ONLINE APPENDIX

Contents

A Supplementary Tables and Figures

Table A1. European Regions

UK	Russia
Ireland	Eastern Europe (Yugoslavia, Czechoslovakia, etc.)
Denmark	Austria-Hungary
Finland	Switzerland
Norway	France
Sweden	Belgium-Netherlands
Germany	Greece-Portugal-Spain
Poland	Italy

Note: this table lists the European sending regions used to construct the instrument for immigration.

Table A2. City List

Akron, OH	Elizabeth, NJ	McKeesport, PA	Saint Joseph, MO
Albany, NY	Elmira, NY	Memphis, TN	Saint Louis, MO
Allentown, PA	Erie, PA	Milwaukee, WI	Saint Paul, MN
Altoona, PA	Evansville, IN	Minneapolis, MN	Salem, MA
Amsterdam, NY	Everett, MA	Mobile, AL	San Antonio, TX
Atlanta, GA	Fall River, MA	Montgomery, AL	San Diego, CA
Atlantic City, NJ	Fitchburg, MA	Mount Vernon, NY	San Francisco, CA
Auburn, NY	Flint, MI	Nashville, TN	Savannah, GA
Augusta, GA	Fort Wayne, IN	New Bedford, MA	Schenectedy, NY
Baltimore, MD	Fort Worth, TX	New Britain, CT	Scranton, PA
Bay City, MI	Galveston, TX	New Castle, PA	Seattle, WA
Bayonne, NJ	Grand Rapids, MI	New Haven, CT	Sioux City, IA
Berkeley, CA	Hamilton, OH	New Orleans, LA	Somerville, MA
Binghamton, NY	Harrisburg, PA	New York, NY	South Bend, IN
Birmingham, AL	Hartford, CT	Newark, NJ	Spokane, WA
Boston, MA	Haverhill, MA	Newton, MA	Springfield, IL
Bridgeport, CT	Hoboken, NJ	Niagara Falls, NY	Springfield, MA
Brockton, MA	Holyoke, MA	Norfolk, VA	Springfield, MO
Buffalo, NY	Houston, TX	Oakland, CA	Springfield, OH
Butte, MT	Huntington, WV	Oklahoma City, OK	Superior, WI
Cambridge, MA	Indianapolis, IN	Omaha, NE	Syracuse, NY
Camden, NJ	Jackson, MI	Oshkosh, WI	Tacoma, WA
Canton, OH	Jacksonville, FL	Pasadena, CA	Tampa, FL
Cedar Rapids, IA	Jamestown , NY	Passaic, NJ	Taunton, MA
Charleston, SC	Jersey City, NJ	Paterson, NJ	Terre Haute, IN
Charlotte, NC	Johnstown, PA	Pawtucket, RI	Toledo, OH
Chattanooga, TN	Joliet, IL	Peoria, IL	Topeka, KS
Chelsea, MA	Kalamazoo, MI	Perth Amboy, NJ	Trenton, NJ
Chester, PA	Kansas City, KS	Philadelphia, PA	Troy, NY
Chicago, IL	Kansas City, MO	Pittsburgh, PA	Utica, NY
Cincinnati, OH	Knoxville, TN	Pittsfield, MA	Washington, DC
Cleveland, OH	La Crosse, WI	Portland, ME	Waterbury, CT
Columbus, OH	Lancaster, PA	Portland, OR	Wheeling, WV
Covington, KY	Lansing, MI	Portsmouth, VA	Wichita, KS
Dallas, TX	Lawrence, MA	Providence, RI	Wilkes-Barre, PA
Davenport, IA	Lexington, KY	Pueblo, CO	Williamsport, PA
Dayton, OH	Lima, OH	Quincy, IL	Wilmington, DE
Decatur, IL	Lincoln, NE	Quincy, MA	Woonsocket, RI
Denver, CO	Little Rock, AR	Racine, WI	Worcester, MA
Des Moines, IA	Los Angeles, CA	Reading, PA	Yonkers, NY
Detroit, MI	Louisville, KY	Richmond, VA	York, PA
Dubuque, IA	Lowell, MA	Roanoke, VA	Youngstown, OH
Duluth, MN	Lynn, MA	Rochester, NY	
East Orange, NJ	Macon, GA	Rockford, IL	
East St. Louis, IL	Malden, MA	Sacramento, CA	
El Paso, TX	Manchester, NH	Saginaw, MI	

Table A3. Tax Revenues and Property Values

Dep. Var.	(1) Total tax revenues PC	(2) Property tax revenues PC	(3) Property values PC	(4) Property values over 1910 pop	(5) Business Taxes PC
Panel A: OLS					
Fr. Immigrants	-8.525	-8.060	372.4	240.3	0.268
	(6.490)	(5.515)	(740.6)	(562.1)	(1.677)
Panel B: 2SLS					
Fr. Immigrants	-11.15	-11.08*	294.6	518.3	1.843
	(6.982)	(6.467)	(915.3)	(740.9)	(1.604)
F-stat	288.3	288.3	288.3	288.3	288.3
Mean of dep var	12.53	12.04	715.9	715.9	0.889
Cities	180	180	180	180	180
Observations	540	540	540	540	540

Note: this Table presents results for a balanced panel of the 180 US cities with at least 30,000 residents in each Census year 1910, 1920, and 1930. Panels A and B report, respectively, OLS and 2SLS results. The dependent variable is total (resp. property) tax revenues per capita in Col 1 (resp. Col 2); property values per capita (resp. over 1910 population) in Col 3 (resp. Col 4); and business taxes per capita in Col 5. *Fr. Immigrants* is the fraction of immigrants arrived in the previous decade over predicted city population, and is instrumented using the baseline version of the instrument constructed in Section 4.2 (see (2) in the main text). F-stat refers to the K-P F-stat for weak instrument. All regressions include city and state by year fixed effects. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table A4. Public Spending and Tax Revenues: Per Capita vs Total

Dep. Variable:	Public Spending	Property Tax Revenues	Public Spending	Property Tax Revenues
	Per Capita		*Total*	
	(1)	(2)	(3)	(4)
Fr. Immigrants	-8.699*	-11.08*	-452.9***	-491.4***
	(4.453)	(6.467)	(96.70)	(104.5)
F-stat	288.3	288.3	288.3	288.3
Observations	540	540	540	540

Note: this table presents 2SLS results for a balanced panel of the 180 US cities with at least 30,000 residents in each Census year 1910, 1920, and 1930. The dependent variable is public spending and property tax revenues per capita in columns 1 and 2. In columns 3 and 4, the dependent variable is total public spending and total property tax revenues (in 100,000 dollars). *Fr. Immigrants* is the fraction of immigrants arrived in the previous decade over predicted city population, and is instrumented using the baseline version of the instrument constructed in Section 4.2 (see (2) in the main text). F-stat refers to the K-P F-stat for weak instrument. All regressions include city and state by year fixed effects. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table A5. Public Spending Per Capita, by Category

VARIABLES	(1) Education	(2) Police	(3) Fire	(4) Charities and hospitals	(5) Sanitation
Panel A: OLS					
Fr. Immigrants	-7.453***	0.227	-0.369	0.486	-0.537
	(2.332)	(0.560)	(0.552)	(0.747)	(0.696)
Panel B: 2SLS					
Fr. Immigrants	-6.170***	-0.345	-0.213	-1.258	-1.318*
	(2.146)	(0.663)	(0.680)	(1.897)	(0.717)
F-stat	248.6	288.3	288.3	220.3	288.3
Mean dep var	4.250	1.338	1.485	0.635	1.129
Cities	180	180	180	175	180
Observations	534	540	540	516	540

Note: this Table presents results for a balanced panel of the 180 US cities with at least 30,000 residents in each Census year 1910, 1920, and 1930. Panels A and B report, respectively, OLS and 2SLS results. The dependent variable, in per capita terms, is displayed at the top of each column. Sanitation (Col 5) includes garbage collection, sewerage, and other spending on sanitation. *Fr. Immigrants* is the fraction of immigrants arrived in the previous decade over predicted city population, and is instrumented using the baseline version of the instrument constructed in Section 4.2 (see (2) in the main text). F-stat refers to the K-P F-stat for weak instrument. All regressions include city and state by year fixed effects. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table A6. Additional Electoral Outcomes

VARIABLES	(1) Republicans' vote share	(2) Other parties' vote share	(3) Democrats-Republicans Margin	(4) Turnout
Panel A: OLS				
Fr. Immigrants	0.337**	0.191	-0.866***	-1.033***
	(0.133)	(0.127)	(0.219)	(0.233)
Panel B: 2SLS				
Fr. Immigrants	0.169	0.235**	-0.573**	-1.422***
	(0.149)	(0.101)	(0.272)	(0.183)
F-stat	83.14	83.14	83.14	83.52
Mean dep var	0.310	0.200	0.181	0.504
MSAs	126	126	126	125
Observations	378	378	378	375

Note: this Table presents results for a balanced panel of the 126 metropolitan statistical areas (MSAs) including at least one of the 180 cities with at least 30,000 residents in each Census year 1910, 1920, and 1930. Panels A and B report, respectively, OLS and 2SLS results. The dependent variable is reported at the top of each column, and refers to Presidential elections. All electoral outcomes were aggregated from the county to the MSA level, using the 1940 MSAs' definitions, and were computed as the average between the closest two elections after each Census year. Results are unchanged when taking the average from the two closest election years (see the online appendix). *Other parties' vote share refers* to the vote share of all parties other than Democrats and Republicans. *Fr. Immigrants* is the fraction of immigrants arrived in the previous decade over predicted city population, and is instrumented using the baseline version of the instrument constructed in Section 4.2 (see (2) in the main text). F-stat refers to the K-P F-stat for weak instrument. All regressions include MSA and state by year fixed effects. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table A7. Additional Outcomes: Economic Activity

VARIABLES	(1) Log value added per capita	(2) Log value products per establishment	(3) Log value products per capita	(4) Log horsepower	(5) TFP	(6) Log number of establishments
Panel A: OLS						
Fr. Immigrants	0.785	2.264***	0.992*	1.267***	0.295	-0.524
	(0.580)	(0.704)	(0.556)	(0.475)	(0.358)	(0.365)
Panel B: 2SLS						
Fr. Immigrants	1.404**	3.549***	2.065**	1.906***	1.013*	-1.061**
	(0.586)	(1.214)	(0.845)	(0.705)	(0.540)	(0.439)
F-stat	270.5	270.5	270.5	270.5	270.5	270.5
Cities	178	178	178	178	178	178
Observations	525	525	525	525	525	525

Note: this table presents results for a balanced panel of the 178 US cities with at least 30,000 residents in each Census year 1910, 1920, and 1930, and for which data were reported in the Census of Manufacture between 1909 and 1929. Panels A and B report, respectively, OLS and 2SLS results. The dependent variable is: the log of value added per capita in Col 1; the log of value of products per establishment (per capita) in Col 2 (Col 3); the log of horsepower in Col 4; total factor productivity (TFP) in Col 5; and, the log of the number of establishments in Col 6. *Fr. Immigrants* is the fraction of immigrants arrived in the previous decade over predicted city population, and is instrumented using the baseline version of the instrument constructed in Section 4.2 (see (2) in the main text). F-stat refers to the K-P F-stat for weak instrument. All regressions include city and state by year fixed effects. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table A8. Heterogeneous Effects and Manufacturing Wages

	Natives Only					Natives and Immigrants	
Dep. Var:	(1) In Labor Force	(2) High-Low Skill Ratio	(3) Employed Illiterate	(4) Employed Blacks	(5) Employed Labor manuf	(6) Log workers manuf	(7) Log avg. wage manuf
Panel A: OLS							
Fr. Immigrants	0.205***	-0.030	-0.147	-0.108	0.037	1.671***	-0.091
	(0.050)	(0.034)	(0.217)	(0.273)	(0.098)	(0.557)	(0.237)
Panel B: 2SLS							
Fr. Immigrants	0.204***	0.061*	-0.109	-0.107	0.078	1.471***	-0.186
	(0.065)	(0.036)	(0.332)	(0.269)	(0.114)	(0.527)	(0.291)
F-stat	251.3	251.3	251.3	251.3	251.3	270.5	270.5
Mean dep var	0.954	0.978	0.745	0.750	0.941	9.063	6.275
Observations	538	538	538	538	538	525	525

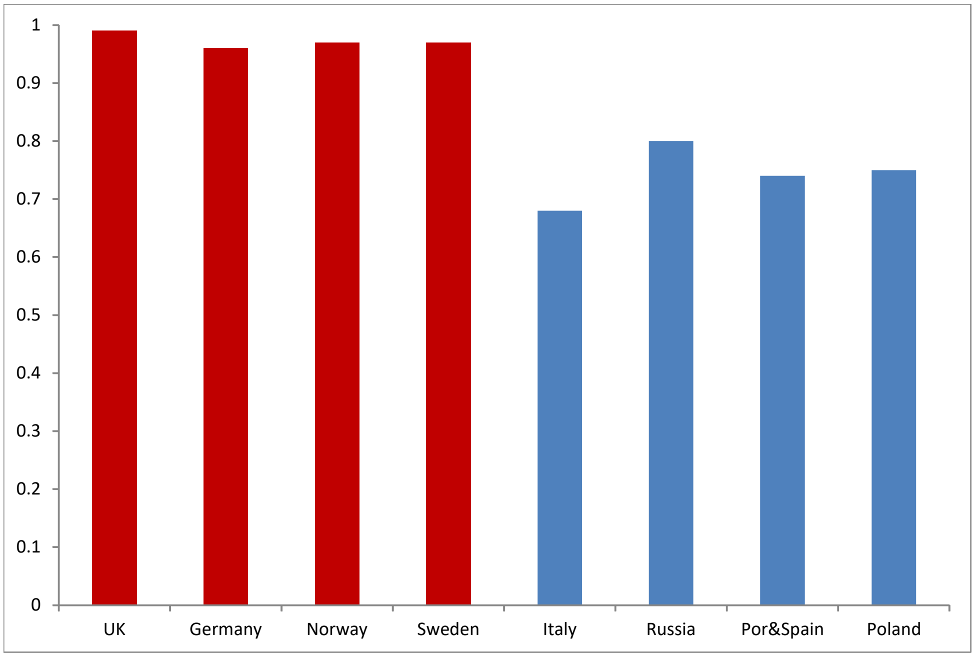
Note: this Table presents results for a balanced panel of the 180 US cities with at least 30,000 residents in each Census year 1910, 1920, and 1930 (Cols 1-5), and for which data were reported in the Census of Manufacture between 1909 and 1929 (Cols 6-7). Variables in Cols 1 to 5 refer to native men in the age range 15 to 65 who were not enrolled in schools. Panels A and B report, respectively, OLS and 2SLS results. The dependent variable is: an indicator for holding any gainful occupation (*In Labor Force*) in Col 1; the log of high skill natives over the log of low skill natives in Col 2; and the employment rate for illiterate natives, for African Americans, and for natives working as manufacturing laborers in Cols 3 to 5 respectively. Variables in Cols 6-7 refer to the whole labor force in the manufacturing sector (from the Census of Manufacture), and include both immigrant and native workers. The dependent variable is (the log of) the number of workers employed in manufacturing in Col 6; and (the log of) the average wage in manufacturing in Col 7. To classify individuals across skill categories, I use the classification made by Katz and Margo (2013). *Fr. Immigrants* is the fraction of immigrants arrived in the previous decade over predicted city population, and is instrumented using the baseline version of the instrument constructed in Section 4.2 (see (2) in the main text). F-stat refers to the K-P F-stat for weak instrument. All regressions include city and state by year fixed effects. The mean of each dependent variable at baseline is shown at the bottom of the Table. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table A9. Linguistic Distance vs Literacy

Dep. Var.	(1) Total tax revenues PC	(2) Property tax revenues PC	(3) Property tax rate	(4) Public spending PC	(5) Education	(6) Police	(7) Charities and Hospitals	(8) Sanitation
Panel A: OLS								
Ling. Distance	-0.292	-0.260	-0.997	-0.183	-0.062	-0.020	-0.044	-0.028
	(0.185)	(0.180)	(0.701)	(0.151)	(0.054)	(0.019)	(0.036)	(0.033)
Literacy	0.058	0.160	0.404	0.093	0.099	0.026	-0.060	-0.028
	(0.181)	(0.169)	(0.327)	(0.132)	(0.063)	(0.020)	(0.041)	(0.026)
Panel B: 2SLS								
Ling. Distance	-0.946**	-0.861*	-2.340	-0.575*	-0.177	0.001	-0.131	-0.065
	(0.458)	(0.450)	(1.553)	(0.314)	(0.128)	(0.046)	(0.092)	(0.054)
Literacy	-0.294	-0.217	-0.129	-0.234	0.096	0.062	-0.091	-0.054
	(0.327)	(0.303)	(0.801)	(0.266)	(0.099)	(0.039)	(0.097)	(0.051)
KP F-stat	14.30	14.30	14.57	14.30	14.45	14.30	10.89	14.30
F-stat (Imm.)	101.7	101.7	102.1	101.7	87.48	101.7	83.47	101.7
F-stat (Ling.)	36.48	36.48	37.87	36.48	34.74	36.48	26.10	36.48
F-stat (Lit.)	21.77	21.77	21.68	21.77	21.70	21.77	21.27	21.77
Mean of dep var	12.76	12.10	19.75	12.16	4.250	1.338	0.635	1.129
Observations	540	540	539	540	534	540	516	540

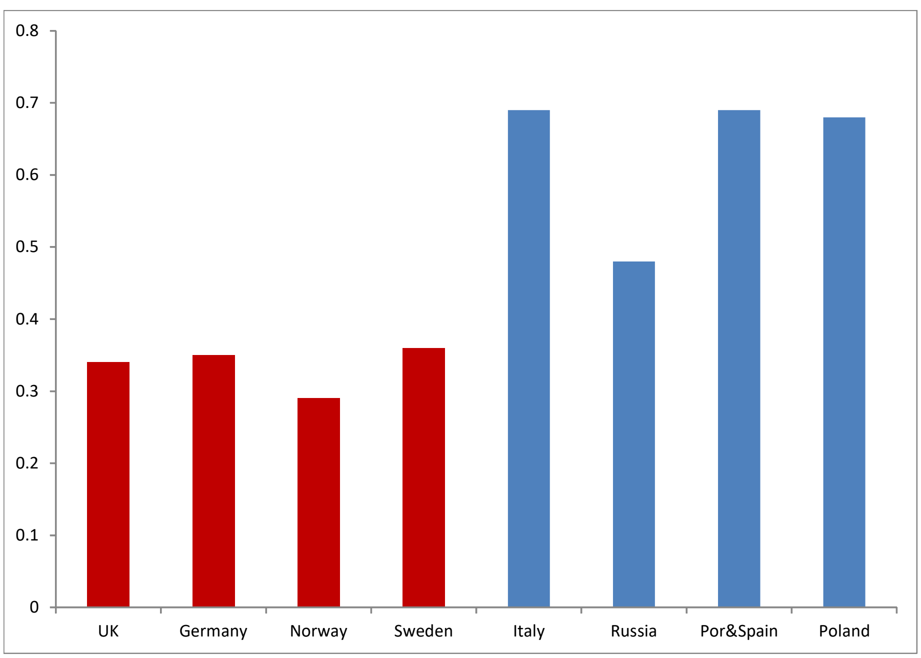
Note: this Table presents results for a balanced panel of the 180 US cities with at least 30,000 residents in each Census year 1910, 1920, and 1930. Panels A and B report, respectively, OLS and 2SLS results. The dependent variable is displayed at the top of each column. In Cols 5 to 8, the dependent variable is spending per capita on the category listed at the top of the column. The main regressors of interest are the (standardized) weighted average linguistic distance and literacy index, and are instrumented using predicted shares of immigrants from each sending region obtained from (2) in Section 4.2. KP F-stat is the Kleibergen-Paap F stat for joint significance of instruments. F-stat (Imm.), F-stat (Ling.), and F-stat (Lit.) refer to the partial F-stats for joint significance of the instruments in the three separate first-stage regressions. All regressions include the (instrumented) fraction of immigrants, and control for city and state by year fixed effects. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Figure A1. Literacy Rates, for Selected Sending Regions (1910)



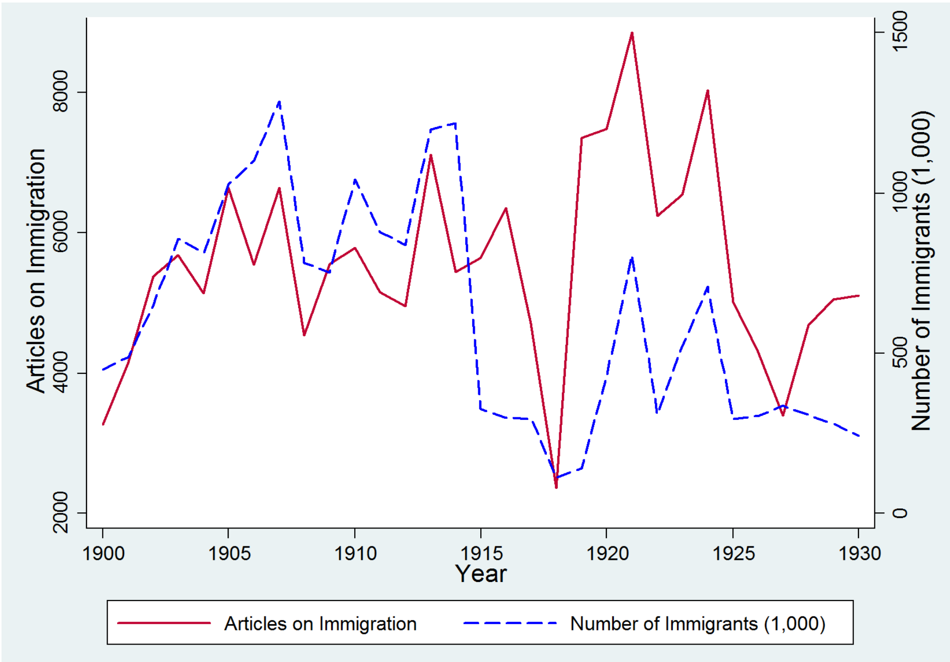
Note: this Figure reports the literacy rate for men in the age range (15-65) for selected immigrants' groups in 1910. Source: Author's calculations using IPUMS data.

Figure A2. Fraction Unskilled, for Selected Sending Regions (1910)



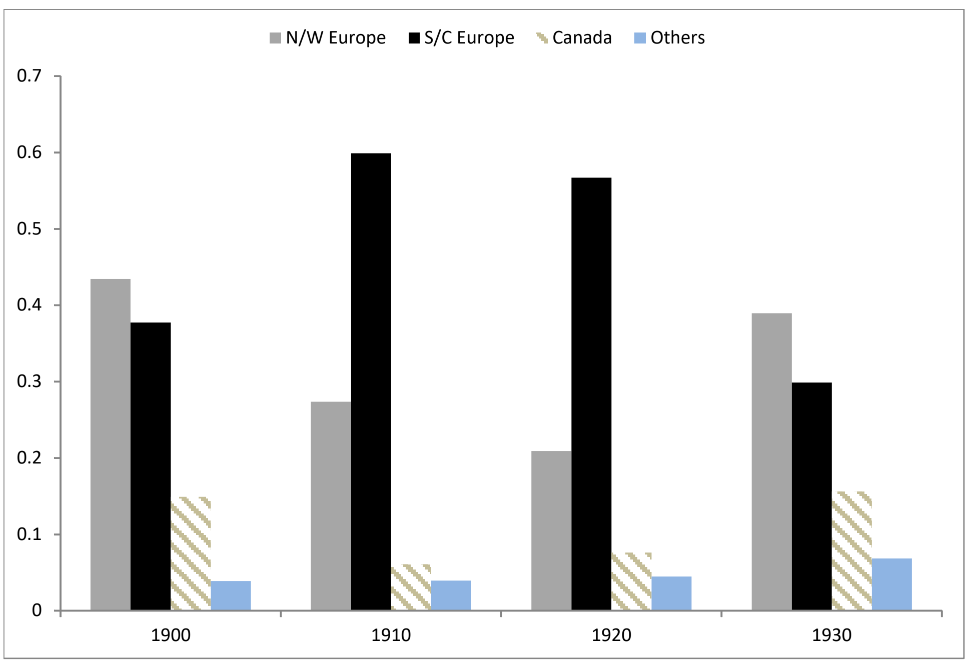
Note: this Figure reports the fraction of men in the age range (15-65) in unskilled occupations for selected immigrants' groups in 1910. Source: Author's calculations using IPUMS data.

