How the Other Half Died: Immigration and Mortality in US Cities

Philipp Ager James Feigenbaum Casper Worm Hansen Hui Ren Tan

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"The Immigrant Menace" as a threat to American Health

> *We know that whatever "immigrant menace" was the focus of xenophobes in the past — whether it be Irish Catholics in the 19th century, then later Chinese and other Asians, of course, Italians and Jews and other southern and eastern Europeans and Mexicans — the claim has always been that these groups were not only racially inferior, but that they brought particularly dangerous and contagious diseases that would end up harming the US native population.*

- Erika Lee (Historian at University of Minnesota, author of *America for Americans: A History of Xenophobia in the United States*)

Immigration in NYC in the 19th Century

- Puck (1883): "The kind of 'assisted emigrant' we can not afford to admit."

Immigration Health Peril Today

- Augusta Chronicle (2014)

Our Setting: The Early 20th Century

- Nativist fears of immigrants recur throughout history
- To study the intersection of immigration and public health, we turn to the US in the early 20th century

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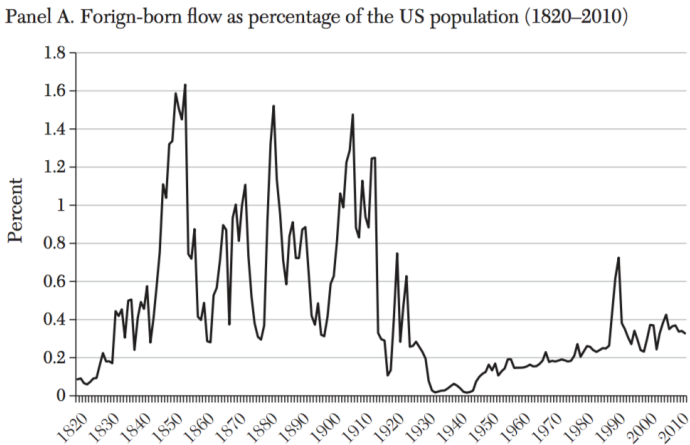
  - Huge number of immigrants during the Age of Mass Migration
  - Extreme xenophobia and nativism
  - Dramatic change to immigration policy that closed the border
- Health
  - Infectious diseases were major killers in cities
  - Urban mortality penalty disappeared in the early 20th century

The Age of Mass Migration



- Abramitzky and Boustan (JEL 2017)

The Age of Mass Migration

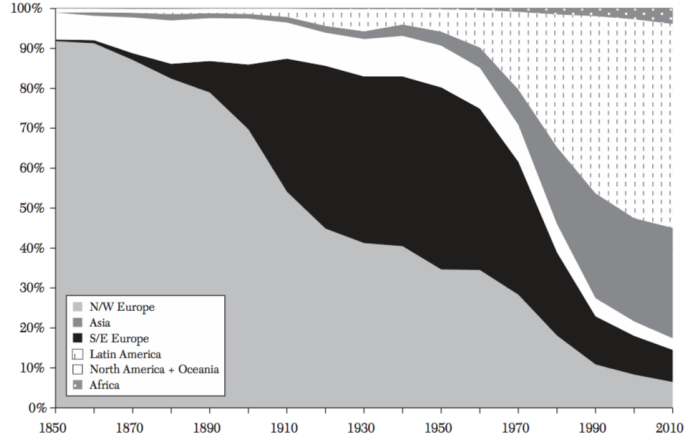


Figure 2. Sending Regions within the Foreign-Born Population, 1850–2010

Sources: Authors' calculations based on IPUMS samples of US Census (Ruggles, et al., 2010).

