## Online Appendix

Long-Term Impacts of Childhood Medicaid Expansions on Outcomes in Adulthood<br>by David W. Brown, Amanda E. Kowalski, and Ithai Z. Lurie

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## Appendix 1 Regression Discontinuity Results

In the tradition of Card and Shore-Sheppard (2004), Wherry and Meyer (2016), and Wherry et al. (2015), we estimate regression discontinuity specifications that harness variation in Medicaid eligibility from the Omnibus Budget Reconciliation Act of 1990 (OBRA 90). This federal policy reduced the Medicaid eligibility threshold to $100 \%$ of the federal poverty level for children who were born after September 30, 1983. Therefore, the policy differentially affected our sample of children born from 1981 to 1984. Variation from OBRA 90 is arguably exogenous as it is unlikely that parents manipulated birth timing in 1983 in anticipation of federal legislation passed in 1990.

Our main specification uses birth month fixed effects to flexibly adjust for seasonality from measuring most our outcomes with respect to the tax year. To address seasonality in the regression discontinuity, we compute the mean outcome for each birth month of 1981, and we subtract it from the mean outcome for the same birth month in later years. ${ }^{16}$ We still see strong patterns by calendar year of birth that are difficult to address in our regression discontinuity specification because there are only three months after the discontinuity within the 1983 calendar year. In our main specification, we do not need to estimate a trend across birth months, so we simply incorporate year fixed effects. As expected, we see a jump in average simulated Medicaid eligibility and Medicaid eligibility by month of birth at the vertical line between September and October 1983, as displayed in Figure OA.1. Figures OA.2-OA. 3 present similar plots for each of our six main outcomes.

To estimate the effect of OBRA 90 on a seasonally-adjusted cumulative outcome $\widetilde{Y}_{i}$, in our regression discontinuity specification, we fit linear functions on both sides of September 30, 1983:

$$
\begin{equation*}
\widetilde{Y}_{i}=\alpha_{0} \mathbf{1}\left\{r_{i} \geq 0\right\}+\alpha_{1} r_{i}+\alpha_{2} r_{i} \mathbf{1}\left\{r_{i} \geq 0\right\}+\alpha_{3}+\eta_{i} \tag{OA.1}
\end{equation*}
$$

where we normalize the running variable $r_{i}$, which represents birth month cohort, to be zero in October 1983. Cohorts with $r_{i} \geq 0$ are treated by OBRA 90. We exclude birth month cohorts from 1981, which we use for seasonal adjustment, and we include birth month cohorts from January 1982 - December 1984, such that $r_{i} \in[-21,14]$. Since we address seasonality outside of the specification, we present bootstrapped standard errors using 200 replications. The first stage results show that OBRA 90 generated around 0.60 to 0.70 years of eligibility across both sexes and across actual and simulated Medicaid eligibility, although we obtain precise estimates for simulated eligibility only.

[^0]Table OA. 1 presents regression discontinuity coefficients for our six main outcomes. The jumps at the discontinuity are imprecise across all outcomes, but they are broadly consistent with the signs and magnitudes of our main estimates (which need not be the case because both sets of estimates rely on different variation). At the discontinuity, we see a jump of $\$ 135$ in cumulative total taxes by age 28 in the full sample, implying that an additional year of simulated eligibility increases taxes by $\$ 198(=135 / 0.682)$, which is broadly consistent with our main estimate of $\$ 471$. For mortality by age 28 , an additional year of simulated eligibility from OBRA 90 decreases the rate by $0.025 \%$ ( $=-0.017 / 0.682$ ), which is consistent with our main estimate of $0.033 \%$. Similarly, the results for college enrollment are positive but smaller in magnitude, and the results for wage income are positive and larger in magnitude than our main estimates. We find a negligible effect on EITC. Finally, departing from our main estimate, we find suggestive evidence of a positive effect of OBRA 90 on fertility.

Figure OA.1: OBRA 90 Regression Discontinuity: First Stage
(a) Simulated Years Eligible for Medicaid, Age 0-18

(b) Years Eligible for Medicaid, Age 0-18




Note. OBRA 90 reduced the eligibility threshold for Medicaid eligibility to $100 \%$ of the federal poverty level for children born after September 30, 1983. Cohorts that experienced this increase in eligibility are to the right of the vertical line in the figure. The plots present seasonally adjusted eligibility and simulated eligibility for each birth month cohort from January 1981 - December 1984. To adjust for seasonal variation, we subtract from each birth month cohort the mean outcome for the respective birth month in 1981.

Figure OA.2: OBRA 90 Regression Discontinuity: Outcomes
(a) Cumulative College Enrollment (\%) by Age 28

(b) Cumulative Fertility (\%) by Age 28



(c) Cumulative Mortality (\%) by Age 28


Note. OBRA 90 reduced the eligibility threshold for Medicaid eligibility to $100 \%$ of the federal poverty level for children born after September 30, 1983. Cohorts that experienced this increase in eligibility are to the right of the vertical line in the figure. The plots present seasonally adjusted mean outcomes for each birth month cohort from January 1981 - December 1984. To adjust for seasonal variation, we subtract from each birth month cohort the mean outcome for the respective birth month in 1981.

Figure OA.3: OBRA 90 Regression Discontinuity: Outcomes (Continued)
(a) Cumulative Wage Income (\$000) by Age 28

(b) Cumulative EITC (\$000) by Age 28

(c) Cumulative Total Taxes (\$000) by Age 28


Note. OBRA 90 reduced the eligibility threshold for Medicaid eligibility to $100 \%$ of the federal poverty level for children born after September 30, 1983. Cohorts that experienced this increase in eligibility are to the right of the vertical line in the figure. The plots present seasonally adjusted mean outcomes for each birth month cohort from January 1981 - December 1984. To adjust for seasonal variation, we subtract from each birth month cohort the mean outcome for the respective birth month in 1981.

