedness" hypothesis. The traumatic experience of being forcibly uprooted:

- Increases the subjective value of investing in portable assets (as opposed to physical), and in particular in education.

- Reduces the utility cost of leaving farming, as refugees are less attached to the land and to their new location (relative to locals).

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Related Literature

- Consequences of forced migration on receiving countries, recently reviewed by Becker and Ferrara (2019) and Verme and Schuettler (2019):

    - Short-term costs/negative effects: disease outbreaks (Baez, 2011; Montalvo and Reynal-Querol, 2007), surge in food prices (Alix-Garcia and Saah, 2010), increased wage competition (Calderón-Mejía and Ibánez, 2015; Morales, 2018; Ruiz and Vargas-Silva, 2015)

    - Mid-term positive effects, operating mostly through agglomeration economies: Braun and Kvasnicka (2014) and Peters (2017) in Germany; Schumann (2014) and Sarvimäki (2011) in Finland

    - Long-run positive effects: Bharadwaj and Mirza (2019) through agricultural productivity

- Long-run benefits of European immigration to the U.S. during the Age of Mass Migration (Abramitzky et al. 2014; Sequeira et al. 2019) and of early European settlers in South America in the 19th cent. (Rocha et al. 2017; Droller, 2018)

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# Roadmap

Historical background: Timeline

- After WWI, backed by the Allies, the Greek Army occupied territories in western Turkey that were heavily populated by ethnic Greeks since antiquity ("Megali Idea").

- The Turkish Army successfully counterattacked in August 1922.

- The persecution of Greek Orthodox communities by the advancing Turkish Army, in particular the fire in the Christian neighborhoods of Smyrna in September 13, 1922, triggered a mass exodus of population to Greek islands and mainland.

- The Lausanne Peacy Treaty (July 1923) ended the war and included a "Convention for the Exchange of Populations"

Historical background: The population exchange

The compulsory exchange of population dictated that:

- All Greek Orthodox of Turkey were forced to resettle in Greece (1.2 millions)

- All Muslims of Greece were expelled and resettled in Turkey (400,000)

- Exchanged population were denaturalized and acquired the citizenship of their destination country

Greek Orthodox in Ottoman Turkey in 1914
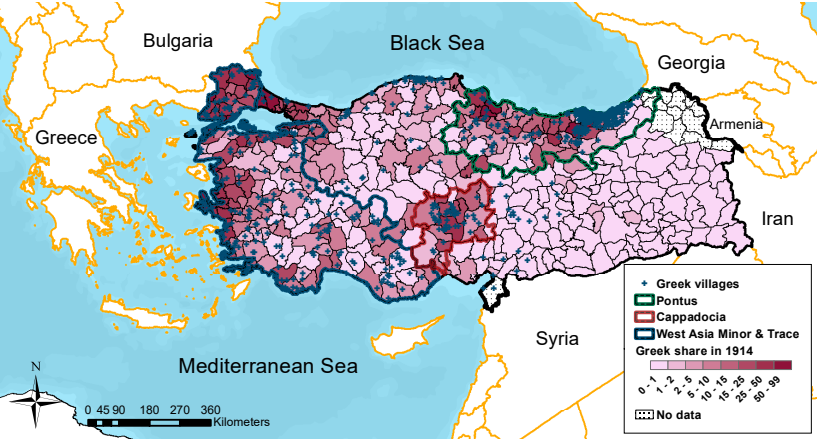
Muslims in Greece in 1920

The Refugee Settlement Commission (RSC)

Due to the limited resources of the Greek State, the League of
Nations intervened and formed the Refugee Settlement
Commission (RSC) in 1923:

- The mandate of the RSC was to establish refugees in
  agricultural work

- Shelters, land suitable for cultivation, and farm inputs were
  provided

- Almost no funds were spent for industry or urban projects

- It operates from the fall of 1923 until 1930.

Rural Settlement policy

- RSC distributed 750,000 hectares of land to refugees, through:

    - Redistribution of the land left behind by the Muslims into smallholdings

    - Expansion of the cultivable area through drainage works in the North

- As a result of this process 2,100 rural refugee settlements were created

    - The goal was often to unite members of the same place of origin to recreate the sense of community, and match the type of agriculture in the place of origin to that of the destination.

- Roughly 190,000 refugee families (about 550,000 individuals) were given land grants.

- Some public works were completed including the construction of roads, health clinics and land reclamation projects.

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Roadmap

Data

Digitized and georeferenced the population census of 1920, and 1928.

- The 1928 census recorded 1,050,000 (post-1922) refugees across settlements.

- We link ALL settlements across population censuses from 1920 to 2011

- We follow about 11,000 settlements over time.

- Obtained 10% micro sample of census data with information on the location of the respondents at the settlement level (-8k) between 1971 and 2011 (25% micro sample for 1991, 2001, and 2011)

Data

1971-1991 censuses:

- No information on place of birth

- No way to identify refugee households, only refugee villages

Data

1928 Census at the province (140) and at the city (42) level:

- Population, literacy, and profession in 1920 and in 1928 for natives and refugees

- Number of Muslims who left between 1920 and 1928

Refugee Land Grants Catalogue:

- Georeferenced Land Grant settlement in Greece

- Number of refugee families by place of origin in Turkey

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The 1928 Census

ΠΙΝΑΞ I. — Πραγματικός καὶ νόμιμος πληθυσμός. — TABLEAU I. — Population de fait et de droit.
δ΄. Κατὰ δήμους, κοινότητας, πόλεις καὶ χωρία. — d. Par municipalités, communes, villes et villages.

Αὔξων ἀριθμός — Numéro d'ordre	Δῆμοι, Κοινότητες Πόλεις καὶ χωρία Municipalités, Communes Villes et villages	Πραγματικὸς πληθυσμός Population de fait						Πραγματικὸς πληθυσμὸς κατανεμόμενος εἰς : Population de fait répartie en :			Νόμιμος πληθυσμὸς κατανεμόμενος εἰς : Population de droit répartie en:	
		Ἐν ὅλῳ — En tout			Πρόσφυγες ἐλθόντες μετὰ τὴν μικρασιατικὴν καταστροφὴν Réfugiés arrivés après le désastre de l'Asie Mineure			Δήμους παρόντας ἐν τῷ δήμῳ ἢ τῇ κοινότητι Membres présents dans leur municipalité ou commune	Δήμους ἄλλων δήμων ἢ κοινοτήτων Membres d'autres municipalités ou communes	Ἀλλοδαπούς Étrangers	Δήμους παρόντας ἐν τῷ δήμῳ ἢ τῇ κοινότητι Membres présents dans leur municipalité ou commune	Δήμους ἀπογραφέντας εἰς ἄλλους δήμους ἢ κοινότητας Membres recensés à d'autres municipalités ou communes
		Σύνολον Total	Ἄρρενες Hommes	Θήλεις Femmes	Σύνολον Total	Ἄρρενες Hommes	Θήλεις Femmes				Νόμιμος πληθυσμὸς ἐν ὅλῳ Population de droit en tout	

