*Caveat Lector:*

*Sample selection in historical heights and the interpretation of early industrializing economies*

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**Appendix 1**

This appendix reports the details of the regressions underlying the tables 1 – 3 in Bodenhorn, Guinnane and Mroz, “Caveat Lector.” Each section provides the summary statistics of all the variables used in the principal and subsidiary analyses, including the estimated coefficients for the birth-year and observation-year, which are the focus of the analysis in “Caveat Lector.” So that the appendix can serve as a stand-alone document, we also reproduce the discussion of the data sets as they appear in the body of the paper.

A1.1 Pennsylvania prisoners

Height data drawn from prison records are a widely used source of information on historical heights and many of the studies purport to provide evidence consistent with the antebellum puzzle.[[1]](#footnote-1) We ask whether there is evidence of self-selection in a typical sample of heights drawn from convicts incarcerated during the era of early industrialization drawing on data from the Pennsylvania penitentiary system between the late 1820s and the late 1870s. These data are similar to those used elsewhere in the literature. The Pennsylvania prisoner data are taken from ledgers maintained by clerks at the Eastern State Penitentiary in Philadelphia and at the Western State Penitentiary in Pittsburgh. At the prisoners’ arrival at the prisons, clerks recorded basic information about the prisoners, including their names, ages, state of birth if native-born or country of birth if foreign-born, pre-incarceration occupation, the crime for which they were incarcerated, sentence length, prior convictions (if any), and the county of conviction. Two descriptive registers, one each from the Eastern and Western penitentiaries, included identifying information such as race (white, black, mulatto), eye color, brief descriptions of marks, scars, tattoos, or physical deformities. Most importantly for our purposes, the clerks recorded heights, typically to the nearest quarter-inch.

The Pennsylvania prisoner data raises selection concerns because prisoners, especially those confined to state penitentiaries in the nineteenth century, were unlikely to represent random draws from the wider population. It is not even clear that they are representative of individuals engaged in criminal activity. Men incarcerated at the prison arrived after traversing a criminal process in which many participants in the law-enforcement sector made choices: individuals chose to (allegedly) commit a crime; the police chose whether to charge and arrest the suspect; the prosecutor chose whether to prosecute the case; a jury chose to convict and to impose a sentence of more than one year of incarceration. Ultimately, men committed to the state prisons were those who were convicted of relatively serious crimes. There is no guarantee that the choices made at each stage of the criminal process – commission, arrest, prosecution, conviction – was independent of the prisoners’ heights. Bodenhorn, Moehling and Price, in fact, show that criminals themselves were negatively selected on height.[[2]](#footnote-2) Criminals were short relative to their contemporaries and shorter men entered prison at younger ages. They offer two possible explanations. If shorter people were shorter due to poor health and nutritional realizations at critical growth periods, they may have had less human or health capital so that the opportunity cost of crime, relative to licit employment, was lower. Alternatively, short people may have suffered from discriminatory treatment, which also reduced the relative costs of criminal employment. The potential for plausibly changing height-based selection into prisons raises concerns about inferences drawn from such data.

The mean age at admission into the Eastern and Western penitentiaries was 28.5 years, and ages ranged from 11 to 89 years. Criminologists identify the prime offending ages from the mid-teens to the mid-twenties, which is consistent with the historical data as well.[[3]](#footnote-3) Because less-privileged individuals tend not to reach their terminal adult heights until around age 20 and because immigrants faced different childhood environments, we limit the sample to native-born, white men 22 years and older.

We use the simple test for the absence of height-related selection in a particular type of sample as described above. Provided that all individuals in each birth cohort in the sample have reached terminal adult height and controlling for birth-year with a set of dummy variables, there should be no impact of any current (macroeconomic) variables on observed height. If heights, holding birth cohort fixed in such a sample, vary over time (measured either by age, observation year or specific current macroeconomic variable), the cliometrician can reject the null hypothesis of no height-based selection in favor of the alternative hypothesis of some form of height-based selection. Due to the exact relationship among age, time, and cohort variables, however, it is impossible to attribute any rejection of the null hypothesis to either a pure age effect or to a pure time period effect that influences the observed heights in the sample. All the cliometrician can do is reject the null that there is no height-based selection. It is important to note, as well, that implicit acceptance of such a null hypothesis underlies nearly all studies using variations in observed heights to draw inferences about changes in birth-cohort macroeconomic conditions, commonly interpreted as biological well-being, over time.

