

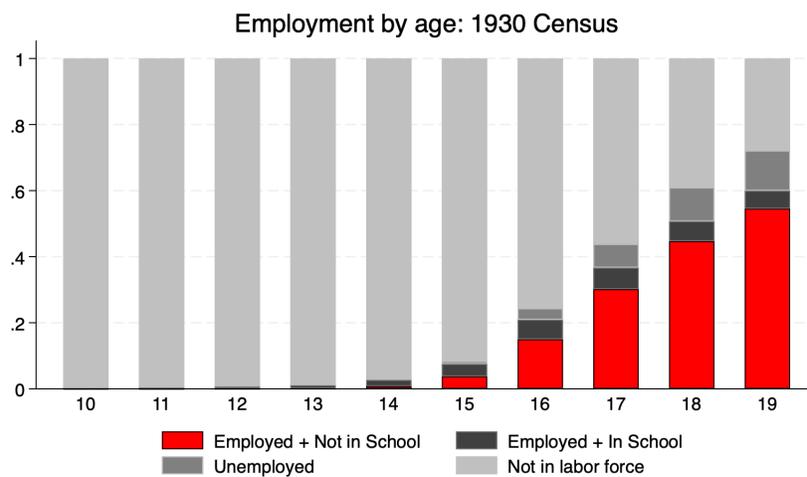
Online Appendix

Table of Contents

A	Supplementary Figures	44
B	Supplementary Tables	46
B.1	Weighing	48

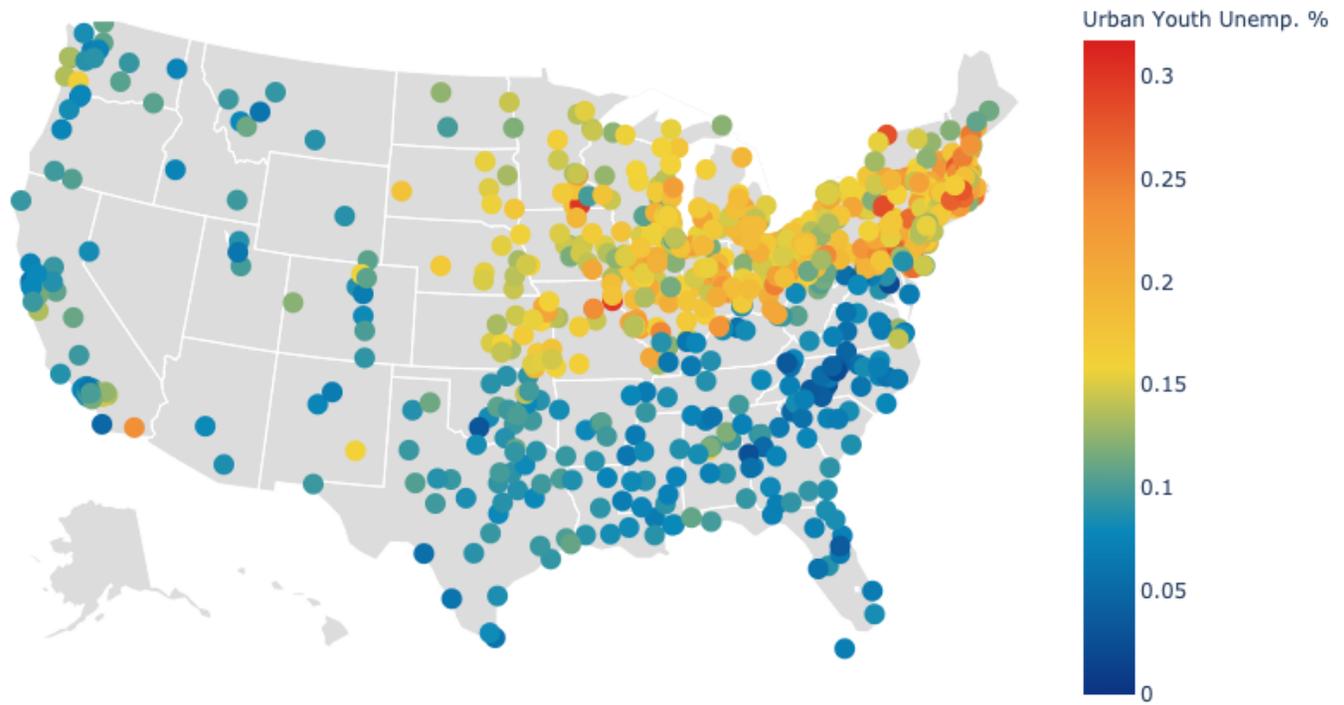
A Supplementary Figures

Figure A.1: Proportion of Employed Males by Age: 1930 U.S. Census



Source: Aggregation of 100 percent count records of the 1930 Decennial Census, available on IPUMS.

