Greek Economic History with Big Data

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Roadmap

1 Modern Greek Economic History

2 Refugees' Legacy in Greek Society and Economy
- Motivation
- Big Data
- Uprootedness
- Mobility
- Ideology

3 Discussion

Modern Greek Economic History

Section Structure

1. **Motivation**
2. **Traditional Approach**
3. **Economic Approach**

Some Questions

Identity, Heritage

- Deep Origins of the Greek Revolution?
- Consequences of Greek defaults (1825/6, 1893-4, 1932)?
- Drivers and implications of the Greek Civil War?
- Holocaust in Salonica and Greece. Aftermath?
- Impact of junta (1967-1974)?
- Lasting role of commodity price booms (raisin 1880s)?
- Impact of Greco-Turkish War (1919-1922)?
- **Anatolia Imprints. Impact of Refugees from Anatolia on Greek society and economy?**

(Greek) History

Traditional Approach

- **Case-specific:** region (village, district); local approach
  - historical "accuracy'
  - Some exceptions, taking a national approach [unorthodox]
- **Specificities:** *the devil is in the details*
- **Narratives**
  - Similar to literature (sociology and political science)
  - Some but limited use of (archival) data
  - many purely descriptive

Towards a Modern Greek (Economic) History

Traditional Approach Limitations

- Cherry-picking; "external validity"
- Generalizability?
- Lessons beyond the specific setting or Greek history?
  - dialectic approach present since 1930s, but limited.
- Connection to other settings
  - Greek Revolution's relation to Other Revolutions [e.g., French, American]
  - Greek junta's fall and the Third Wave of Democratization?
- Theoretical reconciliation? $->$ Lessons today [e.g., Refugees from Anatolia]
- Causal Effects (drivers)?

History through the Lens of Economics

The Dismal Science and History

1. **(Big) Data Quantitative Analysis**
   - **Big Data Patterns.** Mappings; Correlational Approach [short, medium, and long run]
   - Identify **Causal Relationships**; quasi-natural experimental variation $->$ Origins and Consequences
   - Heterogeneity (or not). **Mechanisms**. Lessons
2. **Economic Theory**
   - Spillovers (across space and sectors)
   - From local to aggregate effects; economic (and econometric) modelling

2024 Nobel Memorial Prize. Historical Development

D. Acemoglu, S. Johnson, and J. Robinson

14 October 2024

The Royal Swedish Academy of Sciences has decided to award the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2024 to

Daron Acemoglu
Massachusetts Institute of Technology, Cambridge, USA

Simon Johnson
Massachusetts Institute of Technology, Cambridge, USA

James A. Robinson
University of Chicago, IL, USA

"for studies of how institutions are formed and affect prosperity"

They have helped us understand differences in prosperity between nations

This year's laureates in the economic sciences – Daron Acemoglu, Simon Johnson and James Robinson – have demonstrated the importance of societal institutions for a country's prosperity. Societies with a poor rule of law and institutions that exploit the population do not generate growth or change for the better. The laureates' research helps us understand why.

Figure: Nobel Prize



The Scandinavian Journal of Economics

Scand. J. of Economics 127(3), 511–575, 2025
DOI: 10.1111/sjoe.12599

Institutions, history, antagonisms, and development: the contributions of Daron Acemoglu, Simon Johnson, and James A. Robinson

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Abstract

The Royal Swedish Academy of Sciences awarded the 2024 Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel to Daron Acemoglu, Simon Johnson, and James A. Robinson "for studies of how institutions are formed and affect prosperity". In this paper, I first review the laureates' work, emphasizing how their big-picture approach to long-run development and their broad analytical perspective – blending history, economic theory based on class antagonisms, case studies, and an effort to move beyond correlations towards identifying causal effects – have enriched and transformed the approach of shedding light on the old inquiry into the deep drivers of prosperity. I then discuss in detail the vast subsequent research on the impact and origins of institutions and historical development, which has brought novel insights about the deep drivers of prosperity, testing old influential conjectures and expanding the set of questions. With authoritarianism on the rise and constitutional checks and balances challenged, the lessons from history and the new insights of this research agenda appear more topical than ever.

Keywords: Institutions; long-term development; colonization; economic history; inequality; democracy; persistence

JEL classification: N30; O33; P50

Figure: Overview-Rationale

Economic History and Long-Run Development

Modern Economic Research

- **Colonization** [institutions]. Acemoglu, Johnson, and Robinson (2001, 2002, 2005)
  - African Development. Scramble for Africa; Colonial Concessions; Michalopoulos and Papaioannou (2016, 2023)
- **Enlightenment, Ideas, and Innovation** [culture and human capital]. J. Mokyr
- **Constitutionalism, Property Rights, and Industrialization**. D. North
- **Legal system and tradition.** [early financial markets, contractual institutions]. La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997, 1998, 2006)
- **Geography and Economic Activity**. [agglomeration] P. Krugman, T. Venables, J. Diamond.

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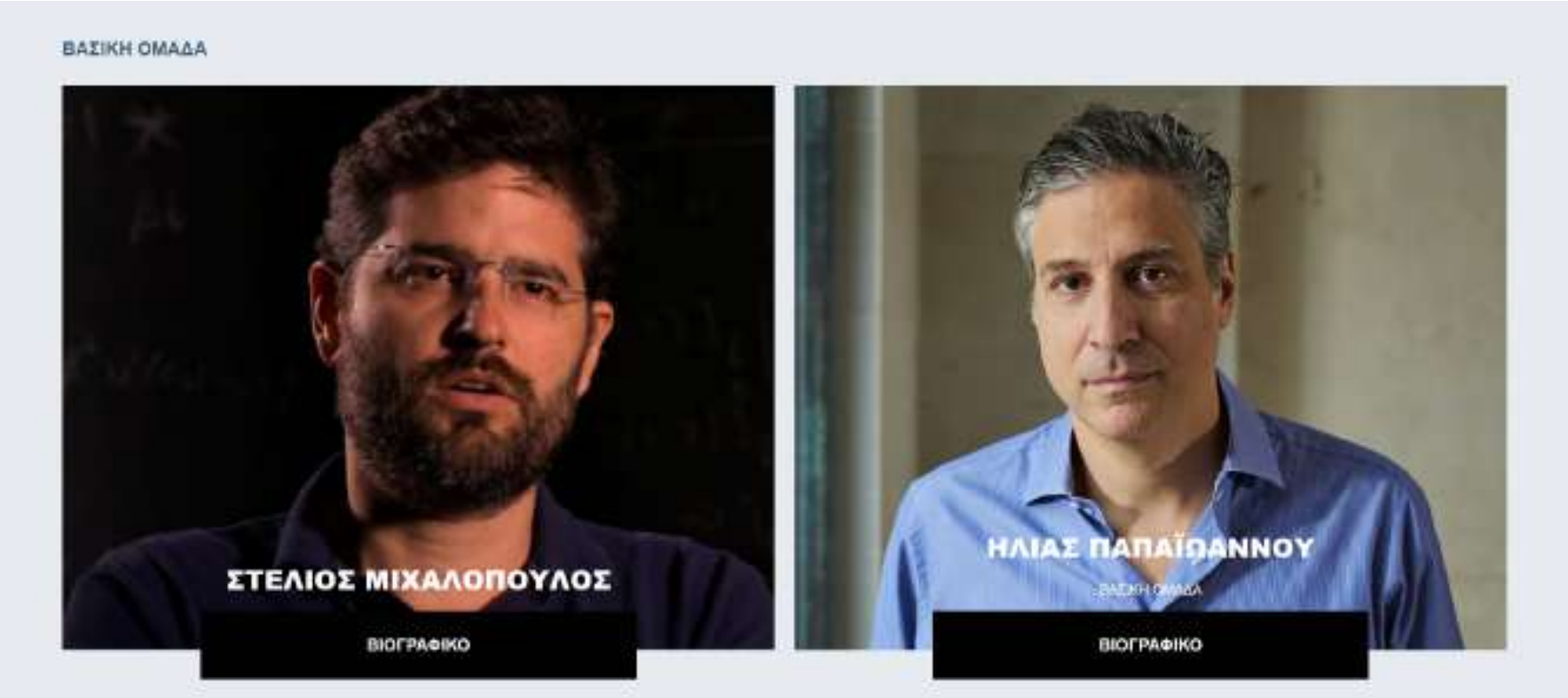
Refugees' Legacy in Greek Society and Economy

Elias Papaioannou and Stelios Michalopoulos

1. Introduction-Motivation
2. Big Data. Anatolia Imprints
3. Human Capital and Uprootedness
   - Internal Migration and Emigration
4. Culture and Politics

Partners (in Crime)

Anatolia Imprints



Refugees' Legacy in Greek Society and Economy

Section Structure

1. **Introduction-Motivation**
2. Big Data. Anatolia Imprints
3. Human Capital and Uprootedness
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Motivation. Greek History

Bring Data and Empirical Evidence in a Deeply Emotional Issue: Lost Motherlands

- Today, one out of three Greeks with a refugee background; one out of six traces to refugees from both sides of the family tree [*Metron Analysis*]
- In the mid-1920s, 1/5 of Greece's population were refugees. 1.2-1.5 million people
- Identity: more than half of Greek people argue that the National Catastrophe is the most important event of the modern Greek state [*Metron Analysis*]

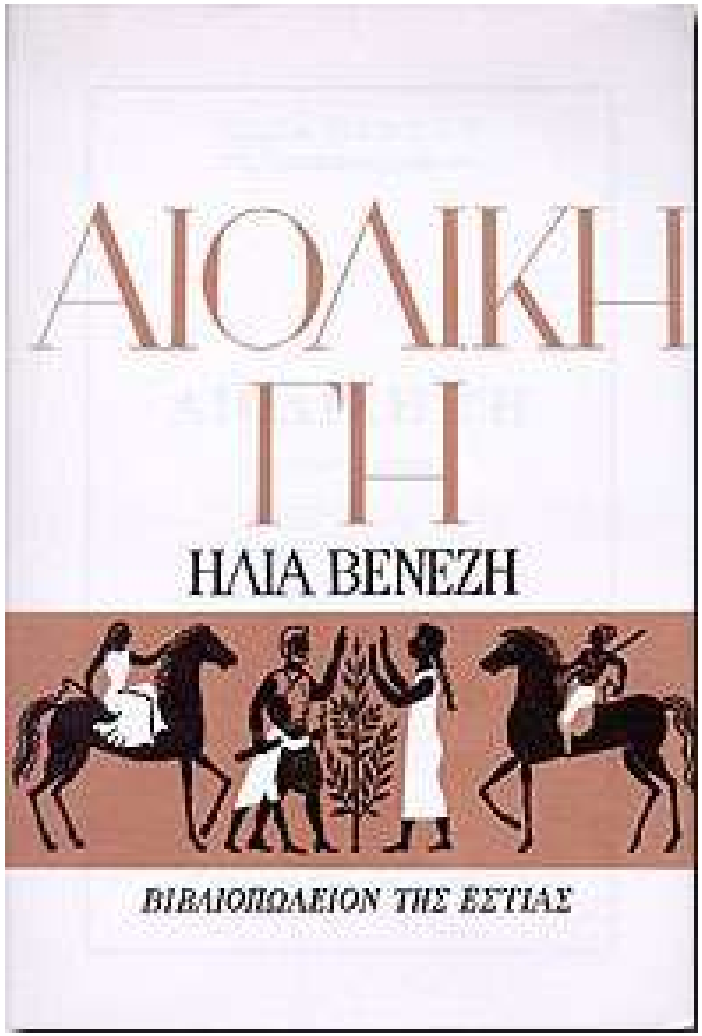
Motivation. Greek History, Lost Motherlands

Identity and Cultural Impact

- **Literature & Poetry**. Generation of 1930s. e.g., George Theotokas, George Seferis, Dido Sotiriou, Ilias Venezis
- **Art, Music, Theater**. e.g., Nelly (Elli Sougioultzoglou-Seraidari); Rebetiko (also in the United States); Popular ("Laiko"): Stelios Kazantizidis, Domna Samiou; Cinema: Elias Kazan(tzoglou); Theater: Dimitris Psathas; Painting: Fotis Kontoglou
- **Sports.** Major clubs [AEK, PAOK, Panionios, Near East]
- **Civic Organizations**. Thousands across the country

Motivation. Greek History

Greek Identity. Aeolian Land; Blood-Stained Lands (Farewell Anatolia)





The National Catastrophe

The Burning of Smyrna



The Burning of Smyrna

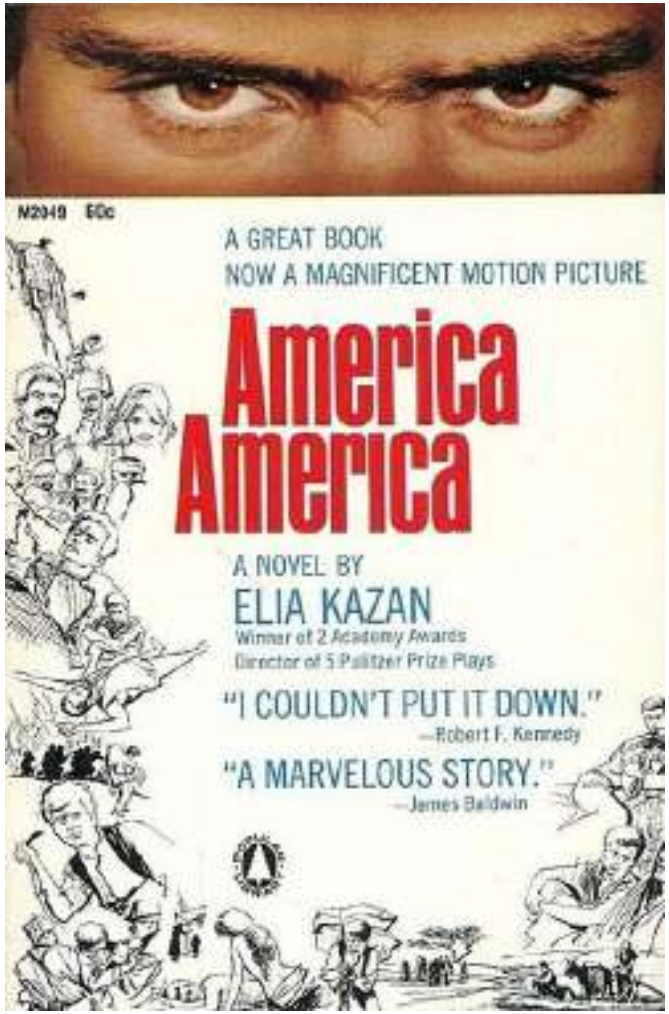
On the Quai at Smyrna. Ernest Hemingway



"The worst, he said, were the women with dead babies. You couldn't get the women to give up their dead babies. They'd have babies dead for six days... Then there was an old lady... We were clearing them off the pier, had to clear off the dead ones, and this old woman was lying on a sort of litter. They said, 'Will you look at her, sir?' So I had a look at her and just then she died and went absolutely stiff. Her legs drew up and she drew up from the waist and went quite rigid... You didn't mind the women who were having babies as you did those with the dead ones. They had them all right. Surprising how few of them died. You just covered them over with something and let them go to it. They'd always pick out the darkest place in the hold to have them."