Table OA.1: Regression Discontinuity Results for Cumulative Outcomes by Age 28

|  | (1) Simulated Years Eligible, Age 0-18 | (2) <br> Years <br> Eligible, <br> Age 0-18 | (3) College Enrollment (\%) | (4) <br> Fertility <br> (\%) | (5) <br> Mortality <br> (\%) | (6) <br> Wage <br> Income <br> (\$000) | (7) <br> EITC <br> (\$000) | $(8)$ <br> Total <br> Taxes <br> $(\$ 000)$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Female |  |  |  |  |  |  |  |  |
| Treated by OBRA 90 | $\begin{gathered} 0.684^{* * *} \\ (0.160) \end{gathered}$ | $\begin{gathered} 0.586 \\ (0.546) \end{gathered}$ | $\begin{gathered} 0.255 \\ (1.124) \end{gathered}$ | $\begin{gathered} 0.246 \\ (1.468) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.018) \end{gathered}$ | $\begin{gathered} 0.806 \\ (2.656) \end{gathered}$ | $\begin{gathered} 0.030 \\ (0.257) \end{gathered}$ | $\begin{gathered} 0.108 \\ (1.007) \end{gathered}$ |
| Birth Month Cohort | $\begin{gathered} 0.041^{* * *} \\ (0.008) \end{gathered}$ | $\begin{gathered} 0.028 \\ (0.025) \end{gathered}$ | $\begin{gathered} 0.137^{* * *} \\ (0.054) \end{gathered}$ | $\begin{gathered} -0.136^{* *} \\ (0.068) \end{gathered}$ | $\begin{gathered} -0.000 \\ (0.001) \end{gathered}$ | $\begin{gathered} 0.289^{* * *} \\ (0.127) \end{gathered}$ | $\begin{gathered} 0.011 \\ (0.012) \end{gathered}$ | $\begin{gathered} -0.009 \\ (0.048) \end{gathered}$ |
| Treated by OBRA 90 * Birth Month Cohort | $\begin{gathered} -0.007 \\ (0.016) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.049) \end{gathered}$ | $\begin{gathered} -0.019 \\ (0.087) \end{gathered}$ | $\begin{gathered} -0.307^{* *} \\ (0.112) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.002) \end{aligned}$ | $\begin{aligned} & -0.065 \\ & (0.197) \end{aligned}$ | $\begin{gathered} -0.006 \\ (0.021) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.076) \end{gathered}$ |
| Constant | $\begin{gathered} 1.305^{* * *} \\ (0.116) \end{gathered}$ | $\begin{gathered} 0.947^{* *} \\ (0.357) \end{gathered}$ | $\begin{gathered} 3.024^{* * *} \\ (0.811) \end{gathered}$ | $\begin{gathered} -3.470^{* * *} \\ (0.992) \end{gathered}$ | $\begin{gathered} -0.013 \\ (0.013) \end{gathered}$ | $\begin{gathered} 8.814^{* * *} \\ (1.829) \end{gathered}$ | $\begin{gathered} 0.423^{* * *} \\ (0.180) \end{gathered}$ | $\begin{aligned} & -0.177 \\ & (0.706) \end{aligned}$ |
| Male |  |  |  |  |  |  |  |  |
| Treated by OBRA 90 | $\begin{gathered} 0.681^{* * *} \\ (0.156) \end{gathered}$ | $\begin{gathered} 0.607 \\ (0.498) \end{gathered}$ | $\begin{gathered} 0.276 \\ (1.338) \end{gathered}$ | $\begin{gathered} 0.102 \\ (0.956) \end{gathered}$ | $\begin{gathered} -0.033 \\ (0.036) \end{gathered}$ | $\begin{gathered} 1.636 \\ (2.263) \end{gathered}$ | $\begin{gathered} 0.013 \\ (0.115) \end{gathered}$ | $\begin{gathered} 0.175 \\ (0.668) \end{gathered}$ |
| Birth Month Cohort | $\begin{gathered} 0.041^{* * *} \\ (0.009) \end{gathered}$ | $\begin{gathered} 0.029 \\ (0.026) \end{gathered}$ | $\begin{gathered} 0.145 * * \\ (0.072) \end{gathered}$ | $\begin{gathered} -0.139 * * * \\ (0.051) \end{gathered}$ | $\begin{gathered} 0.002 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.377^{* * *} \\ (0.115) \end{gathered}$ | $\begin{gathered} 0.007 \\ (0.006) \end{gathered}$ | $\begin{gathered} 0.003 \\ (0.035) \end{gathered}$ |
| Treated by OBRA 90 * Birth Month Cohort | $\begin{aligned} & -0.007 \\ & (0.015) \end{aligned}$ | $\begin{aligned} & -0.001 \\ & (0.052) \end{aligned}$ | $\begin{gathered} -0.019 \\ (0.115) \end{gathered}$ | $\begin{gathered} -0.259 * * * \\ (0.083) \end{gathered}$ | $\begin{gathered} -0.006^{* *} \\ (0.003) \end{gathered}$ | $\begin{aligned} & -0.121 \\ & (0.193) \end{aligned}$ | $\begin{gathered} -0.004 \\ (0.010) \end{gathered}$ | $\begin{aligned} & -0.001 \\ & (0.058) \end{aligned}$ |
| Constant | $\begin{gathered} 1.307^{* * *} \\ (0.114) \end{gathered}$ | $\begin{gathered} 0.934^{* *} \\ (0.359) \end{gathered}$ | $\begin{gathered} 3.418^{* * *} \\ (1.010) \end{gathered}$ | $\begin{gathered} -3.720^{* * *} \\ (0.713) \end{gathered}$ | $\begin{gathered} 0.010 \\ (0.025) \end{gathered}$ | $\begin{gathered} 10.334^{* * *} \\ (1.599) \end{gathered}$ | $\begin{gathered} 0.235^{* *} \\ (0.084) \end{gathered}$ | $\begin{gathered} 0.293 \\ (0.492) \end{gathered}$ |
| All |  |  |  |  |  |  |  |  |
| Treated by OBRA 90 | $\begin{gathered} 0.682^{* * *} \\ (0.118) \end{gathered}$ | $\begin{aligned} & 0.597^{*} \\ & (0.365) \end{aligned}$ | $\begin{gathered} 0.281 \\ (1.020) \end{gathered}$ | $\begin{gathered} 0.193 \\ (1.022) \end{gathered}$ | $\begin{gathered} -0.017 \\ (0.038) \end{gathered}$ | $\begin{gathered} 1.196 \\ (1.935) \end{gathered}$ | $\begin{gathered} 0.024 \\ (0.158) \end{gathered}$ | $\begin{gathered} 0.135 \\ (0.609) \end{gathered}$ |
| Birth Month Cohort | $\begin{gathered} 0.041^{* * *} \\ (0.006) \end{gathered}$ | $\begin{gathered} 0.029 \\ (0.019) \end{gathered}$ | $\begin{gathered} 0.140^{* * *} \\ (0.049) \end{gathered}$ | $\begin{gathered} -0.139^{* *} \\ (0.053) \end{gathered}$ | $\begin{gathered} 0.001 \\ (0.002) \end{gathered}$ | $\begin{gathered} 0.336^{* * *} \\ (0.105) \end{gathered}$ | $\begin{gathered} 0.008 \\ (0.008) \end{gathered}$ | $\begin{aligned} & -0.002 \\ & (0.032) \end{aligned}$ |
| Treated by OBRA 90 * Birth Month Cohort | $\begin{aligned} & -0.007 \\ & (0.011) \end{aligned}$ | $\begin{gathered} 0.000 \\ (0.034) \end{gathered}$ | $\begin{gathered} -0.019 \\ (0.086) \end{gathered}$ | $\begin{gathered} -0.282^{* * *} \\ (0.084) \end{gathered}$ | $\begin{aligned} & -0.003 \\ & (0.003) \end{aligned}$ | $\begin{aligned} & -0.095 \\ & (0.166) \end{aligned}$ | $\begin{aligned} & -0.005 \\ & (0.014) \end{aligned}$ | $\begin{aligned} & -0.001 \\ & (0.052) \end{aligned}$ |
| Constant | $\begin{gathered} 1.306 * * * \\ (0.085) \end{gathered}$ | $\begin{gathered} 0.940^{* * *} \\ (0.258) \end{gathered}$ | $\begin{gathered} 3.211^{* * *} \\ (0.747) \end{gathered}$ | $\begin{gathered} -3.616^{* * *} \\ (0.691) \end{gathered}$ | $\begin{gathered} -0.000 \\ (0.026) \end{gathered}$ | $\begin{gathered} 9.621^{* * *} \\ (1.346) \end{gathered}$ | $\begin{gathered} 0.324^{* * *} \\ (0.110) \end{gathered}$ | $\begin{gathered} 0.069 \\ (0.433) \end{gathered}$ |

[^1]Table OA.2: Contemporaneous and Cumulative College Enrollment (\%)