- Abramitzky and Boustan (JEL 2017)

Restricting Immigration: Quota Acts of 1921 and 1924

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- 1924: Ceiling reduced to *2%* and based on foreign-born stock of *1890*
  - Quota down to 160k in 1925 and 150k in 1929
  - Restrictions bind more against "new" immigrant groups from Southern and Eastern Europe

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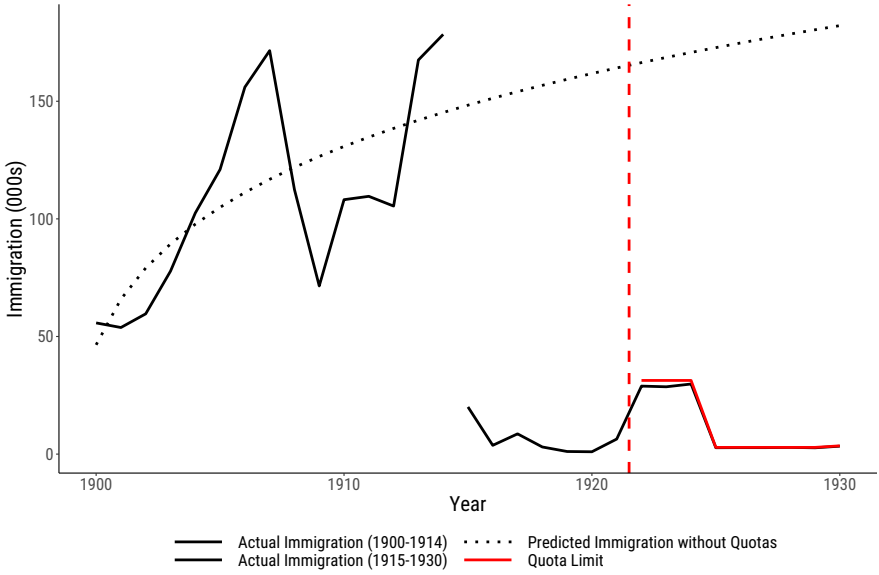
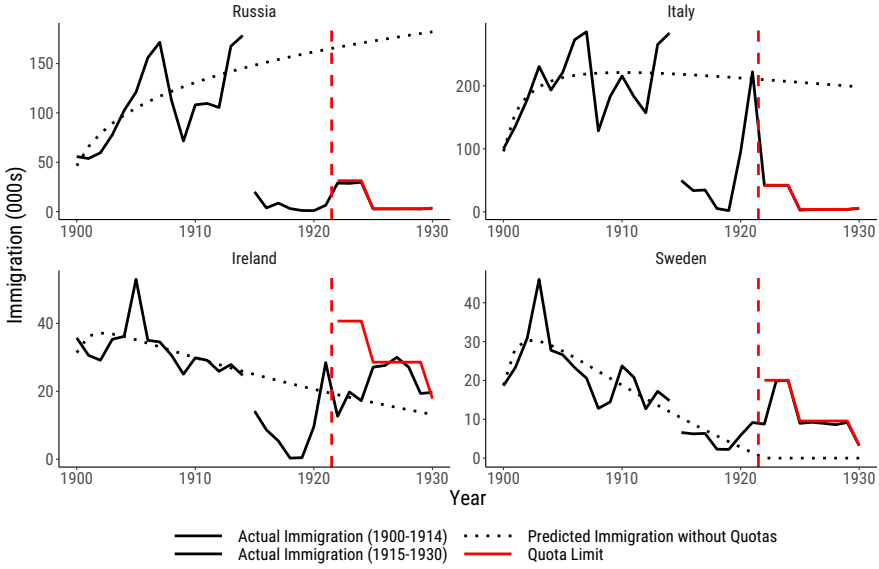
- But
  - Immigrants did not settle in random locations
  - Immigrants did not move to the US in random years or at random rates
- We exploit historical immigration patterns (*shares*) and the dramatic changes to immigration flows from the quota laws (*shifts*) to estimate which cities are *missing* the most immigrants in the 1920s and 1930s