The Exodus

Narratives and Film. Elia Kazan





Refugees of the Mediterranean

Crossing the Aegean. 1922-1923



Refugees of the Mediterranean

Crossing the Aegean. The Exodus. 1922-1923





Refugees of the Mediterranean. Then

Refugees in Greece. 1922-1923





Refugees of the Mediterranean. Then

Refugee Settlements in 1922–23





Historical Research on Population Exchange and Refugees' Impact in Greek Society

Greek and International

- **General Treatise**. Mazower (2009), Mazower (1991); Mavrogordatos (2015); Mavrogordatos (1983)
- **Population Exchange**. Pentzopoulos (1962), Kitromilidis (2008)
- **Refugee Agrarian Settlements.** Kritikos (2005), Kontogiorgi (2006)
- **Refugee Settlement Committee**. Morgenthau (1929), Simpson (1929), Ladas (1932)

Questions. Big Data and Causal Effects

Comprehensive Modern Economic History Approach and Identification Design

1. **Refugees' Economic Impact** [local and aggregate (spillovers, general equilibrium)]
   - Education; Income; Structural Transformation
   - Internal Migration (cities); Emigration
2. **Refugees' Impact on Culture and Politics**
   - Songs, Theater
   - Voting
   - Preferences and Ideology

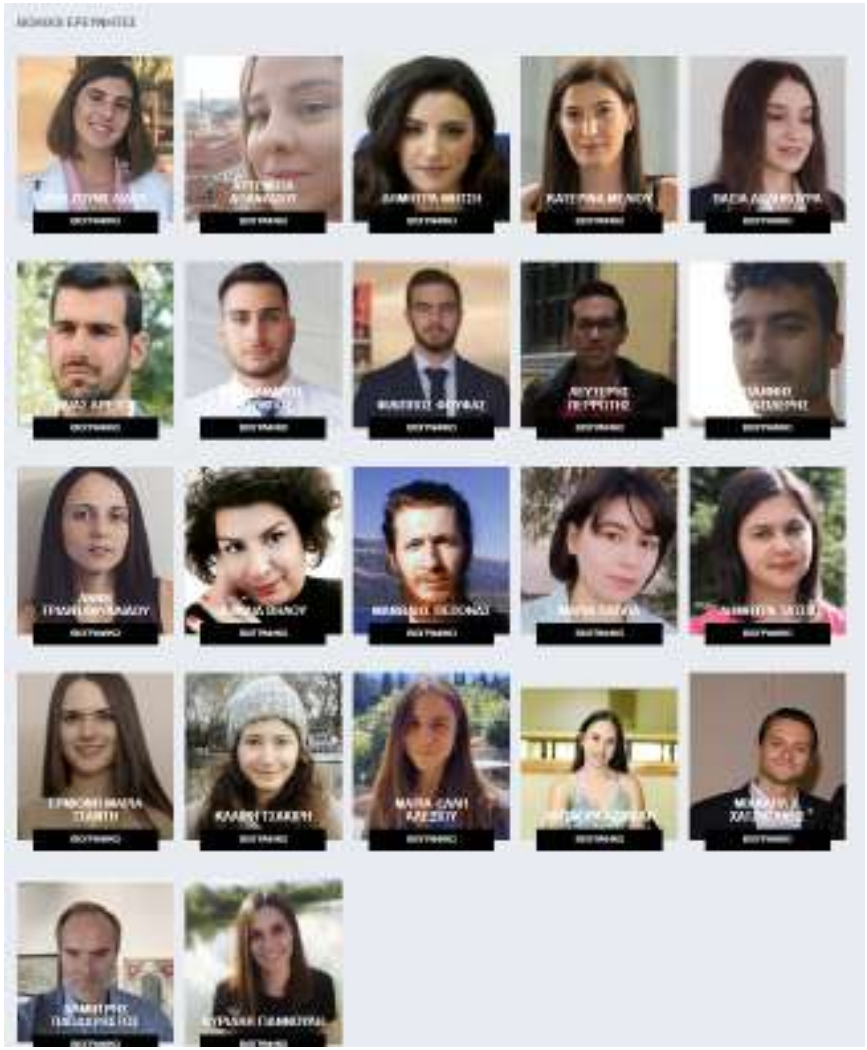
Team. Stelios Michalopoulos and Elias Papaioannou

If you want to go fast, go alone. If you want to go far, go together

1. **Big Data for Greek People.** with great help from Athanasios Stavrakoudis (University of Ioannina)
2. **Economic Impact** Ellie Murard (Trento) and Seyhun Orcan Sakalli (King's College)
   - Uprootedeness, Human Capital and Skill Transferability
   - Once a Refugee, Always a Refugee
   - Large Migration Flows and Spatial Development
3. **Cultural and Political Impact**
   - **Songs of Refugees**
   - **Refugees' Political and Ideological Imprints** with Vassilis Logothetis (University of Ioannina)

Applied Informatics and Economics Lab, UoI

Supervision. Athanasios Stavrakoudis with an Amazing Team of Young Scholars



Applied Informatics and Computational Economics Lab

University of Ioannina. Leader. Athanasios Stavrakoudis

- Dimitra Mitsi, Christina Pouraveli, Tania Iouliana Birladeanou, Maria Ellie Alexiou, Anna Tassi, Alexandros Roumpos, Diana Zaretskaya, Filippos Foufas, Zoi Soumelidou, Alexandros Gesoulis
- Theodora-Maria Gkounta, Thomai Paliari, Anni Triantafyllidou, Evangelia-Paraskevi Christodoulaki, Theodosia Papachristodoulou, George Mplouchos, Charalampos Tziasios, Christina Zachopoulou, Anna Maria Spei, Eleftherios Perrotis, Dimitrios Machlouta, Emmanouil Peponas, Vasileios Georgakis Clarikleia Tsakiri, Eirini Nikolopoulou Nikolaos Sapounas, George Papadopoulos, Vasia Delikoura, Theofaneia Aristofani Adamou, Aretos Ilias, Smaragda Kourtidou, Spyridon Ntemos, Dimitra Tatsi, Anastasia Eginoglou, Alexandros Domatzoglou, Lydia Mamaki, Knstantinos Ntorkos, Christodoulos Bellos, Ermioni Maria Tsanti, Maria Pappa, Vasiliki Stavrou, Danai Kyriakopoulou Thomadaki, Kyriaki Giannouli, Alena Kliuchnik, Tugba Centintas, Aimilia Viliou, Katerina Meliou, Artemhsia Athanasiou, Giannhs Papasiderhs

Anatolia Imprints [https://anatolia-imprints.gr/]

Greek History through the Lens of Economics



ANATOLIA IMPRINTS

"Τόση τι ζει κι τι ζει, θ' μου πις, φίλε. Όμως η ιστορία του πρόσφυγα η σχέση του ορμάθηκαν τη ιστορία του ανθρώπου στον κατάντησε τι αυτός προχώρησε διαφορετικά για την αλλάξει, δεν μπορείς."

Γιώργος Σεφέρης (γεννημένος στο Βουρλά της Επαρχίας της Σμύρνης, 1900 – 1971)

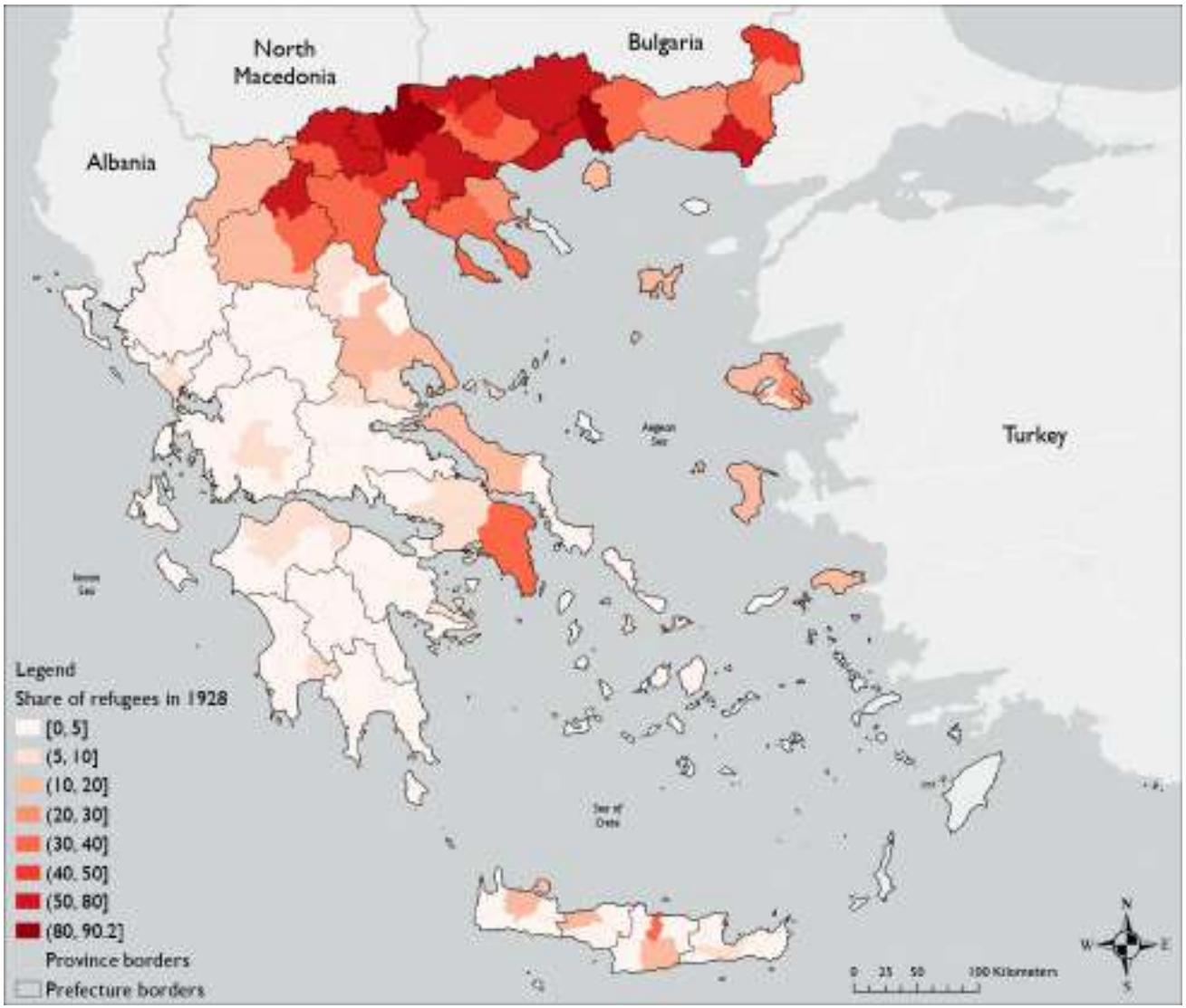
Refugees' Legacy in Greek Society and Economy

Section Structure

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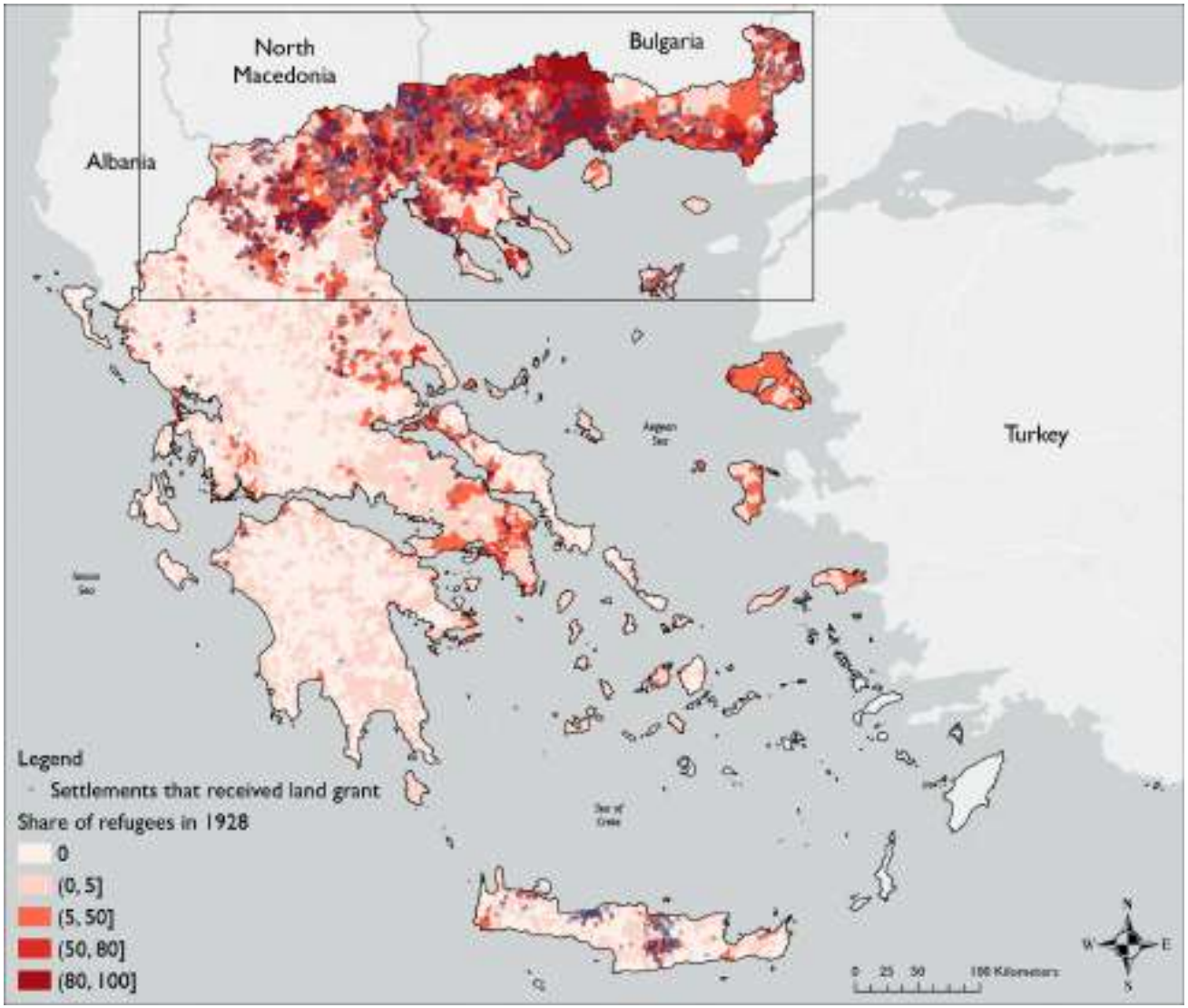
Greece in 1928

Refugee Population Share (1928 Census) across Provinces (*eparcheies*)



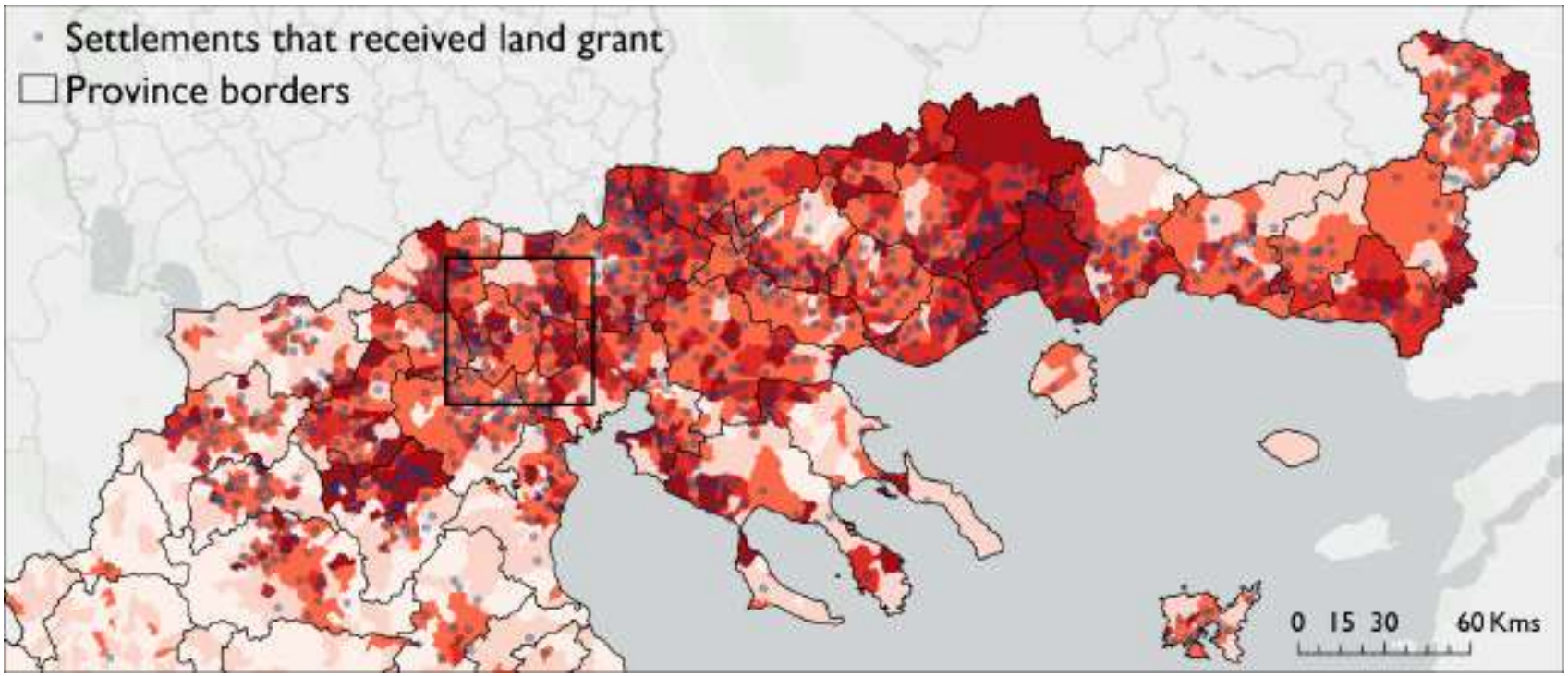
Greece in 1928, cont.