[^2]Table OA.3: Contemporaneous and Cumulative Fertility (\%)

|  | (1) Age 15 | (2) <br> Age 16 | (3) Age 17 | (4) Age 18 | $\begin{gathered} \hline(1) \\ \text { Age } 19 \end{gathered}$ | $\overline{(2)}$ $\text { Age } 20$ | (3) <br> Age 21 | (4) <br> Age 22 | (5) <br> Age 23 | (6) Age 24 | (7) <br> Age 25 | $\begin{gathered} \hline(8) \\ \text { Age } 26 \end{gathered}$ | $\begin{gathered} (9) \\ \text { Age } 27 \end{gathered}$ | $\begin{gathered} \hline(10) \\ \text { Age } 28 \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contemporaneous Fertility (First Dependent Child Born; \%) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Female |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | -0.039* | -0.055 | -0.062 | -0.133** | -0.119** | -0.130** | -0.139** | -0.088 | -0.022 | -0.057 | -0.070** | -0.009 | -0.085** | -0.063 |
| Eligible, Age 0-18 | (-0.021) | (-0.034) | (-0.044) | (-0.065) | (-0.057) | (0.060) | (0.062) | (0.054) | (0.036) | (0.041) | (0.031) | (0.032) | (0.033) | (0.050) |
| Mean | 1.056 | 1.806 | 2.805 | 3.880 | 4.848 | 4.709 | 4.220 | 3.971 | 3.726 | 3.654 | 3.710 | 3.705 | 3.721 | 3.294 |
| Male |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | 0.003 | -0.003 | 0.006 | -0.011 | -0.051 | -0.051 | -0.107** | -0.042 | -0.049 | -0.090** | -0.040 | -0.058* | -0.026 | -0.072** |
| Eligible, Age 0-18 | (-0.013) | (-0.013) | (-0.017) | (-0.031) | (-0.042) | (0.047) | (0.041) | (0.048) | (0.039) | (0.037) | (0.030) | (0.030) | (0.030) | (0.029) |
| Mean | 0.642 | 0.865 | 1.290 | 1.883 | 2.488 | 2.834 | 2.958 | 3.077 | 3.134 | 3.177 | 3.180 | 3.157 | 3.162 | 2.852 |
| All |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | -0.018 | -0.029 | -0.028 | -0.071 | -0.085* | -0.090* | -0.123** | -0.065 | -0.036 | -0.074** | -0.055** | -0.035 | -0.055** | -0.068* |
| Eligible, Age 0-18 | (0.015) | (0.019) | (0.028) | (0.044) | (0.047) | (0.047) | (0.047) | (0.045) | (0.033) | (0.037) | (0.023) | (0.023) | (0.022) | (0.034) |
| Mean | 0.844 | 1.325 | 2.031 | 2.860 | 3.642 | 3.751 | 3.575 | 3.514 | 3.423 | 3.410 | 3.439 | 3.425 | 3.435 | 3.068 |
| Cumulative Fertility (Dependent Child Ever Born; \%) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Female |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | -0.038 | -0.117* | -0.197* | -0.393** | -0.512** | -0.642** | -0.781** | -0.870** | -0.892** | -0.949** | -1.019** | -1.028** | -1.114*** | -1.177*** |
| Eligible, Age 0-18 | (-0.035) | (-0.069) | (-0.099) | (-0.163) | (0.212) | (0.250) | (0.300) | (0.344) | (0.362) | (0.391) | (0.400) | (0.399) | (0.399) | (0.374) |
| Mean | 2.523 | 4.330 | 7.135 | 11.015 | 15.863 | 20.572 | 24.792 | 28.763 | 32.489 | 36.143 | 39.854 | 43.559 | 47.279 | 50.573 |
| Male |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | -0.042 | -0.056 | -0.075 | -0.136 | -0.187 | -0.238 | -0.345* | -0.387* | -0.436* | -0.526* | -0.566* | -0.624* | -0.649** | -0.721** |
| Eligible, Age 0-18 | (-0.032) | (-0.034) | (-0.052) | (-0.083) | (0.119) | (0.157) | (0.189) | (0.215) | (0.245) | (0.274) | (0.293) | (0.313) | (0.313) | (0.313) |
| Mean | 2.048 | 2.912 | 4.202 | 6.084 | 8.572 | 11.407 | 14.364 | 17.442 | 20.575 | 23.752 | 26.932 | 30.088 | 33.250 | 36.103 |
| All |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | -0.040 | -0.087* | -0.135* | -0.263** | -0.348** | -0.438** | -0.560** | -0.625** | -0.662** | -0.736** | -0.790** | -0.825** | -0.880** | -0.948*** |
| Eligible, Age 0-18 | (-0.027) | (-0.044) | (-0.071) | (-0.118) | (0.159) | (0.196) | (0.237) | (0.271) | (0.293) | (0.322) | (0.336) | (0.346) | (0.345) | (0.332) |
| Mean | 2.280 | 3.606 | 5.637 | 8.496 | 12.138 | 15.890 | 19.465 | 22.979 | 26.402 | 29.812 | 33.252 | 36.677 | 40.112 | 43.180 |




Note. ${ }^{* * *} \mathrm{p}<0.01,{ }^{* *} \mathrm{p}<0.05,^{*} \mathrm{p}<0.10$. Standard errors in parentheses are clustered by state. Contemporaneous fertility indicates if a first dependent child is born at a given age, and cumulative fertility indicates if a dependent child is ever born by a given age, starting at age 15. If an individual ever claims a dependent child on a Form 1040, SSA records yield age at birth. For ages younger than 19, coefficients are obtained from separate reduced form regressions of fertility on simulated years eligible from birth through the given age. For ages 19 and older, coefficients are obtained from separate reduced form regressions of fertility on simulated years eligible, ages $0-18$. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample).

Table OA.4: Contemporaneous and Cumulative Mortality (\%)

|  | (1) Age 19 | (2) <br> Age 20 | (3) Age 21 | (4) <br> Age 22 | (5) <br> Age 23 | (6) <br> Age 24 | (7) <br> Age 25 | (8) <br> Age 26 | (9) <br> Age 27 | $\begin{gathered} \hline(10) \\ \text { Age } 28 \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contemporaneous Mortality (\%) |  |  |  |  |  |  |  |  |  |  |
| Female |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | -0.003 |  | -0.004 | $-0.005^{* *}$ | -0.001 | -0.001 | -0.005 |  |  | 0.006* |
| Eligible, Age 0-18 | (0.003) | (0.003) | (0.004) | (0.002) | (0.003) | (0.004) | (0.003) | (0.003) | (0.004) | (0.003) |
| Mean | 0.037 | 0.037 | 0.038 | 0.040 | 0.039 | 0.041 | 0.042 | 0.046 | 0.046 | 0.051 |
| Male |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | -0.001 | 0.004 | -0.001 | 0.006 | -0.009** | $-0.013^{* *}$ | 0.001 | -0.002 | -0.005 | -0.009 |
| Eligible, Age 0-18 | (0.004) | (0.005) | (0.004) | (0.005) | (0.004) | (0.005) | (0.004) | (0.005) | (0.005) | (0.006) |
| Mean | 0.098 | 0.111 | 0.120 | 0.125 | 0.126 | 0.129 | 0.125 | 0.121 | 0.120 | 0.121 |
| All |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | -0.002 | 0.003 | -0.003 | 0.000 | -0.005* | $-0.007^{* *}$ | -0.002 | -0.001 | -0.002 | -0.001 |
| Eligible, Age 0-18 | (0.003) | (0.003) | (0.002) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.004) | (0.004) |
| Mean | 0.068 | 0.075 | 0.080 | 0.084 | 0.083 | 0.086 | 0.084 | 0.084 | 0.084 | 0.087 |
| Cumulative Mortality (\%) |  |  |  |  |  |  |  |  |  |  |
| Female |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | -0.003 | -0.001 | -0.005 | -0.010* | -0.011 | -0.012 | -0.017* | -0.016* | -0.015* | -0.009 |
| Eligible, Age 0-18 | (0.003) | (0.004) | (0.006) | (0.006) | (0.007) | (0.008) | (0.009) | (0.008) | (0.009) | (0.010) |
| Mean | 0.037 | 0.074 | 0.112 | 0.152 | 0.191 | 0.232 | 0.274 | 0.320 | 0.367 | 0.417 |
| Male |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | -0.001 | 0.003 | 0.002 | 0.007 | -0.002 | -0.015 | -0.015 | -0.017 | -0.022 | -0.031* |
| Eligible, Age 0-18 | (0.004) | (0.007) | (0.008) | (0.009) | (0.010) | (0.012) | (0.013) | (0.013) | (0.014) | (0.017) |
| Mean | 0.098 | 0.209 | 0.329 | 0.454 | 0.579 | 0.707 | 0.831 | 0.951 | 1.070 | 1.191 |
| All |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | -0.002 | 0.001 | -0.001 | -0.001 | -0.006 | -0.013* | -0.015* | $-0.016^{* *}$ | -0.018** | -0.020* |
| Eligible, Age 0-18 | (0.003) | (0.004) | (0.005) | (0.006) | (0.007) | (0.008) | (0.008) | (0.008) | (0.008) | (0.011) |
| Mean | 0.068 | 0.143 | 0.223 | 0.306 | 0.389 | 0.475 | 0.559 | 0.643 | 0.726 | 0.812 |
| Female Observations | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 |
| Male Observations | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 |
| All Observations | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 |