I. ΣΤΕΡΕΑ ΕΛΛΑΣ ΚΑΙ ΕΥΒΟΙΑ — GRÈCE CENTRALE ET EUBÉE

Α΄. ΝΟΜΟΣ ΑΙΤΩΛΙΑΣ ΚΑΙ ΑΚΑΡΝΑΝΙΑΣ — DÉPARTEMENT D'AETOLIE ET ACARNANIE

1. ΕΠΑΡΧΙΑ ΒΑΛΤΟΥ — PROVINCE DE VALTOS

	Κοινότητες — Communes:											
1	Ἀλευράδας — Alévrada											
	1 Ἀλευράδα	495	279	216	—	—	—	425	70	—	447	425	22
2	Ἀμπελακίου — Ambélaki											
	1 Ἀμπελάκι	497	255	242	2	—	2	389	108	—	—	—	—
	2 Ἀρμάδα	313	173	140	—	—	—	252	61	—	—	—	—
	Σύνολον — Total	810	428	382	2	—	2	641	169	—	675	641	34
3	Ἀμφιλοχίας — Amphilochia											
	1 Ἀμφιλοχία	3.516	1.981	1.535	58	28	30	3.183	329	4	—	—	—
	2 Μπούκα	322	180	142	1	1	—	322	—	—	—	—	—
	Σύνολον — Total	3.838	2.161	1.677	59	29	30	3.505	329	4	3.979	3.505	474
4	Βαλμάδας — Valmada											
	1 Βαλμάδα	87	50	37	—	—	—	87	—	—	—	—	—
	2 Δρομίστα	123	66	57	—	—	—	123	—	—	—	—	—

Data example: Land Grants Catalogue

| Ὀνοματεπώνυμον	Καταγωγὴ	Ἀριθμὸς δηλώσεως
Ψάλτης Δημήτριος τοῦ Παναγιώτου	Τσιφλίκιοῖ-Δέρκων	171403
Ψάλτης Εὐκλείδης τοῦ Ἐμμανουὴλ	Ἐπιβάται-Σηλυβρίας	153921 Β.
Ψάλτης Ἐμμανουὴλ τοῦ Κυριάκου	Ἀχηρλὴ-Κρήνης	125376
Ψάλτης Ἰωάννης τοῦ Ἀποστόλου	Λιμνίσκη - Μυριοφύτου	123672
Ψάλτης Κυριάκος τοῦ Παναγιώτου	Κερασσοῦς-Κερ]σοῦντος	86031
Ψάλτης Νικόλαος τοῦ Νικολ.	Ἐπιβάται-Σηλυβρίας	154046
Ψάλτης ἢ Πούσης Νικόλαος τοῦ Εὔστρατ.	Τσανακτσῆ-Ἡρακλείας· · Ραιδεστοῦ	115918
Ψάλτης Νικόλαος τοῦ Παν.	Τσιφλίκιοῖ-Βιζύης	43427
Ψάλτης Σταμάτιος τοῦ Γεωργίου	Ἀλώνη - Προικονήσου	8061 Α.
Ψάλτης Χρῆστος τοῦ Σπύρου	Πύργος- Δέρκων	70092
Ψαλτίδης ἢ Ψάλτης Βασίλειος τοῦ Εὔστρ.	Ἐλιγμοὶ-Προύσης	128340-72
Ψαλτίδης Κωνσταντῖνος τοῦ Δημητρίου	Σεβδίκιοῖ-Σμύρνης	116121 Β.
Ψαλτίδου ἢ Ψάλτη Εὐφροσύνη τοῦ Εὔστρ. τὸ γένος Γεωργίου Τσακωνίτου	Ἐλιγμοὶ-Προύσης	128340-73M
Ψαλτικίδης Ἀναστάσιος τοῦ Γεωργίου	Τίζκιοῖ Ἀμασείας	132548
Ψαλτικίδης Γεώργιος (κληρονόμοι)	» »	57954
Ψαλτικίδου Σοφία τοῦ Ἠλία τὸ γένος Κυριάκου Τανακοκούλου	» »	57953

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Origin of Refugees in Anatolia

Τόποι προέλευσης προσφύγων από τη Μικρά Ασία και την Ανατολική Θράκη
Εκτίμηση με βάση το 57% των καταλόγων προσφύγων

Ποσοστό αστικής/αγροτικής αποκατάστασης προσφύγων
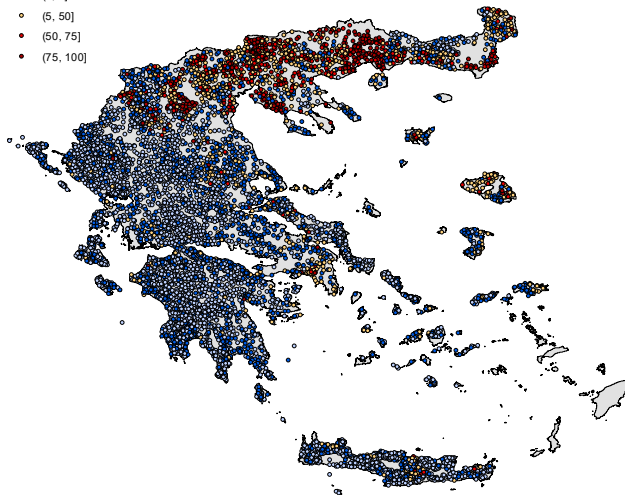
0   25   50   75   100
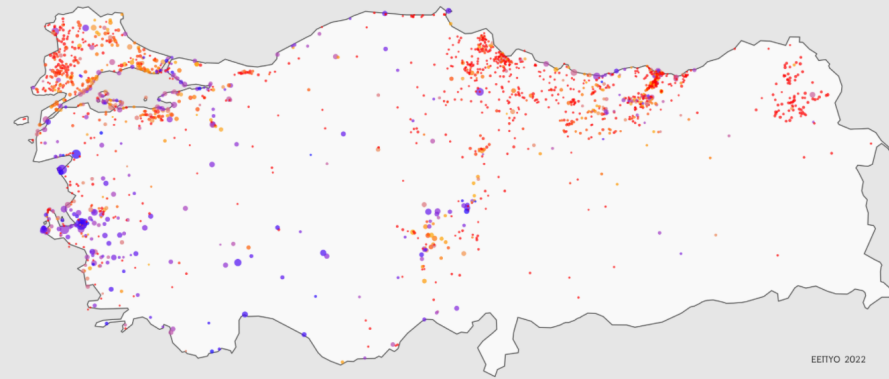
ΕΕΠΥΟ 2022

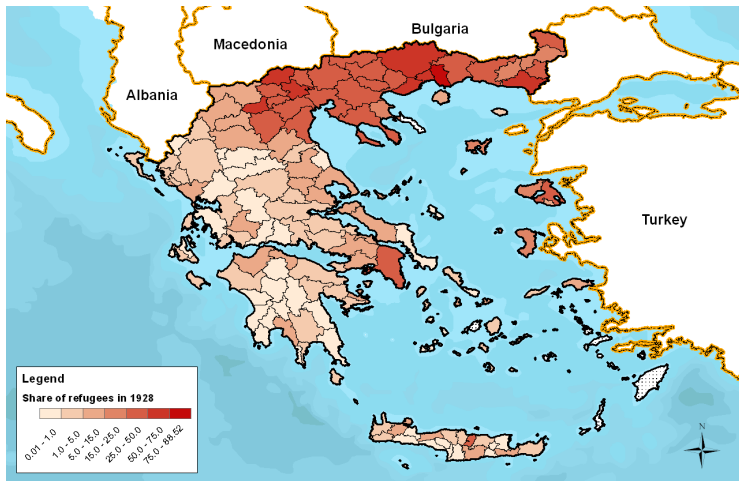# Figure: Greek refugees in 1928 by settlements

Share of refugees in 1928
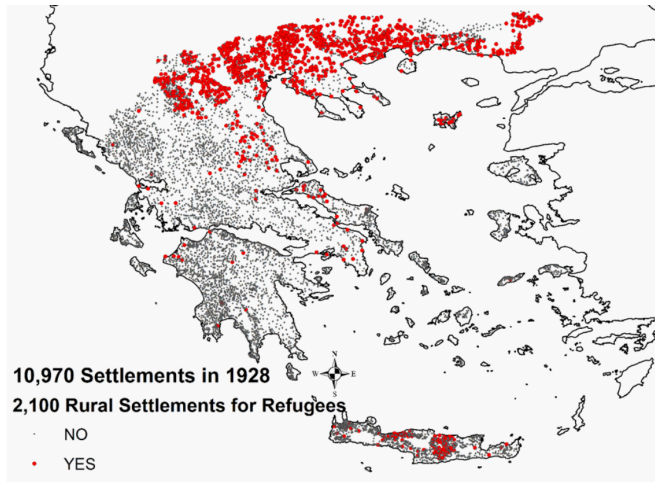
- ∘ 0
- • (0, 5]
- ∘ (5, 50]
- • (50, 75]
- • (75, 100]

