

Online Appendix to “The Impact of Macroeconomic Conditions in Childhood on Adult Labor Market Outcomes”

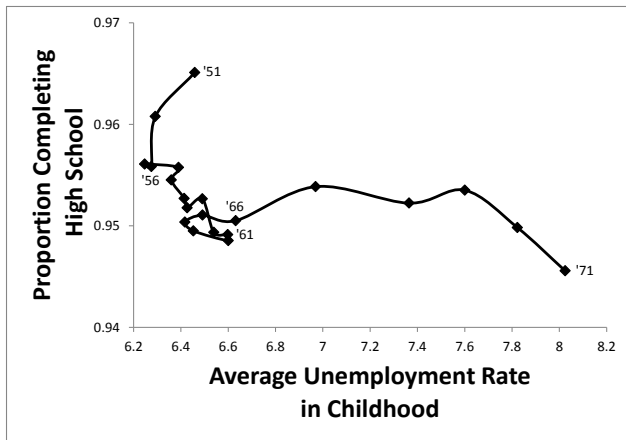
December 29, 2015

Abstract

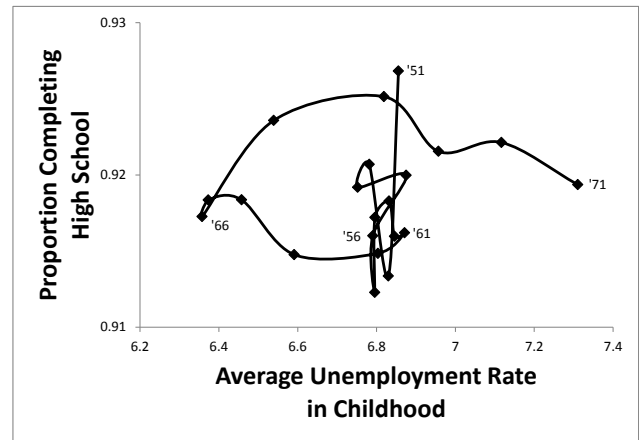
The online appendix contains additional empirical analyses referenced in the main text. Figure A.1 illustrates the association between childhood economic conditions and adult outcomes for the Rust Belt and the Sun Belt. Table A.1 reports the impact of the unemployment rate in childhood after controlling for triple interaction terms among year born, survey year, and Census region of birth. Table A.2 computes standard errors with clustering at the Census division level. The regressions in Table A.3 exclude controls for state-specific linear trends in year born, and the estimates in Table A.4 also omit fixed effects for the interaction between birth state and survey year.

Figure A.1: Relationship of State Unemployment Rate in Childhood to Adult Outcomes for Individuals Born in Rust Belt and Sun Belt

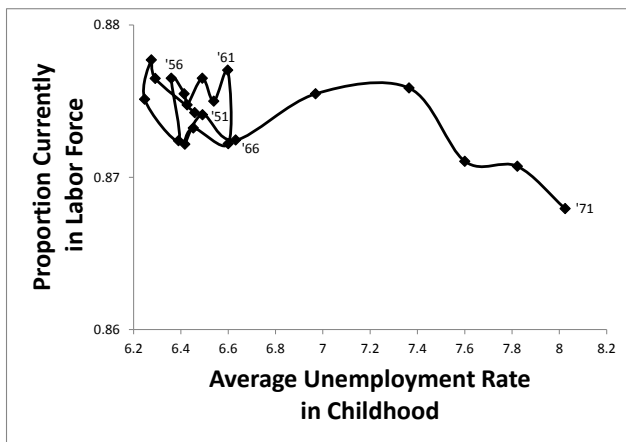
(a) Completion of High School for Rust Belt Cohorts



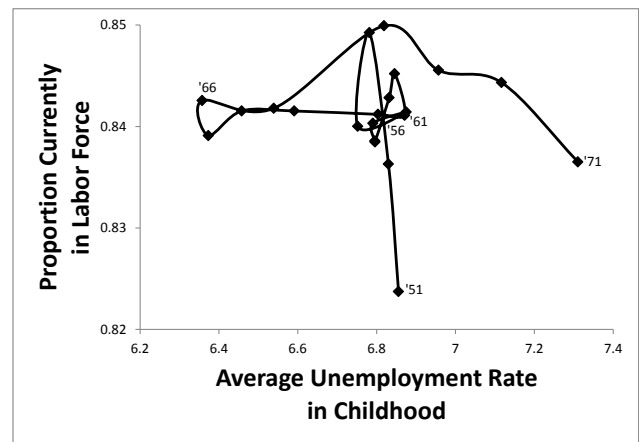
(b) Completion of High School for Sun Belt Cohorts