Note. ${ }^{* * *} \mathrm{p}<0.01,^{* *} \mathrm{p}<0.05,^{*} \mathrm{p}<0.10$. Standard errors in parentheses are clustered by state. Contemporaneous mortality indicates mortality at a given age, measured using SSA death records. Cumulative mortality indicates mortality by a given age, starting at age 19. Coefficients for each age are obtained from separate reduced form regressions of mortality on simulated years eligible, ages $0-18$. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample).

Table OA.5: Contemporaneous Wage Income (\$000)

|  | (1) <br> Age 19 | (2) <br> Age 20 | (3) <br> Age 21 | (4) <br> Age 22 | (5) <br> Age 23 | (6) <br> Age 24 | (7) <br> Age 25 | (8) <br> Age 26 | (9) <br> Age 27 | (10) <br> Age 28 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contemporaneous Wage Income (\$000) |  |  |  |  |  |  |  |  |  |  |
| Female |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | 0.059* | 0.045 | -0.029 | 0.077 | $0.213^{* * *}$ | $0.306^{* * *}$ | 0.259** | 0.208 | 0.232 | $0.414^{* * *}$ |
| Eligible, Age 0-18 | (0.031) | (0.043) | (0.039) | (0.061) | (0.073) | (0.090) | (0.121) | (0.142) | (0.144) | (0.148) |
| Mean | 4.198 | 5.566 | 6.769 | 8.729 | 12.234 | 15.684 | 18.137 | 20.106 | 21.842 | 23.336 |
| Male |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | 0.061 | 0.024 | -0.082 | -0.045 | 0.069 | 0.130 | 0.197 | 0.066 | 0.012 | 0.149 |
| Eligible, Age 0-18 | (0.041) | (0.047) | (0.067) | (0.075) | (0.110) | (0.146) | (0.168) | (0.170) | (0.167) | (0.183) |
| Mean | 4.864 | 6.619 | 8.204 | 10.461 | 14.038 | 18.026 | 20.988 | 23.519 | 26.055 | 28.577 |
| All |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | 0.061* | 0.035 | -0.055 | 0.015 | 0.140* | 0.217* | 0.228 | 0.136 | 0.121 | 0.280* |
| Eligible, Age 0-18 | (0.033) | (0.038) | (0.051) | (0.064) | (0.083) | (0.109) | (0.138) | (0.147) | (0.149) | (0.150) |
| Mean | 4.538 | 6.104 | 7.502 | 9.614 | 13.156 | 16.880 | 19.593 | 21.850 | 23.994 | 26.013 |
| Cumulative Wage Income (\$000) |  |  |  |  |  |  |  |  |  |  |
| Female |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | 0.059* | 0.104 | 0.076 | 0.152 | 0.366* | 0.672** | 0.930*** | $1.139^{* * *}$ | $1.370^{* *}$ | $1.784^{* * *}$ |
| Eligible, Age 0-18 | (0.031) | (0.069) | (0.094) | (0.145) | (0.206) | (0.255) | (0.324) | (0.424) | (0.539) | (0.662) |
| Mean | 4.198 | 9.763 | 16.532 | 25.262 | 37.496 | 53.180 | 71.316 | 91.422 | 113.264 | 136.600 |
| Male |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | 0.061 | 0.085 | 0.003 | -0.042 | 0.027 | 0.157 | 0.354 | 0.420 | 0.432 | 0.581 |
| Eligible, Age 0-18 | (0.041) | (0.083) | (0.131) | (0.189) | (0.271) | (0.358) | (0.482) | (0.609) | (0.728) | (0.885) |
| Mean | 4.864 | 11.483 | 19.687 | 30.147 | 44.186 | 62.212 | 83.199 | 106.718 | 132.774 | 161.350 |
| All |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | 0.061* | 0.095 | 0.040 | 0.055 | 0.195 | 0.411 | 0.639* | 0.776 | 0.896 | 1.177 |
| Eligible, Age 0-18 | (0.033) | (0.069) | (0.104) | (0.160) | (0.226) | (0.282) | (0.372) | (0.480) | (0.591) | (0.715) |
| Mean | 4.538 | 10.642 | 18.144 | 27.758 | 40.914 | 57.794 | 77.387 | 99.237 | 123.231 | 149.245 |
| Female Observations | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 |
| Male Observations | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 |
| All Observations | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 |

[^3]Table OA.6: Contemporaneous and Cumulative EITC (\$000)


Note. ${ }^{* * *} \mathrm{p}<0.01,{ }^{* *} \mathrm{p}<0.05,^{*} \mathrm{p}<0.10$. Standard errors in parentheses are clustered by state. Contemporaneous EITC indicates EITC earned at a given age, obtained from Form 1040, adjusted to 2011 dollars. Cumulative EITC indicates EITC earned by a given age, starting at age 19. Coefficients for each age are obtained from separate reduced form regressions of EITC on simulated years eligible, ages $0-18$. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample).

Table OA.7: Contemporaneous and Cumulative Total Taxes (\$000)