N
W ✦ E
S

0 40 80   160 Kilometers

Greek refugees in 1928 by provinces

Refugee Land Grants

10,970 Settlements in 1928
2,100 Rural Settlements for Refugees
- NO
- YES

Refugee Intensity Across Settlements with Land Grants
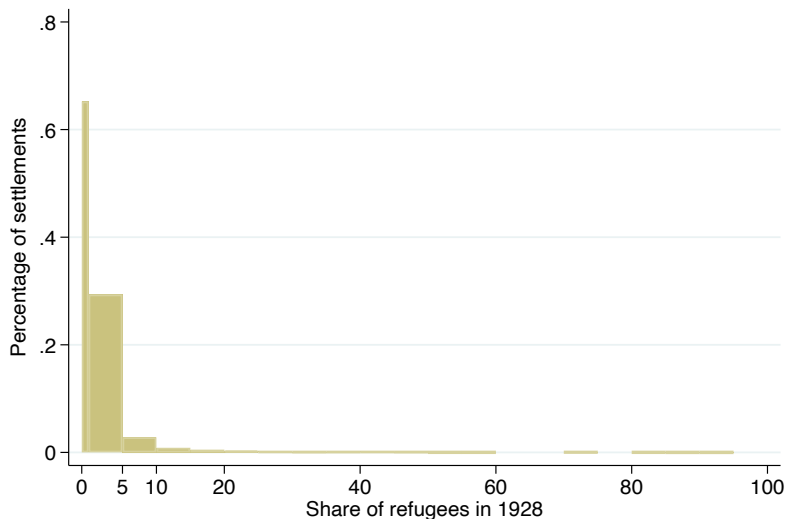

Settlements with Land Grants
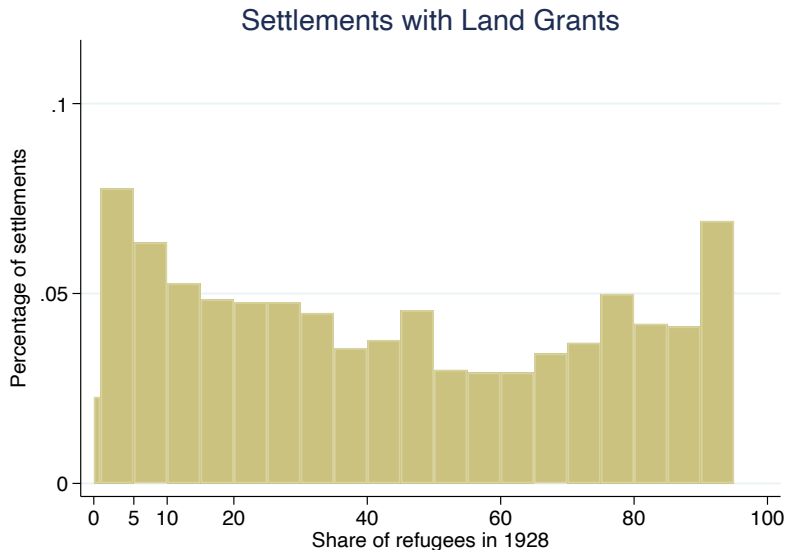
Refugee Intensity Across Settlements without Land Grants

Settlements without Land Grants

Selection into settlement in 1928

In 1928, about 50% of all refugees settled in urban areas, i.e. in the 42 cities of Greece (25% native population). Out of the 500K urban refugees, 300K settled in Athens or Thessaloniki.

Outside cities, refugees were settled more in areas that are:

- More suitable for agriculture: lower elevation and higher temperature places, where they were more likely to form self-sufficient agricultural communities according to the goals of the RSC;

- Closer to railways network and closer to the coast

▸ Table

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▸ Table

Socio-Economic determinants of settlement location (province)

Dep. Var.:	Share of refugees in 1928					
City in 1928	7.193***					
	(2.289)					
Literacy rate in 1920		-0.169				
		(0.115)				
Employment Share Agriculture 1920			-0.023			
			(0.045)			
Employment Sh. Manufacturing 1920				0.021		
				(0.091)		
Population 1920 (log)					1.197	
					(1.308)	
Share of Muslims 1920						0.627***
						(0.053)
R^2	0.549	0.539	0.528	0.527	0.529	0.808
Observations	179	179	179	179	179	179
Geographical controls	Y	Y	Y	Y	Y	Y
Average outcome	13.29	13.29	13.29	13.29	13.29	13.29
Average of variable of interest	.23	45.72	60.84	17.09	9.91	8.64

Socio-Economic determinants of settlement location (province)

Dep. Var.:	Share of refugees in 1928							
Dep. Var.:	Rural				Cities			
Literacy rate in 1920	-0.687***				-0.082			
	(0.170)				(0.209)			
Agriculture 1920		0.331***				-0.046		
		(0.099)				(0.162)		
Manufacturing 1920			-0.686***				-0.082	
			(0.205)				(0.189)	
Population 1920 (log)				-0.546				2.676
				(1.844)				(1.738)
R^2	0.659	0.594	0.594	0.541	0.718	0.718	0.718	0.731
Observations	137	137	137	137	42	42	42	42
Geographical controls	Y	Y	Y	Y	Y	Y	Y	Y
Average outcome	11.2	11.2	11.2	11.2	20.25	20.25	20.25	20.25
Average of variable of interest	41.02	72.09	12.03	9.94	61.09	24.14	33.61	9.80

What do we know about refugees

Table: All Greece- 1928 Census

| | Rural | | Urban | |
	Native	Refugees	Native	Refugees
Literacy	51.5	45.3	72.9	66.3
Male Labor Force Participation	82.0	88.4	79.5	80.6
Female Labor Force Participation	29.1	48.0	16.3	20.3
Agriculture employment share	78.9	83.2	11.9	10.7
Manufacturing	10.0	9.1	35.4	49.3
Wholesale and retail	4.0	2.9	18.7	16.9
Professionals	2.5	1.8	10.8	6.8
Population	3,742,265	544,780	1,293,293	507,760

Northern versus Central Greece

Table: Rural areas: Northern versus Central Greece in 1928

| | Northern Greece | | Central Greece | |
	Native	Refugees	Native	Refugees
literacy	46.6	41.6	54.3	59.1
Male Labor Force Participation	85.2	89.9	80.1	81.9
Female Labor Force Participation	37.1	57.1	24.7	15.4
Agriculture emp.sh.	83.4	90.0	76.0	39.2
Manufacturing	8.9	5.7	10.8	30.9
Wholesale and retail	2.9	1.8	4.7	10.0
Professionals	1.9	1.1	2.9	6.0
Population	1,389,173	434,090	2,353,092	110,690

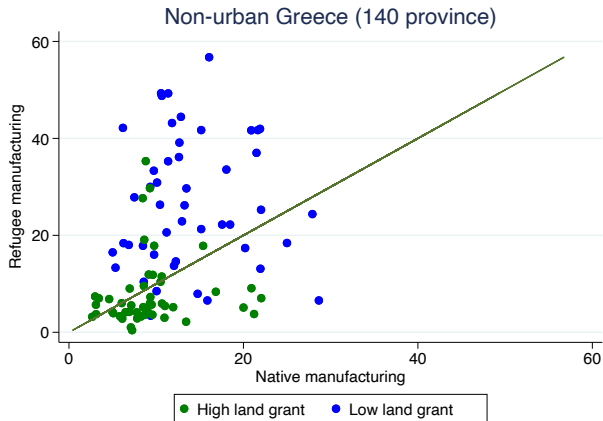Northern Greece is where most of the Land Grants were allocated