Figure A.2: Map of urban youth unemployment estimates



Notes: This figure plots the geographical distribution of youth unemployment in 1931. Youth unemployment is estimated using city-level occupation shares and regional occupational unemployment shares as computed from the Special Unemployment Census of 1931. Section 3.1 describes the construction in more detail.

B Supplementary Tables

Table A1: Unemployment rates for youth in 1931 in select occupations and cities

City	Rate	Weight	Occupation
Duluth	68.1%	6.2%	Laborers : Iron and steel industries
Seattle	59.4%	1.1%	Operatives : Iron and steel industries
Chicago	55.9%	2.0%	Operatives : Paper, printing, and allied industries
Chicago	54.6%	1.6%	Operatives : Food and allied industries
Denver	54.1%	1.0%	Operatives : Iron and steel industries
Detroit	53.9%	11.5%	Laborers : Iron and steel industries
Philadelphia	53.7%	1.7%	Operatives : Electrical machinery and supply factories
Buffalo	53.2%	1.1%	Laborers : Food and allied industries
San Francisco	53.0%	1.1%	Laborers : Building construction, laborers, and helpers
Detroit	52.8%	2.0%	Mechanics
Philadelphia	52.3%	1.1%	Operatives : Leather industries
Boston	51.5%	5.0%	Operatives : Leather industries
Duluth	51.4%	3.5%	Laborers : Building construction, laborers, and helpers
Detroit	50.8%	9.0%	Operatives : Iron and steel industries
Boston	50.7%	1.1%	Operatives : Clothing industries
Buffalo	50.4%	1.1%	Operatives : Leather industries
New Orleans	50.0%	1.4%	Porters (except in stores)
Chicago	50.0%	1.0%	Laborers : Building construction, laborers, and helpers
Buffalo	49.5%	3.3%	Laborers : Building construction, laborers, and helpers
Seattle	49.1%	3.3%	Laborers : Building construction, laborers, and helpers
Boston	48.9%	2.4%	Laborers : Building construction, laborers, and helpers
Chicago	48.9%	1.8%	Mechanics
Buffalo	48.8%	1.5%	Operatives : Textile industries
Birmingham	2.8%	1.3%	Engineers (stationary), cranimen, hoistmen, etc
San Francisco	4.3%	7.9%	Servants (except cooks)
Denver	4.9%	3.5%	Bookkeepers, cashiers, and accountants
San Francisco	5.2%	2.3%	Waiters
San Francisco	5.4%	8.8%	Sailors, deck hands, boatmen, etc.
Denver	5.4%	2.1%	Retail dealers
San Francisco	7.1%	3.3%	Bookkeepers, cashiers, and accountants
Minneapolis	7.6%	3.9%	Bookkeepers, cashiers, and accountants
St. Louis	8.0%	2.8%	Bookkeepers, cashiers, and accountants
Seattle	8.1%	2.3%	Bookkeepers, cashiers, and accountants
San Francisco	8.5%	2.2%	Retail dealers
Denver	9.0%	27.6%	Clerks (except "clerks" in stores)
Seattle	9.4%	8.5%	Servants (except cooks)
Los Angeles	9.8%	3.1%	Bookkeepers, cashiers, and accountants
San Francisco	10.5%	31.0%	Clerks (except "clerks" in stores)
Seattle	10.6%	17.5%	Clerks (except "clerks" in stores)
Manhattan	11.1%	1.5%	Retail dealers
San Francisco	11.1%	2.0%	Machinists, millwrights, and toolmakers
Los Angeles	11.2%	19.9%	Clerks (except "clerks" in stores)
Manhattan	11.8%	6.5%	Salesmen and saleswomen
New Orleans	11.8%	2.7%	Bookkeepers, cashiers, and accountants
Denver	11.9%	3.2%	Laborers : Iron and steel industries
Seattle	11.9%	6.8%	Sailors, deck hands, boatmen, etc.