|  | (1) <br> Age 19 | (2) <br> Age 20 | (3) Age 21 | (4) <br> Age 22 | (5) <br> Age 23 | (6) <br> Age 24 | (7) <br> Age 25 | (8) <br> Age 26 | (9) <br> Age 27 | (10) <br> Age 28 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contemporaneous Total Taxes (\$000) |  |  |  |  |  |  |  |  |  |  |
| Female |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | $0.013^{* * *}$ | $0.021^{* * *}$ | 0.025** | $0.042^{* * *}$ | 0.066*** | $0.087^{* * *}$ | 0.110*** | 0.116*** | 0.093 ** | 0.115** |
| Eligible, Age 0-18 | (0.004) | (0.007) | (0.010) | (0.014) | (0.018) | (0.024) | (0.030) | (0.038) | (0.042) | (0.047) |
| Mean | 0.391 | 0.483 | 0.574 | 0.815 | 1.408 | 2.057 | 2.513 | 2.948 | 3.286 | 3.640 |
| Male |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | 0.010* | 0.011 | 0.007 | 0.010 | 0.031 | 0.053* | $0.074 * *$ | 0.074* | 0.049 | 0.061 |
| Eligible, Age 0-18 | (0.006) | (0.007) | (0.009) | (0.011) | (0.019) | (0.031) | (0.035) | (0.038) | (0.039) | (0.051) |
| Mean | 0.555 | 0.758 | 0.952 | 1.271 | 1.864 | 2.591 | 3.110 | 3.594 | 3.967 | 4.364 |
| All |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | $0.012^{* *}$ | $0.016^{* *}$ | 0.016* | $0.026^{* *}$ | $0.048^{* * *}$ | $0.070^{* * *}$ | 0.092*** | $0.094^{* *}$ | 0.071* | 0.088* |
| Eligible, Age 0-18 | (0.005) | (0.007) | (0.009) | (0.012) | (0.017) | (0.026) | (0.031) | (0.037) | (0.039) | (0.048) |
| Mean | 0.475 | 0.623 | 0.767 | 1.048 | 1.641 | 2.330 | 2.818 | 3.278 | 3.634 | 4.010 |
| Cumulative Total Taxes (\$000) |  |  |  |  |  |  |  |  |  |  |
| Female |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | $0.013^{* * *}$ | $0.034^{* * *}$ | $0.059^{* * *}$ | $0.101^{* * *}$ | $0.167^{* * *}$ | 0.255*** | 0.365*** | $0.481^{* * *}$ | $0.574^{* * *}$ | $0.689^{* * *}$ |
| Eligible, Age 0-18 | (0.004) | (0.011) | (0.021) | (0.034) | (0.050) | (0.068) | (0.093) | (0.125) | (0.160) | (0.200) |
| Mean | 0.391 | 0.874 | 1.447 | 2.263 | 3.671 | 5.728 | 8.241 | 11.189 | 14.475 | 18.115 |
| Male |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | 0.010* | 0.021* | 0.028 | 0.039 | 0.069 | 0.122* | $0.196^{* *}$ | 0.270** | $0.319^{* *}$ | 0.380* |
| Eligible, Age 0-18 | (0.006) | (0.012) | (0.020) | (0.029) | (0.042) | (0.063) | (0.092) | (0.125) | (0.157) | (0.200) |
| Mean | 0.555 | 1.313 | 2.264 | 3.535 | 5.399 | 7.989 | 11.100 | 14.693 | 18.661 | 23.025 |
| All |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | $0.012^{* *}$ | $0.028^{* *}$ | $0.044^{* *}$ | 0.069** | 0.118*** | $0.187^{* * *}$ | 0.279*** | $0.374 * * *$ | $0.445^{* * *}$ | $0.533^{* * *}$ |
| Eligible, Age 0-18 | (0.005) | (0.011) | (0.020) | (0.031) | (0.044) | (0.061) | (0.087) | (0.119) | (0.152) | (0.192) |
| Mean | 0.475 | 1.098 | 1.865 | 2.913 | 4.554 | 6.883 | 9.701 | 12.980 | 16.613 | 20.623 |
| Female Observations | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 |
| Male Observations | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 |
| All Observations | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 |

[^4]Table OA.8: Contemporaneous and Cumulative Any EITC (\%)

|  | (1) Age 19 | (2) <br> Age 20 | (3) <br> Age 21 | (4) <br> Age 22 | (5) Age 23 | (6) Age 24 | (7) Age 25 | (8) <br> Age 26 | (9) Age 27 | (10) <br> Age 28 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contemporaneous Any EITC (\%) |  |  |  |  |  |  |  |  |  |  | $\underset{\sim}{+}$ |
| Female |  |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | -0.215* | $-0.508^{* * *}$ | $-0.604^{* * *}$ | $-0.705^{* * *}$ | $-0.722^{* * *}$ | $-0.779^{* * *}$ | $-0.855^{* * *}$ | $-0.792^{* * *}$ | $-0.728^{* * *}$ | $-0.671^{* *}$ | $\stackrel{B}{B}$$\begin{aligned} & \text { 푹 } \\ & \text { Q } \end{aligned}$ |
| Eligible, Age 0-18 | (0.114) | (0.152) | (0.189) | (0.253) | (0.256) | (0.242) | (0.221) | (0.258) | (0.254) | (0.264) |  |
| Mean | 6.233 | 10.239 | 13.893 | 16.714 | 18.922 | 20.641 | 29.436 | 29.706 | 29.698 | 29.697 |  |
| Male |  |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | -0.096* | -0.179** | $-0.248^{* *}$ | -0.238* | -0.289* | -0.231 | -0.496** | -0.491** | -0.396* | -0.212 |  |
| Eligible, Age 0-18 | (0.056) | (0.079) | (0.108) | (0.139) | (0.159) | (0.173) | (0.234) | (0.218) | (0.226) | (0.239) |  |
| Mean | 2.368 | 4.132 | 5.910 | 7.364 | 8.575 | 9.571 | 21.221 | 21.335 | 21.075 | 20.794 |  |
| All |  |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | -0.155* | $-0.341^{* * *}$ | $-0.424^{* * *}$ | -0.469** | $-0.503^{* *}$ | -0.501** | $-0.673^{* * *}$ | $-0.640^{* * *}$ | -0.561** | -0.438* |  |
| Eligible, Age 0-18 | (0.080) | (0.108) | (0.140) | (0.187) | (0.195) | (0.193) | (0.214) | (0.224) | (0.232) | (0.241) |  |
| Mean | 4.259 | 7.119 | 9.815 | 11.937 | 13.636 | 14.985 | 25.239 | 25.429 | 25.293 | 25.149 |  |
| Cumulative Any EITC (\%) |  |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | -0.215* | -0.536*** | $-0.751^{* * *}$ | $-0.908^{* * *}$ | $-1.013^{* * *}$ | $-1.106^{* * *}$ | $-1.061^{* * *}$ | $-0.929^{* * *}$ | -0.787** | -0.748** |  |
| Eligible, Age 0-18 | (0.114) | (0.172) | (0.227) | (0.293) | (0.338) | (0.356) | (0.318) | (0.321) | (0.313) | (0.316) |  |
| Mean | 6.233 | 11.542 | 16.666 | 21.215 | 25.218 | 28.743 | 38.498 | 43.878 | 47.754 | 50.760 |  |
| Male |  |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | -0.096* | -0.220** | -0.359** | -0.455** | $-0.523^{* *}$ | -0.580** | -0.737** | -0.788** | $-0.716^{* *}$ | -0.635* |  |
| Eligible, Age 0-18 | (0.056) | (0.098) | (0.142) | (0.182) | (0.223) | (0.244) | (0.278) | (0.315) | (0.342) | (0.342) |  |
| Mean | 2.368 | 4.880 | 7.729 | 10.622 | 13.476 | 16.223 | 28.634 | 35.615 | 40.571 | 44.352 |  |
| All |  |  |  |  |  |  |  |  |  |  |  |
| Simulated Years | -0.155* | $-0.376^{* * *}$ | $-0.553^{* * *}$ | $-0.679^{* * *}$ | $-0.765^{* * *}$ | $-0.840 * * *$ | $-0.898 * * *$ | $-0.859^{* * *}$ | $-0.753^{* *}$ | $-0.692^{* *}$ |  |
| Eligible, Age 0-18 | (0.080) | (0.127) | (0.175) | (0.229) | (0.271) | (0.289) | (0.287) | (0.309) | (0.321) | (0.323) |  |
| Mean | 4.259 | 8.138 | 12.100 | 15.803 | 19.219 | 22.346 | 33.459 | 39.656 | 44.084 | 47.486 |  |
| Female Observations | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 |  |
| Male Observations | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 |  |
| All Observations | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 |  |

Note. ${ }^{* * *} \mathrm{p}<0.01,{ }^{* *} \mathrm{p}<0.05,^{*} \mathrm{p}<0.10$. Standard errors in parentheses are clustered by state. Contemporaneous EITC indicates whether the individual earned any EITC at a given age, obtained from Form 1040. Cumulative EITC indicates whether the individual earned any EITC by a given age, starting at age 19. Coefficients for each age are obtained from separate reduced form regressions of any EITC on simulated years eligible, ages $0-18$. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample).

## Appendix 4 Supplemental Total Taxes Results

Figure OA.4: Contemporaneous and Cumulative Total Taxes and Total Tax Components (\$000)


Note. Contemporaneous outcomes are measured at a given age, and cumulative outcomes are measured by a given age, starting at age 19. EITC was obtained from Form 1040, adjusted to 2011 dollars. Payroll taxes are defined as employee portion of payroll taxes reported on Form W-2 across employers, only for the individuals of interest, and the taxes reported on Schedule SE for the self employed, both adjusted to 2011 dollars. Income taxes are defined as household federal tax payments less EITC, adjusted to 2011 dollars. Coefficients for each age are obtained from separate reduced form regressions of the given outcome on simulated years eligible, ages $0-18$. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample). Standard errors are clustered by state.

