

Immigrants and the Making of America

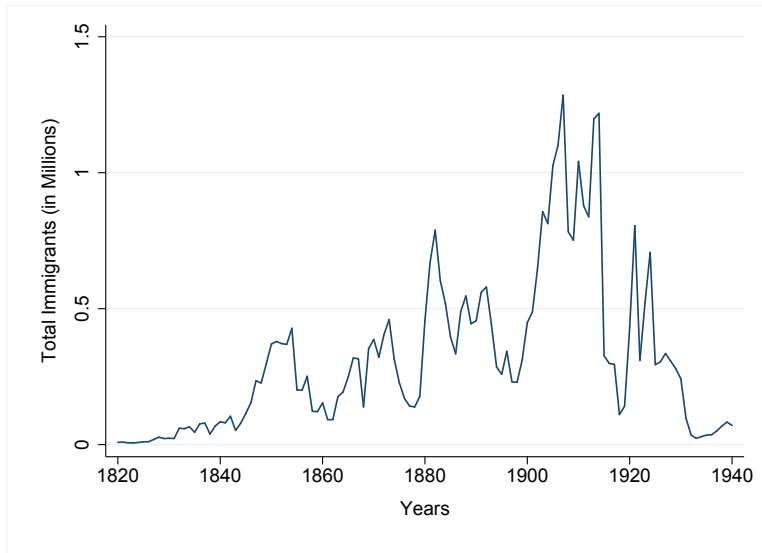
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Introduction

- ▶ Impacts of immigration is an important issue both in the U.S. and around the world.
- ▶ Short-run effects have been fairly well studied.
 - ▶ e.g., Card (1990), Goldin (1994)
- ▶ However, we know much less about the long-run effects of immigrants.
- ▶ This is particularly important since the short-run and long-run impacts could be very different in magnitude or even in sign.

Annual immigrant arrivals to the U.S., 1820–1940



Age of Mass Migration: 1850–1920

- ▶ In the 1830s, approx. 99.5% of the U.S. population had been born in the U.S.
- ▶ This was followed by an immigration boom, where approx. 25 million Europeans came to the U.S. from 1850–1920.
 - ▶ Largest groups: German, UK, Scandinavian.
 - ▶ Over time, immigrants increasingly from Southern and Eastern Europe (e.g., Italy, Poland, Russia).
- ▶ Immigrant flows were halted by the 1921 *Emergency Quota Act* and the 1924 *Immigration Act* (country-specific flows restricted to 2% of 1890 stock).

Research question

- ▶ How much of the economic success of the U.S. is due to the immigration that occurred during during the Age of Mass Migration (1850–1920)?
- ▶ Are locations that had more immigrant settlement during this time more economically successful today?

Why immigrants might matter

1. Provision of unskilled labor.

- ▶ Majority of immigrants worked in unskilled occupations.
- ▶ Important for the growth of industry.
- ▶ Large proportion of immigrants had worked in industrial occupations in their origin country.

Why immigrants might matter

2. Provision of important skills for industry.

- ▶ Many immigrants worked in skilled occupations.
- ▶ E.g., carpenters, blacksmiths, brewers, distillers, barbers, tailors, machinists, jewelers, clockmakers, bakers, etc.
- ▶ In 1870, 37% of German-born workers were employed in skilled occupations.

Why immigrants might matter

3. Provision of agricultural know-how.

- ▶ Immigrants were well represented among farmers (mostly owner operators): 10–15%.
- ▶ Often brought with them knowledge and techniques from the homeland.
- ▶ Also brought new seeds, crops (e.g., alfalfa) and animal breeds (e.g., the Conestoga horse).

Why immigrants might matter

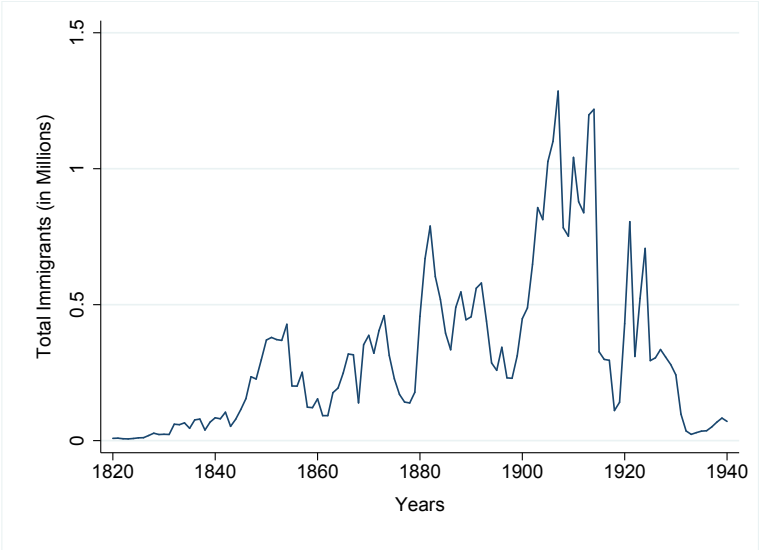
4. Provision of knowledge and innovation.

- ▶ Significant proportion of engineers were immigrants.
 - ▶ John A. Roebling who designed and built the first major suspension bridges in the country, including the Brooklyn bridge.
 - ▶ John F. O'Rourke who built seven of the tunnels under the East and Hudsons Rivers.
- ▶ Many important inventors were immigrants.
 - ▶ Alexander Graham Bell, born in Scotland, invented the first telephone.
- ▶ Many business innovators were immigrants.
 - ▶ Andrew Carnegie, born in Scotland, founded the Carnegie Steel Company, which established the steel industry in the US.
 - ▶ In the *Dictionary of American Biography*, 12.5% of the individuals since 1790 are foreign-born, despite foreign born accounting for less than 10% of the total population.

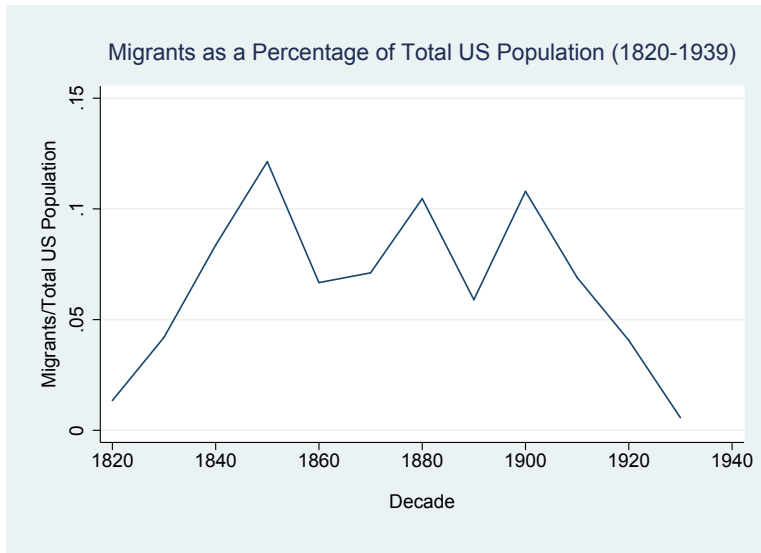
Causal inference

- ▶ Can examine the relationship between historical immigrant settlement in a location and economic performance today.
- ▶ However, obtaining credible estimates is difficult due (in part) to the endogeneity of location choice by immigrants.
 - ▶ Migrants may have wanted to go to the locations with the best future growth prospects.
 - ▶ Despite this, migrants may have only been able to locate in more marginal locations with poor growth potential.
- ▶ Omitted factors, like geography or location, may also affect both historical settlement and economic performance today.
- ▶ Thus, the direction of the bias due to selection is unknown.

Annual immigrant inflows, 1820–1940



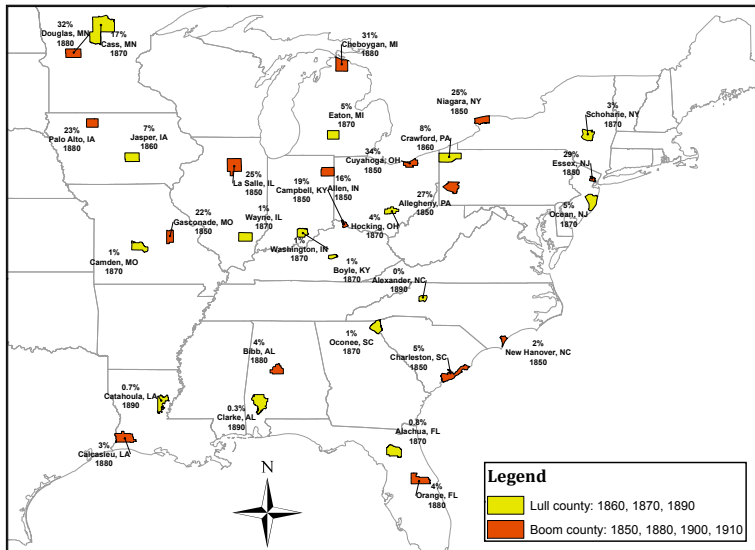
Immigrant inflows, normalized and by decade, 1820-1939