Missing Russian Immigrants

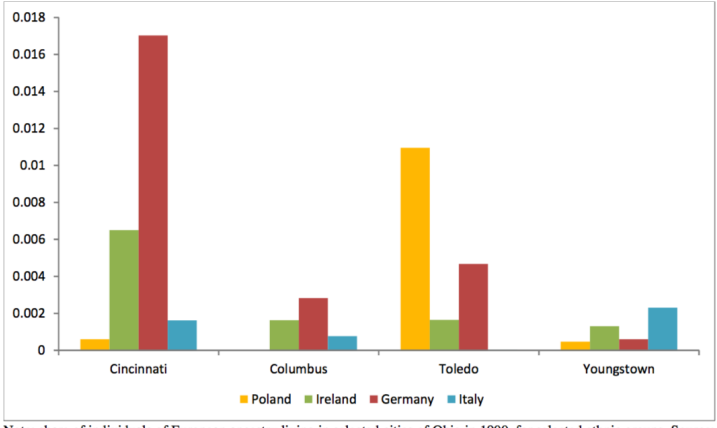


Missing Immigrants



Immigrant Enclaves

Figure A6. Share of European Immigrants in Ohio, 1900



Note: share of individuals of European ancestry living in selected cities of Ohio in 1900, for selected ethnic groups. Source: Author's calculations using IPUMS data.

- Tabellini (2020)

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Differences across Cities by Quota-Exposure

Are cities with more or less *future* quota exposure different?

Estimation Strategies

- Event Study:

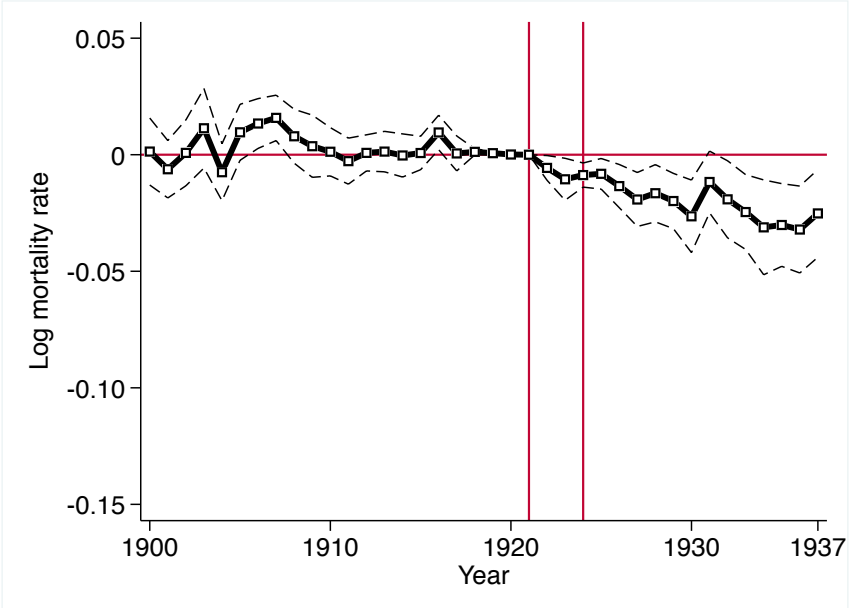
$$\ln m_{ct} = \alpha_c + \alpha_t + \sum_{j=1900}^{1937} \beta_j \text{Quota Exposure}_c \times I_t^j + \mathbf{X}_{ct}'\Gamma + \epsilon_{ct}$$

- Simple DD

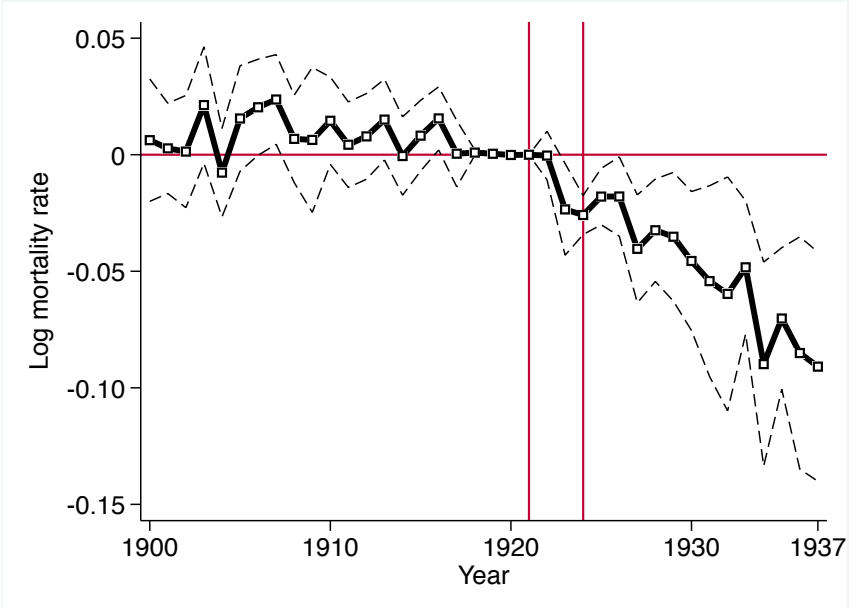
$$\ln m_{ct} = \alpha_c + \alpha_t + \beta \text{Quota Exposure}_c \times Post_t + \mathbf{X}_{ct}'\Gamma + \epsilon_{ct}$$