Figure A3. Immigration and Newspapers' Coverage



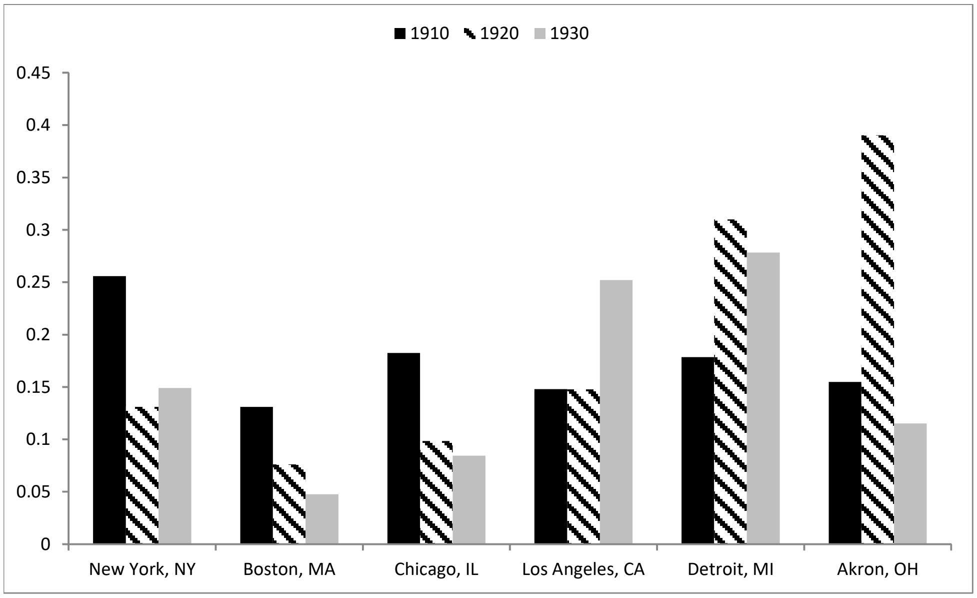
Note: the Figure plots the annual number of immigrants in thousands (dashed blue line, right-axis) and the number of times the words "immigration" and "immigrants" appeared in local newspapers for all cities with at least 30,000 residents and for which data were available in the database of Newspapersarchive (solid red line, left-axis). Source: author's calculation using data from Newspapersarchive.

Figure A4. Share of Recent Immigrants, by Region and Decade



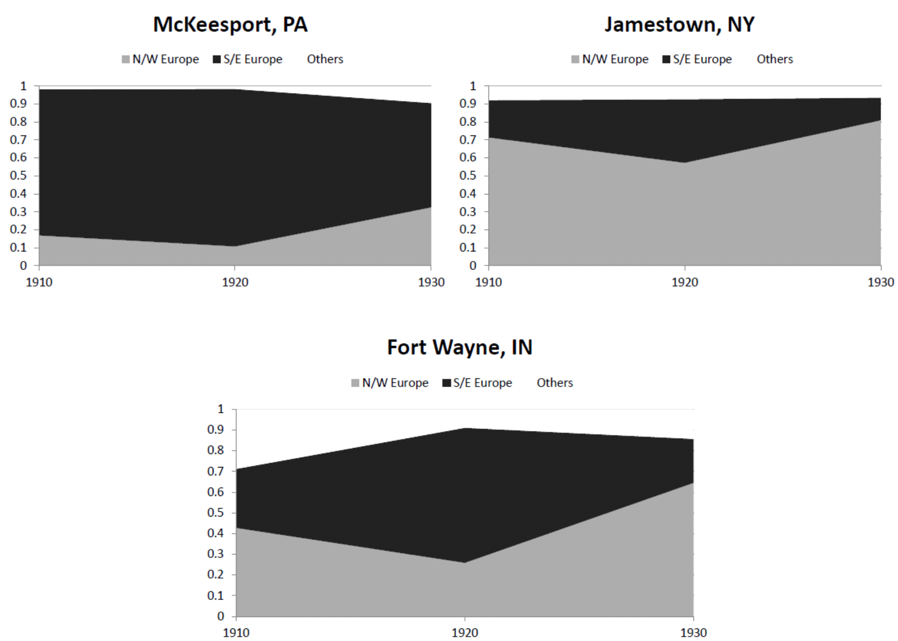
Note: Share of immigrant entering the United States in the previous ten years, by sending region and by decade. Source: Author's calculations from IPUMS sample of US Census (Ruggles et al., 2015).

Figure A5. Recent Immigrants Over 1900 City Population, by Decade



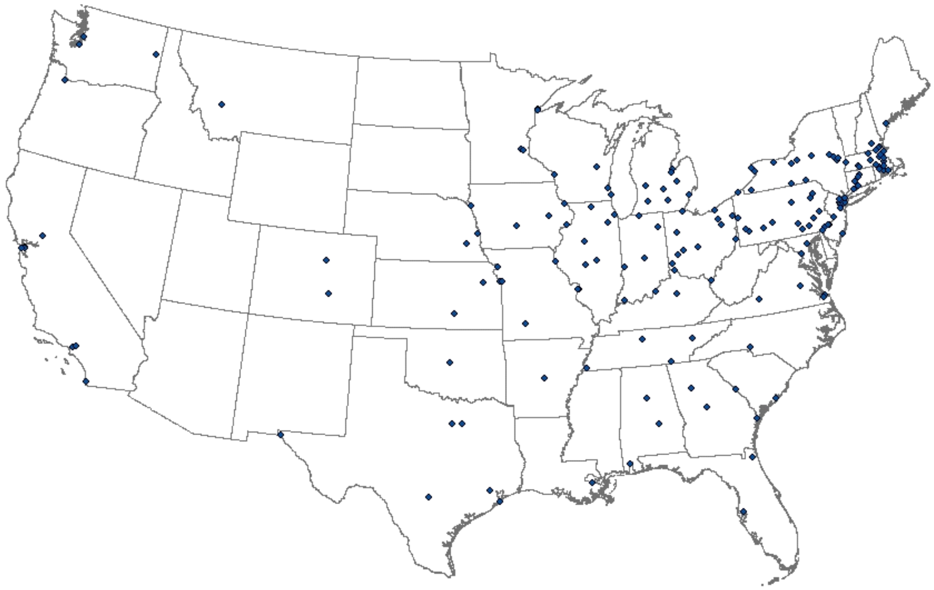
Note: Number of European immigrants that arrived in the United States in the last decade over 1900 city population, for selected cities and by decade. Source: Author's calculations from IPUMS sample of US Census (Ruggles et al., 2015).

Figure A6. Changing Composition of Immigrants in Selected Cities



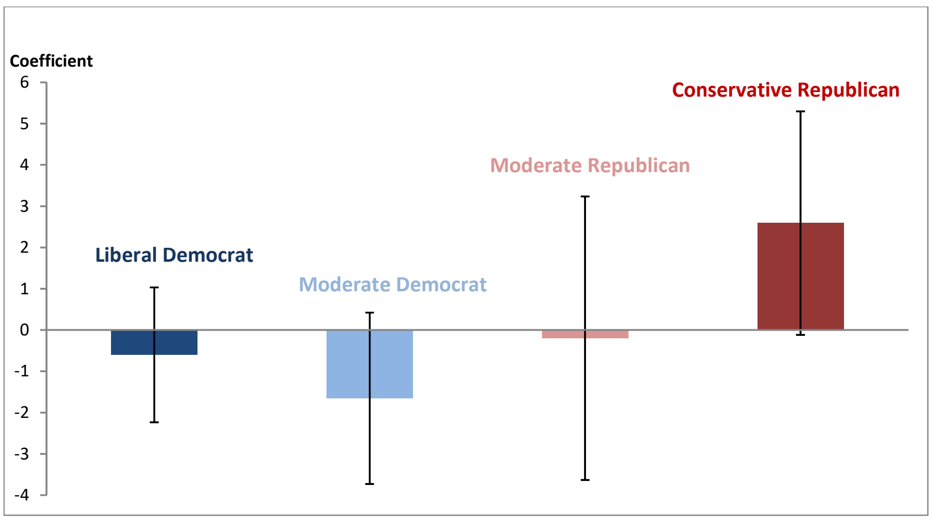
Note: Share of immigrants entering the US in the previous decade from different regions living in selected cities. Source: Author's calculations from IPUMS sample of US Census (Ruggles et al., 2015).

Figure A7. Map of Cities



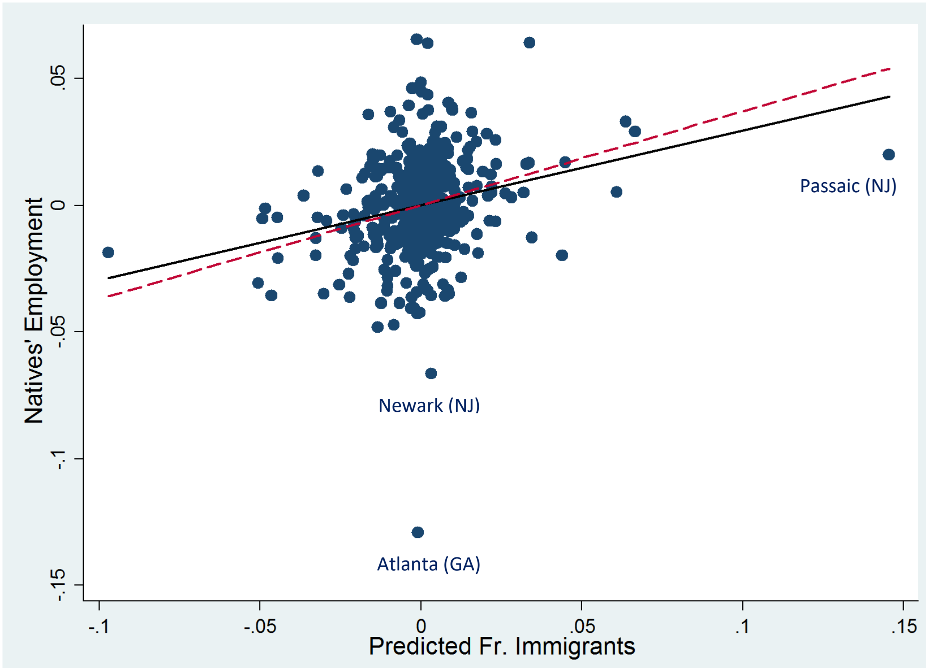
Note: The map plots the 180 cities with at least 30,000 residents in each of the three Census years 1910, 1920, and 1930.

Figure A8. Probability that Winner Has Given Political Orientation



Note: the figure plots 2SLS estimates (with corresponding 95% confidence intervals) reported in columns 3 to 6 of Table 4 (Panel B) for the probability that the member of the House of Representatives elected has a given political orientation. Liberal (resp. moderate) Democrats are defined as legislators with a Nominate score below (resp. above) the median score for Democrats in the 61st Congress. A Republican legislator is classified as moderate (resp. conservative) if his Nominate score is below (resp. above) the median score for Republicans in the 61st Congress.

Figure A9. Natives' Employment and Immigration: Reduced Form



Note: the y-axis and the x-axis report, respectively, the employment to population ratio for native males in working age who were not in school and predicted fraction of immigrants over predicted city population in each of the three Census years, 1910, 1920, and 1930. Each point in the scatter diagram represents the residual change in each of the two variables after partialling out city and state by year fixed effects. The solid line shows the regression coefficient for the full sample (coefficient=0.296, standard error=0.054). The dotted (red) line shows the regression coefficient obtained when dropping the city of Passaic, NJ (coefficient=0.371, standard error=0.065).

B WWI, Quotas, and Weather Shocks Instruments

In this section, I construct different versions of the baseline shift-share instrument of equation (2) in the paper using two alternative strategies. First, in Section B1, I replace actual immigration from each European country in each decade using only variation generated by WWI and by the Immigration Acts. Second, in Section B2, I predict country-decade immigration exploiting only weather shocks in Europe. In Section B3, I show that, as for the baseline instrument, there is a strong first stage for the instruments constructed using either of these alternative strategies.

B1 World War I and Quotas Instruments

As discussed in Section 2 in the paper, WWI and the Immigration Acts induced large and exogenous variation both in the number and in the ethnic composition of immigrants arriving in the US over time. In this section, I explicitly rely on such variation to deal with the potential concern that aggregate migration flows by country of origin, O_{jt}^{-M}, might be endogenous to city-specific pull factors – something that, as noted above, would invalidate the instrument constructed in equation (2) in the main text.

I start by taking (stacked) first differences of equation (1) in the paper. Next, I construct two separate instruments for the decadal change (1910 to 1920 and 1920 to 1930) in the number of immigrants received by a given city in the previous ten years. These instruments (ΔZW_{cs} and ΔZQ_{cs} in equations ($B1$) and ($B2$)) replace the actual number of immigrants entering the US from each country j with a measure of predicted immigration constructed exploiting directly WWI and the Immigration Acts respectively.

Formally, the 1910-1920 and the 1920-1930 changes in immigration are instrumented with, respectively,

$$\Delta ZW_{cs} = \frac{1}{\hat{P}_{cs,1920}} \sum_j \alpha_{jc} \left(1\left[Allies_j\right] \cdot O_{j,1910} - O_{j,1910}\right) \tag{B1}$$

and

$$\Delta ZQ_{cs} = \frac{1}{\hat{P}_{cs,1930}} \sum_j \alpha_{jc} \left(Q_j - O_{j,1920}\right) \tag{B2}$$

The term $O_{j,1910}$ (resp. $O_{j,1920}$) is the number of immigrants from country j that entered the US between 1900 and 1910 (resp. 1910 and 1920). $1\left[Allies_j\right]$ in ($B1$) is a dummy equal to 1 if sending country j belongs to the Allies in WWI, and zero otherwise. Finally, Q_j in ($B2$) is the sum of the yearly quota for country j specified by the Immigration Acts of 1921 and 1924.

The intuition behind equation ($B1$) is that, if a country was not part of the Allies, its immigration was completely shut down between 1910 and 1920. If, instead, the country belonged to the Allies, there was no change in immigration from that specific country over this period. To visually depict this intuition, Figure B1 plots the number of immigrants that entered the United States in the previous decade (relative to 1910) from Germany (dashed blue line) and the UK (red line). While WWI reduced immigration for both countries, the drop in German immigration was twice as large (relative to 1910) as that in immigration from Great Britain.

Interacting ($B1$) and ($B2$) with year (i.e. 1920 and 1930) dummies, I re-estimate equation (1) in stacked first differences with 2SLS. In formulas, the second and the first stage equations become

$$FDy_{cs\tau} = \xi_{s\tau} + \beta_S FDImm_{cs\tau} + FDu_{cs\tau} \tag{B3}$$

and

$$FDImm_{cs\tau} = \xi_{s\tau} + \beta_{FW}\left(\Delta ZW_{cs} \cdot \tau\right) + \beta_{FQ}\left(\Delta ZQ_{cs} \cdot \tau\right) + \varepsilon_{cs\tau} \tag{B4}$$

where FD refers to the first difference for period τ, and $\xi_{s\tau}$ includes interactions between period dummies and state dummies.[1] Variables ΔZW_{cs} and ΔZQ_{cs} in ($B4$) are the instruments constructed in ($B1$) and ($B2$) above, and are both interacted with a full set of year dummies (τ). While being econometrically more demanding, this strategy allows me to perform an important placebo check. Effectively, in ($B4$) there are four instruments, but only two of them, i.e. the interactions between ΔZW_{cs} (resp. ΔZQ_{cs}) and the 1920 (resp. 1930) dummy, should be statistically significant. In Section B3 below, I explicitly test this implication, and show that, reassuringly, the WWI (resp. the quota) instrument predicts changes in immigration only when interacted with the 1920 (resp. 1930) dummy.

As a further robustness check, I also estimate a long differences specification:

$$\Delta y_{cs} = \gamma_s + \beta_L \Delta Imm_{cs} + \Delta u_{cs} \tag{B5}$$

where Δ is the 1910-1930 change, γ_s refers to state fixed effects, and the first stage equation is given by

$$\Delta Imm_{cs} = \gamma_s + \beta_W \Delta ZW_{cs} + \beta_Q \Delta ZQ_{cs} + \Delta\varepsilon_{cs} \tag{B6}$$

[1] Note that, now, there are two time periods, 1920-1910 and 1930-1920, and all variables refer to the change during that period.

B2 Predicting Migration Using Weather Shocks

A number of works have documented the link between agricultural output and weather conditions in Europe during the Age of Mass Migration. For instance, Solomou and Wu (1999) find that more than half of the variation in agricultural production in France, Germany, and the UK between 1850 and 1915 can be explained by temperature and precipitation shocks. At the same time, in a seminal contribution, Hatton and Williamson (1995) argue that agricultural conditions were strongly related to outmigration rates in Europe in this historical period. A similar pattern is found also for contemporary international migration in less developed countries (e.g. Feng et al., 2010).

Motivated by this evidence, I exploit variation in weather shocks across European countries over time to predict migration flows that are independent of US economic or political conditions. As in Sequeira et al. (2019), I make use of historical precipitation and temperature data from, respectively, Pauling et al. (2006) and Luterbacher et al. (2004). The data are measured at annual frequency for each season of the year, and are available at a 0.5 degree spatial resolution. Since out-migration is available at the country-level, I averaged weather variables over all grid cells for each country.

To estimate yearly outmigration rates, I digitized data from the *Commissioner General of Immigration* between 1900 and 1930.[2] I use migration flows classified by race rather than by country of origin to deal with the non-trivial problem that the boundaries of several European countries changed significantly between 1900 and 1930. Ethnic groups were then mapped to the country of birth reported in the US Census of Population to match migration flows with 1900 immigrants' shares, α_{jc} in equation (2) in the main text.[3]

For each year between 1900 and 1930 and for each country, I estimated

$$\ln Outmig_{jy} = \alpha + \sum_{s=1}^{4} \sum_{m \in M} \beta_{jsm} I^{s,m}_{jy-1} + \varepsilon_{jy-1} \tag{B7}$$

where $\ln Outmig_{jy}$ is the log of migrants from European country j in year y; and $I^{s,m}_{jy-1}$ is a dummy equal to 1 if the average precipitation (or temperature) in season s falls in the range m. In my baseline specification, I consider precipitation shocks, but results are unchanged when using temperature.

Following Sequeira et al. (2019), I consider the following six categories $m \in M$: more

[2] The US Census of Population records migration only at decadal frequency, and so cannot be used to perform this exercise.

[3] This exercise was relatively straightforward, except when matching individuals of Hebrew race to the corresponding country of origin. I experimented with several alternatives and, reassuringly, results remained always very similar.

than 3 standard deviations below the mean; between 2 and 3 standard deviations below the mean; between 1 and 2 standard deviations below the mean; between 1 and 2 standard deviations above the mean; between 2 and 3 standard deviations above the mean; and more than 3 standard deviations above the mean. That is, I omit the category for precipitations (or temperatures) that are within one standard deviation below or above the mean.

After separately estimating ($B7$) for each country in my sample, I predict log migrant flows (for each country in each year), $\ln \widehat{Outmig}_{jy}$, using the β_{jsm}'s estimated from ($B7$). Figure B2 plots the relationship between actual and predicted (log) migration flows, and shows that the two are strongly correlated. Next, I aggregate predicted flows at the decadal frequency to get

$$\hat{O}_{jt} = \sum_{y} \exp\left(\ln \widehat{Outmig}_{jy}\right) \quad \text{(B8)}$$

Below, I assess the robustness of my results using an alternative version of the shift-share instrument, obtained by replacing O_{jt}^{-M} with $\hat{O}_{jt}$ in equation (2) in the main text.

B3 First Stage Regressions

Table B1 reports results for the stacked first differences and for the long differences specifications, i.e. equations ($B4$) and ($B6$) respectively, in columns 7 and 8. To ease comparisons, columns 1 to 6 replicate Table 2 in the main text. At the bottom of the table, columns 7 and 8 also present the p-value for the test of overidentifying restrictions. Reassuringly, in both cases, not only the F-stat is well above conventional levels, but also, the null hypothesis of overidentifying restrictions cannot be rejected. Furthermore, in column 7, the interaction between year dummies and the WWI instrument is significant only for 1920, while that between year dummies and the quota instrument is significant only for 1930. Conversely, when interacting the WWI and the quota instruments with, respectively, the 1930 and the 1920 dummies, coefficients are never statistically significant and, especially for WWI, an order of magnitude smaller.[4]

Next, in Table B2, I report estimates for the relationship between actual immigration and the instrument constructed in Section B2. To ease comparisons, columns 1 and 2 show the baseline specification estimated in the main text, and reported in columns 2 and 3 of Table 2. Next, columns 3 and 4 replace actual migration flows from each sending country with those predicted using only weather shocks at origin (see ($B8$)). Column 3 scales the

[4] While only the interaction between the 1930 dummy and the quota instrument is statistically significant, the coefficient is not statistically different from that on the interaction between the quota istrument and the 1920 dummy. One possible explanation is that the literacy test introduced in 1917 was more binding for immigrants from Southern and Eastern Europe - groups also more penalized during the 1920s because of the Immigration Acts (see Section 2).

number of immigrants by predicted population, while column 4 divides it by 1900 population. Both the coefficients and the F-stat in columns 3 and 4 fall, but the relationship between actual and predicted immigration remains positive and highly significant even when using this alternative instrument.