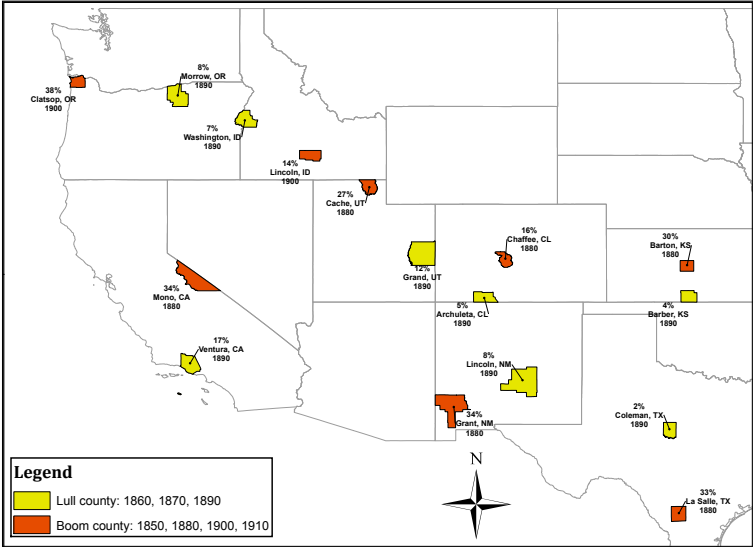
Identification: Basic intuition

- ▶ During the Age of Mass Migration, the flow of immigrants varied significantly over time.
- ▶ After arriving at the coast, immigrants typically moved to their eventual destination using the newly constructed railway network.
- ▶ Therefore, **when** a county became integrated into the railway network affected the number of foreign migrants that settled in the county.
 - ▶ Counties that were connected earlier received more immigrants (we do not use this for identification).
 - ▶ Conditional on length of time connected, counties that were connected during high immigration periods received more immigrants.
 - ▶ Equivalently, counties that became connected just before an immigration boom received more migrants than counties that became connected just prior to an immigration lull.

Examples illustrating the source of identification



Examples illustrating the source of identification



Balance between boom and lull periods

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Boom-Connection Counties			Lull-Connection Counties			Equality of Means
	Obs	Mean	Std Err	Obs	Mean	Std Err	<i>p</i> -value
Panel A: Demographic Composition							
Foreign Share of the Population, 1820	392	0.005	(0.0006)	312	0.004	(0.0005)	0.622
Foreign Share of the Population, 1830	524	0.004	(0.0005)	408	0.004	(0.0007)	0.482
Panel B: Economic Characteristics							
Urban Share, 1840	626	0.975	(0.470)	496	0.695	(0.172)	0.575
Population Density, 1830	670	0.147	(0.0480)	531	0.131	(0.022)	0.754
Share of the Population in Commerce, 1840	653	0.004	(0.0002)	509	0.005	(0.0003)	0.374
Share of the Population in Agriculture, 1840	653	0.259	(0.005)	509	0.260	(0.005)	0.916
Share of the Population in Mining, 1840	654	0.0009	(0.0002)	511	0.001	(0.0002)	0.582
Value of Agricultural Output per Capita, 1840	663	46.332	(1.092)	527	44.253	(1.412)	0.244
Value of Agricultural Crops per Capita, 1840	663	42.300	(1.076)	527	40.354	(1.404)	0.272
Post Offices per 1,000 Inhabitants, 1840	672	0.698	(0.022)	536	0.652	(0.050)	0.403
Newspapers per 1,000 Inhabitants 1840	242	0.175	(0.020)	120	0.112	(0.024)	0.048
Water Connection Indicator, 1840	670	0.467	(0.019)	531	0.514	(0.022)	0.106
Panel C: Geographic Characteristics							
Latitude	1,305	38.115	(0.125)	1,502	38.469	(0.124)	0.045
Longitude	1,305	-90.029	(0.306)	1,502	-92.164	(0.281)	0.000
Share of Counties in the Midwest and West	1,305	0.474	(0.014)	1,503	0.476	(0.013)	0.942
Share of Counties in the South	1,305	0.436	(0.014)	1,503	0.460	(0.013)	0.195

Notes: "Boom-Connection Counties" are counties that we observe as connected to the railway for the first time in either 1850, 1880, or 1900. "Lull-Connection Counties" are counties that we observe as being connected to the railway for the first time in 1860, 1870, 1890, or 1910. Column 7 reports the *p*-value from a test of equality of means with unequal variances.

Railroads and immigration

Immigration and railroads are closely tied in the U.S. historically:

- ▶ Railway were awarded land grants beginning in 1862.
 - ▶ Given over 175 million acres of public land, much of it sold to immigrant settlers.
- ▶ Railway companies set up offices in Europe that promoted immigration.
- ▶ Also coordinated with steamship companies to sell bundled transportation packages.

1871
For Free Distribution.

EMIGRANTS' GUIDE
TO THE
KANSAS PACIFIC RAILWAY
LANDS.

Best and Cheapest Farming and Grazing Lands
in America.

6,000,000 ACRES FOR SALE

BY THE

KANSAS PACIFIC RAILWAY CO.



— "Ours shall be the forest and the prairie,
And boundless meadows ripe with golden grain."

LAND DEPARTMENT, KANSAS PACIFIC RAILWAY CO.,
LAWRENCE, KANSAS, APRIL, 1871.

JOHN P. DEVEREUX,

SAM'L. J. GILMORE,
Sec'y Land Department.

Land Commissioner.

FREE SLEEPING CARS FOR EMIGRANTS

CARRIED ON

EXPRESS TRAINS,

AND LEAVING KANSAS CITY BOTH MORNING AND EVENING,



ON THE

SANTA FÉ ROUTE.

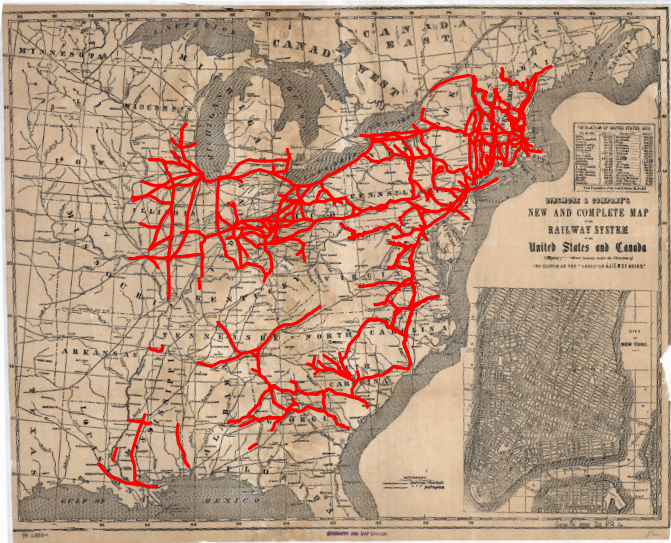
ATCHISON, TOPEKA & SANTA FÉ R. R.

GREAT REDUCTION IN TIME.

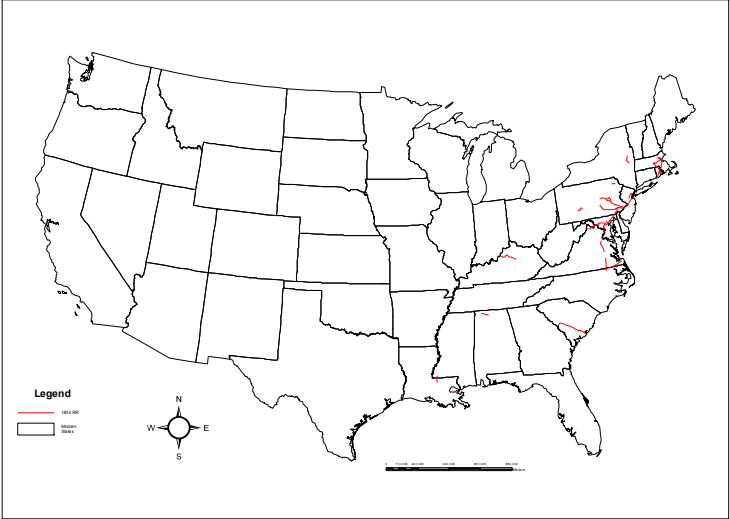
NOVEMBER 8, 1884.

Express Passengers, Santa Fe, Kansas.