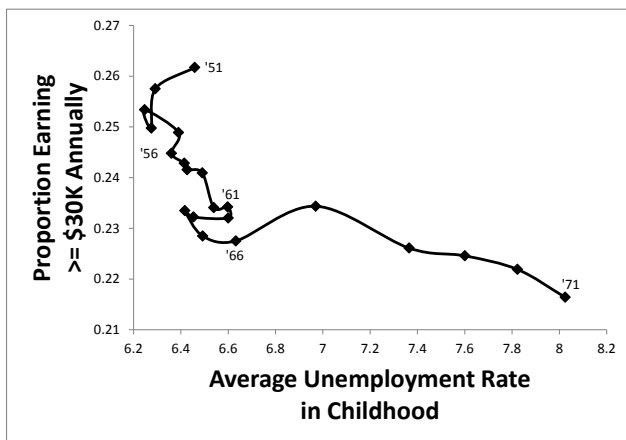
(c) Current Participation in Labor Force for Rust Belt Cohorts



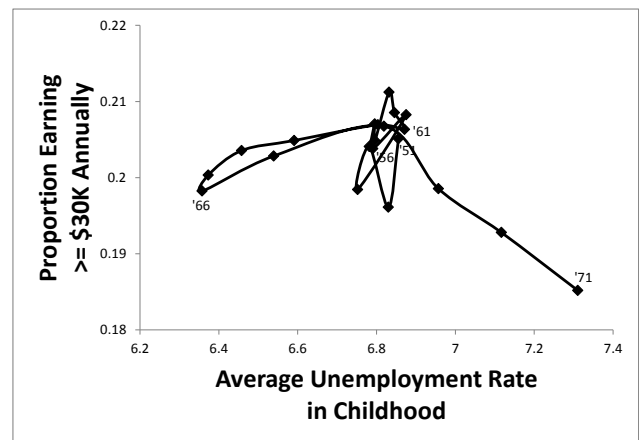
(d) Current Participation in Labor Force for Sun Belt Cohorts



(e) Annual Income of at Least \$30,000 for Rust Belt Cohorts



(f) Annual Income of at Least \$30,000 for Sun Belt Cohorts



Note: The explanatory variable is the average state unemployment rate between the year before one's birth and the year of one's fifteenth birthday. The dependent variables are indicators for high school completion, for currently being in the labor force, and for having both worked in the past calendar year and received a wage income of at least \$30,000 during that period. The Rust Belt is defined to comprise the following states: Illinois, Indiana, Michigan, New Jersey, New York, Ohio, Pennsylvania, Wisconsin. The Sun Belt consists of: Alabama, Arizona, California, Florida, Louisiana, Mississippi, New Mexico, Texas. The data points for the Rust Belt are obtained by limiting the main estimation sample for the ACS to individuals who were aged between 40 and 49 at the time of the survey and who were born in one of the states in the Rust Belt. The averages of the explanatory and dependent variables are then taken over all the individuals born in the same year. The resulting statistics are used to plot average adult outcomes against the average state unemployment rate in childhood. The data points for the Sun Belt are generated analogously. The birth cohorts range from 1951 to 1971.