- In both cases, $\mathbf{X}_{ct}'$ includes city age structure and city FE, Year FE x population in 1910, Year FE x lagged mortality rates, Year FE x State FE

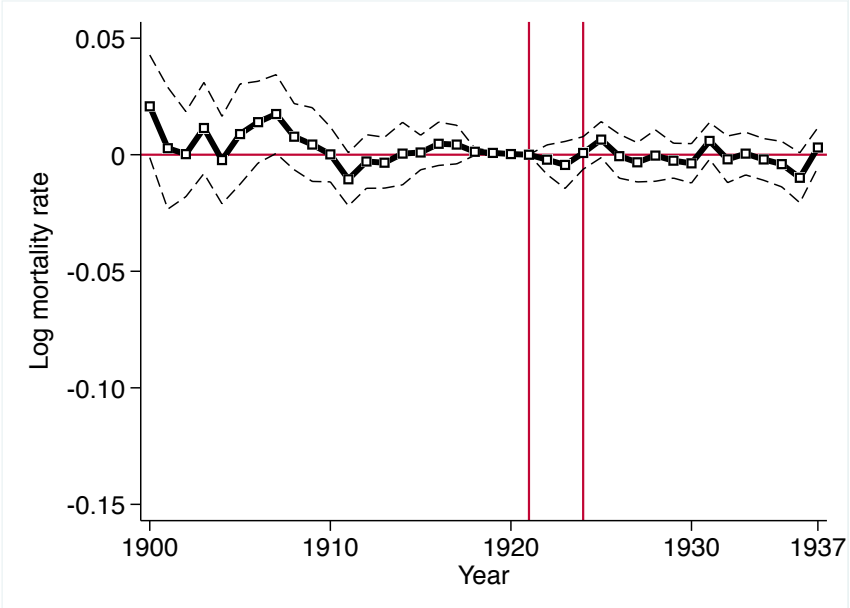
Effect of Quota Shocks on All Cause Mortality



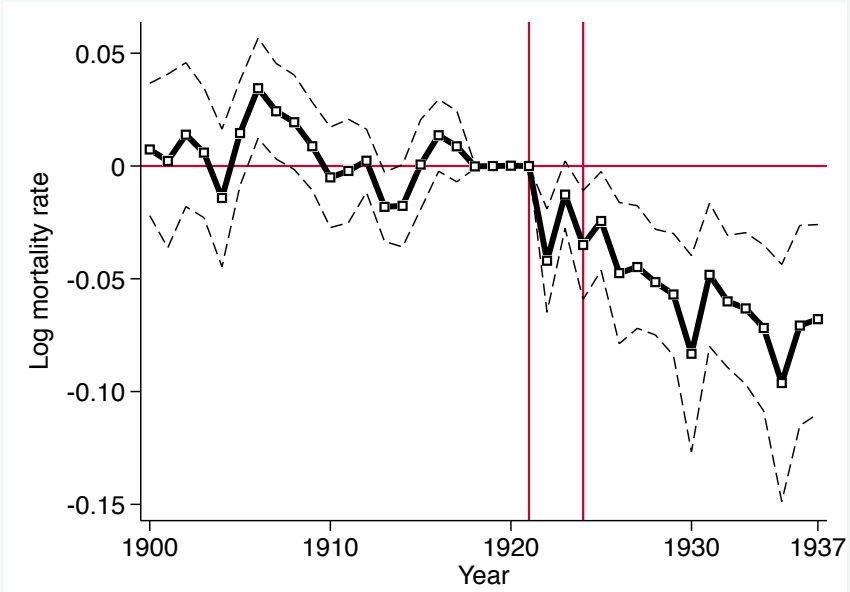
Effect of Quota Shocks on Infectious Mortality