Our regressions for prisoners (and others) take the following general forms:

hi = α + ∑c βc \* Iic + ∑t βt \* Iit + γi + ζi + ρi + εi (1)

Iic is an indicator variable equal to one if the individual is a member of cohort c (i.e., born in year c) and zero otherwise, so the term ∑c βc \* Iic captures a series of cohort or birth-year dummies. Iit is an indicator variable equal to one if the individual entered prison at time t and zero otherwise, so the term ∑t βt \* Iit captures a series of year-of-incarceration dummy variables, that proxy for year-specific macroeconomic effects. In some estimates were also include γ is a crime-specific dummy variable for crime (we restrict the sample to property crimes); ζ is an urban residence dummy variable; ρ represents a set of pre-incarceration occupation dummy variables; and ε is the error term.[[4]](#footnote-4) Neither the results nor our interpretations are changed in a substantial way by the inclusion of additional correlates.

The excluded incarceration year is 1850 and the excluded birth year is 1825, so the estimated constant (reported in an online appendix) is the mean height of a 25-year old, born in 1825 and imprisoned for the first time in 1850. When we include the additional correlates, the excluded crime is larceny, the excluded region/urban category is rural, western Pennsylvania, and common laborer is the excluded occupation. We trim the sample by excluding individuals with reported height more than three standard deviations above or below the unconditional mean, which may reflect either coding errors or physical outliers (i.e., dwarfs). We also trim the sample to include only those individuals between 22 and 50 years, or those likely to have attained their terminal adult stature, but not so old as to have started to shrink. Finally, we trim the sample so that no cohort-year cell has fewer than five observations.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  | | --- | --- | --- | --- | | Table A1.1.1 | | | | | Summary Statistics | | | | | Pennsylvania prisoner sample | | | | |  | Whites | All | Blacks | | Variable | (1) | (2) | (3) | |  |  |  |  | | Incarceration year | 1855.64 | 1854.37 | 1848.79 | |  | [13.36] | [13.49] | [12.60] | | Birth year | 1825.54 | 1824.4 | 1819.36 | |  | [15.83] | [15.75] | [14.32] | | Height | 66.88 | 66.76 | 66.23 | |  | [2.50] | [2.52] | [2.55] | | Philadelphia | 0.14 | 0.17 | 0.31 | | Pittsburgh | 0.13 | 0.13 | 0.12 | | Rural counties | 0.73 | 0.7 | 0.58 | | Eastern PA | 0.48 | 0.52 | 0.72 | | Western PA | 0.52 | 0.48 | 0.28 | |  |  |  |

Table A1.1.1 reports summary statistics for the Pennsylvania prisoners appearing in the three subsamples. The average incarceration year was between 1848 and 1855; the average birth year was between 1819 and 1825; and average heights were between 66.23 inches for native-born, adult male African Americans and 66.88 inches for native-born, white males. African Americans were two time more likely than whites to have been convicted in Philadelphia and were nearly twice as likely to have been convicted in an eastern Pennsylvania county and, therefore, to be incarcerated in the Eastern State Penitentiary in Philadelphia. The regressions include dummy variables for Philadelphia, Pittsburgh and Eastern PA convictions, so that the default is a native-born male convicted in a rural county in western Pennsylvania.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Table A1.1.2 | | | | |
| Summary of OLS estimates of height using Pennsylvania prisoners | | | | |
| Selection diagnostic tests | | | | |
|  |  |  |  |  |
|  |  | Native-born men | | |
|  |  | White | Black | All |
|  |  | Ages 22 - 50 | | |
|  |  | Heights: 59 - 75 inches | | |
|  |  | (1) | (2) | (3) |
|  |  |  |  |  |
| Test all incarceration years zero |  | 1.35 | 1.66 | 1.32 |
| p-value of F test |  | (0.052) | (0.004) | (0.063) |
| degrees of freedom of F test |  | [50, 4157] | [49, 840] | [50, 5131] |
|  |  |  |  |  |
| Test all birth years zero |  | 1.25 | 2.31 | 1.13 |
| p-value of F test |  | (0.083) | (0.000) | -0.219 |
| degrees of freedom of F test |  | [69, 4157] | [68, 840] | [69, 5131] |
|  |  |  |  |  |
| Additional correlates |  |  |  |  |
| Black/Mixed race |  | na | Yes | Yes |
| Occupation |  | Yes | Yes | Yes |
| Crime |  | Yes | Yes | Yes |
| City/Region |  | Yes | Yes | Yes |
|  |  |  |  |  |
| Observations |  | 4297 | 976 | 5273 |
|  |  |  |  |  |
| Note: all regressions use robust standard errors, and include all correlates | | | | |