Table B1. First Stage for WWI and Quota Instruments

	Dep. Variable: *Fraction of Immigrants*							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Z	0.840***	0.968***	0.999***	0.948***	0.893***	0.900***		
	(0.056)	(0.064)	(0.059)	(0.104)	(0.091)	(0.081)		
ZW*1920							0.774***	0.838***
							(0.106)	(0.067)
ZQ*1930							0.771**	1.236***
							(0.349)	(0.188)
ZW*1930							0.064	
							(0.082)	
ZQ*1920							0.464	
							(0.423)	
1900 population		X						
Predicted population			X					
MSA analysis				X				
Year by 1900 Log					City and imm pop	Value added manuf.		
WWI-Quotas IV							First Diff.	Long Diff.
F-stat	225.1	226.7	288.3	82.65	96.48	124.8	106.8	207.4
P-value Overid. Test							0.456	0.432
Cities	180	180	180	127	180	176	180	180
Observations	540	180	540	379	540	528	360	180

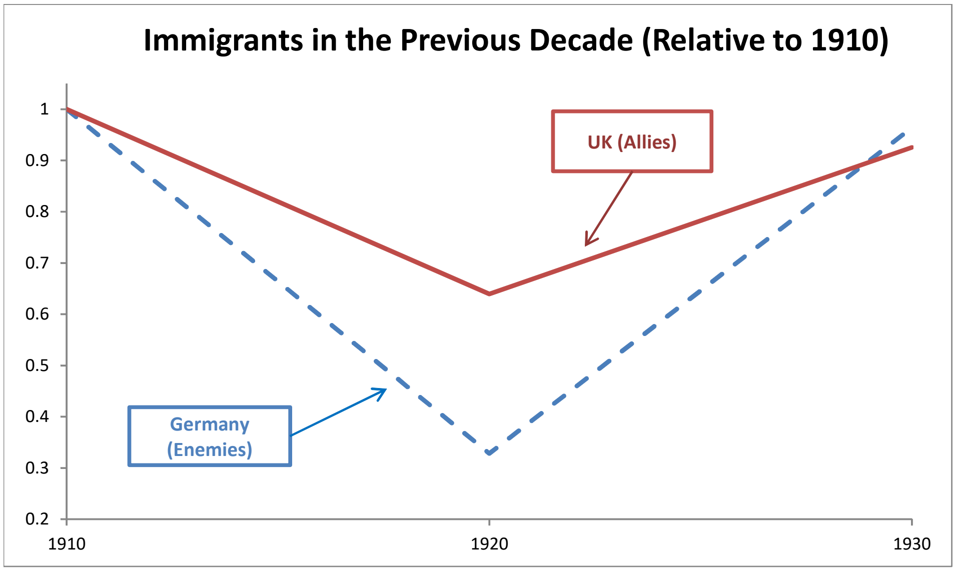
Note: the sample includes a balanced panel of the 180 US cities with at least 30,000 residents in each Census year 1910, 1920, and 1930. In Col 1 the actual number of immigrants is scaled by actual population, and the instrument is the leave-out version of the shift-share IV in equation (2) (Section 4.2). Cols 2 and 3 replicate Col 1 by scaling the actual and predicted number of immigrants by, respectively, 1900 and predicted population. From Col 3 onwards, Table 2 presents results from specifications where both the predicted and the actual number of immigrants are scaled by predicted population. Col 4 replicates the analysis aggregating the unit of analysis at the MSA level. Cols 5 and 6 include the interaction between year dummies and, respectively, the (log of) 1900 city and immigrants population, and the (log of) 1904 value added by manufacture per establishment. Cols 7 and 8 estimate stacked first differences equation (B4) and long differences equation (B6) replacing the standard shift-share instrument with those constructed exploiting World War I and the quotas (equations (B1) and (B2) in online appendix B1). F-stat refers to the K-P F-stat for weak instrument. Cols 7-8 report the p-value for the test of overidentifying restrictions. All regressions partial out city and state by year fixed effects. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table B2. First Stage for Weather Shocks Instrument

	Dep. Variable: *Fraction of Immigrants*			
	(1)	(2)	(3)	(4)
Predicted Fr. Immigrants	0.999***	0.968***	0.725***	0.738***
	(0.059)	(0.064)	(0.168)	(0.155)
Immigrants over	Predicted Pop.	1900 Pop.	Predicted Pop.	1900 Pop.
Weather Shocks			X	X
F-stat	288.3	226.7	18.70	22.65
Observations	540	540	540	540

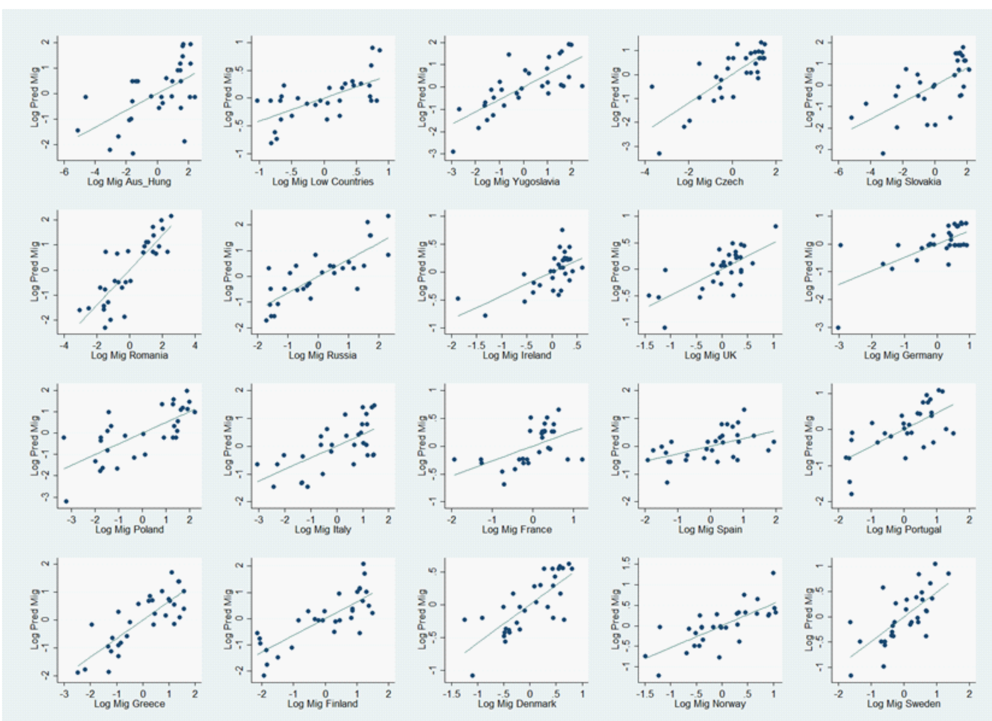
Note: the sample includes a balanced panel of the 180 US cities with at least 30,000 residents in each Census year 1910, 1920, and 1930. Col 1 presents results for the baseline specification (Col 3 in Table 2), where the number of immigrants is scaled by predicted population, and the instrument is the leave-out version of the shift-share IV in equation (2) (Section 4.2). Col 2 replicates Col 1 by scaling the actual and the predicted number of immigrants by 1900 city population. Cols 3 and 4 replicate Cols 1 and 2 replacing actual aggregate flows (by country of origin) with those predicted exploiting only weather shocks at origin (see equation (B8) in online appendix Section B2). All regressions include city and state by year fixed effects. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Figure B1. The Effect of WWI on Immigration from Allies and Enemies



Note: the figure plots the number immigrants from Germany (blue, dashed line) and from the UK (red line) that entered the United States during the previous decade, normalizing them to 1 relative to 1910. Source: author's calculation using IPUMS data.

Figure B2. Actual Versus Predicted Migration Using Precipitation Shocks



C Graphical Example and Immigrants' Settlements

C1 Graphical Example

The instrument constructed in equation (2) in the main text exploits two sources of variation: first, cross-sectional variation in the share of individuals from each ethnic group living in different US cities in 1900 (α_{jc}); second, time-series variation induced by changes in the total number of immigrants from any sending region entering the United States in a given decade (O_{jt}^{-M}). Figure C1 presents an example for three cities (Chicago, Milwaukee, and San Francisco) and two ethnic groups (Italians and Germans) to illustrate the variation underlying the instrument.

Between 1910 and 1930, Italian immigration fell monotonically, while German immigration declined between 1910 and 1920 due to WWI, but rebounded after 1920, as the quotas were quite generous with respect to Germany. Chicago (Panel A) had large Italian and German communities in 1900. In line with the aggregate flows, both the actual (straight lines) and the predicted (dotted lines) number of Italians (yellow lines) and Germans (blue lines) arriving in Chicago fell between 1910 and 1920. However, after 1920, while Italian immigration continued its decline, Chicago experienced a positive immigration shock from Germany.

Milwaukee, instead, had a relatively large German community, but almost no Italians in 1900. Thus, as shown in Panel B, variation in immigration for this city resulted from changes in German, and not Italian, immigration. Finally, while very few Germans were living in San Francisco in 1900, Italian settlements were fairly large in this city. As documented in Panel C, the actual and predicted immigration shock for San Francisco was due to the decline in Italian immigration, and only marginally to the inflow of Germans after 1920.

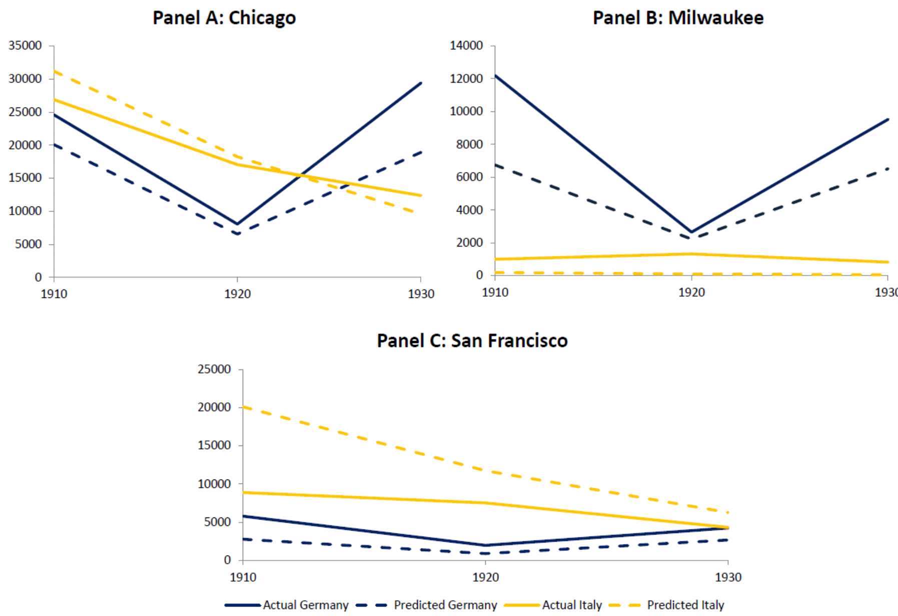
The instrument in equation (2) in the main text extends this example to many cities and many ethnic groups, but the logic behind it can be grasped by looking at the patterns in Panels A to C of Figure C1.

C2 Immigrants' Settlements

The cross-sectional variation underlying the instrument in equation (2) in the main text is based on the idea that immigrants cluster geographically and their settlements are highly persistent due to social networks and family ties, and not because of local pull factors (Card, 2001; Stuart and Taylor, 2016). As documented in Sequeira et al. (2019), the gradual expansion of the railroad network during the second half of the nineteenth century is a strong predictor of the geographic distribution of immigrants in the US: places that gained access to the railroad just before an immigration boom received more immigrants in the following decade. Since the timing of outmigration varied widely across European countries, depending on local political and economic conditions (Hatton and Williamson, 1998), different US regions were populated by different ethnic groups before 1900. Early settlers then acted as a catalyst for subsequent migrants from the same ethnic group (Lafortune and Tessada, 2014).

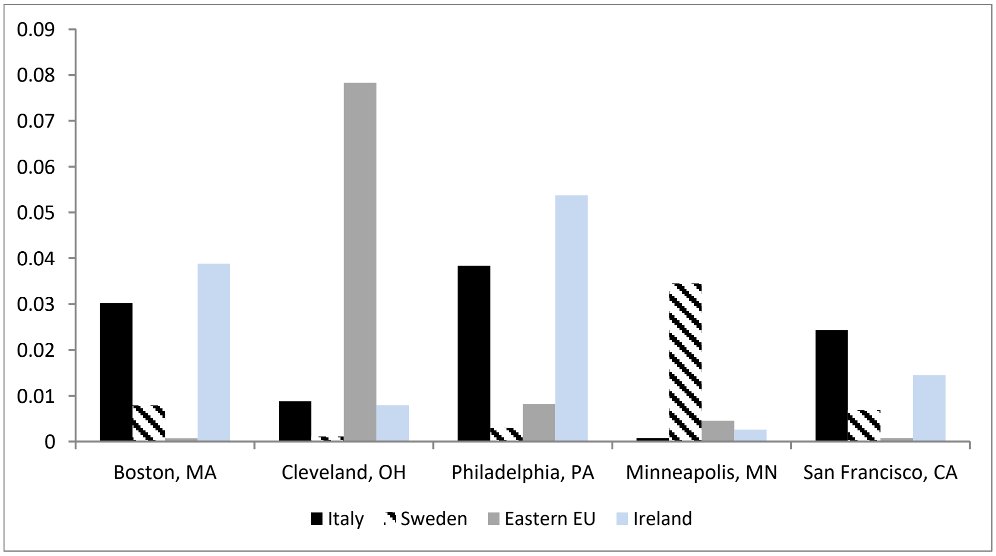
The geographic concentration of Europeans in the United States during the Age of Mass Migration is discussed, among others, by Abramitzky and Boustan (2017). For instance, Italians clustered in the north-eastern states of New York, Pennsylvania, and New Jersey, and in California, whereas Germans and Scandinavians settled mainly in the lower and in the upper Midwest respectively. Figure C2 visually confirms these patterns in my data by plotting the share of individuals from different European regions living in selected US cities in 1900. Figure C3 presents a similar example for Ohio, and shows that differences in immigrants' settlements existed also within the same state. This is important, for otherwise the instrument in (2) would not have power, since my empirical strategy exploits only within state variation in immigration.

Figure C1. A Simple Example: Actual and Predicted Immigration



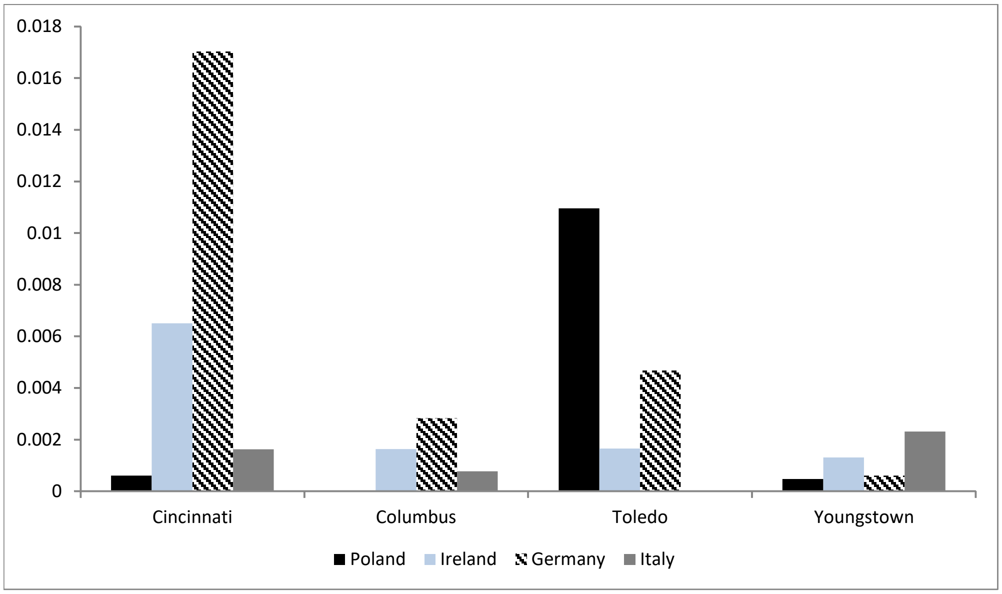
Note: This Figure reports the actual and predicted number of Italians and Germans arrived during the previous decade to Chicago (Panel A), Milwaukee (Panel B), and San Francisco (Panel C), in 1910, 1920, and 1930. Predicted immigration is obtained from the instrument constructed in equation (2) in the main text. Source: from IPUMS sample of US Census (Ruggles et al., 2015).

Figure C2. Share of European Immigrants in US Cities, 1900



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

Figure C3. 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.

D Robustness Checks

In this section, I conduct a number of robustness checks. Section D1: *i*) tests for pre-trends; *ii*) augments the baseline specification with a predicted measure of industrialization and interacts year dummies with many 1900 city characteristics; *iii*) tests the stability of results when including interactions between year dummies and the 1900 share of immigrants from each sending country. Section D2 shows that results are robust to: *i*) aggregating the unit of analysis to the MSA level; and *ii*) allowing for the presence of spillovers from other cities in the same state. Section D3 replicates the analysis using the WWI and quota, and the weather shocks instruments constructed in online appendix B.

Section D4 documents that the shift-share instrument in this setting is unlikely to conflate the short and the long run effects of immigration (Jaeger et al., 2018). Section D5 shows that results are robust to: *i*) dropping potential outliers; *ii*) scaling the number of immigrants in different ways; and *iii*) using alternative definitions of immigration. Section D6 explores possible non-linearities, and compares the effects of relative vs absolute size of immigration. Section D7 documents that results are robust to different assumptions on bias due to selection on observables and unobservables using the procedure described in Oster (2017). Section D8 replicates the analysis on legislators' ideology using cross-sectional regressions, and shows that results on Presidential elections are robust to constructing outcomes in different ways.

D1 Pre-Trends and Interactions

The validity of the shift-share instrument constructed in equation (2) in the main text rests on one key assumption: cities receiving more immigrants (from each sending area) before 1900 must not be on different trajectories for the evolution of economic and political conditions in subsequent decades (see also Borusyak et al., 2018, and Goldsmith-Pinkham et al., 2018). In this section, I test this assumption in a variety of ways. First, in Table D1, I test for pre-trends, regressing the pre-period change in the outcomes of interest against the 1910 to 1930 change in immigration predicted by the instrument.[5] Reassuringly, coefficients (reported in Panel B) are never statistically significant. Also, and importantly, they are quantitatively different from the baseline 2SLS estimates, reported in Panel A. These results indicate that, before 1900, European immigrants did not settle in cities that were already undergoing economic growth or political change.

Next, in Panel B of Table D2, I check that results are unchanged when separately con-

[5] For public spending per capita and property tax rates, I use 1906 as pre-period year, since this was the first year for which the data were available. For the same reason, for the log of value added per establishment and for log of establishment size, I use 1904 as pre-1910 year. For other outcomes, I instead use 1900.

trolling for a measure of predicted industrialization constructed by interacting 1900 industry shares with national growth rates as in Sequeira et al. (2019).[6] The rest of Table D2 includes interactions between year dummies and *i*) 1900 city and immigrant population (Panel C); *ii*) 1904 value added per establishment (Panel D). In most cases, results are unchanged. The only notable exception emerges for the Democrats' vote share in Presidential elections, when year dummies are interacted with the 1900 immigrant and city population (column 3, Panel C). Reassuringly, however, this pattern does not appear for any other outcome. Moreover, results for all outcomes remain similar to the baseline estimates when, in Table D3 (Panels A to D), I also include interactions between year dummies and: *i*) 1900 ratio of high to low skilled natives; *ii*) 1900 fraction of blacks; *iii*) 1904 value of products per establishment; *iv*) 1900 employment share in manufacturing.[7]

When interacting year dummies with the 1904 value added by manufacture (Table D2, Panel D), value of products (Table D3, Panel C), and employment share in manufacturing (Table D3, Panel D), the coefficient for public spending per capita (column 1) becomes almost twice as large (in absolute value) as that from the baseline specification. Yet, as documented in Table D4, this is due to the slightly different sample of cities for which 1904 Census of Manufacture data are available.[8] Specifically, in Table D4, I estimate the baseline specification for the full sample (Panel A) and for the sample of cities for which data were reported in the 1904 Census of Manufacture (Panel B). The coefficient on public spending per capita (column 1) in Panel B is twice as large as that for the full sample. Also, and importantly, this coefficient is quantitatively very close to that reported in Panel D of Table D2 and in Panels C and D of Table D3 (column 1).

Finally, I replicate the analysis by interacting the 1900 share of each immigrant group (α_{jc} in equation (2) in the main text) with year dummies.[9] This is an important test to check whether results are driven by some specific group that happened to settle in specific cities before 1900, and at the same time is responsible for a large component of the variation in immigration over time (Goldsmith-Pinkham et al., 2018). Figures D1 and D2 plot the 2SLS coefficient (with corresponding 95% confidence intervals) for the effect of immigration on each of the four main political and economic outcomes in specifications where I control for interactions between year dummies and α_{jc} in equation (2). To ease comparison with results reported in the main text, the first dot on the left of each panel plots the baseline

[6]Formally, predicted industrialization, ind_{cst}, is constructed as $ind_{cst} = \sum_i \gamma_{ci}^{900} g_{it}$, where γ_{ci}^{900} is the (one digit) industry share of industry i in city c in 1900, and g_{it} is the national growth rate of that industry between t and $t-10$.

[7]Results, shown in Table D15 below, are also robust when including all interactions simultaneously.

[8]Cities for which 1904 industrial data are missing are: Pasadena (CA), Perth Amboy (NJ), Superior (WI), and Washington DC.

[9]See Table A1 for the list of countries.

point estimate (see Tables 3 and 5 in the main text).

Results are very stable and, in most cases, coefficients always remain statistically significant and quantitatively close to the baseline effect obtained without including any interaction.

D2 Spillovers

The shift-share instrument – but more generally any cross-area design study – assumes no geographic spillovers across treated units (i.e., in this case, cities receiving immigrants). Given the proximity of some cities in my sample, especially in northeastern states like New York or Massachusetts, this might be an excessively stringent assumption. Moreover, as discussed in Borjas (2003), immigration may induce some native workers to leave the local labor market, moving to less exposed areas. In turn, this mechanism might dilute the (negative) effect of immigration on natives' wages.

To address these and similar concerns, I replicate the analysis aggregating the unit of analysis to the MSA level, a reasonable proxy for integrated (local) labor markets at the time. Results, reported in Panel B of Table D5, remain quantitatively very similar to those presented in Table 5 (also reported in Panel A of Table D5), even though the coefficient for log occupational scores (column 2) is no longer statistically significant.[10] These findings are consistent with historical accounts suggesting that, differently from the Great Migration of blacks from the South to the North of the United States (Boustan, 2010), natives did not systematically leave cities in response to European immigration. In line with this idea, in online appendix E2, I show that, if anything, immigration promoted internal in-migration (Table E6).

Next, to more directly tackle the issue of spillovers at the state level, I separately include the average fraction of immigrants received by other cities in the same state (Table D5, Panel C). The average fraction of immigrants received by other cities is instrumented with the equivalent version of the instrument in equation (2) in the main text. To ease the interpretation of coefficients, both the fraction of immigrants in the city and the average fraction of immigrants in other cities are standardized by subtracting the mean and dividing through the standard deviation. While the coefficient on immigration to other cities is negative for all outcomes, except for occupational scores (column 2), it is smaller in magnitude than the (positive) direct effect of immigration and not statistically significant at conventional levels.[11] This suggests that immigration to other cities in the state likely had a small, if

[10] The lower precision of these estimates should not be surprising, given that when aggregating observations up to the MSA level the number of units moves from 180 to 127.

[11] In unreported results, I also replicated the analysis for political outcomes presented in Table 3. Im-

not negligible, effect on economic conditions within individual cities. Findings in Panel C of Table D5 are consistent with those in Sequeira et al. (2019) who document that immigration had a positive effect on industrialization in US counties between 1860 and 1920, and did not generate negative spillovers.

D3 Push Factors Instruments

As discussed in Section 4.2 in the paper, one potential concern with the shift-share instrument is that local economic shocks in US cities pulled immigrants from specific countries. For example, an economic boom in New York City may have attracted Italian immigrants to the US. Given the size of the local labor market in New York, upon arrival, all Italians might have settled precisely in this city to take advantage of the economic opportunities.[12] Under this scenario, and if this were true also for other cities and other national groups, the identifying assumption would be violated, and the instrument would be spuriously correlated with changes in economic conditions across cities.

I address this issue in two different ways. First, I replicate results using the instrument constructed in online appendix B1, where national inflows from each European origin (O_{jt}^{-M}) are predicted using WWI and the quotas. Second, I use the version of the instrument constructed relying on weather shocks across European countries to predict national immigration flows (online appendix B2). Table D6 (Panels B and C) replicates results using the stacked first difference and the long difference version of the WWI and quota instrument (equations ($B1$) and ($B2$) in online appendix B1), and shows that my estimates are robust to these specifications. As for the interaction between year dummies and 1900 immigrant population (Table D2, Panel C), only for the Democrats' vote share in Presidential elections, in the stacked first difference specification, the coefficient is significantly affected. In all other cases, instead, results are unchanged.

In Panel B of Table D7, I perform an even more stringent robustness check by augmenting the stacked first difference specification (equation ($B3$) in online appendix B1) with the interaction between year dummies and (the log of) 1900 city and immigrants population. This amounts to comparing cities that in 1900 had the same fraction of immigrants, and that experienced changes in immigration only because of variation in sending countries induced by World War I and by the Immigration Acts. Not surprisingly, the precision of the estimates deteriorates. However, their magnitude remains very close to that from the baseline stacked

migration to other cities in the same state had a negative and statistically significant effect only on public spending per capita, while all other political variables were not affected.

[12] Since I always use a leave-out version of the instrument, for this story to be a problem, one would need shocks to e.g. New York City to affect migration to other cities within the state of New York, but outside the New York City MSA.

first difference specification (see Table D7, Panel A).[13]

Finally, Panel D of Table D6 replicates the analysis replacing actual aggregate migration flows using the measure of predicted immigration that only exploits temperature and precipitation shocks in origin countries ($\hat{O}_{jt}$ in ($B8$) above). Results are consistent with those obtained in the baseline specification, even if in some cases they are an order of magnitude larger, especially for tax rates (column 2) and employment (column 5).

D4 Serial Correlation in National Migration Flows

The recent work by Jaeger et al. (2018) shows that, for the post 1970 period, the shift-share instrument might conflate the long and the short run effects of immigration, because there is a very high serial correlation (between 0.95 and 0.99) in the sending-destination migration patterns. Said differently, high immigration cities like Los Angeles have been receiving immigrants from the same sources (Mexico) in all decades between 1970 and 2000. Since the economy might react with a lag to the inflow of immigrants, such serial correlation might bias the standard shift-share instrument, which identifies a mix of contemporaneous and lagged effects of immigration.