Table OA.9: Contemporaneous Total Tax Components (\$000)

|  | (1) $\text { Age } 19$ | $\begin{gathered} \hline(2) \\ \text { Age } 20 \end{gathered}$ | $\begin{gathered} \hline(3) \\ \text { Age } 21 \end{gathered}$ | (4) <br> Age 22 | (5) <br> Age 23 | (6) <br> Age 24 | (7) <br> Age 25 | (8) <br> Age 26 | (9) <br> Age 27 | $\begin{gathered} \hline(10) \\ \text { Age } 28 \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All |  |  |  |  |  |  |  |  |  |  |
| EITC |  |  |  |  |  |  |  |  |  |  |
| Simulated Years Eligible, Age 0-18 | $\begin{gathered} -0.005^{* * *} \\ (0.001) \end{gathered}$ | $\begin{gathered} -0.009^{* * *} \\ (0.002) \end{gathered}$ | $\begin{gathered} -0.012^{* * *} \\ (0.003) \end{gathered}$ | $\begin{gathered} -0.016^{* * *} \\ (0.004) \end{gathered}$ | $\begin{gathered} -0.019^{* * *} \\ (0.005) \end{gathered}$ | $\begin{gathered} -0.020^{* * *} \\ (0.005) \end{gathered}$ | $\begin{gathered} -0.026^{* * *} \\ (0.006) \end{gathered}$ | $\begin{gathered} -0.028^{* * *} \\ (0.007) \end{gathered}$ | $\begin{gathered} -0.026^{* * *} \\ (0.007) \end{gathered}$ | $\begin{gathered} -0.021^{* * *} \\ (0.008) \end{gathered}$ |
| Mean | 0.066 | 0.119 | 0.175 | 0.226 | 0.275 | 0.323 | 0.395 | 0.443 | 0.489 | 0.533 |
| \% Change in Total Taxes | 42\% | 56\% | 75\% | $62 \%$ | 40\% | 29\% | 28\% | 30\% | 37\% | 24\% |
| Payroll Taxes |  |  |  |  |  |  |  |  |  |  |
| Simulated Years Eligible, Age 0-18 | $\begin{gathered} 0.003 \\ (0.002) \end{gathered}$ | $\begin{aligned} & -0.000 \\ & (0.003) \end{aligned}$ | $\begin{gathered} -0.003 \\ (0.003) \end{gathered}$ | $\begin{gathered} 0.000 \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.008 \\ (0.005) \end{gathered}$ | $\begin{aligned} & 0.015^{*} \\ & (0.008) \end{aligned}$ | $\begin{gathered} 0.016 \\ (0.010) \end{gathered}$ | $\begin{gathered} 0.013 \\ (0.011) \end{gathered}$ | $\begin{gathered} -0.006 \\ (0.010) \end{gathered}$ | $\begin{aligned} & -0.006 \\ & (0.010) \end{aligned}$ |
| Mean | 0.337 | 0.457 | 0.568 | 0.737 | 1.011 | 1.300 | 1.511 | 1.687 | 1.736 | 1.752 |
| \% Change in Total Taxes | 25\% | 0\% | - $19 \%$ | 0\% | 17\% | 21\% | 17\% | 14\% | - $8 \%$ | - $7 \%$ |
| Income Taxes + EITC |  |  |  |  |  |  |  |  |  |  |
| Simulated Years Eligible, Age 0-18 | $\begin{gathered} 0.004 \\ (0.003) \end{gathered}$ | $\begin{aligned} & 0.007^{*} \\ & (0.004) \end{aligned}$ | $\begin{gathered} 0.007 \\ (0.004) \end{gathered}$ | $\begin{gathered} 0.010 \\ (0.006) \end{gathered}$ | $\begin{gathered} 0.021^{* *} \\ (0.010) \end{gathered}$ | $\begin{gathered} 0.035^{* *} \\ (0.016) \end{gathered}$ | $\begin{gathered} 0.050^{* *} \\ (0.019) \end{gathered}$ | $\begin{gathered} 0.053^{* *} \\ (0.022) \end{gathered}$ | $\begin{aligned} & 0.051^{*} \\ & (0.026) \end{aligned}$ | $\begin{gathered} 0.073^{* *} \\ (0.034) \end{gathered}$ |
| Mean | 0.204 | 0.286 | 0.373 | 0.537 | 0.905 | 1.353 | 1.701 | 2.034 | 2.387 | 2.791 |
| \% Change in Total Taxes | $33 \%$ | 44\% | 44\% | $38 \%$ | 44\% | 50\% | $54 \%$ | $56 \%$ | $72 \%$ | 83\% |
| Female Observations | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 | 4,913,139 |
| Male Observations | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 | 5,132,023 |
| All Observations | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 | 10,045,162 |

Note. ${ }^{* * *} \mathrm{p}<0.01,{ }^{* *} \mathrm{p}<0.05,^{*} \mathrm{p}<0.10$. Standard errors in parentheses are clustered by state. Contemporaneous EITC indicates EITC earned at a given age, obtained from Form 1040, adjusted to 2011 dollars. Contemporaneous payroll taxes indicate payroll taxes earned at a given age, defined as employee portion of payroll taxes reported on Form W-2 across employers, only for the individuals of interest, and the taxes reported on Schedule SE for the self employed, both adjusted to 2011 dollars. Contemporaneous income taxes are defined as household federal tax payments less EITC at a given age, adjusted to 2011 dollars. Coefficients for each age are obtained from separate reduced form regressions of the given outcome on simulated years eligible, ages $0-18$. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample). The "\% change in total taxes" due to each component is calculated as the ratio between the point estimate for the given component and the point estimate for total taxes at each age, adjusted by a factor of ( -1 ) for the EITC component, which enters negatively into the decomposition. For example, at age 28 in the full sample, $27 \%(=(-1) *(-0.030) / 0.110)$ of the increase in contemporaneous total taxes due to an additional year of Medicaid eligibility is due to decreases in EITC.

## Appendix 5 Heterogeneous Effects by Childhood Household FPL

### 5.1 College Enrollment

Figure OA.5: Cumulative College Enrollment (\%) by Family FPL at Ages 15-18


Note. Cumulative college enrollment indicates ever having enrolled in college by a given age, starting at age 19, observed through Form 1098-T, filed by educational institutions. Children are assigned to an \% FPL bin if their household remained in that bin at every age from 15-18. We exclude children with heterogeneity in their observed \% FPL bin ( $32.2 \%$ of the sample). Coefficients for each age are obtained from separate reduced form regressions of college enrollment on simulated years eligible, ages $0-18$. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample). Standard errors are clustered by state.

### 5.2 Fertility

Figure OA.6: Cumulative Fertility (\%) by Family FPL at Ages 15-18

Female



All


$\triangle 0.01<p<0.05$ - $0.05<p<0.1 \circ p>0.1$




$$
-<200 \% \text { FPL } \quad-200 \%-500 \% \text { FPL } \quad->500 \% \text { FPL }
$$

Note. Cumulative fertility indicates if a dependent child is ever born by a given age, starting at age 19. If an individual ever claims a dependent child on a Form 1040, SSA records yield age at birth. Children are assigned to an \% FPL bin if their household remained in that bin at every age from 15-18. We exclude children with heterogeneity in their observed \% FPL bin ( $32.2 \%$ of the sample). Coefficients for each age are obtained from separate reduced form regressions of fertility on simulated years eligible, ages $0-18$. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample). Standard errors are clustered by state.

