# The Effect of Immigration on Local Labor Markets: Lessons from the 1920s Border Closure

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Appendix Material – For On-line Publication Only

APPENDIX FIGURES AND TABLES
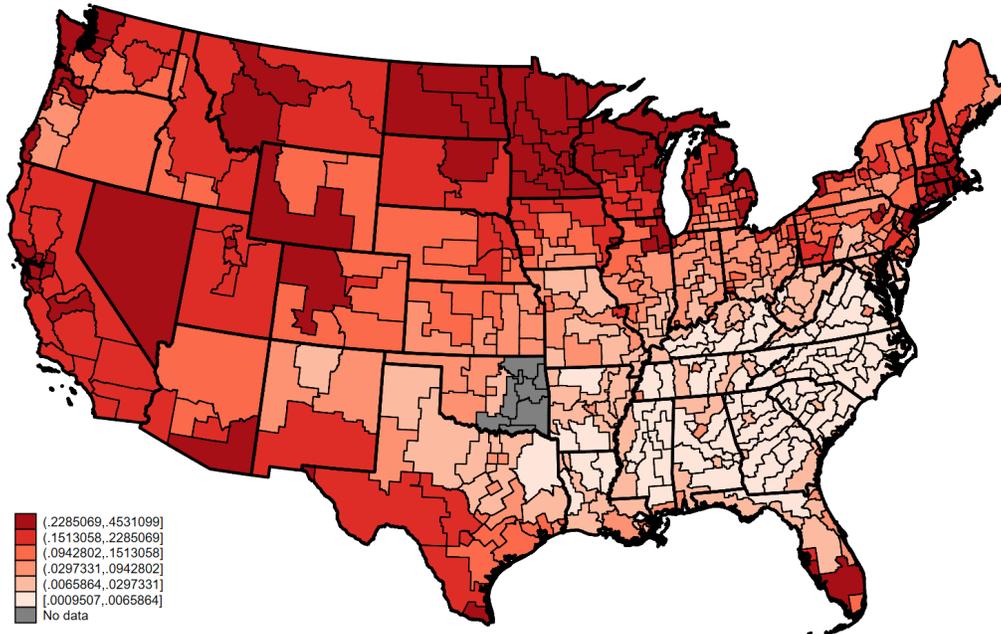
(a) SEA Foreign-Born Share, 1900
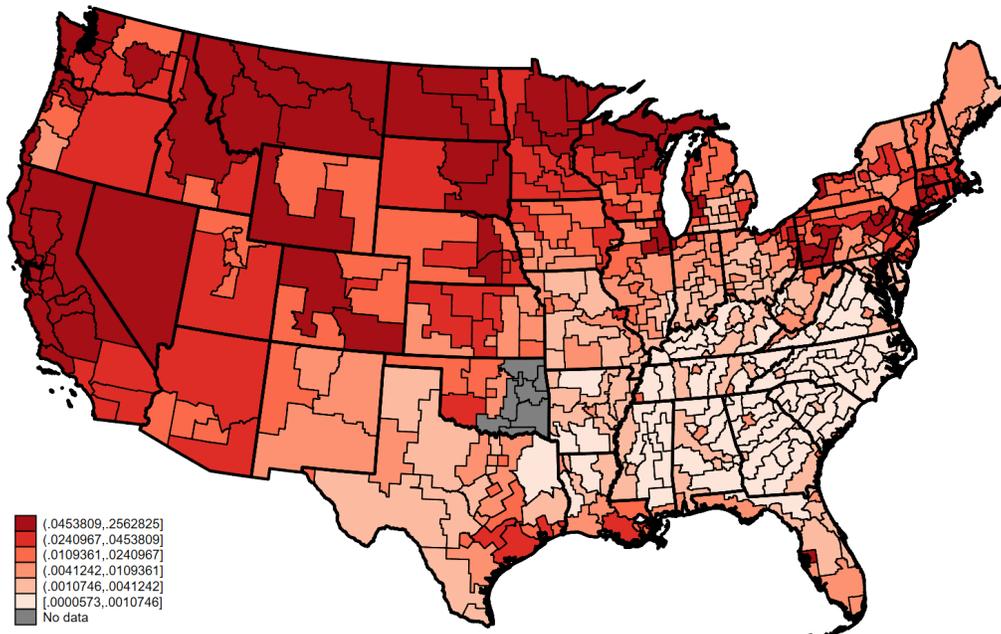
(b) SEA Quota Exposure Measure QE_2

Figure A1. : SEA Foreign Born Share (1900) and Quota Exposure Measure QE_2

Note: Decadal The figures show the 460 SEAs used in the analysis and assign a darker red color to SEAs with higher foreign-born share in 1900 in (a) and to SEAs with a higher quota exposure measure QE_2 (see equation (2)).