Table A.1: Relationship of Average State Unemployment Rate in Childhood to Adult Outcomes for ACS Sample after Controlling for Three-Way Interactions among Year Born, Survey Year, and Census Region of Birth

	H.S. Diploma	College Degree	Grad. School	Worked Last Yr.	In Labor Force	Currently Employed	Worked & Y ≥ \$10K	Worked & Y ≥ \$20K	Worked & Y ≥ \$30K
Average State Unemployment Rate in Childhood									
U.E. Rate btw. Ages -1 and 15	-0.0015 (0.0010)	-0.0067*** (0.0025)	-0.0037** (0.0017)	-0.0066*** (0.0014)	-0.0074*** (0.0015)	-0.0081*** (0.0015)	-0.0085*** (0.0021)	-0.0016 (0.0016)	0.0036*** (0.0009)
With State Unemployment Rate at Ages 18 and 22									
U.E. Rate btw. Ages -1 and 15	-0.0009 (0.0014)	-0.0053* (0.0030)	-0.0035** (0.0016)	-0.0060*** (0.0015)	-0.0067*** (0.0017)	-0.0074*** (0.0017)	-0.0076*** (0.0025)	-0.0004 (0.0019)	0.0053*** (0.0015)
U.E. Rate at Age 18	0.0005** (0.0002)	0.0000 (0.0005)	-0.0007** (0.0003)	-0.0003 (0.0003)	-0.0002 (0.0004)	-0.0003 (0.0003)	-0.0001 (0.0004)	0.0001 (0.0003)	0.0004 (0.0003)
U.E. Rate at Age 22	-0.0002 (0.0002)	0.0006 (0.0004)	0.0008** (0.0003)	0.0006** (0.0003)	0.0005 (0.0003)	0.0005* (0.0003)	0.0005 (0.0003)	0.0004 (0.0003)	0.0004* (0.0003)
With State Unemployment Rate in Imputed Year of Graduation									
U.E. Rate btw. Ages -1 and 15	-0.0026 (0.0019)	0.0185*** (0.0059)	0.0086** (0.0040)	-0.0022 (0.0016)	-0.0034** (0.0017)	-0.0047*** (0.0017)	-0.0061** (0.0027)	0.0045* (0.0027)	0.0105*** (0.0017)
U.E. Rate in Grad. Year	-0.0007 (0.0013)	0.0166*** (0.0033)	0.0081*** (0.0021)	0.0029*** (0.0006)	0.0026*** (0.0006)	0.0022*** (0.0006)	0.0015* (0.0009)	0.0040*** (0.0013)	0.0045*** (0.0012)
With Average State Unemployment Rate and Labor Force Participation Rate in Early Adulthood									
U.E. Rate btw. Ages -1 and 15	-0.0003 (0.0013)	-0.0036 (0.0035)	-0.0034* (0.0019)	-0.0025 (0.0015)	-0.0022 (0.0016)	-0.0034** (0.0015)	-0.0037 (0.0023)	0.0029 (0.0018)	0.0072*** (0.0018)
U.E. Rate btw. Ages 16 and 29	0.0010 (0.0010)	0.0028 (0.0025)	0.0008 (0.0020)	0.0041*** (0.0013)	0.0046*** (0.0012)	0.0042*** (0.0012)	0.0042*** (0.0016)	0.0034*** (0.0011)	0.0027* (0.0014)
L.F.P. Rate btw. Ages 16 and 29	-0.0022** (0.0010)	-0.0033 (0.0026)	0.0016 (0.0015)	0.0012 (0.0012)	0.0013 (0.0012)	0.0011 (0.0012)	0.0018 (0.0017)	0.0015 (0.0012)	0.0009 (0.0012)
Sample Size	51 Birth States / 8,491,751 Observations								

Note: The main estimation sample for the ACS is used. The specifications control for race, gender, fixed effects for age, indicator variables for birth state, indicator variables for survey year, indicator variables for year born, a linear trend in year born specific to each birth state, two-way interactions between dummy variables for birth state and survey year, two-way interactions between dummy variables for birth region and year born, two-way interactions between dummy variables for survey year and year born, and three-way interactions among dummy variables for birth region, survey year, and year born. The four Census regions are: Northeast, Midwest, South, West. The year in which an individual leaves school is imputed based on the formula: year of graduation = year of birth + 6 + years of schooling. Huber-White standard errors, clustered by birth state, are reported in parentheses. Single, double, and triple asterisks respectively denote statistical significance at the 10 percent, 5 percent, and 1 percent levels.