In Figures D3 and D4, I show that this concern is unlikely to hold in my setting. Due to the national shocks – WWI and Immigration Acts – occurring during this period, there were large and unexpected changes in immigration from different countries (see Section 2 in the main text). Figure D3 plots the serial correlation in the share of immigrants from each European country entering the US over time. With the partial exception of Italy and Russia, the major sending countries in the 1900s and 1910s were quite different from the main sending countries in the 1920s. This is also documented in Figure D4: until the Immigration Acts, most immigrants came from Eastern and Southern Europe. Yet, this pattern was reversed in the 1920s. Similarly, immigration from Germany experienced a dip in the 1910s due to WWI, but then rebounded during the 1920s, once the "German scare" (Fouka, 2018; Higham, 1955) was over.

Directly investigating the serial correlation in immigration across cities in my sample, I found that this number was in the order of 0.7. According to Jaeger et al. (2018), this value is sufficiently low for the shift-share instrument to be unlikely to conflate the long and the short run effects of immigration. Consistent with this idea, in Table D8, I report results for specifications where the contemporaneous (columns 1 and 2) and the lagged (columns 3 and 4) values of the actual fraction of immigrants are regressed against the contemporaneous and the lagged values of the instrument. Once city and state by year fixed effects are included

[13] As noted above, the only case in which results are not robust to the use of the stacked first difference specification is for the Democrats' vote share.

(as in all specifications in the paper), only the contemporaneous value of the instrument is significantly correlated with the contemporaneous value of the actual fraction of immigrants. Also, and reassuringly, the correlation between the lagged fraction of immigrants is more precisely estimated and an order of magnitude larger for the lagged value of the instrument relative to the contemporaneous one.

Taken together, these patterns suggest that the critiques to shift-share instruments raised by Jaeger et al. (2018) are unlikely to apply to this context. Further corroborating this idea, in appendix D5.3 below, I show that all results are unchanged when the fraction of all immigrants (irrespective of their arrival year) is instrumented with the contemporaneous and the lagged values of the instrument, using a strategy akin to that in Burchardi et al. (2019).

D5 Outliers and Alternative Specifications

In this section, I show that results are robust to: *i*) dropping potential outliers (Section D5.1); *ii*) constructing the fraction of immigrants using different denominators (Section D5.2); and *iii*) considering not only European immigrants arrived in the previous decade (Section D5.3).

D5.1 Outliers

First, I check that results are not driven by the city of Passaic (NJ), which often appeared as a potential outlier in the scatterplots presented in the main paper (e.g. Figures 4 and A9), or by other cities with extreme values (either high or low) of immigration. In Table D9, I start by replicating each of the specifications for the first stage reported in Tables 2 and B1 by dropping Passaic (NJ). Reassuringly, coefficients always remain highly significant and quantitatively close to those presented in Table 2 and, in all cases, the F-stat is above conventional levels. Figure D5 replicates Figure 4 in the paper, plotting the relationship between the fraction of immigrants and the instrument, after partialling out city and state by year fixed effects (column 3 in Table D9). Then, in Table D10, I replicate Tables 2 and B1 by excluding cities in the 1^{st} (Flint, MI, and Pasadena, CA) and 99^{th} (Passaic, NJ, and Perth Amboy, NJ) percentiles of the 1910 to 1930 change in immigration. As for Table D9, all results remain in line with those reported in the main text.[14]

Next, in Table D11, I assess the robustness of second stage estimates for the key political and economic outcomes. Panel A reports the baseline specification, Panel B drops the city of Passaic, and Panel C omits cities in the 1^{st} and 99^{th} percentiles of the 1910 to 1930 change

[14] Very similar results are obtained when trimming the top and bottom percentiles of the 1900 fraction of immigrants.

in immigration. As in Tables D9 and D10, reassuringly, all results remain in line with those obtained for the full sample, becoming, if anything, somewhat larger (in absolute value).[15]

D5.2 Scaling the Number of Immigrants in Different Ways

Since actual city population is likely to be an outcome of immigration, in my baseline specification I present results where the actual and the predicted number of immigrants are both scaled by predicted city population, constructed by multiplying 1900 population with average urban growth in the US, excluding the Census division where the city is located. In Table D12, I present results obtained scaling the number of immigrants using different population measures. First, in Panel B, both the actual and the predicted number of immigrants is scaled by 1900 city population. Second, in Panel C, I replicate the analysis by scaling the actual number of immigrants with actual city population, while instrumenting it with the predicted number of immigrants over predicted city population, i.e. Z_{cst} in (2) in the main text. Reassuringly, in both cases, results remain close to those estimated in the main text, and reported in Panel A of Table D12.

D5.3 Immigrants' Stock and Immigrants from Any Source

As discussed in the main text, in my baseline specification, I only consider European immigrants that entered the United States in the previous decade. However, one may be worried that the effects of recently arrived foreign born differ from those of "long-term" immigrants. For this reason, in Panel A of Table D13, I repeat the analysis considering the fraction of all foreign born individuals, and not only those arrived in the previous ten years. To instrument for immigrants' stock, I adopt a strategy very similar to that in Burchardi et al. (2019): at any point in time, the number of foreign born in a given city is predicted by interacting 1900 shares (i.e. α_{jc} in equation (2) in the main text) with both current and lagged aggregate migration flows (from each sending region). This strategy is also akin to the "double instrumentation" procedure suggested by Jaeger et al. (2018) to isolate the component of immigration uncorrelated with both current demand and past supply shocks.

Reassuringly, results remain very similar to those obtained using only recent immigrants. As a further check, Panel B of Table D13 considers (recently arrived) immigrants from all source countries, and not only from Europe. As expected, results are barely affected.

[15] Results, not reported for brevity, also remain very similar to those from my baseline specification when using the Li (1985) procedure to downweight outliers.

D6 Non-Linear Effects and Relative vs Absolute Size

D6.1 Non-Linear Effects

In the paper, I run linear regressions to estimate the effects of immigration on political and economic outcomes. However, it is possible that immigration affected both political and economic conditions across US cities in a non-linear way. To explore this possibility, in Figures D6 and D7, I plot the relationship between the inflow of immigrants and the eight main outcomes considered in the paper, without restricting the functional form to be linear. In particular, I first regress non-parametrically the 1910-1930 change in each of the outcomes and in the instrument on state dummies. Next, I predict the residuals, and plot non-parametrically the residualized change in each of the outcomes against the residualized change in the instrument.[16]

Figure D6 presents results for political outcomes: in all cases, except for public spending per capita, the relationship between (predicted) immigration and political reactions appears to be linear (or, close to linear). For public spending, instead, there seems to be evidence of a non-linear – and in particular, quadratic – relationship. Also in this case, however, a linear approximation seems to perform quite well. Next, Figure D7 plots the equivalent graphs of D6, focusing on economic outcomes. Also in this case, the economic effects of immigration seem to be well approximated by a linear functional form.

As discussed above, Passaic (NJ) appears to be an outlier, and one may be concerned that some of the results might be unduly affected by this city. In Figures D8 and D9, I replicate the analysis presented in Figures D6 and D7 omitting this city. Reassuringly, all results remain very similar to the full-sample specification. In unreported results, I also estimated regressions interacting the main effect of immigration with a dummy equal to 1 for cities with the fraction of immigrants above the 75^{th} percentile. While this reduced the precision of results, the coefficient on the main effect remained in line with that estimated in the paper, while that on the interaction term was never statistically significant. I also replicated this with other values for potentially "salient thresholds", but I never detected a statistically significant and consistent pattern. My interpretation is that these findings, together with Figures D6 to D9, indicate that the effects of immigration were unlikely to be non-linear.

[16] Note that an equivalent way of doing this would be to run (non-parametric) regressions stacking the data and partialling out city and state by year fixed effects (as I do in the paper for linear regressions). Here, I preferred to perform this exercise in changes to make graphs easier to read and interpret. However, all results are very similar when stacking the data and estimating panel regressions.

D6.2 Absolute vs Relative Size

In the paper, I showed that a higher fraction of immigrants triggered political backlash despite their economic benefits. It is possible that the absolute numbers (or levels) of immigrants mattered too. Especially in the housing market and in the allocation of public spending, the (absolute) number of immigrants might be even more likely to generate congestion costs than their shares. To explore this possibility, in Panel B of Table D14, I repeat the analysis using as main regressor of interest the log of the number of immigrants, separately controlling for the log of city population.[17] To ease comparisons, Panel A presents the coefficients estimated in the paper for the effects of the fraction of immigrants.

Starting from the political effects of immigration, while results become somewhat less precise, also when using a specification in logs, immigration triggers hostile political reactions. The only exception is the property tax rate (column 2): the log of immigrant population has no longer a statistically significant effect, and the coefficient becomes positive. However, given the size of the standard errors, it is impossible to make any conclusive statement in this case. Turning to economic outcomes, as it appears from columns 5 to 8, even when considering a specification in logs, immigration had a positive, statistically significant, and economically relevant effect on natives' employment and on economic activity.

Summing up, results estimated in the paper are robust to a specification in logs, suggesting that both the relative and the absolute size of immigrant groups mattered (both for political and for economic outcomes).

D7 Selection on Observables and Unobservables

In Table D15, I explore the stability of coefficients using the methodology proposed in Oster (2017), which allows for different assumptions on bias due to selection on observables and unobservables. Since my baseline specification already controls for city and state by year fixed effects, and relies on an instrumental variable procedure, I first residualize all outcomes as well as predicted immigration by regressing them (separately) on city dummies and on interactions between year and state dummies. Column 1 of Table D15 reports the coefficient for reduced form regressions of each residualized outcome on the residualized instrument.[18] Here, I also report the R-squared of the baseline specification in square brackets.

Next, in column 2, I report the estimates for a model where the baseline (residualized) specification of column 1 is augmented with interactions between year dummies and all

[17] Results are unchanged when separately controlling for the log of predicted (rather than actual) city population.

[18] As usual, standard errors are reported in parentheses.

the controls used to test the robustness of results (see online appendix D1, and Tables D2 and D3).[19] Following the terminology in Oster (2017), I refer to this as the "full controls" specification. As already documented in Tables D2 and D3 above, most coefficients remain quantitatively close to those estimated in the baseline specification.[20] The only exception occurs for the Democrats' vote share in Presidential elections, which is not robust to the inclusion of interactions between year dummies and the 1900 immigrant and city population.

Finally, in column 3 of Table D15, I apply the adjustment strategy proposed by Oster (2017). I impose the most conservative estimate for R_{max}, equal to $1.3^{*}R2_c$, where $R2_c$ is the R-squared of the "full controls" model. Following Oster (2017), I define the relative degree of selection on observables and unobservables δ, and assume a value for it equal to 1, but results remain almost identical when setting δ lower than 1 (as for R_{max}, I chose the value of δ that would provide the most stringent test). Reassuringly, except for the Democrats' vote share and, to some extent, the DW Nominate scores, all point estimates remain quantitatively very close to those estimated in the baseline model even when using the adjustment procedure from Oster (2017). These findings suggest that the stability of coefficients does not depend on specific assumptions about selection on unobservables.

D8 Additional Robustness Checks

D8.1 Cross-Sectional Regressions for Legislators' Ideology

In Section 5.3.2 of the paper, I investigate the relationship between the 1910 to 1920 change in immigration and votes of members of the House of Representatives on the 1924 National Origins Act. Since I examine voting behavior at a specific point in time, my analysis for this outcome relies on a cross-sectional regression, implying that city and state by year fixed effects cannot be included. To indirectly assess the size and the direction of the bias that this may generate, in Table D16, I replicate columns 1 and 3 to 6 of Table 4 using cross-sectional regressions. To mirror as close as possible the specification reported in columns 7 and 8 of Table 4, 1920 DW Nominate scores are regressed against the 1910 to 1920 (instrumented) change in the fraction of immigrants and on state fixed effects.

Results from this exercise, reported in Panel B of Table D16, are similar to those from the baseline specification, which, to ease comparisons, are presented in Panel A. While only suggestive, the estimates in Table D16 indicate that failing to include city and state by year

[19] Specifically, these variables are the pre-period: log of immigrant and city population; skill ratios; fraction of blacks; log of value added by manufacturing per establishment; log of the value of products per establishment; share of employment in manufacturing.

[20] In a few instances, such as for tax rates or DW Nominate scores, however, coefficients are no longer statistically significant at conventional levels.

fixed effects, at least for this set of outcomes, does not seem to introduce substantial bias in 2SLS estimates.

D8.2 Presidential Elections

Finally, in Table D17, I replicate the electoral results presented in Table 3 (column 3) and Table A6 above by computing vote shares and turnout by taking the average between the two closest election years rather than between the two elections after each Census year (Panel A), and excluding MSAs in the US South (Panel B). In both cases, results remain in line with those presented in the main text.

Table D1. Checking for Pre-Trends

VARIABLES	(1) Public Spending PC	(2) Prop. Tax Rate	(3) Democrats' Vote Share	(4) DW Nominate Scores	(5) Employed	(6) Log Occ. Scores	(7) Log Value Added per Establ.	(8) Log Establ. Size
Panel A. Baseline Specification								
Fr. Immigrants	-8.699*	-29.44*	-0.404***	1.658**	0.299***	0.097***	2.889***	2.532***
	(4.453)	(16.95)	(0.141)	(0.808)	(0.064)	(0.036)	(0.954)	(0.815)
F-stat	288.3	292.7	83.14	23.11	251.3	251.3	270.5	270.5
Observations	540	539	378	460	538	538	525	525
Panel B. Dep. Variable is 1910-1900 Change								
Fr. Immigrants	0.460	-4.204	-0.147	0.052	-0.117	0.026	0.031	0.051
	(4.135)	(8.224)	(0.157)	(0.909)	(0.112)	(0.066)	(0.414)	(0.458)
F-stat	318.3	320.6	64.54	25.92	313.0	313.0	272.6	272.6
Observations	180	179	123	135	180	180	176	176

Note: this table reports baseline 2SLS estimates in Panel A. Panel B regresses the 1900-1910 change in outcomes against the 1910-1930 change in instrumented immigration. All regressions include city, or MSA or congressional district to city and state by year fixed effects. Robust standard errors, clustered at the city or MSA or congressional district to city level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table D2. Differential Trends/1

VARIABLES	(1) Public Spending PC	(2) Prop. Tax Rate	(3) Democrats' Vote Share	(4) DW Nominate Scores	(5) Employed	(6) Log Occ. Scores	(7) Log Value Added per Establ.	(8) Log Establ. Size
Panel A: Baseline Specification								
Fr. Immigrants	-8.699*	-29.44*	-0.404***	1.658**	0.299***	0.097***	2.889***	2.532***
	(4.453)	(16.95)	(0.141)	(0.808)	(0.064)	(0.036)	(0.954)	(0.815)
F-stat	288.3	292.7	83.14	23.11	251.3	251.3	270.5	270.5
Panel B: Predicted Industrialization								
Fr. Immigrants	-12.47***	-30.80*	-0.375**	1.529*	0.288***	0.098***	2.884***	2.532***
	(4.759)	(18.72)	(0.158)	(0.855)	(0.070)	(0.035)	(1.014)	(0.843)
F-stat	234.3	239.3	76.10	22.16	207.3	207.3	216.0	216.0
Panel C: Immigrant and City Pop.								
Fr. Immigrants	-12.01**	-21.42	0.169	1.760*	0.226***	0.082*	2.465**	1.945**
	(5.490)	(21.22)	(0.271)	(1.025)	(0.061)	(0.042)	(1.073)	(0.931)
F-stat	96.48	97.37	35.64	10.75	82.91	82.91	89.38	89.38
Panel D: Value Added Manufacturing								
Fr. Immigrants	-17.18***	-19.38	-0.271	2.403	0.280***	0.112***	2.423**	2.590***
	(4.421)	(19.73)	(0.169)	(1.507)	(0.081)	(0.039)	(1.113)	(0.972)
F-stat	124.8	124.2	67.73	34.13	107.5	107.5	124.7	124.7

Note: Panel A replicates the 2SLS baseline specification. Panel B separately controls for predicted industrialization constructed by interacting the share of each 1-digit industry in 1900 with the growth of that industry at the national level. Panels C and D augment the baseline specification interacting year dummies with log 1900 city and immigrant population, and the log of value added per establishment in 1904. *** p<0.01; ** p<0.05; * p<0.1.

Table D3. Differential Trends/2

VARIABLES	(1) Public Spending PC	(2) Prop. Tax Rate	(3) Democrats' Vote Share	(4) DW Nominate Scores	(5) Employed	(6) Log Occ. Scores	(7) Log Value Added per Establ.	(8) Log Establ. Size
Panel A: Skill Ratios								
Fr. Immigrants	-8.257*	-29.52*	-0.393***	1.614**	0.294***	0.101***	2.879***	2.520***
	(4.686)	(17.00)	(0.142)	(0.821)	(0.065)	(0.035)	(0.948)	(0.816)
F-stat	258.8	260.3	83.60	25.33	223.8	223.8	247.1	247.1
Panel B: Fraction of Blacks								
Fr. Immigrants	-9.968**	-27.25	-0.384***	1.756**	0.286***	0.092**	3.009***	2.825***
	(4.480)	(16.94)	(0.146)	(0.794)	(0.063)	(0.036)	(1.006)	(0.920)
F-stat	269.7	273.8	76.74	24.06	235.1	235.1	249.9	249.9
Panel C: Value of Products								
Fr. Immigrants	-17.19***	-19.63	-0.226	2.302	0.265***	0.108***	2.642**	2.690**
	(4.752)	(20.15)	(0.179)	(1.550)	(0.075)	(0.038)	(1.189)	(1.054)
F-stat	130.6	130.7	34.89	37.73	112.9	112.9	128.6	128.6
Panel D: Employment Share Manufacture								
Fr. Immigrants	-15.45***	-20.47	-0.407***	2.310*	0.284***	0.127***	3.220***	2.860***
	(4.455)	(22.37)	(0.146)	(1.247)	(0.092)	(0.044)	(1.118)	(0.941)
F-stat	230.5	232.0	60.27	34.45	204.7	204.7	222.3	222.3

Note: this table replicates the 2SLS baseline specification by including interactions between year dummies and: i) natives' 1900 skill ratios (Panel A); ii) 1900 fraction of blacks; iii) 1904 log value of products per establishment (Panel C); and iv) the 1904 employment share in manufacturing (Panel D). *** p<0.01; ** p<0.05; * p<0.1.

Table D4. Full Sample vs Cities with 1904 Industrial Data

VARIABLES	(1) Public Spending PC	(2) Prop. Tax Rate	(3) Democrats' Vote Share	(4) DW Nominate Scores	(5) Employed	(6) Log Occ. Scores	(7) Log Value Added per Establ.	(8) Log Establ. Size
Panel A: Full Sample								
Fr. Immigrants	-8.699*	-29.44*	-0.404***	1.658**	0.299***	0.097***	2.889***	2.532***
	(4.453)	(16.95)	(0.141)	(0.808)	(0.064)	(0.036)	(0.954)	(0.815)
F-stat	288.3	292.7	83.14	23.11	251.3	251.3	270.5	270.5
Cities	180	180	126	157	180	180	178	178
Observations	540	539	378	460	538	538	525	525
Panel B: Drop Cities without 1904 Industrial Data								
Fr. Immigrants	-13.38***	-20.85	-0.415***	2.159*	0.287***	0.109***	2.964***	2.715***
	(3.840)	(18.55)	(0.140)	(1.291)	(0.074)	(0.038)	(1.038)	(0.838)
F-stat	247.9	251.3	83.75	42.17	216.6	216.6	240	240
Cities	176	176	126	154	176	176	176	176
Observations	528	527	378	451	526	526	519	519

Note: this table replicates the baseline specification comparing the full sample (Panel A) with the sample of cities for which 1904 industrial data were reported in the 1904 Census of Manufacture (Panel B). The 4 cities for which industrial data is not available are: Pasadena (CA), Perth Amboy (NJ), Superior (WI), and Washington D.C. The dependent variable is displayed at the top of each column. *** p<0.01; ** p<0.05; * p<0.1.

Table D5. Testing for Spillovers

Dep. Variable:	Employment to Population (1)	Log Occupational Scores (2)	Log Value Added per Establishment (3)	Log Establishment Size (4)
Panel A. Baseline specification				
Fr. Immigrants	0.299***	0.097***	2.889***	2.532***
	(0.064)	(0.036)	(0.954)	(0.815)
F-stat	251.3	251.3	270.5	270.5
Observations	538	538	525	525
Panel B. MSA-level regressions				
Fr. Immigrants	0.330***	0.060	4.484***	4.539***
	(0.115)	(0.067)	(1.084)	(0.981)
F-stat	82.65	82.65	80.23	80.23
Observations	379	379	370	370
Panel C. Spillovers from other cities in the state				
Fr. Immigrants	0.014***	0.005***	0.136***	0.124***
	(0.003)	(0.002)	(0.041)	(0.034)
Fr. Immigrants in the State	-0.005*	-0.007**	-0.076	-0.058
	(0.003)	(0.004)	(0.049)	(0.056)
KP F-stat	248.3	248.3	254.9	254.9
AP F-stat (Imm)	114.5	114.5	127.1	127.1
AP F-stat(Imm state)	245.5	245.5	254.2	254.2
Observations	502	502	492	492

Note: Panel A replicates the baseline 2SLS specification. Panel B aggregates the unit of analysis to the MSA level. Panel C controls for the (instrumented) average fraction of immigrants received by other cities in the same state. F-stat refers to the K-P F-stat for weak instrument, while AP F-stats refer to the partial F-stats for joint significance of the instruments in the two separate first-stage regressions. *** p<0.01; ** p<0.05; * p<0.1.

Table D6. Quota and WWI and Weather Shock Instruments

VARIABLES	(1) Public Spending PC	(2) Prop. Tax Rate	(3) Democrats' Vote Share	(4) DW Nominate Scores	(5) Employed	(6) Log Occ. Scores	(7) Log Value Added per Establ.	(8) Log Establ. Size
Panel A: Baseline Specification								
Fr. Immigrants	-8.699*	-29.44*	-0.404***	1.658**	0.299***	0.097***	2.889***	2.532***
	(4.453)	(16.95)	(0.141)	(0.808)	(0.064)	(0.036)	(0.954)	(0.815)
F-stat	288.3	292.7	83.14	23.11	251.3	251.3	270.5	270.5
Panel B: Stacked 1st Differences								
Fr. Immigrants	-5.739*	-24.29	0.048	1.939**	0.213***	0.082**	1.778***	1.983***
	(2.970)	(19.35)	(0.162)	(0.773)	(0.043)	(0.033)	(0.665)	(0.596)
F-stat	106.8	106.2	23.43	8.693	102.2	102.2	106.0	106.0
Panel C: Long Differences								
Fr. Immigrants	-11.34*	-38.16**	-0.606***	1.168	0.362***	0.124***	2.277***	2.146***
	(6.197)	(14.88)	(0.167)	(0.843)	(0.076)	(0.042)	(0.729)	(0.720)
F-stat	207.4	204.5	35.76	15.39	207.4	207.4	199.4	199.4
Panel D: Weather Shocks								
Fr. Immigrants	-15.88**	-86.07*	-0.387*	2.205**	0.480***	0.141**	2.171**	1.924*
	(7.848)	(48.12)	(0.230)	(1.042)	(0.113)	(0.060)	(0.969)	(0.983)
F-stat	18.70	18.72	28.17	14.39	15.68	15.68	18.28	18.28

Note: Panel A replicates the baseline specification. Panels B and C report estimates obtained from the stacked first difference and the long difference specifications (equations (7) and (8) in the main text), where immigration is instrumented with the interaction of year dummies and the World War I and the quota instruments constructed in online appendix B1 (see equations (B1) and (B2)). Panel D reports 2SLS estimates obtained using the instrument constructed with aggregate migration flows predicted with temperature and precipitation shocks in the country of origin (see equation (B8) in online appendix B2). The dependent variable is displayed at the top of each column. F-stat refers to the K-P F-stat for weak instrument. *** p<0.01; ** p<0.05; * p<0.1.