Table A1—: Border Closure Policy and World War I Intensity Measures by Country

Country Group	(1) Quota Intensity 1	(2) Quota Intensity 2	(3) World War I Intensity
A. High-Restriction Countries			
Asia	1	0.947	0.496
Central Europe	1	0.968	0.978
Eastern Europe	1	0.935	0.957
Greece	1	0.965	0.502
Italy	1	0.962	0.887
Portugal	1	0.945	0.411
Rest of World	1	0.686	0.000
Russia	1	0.933	0.950
Spain	1	0.980	0.140
B. Low-Restriction Countries			
Germany	0	0	0.919
Ireland	0	0	0.789
Scandinavia	0	0.100	0.675
United Kingdom	0	0	0.795
Western Europe	0	0.559	0.716
C. Non-Restriction Countries			
Canada	0	0	0
Caribbean	0	0	0.112
Latin America	0	0	0
Mexico	0	0	0

Note: This table presents the list of countries used in the paper to construct the quota intensity measures and the World War I intensity measure for the different 18 country groups used in the analysis. Columns 1-2 present the country-specific quota intensity measure, according to equations (1) and (2) in the text. Column 3 presents the country-specific WWI intensity measure, constructed by multiplying the population share from each country-of-origin by the share of immigration flow halted by wartime activities. Panel A lists the high-restriction country groups, Panel B lists the low-restriction country groups, and Panel C lists the non-restriction country groups, as described in the text.

Table A2—: The Effect of Exposure to Border Closure Policy on Natives' Income Score - Robustness

Sample:	Urban	Mining	Rural	Full
	(1)	(2)	(3)	(4)
1. Baseline Results (Matched Sample - Stayers)				
Policy Exposure x Post	0.108	-0.0561	0.0508	-0.103
	(0.326)	(0.263)	(0.102)	(0.160)
2. Use Full Matched Sample				
Policy Exposure x Post	0.0634	0.0891	0.103	-0.0133
	(0.293)	(0.205)	(0.104)	(0.128)
3. Add 1920 Observations				
Policy Exposure x Post	0.140	0.0212	0.0420	-0.0185
	(0.223)	(0.179)	(0.0636)	(0.104)
4. Add Additional Controls				
Policy Exposure x Post	0.148	-0.0527	0.0904	-0.145
	(0.315)	(0.282)	(0.103)	(0.165)
5. Exclude SEAs in Bottom 10% Quota Exposure Distribution				
Policy Exposure x Post	0.400	-0.0548	0.0525	-0.0949
	(0.282)	(0.267)	(0.101)	(0.162)
6. Exclude SEAs in Top 10% Out-Migration to High Exposure SEAs				
Policy Exposure x Post	0.0413	0.0370	-0.0530	-0.0538
	(0.363)	(0.234)	(0.325)	(0.208)
7. Include State Time Trends				
Policy Exposure x Post	-0.309	-0.160	0.0582	-0.231
	(0.386)	(0.194)	(0.0673)	(0.186)
8. Alternative Quota Exposure 1				
Policy Exposure x Post	0.0843	-0.00291	0.0316	-0.0884
	(0.276)	(0.235)	(0.0830)	(0.134)
9. Use 1900 Population Weights				
Policy Exposure x Post	0.157	-0.129	0.0443	0.00214
	(0.142)	(0.206)	(0.112)	(0.118)
10. Log Occupational Score + No 1900 Foreign-Born Share Control + State Time Trends				
Policy Exposure x Post	-0.748	-0.573	-0.0337	-0.472
	(0.232)	(0.230)	(0.184)	(0.143)