Table A.2: Effect of Clustering at Census Division Level on Standard Errors for Estimated Relationship of Average State Unemployment Rate in Childhood to Adult Outcomes for ACS Sample

	H.S. Diploma	College Degree	Grad. School	Worked Last Yr.	In Labor Force	Currently Employed	Worked & Y ≥ \$10K	Worked & Y ≥ \$20K	Worked & Y ≥ \$30K
Average State Unemployment Rate in Childhood									
U.E. Rate btw. Ages -1 and 15	-0.0018 (0.0012)	-0.0074* (0.0033)	-0.0044* (0.0023)	-0.0066*** (0.0017)	-0.0075*** (0.0018)	-0.0083*** (0.0017)	-0.0086*** (0.0025)	-0.0012 (0.0022)	0.0035* (0.0012)
With State Unemployment Rate at Ages 18 and 22									
U.E. Rate btw. Ages -1 and 15	-0.0023 (0.0017)	-0.0073* (0.0033)	-0.0050** (0.0019)	-0.0073*** (0.0015)	-0.0080*** (0.0014)	-0.0085*** (0.0013)	-0.0089*** (0.0023)	0.0005 (0.0021)	0.0059*** (0.0016)
U.E. Rate at Age 18	0.0001 (0.0002)	-0.0004 (0.0007)	-0.0011** (0.0004)	-0.0009*** (0.0002)	-0.0007** (0.0002)	-0.0006** (0.0003)	-0.0006 (0.0003)	0.0003 (0.0002)	0.0007*** (0.0002)
U.E. Rate at Age 22	-0.0003* (0.0002)	0.0004 (0.0005)	0.0007 (0.0004)	0.0004 (0.0003)	0.0004 (0.0002)	0.0004* (0.0002)	0.0003 (0.0003)	0.0004 (0.0003)	0.0005** (0.0002)
With State Unemployment Rate in Imputed Year of Graduation									
U.E. Rate btw. Ages -1 and 15	-0.0028 (0.0024)	0.0145* (0.0077)	0.0062 (0.0053)	-0.0029 (0.0020)	-0.0042* (0.0021)	-0.0055** (0.0020)	-0.0066* (0.0034)	0.0042 (0.0034)	0.0097*** (0.0020)
U.E. Rate in Grad. Year	-0.0007 (0.0018)	0.0159*** (0.0042)	0.0077** (0.0027)	0.0027** (0.0009)	0.0024** (0.0009)	0.0021* (0.0009)	0.0014 (0.0013)	0.0039** (0.0016)	0.0045** (0.0014)
With Average State Unemployment Rate and Labor Force Participation Rate in Early Adulthood									
U.E. Rate btw. Ages -1 and 15	-0.0025 (0.0014)	-0.0077* (0.0040)	-0.0031 (0.0028)	-0.0041** (0.0014)	-0.0035** (0.0014)	-0.0045*** (0.0013)	-0.0036* (0.0019)	0.0033 (0.0022)	0.0055*** (0.0017)
U.E. Rate btw. Ages 16 and 29	-0.0009 (0.0006)	-0.0008 (0.0035)	0.0013 (0.0033)	0.0020 (0.0015)	0.0032** (0.0012)	0.0030** (0.0012)	0.0040** (0.0016)	0.0036*** (0.0009)	0.0017* (0.0008)
L.F.P. Rate btw. Ages 16 and 29	-0.0025* (0.0011)	-0.0035 (0.0032)	0.0020 (0.0020)	0.0006 (0.0012)	0.0011 (0.0013)	0.0009 (0.0014)	0.0018 (0.0020)	0.0016 (0.0014)	0.0011 (0.0013)
Sample Size	9 Census Divisions / 8,491,751 Observations								

Note: The main estimation sample for the ACS is used. The specifications control for race, gender, fixed effects for age, dummy variables for birth state, dummy variables for survey year, interactions between the dummy variables for birth state and survey year, indicator variables for year born, and a linear trend in year born specific to each birth state. The year in which an individual leaves school is imputed based on the formula: year of graduation = year of birth + 6 + years of schooling. Huber-White standard errors, clustered by Census division of birth state, are reported in parentheses. The nine Census divisions are: New England, Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, Pacific. Single, double, and triple asterisks respectively denote statistical significance at the 10 percent, 5 percent, and 1 percent levels.