Refugee Population Share (1928 Census) across more than 7000 Settlements



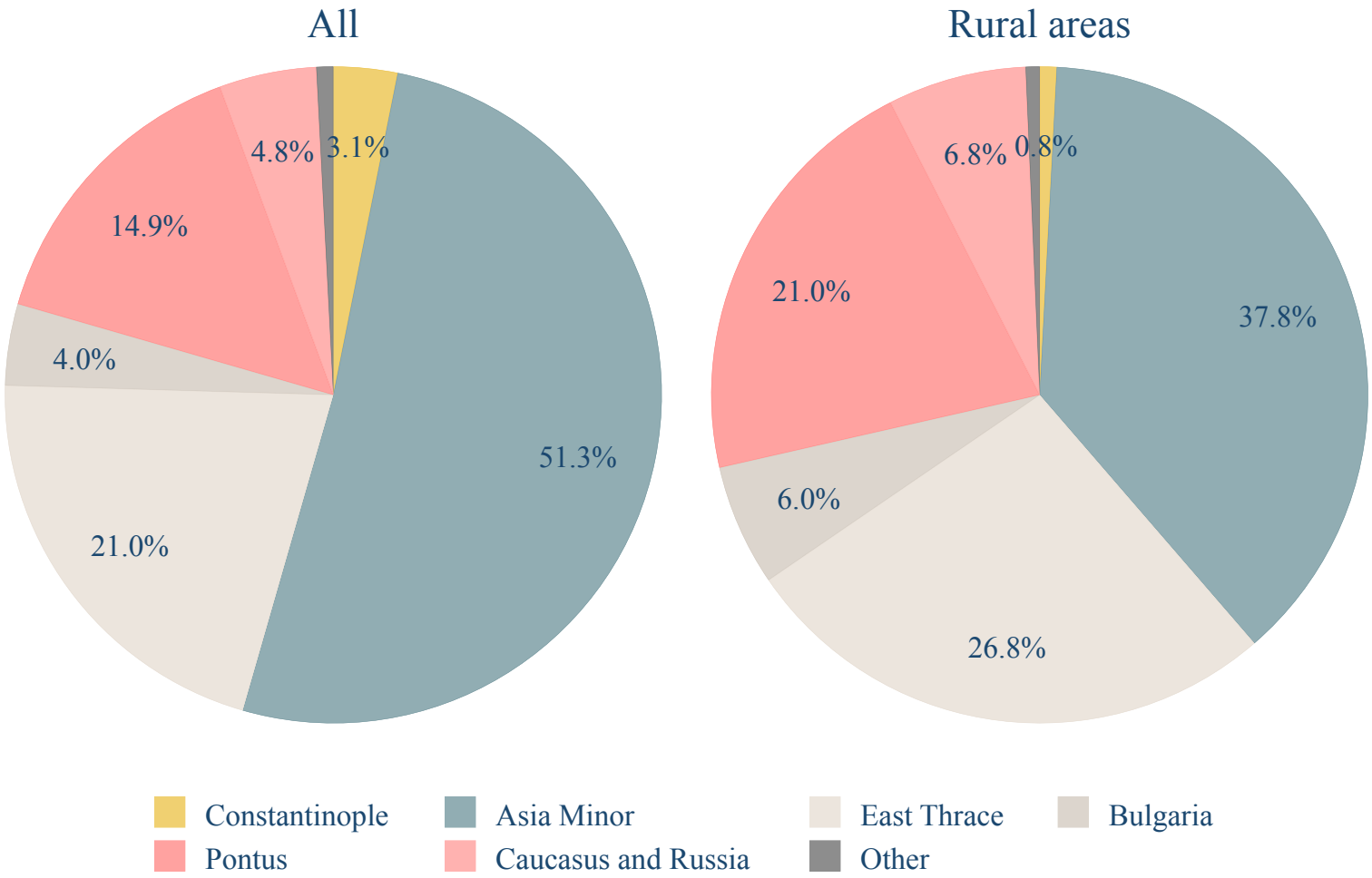
Macedonia and Western Thrace in 1928

Distribution of Refugees (1928 Census) across Settlements



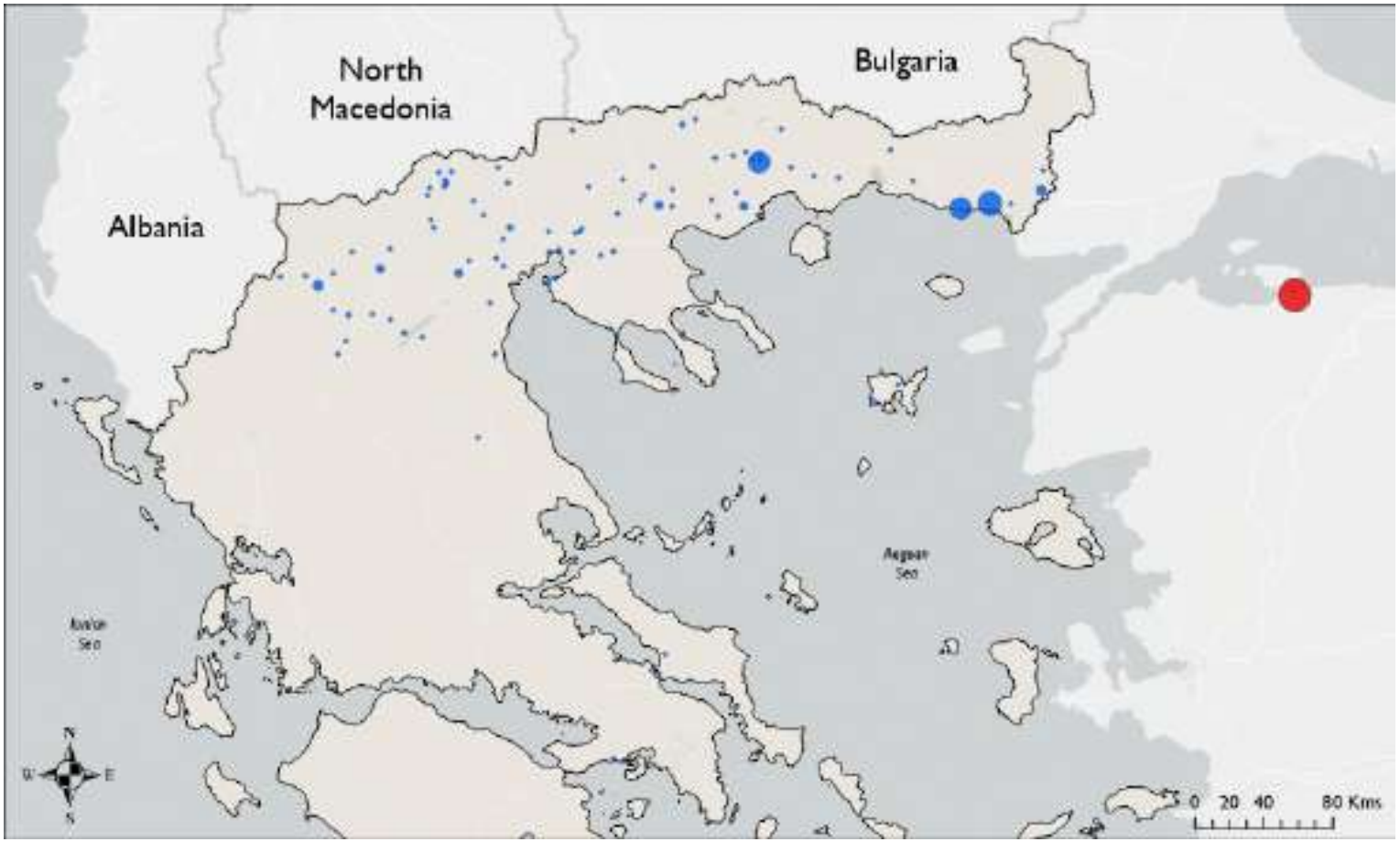
Refugees' Background in 1928

General Population Census. 1,221,849 refugees out of 6,204,684 (19.6%)



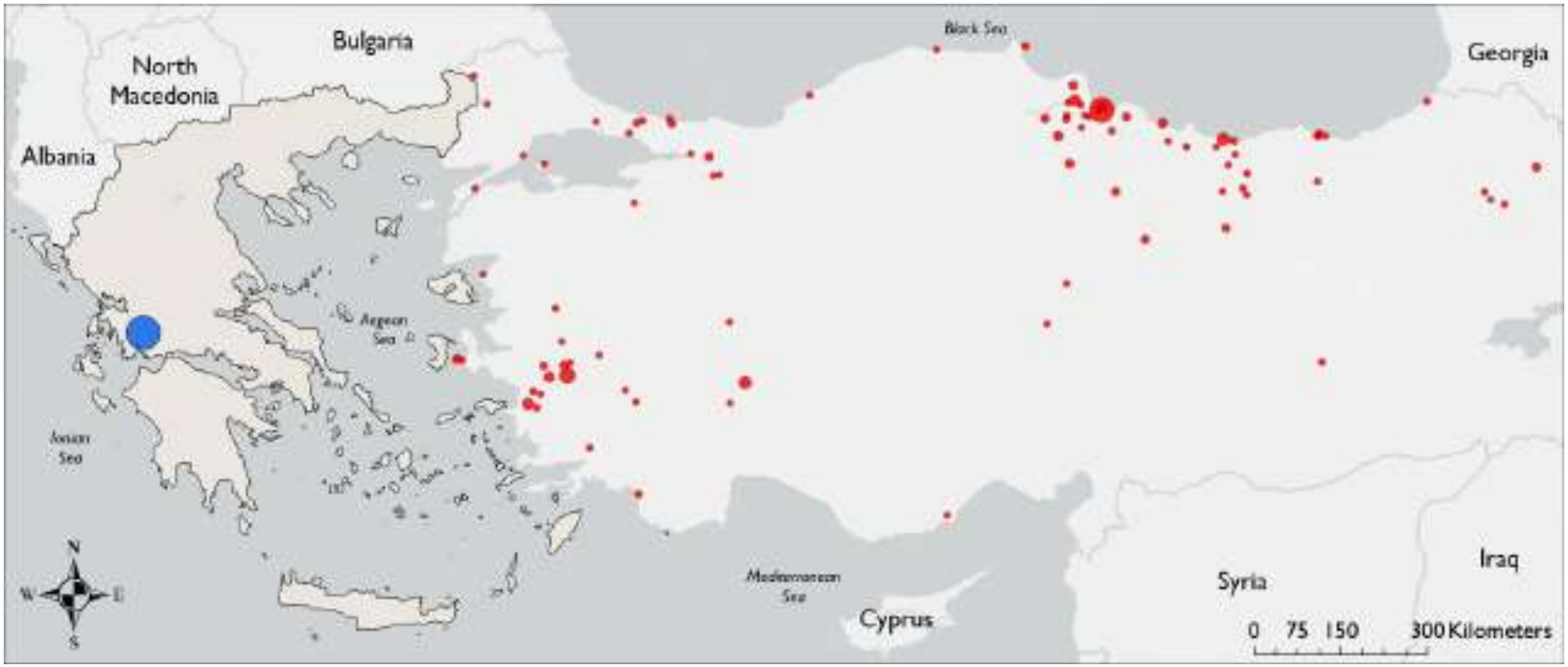
Origin in Anatolia and Destination. RSC Rural Catalog

Example. Panormos (Kiziki)



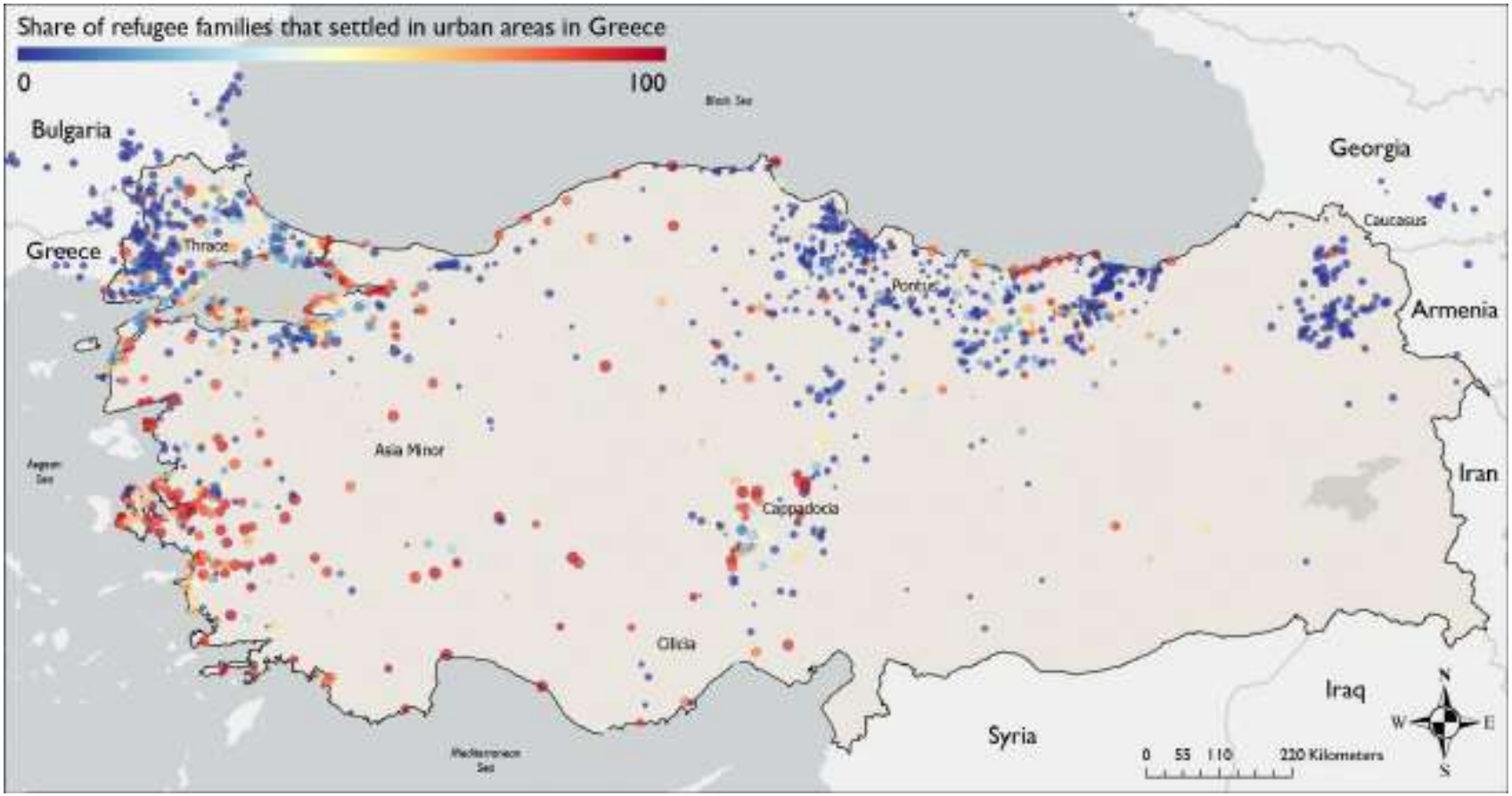
Origin in Anatolia and Destination. RSC Rural Catalog

Example. Agios Konstantionos



Origin of Refugees. RSC Rural and Urban Catalogs

www.Anatolia-Imprints.gr



Origin. Broad Region and Exact Settlement

1. **Coastal Asia Minor**
   - Big cities (Smyrna), but also agriculture
   - Abrupt exodus chaotic conditions
2. **Cappadocia-Cilicia**
   - Non-Greek speaking; Agriculture, pastoral
   - displacement after Convention
3. **Eastern Thrace**
   - Big cities, but also agriculture and pastoral activities
   - Relatively peaceful displacement (movables and animals)
4. **Bulgaria**
   - Peaceful; movables and assets
5. **Pontus (& Caucasus)**. South Black Sea
   - Strig Identity; movement after the end of warfare
6. **Constantinople**

Oral Testimonials → Data

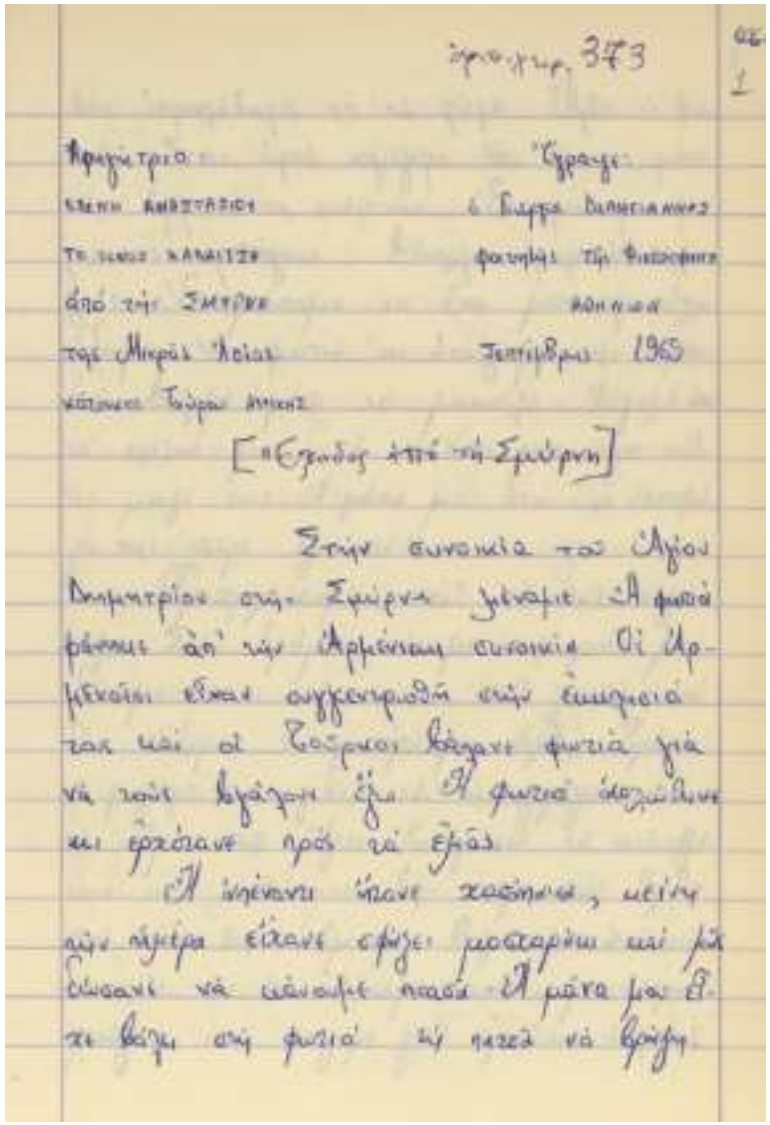
1,500 from about 5,000 Interviews (Center of Asia Minor Studies)

- **Centre for Asia Minor Studies**. Athens, founded by Melpo Merlier
- **Archive of Oral Tradition** about 5,000 refugee oral testimonials (300,000 hand-written pages); between early 1930s and 1970s. 52% settled in Athens and Pireaus; remaining countryside and Macedonia
- **Xenophanis**. Periodical Assoication of Asia Minor Greeks
- **Greek-Orthodox Communities in Asia Minor.** (Anagnostopoulou, 1997)
- Summer and Fall of 2019; 6 RAs, read and decode about 1,500 narratives $->$ AI/ML methods ongoing

Refugees' Background in 1928

Asia Minor Centre Oral Tradition Archive





αρ.φ.χ.μ. 373

Ερωτηθείς: Δημήτριος

Γένος Αναστασίου

Το όνομα Χαραλάμπης

Από την Σμύρνη

Της Μικράς Ασίας

Κατοικεί Τώρα Αθήνας

Εγραφε: ο ίδιος διαφανώς

φοιτητής της Φιλοσοφικής

Αθήνα

Σεπτέμβριος 1965

[Η Έξοδος από τη Σμύρνη]

Στην συνοικία του Αγίου Δημητρίου στη Σμύρνα μένανε οι φτωχότερες οικογένειες. Οι πρόσφυγες είχαν συγκεντρωθεί στην επιφάνειά του και οι Τούρκοι βάζανε φωτιά για να τους βγάλουν έξω. Η φωτιά έπιανε και έρχότανε προς τα εδώ.