Note: This table presents the coefficient of the interaction between quota exposure QE_2 and the post policy change indicator from equation (3) in the text. The variable Post is an indicator for post quota policy year, which is defined as 1930. Columns 1-4 present the coefficient for the urban, mining, rural, and full sample, respectively. The outcome variable in specifications 1-9 is the log of the average predicted income score among working-age males (age 15-65) who are included in our matched sample and have resided in the same SEA in the beginning and end of each decade ("Stayers"). The outcome variable in specification 10 is the log of the average occupational score among working-age males (age 15-65) who are included in our matched sample and are "stayers." In the baseline specification in row 1, each SEA has three observations for the years 1900, 1910, and 1930. This specification includes SEA fixed effects and census region and initial (1900) foreign-born share time trends. The specification in row 2 includes all matched US-born individuals. The specification in row 3 adds the 1920 observations to the baseline specification. The specification in row 4 adds log 1900 total population and share of men working in farming in 1900 time trends as additional controls to the baseline specification. In row 5, we exclude SEAs with low (bottom 10 percent in each sample) policy exposure and estimate the baseline specification using the new sample. In row 6, we exclude SEAs who had high (top 10 percent in each sample) out-migration of natives to SEA with a high policy exposure (above median) and use the new sample to estimate the baseline specification. In row 7, we estimate the baseline specification using state time trends. In row 8, we use exposure measure QE_1 instead of our baseline policy exposure measure QE_2. In row 9, we weight the observation in the baseline specification using 1900 population. In row 10, we try to replicate Tabellini (2020) by using the log occupational score as the outcome variable, excluding the initial (1900) foreign-born time trend and including state time trends. In the baseline specification, the number of SEAs is 170 in the urban sample, 115 in the mining sample, 174 in the rural sample, and 459 in the full sample. Robust standard errors, clustered at the SEA level, in parenthesis.

Table A3—: Lasso Results for the Relationship Between Exposure to Border Closure Policy and 1900 SEA Characteristics

Sample:	Urban (1)	Mining (2)	Rural (3)	Full Sample (4)
Foreign Born Share	x	x	-	x
Log Total Population	-	-	-	-
Share Urban Population	-	-	-	-
Share Black Population	-	-	-	-
Literacy Rate	-	-	-	-
Share Workers in Manufacturing	-	-	-	-
Share Workers in Agriculture	x	x	-	x
Share Workers Holding White Collar Occupation	-	-	-	-
Log Average Wage in Manufacturing	-	-	-	-
Log Average Farm Value	-	-	-	-
Log Value of Farm Output per Acre	-	-	-	-
Share Owner Operated Farms	-	-	-	-
Share Farmland Cultivated	-	-	-	-
Share Wheat in Cultivated Farmland	-	-	-	-
Share Cotton in Cultivated Farmland	-	-	-	-
Share Hay/Corn in Cultivated Farmland	-	-	-	-
Census Region FE	Yes	Yes	Yes	Yes
Observations	170	115	174	459

Note: This table presents the coefficients selected by a lasso procedure of a cross-sectional specification where the dependent variable is the SEA quota exposure measure QE_2 and the potential explanatory variables are a set of 1900 SEA socioeconomic characteristics. All Lasso procedures partial out census region fixed effects prior to control selection. Column 1 shows the controls selected for the urban sample of 170 SEAs, column 2 shows the controls selected for the 115 SEAs in the mining sample, column 3 shows the controls selected for the 174 SEAs in the rural sample, and column 4 shows the controls selected for the 459 SEAs in the full sample. Controls marked with an "x" are chosen by the Lasso specification.

Table A4—: The Effect of Exposure to Border Closure Policy on Population Change Rates in Urban SEAs - Central City vs. Suburbs

Population Group:	European immigrants, Recent arrivals	All Unrestricted Population	Native Born White	Native Born Non-White	European immigrants, 10+ years in US	Immigrants from Western Hemisphere
	(1)	(2)	(3)	(4)	(5)	(6)
A. Largest County Only ("Central City")						
Policy Exposure x Post	-1.607	2.207	1.649	0.0567	-0.247	0.748
	(0.704)	(1.514)	(1.168)	(0.167)	(0.311)	(0.220)
B. Excluding Largest County ("Suburbs")						
Policy Exposure x Post	-0.0856	5.065	3.351	0.766	0.424	0.523
	(0.352)	(1.790)	(1.330)	(0.580)	(0.263)	(0.331)