### 5.3 Mortality

Figure OA.7: Cumulative Mortality (\%) by Family FPL at Ages 15-18


Note. Cumulative mortality indicates mortality by a given age, starting at age 19, measured using SSA death records. Children are assigned to an $\%$ FPL bin if their household remained in that bin at every age from $15-18$. We exclude children with heterogeneity in their observed \% FPL bin ( $32.2 \%$ of the sample). Coefficients for each age are obtained from separate reduced form regressions of mortality on simulated years eligible, ages $0-18$. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample). Standard errors are clustered by state.

### 5.4 Wage Income

Figure OA.8: Cumulative Wage Income (\$000) by Family FPL at Ages 15-18


Note. Cumulative wage income indicates wages earned by a given age, starting at age 19, obtained from Form W-2, adjusted to 2011 dollars and censored at $\$ 10$ million. Children are assigned to an \% FPL bin if their household remained in that bin at every age from 15-18. We exclude children with heterogeneity in their observed \% FPL bin ( $32.2 \%$ of the sample). Coefficients for each age are obtained from separate reduced form regressions of wage income on simulated years eligible, ages $0-18$. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample). Standard errors are clustered by state.

### 5.5 Earned Income Tax Credit (EITC)

Figure OA.9: Cumulative EITC (\$000) by Family FPL at Ages 15-18


Note. Cumulative EITC indicates EITC earned by a given age, starting at age 19, obtained from Form 1040, adjusted to 2011 dollars. Children are assigned to an \% FPL bin if their household remained in that bin at every age from $15-18$. We exclude children with heterogeneity in their observed $\%$ FPL bin ( $32.2 \%$ of the sample). Coefficients for each age are obtained from separate reduced form regressions of EITC on simulated years eligible, ages $0-18$. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample).

### 5.6 Total Taxes

Figure OA.10: Cumulative Total Taxes (\$000) by Family FPL at Ages 15-18


Note. We also present this figure as Figure 3. Cumulative total taxes indicate taxes paid by a given age, starting at age 19, defined as household federal tax payments plus individual payroll tax payments less EITC, adjusted to 2011 dollars. Children are assigned to an \% FPL bin if their household remained in that bin at every age from $15-18$. We exclude children with heterogeneity in their observed \% FPL bin ( $32.2 \%$ of the sample). Coefficients for each age are obtained from separate reduced form regressions of total taxes on simulated years eligible, ages $0-18$. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample). Standard errors are clustered by state.

## Appendix 6 Heterogeneous Effects by Parental Filing Status

The means in Figure OA. 11 show that children whose parents file jointly pay more taxes in adulthood, consistent with inter-generational persistence in income. However, the coefficients show that children whose parents do not file jointly experience impacts of Medicaid that are almost twice as large. For each additional year of Medicaid eligibility during childhood, cumulative total taxes by age 28 increase by $\$ 651$ for children whose parents do not file jointly, compared to $\$ 350$ for children whose parents file jointly.

Figure OA.11: Cumulative Total Taxes (\$000) by Parental Filing Status


Note. Cumulative total taxes indicate taxes paid by a given age, starting at age 19, defined as household federal tax payments plus individual payroll tax payments less EITC, adjusted to 2011 dollars. We proxy for household structure using filing status, separately considering children with "parents filing jointly" at age 15-only those whose parents file as "married, filing jointly"and all other children. Coefficients for each age are obtained from separate reduced form regressions of total taxes on simulated years eligible, ages $0-18$. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample). Standard errors are clustered by state.

## Appendix 7 Heterogeneous Effects at Different Ages

Figure OA.12: Heterogeneous Effects of Medicaid Eligibility at Different Ages Cumulative Total Taxes (\$000)


Note. Cumulative total taxes indicate taxes paid by the given age, starting at age 19, defined as household federal tax payments plus individual payroll tax payments less EITC, adjusted to 2011 dollars. Coefficients for each age range are obtained from a single reduced form regression of cumulative total taxes on the given vector of simulated eligibility variables. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample).

# Appendix 8 Heterogeneous Distributional Effects Within the High Impact Sample 

Table OA.10: Heterogeneous Distributional Effects Within the High Impact Sample

| $(1)$ | $(2)$ | $(3)$ | $(4)$ |  |
| :---: | :---: | :---: | :---: | :---: |
| Below Q1 | Q1 to Q2 | Q2 to Q3 | Above Q3 |  |
|  | $\%$ | $\%$ | $\%$ | $\%$ |


| Cumulative Total Taxes by Age 28 |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
| Female |  |  |  |  |
| Simulated Years | $-3.295^{* *}$ | $0.475^{*}$ | $1.228^{* *}$ | $1.593^{* *}$ |
| Eligible, Age 0-18 | $(0.676)$ | $(0.204)$ | $(0.283)$ | $(0.478)$ |
| Mean | 43.917 | 21.532 | 19.723 | 14.829 |
| Male |  |  |  |  |
| Simulated Years | $-2.384^{* *}$ | -0.074 | $0.793^{* *}$ | $1.665^{* *}$ |
| Eligible, Age 0-18 | $(0.475)$ | $(0.208)$ | $(0.185)$ | $(0.494)$ |
| Mean | 27.531 | 30.501 | 23.574 | 18.393 |
| All |  |  |  |  |
| Simulated Years | $-2.854^{* *}$ | 0.209 | $1.011^{* *}$ | $1.634^{* *}$ |
| Eligible, Age 0-18 | $(0.561)$ | $(0.179)$ | $(0.215)$ | $(0.479)$ |
| Mean | 35.612 | 26.078 | 21.675 | 16.635 |


| Cumulative Wage Income by Age 28 |  |  |  |  |
| :--- | :---: | :--- | :--- | :--- |
| Female |  |  |  |  |
| Simulated Years | $-1.461^{*}$ | -0.283 | 0.155 | $1.589^{* *}$ |
| Eligible, Age 0-18 | $(0.567)$ | $(0.153)$ | $(0.288)$ | $(0.388)$ |
| Mean | 33.081 | 28.588 | 23.186 | 15.146 |
| Male |  |  |  |  |
| Simulated Years | $-1.504^{* *}$ | -0.182 | 0.241 | $1.444^{* *}$ |
| Eligible, Age 0-18 | $(0.398)$ | $(0.175)$ | $(0.176)$ | $(0.415)$ |
| Mean | 29.439 | 23.977 | 22.962 | 23.622 |
| All |  |  |  |  |
| Simulated Years | $-1.480^{* * *}$ | $-0.239^{*}$ | 0.193 | $1.526^{* * *}$ |
| Eligible, Age 0-18 | $(0.470)$ | $(0.142)$ | $(0.211)$ | $(0.390)$ |
| Mean | 31.235 | 26.251 | 23.072 | 19.442 |
| Female Observations | $1,711,145$ | $1,711,145$ | $1,711,145$ | $1,711,145$ |
| Male Observations | $1,758,738$ | $1,758,738$ | $1,758,738$ | $1,758,738$ |
| All Observations | $3,469,883$ | $3,469,883$ | $3,469,883$ | $3,469,883$ |

Note. ${ }^{* * *} \mathrm{p}<0.01,{ }^{* *} \mathrm{p}<0.05,^{*} \mathrm{p}<0.10$. Standard errors in parentheses are clustered by state. The outcome is an indicator for being in the given quartile of the cumulative total taxes or wage income distribution for the full sample at age 28 . Cumulative total taxes indicate taxes paid by age 28 starting at age 19, defined as household federal tax payments plus individual payroll tax payments less EITC, adjusted to 2011 dollars. Cumulative wage income indicates wages earned by age 28 starting at age 19, obtained from Form W-2, adjusted to 2011 dollars and censored at $\$ 10$ million. Coefficients are obtained from a reduced form regression of the outcome on simulated years eligible, ages $0-18$, within the sample of children below $200 \%$ of the FPL from ages $15-18$. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample).