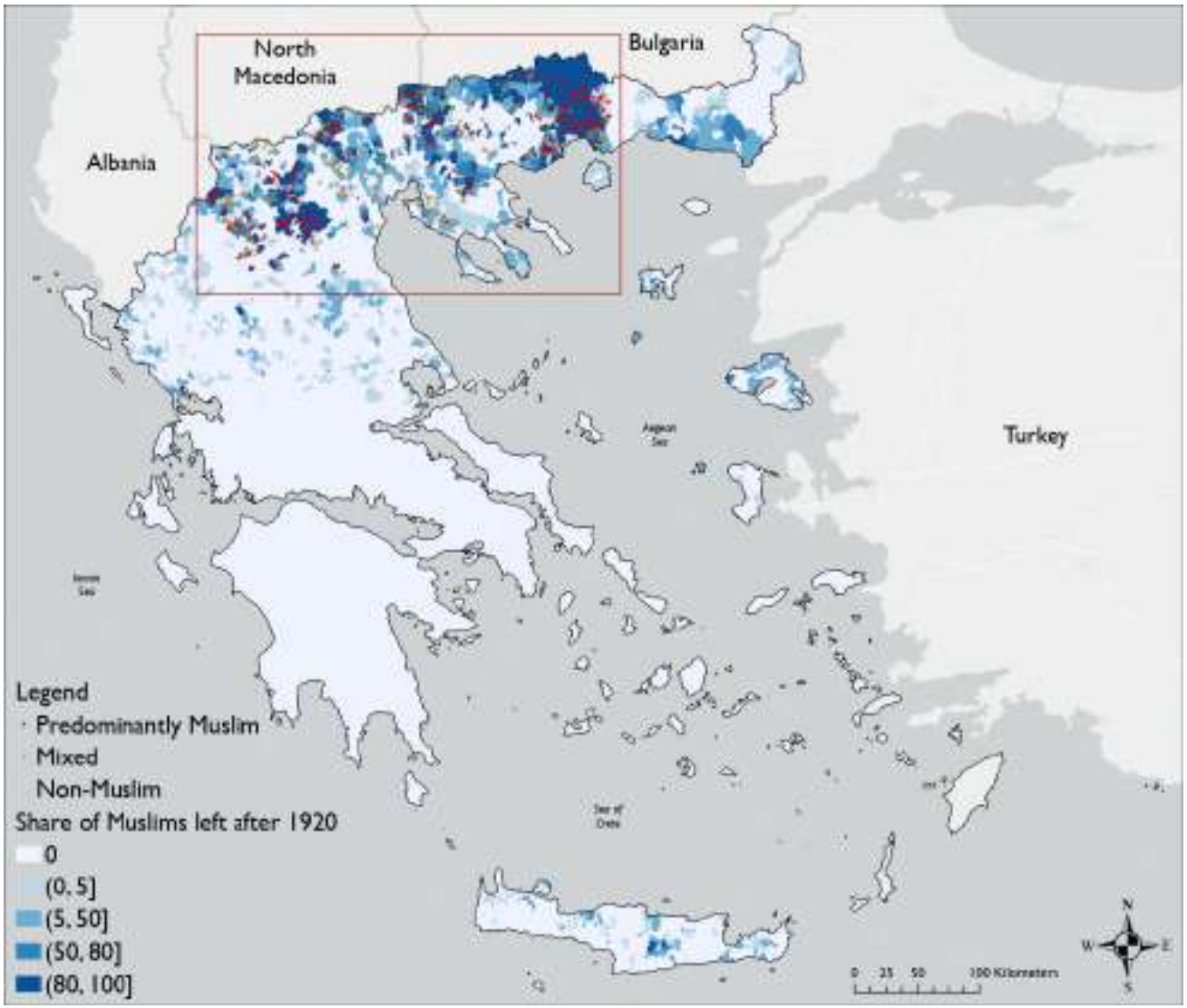
Η μάνα μου ήτανε χασμένη, μείνανε μόνες τους δύο εδώ μετά και δεν ξέρανε να κάνουνε πολλά. Η μάνα μου Β. τα βάζει στη φωτιά κι πάσχει να βγάλει

Details Origin Features

1,500 Interviews (Center of Asia Minor Studies)

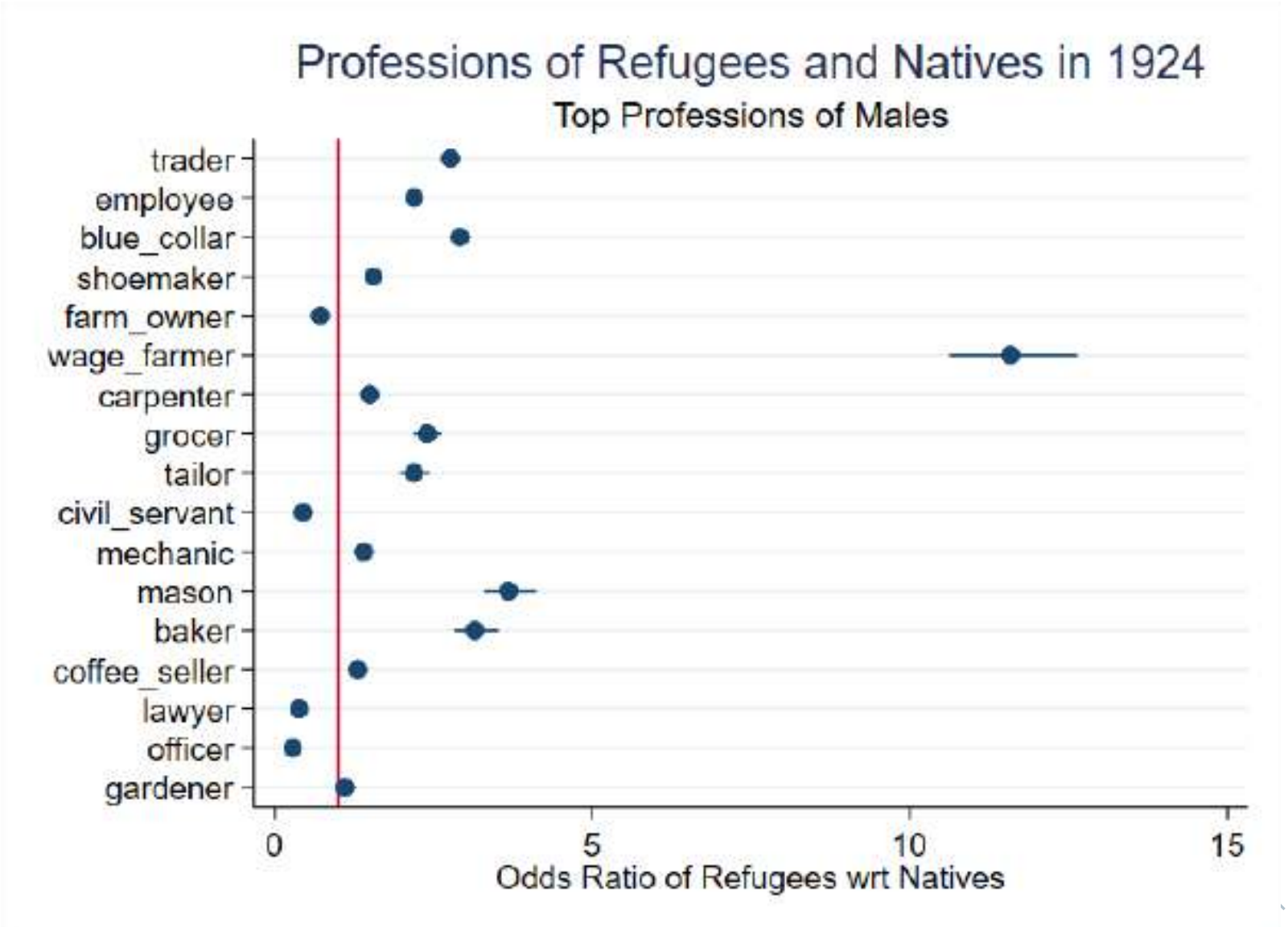
	Constantinople	**Eastern Thrace**	**Asia Minor**	**Pontus**	**Cappadocia**
Settlement	Mainly in Athens connections with Greek cities (trading)	West Thrace	Aegean Sea Islands Athens Sterea Elada	Rural Macedonia, Thessaloniki	Central Northern Greece
Trajectory	Peacefully, transferring assets Trade, Services	Cross Evros Fall 1922 carry movables and animals	Repression since 1908 Exodus, Fire of Smyrna Attacks by Turkish Army	Post Population Exchange Convention (1923); Some via Caucasus, Russia	Post Population Exchange Convention mid/late 1923 & 1924
Main Activity					
Agriculture	0.43	0.71	0.63	0.71	0.71
Herding	0.00	0.00	0.02	0.09	0.03
Fishing	0.29	0.00	0.08	0.00	0.00
Merchants	0.29	0.14	0.20	0.10	0.21
Mining	0.00	0.14	0.08	0.04	0.05
Main Agriculture					
Tobacco	0.00	0.00	0.12	0.21	0.00
Cereal	0.40	0.33	0.29	0.59	0.68
Silk Cocoons	0.00	0.33	0.39	0.01	0.00
Vineyards	0.00	0.33	0.21	0.02	0.32
Language					
Turkish Spoken	0.26	0.25	0.37	0.49	0.75
Only Turkish	0.00	0.00	0.14	0.31	0.57
Only Pontic	0.00	0.12	0.08	0.26	0.04
Only Greek	0.74	0.62	0.53	0.21	0.00
Only Cappadocian	0.00	0.00	0.00	0.00	0.20
# Settlements	19	8	333	250	75

Muslim Share in 1920. Census and Ethnographic Map



Urban Refugees. Occupations Upon Arrival

Electoral Catalogue, Athens 1924



Urban Settlements

80 Cities/municipalities across Greece, incl. Athens, Salonica, and Piraeus

Table: Refugee Urban Settlement Areas Recorded in the Refugee Urban Census, 1927; *League of Nations Archive*

	Number
Cities	80 (incl. 3 Metropolitan Area
Municipalities	80
Refugee Neighborhoods	253
Number of Refugee Families	101,405
Number of Refugee Families in Permanent Houses	39,450
Number of Refugee Families in Semi-Permanent Houses	26,288
Number of Refugee Families in Favelas	35,667

Urban Refugee Settlements. League of Nations

Nea (New) Erythraia



Historical Urban Map



Digitized Now

Athens Refugee Settlements

Digitized Maps



Refugees' Legacy in Greek Society and Economy

Section Structure. Human Capital

1. Introduction-Motivation
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3. **Human Capital and Uprootedness**
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Uprootedness Hypothesis

Refugees and Human Capital

1. Uprootedness Hypothesis
   - Forced Displacement and Human Capital
2. The Greek Experience
   - Design. Causal Relationship
   - Main Dynamic Patterns
   - Human Capital Transferability

Uprootedeness Hypothesis

Old Conjecture

"(...) since Jews have been persecuted so often and forced to flee to other countries, they have not invested in immobile land, but in mobile human capital-business skills, education, etc. that would automatically go with them." Stigler and Becker (1977)

"It was always like that with Jewish families: they believed that **education was an investment for the future, the only thing that no one can [...] take away from your children, even if, God forbid, there's another war, ... another migration.**" Amos Oz (2005), taken from Becker et al. (2020)

Hard to detect in Jewish history. "The argument [that persecuted minorities prefer to invest in human rather than physical capital] is problematic when one considers the salient facts of Jewish history, however, as the transition from farming to urban skilled occupations occurred in eighth- and ninth- century Mesopotamia and Persia, where the Jewish minority enjoyed significant security of life." Botticini and Eckstein (2012)

Forced Displacement & Human Capital Investments

Historical Empirical Works. Reviews: Becker (2022) and Becker et al. (2020)

- **Jewish History.** *Unclear.* Botticini and Eckstein (2012)
- **Poland, after WWII**. *Positive, survey-based* Becker et al. (2020)
- **West Germany, after WWII**. *No, despite income and agglomeration* Bauer et al. (2013); Bauer and Kvasnicka (2014); Peters (2022); Ciccone and Nimczik (2023)
- **Finland after WWII**. *Some, heterogeneous, despite income gains.* Sarvimäki et al. (2022)
- **Mozambican Civil War**. *Yes, short-term*(Chiovelli, Michalopoulos, Papaioannou, and Sequeira (2025)
- **Icelandic volcano outbreak in 1973.** *Some alongside strong income effects* Nakamura et al. (2022)

Forced Displacement → Human Capital

In a Nutshell. Henry Morgenthau (RSC Chair). *I was Sent to Athens*

"They explained that they represented a group of refugees from the Black Sea region of Asia Minor, who had finally been got together again after their dispersion and were now settled in the mountains of western Macedonia. They had an exceedingly hard time getting started in their new surroundings, and at times their sufferings had been severe. They were so poor that they had not been able to build even a church, but for five years had been holding their church services in a barn.

The priest himself then explained what they wanted. It was not relief from taxes, nor an extension of time on their land payments, nor any of the selfish advantages one might have expected; it was not even a church they wanted. Said the priest: **'We are willing to go on worshiping in a stable until better times come, but we implore you to help us build a school, so that our children shall not grow up in ignorance."'** Henry S. Morgenthau (1929)

Refugee Settlement Commission

Henry Morgentau Sr. (RSC Chairman), Eleftherios Venizelos (Prime Minister), and Apostolos Doxiadis (Minister of Refugees, Social Welfare, and Public Health



Uprootedness Hypothesis

Displacement → (Portable) Human Capital

"**A very marked feature of the life of an agricultural (refugee) village is the intense desire for education**. Directly a village is fairly settled, the inhabitants proceed to build a temporary wooden church, which will be replaced when they can afford it by a stone edifice. But even before they are comfortably settled they commence to agitate for a school.... The desire for education among the children is so great as to be incredible, and is most astounding to an English observer." Sir John Hope Simpson (1929), RSC Vice-Chair

The Refugees' Issue in Greece in mid-1920s

Settlement and Support

1. **Urban Refugees.**
   - Permanent Housing Structures
   - Renting
   - Favelas & other ways of self-housing.
2. **Rural Refugees. Land Grants, Housing, and Technical Assistance**
   - Departing Muslims (and other foreigners)
   - Nationalize large properties (enact earlier legislation)
   - Some monasteries' land
   - Drained swamps and lakes

Rural Refugees Settlement Policy

Rural Refugees (in Greece)

RSC distributed 850,000 hectares to refugees; 3.5 hectares per family similar to the typical native farmer:

- Redistribution of the large estates left behind by departing Muslims ("tsifliks") into smallholdings.
- Expansion of the cultivable area through drainage works.
- Land reform

Hundreds of refugee settlements: (30% new, 70% from exchanged Muslims)

- The goal was to unite members of the same place to recreate the sense of community.
- Approx. 220,000 refugee families were granted land.

RSC (and State) Work in the Countryside

Rural (Agricultural) Refugees (besides housing and land)

1. **Technical Support**. Cereals (wheat, corn, maize) and tobacco
2. **Animals**. 150,000 (RSC) plus 135,000 (state) small and big animals
3. **Inputs/Machinery.** Plows, tools, machinery, seeds
4. **Investments**
   - Drainage of swamps and lakes, wells, and small irrigation; some public works (small roads, clearing trails).
   - No responsibility for schools, clinics, hospitals, and transportation.