Notes: This table lists the occupations with the largest and smallest youth (10-19 years old) unemployment rates as defined in Section 3.1 across cities in the 1931 Special Census of Unemployment. Column "Weight" refers to share of the youth labor force at the occupation-city level, as of 1930.

Table A2: Most common youth occupations and unemployment rates by region

Rank	Modal Occupation	Unemployment Rate	# Cities	Weight
Midwest				
1	Retail workers	7%	176	16%
2	Servants (except cooks)	16%	50	24%
3	Operatives: Leather industries	43%	15	24%
4	Clerks (except "clerks" in stores)	15%	15	21%
5	Laborers: Iron and steel industries	50%	6	17%
6	Operatives: Clothing industries	44%	4	19%
7	Laborers: Food and allied industries	45%	3	30%
8	Farm laborers (wageworkers)	33%	3	17%
9	Operatives: Metal industries (except iron and steel)	33%	3	17%
10	Operatives: Iron and steel industries	46%	2	17%
11	Laborers: Metal industries	34%	1	19%
12	Operatives: Clay, glass, and stone industries	31%	1	15%
Northeast				
1	Retail workers	5%	91	15%
2	Operatives: Textile industries	42%	72	31%
3	Clerks (except "clerks" in stores)	13%	61	20%
4	Servants (except cooks)	12%	40	23%
5	Operatives: Leather industries	47%	29	29%
6	Laborers: Iron and steel industries	49%	20	24%
7	Operatives: Clothing industries	44%	16	20%
8	Stenographers and typists	18%	8	14%
9	Operatives: Cigar and tobacco factories	27%	5	15%
10	Laborers: Clay, glass, and stone industries	38%	4	21%
11	Operatives : Metal industries (except iron and steel)	29%	3	14%
12	Public service - non-laborers	11%	3	38%
13	Operatives: Rubber factories	33%	2	29%
14	Farm laborers (wageworkers)	29%	1	13%
15	Operatives: Electrical machinery and supply factories	29%	1	13%
South				
1	Retail workers	5%	78	15%
2	Servants (except cooks)	8%	69	18%
3	Clerks (except "clerks" in stores)	11%	2	13%
4	Laborers : Food and allied industries	26%	1	26%
5	Stenographers and typists	15%	1	15%
6	Laborers : Iron and steel industries	42%	1	13%
7	Waiters	15%	1	15%
8	Laborers : Clay, glass, and stone industries	43%	1	15%
West				
1	Retail workers	4%	56	16%
2	Servants (except cooks)	6%	10	24%
3	Farm laborers (wageworkers)	39%	10	23%
4	Laborers : Lumber and furniture industries	29%	5	24%
5	Clerks (except "clerks" in stores)	9%	5	16%
6	Oil and gas well operatives	29%	1	20%
7	Operatives : Food and allied industries	17%	1	14%
8	Fishermen and oystermen	40%	1	12%
Total			878	

Notes: This table shows the most common occupations reported by urban 10-19 year olds and their estimated unemployment rates in 1931 from city-level data obtained from the Special Census of Unemployment. The column “# Cities” reports the number of cities in which the occupation listed is the most common occupation within the city. The “Weight” column reports the share of youth that hold the occupation as a proportion of all city youth workers. Midwest includes the states: IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, SD, WI. Northeast includes the states: CT, MA, ME, NH, NJ, NY, PA, RI, VT. South includes the states: AL, AR, DC, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV. West includes the states: AZ, CA, CO, ID, MT, NM, NV, OR, UT, WA, WY.

B.1 Weighing

Following Bailey et al. (2017), I construct inverse propensity weights to adjust for observable differences between linked and linked records in two steps. First, using the population of 11-22 year old males living in an Census-identified city in 1930, I estimate a probit regression of link status (whether an individual is matched) on the following variables: indicator for being white, indicator for father having a white-collar occupation, indicators for each Census region, age and age squared, and a constant. The results are shown in Table [A3](#). I then compute the inverse propensity scores for each person as $(1-p)/p$ times $m/(1-m)$, where (p) is the predicted likelihood of an individual being matched based on the estimated probit coefficients and (m) is the actual match rate (22.1 percent).