Table A.3: Relationship of Average State Unemployment Rate in Childhood to Adult Outcomes for ACS Sample after Excluding State-Specific Linear Trends in Year Born

	H.S. Diploma	College Degree	Grad. School	Worked Last Yr.	In Labor Force	Currently Employed	Worked & Y ≥ \$10K	Worked & Y ≥ \$20K	Worked & Y ≥ \$30K
Average State Unemployment Rate in Childhood									
U.E. Rate btw. Ages -1 and 15	0.0009 (0.0014)	-0.0017 (0.0014)	-0.0012 (0.0010)	-0.0030*** (0.0011)	-0.0035*** (0.0012)	-0.0038*** (0.0011)	-0.0025 (0.0016)	0.0000 (0.0012)	0.0013* (0.0007)
With State Unemployment Rate at Ages 18 and 22									
U.E. Rate btw. Ages -1 and 15	0.0018 (0.0016)	-0.0002 (0.0016)	-0.0003 (0.0011)	-0.0021 (0.0013)	-0.0025* (0.0013)	-0.0027** (0.0012)	-0.0011 (0.0015)	0.0004 (0.0013)	0.0012 (0.0008)
U.E. Rate at Age 18	0.0008*** (0.0002)	0.0005 (0.0005)	-0.0004 (0.0003)	0.0000 (0.0003)	0.0002 (0.0003)	0.0003 (0.0003)	0.0003 (0.0003)	0.0002 (0.0002)	0.0001 (0.0002)
U.E. Rate at Age 22	0.0005 (0.0003)	0.0013*** (0.0005)	0.0013*** (0.0005)	0.0010** (0.0004)	0.0010** (0.0004)	0.0011*** (0.0004)	0.0013*** (0.0004)	0.0003 (0.0003)	-0.0002 (0.0002)
With State Unemployment Rate in Imputed Year of Graduation									
U.E. Rate btw. Ages -1 and 15	0.0007 (0.0015)	0.0039* (0.0023)	0.0015 (0.0014)	-0.0020* (0.0011)	-0.0025** (0.0012)	-0.0030*** (0.0011)	-0.0019 (0.0016)	0.0013 (0.0013)	0.0028*** (0.0010)
U.E. Rate in Grad. Year	-0.0004 (0.0011)	0.0151*** (0.0030)	0.0074*** (0.0019)	0.0028*** (0.0006)	0.0025*** (0.0006)	0.0022*** (0.0006)	0.0016** (0.0008)	0.0036*** (0.0012)	0.0040*** (0.0011)
With Average State Unemployment Rate and Labor Force Participation Rate in Early Adulthood									
U.E. Rate btw. Ages -1 and 15	0.0015 (0.0014)	-0.0004 (0.0015)	0.0001 (0.0010)	-0.0023* (0.0012)	-0.0025** (0.0013)	-0.0027** (0.0011)	-0.0007 (0.0015)	0.0006 (0.0014)	0.0011 (0.0008)
U.E. Rate btw. Ages 16 and 29	0.0020** (0.0008)	0.0030* (0.0016)	0.0028* (0.0015)	0.0020 (0.0014)	0.0026** (0.0013)	0.0029** (0.0012)	0.0043*** (0.0011)	0.0014 (0.0008)	-0.0006 (0.0007)
L.F.P. Rate btw. Ages 16 and 29	-0.0019** (0.0009)	-0.0000 (0.0012)	0.0014* (0.0007)	-0.0019* (0.0011)	-0.0016* (0.0010)	-0.0012 (0.0009)	-0.0003 (0.0011)	0.0003 (0.0010)	0.0004 (0.0005)
Sample Size	51 Birth States / 8,491,751 Observations								

Note: The main estimation sample for the ACS is used. The specifications control for race, gender, fixed effects for age, dummy variables for birth state, dummy variables for survey year, interactions between the dummy variables for birth state and survey year, and indicator variables for year born. The year in which an individual leaves school is imputed based on the formula: year of graduation = year of birth + 6 + years of schooling. Huber-White standard errors, clustered by birth state, are reported in parentheses. Single, double, and triple asterisks respectively denote statistical significance at the 10 percent, 5 percent, and 1 percent levels.