Effect of Quota Shocks on Non-Infectious Mortality



Effect of Quota Shocks on External Cause Mortality



DD Effects of Quota Shocks on Log Mortality Rate

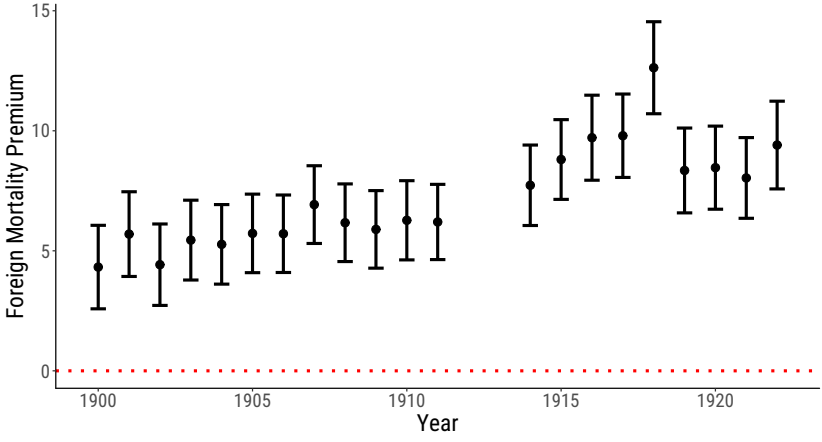
	All Causes		Infectious Causes		External Causes		Non-Infectious Causes	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Quota Exposure × Post	-0.021***	-0.021**	-0.050***	-0.042***	-0.056***	-0.050***	-0.005	0.004
	(0.008)	(0.008)	(0.016)	(0.013)	(0.017)	(0.016)	(0.006)	(0.003)
Age Structure	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ln Pop 1910 × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Initial Mortality Rates × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State-by-Year FEs	No	Yes	No	Yes	No	Yes	No	Yes
Observations	12587	12333	12587	12333	12587	12333	12587	12333
R-squared	0.794	0.829	0.859	0.885	0.588	0.638	0.874	0.898

Note: This table reports the baseline DD estimates. The outcomes are (log) mortality rates of our four COD-categories (all causes, infectious causes, external causes, and non-infectious causes). All regressions include city and year fixed effects, (log) populations size in 1910 x year FE, initial outcomes in 1918 to 1921 x year FE, and controls for the city age structure. The even-numbered columns also control state-by-year FE. The sample period is 1900-1937. Robust standard errors clustered at the city level in parentheses.

Why Did Quota Exposure Drive Down Mortality Rates?

- Three *C*'s
  - Composition
  - Contagion
  - Crowding and Congestion

Simple Composition Effect



- Before the quotas, the foreign-born had worse mortality rates than the US-born
- A reduction in their population could mechanically lower mortality rates

Evidence Against Composition-Only Effect

- In the paper, we provide two pieces of indirect evidence that composition effects are not the whole story:

1. (See the paper) Quota effects are too large to be explained only by a reduction in the foreign-born share
2. *Mortality rates for African Americans also driven down by quota shocks*

Quota Effects by Race: All Causes

	Dependent variable is mortality rates (in logs) of: All Causes			
	White and Black		White	Black
	(1)	(2)	(3)	(4)
Quota Exposure × Post	-0.040***	-0.045***	-0.045***	-0.042**
	(0.009)	(0.015)	(0.010)	(0.016)
Quota Exposure × Post × Black		0.009		
		(0.017)		
Age Structure	Yes	Yes	Yes	Yes
Race × Year FE	Yes	Yes	Yes	Yes
Observations	5880	5880	2686	2686
R-squared	0.810	0.810	0.814	0.846