Table D7. Quota and WWI Instrument: Interactions

VARIABLES	(1) Public Spending PC	(2) Prop. Tax Rate	(3) Democrats' Vote Share	(4) DW Nominate Scores	(5) Employed	(6) Log Occ. Scores	(7) Log Value Added per Establ.	(8) Log Establ. Size
				Panel A: Baseline Stacked 1st Differences				
Fr. Immigrants	-5.739*	-24.29	0.048	1.939**	0.213***	0.082**	1.778***	1.983***
	(2.970)	(19.35)	(0.162)	(0.773)	(0.043)	(0.033)	(0.665)	(0.596)
F-stat	106.8	106.2	23.43	8.693	102.2	102.2	106.0	106.0
				Panel B: Stacked 1st Differences AND Year by 1900 City and Immigrants Pop.				
Fr. Immigrants	-7.790	-20.45	-0.069	1.735*	0.205***	0.087*	1.515**	1.526**
	(5.080)	(23.84)	(0.197)	(1.046)	(0.055)	(0.047)	(0.724)	(0.764)
F-stat	86.99	87.26	15.28	5.945	80.24	80.24	91.18	91.18

Note: Panel A reports baseline estimates obtained from the stacked first difference specification (equation (7) in the main text), where immigration is instrumented with the interaction of year dummies and the World War I and the quota instruments constructed in online appendix B1 (see equations (B1) and (B2)). Panel B augments this specification including the interaction between year dummies and (the log of) 1900 city and immigrants population. The dependent variable is displayed at the top of each column. F-stat refers to the K-P F-stat for weak instrument. *** p<0.01; ** p<0.05; * p<0.1.

Table D8. First Stage: Specification in Jaeger et al. (2018)

	Dep. Variable: Fraction of Immigrants			
	(1)	(2)	(3)	(4)
	Contemporaneous		*Lagged*	
Instrument	0.557**	0.677**	0.409*	0.696*
	(0.254)	(0.278)	(0.240)	(0.398)
Lagged Instrument	0.254***	0.095	1.024***	0.804***
	(0.089)	(0.083)	(0.097)	(0.118)
Observations	360	360	360	360
Fixed Effects	NO	YES	NO	YES

Note: this table reports first stage regressions for the specification suggested in Jaeger et al. (2018). The contemporaneous (columns 1 and 2) and the lagged (columns 3 and 4) actual fraction of immigrants are both regressed against the contemporaneous and the lagged values of the instrument. Columns 1 and 3 do not include fixed effects. Columns 2 and 4 estimate the baseline specification, including city and state by year fixed effects. Since all regressions include lagged values, 1910 is dropped from the analysis. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table D9. First Stage Omitting Passaic (NJ)

	Dep. Variable: *Fraction of Immigrants*							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Z	0.884***	0.900***	0.940***	0.948***	0.795***	0.786***		
	(0.059)	(0.077)	(0.068)	(0.105)	(0.092)	(0.078)		
(Z_WWI)*1920							0.730***	0.783***
							(0.146)	(0.121)
(Z_Quotas)*1930							0.774**	1.246***
							(0.349)	(0.189)
(Z_WWI)*1930							0.053	
							(0.092)	
(Z_Quotas)*1920							0.472	
							(0.427)	
1900 population		X						
Predicted population			X					
MSA analysis				X				
Year by 1900 Log					City and imm pop	Value added manuf.		
WWI-Quotas IV							First Diff.	Long Diff.
F-stat	226.4	137.0	193.2	81.88	75.38	102.0	36.31	64.47
P-value Overid. Test							0.431	0.603
Cities	179	179	179	127	179	175	179	179
Observations	537	537	537	379	537	525	358	179

Note: this table presents the full replica of Table B1 in online appendix B excluding the city of Passaic (NJ). In Col 1 the actual number of immigrants is scaled by actual population, and the instrument is the leave-out version of the shift-share IV in equation (2) (Section 4.2). Cols 2 and 3 replicate Col 1 by scaling the actual and predicted number of immigrants by, respectively, 1900 and predicted population. From Col 3 onwards, Table D9 presents results from specifications where both the predicted and the actual number of immigrants are scaled by predicted population. Col 4 replicates the analysis aggregating the unit of analysis at the MSA level. Cols 5 and 6 include the interaction between year dummies and, respectively, the (log of) 1900 city and immigrant population, and the (log of) 1904 value added by manufacture per establishment. Cols 7 and 8 estimate stacked first differences equation (B4) and long differences equation (B6) replacing the standard shift-share instrument with those constructed exploiting World War I and the quotas (equations (B1) and (B2) in online appendix B1). F-stat refers to the K-P F-stat for weak instrument. Cols 7-8 report the p-value for the test of overidentifying restrictions. All regressions partial out city and state by year fixed effects. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table D10. First Stage Trimming 1^{st} and 99^{th} Percentiles of Immigration

	Dep. Variable: *Fraction of Immigrants*							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Z	0.889***	0.845***	0.897***	0.945***	0.758***	0.785***		
	(0.067)	(0.097)	(0.079)	(0.105)	(0.099)	(0.078)		
(Z_WWI)*1920							0.759***	0.790***
							(0.162)	(0.163)
(Z_Quotas)*1930							0.787**	1.209***
							(0.347)	(0.188)
(Z_WWI)*1930							0.031	
							(0.099)	
(Z_Quotas)*1920							0.422	
							(0.412)	
1900 population		X						
Predicted population			X					
MSA analysis				X				
Year by 1900 Log					City and imm pop	Value added manuf.		
WWI-Quotas IV							First Diff.	Long Diff.
F-stat	176.4	75.71	128.6	80.74	58.36	101.5	23.76	42.48
P-value Overid. Test							0.456	0.557
Cities	176	176	176	127	176	173	176	176
Observations	528	528	528	379	528	519	352	176

Note: this table presents the full replica of Table B1 in the main text by dropping cities in the 1^{st} and 99^{th} percentiles of the 1910-1930 change in immigration. Cities in the top 99^{th} percentile of the change in immigration are Perth Amboy (NJ) and Passaic (NJ), while those in the bottom 1^{st} percentile are Flint (MI) and Pasadena (CA). F-stat refers to the K-P F-stat for weak instrument. Cols 7-8 report the p-value for the test of overidentifying restrictions. All regressions partial out city and state by year fixed effects. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table D11. Main Results Omitting Potential Outliers

VARIABLES	(1) Public Spending PC	(2) Prop. Tax Rate	(3) Democrats' Vote Share	(4) DW Nominate Scores	(5) Employed	(6) Log Occ. Scores	(7) Log Value Added per Establ.	(8) Log Establ. Size
Panel A: Baseline Specification								
Fr. Immigrants	-8.699*	-29.44*	-0.404***	1.658**	0.299***	0.097***	2.889***	2.532***
	(4.453)	(16.95)	(0.141)	(0.808)	(0.064)	(0.036)	(0.954)	(0.815)
F-stat	288.3	292.7	83.14	23.11	251.3	251.3	270.5	270.5
Observations	540	539	378	460	538	538	525	525
Panel B: Drop Passaic (NJ)								
Fr. Immigrants	-9.035	-41.79*	-0.404***	2.032**	0.401***	0.103*	3.947***	3.339***
	(6.655)	(25.17)	(0.141)	(0.838)	(0.078)	(0.055)	(0.902)	(0.855)
F-stat	193.2	193.3	82.37	24.86	178.2	178.2	181.9	181.9
Observations	537	536	378	457	535	535	522	522
Panel C: Trim 1st and 99th Percentiles of Immigration								
Fr. Immigrants	-18.25***	-28.83	-0.434***	2.205*	0.418***	0.121*	4.421***	3.978***
	(5.557)	(30.96)	(0.138)	(1.298)	(0.098)	(0.069)	(0.960)	(0.953)
F-stat	128.6	128.0	81.22	42.23	123.0	123.0	121.0	121.0
Observations	528	527	375	448	526	526	513	513

Note: this table replicates the main results for the full sample (reported in Panel A) by dropping Passaic, NJ (Panel B), by excluding cities in the 1st and 99th percentiles of the 1910-1930 change in immigration (Panel C). Cities in the top 99th percentile of the change in immigration are Perth Amboy (NJ) and Passaic (NJ), while those in the bottom 1st percentile are Flint (MI) and Pasadena (CA). The dependent variable is displayed at the top of each column. *Fr. Immigrants* is the fraction of immigrants arrived in the previous decade over predicted city population, and is instrumented using the baseline version of the instrument constructed in Section 4.2 (see (2) in the main text). F-stat refers to the K-P F-stat for weak instrument. *** p<0.01; ** p<0.05; * p<0.1.

Table D12. Alternative Specifications/1

VARIABLES	(1) Public Spending PC	(2) Prop. Tax Rate	(3) Democrats' Vote Share	(4) DW Nominate Scores	(5) Employed	(6) Log Occ. Scores	(7) Log Value Added per Establ.	(8) Log Establ. Size
Panel A. Baseline Specification								
Fr. Immigrants	-8.699*	-29.44*	-0.404***	1.658**	0.299***	0.097***	2.889***	2.532***
	(4.453)	(16.95)	(0.141)	(0.808)	(0.064)	(0.036)	(0.954)	(0.815)
F-stat	288.3	288.3	83.14	23.11	251.3	251.3	270.5	270.5
Panel B. Immigrants Over 1900 Pop.								
Fr. Immigrants	-5.794*	-16.09	-0.313***	1.174**	0.213***	0.070***	2.105***	1.726***
	(3.178)	(11.56)	(0.112)	(0.559)	(0.048)	(0.026)	(0.730)	(0.596)
F-stat	226.7	230.4	55.42	70.30	175.3	175.3	198.2	198.2
Panel C. Immigrants Over Actual Pop.								
Fr. Immigrants	-10.34**	-35.06*	-0.387*	2.205**	0.357***	0.116***	3.456***	3.029***
	(4.870)	(18.96)	(0.230)	(1.042)	(0.056)	(0.040)	(0.926)	(0.810)
F-stat	225.1	223.5	28.17	14.39	249.3	249.3	241.8	241.8
Observations	540	539	378	460	538	538	525	525

Note: Panel A replicates the baseline specification. Panel B scales both the actual and the predicted number of immigrants with 1900 population. Panel C defines immigration (*Fr. Immigrants*) as the fraction of immigrants over actual (rather than predicted) city population, instrumented with the baseline version of the instrument constructed in Section 4.2 (see (2) in the main text). The dependent variable is reported at the top of each column. F-stat refers to the K-P F-stat for weak instrument. Robust standard errors, clustered at the MSA (congressional district) level in Cols 1 to 8 (Col 4), in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table D13. Alternative Specifications/2

VARIABLES	(1) Public Spending PC	(2) Prop. Tax Rate	(3) Democrats' Vote Share	(4) DW Nominate Scores	(5) Employed	(6) Log Occ. Scores	(7) Log Value Added per Establ.	(8) Log Establ. Size
Panel A: Immigrants' Stock								
Fr. Immigrants	-9.843*	-33.29*	-0.489***	2.068**	0.335***	0.109***	3.323***	2.911***
	(5.156)	(18.42)	(0.181)	(0.984)	(0.071)	(0.041)	(1.047)	(0.884)
F-stat	81.14	80.90	19.49	37.88	81.20	81.20	76.66	76.66
Panel B: Immigrants from All Sources								
Fr. Immigrants	-7.107**	-17.78	-0.256***	0.907**	0.189***	0.095***	1.945***	1.605**
	(2.819)	(11.67)	(0.075)	(0.462)	(0.059)	(0.027)	(0.627)	(0.634)
F-stat	86.59	86.32	32.02	40.35	85.19	85.19	89.38	89.38
Observations	540	539	378	460	538	538	525	525

Note: Panel A replicates the baseline specification measuring immigration (*Fr. Immigrants*) as the fraction of all foreign born individuals over predicted city population, instrumenting it with both current and lagged migration flows interacted with the share of immigrants (from each country of origin) living in the city in 1900. Panel B replicates the baseline specification considering immigrants from all sending countries: *Fr. Immigrants* refers to the fraction of immigrants arrived during the previous decade over predicted city population, and is instrumented with the baseline version of the instrument constructed in Section 4.2 (see (2) in the main text). The dependent variable is reported at the top of each column. F-stat refers to the K-P F-stat for weak instrument. *** p<0.01; ** p<0.05; * p<0.1.

Table D14. Relative vs Absolute Size of Immigrants

VARIABLES	(1) Public Spending PC	(2) Prop. Tax Rate	(3) Democrats' Vote Share	(4) DW Nominate Scores	(5) Employed	(6) Log Occ. Scores	(7) Log Value Added per Establ.	(8) Log Establ. Size
Panel A: Baseline Specification								
Fr. Immigrants	-8.699*	-29.44*	-0.404***	1.658**	0.299***	0.097***	2.889***	2.532***
	(4.453)	(16.95)	(0.141)	(0.808)	(0.064)	(0.036)	(0.954)	(0.815)
F-stat	288.3	292.7	83.14	23.11	251.3	251.3	270.5	270.5
Panel B: Logs Specification								
Log Immigrants	-4.348***	2.053	-0.066*	0.239	0.053**	0.020*	1.082***	0.714**
	(1.455)	(6.080)	(0.039)	(0.191)	(0.021)	(0.012)	(0.340)	(0.291)
F-stat	247.9	251.3	83.75	42.17	19.08	19.08	15.20	15.20

Note: Panel A reports the baseline 2SLS specification where the regressor of interest is the fraction of immigrants. Panel B reports results for the log of the number of immigrants, separately controlling for the log of city population. The dependent variable is displayed at the top of each column. F-stat refers to the K-P F-stat for weak instrument. *** p<0.01; ** p<0.05; * p<0.1.

Table D15. Selection on Observables and Unobservables: Oster (2017)

Specification:	Baseline (1)	Controlled (2)	Bias Adjusted Coefficient (3)
Public Spending per Capita	-8.688** (4.333) [0.007]	-11.05** (4.553) [0.120]	-11.87
Property Tax Rate	-29.42* (16.09) [0.012]	-21.71 (19.12) [0.027]	-17.55
Democrats Vote Share	-0.383** (0.147) [0.018]	-0.083 (0.171) [0.179]	0.017
DW Nominate Score	1.669** (0.773) [0.019]	1.124 (0.930) [0.061]	0.892
Employment to Population	0.296*** (0.054) [0.057]	0.234*** (0.052) [0.166]	0.206
Log Occupational Scores	0.096*** (0.034) [0.014]	0.092** (0.038) [0.028]	0.090
Log Value Added per Establ.	2.859*** (0.861) [0.046]	2.353*** (0.891) [0.094]	2.056
Log Establ. Size	2.505*** (0.737) [0.044]	1.996** (0.845) [0.083]	1.671

Note: column 1 reports the reduced form relationship between each of the 8 outcomes in Tables 3 and 5 and the baseline version of the instrument; it also partials out city and state by year fixed effects. Column 2 augments the baseline (reduced form) specification by including all interactions considered in Tables D2 and D3. Column 3 reports the adjustment strategy proposed by Oster (2017): I impose the most conservative estimate for Rmax, equal to 1.3 times the R-squared of the "full controls" model, and assume a value of delta equal to 1. In columns 1-2, standard errors are reported in parentheses, and the R-squared in square brackets. *** p<0.01; ** p<0.05; * p<0.1.

Table D16. Legislators' Ideology: Cross-Sectional Regressions

Dep. Variable:	*DW Nominate Scores*	*Pr. that Winner has Given Political Orientation*			
	(1)	(2)	(3)	(4)	(5)
Panel A: Baseline					
Fr. Immigrants	1.658**	-0.601	-1.655	-0.198	2.592*
	(0.808)	(0.817)	(1.039)	(1.717)	(1.354)
F-stat	23.11	23.11	23.11	23.11	23.11
Observations	470	470	470	470	470
Panel B: Cross-Sectional					
Fr. Immigrants	2.112**	0.198	-1.898	-0.359	2.974**
	(1.060)	(0.351)	(1.522)	(1.454)	(1.226)
F-stat	15.24	15.24	15.24	15.24	15.24
Observations	146	146	146	146	146
Political Orientation		Liberal Democrat	Moderate Democrat	Moderate Republican	Conservative Republican

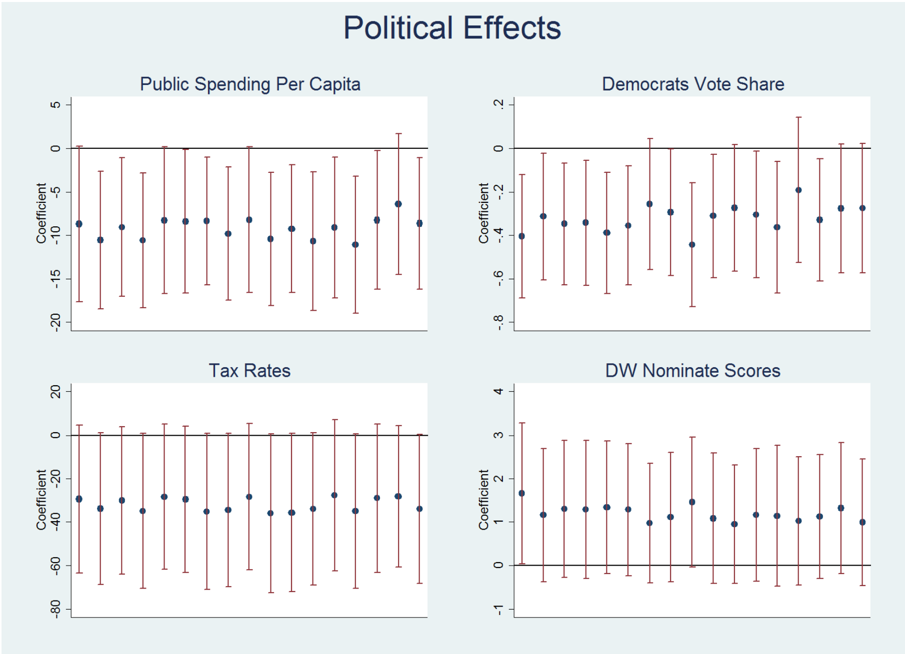
Note: this table replicates results for the ideology of members of the House of Representatives reported in Table 4 in the main text using a cross-sectional specification. Panel A reports 2SLS estimates shown in columns 1 and 3 to 6 of Table 4. In Panel B, the dependent variable refers to 1920, and the regressor of interest (*Fr. Immigrants*) is the 1910 to 1920 change in the fraction of immigrants arrived during the previous decade, instrumented with the corresponding change in the instrument constructed in Section 4.2 of the main text (equation (2)). F-stat refers to the K-P F-stat for weak instrument. Panel A includes city by congressional district and state by year fixed effects, while Panel B controls for state fixed effects. Robust standard errors, clustered at the congressional district level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table D17. Presidential Elections: Alternative Definitions and Samples

VARIABLES	(1) Democrats' vote share	(2) Republicans' vote share	(3) Other parties' vote share	(4) Democrats-Republicans Margin	(5) Turnout
Panel A: Average Outcomes Between 2 Closest Elections					
Fr. Immigrants	-0.743***	0.431***	0.312***	-1.174***	-1.588***
	(0.154)	(0.145)	(0.119)	(0.275)	(0.157)
F-stat	83.14	83.14	83.14	83.14	82.20
Mean dep var	0.455	0.341	0.204	0.114	0.525
MSAs	126	126	126	126	125
Observations	378	378	378	378	373
Panel B: Exclude Southern MSAs					
Fr. Immigrants	-0.396**	0.197	0.199*	-0.593**	-1.532***
	(0.154)	(0.158)	(0.106)	(0.293)	(0.180)
F-stat	71.55	71.55	71.55	71.55	71.55
Mean dep var	0.423	0.351	0.225	0.073	0.570
MSAs	94	94	94	94	94
Observations	282	282	282	282	282

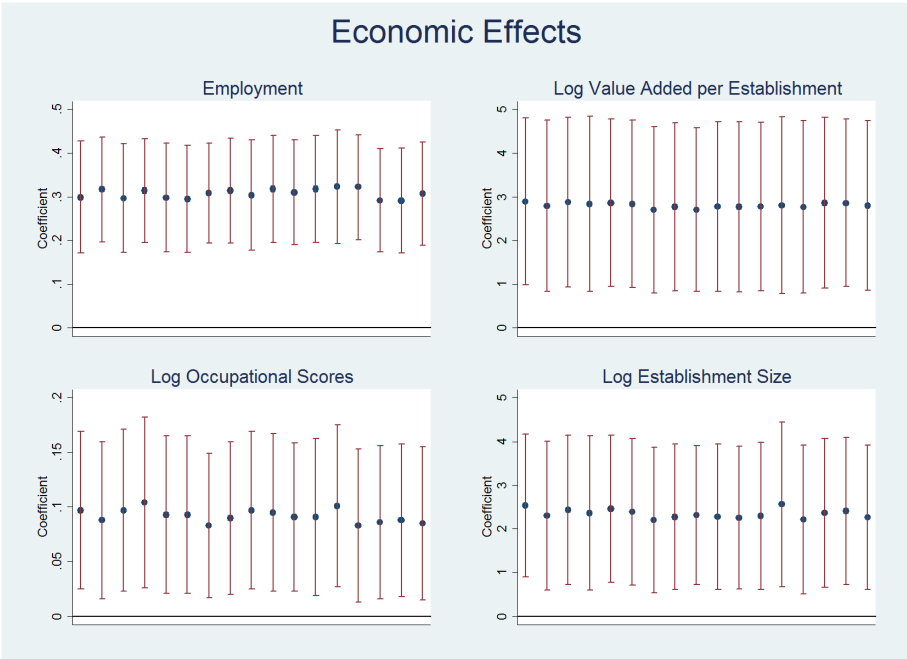
Note: this table replicates results reported in Table 3 and in Table A6 computing vote shares and turnout by taking the average between the two closest election years rather than between the two elections after each Census year (Panel A), and excluding southern MSAs (Panel B). The dependent variable is reported at the top of each column, and refers to Presidential elections. All electoral outcomes were aggregated from the county to the MSA level, using 1940 MSAs' definitions. *Other parties' vote share refers* to the vote share of all parties other than Democrats and Republicans. *Fr. Immigrants* is the fraction of immigrants arrived in the previous decade over predicted city population, and is instrumented using the baseline version of the instrument constructed in Section 4.2 (see (2) in the main text). F-stat refers to the K-P F-stat for weak instrument. All regressions include MSA and state by year fixed effects. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Figure D1. Political Effects of Immigration, Interacting Year with α_{jc}



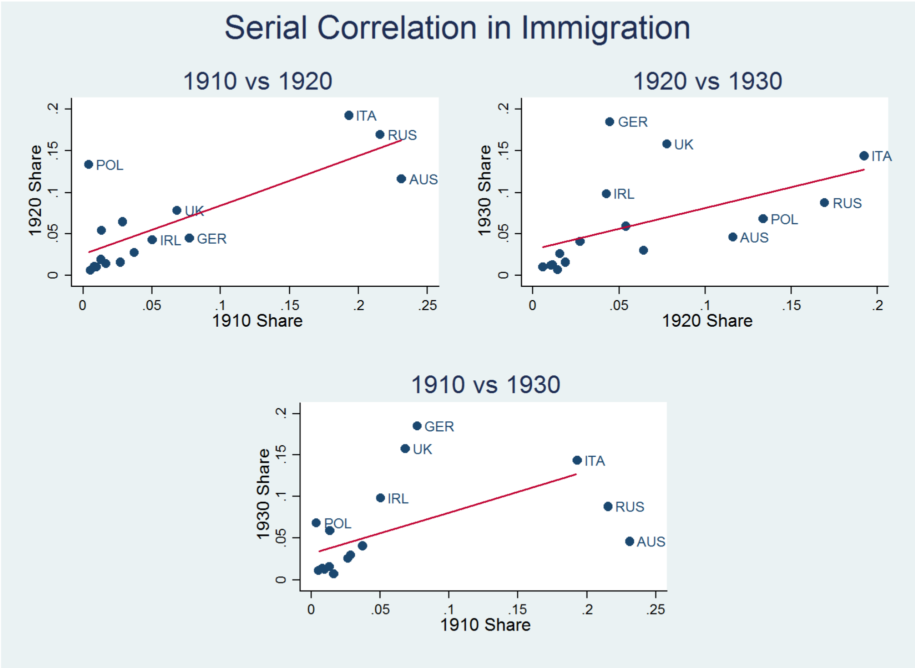
Note: the Figure plots the 2SLS point estimate (with corresponding 95% confidence intervals) for the political effects of immigration augmenting the baseline specification reported in Table 3 with interactions between year dummies and the 1900 share of immigrants from each sending country.