Note: This table presents the coefficient of the interaction between quota exposure QE_2 and the post policy change indicator from equation $(3')$ in the text for various populations. The Post variable is defined as an indicator for the 1920-1930 decade. Each column lists the dependent variable in the specifications that are defined as the decadal change in working-age male population change for the relevant population group over total working-age male population in the beginning of the decade. In panel A, we define SEA as the largest county of the SEA in terms of 1900 population, to proxy for the central city. In panel B, we exclude the largest county of the SEA to proxy for the suburbs of the city. In all specifications, each SEA has one observation for the 1900-1910 decade and another observation for the 1920-1930 decade. All specifications include SEA and decade fixed effects, census region time trends, and initial (1900) foreign-born share time trend. In Panel A, the number of SEAs is 170 and the number of observations is 340. In Panel B, the number of SEAs is 95 and the number of observations is 190. Robust standard errors, clustered at the SEA level, in parenthesis.

Table A5—: The Effect of Exposure to Border Closure Policy on Population Change Rates by Occupation "Foreignness" Quintile

Occupation "Foreignness" Quintile:	Q1 (Lowest)	Q2	Q3	Q4	Q5 (Highest)
	(1)	(2)	(3)	(4)	(5)
A. Urban Sample					
A.1. Policy Restricted Population					
Policy Exposure x Post	0.0142	-0.0753	-0.0386	-0.199	-0.886
	(0.0127)	(0.0300)	(0.0832)	(0.0563)	(0.464)
A.2. Policy Unrestricted Population					
Policy Exposure x Post	0.663	0.317	0.0638	0.463	0.707
	(0.266)	(0.277)	(0.210)	(0.258)	(0.377)
B. Mining Sample					
B.1. Policy Restricted Population					
Policy Exposure x Post	-0.00480	-0.0218	-0.125	0.0137	-1.092
	(0.00694)	(0.0304)	(0.0963)	(0.0487)	(0.476)
B.2. Policy Unrestricted Population					
Policy Exposure x Post	0.115	0.181	0.497	0.0197	-0.0854
	(0.119)	(0.540)	(0.375)	(0.255)	(0.758)
C. Rural Sample					
C.1. Policy Restricted Population					
Policy Exposure x Post	-0.0340	-0.00214	-0.427	-0.174	0.0405
	(0.00765)	(0.00452)	(0.150)	(0.209)	(0.0705)
C.2. Policy Unrestricted Population					
Policy Exposure x Post	0.0448	-0.254	-0.219	-0.0129	0.327
	(0.307)	(0.220)	(0.628)	(1.099)	(0.271)
D. Full Sample					
D.1. Policy Restricted Population					
Policy Exposure x Post	-0.0755	-0.0949	-0.0273	-0.107	-1.052
	(0.0253)	(0.0568)	(0.00945)	(0.0504)	(0.269)
D.2. Policy Unrestricted Population					
Policy Exposure x Post	0.477	0.312	0.0386	0.229	0.136
	(0.288)	(0.224)	(0.0831)	(0.186)	(0.279)

Note: This table presents the coefficient of the interaction between quota exposure QE_2 and the post policy change indicator from equation $(3')$ in the text for various occupation categories. The Post variable is defined as an indicator for the 1920-1930 decade. The dependent variables in these specifications are defined as the decadal change in working-age male population reporting an occupation in a specific group of occupations that belong to one of the 5 quintiles of foreign-born share in occupation in 1910 (computed separately for each sub-sample), over total working-age male population in the beginning of the decade. The occupation quintiles are defined using the census of population occupation codes. Panel A presents results for the urban sample of 170 SEAs, panel B presents results for the mining sample of 115 SEAs, Panel C presents results for the rural sample of the remaining 174 SEAs and Panel D presents results for the full sample of 459 SEAs. Sub-panels 1 show the coefficients of the interaction term from equation $(3')$ for the policy restricted population (European immigrants who arrived in the US in the past 10 years) and sub-panels 2 show the coefficients of the interaction term from equation $(3')$ for the policy unrestricted populations. In all specifications, each SEA has one observation for the 1900-1910 decade (pre) and another observation for the 1920-1930 decade (post). All specifications include SEA and decade fixed effects, census region time trends, and initial (1900) foreign-born share time trends. Robust standard errors, clustered at the SEA level, in parenthesis.