Empirical Approach and Design

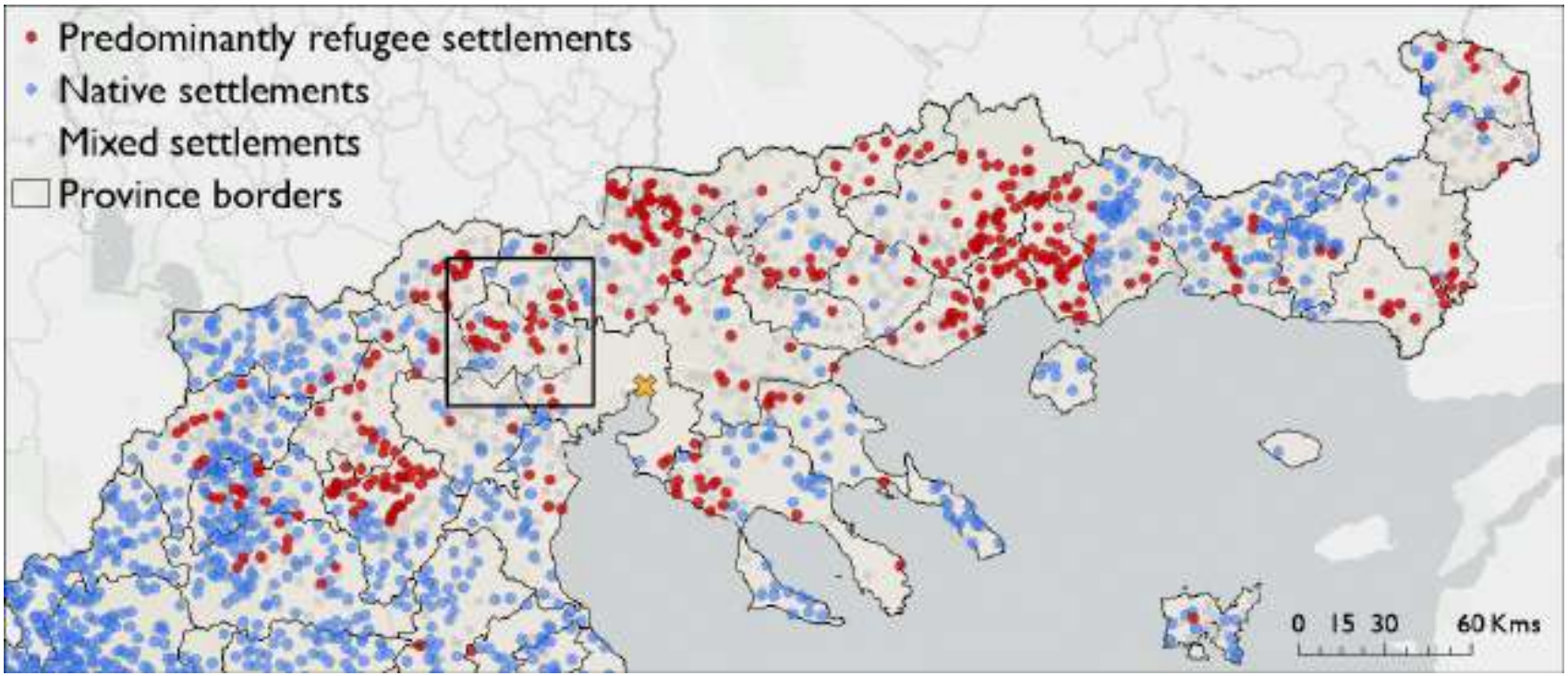
Identification

Greek state never asked after 1928 about refugee background
⇒ **comparisons between predominantly refugee settlements and (nearby) predominantly native (non-refugee) settlements**

- Focus on the Greek countryside → settlements with land grants; no exact location in the urban catalog to look at cities across neighborhoods
- Population share cutoffs in 1928, to identify predominantly refugee and non-refugee (native, autochthonous) settlements; estimates also using refugee share (incl. mixed refugee-native settlements)
- Trace settlements [stable geographic units] over a century

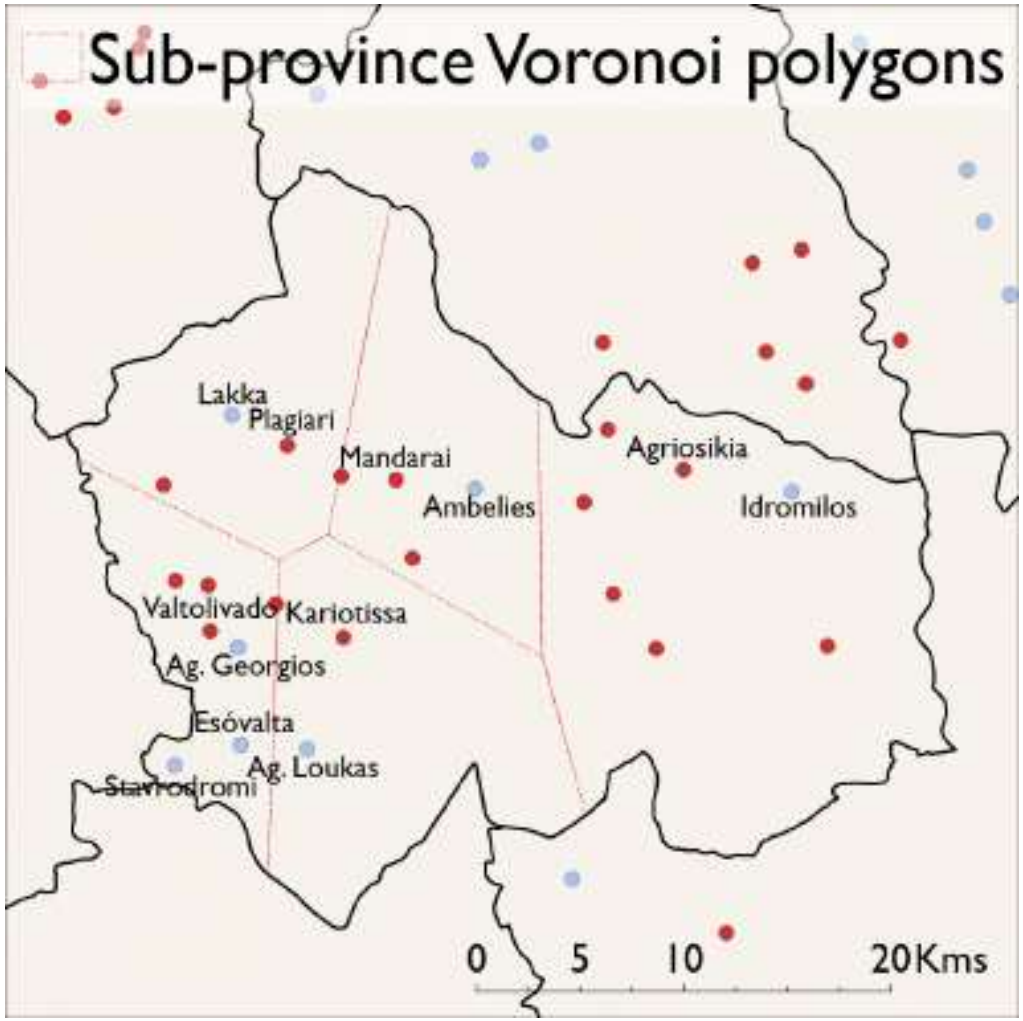
Identification Design. Control-Treatment Dynamics

Predominantly Refugee and Native Settlements in Macedonia and West Thrace
80% of rural refugees; Ottoman Empire til 1913



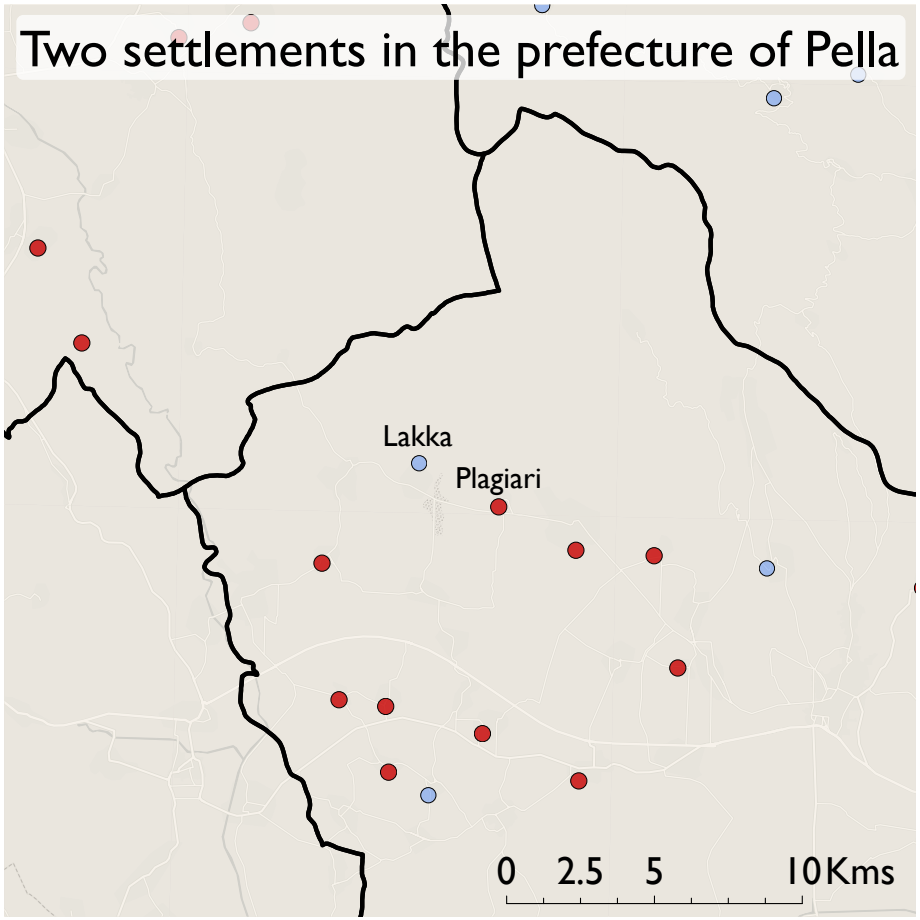
Identification Design, cont. Example

Giannitsa with sub-eparchia polygons



Local Analysis. Example from Macedonia

Plagiari (99% refugee), Lakka (0% refugee)



Plagiari:

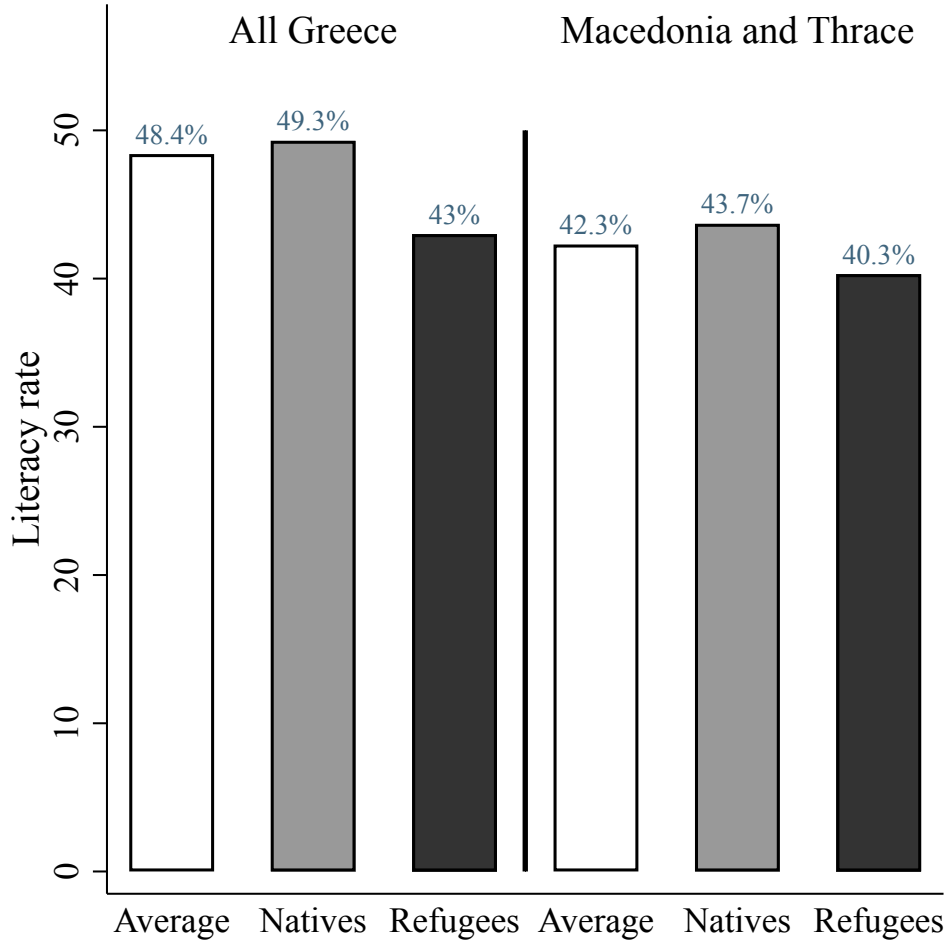
- 327 persons in 1928;
- 349 persons in 2011;
- Primary education of those born before 1915: 6%, after 1915: 69%;
- Employment in manufacturing (1971-2001): 8%;

Lakka:

- 278 persons in 1928;
- 372 persons in 2011;
- Primary education of those born before 1915: 15%, after 1915: 64%;
- Employment in manufacturing (1971-2001): 6%;

Results. Initial Conditions. Literacy Rates in 1928

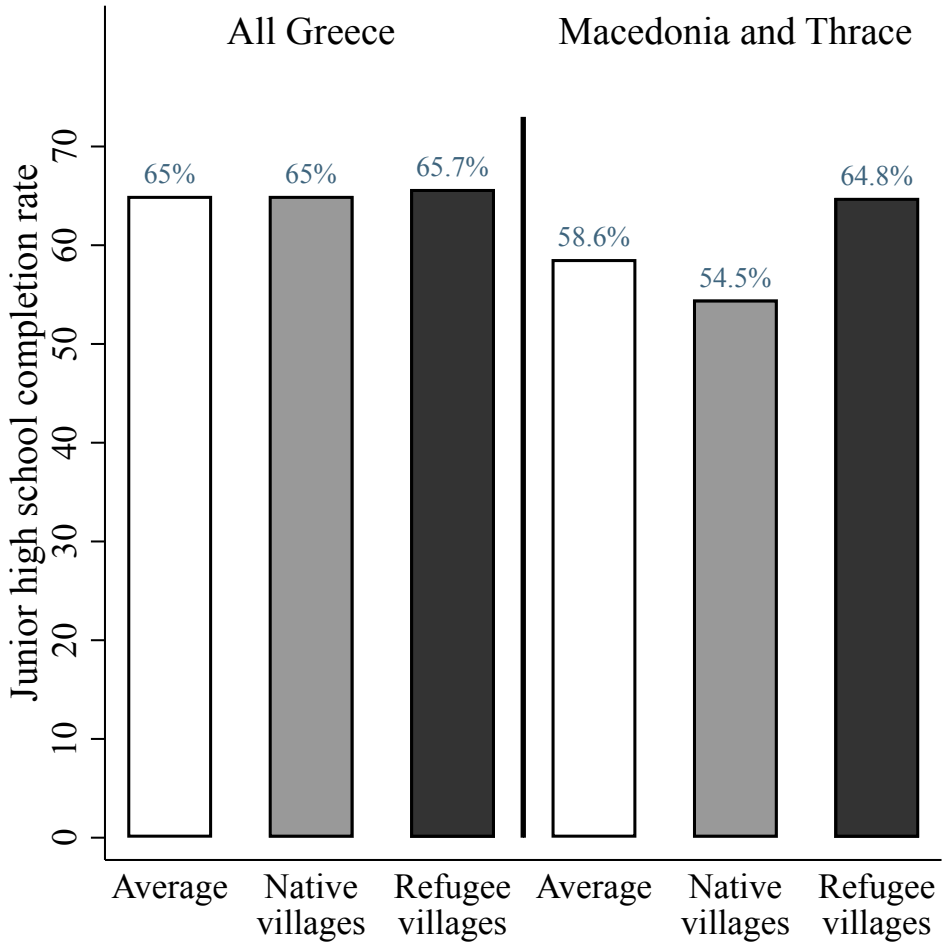
Natives and Refugees (1928 Full mPopulation Census)