Quota Effects by Race: Infectious Causes

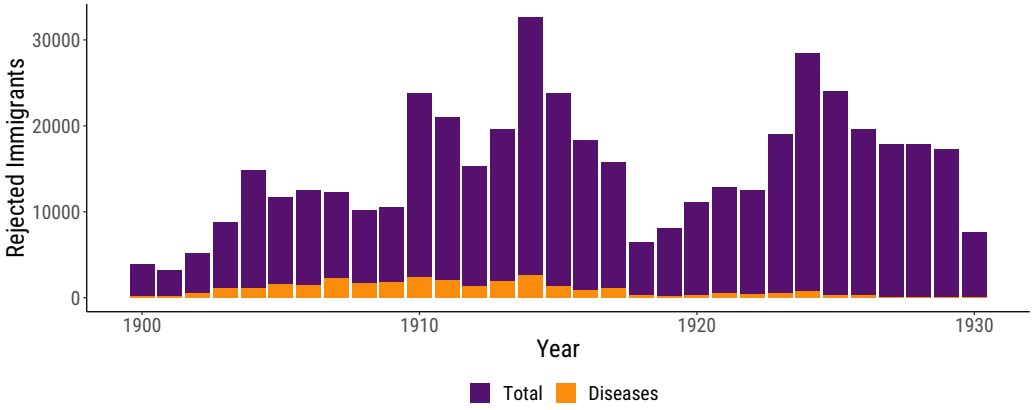
	Dependent variable is mortality rates (in logs) of: Infectious Causes			
	White and Black		White	Black
	(1)	(2)	(3)	(4)
Quota Exposure × Post	-0.039**	-0.058**	-0.053***	-0.037*
	(0.016)	(0.027)	(0.018)	(0.022)
Quota Exposure × Post × Black		0.035		
		(0.030)		
Age Structure	Yes	Yes	Yes	Yes
Race × Year FE	Yes	Yes	Yes	Yes
Observations	5878	5878	2686	2682
R-squared	0.847	0.848	0.865	0.834

Contagion

- The immigrant's journey during the Age of Mass Migration was harrowing and potentially unhealthy
- Steiner, *On the Trail of the Immigrant* (1906)
  - "On the whole, the steerage of the modern ship ought to be condemned as unfit for the transportation of human beings. . . "
  - "while in steerage from 200 to 400 sleep in one compartment on bunks, one above the other, with little light and no comforts. . . "

Quota Acts at the Border

- Very few immigrants from any country were rejected at the US border for infectious diseases.
- No changes after the quotas



Crowding and Congestion

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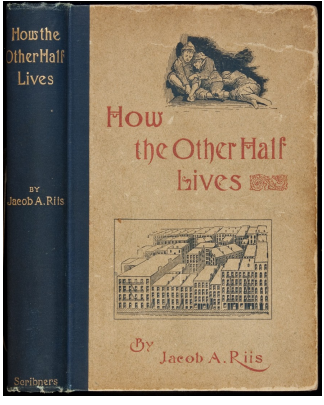


Living Conditions and Immigration Quotas

To test whether crowded, dense, congested, and unsanitary living conditions interacted with immigration quotas, we:

- Estimate heterogeneity in quota effects by city crowding
- Estimate effects of quotas on measures of crowding and congestion
- Estimate effects of quota exposure on rural mortality

Quota Effects Are Larger in More Crowded Cities

	Dependent variable is mortality rates (in logs) of:					
	All Causes		Infectious Causes		External Causes	
	(1)	(2)	(3)	(4)	(5)	(6)
Quota Exposure × Post	-0.021***	-0.021***	-0.053***	-0.053***	-0.053***	-0.053***
	(0.007)	(0.007)	(0.015)	(0.015)	(0.016)	(0.016)
Quota Exposure × Post × Internal Density	-0.009***	-0.008	-0.023***	-0.024**	-0.002	0.003
	(0.002)	(0.005)	(0.005)	(0.011)	(0.006)	(0.011)
Age Structure	Yes	Yes	Yes	Yes	Yes	Yes
Ln Pop 1910 × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Initial Mortality Rates × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
City and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Dwelling 1910 × Year FE	No	Yes	No	Yes	No	Yes
Observations	12155	12155	12155	12155	12155	12155
R-squared	0.792	0.792	0.858	0.859	0.590	0.591