Table A1.1.2 reports the summary tests for the joint significance of birth year and incarceration year dummy variables when all the observable correlates are included in the regressions. The tables in the paper report similar values for regressions that include only a minimal specification, which includes just height, birth year, incarceration year, and race, which reflects the fact that some samples contain very little information beyond that included in the regression diagnostics included in the paper. The summary tests reported in Table A1.1.2, however, show that adding additional correlates does not alter our interpretations. Significant values of the F-tests on the incarceration years point to dynamic selection into the sample.

Table A1.1.3 reports the full battery of regression coefficients from each of the six specifications – whites/blacks/all, with and without additional controls. In these and all later tables, “by\_#” refers to the birth year and “ry\_#” refers to the registration or height-observation year.

Table A1.1.3

OLS Estimates

Pennsylvania prisoners

Native-born men 22 - 50 years

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Variables | (1) | (2) | (3) | (4) | (5) | (6) |
|  | Whites | Whites | All Race | All Race | Blacks | Blacks |
|  |  | Controls |  | Controls |  | Controls |
| by\_1784 | -0.271 | -0.423 | 0.144 | -0.054 | 1.586 | 1.146 |
|  | [0.797] | [0.774] | [0.698] | [0.668] | [1.263] | [1.260] |
| by\_1785 | -2.509 | -2.673 | -2.030 | -2.130 | -0.397 | -0.132 |
|  | [0.974]\*\* | [0.867]\*\*\* | [1.403] | [1.418] | [2.925] | [3.019] |
| by\_1786 | -0.601 | -0.821 | -0.245 | -0.393 |  |  |
|  | [1.262] | [1.245] | [1.294] | [1.273] |  |  |
| by\_1787 | 1.645 | 1.456 | 2.251 | 2.052 | 4.821 | 4.740 |
|  | [1.155] | [1.177] | [0.817]\*\*\* | [0.822]\*\* | [0.926]\*\*\* | [1.075]\*\*\* |
| by\_1789 | 0.596 | 0.539 | 0.902 | 0.863 | 0.954 | 1.036 |
|  | [0.846] | [0.860] | [0.770] | [0.788] | [0.793] | [0.874] |
| by\_1790 | 0.178 | -0.100 | 0.549 | 0.292 | 2.283 | 2.075 |
|  | [0.619] | [0.680] | [0.643] | [0.686] | [1.824] | [1.820] |
| by\_1791 | 1.324 | 1.200 | 1.104 | 1.091 | 0.744 | 1.093 |
|  | [0.762]\* | [0.721]\* | [0.663]\* | [0.629]\* | [0.822] | [0.929] |
| by\_1792 | 0.598 | 0.392 | 0.602 | 0.430 | 0.429 | 0.454 |
|  | [0.606] | [0.615] | [0.544] | [0.554] | [1.120] | [1.259] |
| by\_1793 | -0.004 | -0.094 | 0.299 | 0.256 | 1.536 | 1.259 |
|  | [0.630] | [0.640] | [0.604] | [0.612] | [1.035] | [1.049] |
| by\_1794 | 0.191 | 0.125 | 0.159 | 0.114 | -0.915 | -0.942 |
|  | [0.734] | [0.719] | [0.691] | [0.676] | [1.375] | [1.640] |
| by\_1795 | 0.413 | 0.231 | 0.660 | 0.471 | 2.025 | 1.996 |
|  | [0.698] | [0.709] | [0.647] | [0.651] | [2.121] | [2.218] |