▸ Literacy in 1971–81 ▸ Primary school in 1971–81

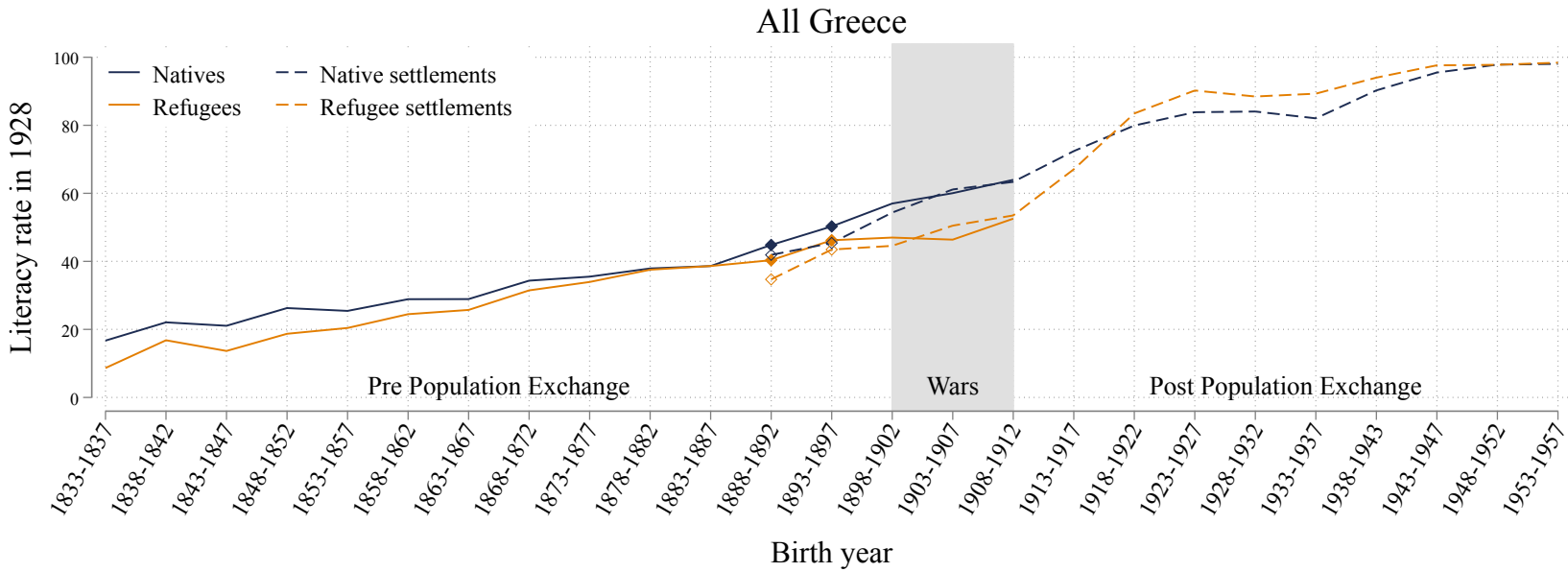
Results. Post. Junior-high Completion Rates in 2011

Born in Native and Refugee Settlements (2011 Population Census)



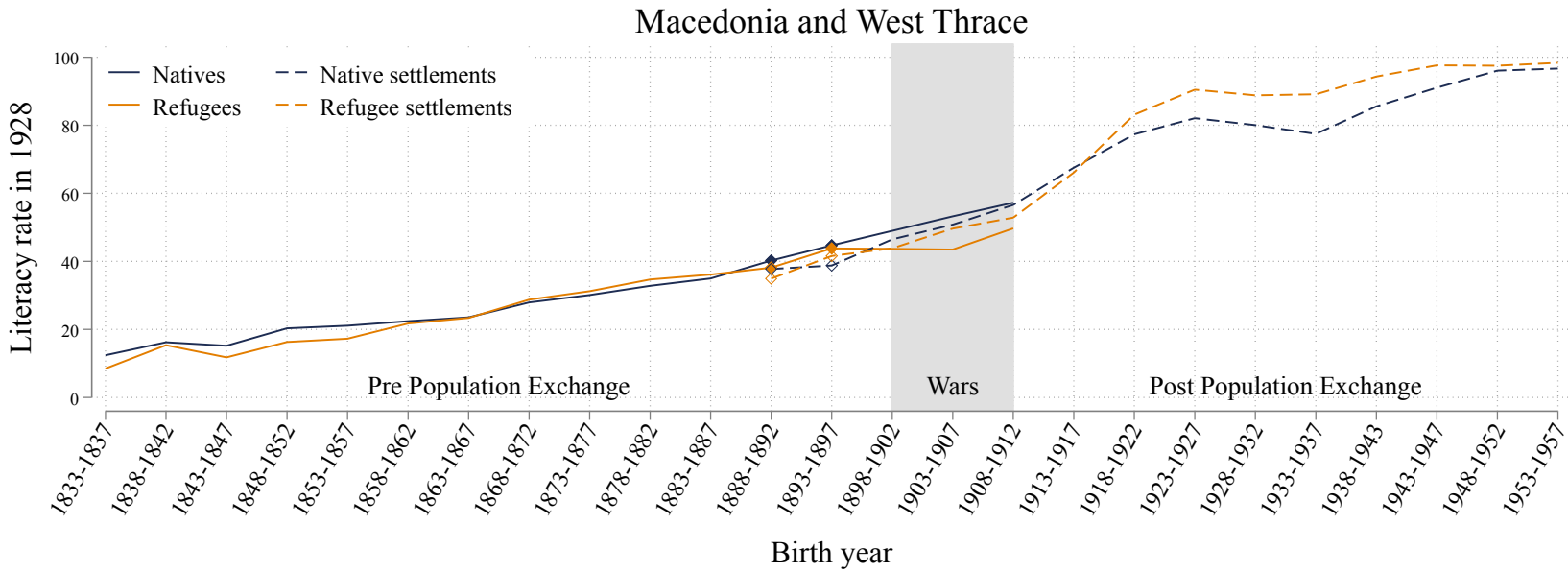
Long-Run Trends in Literacy, Greece

Refugee and Native Settlements (1928, 1971 and 1981 General Population Censuses)



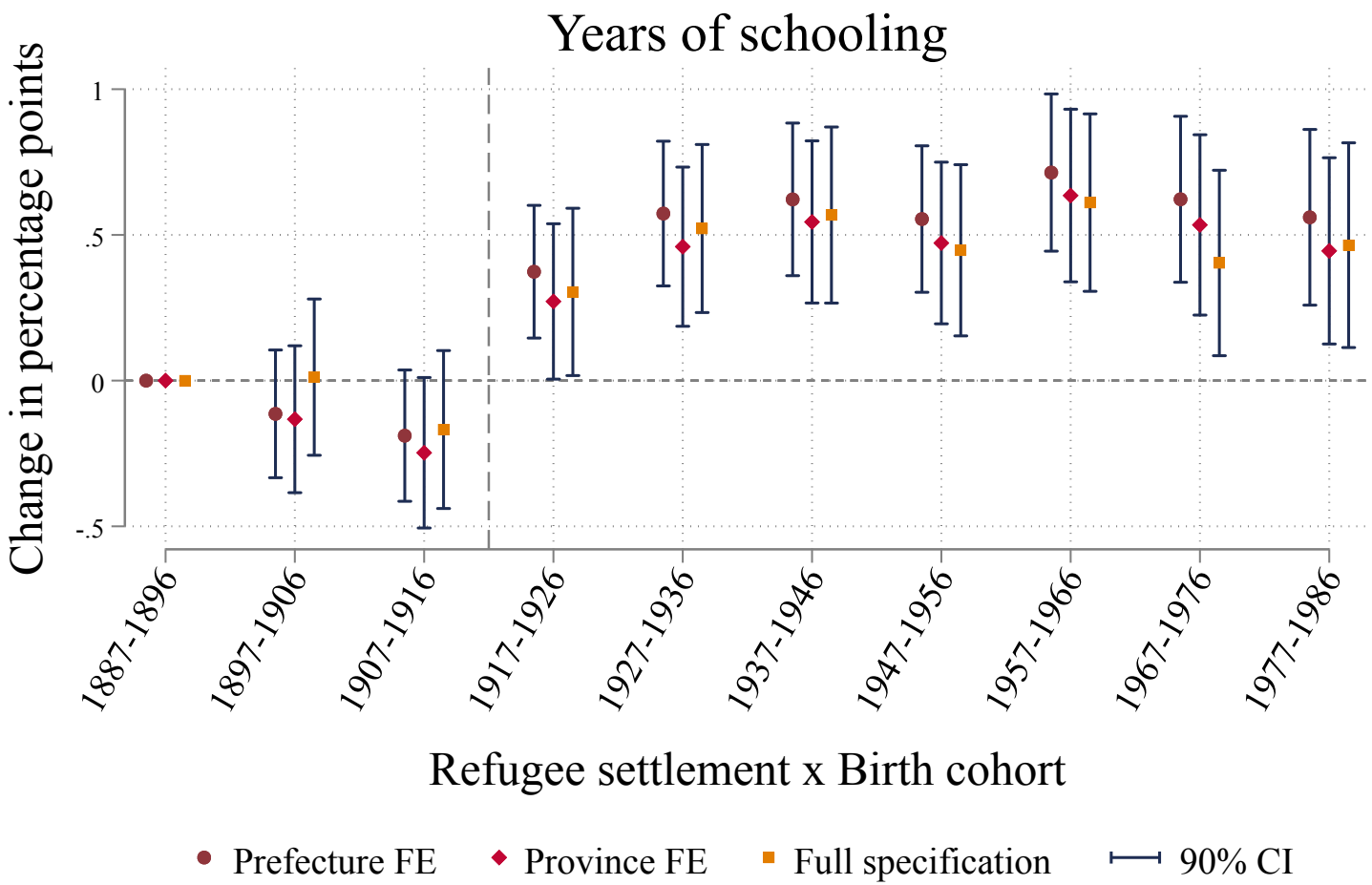
Long-Run Trends in Literacy, Macedonia and West Thrace

Refugee and Native Settlements (1928, 1971 and 1981 General Population Censuses)



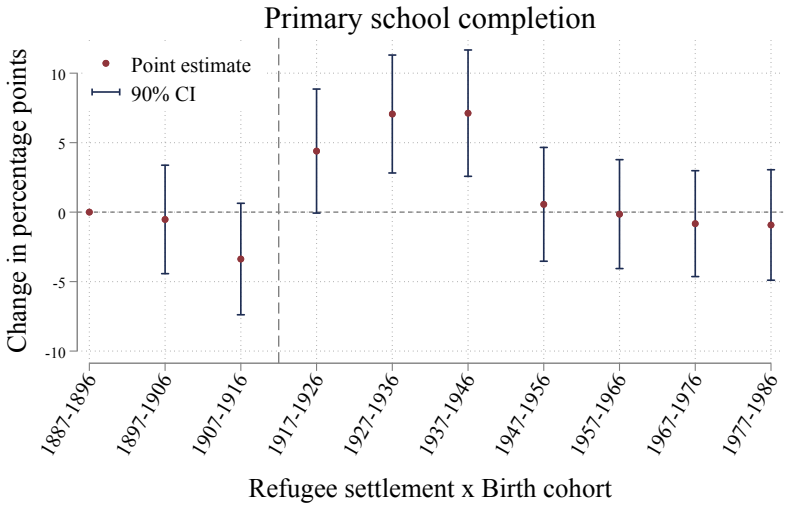
Diff-in-Diff Dynamic Estimates

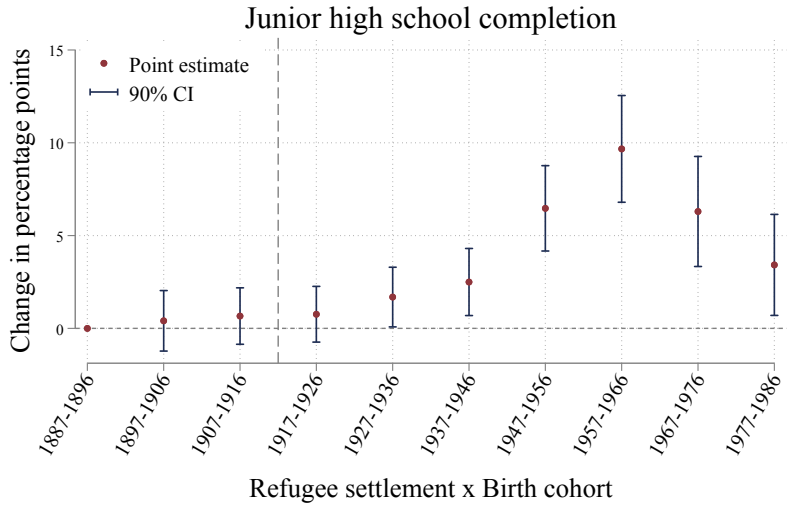
Full Sample



Primary and Junior-high Completion (1971–2011)

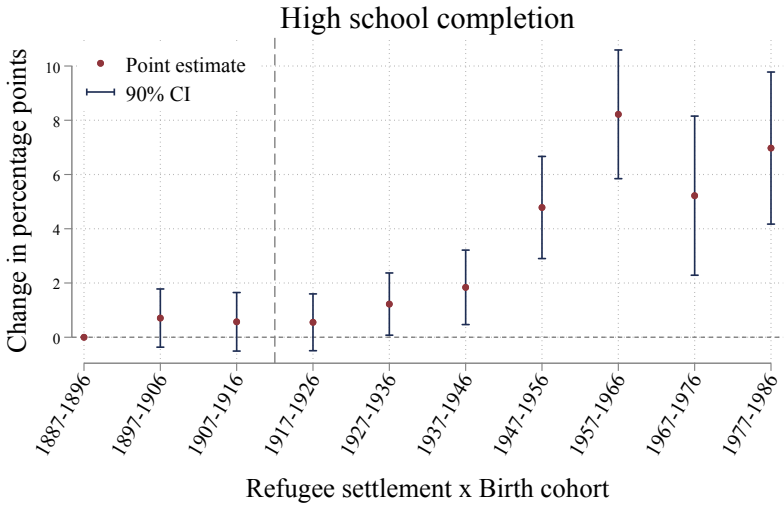
Native and Refugee Settlements. Diff-in-Diff Estimates. Rich Spec.

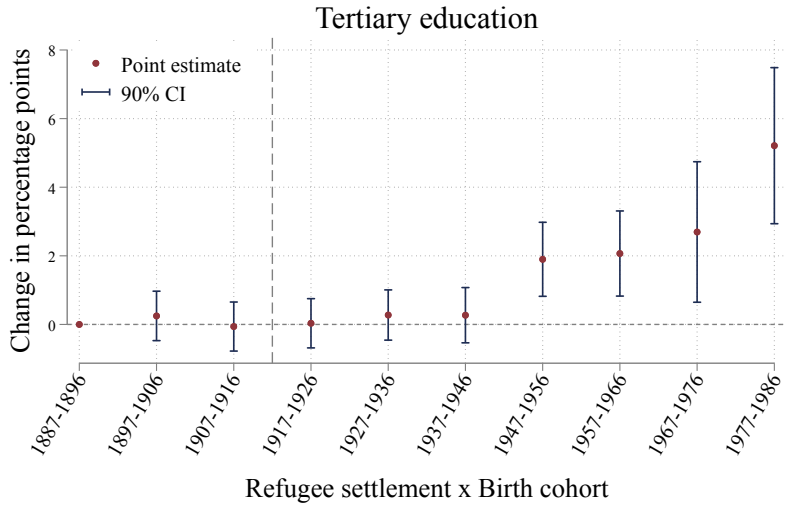




Completed High-school and Tertiary Education (1971–2001)

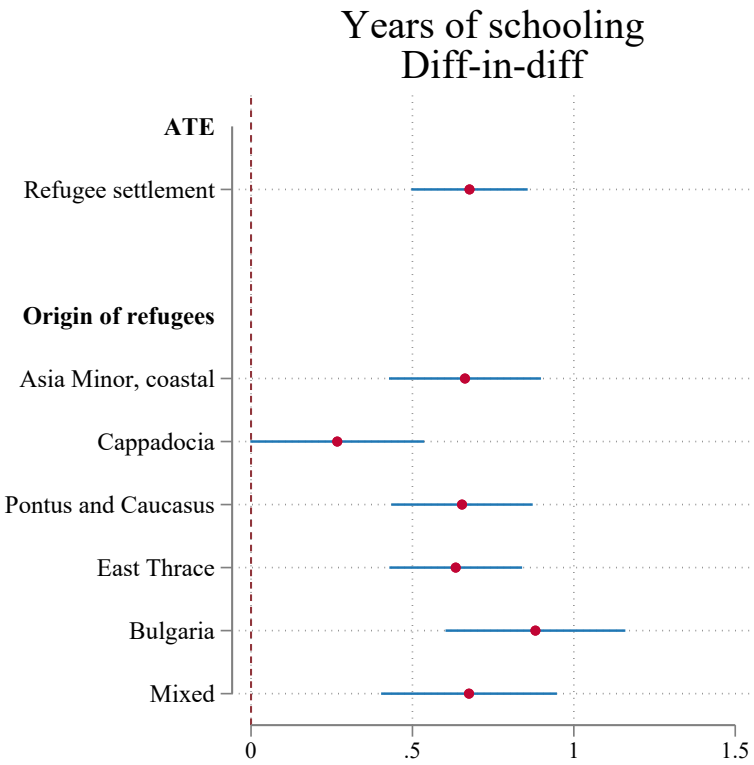
Difference-in-Difference Estimates. Rich Spec.