Table A6—: The Effect of Exposure to Border Closure Policy on Population Change Rates - Robustness

Sample:	Urban		Mining		Rural		Full	
Population Group:	European immigrants, Recent arrivals	All Unrestricted Population	European immigrants, Recent arrivals	All Unrestricted Population	European immigrants, Recent arrivals	All Unrestricted Population	European immigrants, Recent arrivals	All Unrestricted Population
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Baseline Results								
Policy Exposure x Post	-1.541 (0.610)	2.595 (1.276)	-1.278 (0.707)	1.177 (2.017)	-0.720 (0.352)	-0.781 (2.195)	-1.578 (0.389)	1.432 (0.924)
2. Exclude 1900 Foreign-Born Share Control								
Policy Exposure x Post	-1.978 (0.501)	0.847 (0.719)	-2.094 (0.633)	-0.122 (1.084)	-0.684 (0.275)	-1.427 (1.996)	-1.871 (0.340)	0.0647 (0.628)
3. Add Additional Controls								
Policy Exposure x Post	-1.228 (0.635)	3.620 (1.258)	-1.277 (0.709)	1.197 (2.082)	-0.737 (0.355)	-0.675 (2.167)	-1.464 (0.376)	1.496 (0.944)
4. Exclude SEAs in Top 10% Out-Migration to High Exposure SEAs								
Policy Exposure x Post	-2.161 (0.691)	1.215 (1.169)	-1.093 (0.793)	1.015 (2.048)	-0.319 (0.233)	0.549 (2.420)	-1.511 (0.374)	0.442 (0.794)
5. Exclude SEAs in Bottom 10% Quota Exposure Distribution								
Policy Exposure x Post	-1.523 (0.639)	3.300 (1.089)	-1.281 (0.708)	1.151 (2.033)	-0.720 (0.353)	-0.743 (2.205)	-1.579 (0.389)	1.434 (0.925)
6. Include State Time Trends								
Policy Exposure x Post	-1.578 (0.641)	1.816 (1.475)	-1.082 (0.581)	0.656 (2.160)	0.193 (0.320)	-3.115 (3.046)	-1.575 (0.420)	0.521 (0.964)
7. Use 1900 Population Weights								
Policy Exposure x Post	-0.660 (0.362)	0.835 (0.620)	-1.058 (0.706)	-0.00937 (1.590)	-0.367 (0.262)	-1.717 (1.859)	-1.102 (0.364)	0.303 (0.454)
8. Alternative Quota Exposure 1								
Policy Exposure x Post	-1.632 (0.639)	2.385 (1.193)	-0.989 (0.686)	1.378 (1.951)	-0.925 (0.367)	-1.764 (2.291)	-1.591 (0.389)	1.163 (0.874)

Note: This table presents the coefficient of the interaction between quota exposure QE_2 and the post policy change indicator from equation (3') in the text for various populations. The policy exposure measure in specifications 1-7 is QE_2 and in specification 8 is QE_1. The Post variable is defined as an indicator for the 1920-1930 decade. Columns 1-2, 3-4, 5-6, and 7-8 present the results of the urban, mining, rural, and full sample, respectively. Each column lists the dependent variable in the specifications that are defined as the decadal change in working-age male population change for the relevant population group over total working-age male population in the beginning of the decade. The policy restricted population includes European immigrants who arrived in the US in the past 10 years. The policy unrestricted population group includes all population groups that were not directly impacted by the policy change - native born whites, native-born non-whites, European immigrants who arrived in the US more than 10 years ago, and immigrants from the Western Hemisphere. All specifications include SEA and decade fixed effects. In the baseline specification in row 1, each SEA has two observations for the 1900-1910 and 1920-1930 decades. This specification includes SEA fixed effects and census region and initial (1900) foreign-born share time trends. In row 2, we exclude the initial (1900) foreign-born time trend from the baseline specification. The specification in row 3 adds log 1900 total population and share of men working in farming in 1900 time trends as additional controls to the baseline specification. In row 4, we exclude SEAs who had high (top 10 percent in each sample) out-migration of natives to SEA with a high policy exposure (above median) and uses the new sample to estimate the baseline specification. In row 5, we exclude SEAs with low (bottom 10 percent in each sample) policy exposure and estimate the baseline specification using the new sample. In row 6, we estimate the baseline specification using state time trends. In row 7, we weight the observation in the baseline specification using 1900 population. In row 8, we use QE_1 exposure measure instead of our baseline policy exposure measure. In the baseline specification, the number of SEAs in the urban sample is 170, 115 in the mining sample, 174 in the rural sample, and 459 in the full sample. Robust standard errors, clustered at the SEA level, in parenthesis.