Figure D2. Economic Effects of Immigration, Interacting Year with α_{jc}



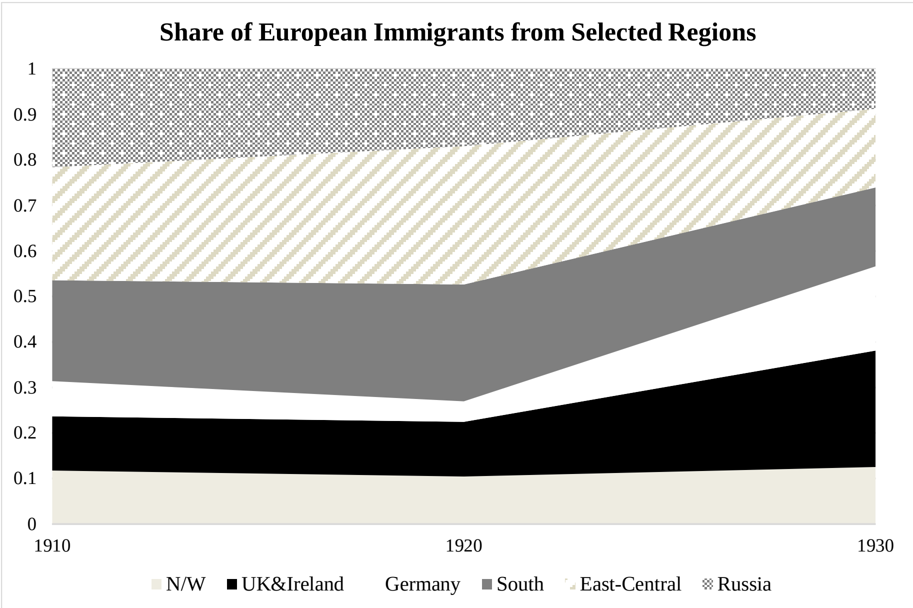
Note: the Figure plots the 2SLS point estimate (with corresponding 95% confidence intervals) for the political effects of immigration augmenting the baseline specification reported in Table 5 with interactions between year dummies and the 1900 share of immigrants from each sending country.

Figure D3. Serial Correlation in National Migration Flows



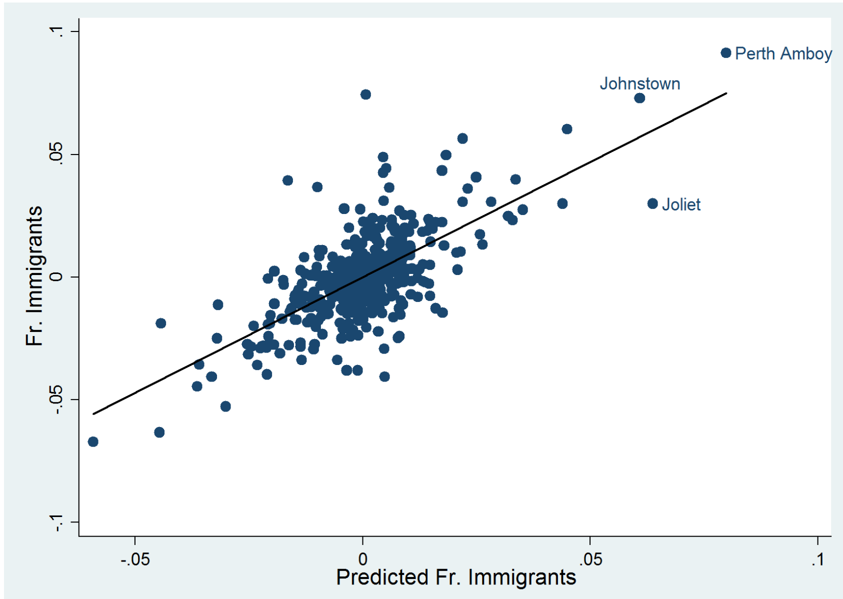
Note: each dot represents the correlation between the share of immigrants entering the US during decade t and decade t-10 (or, t-20 in the graph at the bottom of the Figure). Shares are computed as the number of immigrants from each country relative to all European immigrants arriving in the US during the same period.

Figure D4. European Immigrants: Composition, 1910-1930



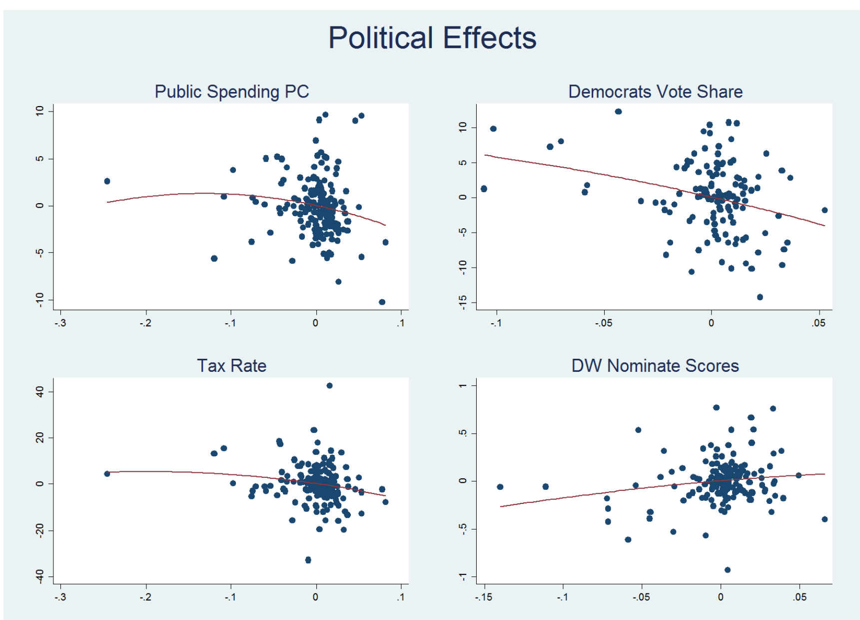
Note: the graph plots the share of European immigrants arrived in the previous decade from each region in the three decades, 1910, 1920, and 1930. Source: author's calculations using full count Census data (Ruggles et al., 2015).

Figure D5. First Stage Omitting Passaic (NJ)



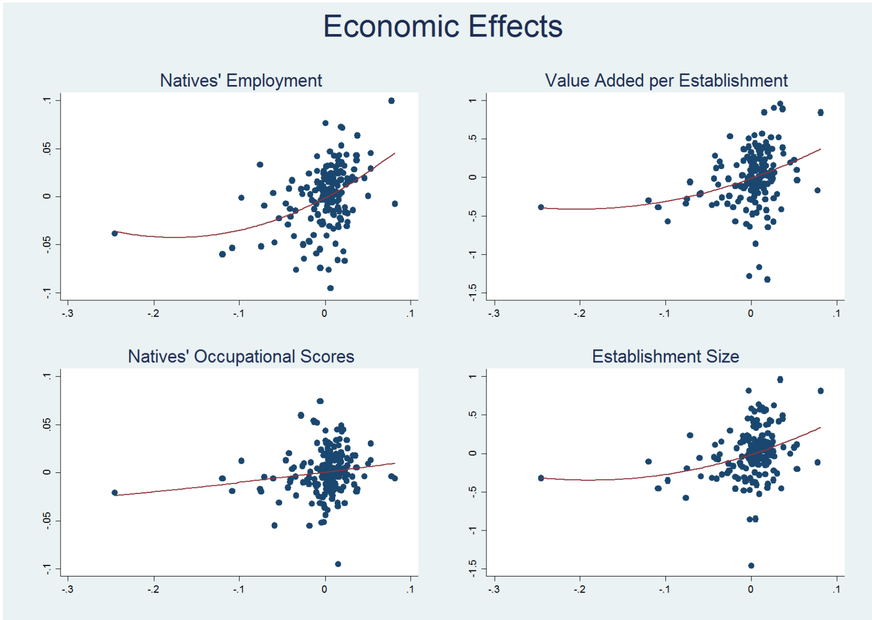
Note: this figure replicates Figure 4 in the main text omitting the city of Passaic (NJ). The y-axis (resp. x-axis) reports the actual (resp. predicted) number of immigrants over predicted city population in each of the three Census years, 1910, 1920, and 1930. Each point in the scatter diagram represents the residual change in a city's actual and predicted fraction of immigrants after partialling out city and year by state fixed effects. The predicted number of immigrants is constructed as discussed in Section 4.2 in the text (see (2)). Predicted city population is obtained by multiplying 1900 city population with average urban growth, excluding that of the Census division where a city is located. The solid line shows the regression coefficient (coefficient=0.940, standard error=0.068).

Figure D6. Non-Parametric Regressions: Political Effects



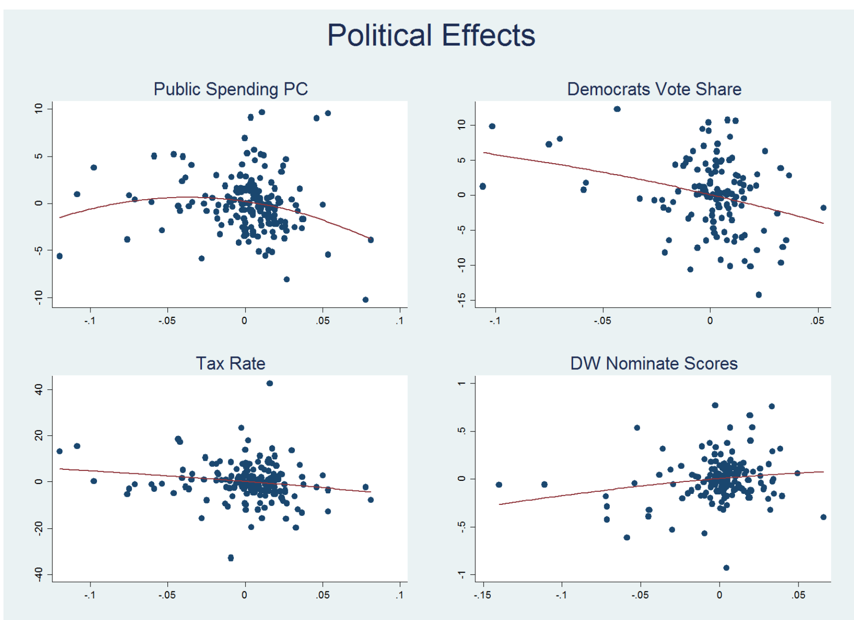
Note: each panel represents the residual scatterplot for the (non-parametric) relationship between the change in predicted fraction of immigrants and the change in each political outcome. I first run non-parametric regressions between state dummies and the 1910-1930 change in each outcome and in the instrument. I then residualize outcomes and the instrument, and plot the relationship between them non-parametrically. The red line in each panel is the best quadratic approximation for the (non-parametric) scatterplot.

Figure D7. Non-Parametric Regressions: Economic Effects



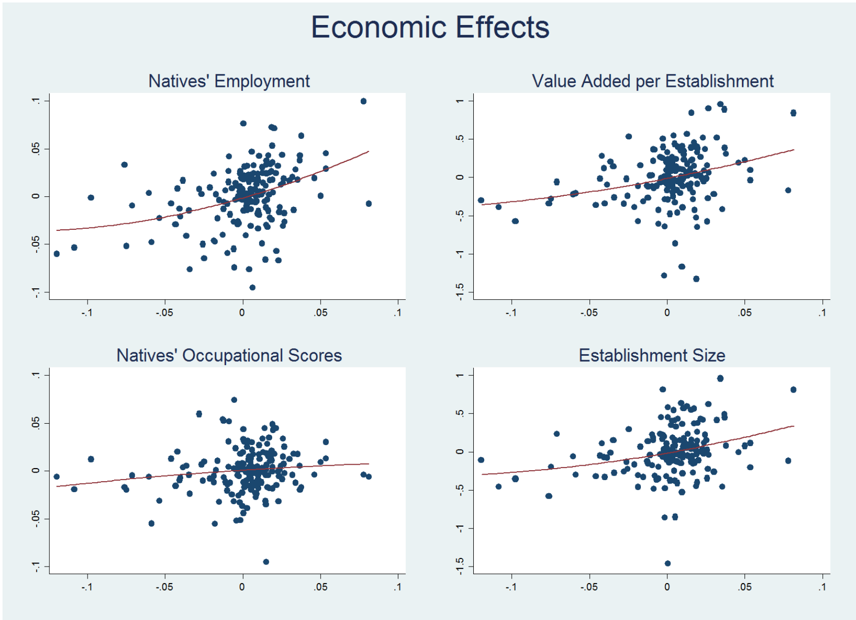
Note: each panel represents the residual scatterplot for the (non-parametric) relationship between the change in predicted fraction of immigrants and the change in each economic outcome. I first run non-parametric regressions between state dummies and the 1910-1930 change in each outcome and in the instrument. I then residualize outcomes and the instrument, and plot the relationship between them non-parametrically. The red line in each panel is the best quadratic approximation for the (non-parametric) scatterplot.

Figure D8. Non-Parametric Regressions: Political Effects (Drop Passaic)



Note: This figure replicates Figure D6 dropping the city of Passaic (NJ). Specifically, each panel represents the residual scatterplot for the (non-parametric) relationship between the change in predicted fraction of immigrants and the change in each political outcome. I first run non-parametric regressions between state dummies and the 1910-1930 change in each outcome and in the instrument. I then residualize outcomes and the instrument, and plot the relationship between them non-parametrically. The red line in each panel is the best quadratic approximation for the (non-parametric) scatterplot.

Figure D9. Non-Parametric Regressions: Economic Effects (Drop Passaic)



Note: This figure replicates Figure D7 dropping the city of Passaic (NJ). Specifically, each panel represents the residual scatterplot for the (non-parametric) relationship between the change in predicted fraction of immigrants and the change in each economic outcome. I first run non-parametric regressions between state dummies and the 1910-1930 change in each outcome and in the instrument. I then residualize outcomes and the instrument, and plot the relationship between them non-parametrically. The red line in each panel is the best quadratic approximation for the (non-parametric) scatterplot.

E Additional Results

In this section I present several additional results. First, I provide detailed evidence of immigrants-natives complementarities (Section E1). Second, I investigate which groups among natives likely benefitted from the new employment opportunities created by immigration (Section E2). Third, I study the effects of immigration on employment of previously arrived immigrants (Section E3). Fourth, I investigate the effects of immigration on the use of electricity in manufacturing (Section E4). Fifth, I test whether immigration had any effect on natives' rents (Section E5). Sixth, I explore possible heterogeneity in the effects of immigration, depending on city characteristics (Section E6). Seventh, I ask if Protestant and non-Protestant immigrants had differential economic effects (Section E7). Finally, I run a horse-race between religion and linguistic distance (Section E8), and study the effects of ethnic diversity on redistribution (Section E9).

E1 Immigrants-Natives Complementarities

A recent body of the literature has shown theoretically and empirically that immigrants can raise natives' wages and employment because of complementarity and gains from specialization (e.g. Peri and Sparber, 2009; Ottaviano and Peri, 2012; Foged and Peri, 2016). Building on these ideas, and exploiting the granularity of full count census data, I test whether this mechanism was at play also in the early twentieth century.

Table E1 studies the effects of immigration on the fraction of natives employed in specific occupations, which varied in their exposure to immigrants' competition. I proxy for the latter using the ratio of the probability that natives and immigrants held a given occupation in 1910, reported at the bottom of Table E1: values below (resp. above) 1 indicate that immigrants were over (resp. under) represented relative to natives (see also Table E2).

Columns 1 to 3 consider three occupations that were heavily exposed to immigrants' competition and required relatively low skills as well as language proficiency (manufacturing laborers, waiters, and blacksmiths). While the coefficient is statistically significant only in column 3, the point estimates are consistently negative, suggesting that natives responded to immigration by moving away from these occupations. In line with this interpretation, columns 4 to 6 document a significant increase in the fraction of natives employed in more skilled and less exposed occupations such as manufacturing foremen (column 4), electricians (column 5), and engineers (column 6). These findings can be effectively summarized using the words of Jewish-American economist and statistician Isaac Hourwich who, in 1912, noted that "the effect of immigration upon the occupational distribution of industrial wage earners has been the elevation of the English-speaking workmen to the status of an aristocracy of labor, while the immigrants have been employed to perform the rough work of all industries" (Meyer, 1981).

Among the occupations considered in Table E1, manufacturing foremen experienced the largest percent increase relative to the 1910 mean in response to immigration (Figure E1). This seems plausible for two reasons. First, becoming supervisors or floor managers did not require significant investment in education, and so even natives that were already in the labor force could be employed there relatively quickly. Second, as I show in the main text (Table 5, columns 3 and 4), immigration promoted the expansion of manufacturing, not only allowing to absorb the supply shock, but also creating new job opportunities for natives.

If immigration induced natives to specialize in more skilled occupations because of complementarity, this effect should be stronger when skill differences between immigrants and natives were larger. To investigate this conjecture, I classify immigrants as coming from linguistically close and far countries using the measure constructed by Chiswick and Miller (2005), which is based on the difficulty that Americans have in learning other languages. I define a country as linguistically far (resp. close) if its linguistic distance from English is above (resp. below) the median distance.

Relying on this admittedly crude measure of linguistic distance, in Table E3, I re-estimate equation (1) in the main text allowing immigrants from linguistically far and close countries to have differential effects on natives' employment and occupational standing. To ease comparisons across groups, I standardize both regressors by subtracting their means and dividing them by their standard deviations. In this way, coefficients in Table E3 can be interpreted as the effect of a one standard deviation change in the fraction of linguistically far and close immigrants respectively.

Consistent with Peri and Sparber (2009) and Foged and Peri (2016), while the employment effects of immigration are positive regardless of "immigrants' type", they are statistically significant only when immigrants came from linguistically far countries (columns 1 and 2). More importantly, there is evidence of natives' occupational upgrading (columns 3 and 4) only when immigrants were linguistically far from natives. Figure E2 plots the implied percent change in employment and occupational scores due to a one standard deviation change in immigrants from linguistically far (orange bar) and linguistically close (blue bar) countries. Similar patterns emerge when splitting immigrants between new (Russia, Eastern, and Southern Europe) and old (British Isles, Western Europe, Scandinavia, and Germany) source countries (see Panel B of Table E3), exploiting the fact that immigrants from new sending regions were more likely to be illiterate and unskilled (see Figures A1 and A2 above).[21]

[21] See also Biavaschi et al. (2017) and Greenwood and Ward (2015).

Figure E3 further corroborates the idea that immigrants benefitted natives because of complementarities. Focusing on the fraction of immigrants arrived more than 10 years before (rather than on natives) in the same occupations considered in Figure E1, it shows that immigration did not favor occupational upgrading for previously arrived foreign born workers. This is in line with theoretical predictions (e.g. Borjas, 2003), since new immigrants were closer substitutes for previous migrants than for natives, and should have not benefitted from the inflow of "very similar" workers.[22]

E2 Natives' Employment Gains: Where Did They Come From?

Table 5 in the paper shows that immigration increased natives' employment and occupational standing. My analysis suggests that two mechanisms were responsible for this pattern: first, immigration promoted firm growth and spurred industrialization; second, complementarities between immigrants and natives favored natives' occupational mobility. One remaining question, though, is: who were the newly employed natives? There are at least three possible, non-mutually exclusive, answers. First, immigration might have increased employment among previously unemployed natives. Second, the economic boom triggered by immigration, by increasing the opportunity cost of schooling, might have raised labor force participation of young native males who opted out of school. Third, by making cities economically more attractive, immigration may have favored internal migration of natives living elsewhere in the country.[23]

I start by investigating the first channel: if natives' employment gains accrued to previously unemployed workers, one would expect cities with a larger pool of unemployed individuals at baseline to experience higher employment growth in response to immigration. Table E4 tests this idea by interacting immigration with the 1910 unemployment rate, which is standardized to ease the interpretation of coefficients.[24] As already documented in Table 5 (column 1), immigration had a positive and statistically significant effect on natives' employment. However, this effect was lower in cities with higher initial unemployment. Specifically, in a city where the 1910 unemployment rate was one standard deviation above the sample mean, the (positive) effect of immigration on natives' employment was 20% lower.[25]

[22] See online appendix E3 below for the effects of immigration on employment of previously arrived immigrants.

[23] Carlana and Tabellini (2018) show that immigration increased fertility among native couples. A fourth potential channel could thus be that natives' employment increased because of higher population growth, due to fertility and not internal migration. This seems unlikely, however, given that it would take at least 15 to 20 years for newly born individuals to enter the labor force.

[24] In Table E4, I consider the unemployment rate among men, irrespective of their nativity. However, results are unchanged when using the unemployment rate of native men.

[25] In column 3, I augment the baseline specification (presented in column 2) by interacting year dummies

This finding suggests that natives' employment gains were unlikely to come from previously unemployed workers – if this were to be the case, one would expect the coefficient on the interaction term in Table E4 to be positive, rather than negative. In fact, consistent with the historical evidence reviewed in Section 2.2 of the paper, one interpretation of results in Table E4 is that immigration was economically beneficial because it allowed firms to overcome a persistent problem of labor scarcity. If previously unemployed workers did not represent the pool of natives responsible for the employment gains documented in the paper, it must be that either immigration favored internal migration or it pulled young natives into the labor force (and out of school), or both. In what follows, I provide evidence that both forces were at play.

First, in Table E5, I replicate results obtained in Carlana and Tabellini (2018), and show that immigration increased the probability of employment among native males in the age range 15-18 (Panel A). Symmetrically, the enrollment rate of the same age group fell significantly in response to immigration (Panel B), indicating that young natives dropped out of school to enter labor markets earlier in their life, because of the higher opportunity cost of schooling.[26] As discussed in Carlana and Tabellini (2018), this pattern is consistent with findings for the more recent period in Cascio and Narayan (2015) and Charles et al. (2018) among others. Note, however, that this channel is very unlikely to account for the majority of the employment effects brought about by immigration. On the one hand, the supply of native males between 15 and 18 was relatively limited, and cannot, by any means, explain the large employment effects presented in Table 5. On the other, young natives likely entered at the bottom of the occupational ladder – something that cannot explain the positive effect of immigration on natives' occupational ranking.[27]

Second, I test if, by making cities relatively more attractive, immigrants promoted in-migration of natives from other parts of the country. Since prior to 1940 statistics on internal migration in the US do not exist, I proxy for the number of internal movers by looking at the fraction of (native) males in working age that were born outside the state of their city of residence (see also Bandiera et al., 2019). Table E6 documents that immigration had a positive and statistically significant effect on the fraction of internal movers (column 1). Reassuringly, the 1900 to 1910 change in the fraction of natives born in another state does not predict the (instrumented) change in immigration in subsequent decades (column 2).

Interestingly, 2SLS coefficients in column 1 of Tables 5 (0.299) and E6 (0.296) are quan-

with the 1900 immigrant and city population. Reassuringly, results are unchanged.

[26] As also noted in Carlana and Tabellini (2018), there were no systematic differences depending on teenagers' parentage.

[27] Consistent with this reasoning, Carlana and Tabellini (2018) show that the positive effects of immigration on employment were strongest among native men between the age of 20 and 35.

titatively very close to each other, suggesting that internal migration likely represented the main mechanism behind the rise in natives' employment. One may wonder why firms did not create jobs for natives in the first place, or why native workers were not willing to move to urban areas even before the inflow of international immigrants. One answer, consistent with the historical evidence discussed in Section 2.2, is that immigration raised the supply of cheap labor and allowed firms to expand. As firms expanded, because of complementarity between the skills of immigrants and those of natives (Peri and Sparber, 2009), new, relatively more skilled jobs were created for native workers.[28] This interpretation squares well with the positive effect of immigration on natives' occupational scores (Table 5, column 2), and suggests that internal migrants were positively selected.

If immigration fostered in-migration of natives, it must be that some areas in the US lost population, possibly also experiencing economic losses. Section D2 reassuringly documents that immigration was unlikely to generate negative spillovers across the cities in my sample (see Table D5). This is important because it suggests that endogenous population responses are unlikely to introduce systematic (upwards) bias in my estimates for the economic effects of immigration. One possibility, consistent with findings in the recent working paper by Abramitzky et al. (2019), is that rural areas were negatively affected by immigration to cities, as workers and economic resources moved away from the periphery (i.e. the countryside) and into the core of local economies (i.e. cities). Investigating this idea goes beyond the scope of this paper. However, it is important to emphasize that none of the results in my work would be affected by the presence of rural-urban reallocation, since non-urban areas are not included in my sample (and thus do not serve as a "control group").