Refugee versus native agricultural occupation

Figure: Refugee and native employment in agricultural in 1928
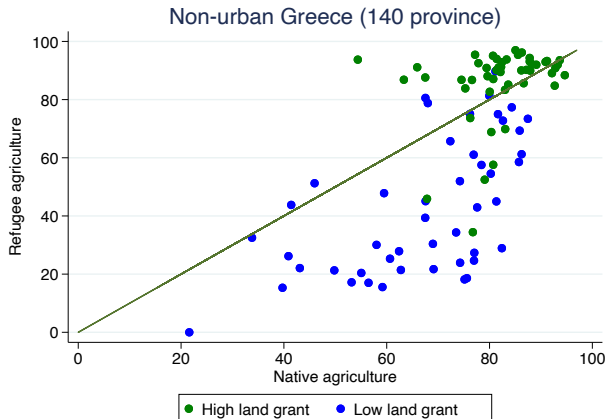
Refugee versus native Manufacturing

Figure: Refugee and native employment in manufacturing in 1928

Non-urban Greece (140 province)

Short-term effects: 1920-1928

Table: **Short-term effects : 1920-1928**

	Cities		Rural areas	
Dep. var	1920-1928 Variation in Employment Share			
	Agriculture	Manufacturing	Agriculture	Manufacturing
Share of refugees in 1928	-0.220***	0.233***	-0.090	0.036
	(0.079)	(0.071)	(0.056)	(0.039)
R^2	0.174	0.238	0.022	0.007
Observations	42	42	137	137
Average outcome	-2.218	2.386	3.922	-1.009

Note: Province-city level *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Short-term effects: 1920-1928

Table: Short-term effects in rural areas

| Dep. var | 1920-1928 Variation in Employment Share | | | |
	Agriculture		Manufacturing	
Share of refugees in 1928	-0.090	-0.583***	0.036	0.231**
	(0.056)	(0.135)	(0.039)	(0.098)
Share of refugees in 1928 *High Land Grant coverage		0.512***		-0.202*
		(0.145)		(0.106)
High LG coverage		1.487		-0.590
		(1.267)		(0.926)
R^2	0.022	0.159	0.007	0.052
Observations	137	137	137	137
Average outcome	3.922	3.922	-1.009	-1.009

Note: Province-city level *** p<0.01, ** p<0.05, * p<0.1

Roadmap

Treatment and sample selection

- We focus on a sample of rural villages, with less than 10,000 inhabitants in 1920 (categorised as non-urban in the 1920 census) and that are not province capitals. We also exclude all villages in the periphery (within 25km) of Athens, Piraeus, and Thessaloniki.

- We define refugee villages as gKOD with more than 50% refugees in the 1928 population and where Land Grants were given to refugees.

- We define native villages as gKOD with less than 5% refugees in the 1928 population and where no Land Grants were provided.
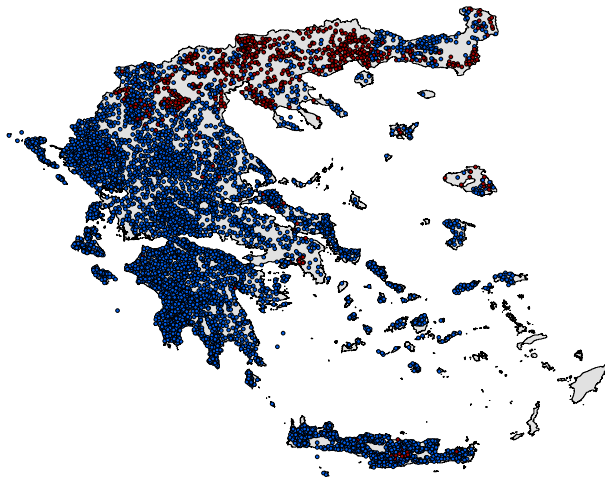
Local comparison in rural areas

- For each refugee village, we select native villages within a 25km (or 15km) radius.

- We drop refugee villages that have no native village in the proximity (i.e. within 25km or 15km).

- By doing so, we reduce the number of native gKOD from 6055 to 2484, and the number of refugee gKOD from 635 to 570.

Figure: Local comparison in rural areas

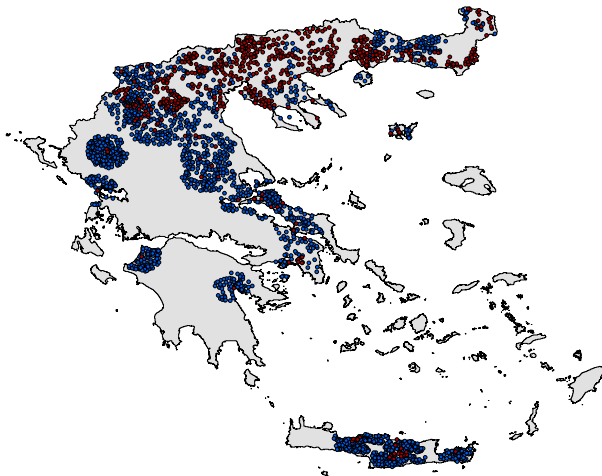**Share of refugees in 1928**

- [0, 5]
- [50, 100]

Figure: Local comparison in rural areas - 25km Radius

Distribution of refugee and native settlements

- Refugee settlements with land grant
- Native settlements

0   40   80   160 Kilometers

Empirical approach

- We use a Diff-in-Diff approach, examining variations in educational and occupational outcomes

    - Between refugee and native villages
    - Across birth cohorts (born from 1880 to 1971)
    - Using as control the cohorts too old to be affected by the 1923 forced displacement.

- We compare rural villages within the same province (local labor market)

Control cohorts

For educational outcomes:

- Refugees arrived in Greece when they were 11 or older (born before 1912)

For occupational outcomes:

- We check that cross-cohorts variation reflects change in opportunities at first entry in the labor market (i.e. Structural Transformation), and not only life-cycle job transition ▸ Graph

- We use the 1916-1936 cohort as reference (first entry in labor market most likely before the Growth Miracle period of 1953-1973).

- We restrict to individuals betw. 25 and 55 year old to minimize biases due differential selection into the labor force. ▸ Table

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Diff-in-Diff regression at the village level

Pooling the 1971, 1981 and 1991 Greek population censuses:

$$Y_{igcs} = \beta.Ref_g \times Post_c + \delta_g + \delta_c + \delta_s + \delta_c \times \delta_s + \delta_c \times Z_g + \varepsilon_{igcs}$$

- Y_{igcs}: outcome of individual i living in gKOD g born in cohort c and enumerated in census year s.

- Ref_g is a binary taking one for refugee village

- $Post_c$ a binary indicating the treated birth cohorts.