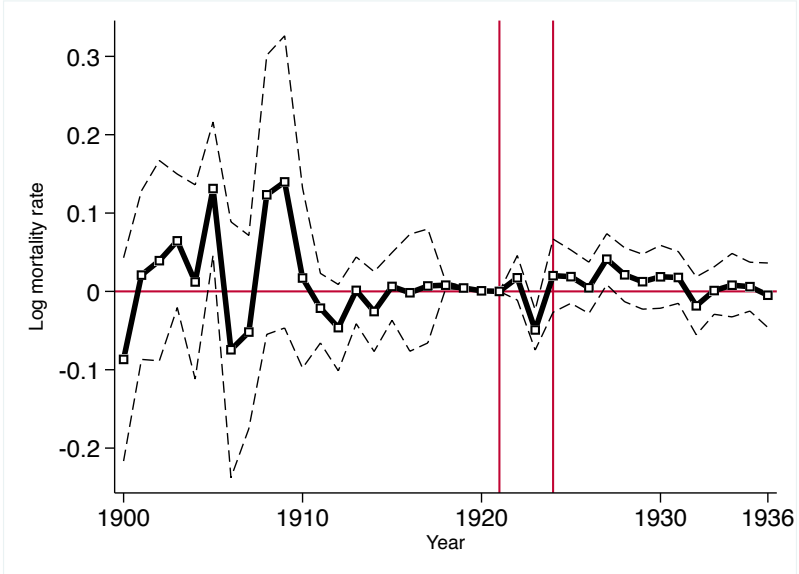
Quotas Reduced Density and Congested Living Conditions

	# of Boarders and Lodgers per 1000 people				
				US-born	
	All	US-born	Foreign-Born	White	Black
	(1)	(2)	(3)	(4)	(5)
Quota Exposure × Post	-3.65***	-1.82***	-7.66***	-1.69***	-6.50***
	(0.92)	(0.53)	(2.09)	(0.49)	(1.91)
Age Structure	Yes	Yes	Yes	Yes	Yes
Ln Pop 1910 × Year FE	Yes	Yes	Yes	Yes	Yes
City and Year FEs	Yes	Yes	Yes	Yes	Yes
Outcome in 1910 × Year FE	Yes	Yes	Yes	Yes	Yes
Dependent Mean	70.53	59.52	115.89	57.11	153.74
Observations	1627	1627	1627	1627	1569
R-squared	0.891	0.874	0.816	0.872	0.899

Quotas Reduced Density and Congested Living Conditions

	# of People Living in Multifamily Housing per 1000 people				
					US-born
	All	US-born	Foreign-Born	White	Black
	(1)	(2)	(3)	(4)	(5)
Quota Exposure × Post	-7.79***	-4.86***	-8.00***	-4.27***	-9.43***
	(2.27)	(1.39)	(1.97)	(1.17)	(3.16)
Age Structure	Yes	Yes	Yes	Yes	Yes
Ln Pop 1910 × Year FE	Yes	Yes	Yes	Yes	Yes
City and Year FEs	Yes	Yes	Yes	Yes	Yes
Outcome in 1910 × Year FE	Yes	Yes	Yes	Yes	Yes
Dependent Mean	212.75	202.28	237.10	197.74	446.70
Observations	1627	1627	1627	1627	1569
R-squared	0.924	0.915	0.915	0.915	0.983

Rural Placebo: No Quota-Exposure Effects on Total Mortality



Conclusion

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- In the early 20th century US, the closing of the border led to substantial mortality improvements in more quota-exposed cities
  - A one percentage point increase in the rate of missing immigrants reduces the overall mortality rate by around 2 percent
- Decline driven by a reduction in infectious diseases

Conclusion

- Throughout history, immigrants have been blamed for transmitting disease to domestic populations
- But did the nativists and xenophobes sow the seeds of their own mortality and suffering? After the quotas:
  - Initially crowded cities experienced substantial mortality reductions, particularly from infectious diseases
  - Congested housing conditions were alleviated
  - Rural areas—always less dense—saw no mortality effects from the reduction in immigration