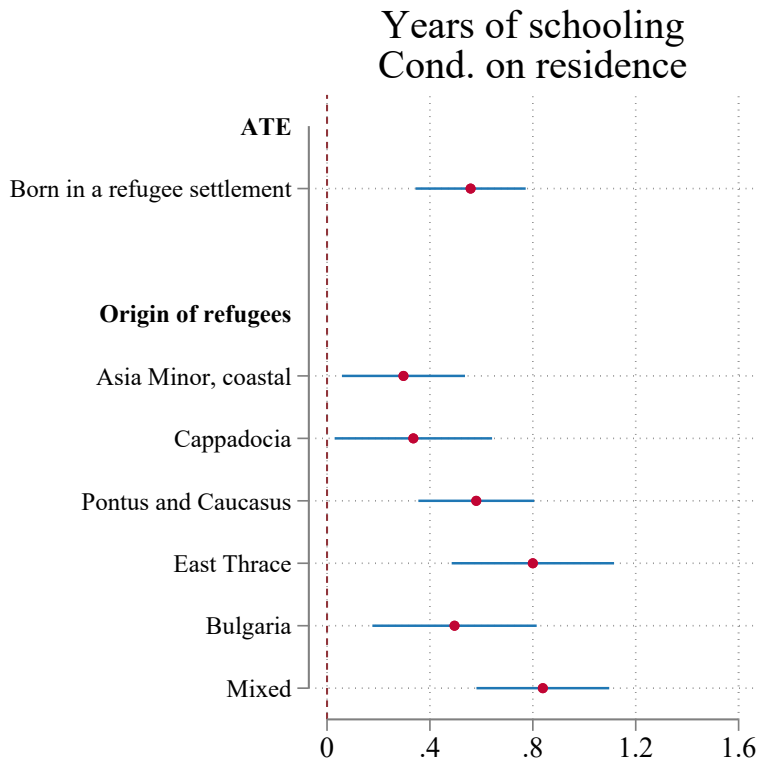




Heterogeneous Effects by Region of Origin

Diff-in-Diff and Refugee-Native Birthplace; Macedonia & West Thrace





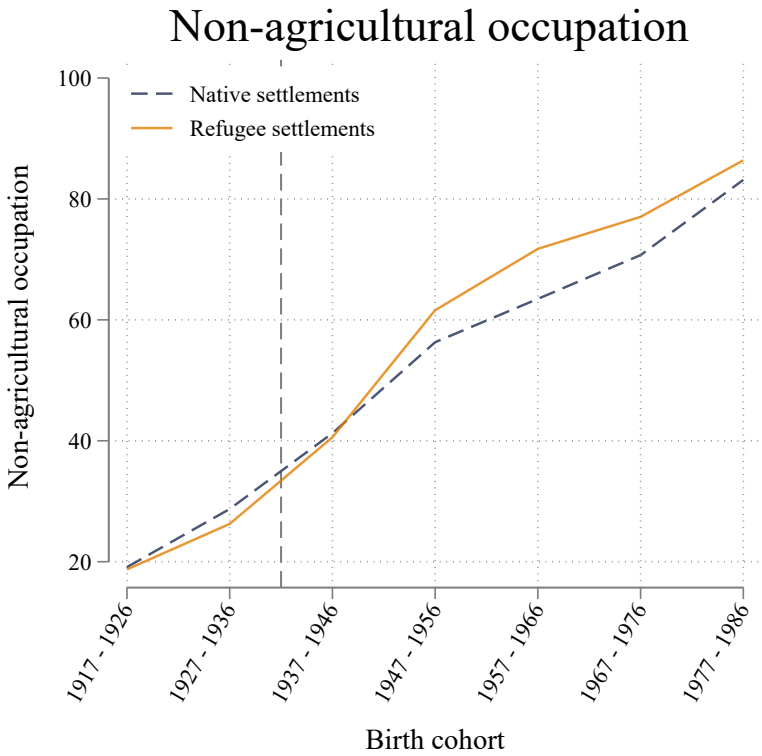
Deeper Underlying Mechanisms

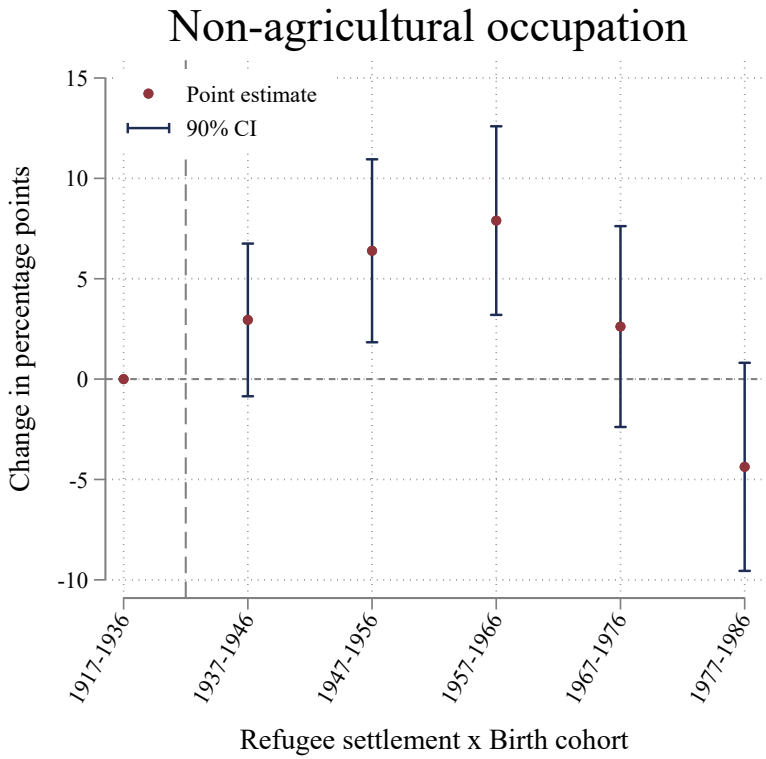
Forced Displacement → Human Capital. *Why?*

1. **Structural Transformation**
   - Low attachment to new rural settlements → employment in modern sectors (returns to education ↑)
   - Lower (psychological) costs moving to competitive service and manufacturing-oriented labor markets (in cities)
   - Subsequent location choices: (i) Return to lost homelands (gone after 1931); (ii) emigration; (iii) internal migration; (iv) forced out-migration; Michalopoulos et al. (2025)
2. **Desire for education ("pure" uprootedness)**
   - Correlation present also for non-movers in the countryside
   - Preferences; Risk; Insurance

Structural Transformation by Refugee Presence (1971–2011)

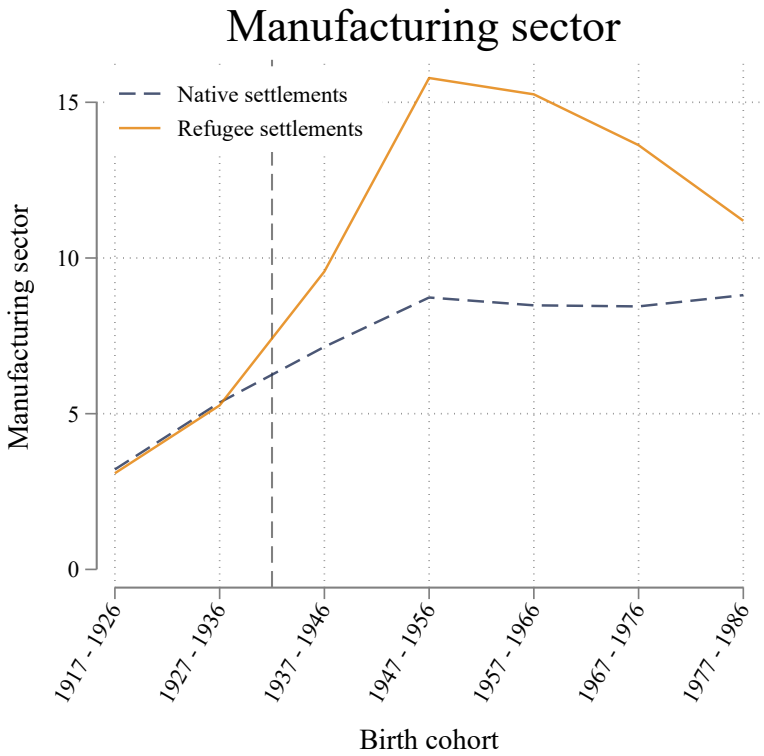
Native and Refugee Settlements. Full Sample. Rich Spec.

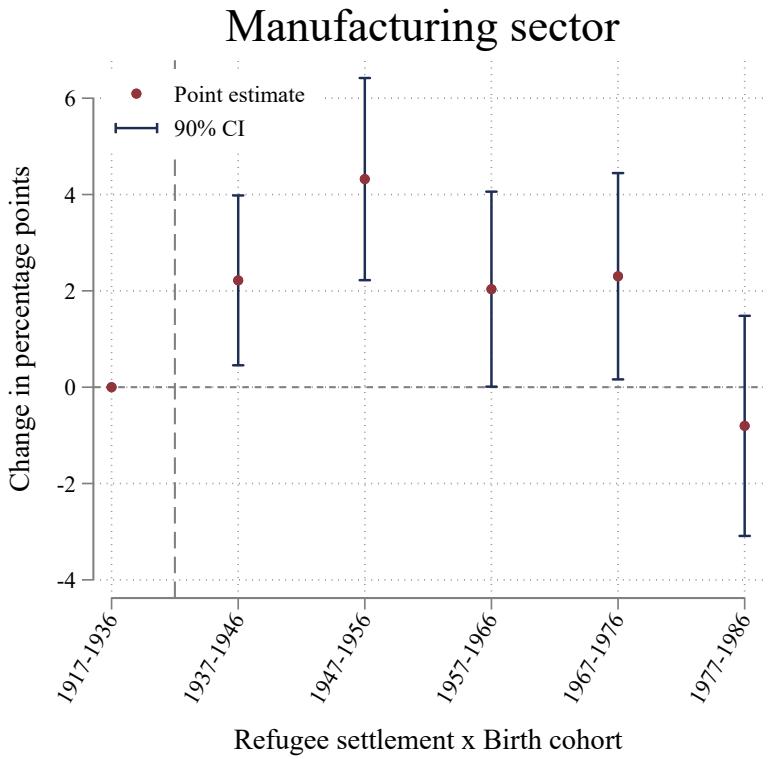




Manufacturing Sector by Refugee Presence (1971–2011)

Native and Refugee Settlements. Full Sample. Rich Spec.





Forced Displacement and Structural Transformation

Summary

- Rural refugees and their offspring move out-of-agriculture into manufacturing and services (also in other settings)
  - Stayers and internal migrants (results not shown)
  - Within broad sectors into occupations and sub-sectors which employ more skilled workers (results not shown)
- Occupational-Sectoral transition takes place after educational investments
  - Educational catch-up and investments start immediately after setting in Greece (6-year old and younger in 1922) and for those born in Greece
  - Out-of-agriculture transition after 15 years in Greece; mainly after WWII

Uprootedeness and Human Capital. Mechanisms

Summary

1. **Displacement → Human Capital**
   - Rural refugees start with lower schooling; catch up and then surpass natives. **Dynamics over a century**
   - **"Stayers"** in refugee and autochthonous settlements; **"movers"** in big cities or elsewhere
   - + Uprootedeness ⇒ Income (via education)
2. **Mechanisms ⇒ Professional Upgrade and Preferences. half and half**
   - **Employment Sector and Profession. 50%**
   - **Preferences; Risk. 50%**
   - - No evidence of children quality-quantity tradeoff

Uprootedness. Digging Deeper

Human Capital Portability

Portable Human Capital. Core of uprootedeness hypothesis [Kessel (1958), Stigler and Becker (1977), Ayal and Chiswick (1983), Botticini and Eckstein (2012), Brenner and Kiefer (1981), Becker et al. (2020)]. **Little evidence (tiny samples)**

- 2011 Census (25% sample): Detailed information on university degrees.
- Classify degrees by "portability of skills" (e.g., law versus engineering and medicine).
- People from refugee settlements with university education are more likely to complete degrees with "portable" skills, compared to those from autochthonous settlements.
- **Estimation among those with completed tertiary.**

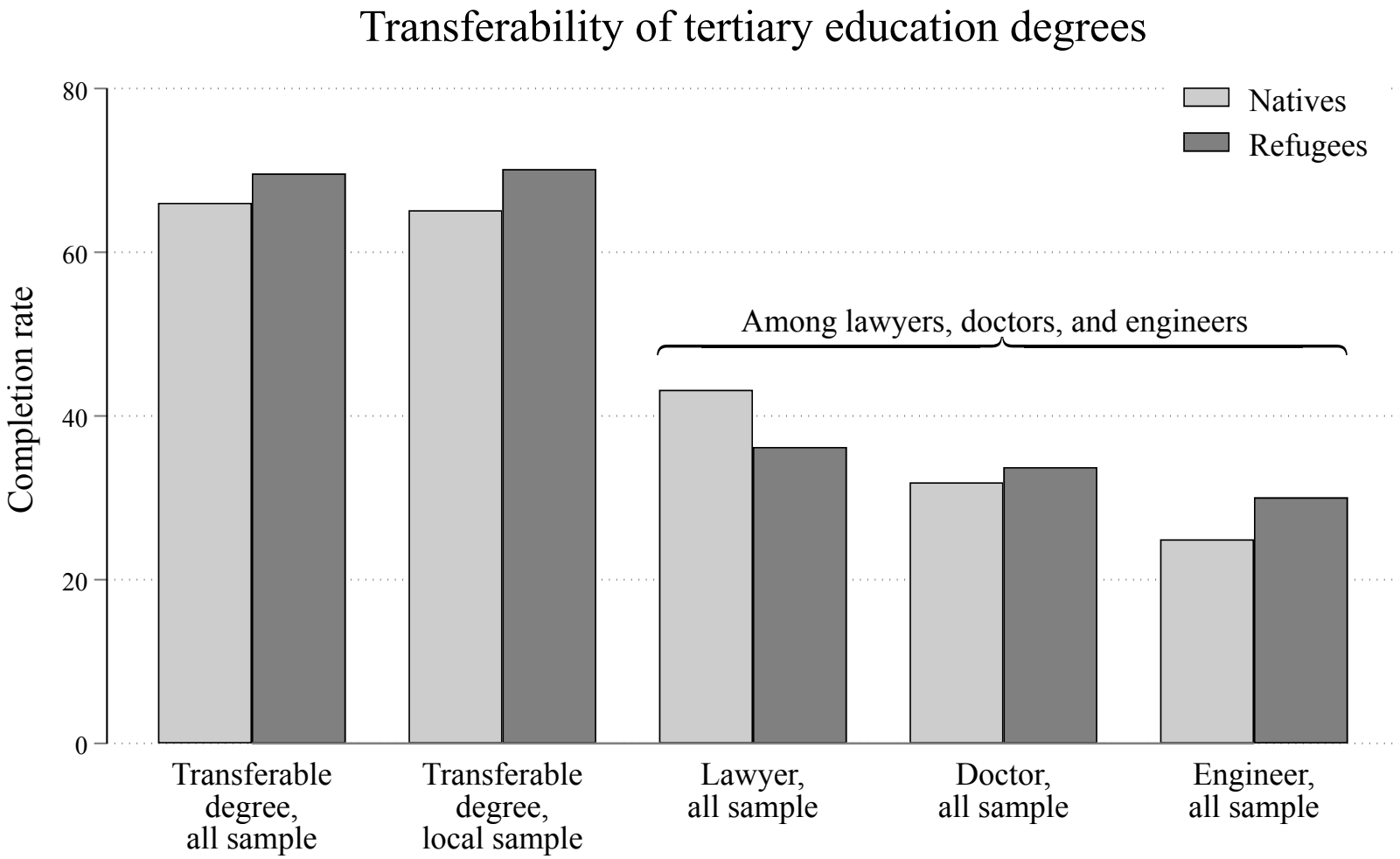
Transferability of Tertiary Degrees

Classification

- We map university degrees into transferable and non-transferable using **ChatGPT 4**
- Greece-specific degrees are classified as non-transferable. Examples among the top 50 most popular degrees out of 302 degrees (76% of those with a college degree):
  - **Non-Portable: Legal studies; education pedagogy (preschool, primary, secondary); theology; military academies, protection forces (police), public administration**
  - **Portable: Engineering, Medicine, Physics, Mathematics, Economics, Business, Biology**
- **Law vs Engineering and Medicine**