E3 Effects of Immigration on Previous Immigrants' Employment

In this section, I investigate the effects of immigration on employment of previously arrived immigrants. Relative to natives, new and old immigrants have relatively similar skills, and should thus be closer substitutes in production. Because of this, it would be surprising if immigration had a positive effect also on employment of previous migrants. Reassuringly, Figure E4 shows that this was not the case. In particular, here I plot the coefficient (and corresponding 95% confidence intervals) for the effect of immigration on employment of different groups of immigrants.[29]

Starting from the left, the first dot reports the coefficient for the effect of immigration

[28] In online appendix F, I show that a model of directed technological change with complementarities between natives and immigrants can explain the empirical results obtained in my paper.

[29] Since the dependent variable in this analysis refers to the foreign born, I re-estimate a version of equation (1) in the paper by also including the interaction between year dummies and the 1900 fraction of immigrants.

on natives' employment (which is positive and statistically significant). Next, moving from the left to the right of the figure on the x-axis, there is no positive effect of immigration on employment of immigrants from either Southern and Eastern (second group from the left) or Northern and Western (third group from the left) Europe. In fact, the coefficient is negative, although not statistically significant. Consistent with the idea that European immigrants gradually assimilated over time (Abramitzky and Boustan, 2017; Abramitzky et al., 2018), the point estimate is negative for relatively recent immigrants (i.e. those arrived between 10 and 20 years before), while it is zero for foreign born that had spent at least 20 years in the United States. In addition to providing a useful placebo check for the validity of the empirical strategy, Figure E4 also suggests that natives' backlash was unlikely to emerge because immigrants were able to upgrade faster than natives in this period (see the discussion in Section 6.3 of the paper).

E4 Immigration and Electricity in Manufacturing

One possible explanation for the positive effect of immigration on firms' productivity is that the inflow of immigrants encouraged the adoption of new technologies that made intensive use of electricity, e.g. the assembly line, in turn raising the demand for managers and supervisors, and for high skilled workers such as electricians (Goldin and Katz, 2009; Katz and Margo, 2014). Lack of systematic data on electricity use at the city level before 1940 prevents me from investigating this idea directly. However, I digitized data on the share of horsepower coming from electricity reported in the 1929 Census of Manufactures for selected US counties. Aggregating the data to the MSA level, and running cross-sectional regressions, I find that MSAs that received more immigrants between 1910 and 1930 had a larger share of power coming from electricity in 1930 (Table E7). Because of the cross-sectional nature of this exercise, the evidence in Table E7 should be interpreted as only suggestive.[30] Nevertheless, it is consistent with the idea that immigration may have induced a faster adoption of electricity and of related technologies.

E5 Immigration and Natives' Rents

To directly assess the causal effect of immigration on rents, ideally, one would want to exploit data that vary both over time and across neighborhoods within the same city. Unfortunately, such data are not consistently available for the historical period studied in my paper.

[30] All regressions control for state fixed effects. Columns 2 and 4 also include a number of 1900 controls such as city and immigrants population, skill ratios, and measures of industrial production.

Instead, to indirectly investigate the possibility that higher rents fueled natives' discontent, in Figure E5, I plot the relationship between the 1910 to 1930 instrumented change in immigration (x-axis) and 1930 natives' average rents (y-axis), after partialling out state fixed effects.[31] Because of the cross-sectional nature of this regression, results in Figure E5 should be interpreted with some caution, but they suggest that immigration was not correlated with rents paid by natives. This, in turn, weighs against the possibility that natives' backlash was triggered (mainly) by higher rents. As discussed in the main text of the paper, one potential explanation for why, despite its positive effect on productivity, immigration did not increase rents is that immigrants represented a production amenity, but were perceived as a consumption disamenity, as documented for the contemporaneous period by a number of papers in both Europe and the US (e.g. Card et al., 2012; Saiz and Wachter, 2011).

E6 Heterogeneous Effects of Immigration

E6.1 City Size and Population Density

In the paper, I argue that natives' backlash was due predominantly to cultural differences between immigrants and natives. However, an alternative interpretation is that, in spite of the positive economic effects, immigration created congestions and lowered living standards in already crowded cities. In Table E8, I explore this possibility by testing if immigration had heterogeneous effects depending on baseline city population (Panel A) and population density (Panel B). To ease the interpretation of 2SLS coefficients, both variables are standardized by subtracting their mean and dividing through their standard deviation. Population density was constructed dividing city population by land area, which was collected and digitized from the Financial Statistics of Cities.[32]

Starting from city population, Panel A documents that immigration lead to smaller reductions in public spending per capita or property tax rates (columns 1 and 2) in larger cities, but the increase in DW Nominate scores (column 4) was larger in more populated places. These patterns suggest that the relationship between political backlash and city size was mixed. Consistent with the presence of agglomeration economies, larger cities experienced a stronger industrial growth following immigration (columns 7 and 8), although here the employment gains were marginally lower. Next, when focusing on population density (Panel B) – probably the most accurate variable to capture congestion costs – there is some evidence that immigration lead to larger tax and spending cuts in more densely populated

[31] 1930 is the first year in which data on rents were collected by the US Census.

[32] Since neither population density nor land area is available for MSAs and city-Congressional District units, I computed density by taking the weighted average across the cities belonging to the MSA or the Congressional District.

cities, but had no differential effect on either the Democrats' vote share (column 3) or DW Nominate scores (column 4).[33]

Overall, the unstable patterns documented in Table E8 are not consistent with congestion costs being the main channel behind the political effects of immigration, although one cannot rule out the possibility that they played a role in fostering natives' grievances against immigrants.

E6.2 Average Length of Stay of Immigrants

Both historical and anecdotal evidence suggests that, until the early 1900s, immigrants represented an important political group in major US cities (e.g. Kleppner, 1982; Goldin, 1994; Shertzer, 2016). Hence, it might be interesting to explore if political reactions were mediated by the presence of more established immigrants. *Ex-ante*, the effects of a larger share of more established (and likely more assimilated) immigrants on city politics and, in particular, on natives' backlash is ambiguous. On the one hand, backlash can be decreasing in the time spent by previous immigrants in the US, if natives begin to consider the latter as part of the in-group of the society, and if established and new migrants belong to the same ethnic group. On the other hand, if new migrants belong to a different ethnic group than that of more established ones, due to "status" (or, housing and labor market) competition, old immigrants might join natives in their anti (new) immigrant positions (Goldin, 1994).

In Table E9, I test empirically these ideas by interacting the main effect of immigration with a dummy equal to 1 for cities where the average immigrants' length of stay at baseline was above the sample median (18 years). Except for the Democrats' vote share (column 3), the average length of stay in the US does not affect natives' political reactions in a statistically significant way. If anything, immigration seems to lead to higher political opposition in cities where the average length of stay of previous immigrants was higher, although standard errors are very large.[34]

Instead, the opposite holds for Presidential elections: in this case, the negative effect of immigration on the Democrats' vote share is entirely driven by cities where the average length of stay of previous immigrants was below the sample median. One interpretation for this finding, strongly consistent with Shertzer (2016), is that in cities with more assimilated ethnic enclaves, new immigrants were more effectively mobilized to express their (pro-immigration) preferences. Finally, as expected, there is no significantly different eco-

[33] Except for occupational scores (column 6), which increased more in more densely populated places, immigration did not have a statistically different effect on economic outcomes in more vs less densely populated cities.

[34] This interpretation would be consisent with Goldin (1994).

nomic effect of immigration depending on immigrants' length of stay at baseline (columns 5 to 8).

E7 Religion and the Economic Effects of Immigration

Table 6 in the paper shows that political discontent emerged entirely when immigrants came from Catholic or Jewish, but not from Protestant, countries. My interpretation is that this was due to cultural differences between immigrants and natives, which were significantly more pronounced for Catholics and Jews (e.g. Higham, 1955). However, an alternative interpretation is that non-Protestant immigrants had a negative (or, a less positive) economic effect on natives. To rule out this possibility, in Figures E6 and E7, I plot the effect of Protestant and non-Protestant immigration on, respectively, natives' employment and log of value added by manufacturing per establishment. To ease the interpretation of results, as in Table 6, I standardize the inflow of immigrants for each religious group by subtracting the mean and dividing through the standard deviation.

Immigrants from the two religious groups did not have a statistically different impact on either natives' labor market outcomes or economic activity. In the full sample, non-Protestant immigration has a somewhat lower effect on natives' employment (left panel in Figure E6). However, once the city of Passaic (NJ) is excluded, the effects of immigration from Protestant and non-Protestant countries on natives' employment become almost identical (right hand side panel in Figure E6).

These results suggest that political backlash triggered by non-Protestant immigration did not come from a differential effect that these immigrants had on natives' labor market outcomes, and provide further support for the cultural hypothesis advanced in the paper. Importantly, as for Tables 6 and 7, results in Figures E6 and E7 are robust to controlling simultaneously for an index of average literacy of the foreign born – this is an important control, since one may be worried that Protestant immigrants were more skilled and better educated than non-Protestant ones (although, the Jews are a clear counterexample to this possibility).

E8 A Horse-Race Between Religion and Linguistic Distance

Tables 6 and 7 in the paper document that political discontent: *i*) took place only when immigrants came from non-Protestant countries; and *ii*) was increasing in the linguistic distance between immigrants and natives. In this section, I investigate if either of the two measures of cultural diversity dominates over the other by replicating the analysis in Table 7 including simultaneously religion and linguistic distance. To ease the interpretation of results, the fraction of immigrants from Protestant and non-Protestant countries are both standardized by subtracting their mean and dividing through their standard deviation. Thus, as for the index of linguistic distance, the coefficient on immigration from each religious group should be interpreted as the effect of a one standard deviation increase in the fraction of immigrants from Protestant and non-Protestant countries.

2SLS results are reported in Table E10. When focusing on taxes and spending (columns 1 to 4), only the index of linguistic distance is statistically significant. Instead, even if the coefficient on immigration from non-Protestant countries is negative, it is quantitatively small and imprecisely estimated. However, for electoral outcomes (columns 5 to 8), the opposite pattern emerges: only immigration from non-Protestant countries is associated with a significant reduction (resp. increase) in support for Democrats (resp. in legislators' ideology and support for the 1924 Immigration Act).[35] One possible interpretation is that the salience of different cultural attributes might differ across political issues.

E9 Ethnic Diversity

A large literature has shown that ethnic diversity is associated with lower public goods provision and with more limited redistribution (e.g. Alesina et al., 1999; Beach and Jones, 2017; Luttmer, 2001). The argument advanced in these works is that both altruism and the utility from public goods' consumption are lower when they involve inter-ethnic interactions. It follows that, if immigration reduced natives' demand for public goods by increasing ethnic diversity, this effect should be stronger when the ethnic composition of foreign born was more heterogeneous. Also, a more diverse foreign born population may reduce immigrants' ability to act as a unified political group, in turn reinforcing the effectiveness of natives' actions.[36] To test these conjectures, I interact immigration, Imm_{cst}, with an index of ethnic diversity (Alesina et al., 1999) of the foreign born population, $ED_{cst} = 1 - \sum_j \left(sh^j_{cst}\right)^2$, where sh^j_{cst} is the share of ethnic group j among the foreign born population introduced in the previous section. I then estimate

$$y_{cst} = \gamma_c + \delta_{st} + \beta_1 Imm_{cst} + \beta_2 Imm_{cst} * ED_{cst} + \beta_3 ED_{cst} + u_{cst} \tag{E1}$$

As in the main text (Section 7.2), to ease the interpretation of results, which are reported in Table E11, I standardize ED_{cst} by subtracting its mean and dividing it by its standard deviation. The coefficient on the interaction between immigration and ethnic diversity, β_2,

[35] Somewhat surprisingly, the index of linguistic distance seems to have a positive effect on the support for Democrats (column 5).

[36] An alternative view is discussed in Borjas (2016), who suggests that higher diversity could make immigration less salient, in turn reducing natives' backlash.

can thus be interpreted as the additional effect of immigration for a city with ethnic diversity one standard deviation above the sample mean. When estimating ($E1$), the interaction term, $Imm_{cst} * ED_{cst}$, is instrumented with the interaction between ED_{cst} and predicted immigration, i.e. Z_{cst} in equation (2) in the main text.

The (negative) effect of immigration on tax revenues per capita is larger when ethnic diversity among foreign born is higher (columns 1 and 2). Somewhat surprisingly, though, when looking at tax rates (column 3), the coefficient on the interaction between immigration and ethnic diversity is not statistically significant, even if it is negative. Next, in line with columns 1 and 2, column 4 shows that the effects of immigration on public spending are larger (i.e. more negative) when ethnic diversity is higher. This result is consistent with the existing literature (e.g. Alesina et al., 1999), and corroborates the interpretation advanced in Section 5 that immigrants lowered natives' utility from consumption of public goods by increasing ethnic diversity.

Table E1. Immigration and Natives' Occupational Upgrading

	High Immigrants' Competition			Low Immigrants' Competition		
	(1)	(2)	(3)	(4)	(5)	(6)
Fraction Natives:	Manuf. Laborers	Waiters	Blacksmiths	Manuf. Foremen	Electricians	Engineers
Panel A: OLS						
Fr. Immigrants	-0.026	-0.015	-0.008**	0.020***	0.010**	0.017*
	(0.048)	(0.011)	(0.004)	(0.005)	(0.004)	(0.010)
Panel B: 2SLS						
Fr. Immigrants	-0.057	-0.015	-0.011**	0.028***	0.011***	0.031***
	(0.037)	(0.013)	(0.005)	(0.006)	(0.004)	(0.008)
F-stat	251.3	251.3	251.3	251.3	251.3	251.3
Mean dep var.	0.038	0.007	0.006	0.007	0.010	0.021
Natives/Immigrants Ratio (1910)	0.220	0.583	0.750	3.500	3.667	4.200
Observations	538	538	538	538	538	538

Note: The dependent variable is the fraction of native males in working age (15-65) employed in the occupation reported at the top of each column. Panels A and B report, respectively, OLS and 2SLS results. *Fr. Immigrants* is the fraction of immigrants arrived in the previous decade over predicted city population, and is instrumented using the baseline version of the instrument constructed in Section 4.2 (see (2) in the main text). F-stat refers to the K-P F-stat for weak instrument. *Natives/Immigrants Ratio (1910)* refers to the ratio of native to immigrant workers in a given skill category or occupation in 1910. All regressions include city and state by year fixed effects. The mean of each dependent variable at baseline is shown at the bottom of the table. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table E2. Labor Market Characteristics of Immigrants and Natives

	Natives	Immigrants	Ratio (Natives to Immigrants)
Panel A: Industries			
Manufacturing	0.216	0.437	0.494
Construction	0.089	0.107	0.832
Trade	0.182	0.169	1.077
Services (excluding personal)	0.098	0.037	2.649
Public Sector	0.034	0.005	6.800
Panel B: Skills and Broad Occupational Groups			
High Skilled	0.345	0.126	2.738
Unskilled	0.347	0.614	0.565
Clerical and Sales	0.198	0.065	3.046
Laborers	0.110	0.311	0.354
Panel C: Narrowly Defined Occupations			
Manuf. Laborers	0.038	0.150	0.253
Waiters	0.007	0.012	0.583
Blacksmiths	0.006	0.008	0.750
Manuf. Supervisors	0.007	0.002	3.500
Electricians	0.010	0.003	3.667
Engineers	0.021	0.005	4.200

Note: this table presents the fraction of natives and of immigrants in selected industries (Panel A), skill categories (Panel B), and narrowly defined occupations (Panel C) in 1910. For both natives and immigrants, the sample is restricted to males in working age living in the 180 cities in my sample. The last column on the right shows the ratio of the fraction of natives over the fraction of immigrants in a given industry/skill category/occupation.

Table E3. Immigrants' Characteristics and Natives' Employment

Dependent Variable:	Natives' Employment		Natives' Log Occupational Scores	
	(1) OLS	(2) 2SLS	(3) OLS	(4) 2SLS
Panel A: Linguistically Far vs Close				
Fr. Imm. Far	0.012***	0.011***	0.003*	0.005***
	(0.002)	(0.003)	(0.002)	(0.002)
Fr. Imm. Close	0.003	0.006	-0.008***	-0.007*
	(0.003)	(0.004)	(0.003)	(0.004)
KP F-stat		22.20		22.20
F-stat (Far)		86.31		86.31
F-stat (Close)		27.11		27.11
Panel B: New vs Old Sending Regions				
Fr. Imm. New	0.011***	0.011***	0.003**	0.006***
	(0.002)	(0.003)	(0.002)	(0.002)
Fr. Imm. Old	0.003	0.007	-0.008**	-0.008*
	(0.003)	(0.004)	(0.003)	(0.004)
KP F-stat		20.91		20.91
F-stat (New)		88.52		88.52
F-stat (Old)		29.44		29.44
Observations	538	538	538	538

Note: this table presents results for a balanced panel of the 180 US cities with at least 30,000 residents in each Census year 1910, 1920, and 1930. The sample is restricted to native men in the age range 15 to 65 who are not enrolled in schools. Panels A and B classify immigrants as coming from linguistically far vs close and new vs old sending countries. The dependent variable is displayed at the top of each column. *Fr. Imm. Far* (resp. *Close*) refers to the fraction of immigrants arrived in the previous decade that come from linguistically far (resp. close) countries, over predicted city population. *Fr. Imm_New* (resp. *Close*) refers to the fraction of immigrants arrived in the previous decade that come from new (resp. old) source countries, over predicted city population. Each endogenous regressor is instrumented with the predicted fraction of immigrants (see (2) in Section 4.2), obtained by summing (predicted) immigration across linguistically far and close (Panel A) and new and old (Panel B) sending countries. F-stat (Far), F-stat (Close), F-stat (New), and F-stat (Old) refer to the partial F-stats for joint significance of the instruments in the two separate first-stage regressions. KP F-stat is the Kleibergen-Paap F stat for joint significance of instruments. All regressions include city and state by year fixed effects. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table E4. Immigration, Natives' Employment, and Labor Scarcity

	Dep. Variable: *Natives' Employment to Population Ratio*		
	(1)	(2)	(3)
Fr. Immigrants	0.299***	0.292***	0.207***
	(0.064)	(0.074)	(0.071)
(Fr. Immigrants)*Unemployment		-0.064**	-0.075**
		(0.031)	(0.035)
KP F-stat	251.3	98.38	38.78
AP F-stat (Fr. Immigrants)		151.8	46.57
AP F-stat (Interaction)		171.9	155.3
Year by 1900 Fr. Immigrants			X
Observations	538	538	538

Note: this table reports 2SLS estimates for the effects of immigration on natives' employment to population ratio. The sample is restricted to native men 15-65 living in the 180 cities in my sample (see Table A2). *Fr. Immigrants* is the fraction of immigrants arrived in the previous decade over predicted city population, and is instrumented using the baseline version of the instrument constructed in Section 4.2 (see (2) in the main text). *Unemployment* is the unemployment rate among men 15-65 at baseline, standardized by subtracting the mean and dividing through the standard deviation. Identical results are obtained when using the unemployment rate of native men. Column 3 also controls for the interaction between year dummies and 1900 city and immigrant population. F-stat refers to the K-P F-stat for weak instrument. AP F-stat (Fr. Immigrants) and AP F-stat (Interaction) refer to the partial F-stats for joint significance of the instruments in the two separate first-stage regressions. All regressions include city and state by year fixed effects. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table E5. Enrollment, and Labor Force Participation of Young Natives

	(1)	(2)	(3)	(4)
	Panel A. Employment to Population Ratio, Native Males (15-18)			
Fr. Immigrants	0.307***	0.312***	0.150*	0.261**
	(0.103)	(0.105)	(0.084)	(0.116)
Mean Dep. Variable	0.602	0.595	0.547	0.633
	Panel B. Share Enrolled in School, Native Males (15-18)			
Fr. Immigrants	-0.131**	-0.139**	-0.081	-0.042
	(0.065)	(0.070)	(0.072)	(0.073)
Mean Dep. Variable	0.323	0.338	0.388	0.299
Observations	538	538	538	538
F-stat	251.3	251.3	251.3	251.3
Group	All natives	All native whites	Native parentage	Mixed/foreign parentage

Note: The dependent variable is the fraction of native males in age range 15-18 employed (Panel A) and enrolled in school (Panel B). *Fr. Immigrants* is the fraction of immigrants arrived in the previous decade over predicted city population, and is instrumented using the baseline version of the instrument constructed in Section 4.2 (see (2) in the main text). F-stat refers to the K-P F-stat for weak instrument. The bottom row of the table reports the parentage of the group considered. Column 1 considers all natives, irrespective of race and parentage; column 2 restricts attention to native whites; column 3 only considers natives of native parentage; column 4 only considers natives of mixed or foreign parentage. All regressions include city and state by year fixed effects. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table E6. Immigration and Internal Migration

	Dep. Variable*: Fr. Natives Born Outside the State*			
	(1)	(2)	(3)	(4)
Panel A: OLS				
Fr. Immigrants	0.290***	0.090	0.244	0.307***
	(0.097)	(0.126)	(0.224)	(0.099)
Panel B: 2SLS				
Fr. Immigrants	0.296***	0.044	-0.169	0.377***
	(0.096)	(0.115)	(0.190)	(0.113)
F-stat	288.3	313.0	116.0	144.2
Mean dep var	0.350	0.350	0.391	0.264
Cities	180	180	90	90
Observations	540	180	270	270
Sample	Full	Full	High growth	Low growth
Pre-period		X		

Note: this Table presents results for a balanced panel of the 180 US cities with at least 30,000 residents in each Census year 1910, 1920, and 1930. Panels A and B report, respectively, OLS and 2SLS results. The dependent variable is the fraction of native males in working age that were born outside the state of their city of residence. *Fr. Immigrants* is the fraction of immigrants arrived in the previous decade over predicted city population, and is instrumented using the baseline version of the instrument constructed in Section 4.2 (see (2) in the main text). Col 2 reports results for a regression of the 1900-1910 change in the dependent variable against the 1910 to 1930 change in the fraction of immigrants. Col 3 (resp. 4) restricts the sample to the 90 cities with population growth between 1910 and 1930 above (resp. below) median. F-stat refers to the K-P F-stat for weak instrument. All regressions include city and state by year fixed effects. The mean of each dependent variable at baseline is shown at the bottom of the Table. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table E7. Share of Electric Power in Manufacture (1930)

	Dep. Variable: *Share of Horsepower from Purchased Electricity*			
	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Fr. Immigrants	2.449***	1.799**	2.520***	1.867**
	(0.557)	(0.774)	(0.522)	(0.744)
F-stat			61.14	27.23
Mean Dep. Var.	0.617	0.617	0.617	0.617
Additional Controls		X		X
MSAs	101	101	101	101

Note: the sample is restricted to the 101 MSAs spanning counties for which data on purchased electricity used in production was reported in the 1929 Census of Manufacture, and that include at least one of the 180 cities with at least 30,000 residents in each Census year 1910, 1920, and 1930. MSA boundaries are fixed to 1940. Cols 1 and 2 (resp. 3 and 4) present OLS (resp. 2SLS) results. The dependent variable is the share of horsepower coming from purchased electricity in 1930. *Fr. Immigrants* is the 1910 to 1930 change in the fraction of immigrants arrived in the previous decade over predicted city population, and is instrumented using the baseline version of the instrument constructed in Section 4.2 (see (2) in the main text). F-stat refers to the K-P F-stat for weak instrument. All regressions include state fixed effects. Cols 2 and 4 also control for the fraction of immigrants and the fraction of blacks in 1900, and the log of value added per establishment in 1904. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table E8. Heterogeneity: City Size and Population Density