| by\_1796 | 0.182 | 0.233 | 0.061 | 0.085 | -0.033 | 0.160 |
|  | [0.552] | [0.559] | [0.527] | [0.541] | [1.273] | [1.332] |
| by\_1797 | 1.546 | 1.533 | 0.945 | 0.953 | -0.079 | -0.287 |
|  | [0.650]\*\* | [0.614]\*\* | [0.592] | [0.578]\* | [1.059] | [1.156] |
| by\_1798 | 0.313 | -0.003 | 0.219 | -0.040 | 1.061 | 0.941 |
|  | [0.541] | [0.537] | [0.471] | [0.465] | [1.022] | [1.028] |
| by\_1799 | 0.046 | -0.109 | 0.002 | -0.142 | 0.323 | 0.206 |
|  | [0.520] | [0.527] | [0.463] | [0.467] | [1.040] | [1.064] |
| by\_1800 | 0.511 | 0.455 | 0.710 | 0.687 | 1.805 | 1.895 |
|  | [0.486] | [0.485] | [0.426]\* | [0.425] | [0.940]\* | [0.958]\*\* |
| by\_1801 | -0.400 | -0.434 | -0.291 | -0.323 | 0.273 | 0.159 |
|  | [0.447] | [0.450] | [0.421] | [0.425] | [1.239] | [1.250] |
| by\_1802 | 0.083 | 0.079 | 0.257 | 0.256 | 1.683 | 1.646 |
|  | [0.463] | [0.455] | [0.391] | [0.384] | [0.780]\*\* | [0.817]\*\* |
| by\_1803 | 0.072 | -0.031 | 0.065 | 0.005 | 0.933 | 0.895 |
|  | [0.445] | [0.436] | [0.409] | [0.400] | [0.961] | [0.965] |
| by\_1804 | 0.063 | 0.078 | 0.457 | 0.495 | 1.921 | 2.067 |
|  | [0.440] | [0.440] | [0.399] | [0.400] | [0.970]\*\* | [0.986]\*\* |
| by\_1805 | -0.026 | -0.102 | 0.283 | 0.239 | 1.812 | 1.796 |
|  | [0.408] | [0.408] | [0.374] | [0.374] | [0.958]\* | [0.972]\* |
| by\_1806 | -0.475 | -0.499 | -0.364 | -0.394 | 0.572 | 0.530 |
|  | [0.412] | [0.412] | [0.377] | [0.376] | [0.922] | [0.907] |
| by\_1807 | -0.171 | -0.234 | 0.032 | 0.019 | 1.091 | 1.193 |
|  | [0.424] | [0.422] | [0.374] | [0.374] | [0.855] | [0.870] |
| by\_1808 | 0.342 | 0.202 | 0.361 | 0.238 | 1.254 | 1.144 |
|  | [0.447] | [0.449] | [0.398] | [0.395] | [0.886] | [0.904] |
| by\_1809 | 0.235 | 0.263 | 0.112 | 0.153 | 0.533 | 0.624 |
|  | [0.402] | [0.403] | [0.348] | [0.348] | [0.788] | [0.808] |
| by\_1810 | -0.389 | -0.302 | -0.135 | -0.119 | 1.125 | 1.164 |
|  | [0.436] | [0.435] | [0.359] | [0.357] | [0.779] | [0.793] |
| by\_1811 | -0.014 | -0.055 | 0.097 | 0.073 | 1.072 | 1.084 |
|  | [0.444] | [0.446] | [0.399] | [0.400] | [0.930] | [0.944] |
| by\_1812 | -0.303 | -0.367 | -0.005 | -0.060 | 1.324 | 1.361 |
|  | [0.401] | [0.402] | [0.349] | [0.349] | [0.794]\* | [0.817]\* |
| by\_1813 | 0.179 | 0.122 | 0.374 | 0.360 | 1.478 | 1.601 |
|  | [0.412] | [0.410] | [0.372] | [0.372] | [0.878]\* | [0.903]\* |
| by\_1814 | -0.396 | -0.400 | -0.121 | -0.135 | 1.185 | 1.254 |
|  | [0.400] | [0.402] | [0.349] | [0.348] | [0.800] | [0.812] |
| by\_1815 | -0.454 | -0.471 | 0.001 | 0.018 | 1.851 | 2.011 |
|  | [0.395] | [0.393] | [0.368] | [0.366] | [0.907]\*\* | [0.923]\*\* |
| by\_1816 | 0.231 | 0.154 | 0.414 | 0.372 | 1.477 | 1.520 |
|  | [0.400] | [0.406] | [0.367] | [0.370] | [0.941] | [0.950] |