Table A3: Predicting characteristics of successful links using a probit regression

	(1)
	in_sample
in_sample	
white	0.641*** (0.017)
father_white_collar	0.313*** (0.012)
New England Division	0.000 (.)
Middle Atlantic Division	-0.123*** (0.028)
East North Central Div.	0.002 (0.030)
West North Central Div.	0.036 (0.033)
South Atlantic Division	-0.382*** (0.106)
East South Central Div.	-0.228*** (0.082)
West South Central Div.	-0.209*** (0.047)
Mountain Division	0.009 (0.041)
Pacific Division	-0.115*** (0.044)
Age	-0.006 (0.004)
age2	-0.001*** (0.000)
Constant	-0.443*** (0.040)
N	13,360,121

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A4: Impact of the Great Depression on Average Educational Outcomes (Inverse City Population Weighing)

Panel A: Full Sample

	Outcome: I[completed \geq X years]					Years of education
	9	10	11	12	13	
Age: 15 - 19 $\times \Delta Unemp$	-0.10 (0.19)	-0.11 (0.23)	-0.00 (0.25)	0.18 (0.25)	0.32** (0.14)	0.01 (0.01)
Age: 11 - 14 $\times \Delta Unemp$	0.17 (0.26)	-0.02 (0.30)	0.08 (0.36)	0.37 (0.37)	0.58*** (0.22)	0.03 (0.02)
City FE	✓	✓	✓	✓	✓	✓
Cohort FE	✓	✓	✓	✓	✓	✓
State x Year	✓	✓	✓	✓	✓	✓
1930 Occ Shares x Year	✓	✓	✓	✓	✓	✓
Manufacturing	✓	✓	✓	✓	✓	✓
Banking	✓	✓	✓	✓	✓	✓
E[y]	76.23	68.50	57.41	50.69	19.69	11.00
R-sq	0.08	0.08	0.08	0.07	0.05	0.09
N	3,552,178	3,552,178	3,552,178	3,552,178	3,552,178	3,552,178

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Panel B: Household Sample

	Outcome: I[completed \geq X years]					Years of education
	9	10	11	12	13	
Age: 15 - 19 $\times \Delta Unemp$	0.06 (0.30)	0.09 (0.33)	-0.03 (0.35)	0.14 (0.35)	0.28 (0.21)	0.02 (0.02)
Age: 11 - 14 $\times \Delta Unemp$	0.51 (0.46)	0.18 (0.43)	-0.03 (0.49)	0.18 (0.49)	0.51* (0.29)	0.03 (0.02)
Household FE	✓	✓	✓	✓	✓	✓
Cohort FE	✓	✓	✓	✓	✓	✓
State x Year	✓	✓	✓	✓	✓	✓
1930 Occ Shares x Year	✓	✓	✓	✓	✓	✓
Manufacturing	✓	✓	✓	✓	✓	✓
Banking	✓	✓	✓	✓	✓	✓
E[y]	74.55	66.32	54.81	48.13	17.54	10.84
R-sq	0.42	0.44	0.47	0.47	0.45	0.55
N	1,803,293	1,803,293	1,803,293	1,803,293	1,803,293	1,803,293

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the estimation results of Equation 5.1 using the full sample (Panel A) and the sibling sample (Panel B). Individuals who turned 20, 21, 22, or 23 years of age in 1930 serve as the omitted reference group. In Panel B, the sibling sample is restricted to households where the oldest and youngest children are at most six years apart. The outcome variable across the the first five columns is a binary variable taking the value of 100 if the individual reported finishing (at least) the amount of years of school denoted in the header and zero otherwise. The outcome variable in the last column is the number of school years completed. $\Delta Unemp$ is the standardized (mean zero, standard deviation one) measure of the youth unemployment rate at the city level in 1931 estimated using the 1931 Unemployment Census minus the 1930 county total unemployment rate. E[y] reports the mean value of the outcome variable in the regression sample for 17 year olds in 1930. Individual-level controls include nativity and race categorical variables. Regressions are weighted by the inverse of the logarithm of city population in 1930. Standard errors shown in parentheses and are clustered at the city level.