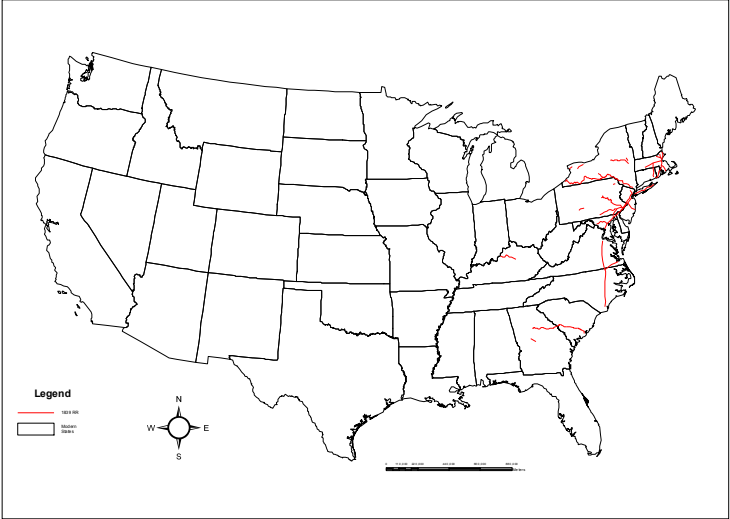
Railroads, 1850



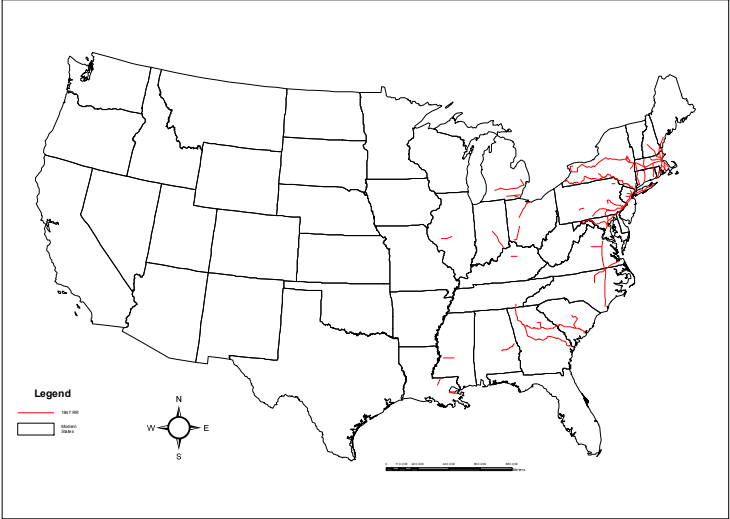
1834 Railways



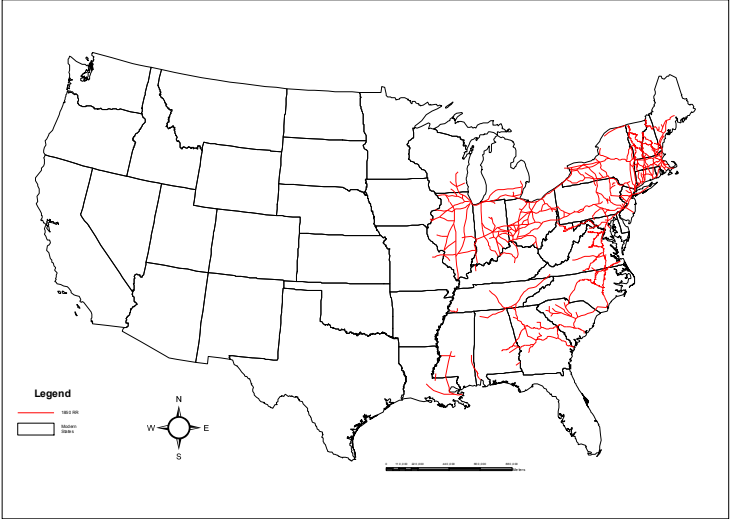
1839 Railways



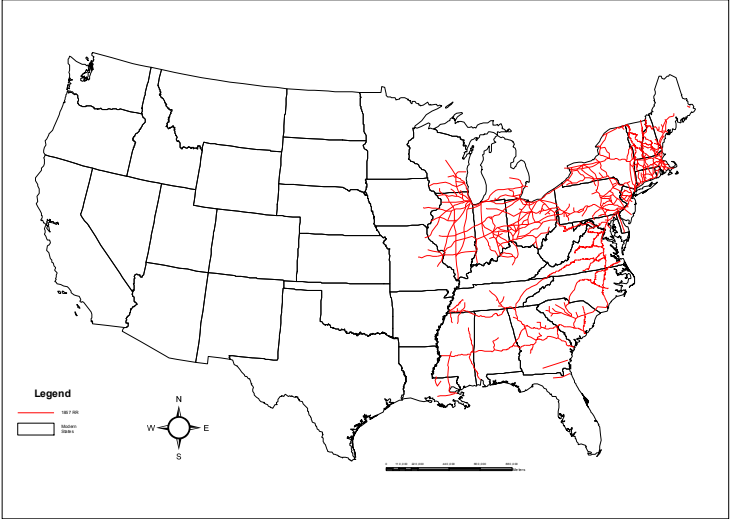
1847 Railways



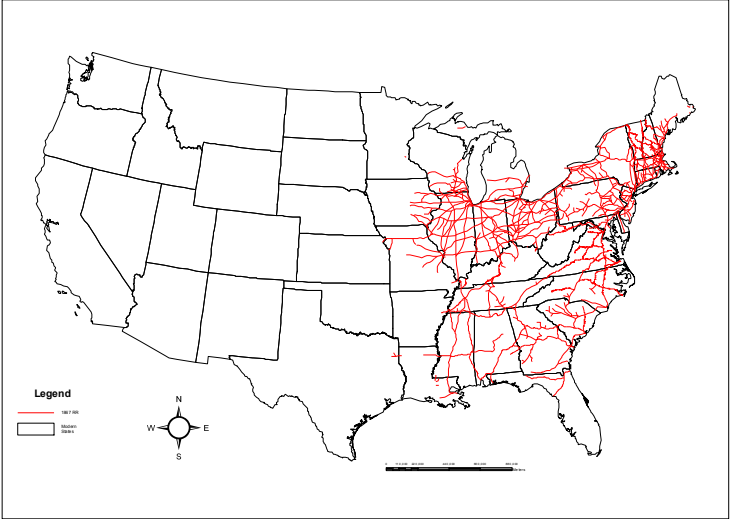
1850 Railways



1857 Railways

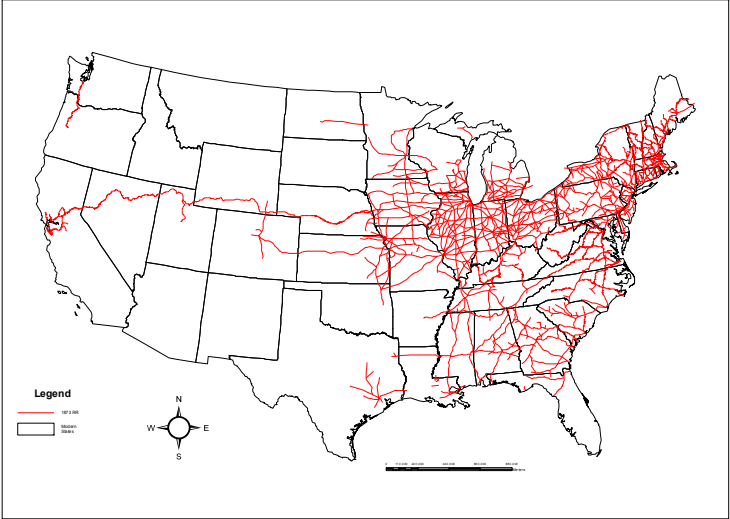


1867 Railways



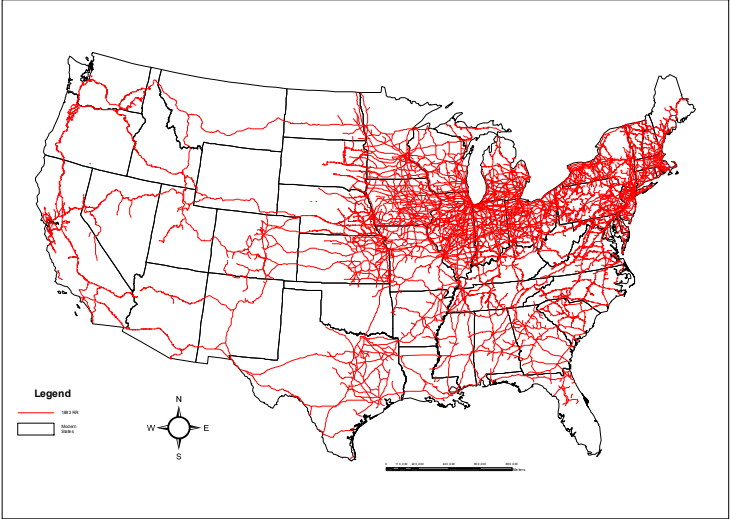
1873

1873 Railways



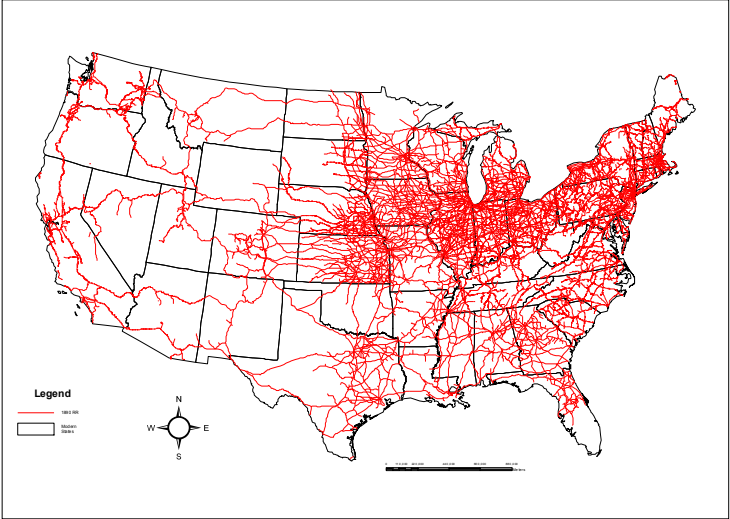
1883

1883 Railways



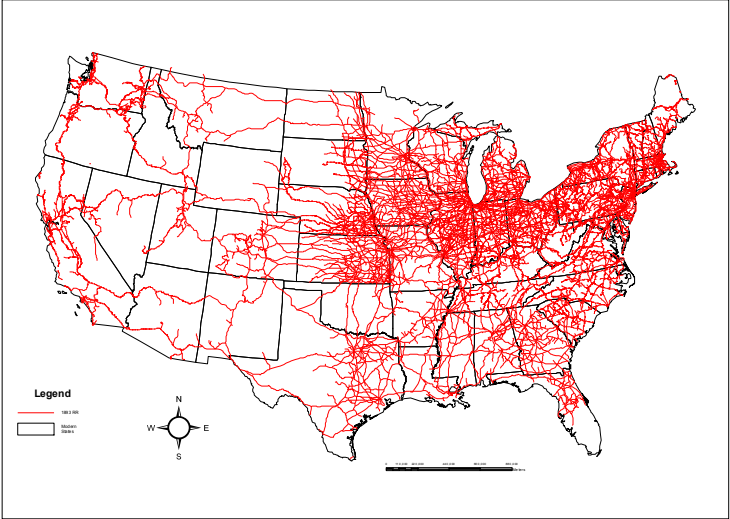
1890

1890 Railways



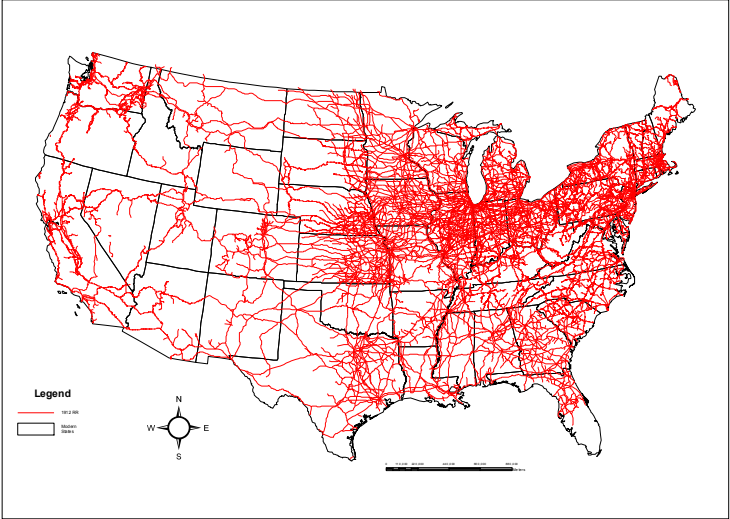
1893

1893 Railways



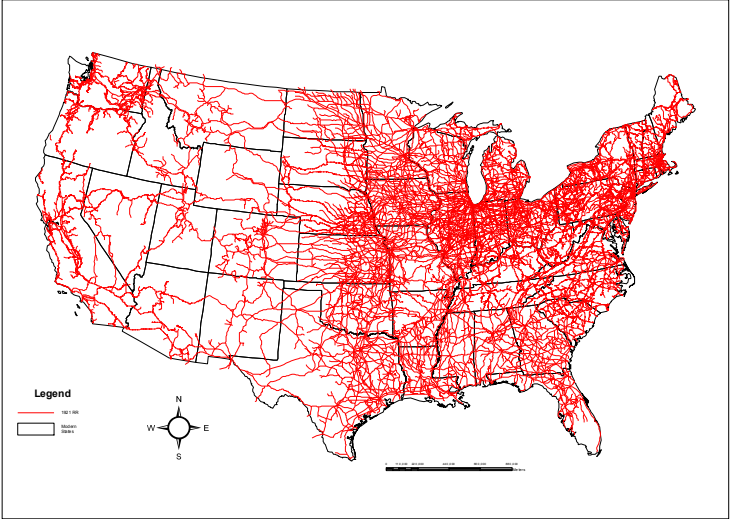
1912

1912 Railways



1921

1921 Railways



Zero-stage estimating equation

$$\begin{aligned}\text{Immigrant Share}_{i,t} &= \alpha_t + \alpha_i + \gamma \text{Immigrant Share}_{i,t-1} + \delta I_{i,t-1}^{\text{RR Access}} \\ &\quad + \beta \text{Immigrant Flow}_{t-1} \times I_{i,t-1}^{\text{RR Access}} \\ &\quad + \theta \text{Industrialization}_{t-1} \times I_{i,t-1}^{\text{RR Access}} \\ &\quad + \phi \text{GDP Growth}_{t-1} \times I_{i,t-1}^{\text{RR Access}} \\ &\quad + \mathbf{X}_{i,t-1} \boldsymbol{\Gamma} + \varepsilon_{i,t}\end{aligned}$$

- ▶ i indexes counties, t decades (1860–1920).
- ▶ $\text{Immigrant Share}_{i,t}$: share of the population that is foreign-born living in county i and decade t .
- ▶ $\text{Immigrant Flow}_{t-1}$: flow of immigrants arriving in the U.S. between $t - 1$ and t , normalized by total population in $t - 1$.
- ▶ $\text{RR Access}_{i,t-1}$: indicator variable that equals one if county i was connected to the railway in decade $t - 1$.

Zero-stage estimating equation

$$\begin{aligned} \text{Immigrant Share}_{i,t} = & \alpha_t + \alpha_i + \gamma \text{Immigrant Share}_{i,t-1} + \delta I_{i,t-1}^{\text{RR Access}} \\ & + \beta \text{Immigrant Flow}_{t-1} \times I_{i,t-1}^{\text{RR Access}} \\ & + \theta \text{Industrialization}_{t-1} \times I_{i,t-1}^{\text{RR Access}} \\ & + \phi \text{GDP Growth}_{t-1} \times I_{i,t-1}^{\text{RR Access}} \\ & + \mathbf{X}_{i,t-1} \boldsymbol{\Gamma} + \varepsilon_{i,t} \end{aligned}$$