- δ_g: gKOD Fixed-Effects ; δ_c: cohort FE; δ_s: census year FE

- Z_g: Province FE and historical and geographical characteristics of the settlement log population in 1920; a proxy for Muslim presence; log distance to: a railway station in 1929, the coast, marshland, province capital; log elevation, temperature and rainfall; log land suitability for agriculture

- Clustered standard-errors at the gKOD level
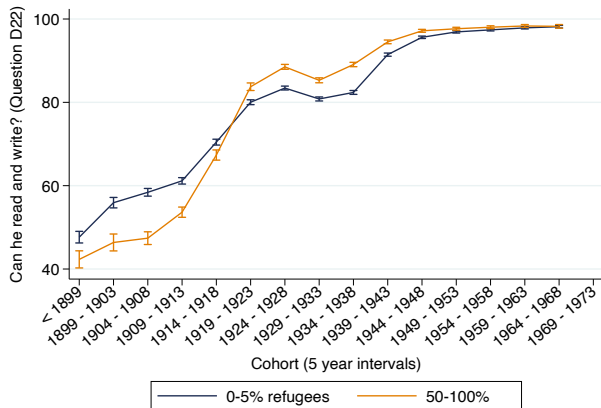
Roadmap
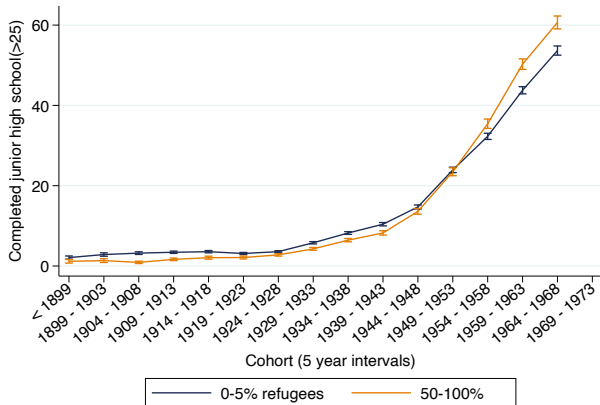
Primary education
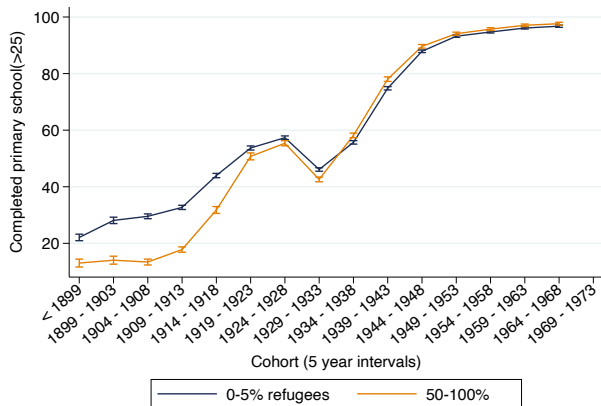
Non-urban gKOD, local sample 25km (APT25km excluded), pooled 71-81-91 censuses
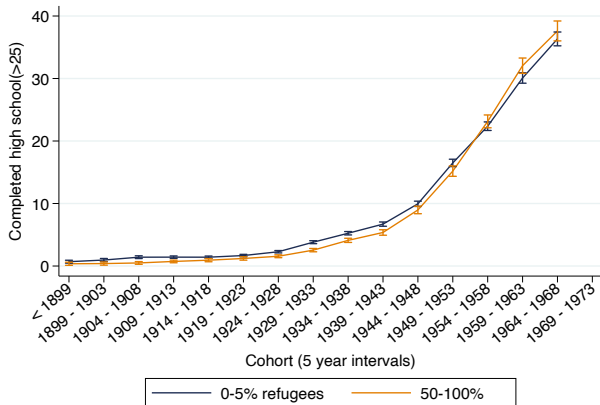
Literacy

Non-urban gKOD, local sample 25km (APT25km excluded), pooled 71-81-91 censuses

Junior High School

Non-urban gKOD, local sample 25km (APT25km excluded), pooled 71-81-91 censuses
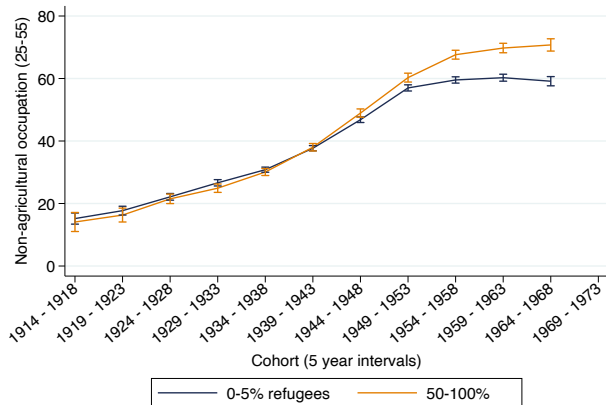
High School

Non-urban gKOD, local sample 25km (APT25km excluded), pooled 71-81-91 censuses
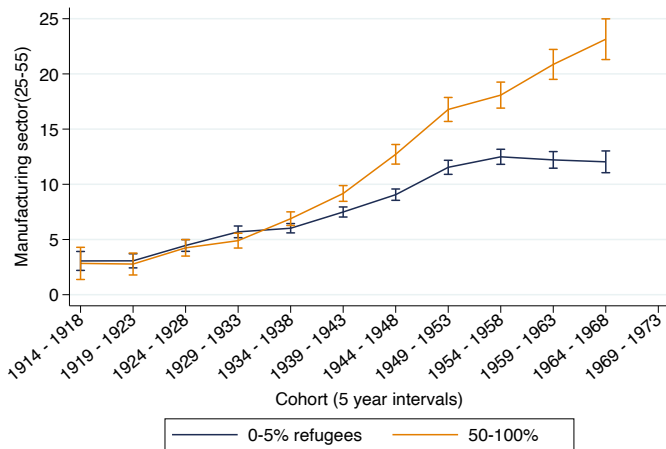
Education Effects

| Dependent var.: | Highest completed education | | | |
	Primary school	Junior High School	High school	Tertiary
Refugee village × 1883-1912	ref.	ref.	ref.	ref.
Refugee village × 1913-1932	3.897***	0.479	0.338	0.078
	(1.187)	(0.415)	(0.276)	(0.141)
Refugee village × 1933-1952	6.194***	1.760***	1.753***	0.801***
	(1.318)	(0.592)	(0.469)	(0.281)
Refugee village × 1953-1972	2.232*	6.827***	4.289***	0.655
	(1.230)	(1.397)	(1.133)	(0.563)
R^2	0.336	0.242	0.169	0.057
Observations	340,368	340,368	340,368	340,368
Av.outcome cohort 1883-1912	28.997	3.009	1.184	0.418
Av.outcome cohort 1913-1932	50.390	3.991	2.299	0.724
Av.outcome cohort 1933-1952	72.762	12.354	8.241	3.034
Av.outcome cohort 1953-1972	95.521	39.904	27.349	8.470
gKOD FE	Y	Y	Y	Y
Cohort × Census Year FE	Y	Y	Y	Y
Cohort × Settlement controls	Y	Y	Y	Y
Cohort × Eparchia FE	Y	Y	Y	Y

Non-agricultural occupation

Non-urban gKOD, local sample 25km (APT25km excluded), pooled 71-81-91 censuses

Manufacturing

Non-urban gKOD, local sample 25km (APT25km excluded), pooled 71-81-91 censuses

Occupation Effects

Dependent var.:			Occupation		
Dep:	Non-agricultural	Manufacturing	Wholesale/retail	Professionals/Clerks	High-skilled services
Refugee village × 1916-1936	ref.	ref.	ref.	ref.	ref.
Refugee village × 1937-1953	2.420	2.918***	-0.025	-0.118	0.152
	(1.534)	(0.766)	(0.601)	(0.627)	(0.507)
Refugee village × 1954-1966	8.362***	7.042***	2.317***	1.758	0.277
	(2.391)	(1.467)	(0.820)	(1.216)	(0.863)
R^2	0.301	0.117	0.048	0.109	0.081
Observations	125,349	124,065	124,065	125,349	124,065
Av.outcome cohort 1916-1936	24.434	4.860	4.222	3.995	2.094
Av.outcome cohort 1937-1953	44.221	8.783	5.769	10.193	5.354
Av.outcome cohort 1954-1966	59.710	12.298	8.414	18.127	9.950
gKOD FE	Y	Y	Y	Y	Y
Cohort × Census Year FE	Y	Y	Y	Y	Y
Cohort × Settlement controls	Y	Y	Y	Y	Y
Cohort × Eparchia FE	Y	Y	Y	Y	Y