Table A5: Impact of the Great Depression on Male vs. Female Youth (Inverse City Population Weighing)

Panel A. Full Sample

	Female				Male			
	I[9+]	I[12+]	I[13+]	Years	I[9+]	I[12+]	I[13+]	Years
Age: 15 - 19 $\times \Delta Unemp$	-0.34 (0.23)	-0.71** (0.30)	0.17 (0.22)	-0.02 (0.02)	-0.03 (0.23)	0.56* (0.29)	0.35** (0.16)	0.03* (0.01)
Age: 11 - 14 $\times \Delta Unemp$	-0.34 (0.32)	-0.71* (0.39)	0.19 (0.30)	-0.03 (0.02)	0.39 (0.30)	0.87** (0.41)	0.69*** (0.23)	0.05** (0.02)
City FE	✓	✓	✓	✓	✓	✓	✓	✓
Cohort FE	✓	✓	✓	✓	✓	✓	✓	✓
State x Year	✓	✓	✓	✓	✓	✓	✓	✓
1930 Occ Shares x Year	✓	✓	✓	✓	✓	✓	✓	✓
Manufacturing	✓	✓	✓	✓	✓	✓	✓	✓
Banking	✓	✓	✓	✓	✓	✓	✓	✓
E[y]	79.46	55.16	18.05	11.10	74.43	48.18	20.61	10.94
R-sq	0.09	0.08	0.07	0.10	0.08	0.07	0.04	0.08
N	1,269,991	1,269,991	1,269,991	1,269,991	2,282,187	2,282,187	2,282,187	2,282,187

Standard errors in parentheses
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Panel B. Households

	Sisters				Brothers			
	I[9+]	I[12+]	I[13+]	Years	I[9+]	I[12+]	I[13+]	Years
Age: 15 - 19 $\times \Delta Unemp$	-0.25 (0.61)	-0.83 (0.65)	0.28 (0.51)	-0.03 (0.03)	0.08 (0.41)	0.51 (0.43)	0.37 (0.30)	0.03 (0.02)
Age: 11 - 14 $\times \Delta Unemp$	-0.33 (0.87)	-1.47 (0.95)	0.22 (0.67)	-0.06 (0.04)	1.06* (0.59)	0.46 (0.64)	0.73* (0.42)	0.07** (0.03)
Household FE	✓	✓	✓	✓	✓	✓	✓	✓
Cohort FE	✓	✓	✓	✓	✓	✓	✓	✓
State x Year	✓	✓	✓	✓	✓	✓	✓	✓
1930 Occ Shares x Year	✓	✓	✓	✓	✓	✓	✓	✓
Manufacturing	✓	✓	✓	✓	✓	✓	✓	✓
Banking	✓	✓	✓	✓	✓	✓	✓	✓
E[y]	77.80	52.52	16.07	10.94	72.89	45.80	18.52	10.79
R-sq	0.50	0.55	0.54	0.61	0.41	0.46	0.45	0.54
N	306,696	306,696	306,696	306,696	822,743	822,743	822,743	822,743

Standard errors in parentheses
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the estimation results of Equation 5.1 using the full sample (Panel A) and the sibling sample (Panel B). Individuals who turned 20, 21, 22, or 23 years of age in 1930 serve as the omitted reference group. In Panel B, the sibling sample is restricted to households where the oldest and youngest children are at most six years apart. The outcome variable across “I[X+]” columns is a binary variable taking the value of 100 if the individual reported finishing at least X number of years of school and zero otherwise. The outcome variable in the “Years” column is the number of school years completed. $\Delta Unemp$ is the standardized (mean zero, standard deviation one) measure of the youth unemployment rate at the city level in 1931 estimated using the 1931 Unemployment Census minus the 1930 county total unemployment rate. E[y] reports the mean value of the outcome variable in the regression sample for 17 year olds in 1930. Individual-level controls include nativity and race categorical variables. Regressions are weighted by the inverse of the logarithm of city population in 1930. Standard errors shown in parentheses and are clustered at the city level.