- ▶ $\text{Industrialization}_{t-1}$: average log industrial production index between $t - 1$ and t .
- ▶ GDP Growth_{t-1} : growth in national GDP between $t - 1$ and t .
- ▶ $\mathbf{X}_{i,t-1}$ includes:
 - ▶ Lagged population density.
 - ▶ Lagged urban county indicator (city ≥ 2500).
 - ▶ Lagged urban county \times Immigrant Flow $_{t-1}$.

Constructing the instrument

$$\widehat{\text{Avg Immigrant Share}}_i = \frac{1}{T} \sum_{t=1}^T \widehat{\text{Immigrant Share}}_{i,t}$$

where:

$$\widehat{\text{Immigrant Share}}_{i,t} = \hat{\beta}_1 \text{Immigrant Flow}_{t-1} \times I_{i,t-1}^{\text{RR Access}}$$

2SLS equations

$$\text{Avg Immigrant Share}_{i,s} = \zeta_s + \mu \widehat{\text{Avg Immigrant Share}}_{i,s} + \omega \text{RR Duration}_{i,s} + \mathbf{X}_{i,s} \boldsymbol{\Omega} + \epsilon_{i,s}$$

$$Y_{i,s} = \xi_s + \psi \text{Avg Immigrant Share}_{i,s} + \pi \text{RR Duration}_{i,s} + \mathbf{X}_{i,s} \boldsymbol{\Pi} + \nu_{i,s}$$

- ▶ i indexes counties, s states.
- ▶ ζ_s, ξ_s : state fixed effects.
- ▶ $Y_{i,s}$: outcome of interest, measured in 2000.
- ▶ $\text{RR Duration}_{i,s}$: years connected to RR (as of 2000).
- ▶ $\mathbf{X}_{i,s}$:
 - ▶ Cubic polynomial in latitude and longitude (baseline)
 - ▶ Additional covariates (robustness)

Threats to inference

1. Differential effect of the railway depending on aggregate immigration may also be correlated with how early a location was connected to the railway.
 - ▶ In all specifications, we control (linearly) for date of connection to the RR.
2. The differential effect of the railway may also depend on aggregate economic conditions, which may be correlated with immigration.
 - ▶ Control for differential effects depending on level of industrialization or recent economic growth.
3. Timing of connection to the RR may be correlated with a county's geographic location.
 - ▶ All specifications flexibly account for latitude and longitude, and include state fixed effects.