Intergenerational mobility within household

Within the same household, we look at whether children are more educated than their parents.
Using the 1971, 1981 and 1991 Greek censuses:

- We identify 54,513 children between 14 and 22 that co-reside with their parents

- One concern is selection into co-residence, but

  - About 90% of 14-22 children live with their parents

  - No significant differences in co-residence between refugee and native village ▸ Table

Intergenerational Mobility: Education

Table: Intergenerational Mobility: Education

Dependent var.:	Educational Upward Mobility		
Refugee village	0.026***	0.037***	0.026**
	(0.007)	(0.012)	(0.011)
R^2	0.365	0.366	0.380
Observations	54,513	54,513	54,512
Average outcome	0.521	0.521	0.521
Age-gender and parents' age and education FE	Y	Y	Y
Census Year FE	Y	Y	Y
Settlement controls		Y	Y
Eparchia FE			Y

Occupational Mobility

Figure: Non-agricultural employment across generation

Figure: Manufacturing across generation

Occupational Mobility
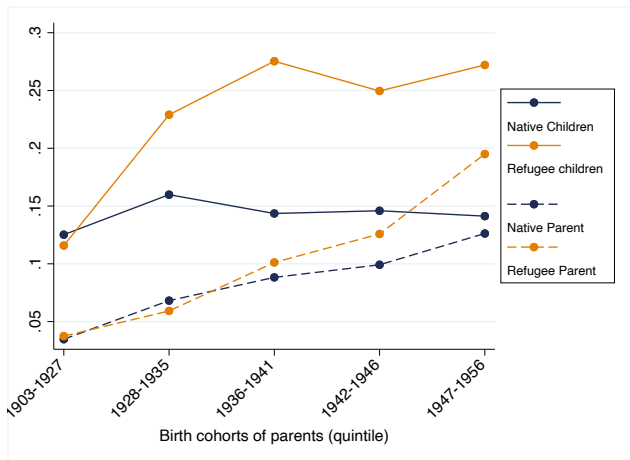
Dep. var.:	Transition from Parental Farming to:			
	All non-agri	Manufacture	Wholesale /Retail	Professionals /Clerks
Refugee gKOD	0.080***	0.037**	0.021**	0.010
	(0.025)	(0.016)	(0.009)	(0.007)
R^2	0.139	0.100	0.042	0.065
Observations	11,351	11,238	11,238	11,351
Average outcome	0.281	0.097	0.047	0.030
Age-gender + parents' age and education FE	Y	Y	Y	Y
Census Year FE	Y	Y	Y	Y
Settlement controls	Y	Y	Y	Y
Eparchia FE	Y	Y	Y	Y

Note: 14-22 working children of farmer parents (co-residing)

Income effect

Dep. var.:	Housing Quality Index (pca,Z-score)		
Refugee village	0.213***	0.350***	0.325***
	(0.042)	(0.058)	(0.058)
R^2	0.009	0.070	0.148
Observations	31,637	31,637	31,637
Census Year FE	Y	Y	Y
Settlement controls		Y	Y
Eparchia FE			Y

Note: One observation per household, 1971 census. Standardized effects.

Income effect

Dep:	Electricity	Has kitchen	Water supply inside	Toilet inside	Bath Shower	Sewage Dispoal
Refugee village	11.496***	7.230***	18.515***	4.315***	3.701***	-3.267
	(1.955)	(1.569)	(2.641)	(1.287)	(0.913)	(2.038)
R^2	0.132	0.064	0.141	0.073	0.056	0.182
Observations	31,897	31,956	31,919	31,909	31,731	31,912
Average outcome native	74.606	78.539	28.615	10.348	4.988	7.534
Census Year FE	Y	Y	Y	Y	Y	Y
Settlement controls	Y	Y	Y	Y	Y	Y
Eparchia FE	Y	Y	Y	Y	Y	Y

Roadmap

Mechanisms (I): Uprootedness

Idea: People tend to grow attached to the place where they live
$\rightarrow$ stuck in occupations and locations that do not fully exploit their
economic potential, due to habits (family or communities ties)

The experience of forced migration has two effects:

- Having lost their homes, the cost of switching occupations (i.e. leaving farming) is lower for refugees since they are less attached to their new location.

- The trauma of being forcibly uprooted increases the subjective value of investing in portable assets (as opposed to physical), and in particular in education.

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Mechanisms (I): Uprootedness

Different studies find positive effects of forced displacement on occupational mobility, lifetime earnings, and education.

- Bauer et al. (2013) : expulsions of ethnic Germans from Eastern Europe after WWII

- Sarvimaki et al.(2018): resettlement of Finnish population after the 1939 Soviet invasion

- Nakamura et al.(2018): forced migration after volcano outbreak in Iceland in 1973.

- Becker et al.(2018) : forced displacement of Poles after WWII

"The gift of moving" : Displaced people are forced start from scratch and need to reinvent a new way of living: they are more responsive to economic opportunities.

Mechanisms (I): Uprootedness

Testable hypothesis:

Forced displacement should have stronger effects

(a) For farmers as they are likely more attached to their homelands (taste for habits) than non-farmers.

Mechanisms (I): Uprootedness

Dep. var.:	Educational Upward Mobility		
Refugee village	0.026**	0.005	0.003
	(0.011)	(0.012)	(0.018)
Refugee village * Farmer parents		0.029***	0.029***
		(0.010)	(0.011)
Farmer parents		-0.054***	-0.054***
		(0.006)	(0.006)
Parents with primary edu. or more			0.003
			(0.013)
Parents with junior high edu. or more			-0.002
			(0.012)
R^2	0.380	0.381	0.381
Observations	54,512	50,286	50,286
Average outcome	0.521	0.521	0.521
Age-gender and parents' age and education FE	Y	Y	Y
Census Year FE	Y	Y	Y
Settlement controls	Y	Y	Y
Eparchia FE	Y	Y	Y

Mechanisms (I): Uprootedness

Testable hypothesis:
Forced displacement should have stronger effects

(b) When the origin community gets more dispersed during displacement $\rightarrow$ greater disruption of habits.

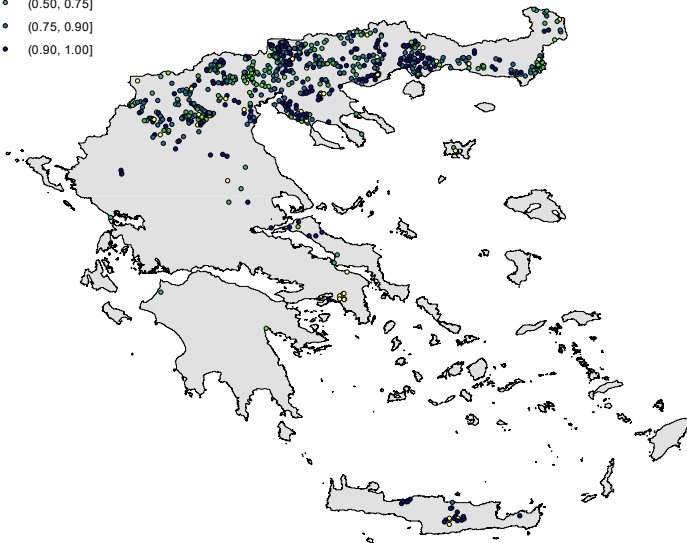$$Dispersion_g = \sum_o w_o \frac{N_o - N_{og}}{N_o}$$

with

$$w_o = \frac{N_{og}}{N_g}$$

Figure: Origin community dispersion in refugee villages in 1928

Dispersion rate of refugees

- [0.00, 0.25]
- (0.25, 0.50]
- (0.50, 0.75]
- (0.75, 0.90]
- (0.90, 1.00]