Table A.4: Relationship of Average State Unemployment Rate in Childhood to Adult Outcomes for ACS Sample after Excluding State-Specific Linear Trends in Year Born and Two-Way Interactions between Birth State and Survey Year

	H.S. Diploma	College Degree	Grad. School	Worked Last Yr.	In Labor Force	Currently Employed	Worked & Y ≥ \$10K	Worked & Y ≥ \$20K	Worked & Y ≥ \$30K
Average State Unemployment Rate in Childhood									
U.E. Rate btw. Ages -1 and 15	0.0008 (0.0014)	-0.0020 (0.0014)	-0.0014 (0.0010)	-0.0035*** (0.0012)	-0.0039*** (0.0012)	-0.0041*** (0.0011)	-0.0030* (0.0016)	-0.0003 (0.0012)	0.0010 (0.0008)
With State Unemployment Rate at Ages 18 and 22									
U.E. Rate btw. Ages -1 and 15	0.0017 (0.0016)	-0.0005 (0.0016)	-0.0005 (0.0011)	-0.0025* (0.0013)	-0.0028** (0.0013)	-0.0029** (0.0012)	-0.0015 (0.0015)	0.0002 (0.0014)	0.0010 (0.0009)
U.E. Rate at Age 18	0.0008*** (0.0002)	0.0005 (0.0005)	-0.0004 (0.0003)	0.0000 (0.0003)	0.0003 (0.0003)	0.0003 (0.0003)	0.0004 (0.0003)	0.0003 (0.0003)	0.0002 (0.0003)
U.E. Rate at Age 22	0.0005 (0.0003)	0.0013*** (0.0005)	0.0013*** (0.0004)	0.0011** (0.0004)	0.0010** (0.0004)	0.0011*** (0.0004)	0.0014*** (0.0004)	0.0003 (0.0003)	-0.0001 (0.0002)
With State Unemployment Rate in Imputed Year of Graduation									
U.E. Rate btw. Ages -1 and 15	0.0007 (0.0015)	0.0036 (0.0023)	0.0013 (0.0014)	-0.0024** (0.0012)	-0.0029** (0.0012)	-0.0033*** (0.0011)	-0.0024 (0.0016)	0.0010 (0.0013)	0.0025** (0.0010)
U.E. Rate in Grad. Year	-0.0004 (0.0011)	0.0151*** (0.0030)	0.0074*** (0.0019)	0.0028*** (0.0006)	0.0026*** (0.0006)	0.0023*** (0.0006)	0.0017** (0.0008)	0.0036*** (0.0012)	0.0041*** (0.0011)
With Average State Unemployment Rate and Labor Force Participation Rate in Early Adulthood									
U.E. Rate btw. Ages -1 and 15	0.0014 (0.0014)	-0.0007 (0.0016)	-0.0001 (0.0010)	-0.0027** (0.0012)	-0.0028** (0.0012)	-0.0029** (0.0011)	-0.0011 (0.0015)	0.0004 (0.0014)	0.0009 (0.0009)
U.E. Rate btw. Ages 16 and 29	0.0019** (0.0008)	0.0029* (0.0016)	0.0028* (0.0015)	0.0023 (0.0014)	0.0028** (0.0013)	0.0031** (0.0012)	0.0044*** (0.0011)	0.0015 (0.0009)	-0.0003 (0.0008)
L.F.P. Rate btw. Ages 16 and 29	-0.0020** (0.0009)	-0.0002 (0.0012)	0.0014* (0.0007)	-0.0017* (0.0010)	-0.0016* (0.0009)	-0.0010 (0.0008)	-0.0002 (0.0011)	0.0003 (0.0010)	0.0005 (0.0006)
Sample Size	51 Birth States / 8,491,751 Observations								

Note: The main estimation sample for the ACS is used. The specifications control for race, gender, fixed effects for age, dummy variables for birth state, dummy variables for survey year, and indicator variables for year born. The year in which an individual leaves school is imputed based on the formula: year of graduation = year of birth + 6 + years of schooling. Huber-White standard errors, clustered by birth state, are reported in parentheses. Single, double, and triple asterisks respectively denote statistical significance at the 10 percent, 5 percent, and 1 percent levels.