Table A7—: The Effect of Exposure to Border Closure Policy on Population Change Rate - Robustness to World War I

Population Group:	Policy Restricted (1)	Policy Un-restricted (2)
A. Urban Sample		
WWI Exposure X (1910-1920)	-0.668 (0.190)	0.650 (0.593)
Policy Exposure X (1920-1930)	-0.928 (0.439)	2.570 (1.155)
Number of SEAs	170	
Number of Observations	510	
B. Mining Sample		
WWI Exposure X (1910-1920)	-0.928 (0.307)	-0.425 (1.224)
Policy Exposure X (1920-1930)	-0.569 (0.416)	0.0954 (1.372)
Number of SEAs	115	
Number of Observations	345	
C. Rural Sample		
WWI Exposure X (1910-1920)	0.00785 (0.180)	2.163 (0.849)
Policy Exposure X (1920-1930)	-0.230 (0.215)	0.293 (1.574)
Number of SEAs	174	
Number of Observations	522	

Note: This table presents the coefficients of the interaction between quota exposure measure QE_2 and an indicator for the 1920-1930 decade and the interaction between World War I exposure measure and the 1910-1920 decade indicator from equation $(3')$ in the text for various populations. The dependent variables in these specifications are the decadal change in quota restricted and unrestricted working-age male population over total working-age male population in the beginning of the decade. The policy restricted population includes European immigrants who arrived in the US in the past 10 years. The policy unrestricted population group includes all population groups that were not directly impacted by the policy change - native born whites, native-born non-whites, European immigrants who arrived in the US more than 10 years ago, and immigrants from the Western Hemisphere. All specifications include SEA fixed effects, Census region time trends, and 1900 foreign born share time trends. Panel A presents results for the urban sample of 170 SEAs, Panel B presents results for the mining sample of 115 SEAs, and Panel C presents results for the rural sample of 174 SEAs. In all specifications, each SEA has three observations for the 1900-1910, 1910-1920, and 1920-1930 decades. Robust standard errors, clustered at the SEA level, in parenthesis.

Table A8—: The Effect of Border Closure Policy Exposure on Population Change Rates and Labor Force Participation of Women

Outcome:	Policy Restricted Population, Change Rate	Policy Unrestricted Population, Change Rate	Labor Force Participation
	(1)	(2)	(3)
A. Urban Sample			
Policy Exposure x Post	-1.126	0.0322	-0.0542
	(0.155)	(0.621)	(0.0740)
B. Mining Sample			
Policy Exposure x Post	-0.778	1.384	-0.0537
	(0.286)	(2.073)	(0.0354)
C. Rural Sample			
Policy Exposure x Post	-0.506	-0.788	-0.161
	(0.173)	(2.013)	(0.0795)
D. Full Sample			
Policy Exposure x Post	-0.956	0.894	-0.0516
	(0.165)	(1.032)	(0.0427)

Note: This table presents the coefficient of the interaction between quota exposure QE_2 and the post policy change indicator from equation $(3')$ in the text for various populations. In columns 1-2, the Post variable is defined as an indicator for the 1920-1930 decade. In column 3, the Post variable is defined as an indicator for 1930. The dependent variables in these specifications are the decadal change in policy restricted and unrestricted working-age women population over total working-age women population in the beginning of the decade and the female labor force participation in columns 1-3, respectively. Female labor force participation in these specifications is defined the share of policy unrestricted women with gainful occupation among the policy unrestricted working-age women population. Panel A presents results for the urban sample of 170 SEAs, Panel B presents results for the mining sample of 115 SEAs, Panel C presents results for the rural sample of the remaining 174 SEAs and Panel D presents results for the full sample of 459 SEAs. In columns 1 and 2, each SEA has one observation for the 1900-1910 decade and another observation for the 1920-1930 decade. All specifications include SEA and decade fixed effects, census region time trends, and initial (1900) foreign-born share time trend. The number of observations is 340 in the urban sample, 230 in the mining sample, 348 in the rural sample and 918 in the full sample. In column 3 specifications, each SEA has three observations for each of the years 1900,1910, and 1930. All specifications include SEA and year fixed effects, and trends by census region and initial (1900) foreign-born share. Robust standard errors, clustered at the SEA level, in parenthesis.