## Appendix 9 Robustness to Assumptions in Early Childhood

### 9.1 Robustness to Simulated Eligibility in the CPS

Figure OA.13: Robustness to Simulated Eligibility in the CPS
Cumulative Total Taxes (\$000)


Note. Cumulative total taxes indicate taxes paid by the given age, starting at age 19, defined as household federal tax payments plus individual payroll tax payments less EITC, adjusted to 2011 dollars. Coefficients are obtained from separate reduced form regressions of cumulative total taxes on simulated years eligible, ages $0-18$, calculated in our main data and in the CPS sample. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample). Standard errors are clustered by state. Dashed lines show $95 \%$ confidence intervals.

### 9.2 Robustness to Restricting Variation in State of Residence

Figure OA.14: Robustness to Restricting Variation in State of Residence
Cumulative Total Taxes (\$000)


Note. Cumulative total taxes indicate taxes paid by the given age, starting at age 19, defined as household federal tax payments plus individual payroll tax payments less EITC, adjusted to 2011 dollars. Coefficients are obtained from separate reduced form regressions of cumulative total taxes on simulated years eligible, ages $0-18$, for those who lived in more than one state between ages $15-18$ (" $>1$ States of Residence"), for those who did not ("Constant State of Residence"), and for the full sample ("Main Results"). The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample). Standard errors are clustered by state.

## Appendix 10 Robustness to Sibling Controls and Family Fixed Effects

Figure OA.15: Robustness to Sibling Controls and Family Fixed Effects
Cumulative Total Taxes (\$000)


Note. Cumulative total taxes indicate taxes paid by the given age, starting at age 19, defined as household federal tax payments plus individual payroll tax payments less EITC, adjusted to 2011 dollars. Coefficients are obtained from separate reduced form regressions of cumulative total taxes on simulated years eligible, ages $0-18$, using the sample of households with two children. The "Sibling Controls" specification controls for the sibling's tax outcome at the age equal to the age of the specification outcome. The "Family FEs" specification includes fixed effects for the household that claims both children. Standard errors are clustered by state. Dashed lines show $95 \%$ confidence intervals.

## Appendix 11 Robustness to Sample Selection

Figure OA.16: Robustness to Sample Selection
Cumulative Total Taxes (\$000)


Note. Cumulative total taxes indicate taxes paid by the given age, starting at age 19, defined as household federal tax payments plus individual payroll tax payments less EITC, adjusted to 2011 dollars. Coefficients are obtained from separate reduced form regressions of cumulative total taxes on simulated years eligible, ages $0-18$. Children in the non-filers sample were claimed by a parent in 1997 who did not file taxes at some point between the first observed age and 18 . The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample). In the non-filers sample, we impute state at age 15 , number of siblings at age 15 , and family income at age 15 by using values from the closest available filing year, and we include a control for non-filing.

## Appendix 12 Robustness to OLS and Income Controls

Figure OA.17: OLS and Reduce Form Results, Without and With Income Controls Cumulative Total Taxes (\$000)



Reduced Form with Income Controls







Note. Cumulative total taxes indicate taxes paid by a given age, starting at age 19. Coefficients for each age are obtained from the given regression of total taxes on the respective measure of eligibility. All specifications includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample). Standard errors are clustered by state. Where indicated, specifications include "income controls": birth year fixed effects interacted with linear splines of total positive household income at age 15 on the parents' tax return with knots at deciles of the sample distribution, re-estimated for every sample. Standard errors are clustered by state. Dashed lines show $95 \%$ confidence intervals.

## Appendix 13 Robustness to State-Specific Linear Time Trends

Figure OA.18: Robustness to State-Specific Linear Time Trends Cumulative Total Taxes (\$000)


Note. Cumulative total taxes indicate taxes paid by a given age, starting at age 19. Coefficients for each age are obtained from the given regression of total taxes on the respective measure of eligibility. All specifications includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample). Standard errors are clustered by state. Where indicated, specifications include state-specific linear time trends. Standard errors are clustered by state. Dashed lines show $95 \%$ confidence intervals.

## References

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Wherry, L. R., S. Miller, R. Kaestner, and B. D. Meyer (2015). Childhood medicaid coverage and later life health care utilization. Review of Economics and Statistics (0).


[^0]:    ${ }^{16}$ Our approach to seasonal adjustment differs from the approach used by Wherry et al. (2015) and Wherry and Meyer (2016), who adjust their data using birth month fixed effects estimated before and after the discontinuity. In our sample, birth months are not balanced on either side of the discontinuity; the data contain 33 cohorts before September 30, 1983 and only 15 afterward. Therefore, birth month fixed effects estimated on the entire sample could capture some of the effect of OBRA 90.

[^1]:    Note. ${ }^{* * *} \mathrm{p}<0.01,{ }^{* *} \mathrm{p}<0.05,^{*} \mathrm{p}<0.10$. Standard errors were bootstrapped with 200 repetitions. Coefficients are obtained from a regression of the cumulative outcome by age 28 on an indicator for treatment by OBRA 90 , birth month cohort centered around the OBRA 90 cutoff, and the interaction between the two. To adjust for seasonal variation, we subtract from each birth month cohort the mean outcome for the respective birth month in 1981. Cumulative college enrollment indicates ever having enrolled in college by age 28, starting at age 19 and observed through Form 1098-T filed by educational institutions. Cumulative fertility indicates if a dependent child is ever born by age 28 , starting at age 19. If an individual ever claims a dependent child on a Form 1040, SSA records yield age at birth. Cumulative mortality indicates mortality by age 28, starting at age 19 and measured using SSA death records. Cumulative wage income indicates wage income earned by age 28 , starting at age 19 and adjusted to 2011 dollars. We obtain wage income from Form W-2, and we censor wage income earned at $\$ 10$ million. Cumulative EITC indicates EITC earned by age 28, starting at age 19, adjusted to 2011 dollars. We observe EITC using Form 1040. Cumulative total taxes indicate taxes paid by age 28, starting at age 19, adjusted to 2011 dollars and defined as household federal tax payments plus individual payroll tax payments less EITC.

[^2]:    Note. ${ }^{* * *} \mathrm{p}<0.01,{ }^{* *} \mathrm{p}<0.05,^{*} \mathrm{p}<0.10$. Standard errors in parentheses are clustered by state. Contemporaneous college enrollment indicates current enrollment in college at a given age, observed through Form 1098-T, filed by educational institutions. Cumulative college enrollment indicates ever having enrolled in college by a given age, starting at age 19. Coefficients for each age are obtained from separate reduced form regressions of college enrollment on simulated years eligible, ages $0-18$. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample).

[^3]:    Note. ${ }^{* * *} \mathrm{p}<0.01,{ }^{* *} \mathrm{p}<0.05,^{*} \mathrm{p}<0.10$. Standard errors in parentheses are clustered by state. Contemporaneous wage income indicates wages earned at a given age, obtained from Form W-2, adjusted to 2011 dollars and censored at $\$ 10$ million. Cumulative wage income indicates wage income earned by a given age, starting at age 19. Coefficients for each age are obtained from separate reduced form regressions of wage income on simulated years eligible, ages $0-18$. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample).

[^4]:    Note. ${ }^{* * *} \mathrm{p}<0.01,{ }^{* *} \mathrm{p}<0.05,^{*} \mathrm{p}<0.10$. Standard errors in parentheses are clustered by state. Contemporaneous total taxes indicate taxes paid at a given age, defined as household federal tax payments plus individual payroll tax payments less EITC, adjusted to 2011 dollars. Cumulative total taxes indicate taxes paid by a given age, starting at age 19. Coefficients for each age are obtained from separate reduced form regressions of total taxes on simulated years eligible, ages 0-18. The specification includes fixed effects for birth cohort by month and for state of residence at age 15 (the youngest age at which we observe all individuals in our sample).