Stage-zero panel estimates

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)
	Immigrant Share of Total County Population					
	All Counties	Excluding Northeast	Excluding Northeast	Excluding South	Excluding South	Midwest and West
Interaction of Interest:						
Lag Rail Access	0.172***	0.183***	0.046	0.239***	0.051*	0.292***
x Lag Immigrant Inflow/ Total US Pop	[0.045]	[0.051]	[0.107]	[0.076]	[0.027]	[0.085]
Other Variables:						
Lag Rail Access	-0.002	0.010	0.087***	-0.056	-0.007	-0.038
	[0.015]	[0.015]	[0.015]	[0.036]	[0.009]	[0.040]
Lag Rail Access	-0.005	-0.009	-0.042***	0.014	0.002	0.007
x Lag Log Industrialization Index	[0.006]	[0.006]	[0.006]	[0.014]	[0.004]	[0.016]
Lag Rail Access	-0.001	-0.008	0.022	-0.023	-0.010	-0.028
x Lag GDP Per Cap Decadal Growth	[0.010]	[0.010]	[0.027]	[0.027]	[0.008]	[0.027]
Lag Immigrant Share	Yes	Yes	Yes	Yes	Yes	Yes
Lag Urban Indicator	Yes	Yes	Yes	Yes	Yes	Yes
Lag Urban Indicator	Yes	Yes	Yes	Yes	Yes	Yes
x Lag Immigrant Inflow/ Total US Pop	Yes	Yes	Yes	Yes	Yes	Yes
Log County Population Density	Yes	Yes	Yes	Yes	Yes	Yes
County Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Decade Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	16,386	14,903	1,483	8,612	7,774	7,129
R-squared (within)	0.408	0.408	0.652	0.463	0.414	0.495
Mean Dependent Variable	0.085	0.080	0.138	0.144	0.021	0.145
SD Dependent Variable	0.109	0.109	0.088	0.112	0.057	0.116

Notes: OLS estimates are reported. An observation is a county in a time period (1860, 1870, 1880, 1890, 1900, 1910 or 1920). The dependent variable "Immigrant Share of Total County Population" is the proportion of a county's population that is foreign born in period t . "Lag Rail Access" is an indicator variable that equals one if a county has a railway in period $t-1$. Coefficients are reported, with Conley standard errors in square brackets. ***, **, and * indicate significance at the 1, 5 and 10% levels.

Zero stage findings

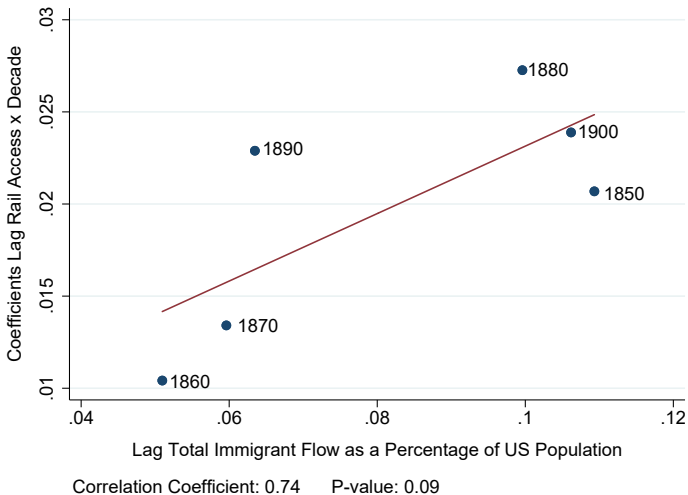
1. There is more immigration settlement in a county if it is connected to the railway network *and* immigrants are arriving in the U.S.
2. The railway on its own does not result in more immigration settlement.
3. No differential effect of the railway on immigration depending on the level of industrialization or GDP growth.

Gaining intuition for the instrument

$$\begin{aligned}\text{Immigrant Share}_{i,t} &= \alpha_t + \alpha_i + \gamma_j \text{Immigrant Share}_{i,t-1} \\ &+ \sum_{j \in \mathcal{T}} \beta_j I_{i,t-1}^{\text{RR Access}} \times I_{t-1}^{j=t} \\ &+ \theta \text{Industrialization}_{t-1} \times I_{i,t-1}^{\text{RR Access}} \\ &+ \phi \text{GDP Growth}_{t-1} \times I_{i,t-1}^{\text{RR Access}} \\ &+ \mathbf{X}_{i,t-1} \boldsymbol{\Gamma} + \varepsilon_{it}\end{aligned}$$

- ▶ We can then examine the effect of being connected to the railway network in different decades, $\hat{\beta}_j$.
- ▶ And check their relationship with aggregate immigrant inflows.
- ▶ Question: Does being connected to the RR have larger effects on immigrant settlement in a county in decades when more immigrants arrive to the U.S.?

Estimated effect of the railway on immigrant settlement and aggregate U.S. in-migration



Historical immigration and economic prosperity

Dependent Variable	(1) Log Average per Capita Income, 2000	(2) Share of Pop. Below Poverty Line, 2000	(3) Unemployment Rate, 2000	(4) Urbanization Rate, 2000	(5) Average Years of Schooling, 2000
A. OLS Estimates					
Average Immigrant Share, 1860-1920	0.243* [0.130]	0.015 [0.028]	0.020 [0.015]	0.949*** [0.184]	0.020 [0.307]
B. Reduced Form					
Predicted Average Immigrant Share, 1860-1920	11.942*** [3.629]	-2.229*** [0.777]	-1.876*** [0.500]	22.382*** [6.820]	41.925*** [10.562]
C. 2SLS Estimates					
Average Immigrant Share, 1860-1920	2.619*** [1.022]	-0.489** [0.209]	-0.411*** [0.151]	4.909*** [2.008]	9.195*** [3.392]
D. First Stage Estimates					
Dependent Variable: Average Immigrant Share, 1860-1920					
Predicted Average Immigrant Share, 1860-1920	4.559*** [1.311]	4.559*** [1.311]	4.559*** [1.311]	4.559*** [1.311]	4.559*** [1.311]
Kleibergen Paap <i>F</i> -statistic	21.222	21.222	21.222	21.222	21.222
Controls (in all Panels):					
Industrialization-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes
Business Cycle-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes
Date of RR Connection (Log Years as of 2000)	Yes	Yes	Yes	Yes	Yes
Cubic Polynomial for Latitude and Longitude	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	2,935	2,935	2,935	2,935	2,935
Mean of Dep. Var. (OLS, Reduced Form, and 2SLS)	10.022	0.136	0.047	0.401	11.445
SD of Dep. Var. (OLS, Reduced Form, and 2SLS)	0.203	0.054	0.025	0.305	0.558

Notes: An observation is a county. Panel A reports OLS estimates, Panel B reports reduced-form estimates, Panel C reports 2SLS estimates, and Panel D reports first-stage estimates. Coefficient estimates are reported, with Conley standard errors in square brackets. ***, **, and * indicate significance at the 1, 5 and 10% levels.

Magnitudes of the long-run benefits of immigration

Per capita income:

- ▶ Movement from zero to the 50th percentile of the Average Immigrant Share (1860–1920) is 0.049.
- ▶ The estimated coefficient in the ln per capita income equation is 2.62.
- ▶ Therefore, a movement from zero to the 50th percentile results in an increase in income of 0.128 or 12.8%.

Education:

- ▶ The same impact on the average years of schooling is 0.45 years of schooling.

Robustness checks

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Log Average per Capita Income, 2000								
	Variants of Instrument			Additional Covariates			Restricted Samples		
	Baseline Specification	Average in Connected Decades	Immigrant Inflow in First Decade	No Covariates	Frontier Experience	Civil War	Internet Trade	Removing Outliers	Constant Borders
A. OLS Estimates									
Average Immigrant Share, 1860-1920	0.243* [0.130]	0.246* [0.133]	0.269** [0.130]	0.395*** [0.134]	0.220 [0.128]	0.244* [0.130]	0.235*** [0.129]	0.333*** [0.087]	0.607*** [0.193]
B. Reduced Form									
Predicted Average Immigrant Share, 1860-1920	11.942*** [3.629]	287.404*** [57.292]	49.319*** [12.435]	12.719*** [2.293]	9.793*** [3.413]	12.183*** [3.618]	10.527*** [2.912]	14.684*** [3.773]	15.778*** [5.794]
C. 2SLS Estimates									
Average Immigrant Share, 1860-1920	2.619*** [1.022]	8.532* [4.497]	4.540*** [1.773]	2.865*** [0.779]	2.238*** [0.964]	2.693** [1.035]	3.564*** [1.581]	3.831*** [1.460]	3.119** [1.615]
D. First Stage Estimates									
Dependent Variable: Average Immigrant Share, 1860-1920									
Predicted Average Immigrant Share, 1860-1920	4.559*** [1.311]	33.686* [17.511]	10.862*** [3.275]	4.439*** [1.214]	4.375*** [1.301]	4.524*** [1.315]	2.954*** [1.132]	3.833*** [1.324]	5.059*** [2.129]
Kleibergen Paap F-statistic	21.222	18.803	21.005	75.973	19.883	21.256	21.225	17.027	10.675
Controls (in all Panels):									
Never Connected to the Railroad [0-1]	No	Yes	Yes	No	No	No	No	No	No
Number of Years with Frontier Experience	No	No	No	No	Yes	No	No	No	No
County Connected During Civil War (1860)	No	No	No	No	No	Yes	No	No	No
Trade-Based Predicted Immigrant Share	No	No	No	No	No	No	Yes	No	No
Industrialization-Based Predicted Immig. Share	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Business Cycle-Based Predicted Immig. Share	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Date of RR Connection (Log Years as of 2000)	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes
Cubic Polynomial for Latitude and Longitude	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Observations	2,935	2,935	2,935	2,935	2,934	2,935	2,935	2,761	1,489
Mean of Dep. Var. (OLS, Reduced Form, and 2SLS)	10.022	10.022	10.022	10.022	10.022	10.022	10.022	10.013	10.021
SD of Dep. Var. (OLS, Reduced Form, and 2SLS)	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.170	0.205

Notes: An observation is a county. Panel A reports OLS estimates, Panel B reports reduced form estimates, Panel C reports 2SLS estimates, and Panel D reports the first-stage estimates from the 2SLS. Coefficient estimates are reported, with Conley standard errors reported in square brackets. ***, **, and * indicate significance at the 1, 5 and 10% levels.