Mechanisms (I): Uprootedness

Dependent var.:	Highest completed education			
	Junior High School		High school	
Refugee village × 1913-1932	0.542	0.232	0.366	0.197
	(0.655)	(0.716)	(0.566)	(0.618)
Refugee village × 1933-1952	1.822***	1.318*	1.782***	1.494**
	(0.646)	(0.706)	(0.558)	(0.609)
Refugee village × 1953-1972	6.892***	5.873***	4.318***	2.944***
	(0.742)	(0.814)	(0.641)	(0.703)
Refugee village × High origin dispersion × 1913-1932		0.688		0.375
		(0.638)		(0.551)
Refugee village × High origin dispersion × 1933-1952		1.122*		0.647
		(0.629)		(0.543)
Refugee village × High origin dispersion × 1953-1972		2.249***		3.027***
		(0.739)		(0.638)
R^2	0.242	0.242	0.169	0.169
Observations	340,368	340,368	340,368	340,368
gKOD FE	Y	Y	Y	Y
Cohort × Census Year FE	Y	Y	Y	Y
Cohort × Settlement controls	Y	Y	Y	Y
Cohort × Eparchia FE	Y	Y	Y	Y

Mechanisms

The uprootedness hypothesis cannot explain:

(a) Why takeoff in manufacturing in particular ?

(b) Why so late, for cohorts entering the labor market in the 1970s ?

  - Idea: Trade shocks in the 70s $\rightarrow$ increase in demand-driven exports of manufactured goods, esp. textile

    - Rise in export quotas within the EEC since 1961 Association Agreement

    - Increase in international demand for low-cost textile (sub-contracting with German firms)

  - Having lower switching costs, refugees responded more to this new opportunity relative to natives

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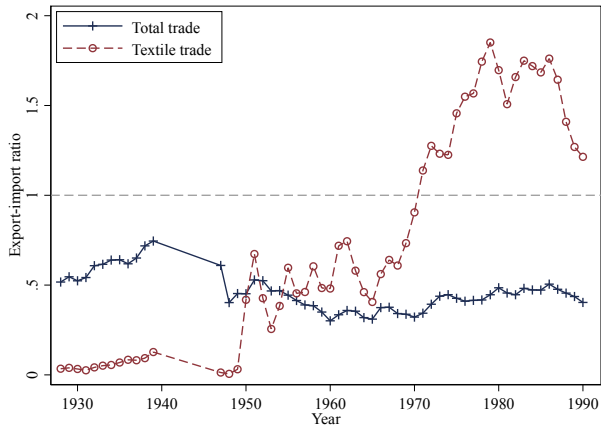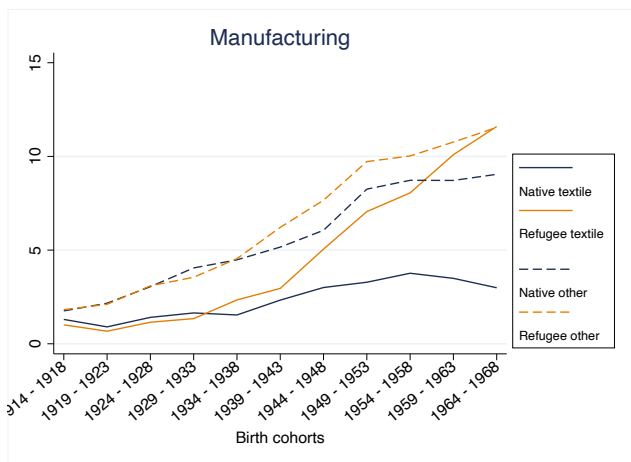
Rise in textile exports

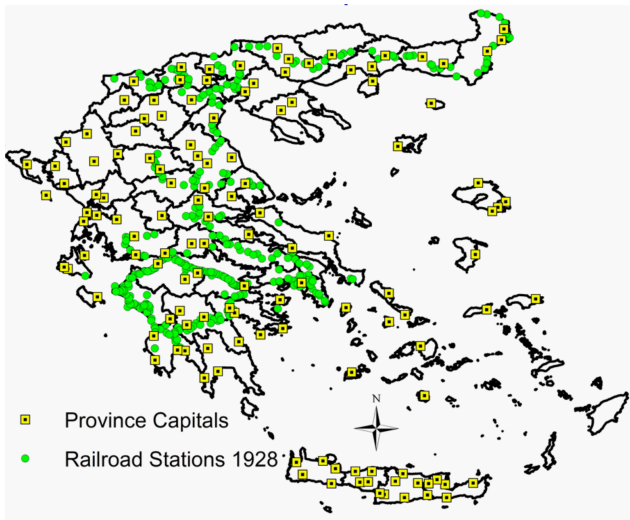

Figure: Exports to imports ratio (value)

Mechanism (II): Trade

Mechanism (II): Trade

Dependent var.:	Manufacturing sector		
	All	Textile	Non-Textile
Refugee village x 1916-1936	ref.	ref.	ref.
Refugee village x 1937-1953	2.918***	1.686***	1.232**
	(0.766)	(0.480)	(0.558)
Refugee village x 1954-1966	7.042***	3.418***	3.624***
	(1.467)	(1.083)	(0.867)
R^2	0.117	0.153	0.088
Observations	124,065	124,065	124,065
Av.outcome cohort 1916-1936	4.860	1.447	3.413
Av.outcome cohort 1937-1953	8.783	2.642	6.140
Av.outcome cohort 1954-1966	12.298	3.510	8.788
gKOD FE	Y	Y	Y
Cohort × Census Year FE	Y	Y	Y
Cohort × Settlement controls	all	all	all
Cohort × Eparchia FE	Y	Y	Y

Figure: Railroads and province capitals in 1928

- ▣ Province Capitals
- ● Railroad Stations 1928

Dependent var.:	Manufacturing sector			Textile		
Refugee village × 1933-1952	3.029***	1.158	1.238	1.651***	0.682	0.876
	(0.859)	(1.155)	(1.272)	(0.509)	(0.685)	(0.754)
Refugee village × 1953-1966	7.056***	2.177*	1.618	3.388***	0.989	0.519
	(0.965)	(1.301)	(1.442)	(0.572)	(0.771)	(0.855)
× Close to train station × 1933-1952		3.246**	3.217**		1.685**	1.712**
		(1.275)	(1.287)		(0.756)	(0.763)
× Close to train station × 1953-1966		8.028***	7.768***		3.938***	3.711***
		(1.445)	(1.459)		(0.857)	(0.865)
× Close to urban area × 1933-1952			0.003			-0.292
			(1.096)			(0.650)
× Close to urban area ×1953-1966			1.332			1.126
			(1.253)			(0.743)
R^2	0.116	0.116	0.116	0.150	0.150	0.150
Observations	123,833	123,833	123,833	123,833	123,833	123,833
gKOD FE	Y	Y	Y	Y	Y	Y
Cohort × Census Year FE	Y	Y	Y	Y	Y	Y
Cohort × Settlement controls	Y	Y	Y	Y	Y	Y
Cohort × Eparchia FE	Y	Y	Y	Y	Y	Y

Alternative mechanisms

(a) **Comparative advantage in manufacturing (textile)**

- Simple Roy model: a farmer leaves agriculture when

$$w_n - w_a > \underbrace{C}_{\text{cost of switching}}$$

- The refugees may have brought new know-hows (carpet-making, silk fabrics) intergenerationally transmitted within household production

(b) Lower quality land

- No evidence of significant difference in crop suitability index (FAO data)

- If given bad lands, we would expect refugee families to migrate to urban areas and hence economic and population decline in refugee villages.