	(1) Public Spending PC	(2) Prop. Tax Rate	(3) Democrats' Vote Share	(4) DW Nominate Scores	(5) Employed	(6) Log Occ. Scores	(7) Log Value Added per Establ.	(8) Log Establ. Size
Panel A. City population								
Fr. Immigrants	-18.08***	-35.37	-0.346**	1.023	0.261***	0.062	2.137***	2.087***
	(3.523)	(25.78)	(0.139)	(0.749)	(0.042)	(0.040)	(0.605)	(0.516)
Interaction	3.126***	11.43***	-0.047***	0.476***	-0.028***	0.007	0.225***	0.357***
	(0.992)	(3.211)	(0.018)	(0.092)	(0.005)	(0.007)	(0.054)	(0.081)
KP F-stat	131.8	132.9	34.28	9.454	118.4	118.4	131.8	131.8
AP F-stat (Imm.)	133.1	134.2	70.25	16.93	119.7	119.7	133.2	133.2
AP F-stat(Int.)	2,289	2,282	1,193	4,454	2,240	2,240	2,483	2,483
Observations	540	539	378	470	538	538	525	525
Panel B. Density								
Fr. Immigrants	-12.36***	-28.70	-0.370***	1.698**	0.270***	0.013	2.175***	1.974***
	(4.303)	(31.052)	(0.138)	(0.751)	(0.040)	(0.042)	(0.654)	(0.573)
Interaction	-5.493***	-5.232	-0.050	-0.022	-0.023	0.064***	-0.001	0.193
	(1.292)	(8.435)	(0.069)	(0.471)	(0.016)	(0.021)	(0.399)	(0.355)
KP F-stat	114.5	115.5	36.36	13.94	101.0	101.0	113.4	113.4
AP F-stat (Imm.)	130.3	130.7	44.95	19.76	116.6	116.6	129.4	129.4
AP F-stat(Int.)	9,267	9,187	121.2	39.37	9,536	9,536	9,282	9,282
Observations	531	530	372	451	529	529	519	519

Note: this table tests the heterogeneity of results for the 8 outcomes reported at the top of each column. Panel A (resp. Panel B) interacts the fraction of immigrants with the 1910 standardized city population (resp. population density). Both variables are standardized by subtracting their mean and dividing through the standard deviation. The interaction term is instrumented with the interaction between the instrument for immigration and the relevant interaction variable. Population density is constructed by dividing city population by city area, available from the Financial Statistics of Cities. Land area is not available for San Diego (CA), Springfield (MO), and Superior (WI). KP F-stat is the Kleibergen-Paap F stat for joint significance of instruments. AP F-stat (Imm.) and AP F-stat (Int.) refer to the partial F-stats for joint significance of the instruments in the two separate first-stage regressions. All regressions include city and state by year fixed effects. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table E9. Heterogeneity: Average Length of Stay

	(1) Public Spending PC	(2) Prop. Tax Rate	(3) Democrats' Vote Share	(4) DW Nominate Scores	(5) Employed	(6) Log Occ. Scores	(7) Log Value Added per Establ.	(8) Log Establ. Size
Fr. Immigrants	-8.890*	-31.713*	-0.337**	1.729**	0.294***	0.102**	3.059***	2.675***
	(4.771)	(17.95)	(0.146)	(0.864)	(0.068)	(0.041)	(1.010)	(0.865)
Fr. Imm.*1[high	-2.825	-35.71	0.784**	0.861	-0.078	0.070	2.499	2.097
length of stay]	(17.57)	(46.06)	(0.374)	(1.571)	(0.157)	(0.175)	(1.793)	(1.537)
KP F-stat	40.55	43.09	29.68	15.42	38.67	38.67	37.32	37.32
AP F-stat (Imm.)	201.7	203.2	41.43	13.90	179.7	179.7	196.7	196.7
AP F-stat(Int.)	138.7	145.5	46.53	52.34	138.4	138.4	132.6	132.6
Observations	540	539	378	460	538	538	525	525

Note: this table tests the heterogeneity of results for the 8 outcomes reported at the top of each column by interacting the fraction of immigrants with a dummy equal to 1 if the average length of stay of immigrants living in the city in 1910 was above the median (18 years). The interaction term is instrumented with the interaction between the instrument for immigration and the relevant interaction variable. KP F-stat is the Kleibergen-Paap F stat for joint significance of instruments. AP F-stat (Imm.) and AP F-stat (Int.) refer to the partial F-stats for joint significance of the instruments in the two separate first-stage regressions. All regressions include city and state by year fixed effects. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table E10. A Horse-Race Between Religion and Linguistic Distance (2SLS)

Dep. Var.	(1) Total tax revenues PC	(2) Property tax revenues PC	(3) Property tax rate	(4) Public spending PC	(5) Dem-Rep. margin	(6) Smith's pct. votes	(7) DW Nominate Scores	(8) 1[Restrict Immigration]
Ling. Distance	-0.860*	-0.802*	-2.309	-0.516*	0.036**	0.065*	0.028	-0.033
	(0.474)	(0.463)	(1.593)	(0.303)	(0.015)	(0.033)	(0.030)	(0.061)
Fr. Non-Prot	-0.108	-0.104	-0.122	-0.122	-0.041***	-0.148***	0.049	0.157***
	(0.417)	(0.382)	(0.879)	(0.257)	(0.013)	(0.031)	(0.037)	(0.060)
Fr. Prot	0.213	0.086	-0.051	0.005	-0.009	0.072	0.006	-0.071
	(0.411)	(0.375)	(1.029)	(0.267)	(0.013)	(0.044)	(0.030)	(0.081)
KP F-stat	14.72	14.72	15.01	14.72	8.111	5.841	13.57	9.314
F-stat (Ling.)	37.91	37.91	40.05	37.91	30.54	30.33	25.25	19.45
F-stat (Non-Prot)	65.52	65.52	66.81	65.52	39.39	29.81	57.43	46.80
F-stat (Prot)	20.91	20.91	20.66	20.91	27.37	23.31	23.01	16.79
Mean of dep var.	12.76	12.10	19.75	12.16	0.180	0.398	0.165	0.676
Observations	540	540	539	540	378	126	460	155

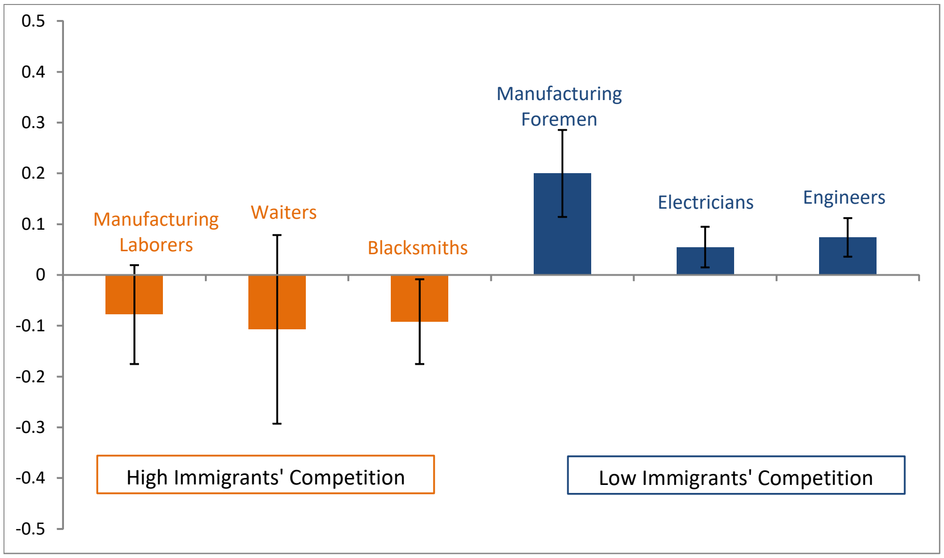
Note: this table replicates results reported in Table 7 in the main text, including simultaneously immigration from different religious groups and the index of linguistic distance introduced in Section 7.2 in the paper. The dependent variable is displayed at the top of each column. To ease the interpretation of results, the fraction of immigrants from Protestant (*Fr. Prot*) and from non-Protestant (*Fr. Non-Prot*) countries are both standardized by subtracting their mean and dividing them by their standard deviation. All regressors are instrumented using the instruments constructed in the main text. KP F-stat is the Kleibergen-Paap F stat for joint significance of instruments. F-stat (Ling.), F-stat (Non-Prot), and F-stat(Prot) refer to the partial F-stats for joint significance of the instruments in the three separate first-stage regressions. Cols 1 to 4 (resp. 5) include city (resp. MSA) and state by year fixed effects, while Col 7 includes congressional district by city and state by year fixed effects. Cols 6 and 8 present results from a cross-sectional regression and control for state dummies. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Table E11. Immigration and Ethnic Diversity

Dep. Var.	(1) Total tax revenues PC	(2) Property tax revenues PC	(3) Property tax rate	(4) Public spending PC	(5) Education	(6) Police	(7) Charities and Hospitals	(8) Sanitation
Panel A: OLS								
Fr. Immigrants	-7.092	-6.817	-28.35***	-4.803	-7.178***	0.263	0.828	-0.433
	(6.030)	(5.055)	(10.82)	(3.705)	(2.248)	(0.586)	(0.701)	(0.667)
(Fr.Imm.)*ED	-9.749**	-9.390*	0.626	-6.107**	-2.882**	-0.760*	-0.480	-1.614**
	(4.647)	(4.749)	(7.772)	(2.969)	(1.253)	(0.423)	(0.740)	(0.672)
Panel B: 2SLS								
Fr. Immigrants	-9.885	-10.133*	-30.31*	-7.564*	-5.933***	-0.305	-0.759	-1.211*
	(6.477)	(5.934)	(17.709)	(4.125)	(2.097)	(0.680)	(1.703)	(0.716)
(Fr. Imm.)*ED	-15.43***	-15.28***	-13.71	-10.69***	-1.903	-0.223	-0.800	-0.897
	(4.587)	(4.458)	(11.26)	(3.665)	(1.414)	(0.648)	(0.802)	(0.562)
KP F-stat	21.39	21.39	21.37	21.39	20.80	21.39	15.80	21.39
F-stat (Imm.)	146.4	146.4	148.4	146.4	130.3	146.4	114.4	146.4
F-stat (Imm_ED)	18.31	18.31	18.30	18.31	30.06	18.31	16.00	18.31
Mean of dep var	12.76	12.10	19.75	12.16	4.250	1.338	0.635	1.129
Observations	540	540	539	540	534	540	516	540

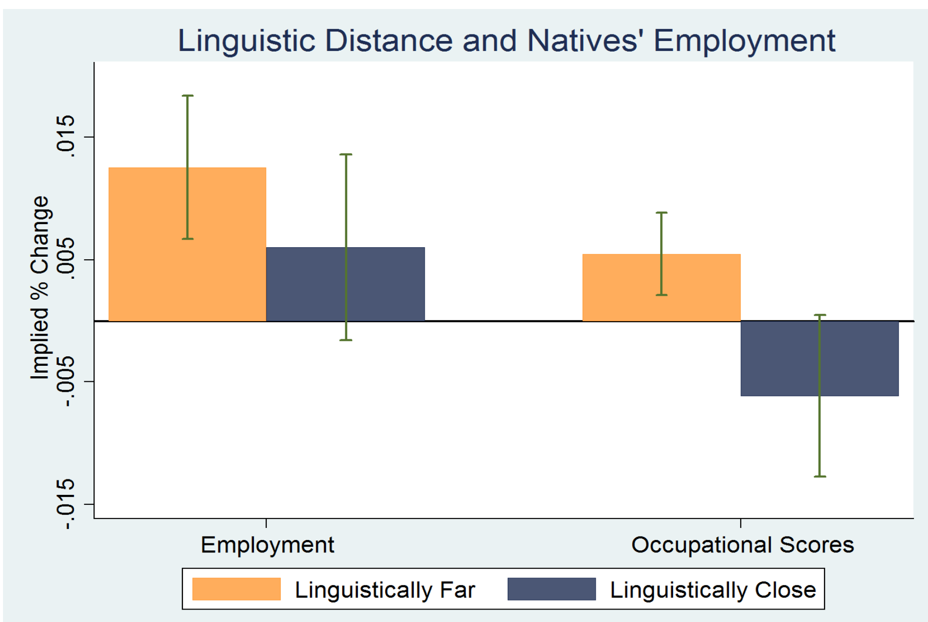
Note: this Table presents results for a balanced panel of the 180 US cities with at least 30,000 residents in each Census year 1910, 1920, and 1930. Panels A and B report, respectively, OLS and 2SLS results. The dependent variable is displayed at the top of each column. In Cols 5 to 8, the dependent variable is spending per capita on the category listed at the top of the column. *Fr. Immigrants* refers to the fraction of immigrants arrived in the previous decade over predicted city population, and is instrumented using the baseline version of the instrument constructed in Section 4.2 (see (2) in the main text). (*Fr. Imm.)*ED* is the interaction between the fraction of immigrants and the (standardized) index of ethnic diversity of the foreign born population constructed in online appendix E9. It is instrumented with the interaction between predicted immigration and the index of ethnic diversity. F-stat (Imm.) and F-stat (Imm_ED) refer to the partial F-stats for joint significance of the instruments in the two separate first-stage regressions. KP F-stat is the Kleibergen-Paap F stat for joint significance of instruments. All regressions include the main effect of the index of ethnic diversity, and control for city and state by year fixed effects. Robust standard errors, clustered at the MSA level, in parenthesis. *** p<0.01; ** p<0.05; * p<0.1.

Figure E1. Percent Change in Fraction of Natives in Selected Occupations



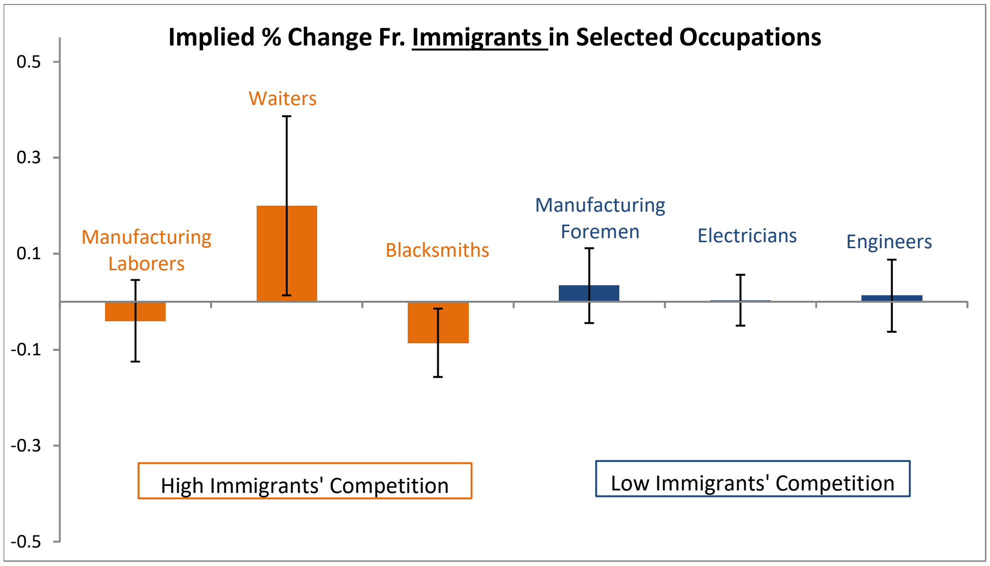
Note: the figure plots the percent change in the fraction of natives in each occupation (relative to its 1910 mean) implied by a one standard deviation increase in immigration, according to 2SLS estimates (with corresponding 95% confidence intervals) reported in Table E1.

Figure E2. Linguistic Distance and Natives' Labor Market Outcomes



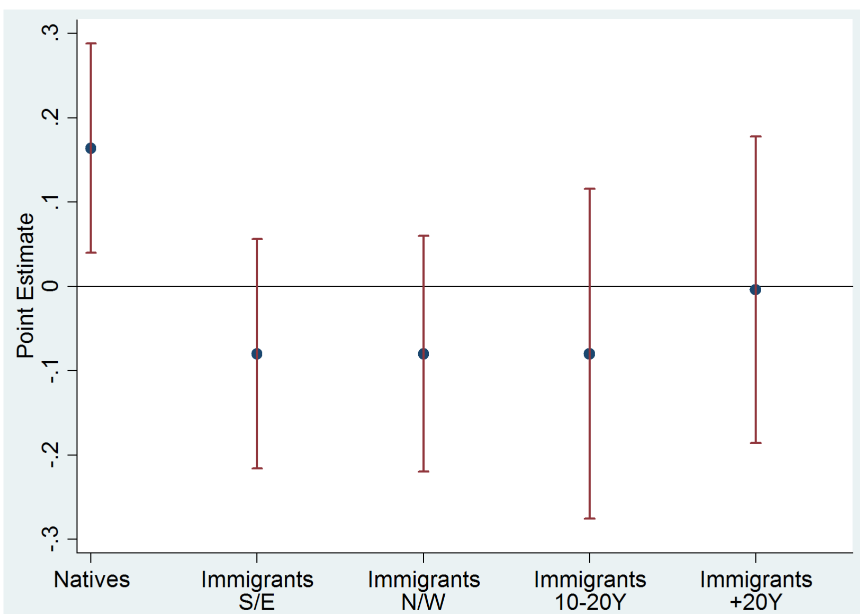
Note: this figure plots the 2SLS estimates for the percent change in employment and occupational scores for native men of working age implied by one standard deviation change (0.05) in the fraction of immigrants with associated 95% confidence intervals, for immigrants coming from linguistically far and linguistically close countries. Countries are classified as linguistically far (resp. close) if they are above (resp. below) the median linguistic distance from English as computed by Chiswick and Miller (2005). See also Table E3.

Figure E3. Percent Change in Fraction of Immigrants in Selected Occupations



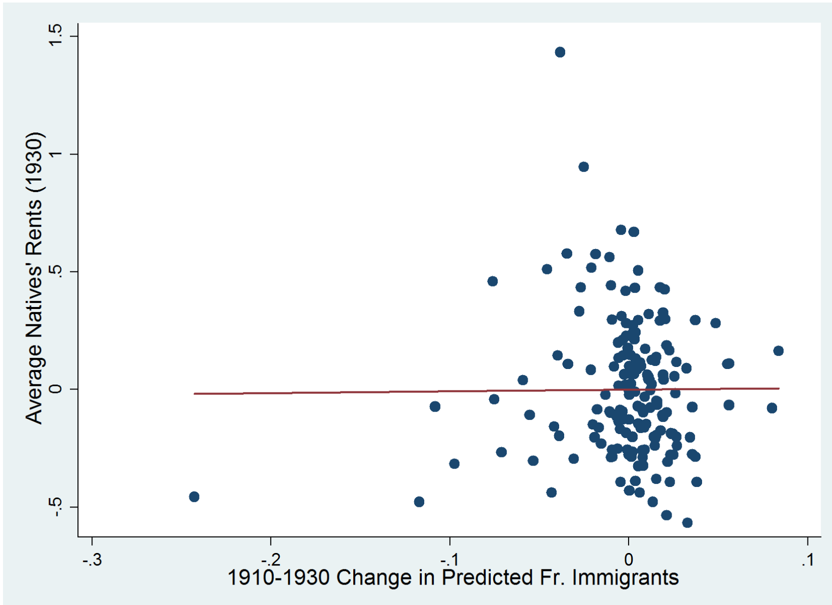
Note: the figure replicates Figure E1 by plotting the percent change in the fraction of immigrants arrived at least 10 year before in each occupation (relative to its 1910 mean) implied by a one standard deviation increase in immigration, according to 2SLS estimates (with corresponding 95% confidence intervals).

Figure E4. Effects of Immigration on Previously Arrived Immigrants



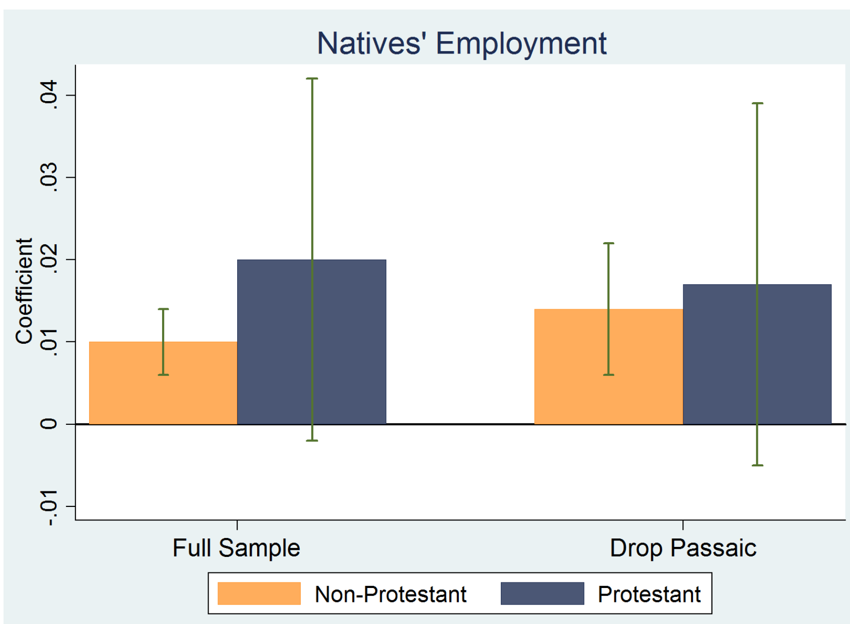
Note: the figure plots the coefficient (with corresponding 95% confidence intervals) from a regression of immigration on employment of different groups of men in age (15-65) who were not in school. The fraction of immigrants is instrumented with the instrument constructed in equation (2) of Section 4.2 in the main text. All regressions control for city and state by year fixed effects, and include interactions between the 1900 fraction of immigrants and year dummies. *Immigrants S/E* (resp. *N/W*) refers to immigrants from Eastern and Southern (resp. Northern and Western) Europe. *Immigrants 10-20Y* (resp. *+20Y*) refers to immigrants that spent between 10 and 20 (resp. more than 20) years in the United States.

Figure E5. 1910-1930 Immigration and 1930 Natives' Rents



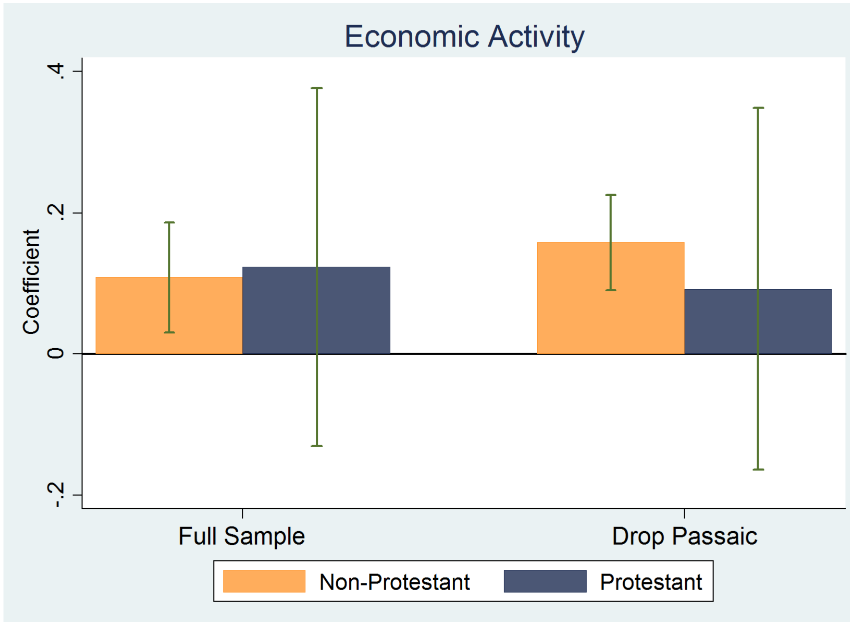
Note: this figure plots the relationship between the log of 1930 average rents paid by natives (y-axis) and the 1910 to 1930 predicted change in immigration (x-axis) after partialling out state fixed effects.

Figure E6. Religion and Natives' Employment



Note: the figure plots the 2SLS coefficient (with corresponding 95% confidence intervals) for the effects of non-Protestant (orange bars) and Protestant (blue bars) immigrants on natives' employment. The dependent variable is the employment to population ratio for native men of age 15-65. The regressors of interest are the fraction of non-Protestant and Protestant immigrants, which are standardized by subtracting their mean and dividing through their standard deviation. The bars on the left (resp. on the right) plot results obtained for the full sample (resp. dropping the city of Passaic, NJ). All regressions control for city and state by year fixed effects.

Figure E7. Religion and Economic Activity



Note: the figure plots the 2SLS coefficient (with corresponding 95% confidence intervals) for the effects of non-Protestant (orange bars) and Protestant (blue bars) immigrants on the log of value added by manufacturing per establishment. The regressors of interest are the fraction of non-Protestant and Protestant immigrants, which are standardized by subtracting their mean and dividing through their standard deviation. The bars on the left (resp. on the right) plot results obtained for the full sample (resp. dropping the city of Passaic, NJ). All regressions control for city and state by year fixed effects.

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