Potential social costs of immigration

- ▶ It is possible that there are long-run social costs of immigration.
- ▶ Concerns, historically and today, center around:
 - ▶ Erosion of socially-desirable values, such as civic mindedness.
 - ▶ Erosion of social cohesion.
 - ▶ Increase in crime.
- ▶ We also estimate long-run effects on these outcomes.

Historical immigration and social outcomes

Dependent Variable	(1) Social Capital, 2000	(2) Voting Turnout, 2000	(3) Total Crime Rate, 2000	(4) Crimes Against Persons, 2000	(5) Crimes Against Property, 2000
A. OLS Estimates					
Average Immigrant Share, 1860-1920	-0.048 [0.030]	-0.071 [0.046]	0.008*** [0.002]	0.002*** [0.001]	0.004*** [0.001]
B. Reduced Form					
Predicted Average Immigrant Share, 1860-1920	0.210 [0.958]	1.244 [1.662]	0.086 [0.070]	0.020 [0.013]	0.054 [0.053]
C. 2SLS Estimates					
Average Immigrant Share, 1860-1920	0.046 [0.209]	0.271 [0.347]	0.019 [0.017]	0.004 [0.003]	0.012 [0.012]
D. First Stage Estimates					
Dependent Variable: Average Immigrant Share, 1860-1920					
Predicted Average Immigrant Share, 1860-1920	4.588*** [1.329]	4.596*** [1.330]	4.559*** [1.311]	4.559*** [1.311]	4.559*** [1.311]
Kleibergen Paap <i>F</i> -statistic	21.206	21.712	21.222	21.222	21.222
Controls (in all Panels):					
Industrialization-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes
Business Cycle-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes
Date of RR Connection (Log Years as of 2000)	Yes	Yes	Yes	Yes	Yes
Cubic Polynomial for Latitude and Longitude	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	2,934	2,925	2,935	2,935	2,935
Mean of Dep. Var. (OLS, Reduced Form, and 2SLS)	0.182	0.535	0.006	0.001	0.004
SD of Dep. Var. (OLS, Reduced Form, and 2SLS)	0.061	0.090	0.004	0.001	0.003

Notes: An observation is a county. Panel A reports OLS estimates, Panel B reports reduced-form estimates, Panel C reports 2SLS estimates, and Panel D reports first-stage estimates. Coefficient estimates are reported, with Conley standard errors reported in square brackets. ***, **, and * indicate significance at the 1, 5 and 10% levels.

Mechanisms and dynamics behind the long-term effects

- ▶ When did the economic benefits of immigrants arise?
- ▶ Have they been increasing or decreasing overtime?
- ▶ We make progress on these questions by examining outcomes, measured:
 1. During the Age of Mass Migration (1860-1920)
 2. Immediately afterwards (1930)

Short-term effects of immigration on industry

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)
	Log Average Manufacturing Output per Capita		Log Average Manufacturing Output per Establishment		Log Number of Establishments per 10,000 Inhabitants	
	1860-1920	1930	1860-1920	1930	1860-1920	1930
A. OLS Estimates						
Average Immigrant Share, 1860-1920	3.476*** [0.631]	4.216*** [0.796]	3.301*** [0.537]	3.343*** [0.648]	0.319** [0.249]	0.783*** [0.248]
B. Reduced Form						
Predicted Average Immigrant Share 1860-1920	40.765 [33.988]	74.736*** [26.368]	20.778 [29.227]	71.924*** [23.653]	32.710*** [6.462]	2.079 [6.765]
C. 2SLS Estimates						
Average Immigrant Share, 1860-1920	9.014 [8.460]	16.197*** [7.343]	4.594 [6.838]	15.588*** [6.868]	7.253*** [2.389]	0.453 [1.467]
D. First Stage Estimates						
Dependent Variable: Average Immigrant Share, 1860-1920						
Predicted Average Immigrant Share, 1860-1920	4.523*** [1.381]	4.614*** [1.466]	4.523*** [1.381]	4.614*** [0.927]	4.510*** [1.381]	4.590*** [1.463]
Kleibergen Paap <i>F</i> -statistic	16.584	17.729	16.584	17.729	16.376	17.456
Controls (in all Panels):						
Industrialization-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes	Yes
Business Cycle-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes	Yes
Date of RR Connection (Log Years as of 2000)	Yes	Yes	Yes	Yes	Yes	Yes
Cubic Polynomial for Latitude and Longitude	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,805	2,463	2,805	2,463	2,804	2,462
Mean of Dep. Var. (OLS, Reduced Form, and 2SLS)	6.561	7.206	12.578	14.030	3.352	2.487
SD of Dep. Var. (OLS, Reduced Form, and 2SLS)	1.197	1.419	0.906	1.156	0.536	0.509

Notes: An observation is a county. The decade of 1910 is missing from the Manufacturing Census. Panel A reports OLS estimates, Panel B reports reduced-form estimates, Panel C reports 2SLS estimates, and Panel D reports first-stage estimates. Coefficient estimates are reported, with Conley standard errors reported in square brackets. ***, **, and * indicate significance at the 1, 5 and 10% levels.

Short-term effects of immigration on agriculture

Dependent Variable	(1)	(2)	(3)	(4)
	Log Average Total Farm Value (per Farm)		Log Average Total Farm Value (per Acre)	
	1860-1920	1930	1860-1920	1930
A. OLS Estimates				
Average Immigrant Share, 1860-1920	0.571 [0.417]	1.321*** [0.340]	1.866*** [0.699]	2.224*** [0.721]
B. Reduced Form				
Predicted Average Immigrant Share, 1860-1920	-1.771 [18.545]	32.991*** [13.341]	-12.372 [22.477]	14.961 [19.545]
C. 2SLS Estimates				
Average Immigrant Share, 1860-1920	-0.393 [4.116]	7.455*** [3.485]	-2.743 [5.005]	3.367 [4.519]
D. First Stage Estimates				
Dependent Variable: Average Immigrant Share, 1860-1920				
Predicted Average Immigrant Share, 1860-1920	4.510*** [1.381]	4.425*** [1.360]	4.510*** [1.381]	4.443*** [1.359]
Kleibergen Paap <i>F</i> -statistic	16.376	15.543	16.376	16.065
Controls (in all Panels):				
Industrialization-Based Predicted Immig. Share	Yes	Yes	Yes	Yes
Business Cycle-Based Predicted Immig. Share	Yes	Yes	Yes	Yes
Date of RR Connection (Log Years as of 2000)	Yes	Yes	Yes	Yes
Cubic Polynomial for Latitude and Longitude	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes
Observations	2,804	2,800	2,804	2,799
Mean of Dep. Var. (OLS, Reduced Form, and 2SLS)	10.420	11.513	5.907	6.558
SD of Dep. Var. (OLS, Reduced Form, and 2SLS)	0.913	0.829	0.701	0.793

Notes: An observation is a county. Panel A reports OLS estimates, Panel B reports reduced-form estimates, Panel C reports 2SLS estimates, and Panel D reports first-stage estimates. Coefficient estimates are reported, with Conley standard errors reported in square brackets. ***, **, and * indicate significance at the 1, 5 and 10% levels.