(c) Agglomeration effects

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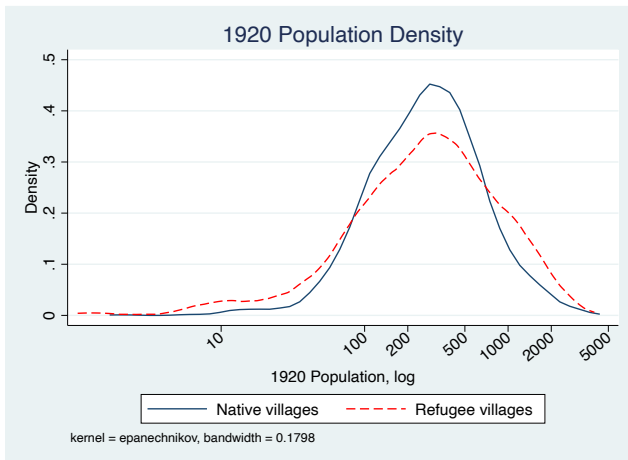
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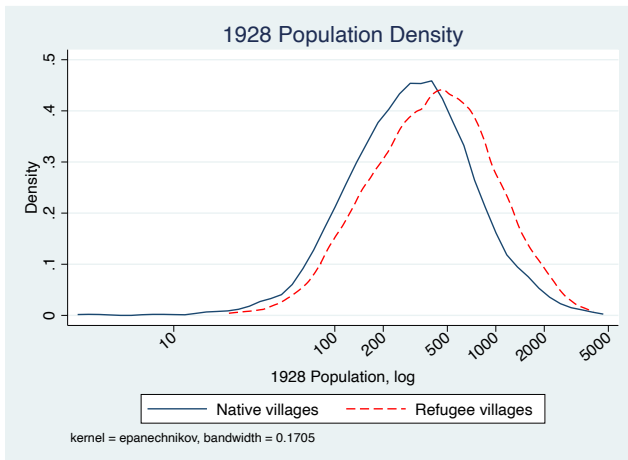
(c) Agglomeration effects

Unlikely Mechanism: Agglomeration economies

- The refugee inflow represented an important increase in the population density and market size.

- This could lead to positive long-run effects on development through agglomeration effects

- Following Combes et al. (2015), we test this mechanism by controlling for the post- resettlement population (in 1928) in the regressions.

- We find that agglomeration economies cannot explain the higher educational and occupational mobility of refugee villages.

- This is unsurprising as we focus on rural villages that have typically less than 1,000 inhabitants.

Small rural villages

1920 Population Density

kernel = epanechnikov, bandwidth = 0.1798

Native villages — Refugee villages

Small rural villages

1928 Population Density

Native villages

Refugee villages

1928 Population, log

kernel = epanechnikov, bandwidth = 0.1705

Unlikely Mechanism: Agglomeration economies

Figure: Population level in rural villages
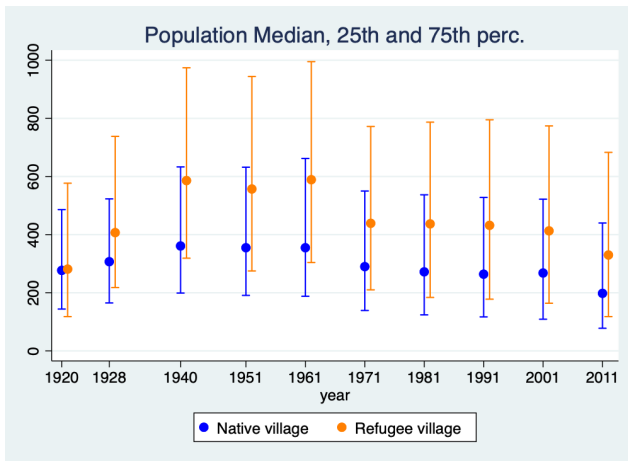
Roadmap

Conclusion

Relative to native villages in close proximity in rural areas, refugee villages:

- Invested more in education during the second half of the century

- Experienced greater sectoral change, leaving farming to specialize in manufacturing

- These changes are driven by higher intergenerational mobility

More work is need to uncover the economic mechanism underpinning these findings

Extension: spillover effects on neighboring native villages and scaling-up the effects (macro spatial equilibrium model)

# Geographic determinants of settlement location (province)

Table: Places of settlement are more suitable for agriculture (province level)

Dependent variable:	Share of refugees in 1928							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Effect of one standard-deviation increase in:								
Distance to railway network in 1920 (km)	-0.052***							0.028**
	(0.015)							(0.014)
Distance to river (km)		-0.031*						-0.017
		(0.016)						(0.013)
Distance to natural ports (km)			-0.017					-0.040**
			(0.016)					(0.020)
Altitude (m)				-0.028*				-0.138***
				(0.016)				(0.023)
Mean annual precipitation					-0.049***			-0.023
					(0.015)			(0.020)
Mean annual temperature						-0.067***		-0.189***
						(0.015)		(0.023)
Crop suitability score							0.086***	0.013
							(0.014)	(0.016)
R2	0.08	0.03	0.01	0.02	0.07	0.13	0.22	0.55
N	138	138	138	138	138	138	138	138
Average of the variable of interest	81.65	11.2	142.16	398.16	640.09	14.09	-.01	
Average of the share of refugee in 1928	.11	.11	.11	.11	.11	.11	.11	
sd of the share of refugees in 1928	.18	.18	.18	.18	.18	.18	.18	

Cohort vs. Age effects

Figure: Employment share of non-agriculture by age or cohort
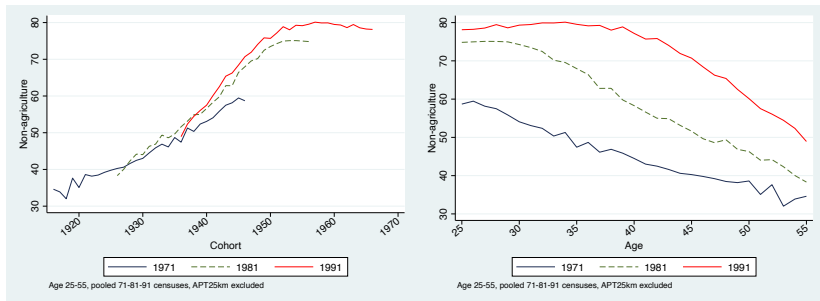
(a) By cohort

(b) By age

Labor Force Participation

Dependent var.:	Labor Force Participation		
Refugee village × 1937-1953	-2.829***	-1.848*	-0.871
	(0.687)	(1.011)	(1.081)
Refugee village × 1954-1966	-2.570***	-1.661	-1.236
	(0.922)	(1.349)	(1.380))
R^2	0.043	0.404	0.406
Observations	195,727	195,727	195,725
Average outcome	65.223	65.223	65.223
Av.outcome cohort 1916-1936	67.989	67.989	67.989
Av.outxcome cohort 1937-1953	64.012	64.012	64.012
Av.outcome cohort 1954-1966	64.594	64.594	64.594
gKOD FE	Y	Y	Y
Cohort × Census Year FE	Y	Y	Y
Cohort × Settlement controls		Y	Y
Cohort × Eparchia FE			Y

Coresidence with parents

Dep. var.:	Coreside with parents		
Refugee village	0.001	0.003	0.000
	(0.004)	(0.006)	(0.006)
R^2	0.092	0.093	0.097
Observations	61,760	61,760	61,759
Average outcome	0.892	0.892	0.892
Age Gender	Y	Y	Y
Census Year FE	Y	Y	Y
Settlement controls		Y	Y
Eparchia FE			Y

Selection into settlement localities: Pre-trends in literacy rates

Figure: Literacy rate of native males in 1928 across birth cohorts and provinces