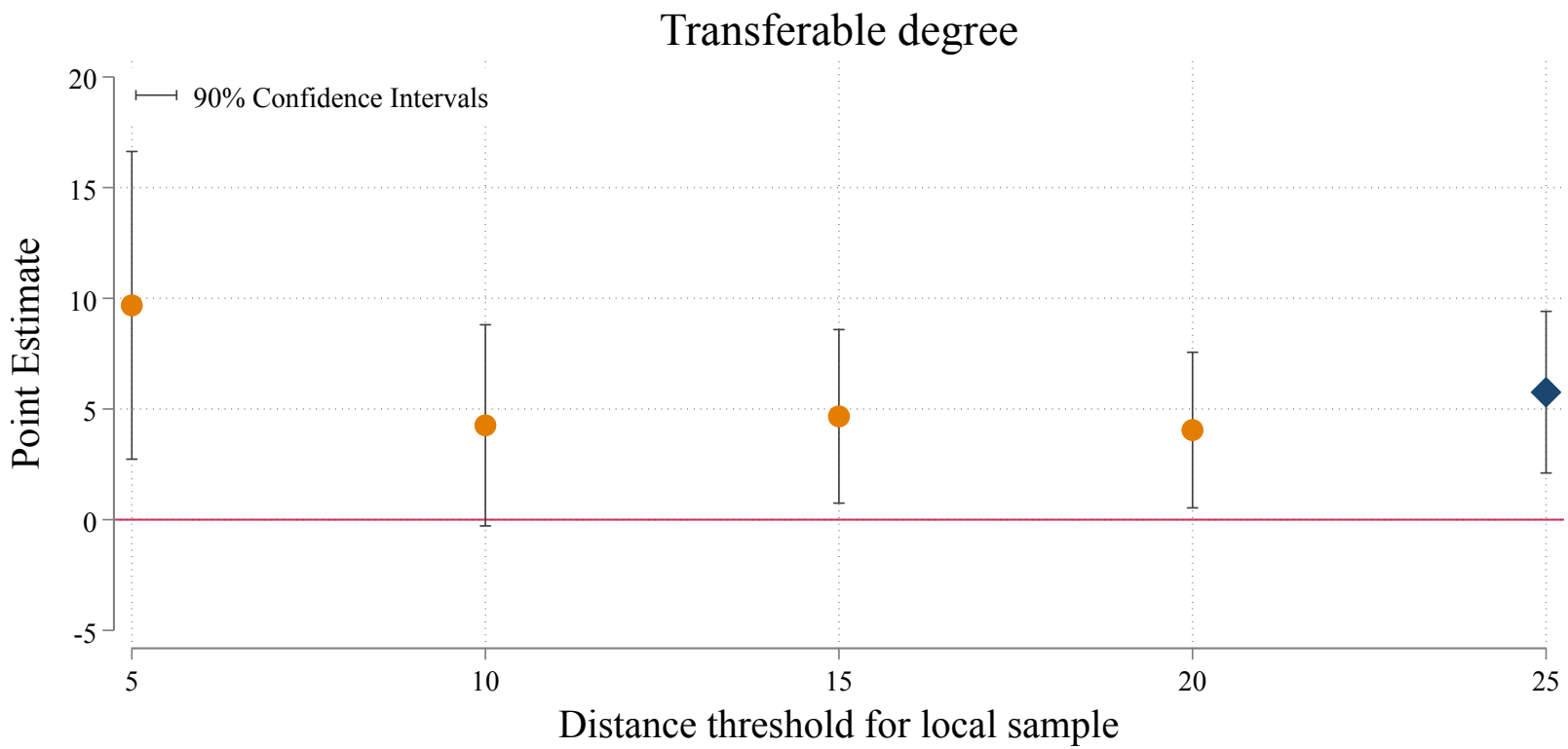
Displacement and Transferability of College Degrees

Refugee-Native Birthplace (2011 Census)



Human Capital Portability

Proximity Refugee and Native Settlements. Alt. Distance Cutoffs. Cond. on Residence



Taking Stock: 1+1 Results

Interpretation

1. **Transferability across Borders**. The odds of choosing a transferable versus non-transferable degree are 15-30% higher for refugees compared to natives.
   - Consistent with reduced-form estimates.
   - Robust to controlling for various degree characteristics and for the past occupation distribution of the birthplace, conducive to choosing certain degrees.
2. **Transferability across Occupations**. Refugees are also more likely to opt for degrees that apply to multiple different occupations → Refugee value both cross-border portability and cross-occupation transferability.

Uprootedeness and Human Capital

Summary

1. **Displacement → Human Capital**
   - Rural refugees start with lower schooling; catch up and then surpass natives. **Dynamics over a century**
   - **"Stayers"**; **"movers"** in big cities or elsewhere
   - + Uprootedeness ⇒ Income (via education)
2. **Mechanisms → Professional Upgrade / Preferences**
   - Employment Sector and Profession
   - Preferences; Risk
3. **Displacement → Portable Human Capital**
   - Uprooted and their offspring invest in **portable skills**
     - Even when zooming into the most selective university degrees (law, medicine, and engineering)
   - Invest in **skills suitable for multiple occupations**

Refugees' Legacy in Greek Society and Economy

Section Structure. Spatial Mobility

1. Introduction-Motivation
2. Big Data. Anatolia Imprints
3. **Human Capital and Uprootedness**
   - **Internal Migration and Emigration**
4. Culture and Politics

Uprootedness. Spatial Mobility

Emigration and Internal Migration

1. **International Migration**
   - Germany. *Gastarbeiter* Program
   - Elsewhere
2. **Internal Migration**
   - In Cities (vs other rural areas)
   - Distance

Gastarbaiter (Guest Worker) Program

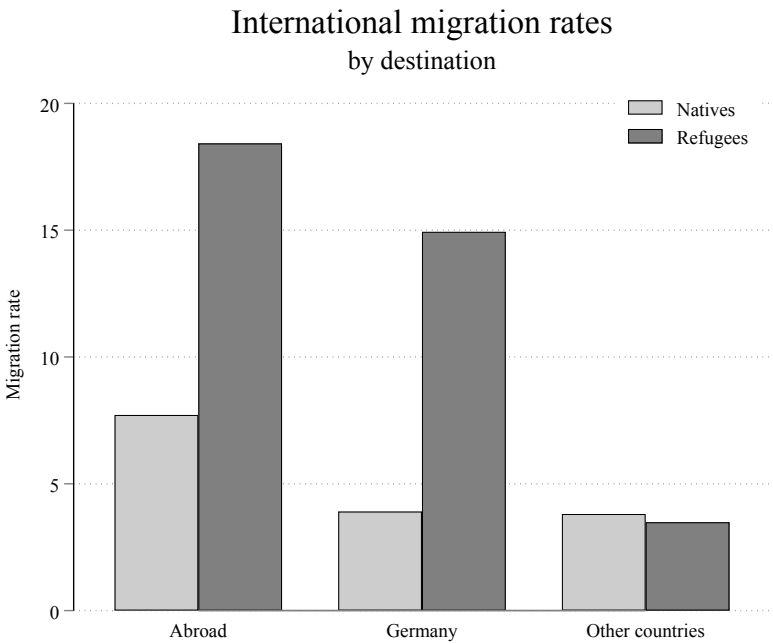
Emigration to Germany

- Recruitment took place in Greece, where prospective employers and German government officials advertised positions.
- Employment contracts were typically for one or two years, but could be renewed with the initial employer or another company. Some managed to stay for more than a decade.
- **Close to** $700,000$ **Greeks participated in the program from 1960 until the mid-1970s** (Lianos, 1975).

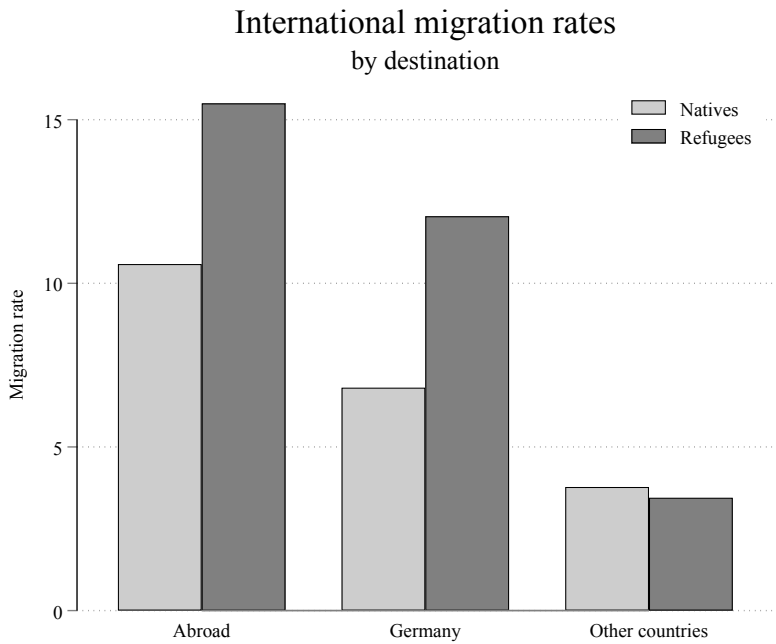
Emigration Rates to Germany and Other Countries

Natives and Refugees. Baseline and Local Samples

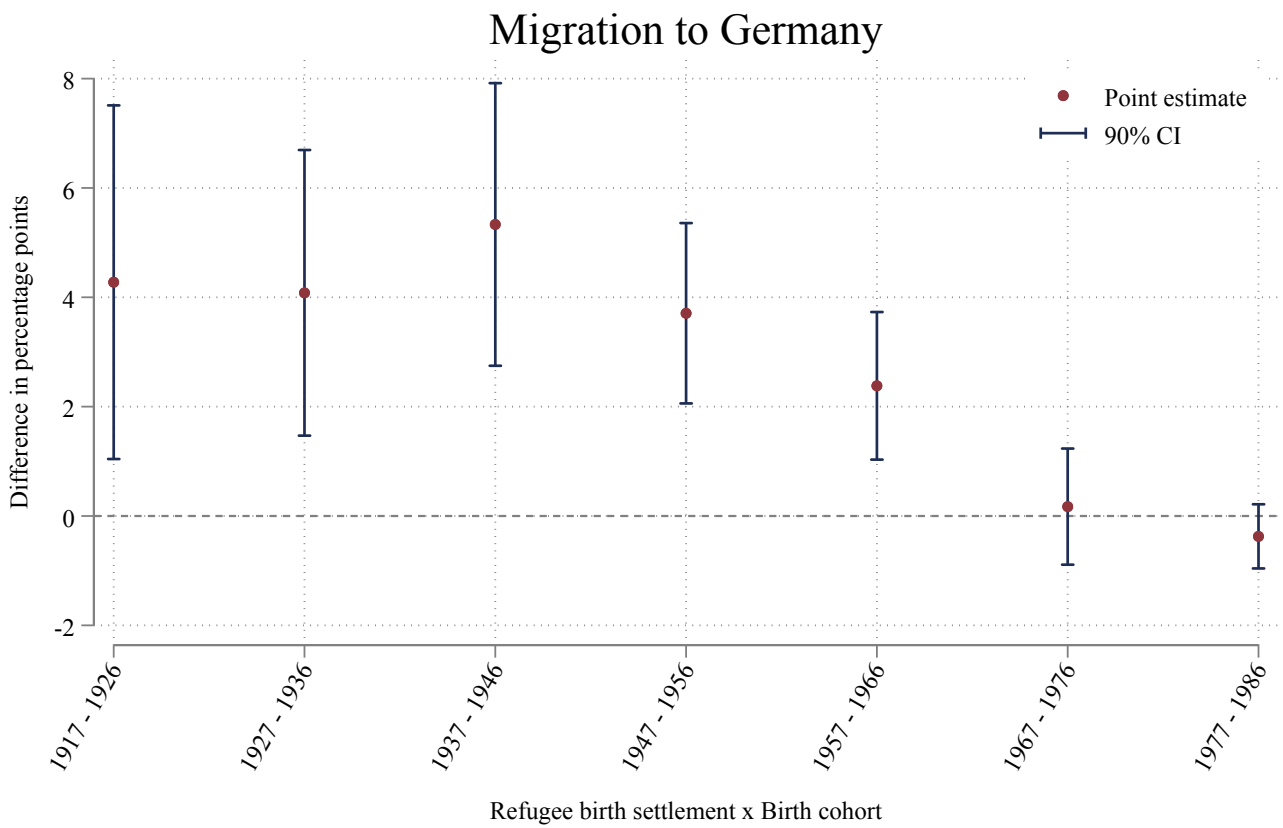
(a) Baseline Sample



(b) Local Sample



Emigration to Germany by 10-year Birth Cohorts



Uprootedeness and Spatial Mobility

Taking Stock

1. **Internal Migration.** Those from refugee settlements, instead of a native settlement from the same (sub)-province, have a higher likelihood of out-migration by 9%, conditional on the destination's attractiveness, distance, and networks
   - Effect is much stronger among the educated
   - Refugees are more responsive to conditions at the destination
   - Distance and social ties matter less
2. **Emigration.** Refugees and their descendants have a much higher likelihood of emigrating to Germany
   - Effect among the non-educated

Refugees' Legacy in Greek Society and Economy

Section Structure. Culture and Politics

1. Introduction-Motivation
2. Big Data. Anatolia Imprints
3. Human Capital and Uprootedness
   - Internal Migration and Emigration
4. **Culture and Politics**

Politics, Culture, and Ideology

A Snapshot. Politics and Voting with Vassilis Logothetis

- **Big Data.** All (almost) Greek elections at the polling station level [1932, 1958, post 1977; newspapers and official granular data]
- **Results.** Refugees' and their descendants' political preferences.
  1. Urban Centers: Left (and Center Left); plus some radicalization
  2. Countryside: Mainstream
  3. Surveys. Feel excluded; strong preference for redistribution and big state

Politics, Culture, and Ideology, cont.

A Snapshot. Culture

- **Big Data:**
  - All Greek Songs; ML Topic Analysis
  - Greek artist's background (composer, singer, songwriter)
- **Results**
  1. Topics of all Greek songs; share of songs about poverty plummets from about a third to less than 2%; refugee songs used to be more about poor living conditions and impoverishment, but not after the 1950s and not any more. **Economics $->$ Culture**
  2. Refugee artists, even fourth generation, compose, sing, and produce songs about (i) memory, (ii) grit and perseverance, and (iii) injustice and unfairness. **Culture as Identity; Persistence of Memory**

Roadmap

1 Modern Greek Economic History

2 Refugees' Legacy in Greek Society and Economy
- Motivation
- Big Data
- Uprootedness
- Mobility
- Ideology

3 Discussion

Discussion

Takeways

- **Modern Economic History with Big Data and Causal Identification**
  - Move beyond case studies
  - Causal effects and deep drivers
  - Connect with other settings, cases, historical examples
- **Objectives**. *Veritas*. complement historical narratives, literature, and culture
- **Policy**. Contemporary Settings (with humility)

Policy: Forced Displacement Today

UNCHR Report mid 2025 (Nov. 2025)

"A refugee is someone who has been forced to flee his or her country because of persecution, war, or violence. A refugee has a well-founded fear of persecution for reasons of race, religion, nationality, political opinion, or membership in a particular social group." **United Nations**

- **More than 117.3 million forcibly displaced**
  - Forcibly displaced more than doubled in the last decade.
- **UNCHR Emergencies** (end of 2024)
  - Africa: Sahel, Ethiopia, North Mozambique.
  - Asia: Myanmar, Afghanistan, Syria, Gaza, Lebanon.
  - Latin America: Venezuela, Central America.
  - Europe: Ukraine. 5.1 million refugees, 3.7 million IDPs.
  - **Mediterranean Sea. 2.5 million refugees**

Refugees in the Mediterranean. Nowadays

The Mediterranean is the world's deadliest migration route. Human Rights Watch

- **About** $2 - 2.5$ **million since 2014** (without Turkey). Main hosts: Greece, Italy, Spain, Cyprus, and Malta. (UNCHR estimates the end of 2024)
  - Italy: 525,117 refugees
  - Greece: 146,837 refugees
  - Cyprus: 73,317 refugees
  - Malta: 527,000 refugees
  - Spain: 707,415 refugees
  - + Turkey: 3 million refugees
- **Just in 2025**. about 132,023 arrivals in 2025: Italy (59,000), Greece (40,000), Cyprus (2,100), Spain (30,000)

Europe's Boat People. *The Economist*

Ongoing Crisis in the Mediterranean and the Aegean





Refugees of the Mediterranean. Lessons from the Past

Crossing the Aegean. Then and Now



Independent Premium > The Longer Read

INDEPENDENT PREMIUM

Europe's forgotten refugees: 100 years of crossing the Aegean

An estimated 1.2 million refugees have landed and lived in Greece since 1923. Bea Tridimas tells their story

Tuesday 19 October 2021 21:30 BST • Comments

Refugees of the Mediterranean

Crossing the Aegean. Then and Now. The Exodus. 1922-1923



Policy ⇒ Conditional Hope

Lessons?

- Legal and political rights upon arrival, citizenship
- International Organizations. League of Nations. Refugee Settlement Commission. Technical support, financial assistance, and know-how
- International Community. Near East Relief Fund. Philanthropic Aid
- Greek governments. A genuine effort to support –after 1930– from all main parties
- Greek people. Despite discrimination in the initial years/decade, embrace the national goal of integration

One Lesson

From Recent Greek History to Today

July 29, 2021 1:00AM EDT | News Release

Greece: Stop Denying Refugee Children an Education

Ensure All Asylum-Seeking Children Are Enrolled in Coming School Year



Parvana Amini, 17, lives in the Ritsona camp, near Athens. She has helped organize informal classes for asylum-seeking children in the camp, whose access to public schools was severely limited by local authorities during the 2020-21 school year. © 2021 Human Rights Watch

One Lesson, cont.

From Recent Greek History to Today. UNHCR (2022)

THE TALENT BEHIND THE NUMBERS: INTRODUCING REFUGEES IN GREECE

Refugee student in Greece towards his dream to become a doctor

Boye was forced to flee his home in Ghana in 2016 when he was just a child, alone. Fast forward five years and he is now studying Biomedical Sciences in Deree, the American College of Greece. Thanks to a fully funded four-year scholarship provided by the College, he is now one step closer to his dream of becoming a doctor.

"I want to be someone who can help. During my journey from Ghana to Greece, I realized certain fundamental needs that people have that are not being met. Like education, health, food, and shelter. So I decided I wanted to help in one of these fields and I realized that health was a good option to consider", Boye says.

You can read the rest of Boye's story here.

© UNHCR/ Achilleas Zavallis



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- **Hellenic Bankers' Association**
- **ELSTAT. Hellenic Statistical Agency**
- **United Nations Archive, Geneva**
- **The Hellenic Agency for Local Development and Local Government**
- **Dozens of Representatives from Associations from Anatolia**

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