Short-term effects of immigration on education and innovation

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)
	Educational Attainment				Innovation	
	Share Enrolled in School		Share Illiterate		Log Patents per 10,000 Inhabitants:	
	1870-1920	1930	1870-1920	1930	All Nationalities 1860-1920	European 1860-1920
A. OLS Estimates						
Average Immigrant Share, 1860-1920	-0.119*** [0.015]	-0.059*** [0.016]	0.103*** [0.035]	0.044*** [0.013]	1.379*** [0.474]	2.992*** [0.555]
B. Reduced Form						
Predicted Average Immigrant Share, 1860-1920	-3.350*** [1.009]	-1.314*** [0.451]	7.558*** [3.190]	1.415*** [0.781]	139.378*** [21.909]	38.047*** [9.336]
C. 2SLS Estimates						
Average Immigrant Share, 1860-1920	-0.735*** [0.308]	-0.288*** [0.113]	1.658** [0.862]	0.310** [0.123]	30.366*** [9.277]	8.289*** [1.998]
D. First Stage Estimates						
Dependent Variable: Average Immigrant Share, 1860-1920						
Predicted Average Immigrant Share, 1860-1920	4.559*** [1.311]	4.559*** [0.849]	4.559*** [0.849]	4.559*** [0.849]	4.590*** [1.332]	4.590*** [1.332]
Kleibergen Paap <i>F</i> -statistic	21.222	21.222	21.222	21.222	21.151	21.151
Controls (in all Panels):						
Industrialization-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes	Yes
Business Cycle-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes	Yes
Date of RR Connection (Log Years as of 2000)	Yes	Yes	Yes	Yes	Yes	Yes
Cubic Polynomial for Latitude and Longitude	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,935	2,935	2,935	2,935	2,929	2,929
Mean of Dep. Var. (OLS, Reduced Form, and 2SLS)	0.190	0.217	0.104	0.041	3.561	0.312
SD of Dep. Var. (OLS, Reduced Form, and 2SLS)	0.035	0.026	0.104	0.042	1.263	0.589

Notes: An observation is a county. Panel A reports OLS estimates, Panel B reports reduced-form estimates, Panel C reports 2SLS estimates, and Panel D reports first-stage estimates. Coefficient estimates are reported, with Conley standard errors reported in square brackets. ***, **, and * indicate significance at the 1, 5 and 10% levels.

Historical immigration and urbanization, 1920–2000

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	1920	1930	1940	1950	1960	1970	1980	1990	2000
Urban Population Share in									
A. OLS Estimates									
Average Immigrant Share, 1860-1920	1.108*** [0.180]	1.085*** [0.181]	1.048*** [0.173]	0.998*** [0.191]	0.987*** [0.202]	0.995*** [0.204]	1.003*** [0.210]	1.016*** [0.201]	0.949*** [0.184]
B. Reduced Form									
Predicted Average Immigrant Share, 1860-1920	14.313*** [6.403]	12.570** [6.412]	11.21 [7.192]	12.231* [7.369]	16.011** [7.837]	17.831*** [7.627]	18.946*** [7.239]	20.782*** [7.336]	22.382*** [6.820]
C. 2SLS Estimates									
Average Immigrant Share, 1860-1920	3.139** [1.611]	2.757** [1.510]	2.459* [1.662]	2.683** [1.117]	3.512** [1.946]	3.883** [1.951]	4.155*** [1.944]	4.558*** [2.059]	4.909*** [2.008]
D. First-Stage Estimates									
Dependent Variable: Average Immigrant Share, 1860-1920									
Predicted Average Immigrant Share, 1860-1920	4.559*** [1.311]	4.559*** [1.311]	4.559*** [1.311]	4.559*** [1.311]	4.559*** [1.311]	4.559*** [1.311]	4.559*** [1.311]	4.559*** [1.311]	4.559*** [1.311]
Kleibergen Paap <i>F</i> -statistic	28.201	28.201	28.201	28.201	28.201	28.571	28.201	28.201	28.201
Controls (in all Panels):									
Industrialization-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Business Cycle-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Date of RR Connection (Log Years as of 2000)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cubic Polynomial for Latitude and Longitude	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,935	2,935	2,935	2,935	2,935	2,933	2,935	2,935	2,935
Mean of Dep. Var. (OLS, Reduced-Form, and 2SLS)	0.195	0.219	0.236	0.286	0.324	0.350	0.362	0.365	0.401
SD of Dep. Var. (OLS, Reduced-Form, and 2SLS)	0.248	0.256	0.252	0.269	0.281	0.289	0.290	0.295	0.305

Notes: An observation is a county. Panel A reports OLS estimates, Panel B reports reduced-form estimates, Panel C reports 2SLS estimates, and Panel D reports first-stage estimates. Coefficient estimates are reported, with Conley standard errors reported in square brackets. ***, **, and * indicate significance at the 1, 5 and 10% levels.

Historical immigration and incomes, 1960–2000

Dependent Variable	(1)	(2)	(3)	(4)	(5)
	1960	1970	1980	1990	2000
A. OLS Estimates					
Average Immigrant Share, 1860-1920	0.364***	0.241***	0.233***	0.299***	0.243**
	[0.133]	[0.107]	[0.105]	[0.110]	[0.130]
<i>Standardized 'beta' Coefficients</i>	0.127	0.115	0.132	0.151	0.133
B. Reduced Form					
Predicted Average Immigrant Share, 1860-1920	10.436**	8.130**	7.578**	11.107***	11.942***
	[5.478]	[4.139]	[3.390]	[3.740]	[3.629]
<i>Standardized 'beta' Coefficients</i>	0.133	0.142	0.157	0.206	0.236
C. 2SLS Estimates					
Average Immigrant Share, 1860-1920	2.290*	1.784**	1.663**	2.438***	2.619***
	[1.411]	[1.054]	[0.791]	[0.994]	[1.022]
<i>Standardized 'beta' Coefficients</i>	0.799	0.852	0.940	1.234	1.427
D. First Stage Estimates					
Dependent Variable: Average Immigrant Share, 1860-1920					
Predicted Average Immigrant Share, 1860-1920	4.556***	4.556***	4.556***	4.556***	4.559***
	[1.312]	[1.312]	[1.312]	[1.312]	[1.311]
Kleibergen Paap <i>F</i> -statistic	21.264	21.264	21.264	21.264	21.222
Controls (in all Panels):					
Industrialization-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes
Business Cycle-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes
Date of RR Connection (Log Years as of 2000)	Yes	Yes	Yes	Yes	Yes
Cubic Polynomial for Latitude and Longitude	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	2,933	2,933	2,933	2,933	2,935
Mean of Dep. Var. (OLS, Reduced-Form, and 2SLS)	8.529	8.909	9.205	9.294	10.022
SD of Dep. Var. (OLS, Reduced-Form, and 2SLS)	0.317	0.230	0.196	0.218	0.203

Notes : An observation is a county. Panel A reports OLS estimates, Panel B reports the reduced form, Panel C reports 2SLS estimates, and Panel D reports first-stage estimates. Coefficient estimates are reported, with Conley standard errors reported in square brackets. ***, **, and * indicate significance at the 1, 5 and 10% levels.

Historical immigration and education, 1950–2000

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Median Years of Schooling			Average Years of Schooling			
	1950	1960	1970	1970	1980	1990	2000
A. OLS Estimates							
Average Immigrant Share, 1860-1920	-1.162**	-1.282**	-1.221**	-0.748**	-0.332	-0.120	0.020
<i>Standardized 'beta' Coefficient</i>	[0.584]	[0.581]	[0.548]	[0.368]	[0.374]	[0.327]	[0.327]
	-0.093	-0.098	-0.098	-0.085	-0.044	-0.020	0.004
B. Reduced Form							
Predicted Average Immigrant Share, 1860-1920	27.680	37.084	55.525***	41.040***	42.733***	44.084***	41.925***
<i>Standardized 'beta' Coefficient</i>	[18.631]	[23.899]	[22.861]	[18.079]	[14.886]	[12.454]	[10.562]
	0.081	0.104	0.163	0.171	0.206	0.266	0.304
B. 2SLS Estimates							
Average Immigrant Share, 1860-1920	5.976	8.171	12.085**	9.001***	9.373***	9.669***	9.195***
<i>Standardized 'beta' Coefficient</i>	[4.351]	[5.987]	[6.355]	[3.284]	[2.999]	[2.703]	[2.470]
	0.479	0.625	0.968	1.026	1.233	1.590	1.822
D. First-Stage Estimates							
	Dependent Variable: Average Immigrant Share, 1860-1920						
Predicted Average Immigrant Share, 1860-1920	4.631***	4.539***	4.595***	4.559***	4.559***	4.559***	4.559***
	[1.364]	[1.310]	[1.311]	[1.311]	[1.311]	[1.311]	[1.311]
Kleibergen Paap F-statistic	21.20	21.74	21.82	21.22	21.22	21.22	21.22
Controls (in all Panels):							
Industrialization-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Business Cycle-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Date of RR Connection (Log Years as of 2000)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cubic Polynomial for Latitude and Longitude	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,889	2,933	2,933	2,934	2,935	2,935	2,935
Mean of Dep. Var. (OLS, Reduced-Form, and 2SLS)	5.289	9.628	10.893	9.187	10.177	10.981	11.445
SD of Dep. Var. (OLS, Reduced-Form, and 2SLS)	1.381	1.444	1.381	0.969	0.840	0.672	0.558

Notes: An observation is a county. Panel A reports OLS estimates, Panel B reports the reduced form, Panel C reports 2SLS estimates, and Panel D reports first-stage estimates. Coefficient estimates are reported, with Conley standard errors reported in square brackets. ***, **, and * indicate significance at the 1, 5 and 10% levels.