| by\_1817 | -0.272 | -0.383 | -0.134 | -0.214 | 0.601 | 0.663 |
|  | [0.432] | [0.431] | [0.391] | [0.389] | [0.898] | [0.937] |
| by\_1818 | -0.047 | -0.124 | 0.336 | 0.249 | 2.114 | 2.014 |
|  | [0.378] | [0.373] | [0.345] | [0.343] | [0.831]\*\* | [0.843]\*\* |
| by\_1819 | -0.028 | -0.069 | 0.295 | 0.202 | 1.944 | 1.736 |
|  | [0.400] | [0.396] | [0.362] | [0.359] | [0.909]\*\* | [0.938]\* |
| by\_1820 | -0.405 | -0.447 | -0.014 | -0.022 | 1.997 | 2.140 |
|  | [0.377] | [0.379] | [0.346] | [0.348] | [0.830]\*\* | [0.857]\*\* |
| by\_1821 | -0.283 | -0.367 | -0.184 | -0.281 | 0.614 | 0.641 |
|  | [0.426] | [0.414] | [0.386] | [0.377] | [0.958] | [0.975] |
| by\_1822 | 0.005 | 0.004 | 0.188 | 0.200 | 1.400 | 1.467 |
|  | [0.408] | [0.409] | [0.359] | [0.359] | [0.806]\* | [0.830]\* |
| by\_1823 | -0.282 | -0.266 | -0.047 | -0.007 | 1.312 | 1.472 |
|  | [0.381] | [0.385] | [0.350] | [0.353] | [0.868] | [0.888]\* |
| by\_1824 | 0.519 | 0.474 | 0.654 | 0.659 | 1.400 | 1.516 |
| by\_1825  base year | [0.422] | [0.424] | [0.398] | [0.399]\* | [1.161] | [1.209] |
| by\_1826 | -0.694 | -0.688 | -0.242 | -0.265 | 2.008 | 1.936 |
|  | [0.370]\* | [0.367]\* | [0.339] | [0.336] | [0.811]\*\* | [0.839]\*\* |
| by\_1827 | -0.384 | -0.329 | -0.006 | 0.035 | 1.819 | 1.844 |
|  | [0.406] | [0.403] | [0.368] | [0.365] | [0.859]\*\* | [0.858]\*\* |
| by\_1828 | -0.193 | -0.224 | 0.189 | 0.211 | 2.470 | 2.734 |
|  | [0.378] | [0.373] | [0.353] | [0.348] | [0.966]\*\* | [0.990]\*\*\* |
| by\_1829 | -0.458 | -0.447 | -0.178 | -0.176 | 1.431 | 1.531 |
|  | [0.382] | [0.377] | [0.354] | [0.349] | [0.950] | [0.950] |
| by\_1830 | -0.237 | -0.142 | -0.100 | -0.009 | 0.618 | 0.716 |
|  | [0.373] | [0.376] | [0.355] | [0.356] | [1.233] | [1.217] |
| by\_1831 | -0.486 | -0.341 | -0.181 | -0.042 | 1.621 | 1.759 |
|  | [0.425] | [0.429] | [0.400] | [0.402] | [1.272] | [1.274] |
| by\_1832 | -0.512 | -0.490 | -0.295 | -0.276 | 1.098 | 1.108 |
|  | [0.396] | [0.392] | [0.363] | [0.362] | [0.937] | [0.959] |
| by\_1833 | -0.279 | -0.222 | -0.064 | -0.012 | 1.268 | 1.207 |
|  | [0.348] | [0.348] | [0.324] | [0.323] | [0.886] | [0.903] |
| by\_1834 | -0.487 | -0.336 | -0.188 | -0.087 | 1.627 | 1.730 |
|  | [0.351] | [0.350] | [0.325] | [0.324] | [0.881]\* | [0.902]\* |
| by\_1835 | -0.357 | -0.234 | -0.198 | -0.074 | 0.853 | 0.902 |
|  | [0.361] | [0.360] | [0.334] | [0.333] | [0.882] | [0.909] |
| by\_1836 | -0.812 | -0.719 | -0.457 | -0.356 | 1.934 | 1.903 |
|  | [0.344]\*\* | [0.348]\*\* | [0.326] | [0.328] | [0.979]\*\* | [1.025]\* |
| by\_1837 | -1.087 | -0.995 | -0.662 | -0.589 | 1.838 | 1.943 |
|  | [0.394]\*\*\* | [0.392]\*\* | [0.363]\* | [0.360] | [0.908]\*\* | [0.908]\*\* |
| by\_1838 | -0.576 | -0.432 | -0.432 | -0.307 | -0.003 | -0.166 |