Historical and current immigration

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	1920	1930	1940	1950	1970	1980	1990	2000
Share of Foreign Born in:								
A. OLS Estimates								
Average Immigrant Share, 1860-1920	0.577*** [0.033]	0.428*** [0.035]	0.282*** [0.029]	0.203*** [0.023]	0.107*** [0.021]	0.112*** [0.029]	0.114*** [0.037]	0.141*** [0.048]
B. Reduced Form								
Predicted Average Immigrant Share, 1860-1920	1.786*** [0.726]	1.566** [0.588]	0.969** [0.428]	0.480 [0.320]	0.358 [0.233]	0.034 [0.404]	-0.153 [0.497]	-0.784 [0.746]
C. 2SLS Estimates								
Average Immigrant Share, 1860-1920	0.392*** [0.101]	0.344*** [0.091]	0.213** [0.151]	0.105* [0.061]	0.079* [0.052]	0.007 [0.089]	-0.034 [0.109]	-0.172 [0.166]
D. First-Stage Estimates								
Dependent Variable: Average Immigrant Share, 1860-1920								
Predicted Average Immigrant Share, 1860-1920	4.559*** [1.311]	4.559*** [1.311]	4.559*** [1.311]	4.559*** [1.311]	4.559*** [1.311]	4.559*** [1.311]	4.559*** [1.311]	4.559*** [1.311]
Kleibergen Paap <i>F</i> -statistic	21.222	21.229	21.222	21.222	21.222	21.222	21.222	21.222
Controls (in all Panels):								
Industrialization-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Business Cycle-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Date of RR Connection (years as of 2000)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Latitude	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Longitude	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,935	2,934	2,935	2,935	2,935	2,935	2,935	2,935
Mean of Dep. Var. (OLS, Reduced-Form, and 2SLS)	0.068	0.055	0.037	0.028	0.015	0.020	0.021	0.033
SD of Dep. Var. (OLS, Reduced-Form, and 2SLS)	0.081	0.065	0.047	0.035	0.021	0.027	0.035	0.047

Notes: An observation is a county. Panel A reports OLS estimates, Panel B reports the reduced form, Panel C reports 2SLS estimates, and Panel D reports first-stage estimates. Coefficient estimates are reported, with Conley standard errors in square brackets. ***, **, and * indicate significance at the 1, 5 and 10% levels.

Additional threat to causal inference

- ▶ Immigrants could have anticipated when the RR became connected to counties with high future growth potential and immigrated to the U.S. then.
- ▶ In this case, aggregate flows are endogenous to where the RR is connected.

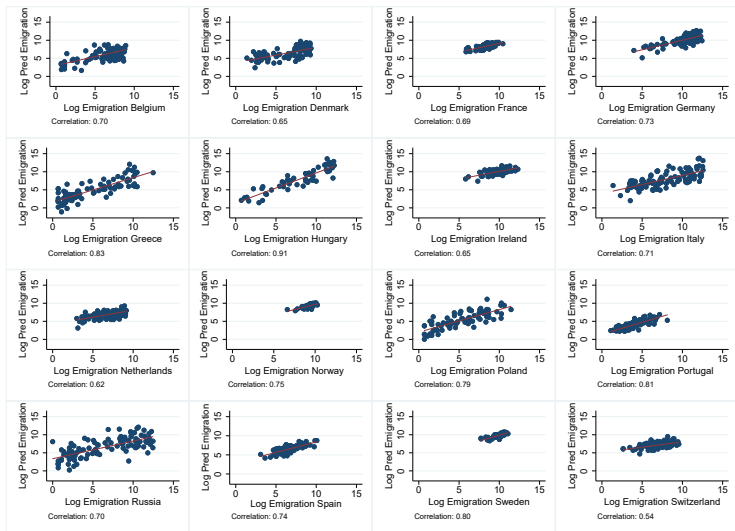
Estimating equation

$$\begin{aligned} \ln \text{Immigrant Flow}_{c,t+1} &= \sum_{s \in S} \sum_{k \in K} \beta_{c,s,k} I_{c,t}^{\text{Temp},s,k} \\ &+ \sum_{s \in S} \sum_{k \in K} \gamma_{c,s,k} I_{c,t}^{\text{Precip},s,k} + \varepsilon_{c,t} \end{aligned}$$

where

- ▶ $\ln \text{Immigrant Flow}_{c,t+1}$ is the natural log of the flow of immigrants from country c in year $t + 1$.
- ▶ $I_{c,t}^{\text{Temp},s,k}$ an indicator variable that equals one if the average temperature in season s falls within temperature range k
 - ▶ $s \in \{\text{Spring, Summer, Winter, Autumn}\}$
 - ▶ k indexes a set K of six temperature categories: 3 or more standard deviations below the mean, 2–3 s.d. below the mean, 1–2 s.d. below the mean, 1–2 s.d. above the mean, 2–3 s.d. above the mean, and 3+ s.d. above the mean.
- ▶ And, similarly for $I_{c,t}^{\text{Precip},s,k}$.

Actual vs. predicted migrant flows (all of Europe)



Estimates using predicted immigrant flows: Economic outcomes

Dependent Variable	(1) Log Average per Capita Income, 2000	(2) Share of Pop. Below Poverty Line, 2000	(3) Unemployment Rate, 2000	(4) Urbanization Rate, 2000	(5) Average Years of Schooling, 2000
A. OLS Estimates					
Average Immigrant Share, 1860-1920	0.244* [0.130]	0.015 [0.028]	0.020 [0.015]	0.948*** [0.185]	0.022 [0.307]
B. Reduced Form					
Predicted Average Immigrant Share, 1860-1920	28.934*** [9.683]	-4.571 [2.874]	-4.402*** [1.453]	65.007*** [19.282]	115.574*** [27.643]
C. 2SLS Estimates					
Average Immigrant Share, 1860-1920	2.792*** [1.249]	-0.441 [0.298]	-0.425*** [0.195]	6.273*** [2.651]	11.152*** [4.397]
D. First Stage Estimates					
Dependent Variable: Average Immigrant Share, 1860-1920					
Predicted Average Immigrant Share, 1860-1920	10.364*** [3.058]	10.364*** [3.058]	10.364*** [3.058]	10.364*** [3.058]	10.364*** [3.058]
Kleibergen Paap <i>F</i> -statistic	18.006	18.006	18.006	18.006	18.006
Controls (in all Panels):					
Industrialization-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes
Business Cycle-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes
Date of RR Connection (Log Years as of 2000)	Yes	Yes	Yes	Yes	Yes
Cubic Polynomial for Latitude and Longitude	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	2,935	2,935	2,935	2,935	2,935
Mean of Dep. Var. (OLS, Reduced Form, and 2SLS)	10.022	0.136	0.047	0.401	11.445
SD of Dep. Var. (OLS, Reduced Form, and 2SLS)	0.203	0.054	0.025	0.305	0.558

Notes: An observation is a county. Panel A reports OLS estimates, Panel B reports reduced-form estimates, Panel C reports 2SLS estimates, and Panel D reports the first-stage estimates. Coefficient estimates are reported, with Conley standard errors in square brackets. ***, **, and * indicate significance at the 1, 5 and 10% levels.

Estimates using predicted immigrant flows: Social outcomes

Dependent Variable	(1) Social Capital, 2000	(2) Voting Turnout, 2000	(3) Total Crime Rate, 2000	(4) Crimes Against Persons, 2000	(5) Crimes Against Property, 2000
A. OLS Estimates					
Average Immigrant Share, 1860-1920	-0.048 [0.030]	-0.071 [0.046]	0.008*** [0.002]	0.002*** [0.0005]	0.004*** [0.001]
B. Reduced Form					
Predicted Average Immigrant Share, 1860-1920	1.506 [2.838]	2.733 [5.032]	0.348 [0.215]	0.063 [0.039]	0.241 [0.162]
C. 2SLS Estimates					
Average Immigrant Share, 1860-1920	0.144 [0.278]	0.254 [0.460]	0.034 [0.024]	0.006 [0.005]	0.023 [0.018]
D. First Stage Estimates					
Dependent Variable: Average Immigrant Share, 1860-1920					
Predicted Average Immigrant Share, 1860-1920	10.424*** [3.097]	10.776*** [3.161]	10.364*** [3.058]	10.364*** [3.058]	10.364*** [3.058]
Kleibergen Paap <i>F</i> -statistic	17.806	18.143	18.006	18.006	18.006
Controls (in all Panels):					
Industrialization-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes
Business Cycle-Based Predicted Immig. Share	Yes	Yes	Yes	Yes	Yes
Date of RR Connection (Log Years as of 2000)	Yes	Yes	Yes	Yes	Yes
Cubic Polynomial for Latitude and Longitude	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	2,934	2,925	2,935	2,935	2,935
Mean of Dep. Var. (OLS, Reduced Form, and 2SLS)	0.182	0.535	0.006	0.001	0.004
SD of Dep. Var. (OLS, Reduced Form, and 2SLS)	0.061	0.090	0.004	0.001	0.003

Notes : An observation is a county. Panel A reports OLS estimates, Panel B reports reduced-form estimates, Panel C reports 2SLS estimates, and Panel D reports first-stage estimates. Coefficient estimates are reported, with Conley standard errors reported in square brackets. ***, **, and * indicate significance at the 1, 5 and 10% levels.

Conclusions

- ▶ We have estimated the long-run effects of immigrant settlement during the 'Age of Mass Migration'.
- ▶ Strong evidence for long-run economic benefits of immigration.
 - ▶ 2SLS benefits are always larger than correlation-based benefits.
 - ▶ Economic benefits arose almost immediately and persisted until today.
- ▶ No evidence for long-run social costs.