|  | [0.381] | [0.377] | [0.358] | [0.352] | [0.856] | [0.923] |
| by\_1839 | -0.599 | -0.435 | 0.073 | 0.201 | 3.677 | 3.773 |
|  | [0.422] | [0.418] | [0.412] | [0.408] | [1.122]\*\*\* | [1.131]\*\*\* |
| by\_1840 | -0.229 | -0.048 | 0.084 | 0.246 | 2.956 | 3.179 |
|  | [0.376] | [0.379] | [0.363] | [0.366] | [1.476]\*\* | [1.489]\*\* |
| by\_1841 | -0.646 | -0.473 | -0.504 | -0.340 | 0.313 | 0.552 |
|  | [0.419] | [0.414] | [0.393] | [0.389] | [1.105] | [1.122] |
| by\_1842 | -0.762 | -0.548 | -0.655 | -0.510 | -0.593 | -0.672 |
|  | [0.397]\* | [0.403] | [0.374]\* | [0.379] | [1.044] | [1.063] |
| by\_1843 | -0.736 | -0.499 | -0.570 | -0.372 | 0.325 | 0.525 |
|  | [0.374]\*\* | [0.377] | [0.350] | [0.353] | [0.928] | [0.973] |
| by\_1844 | -0.685 | -0.526 | -0.510 | -0.372 | 0.308 | 0.409 |
|  | [0.362]\* | [0.363] | [0.342] | [0.342] | [1.047] | [1.057] |
| by\_1845 | -0.869 | -0.607 | -0.638 | -0.406 | 0.741 | 0.978 |
|  | [0.373]\*\* | [0.376] | [0.351]\* | [0.353] | [1.007] | [1.069] |
| by\_1846 | -0.962 | -0.804 | -0.782 | -0.648 | -0.012 | 0.008 |
|  | [0.380]\*\* | [0.381]\*\* | [0.364]\*\* | [0.364]\* | [1.103] | [1.113] |
| by\_1847 | -0.290 | -0.090 | -0.068 | 0.132 | 1.687 | 1.836 |
|  | [0.402] | [0.399] | [0.393] | [0.389] | [1.611] | [1.651] |
| by\_1848 | -0.898 | -0.710 | -0.664 | -0.493 | 1.108 | 0.651 |
|  | [0.466]\* | [0.458] | [0.445] | [0.437] | [1.379] | [1.482] |
| by\_1849 | -1.427 | -1.228 | -1.223 | -1.049 | -0.962 | -0.573 |
|  | [0.416]\*\*\* | [0.415]\*\*\* | [0.395]\*\*\* | [0.393]\*\*\* | [1.084] | [1.145] |
| by\_1850 | -1.077 | -0.941 | -0.749 | -0.652 | 1.409 | 1.192 |
|  | [0.471]\*\* | [0.476]\*\* | [0.442]\* | [0.444] | [1.257] | [1.153] |
| by\_1851 | -1.030 | -0.972 | -0.703 | -0.651 | 2.013 | 2.189 |
|  | [0.490]\*\* | [0.498]\* | [0.466] | [0.470] | [1.285] | [1.390] |
| by\_1852 | -0.417 | -0.139 | -0.142 | 0.087 | 2.164 | 2.455 |
|  | [0.526] | [0.530] | [0.501] | [0.503] | [1.767] | [1.718] |
| by\_1853 | -0.716 | -0.587 | -0.632 | -0.495 | -0.355 | 0.337 |
|  | [0.622] | [0.624] | [0.588] | [0.581] | [1.294] | [1.334] |
| by\_1854 | -1.951 | -1.528 | -1.155 | -0.838 | 6.253 | 6.070 |
|  | [0.506]\*\*\* | [0.619]\*\* | [0.621]\* | [0.675] | [1.406]\*\*\* | [1.391]\*\*\* |
| ry\_1826 | 3.152 | 2.879 | 3.182 | 2.881 |  |  |
|  | [1.095]\*\*\* | [1.013]\*\*\* | [1.049]\*\*\* | [0.972]\*\*\* |  |  |
| ry\_1827 | 0.340 | 0.065 | 0.146 | -0.164 | -1.145 | -1.154 |
|  | [0.931] | [0.932] | [0.775] | [0.770] | [0.843] | [0.859] |
| ry\_1828 | 1.397 | 1.142 | 1.299 | 1.047 | 0.998 | 1.079 |
|  | [0.763]\* | [0.753] | [0.697]\* | [0.683] | [0.900] | [0.936] |
| ry\_1829 | 0.838 | 0.705 | 0.289 | 0.107 | -1.053 | -1.043 |
|  | [0.864] | [0.858] | [0.712] | [0.715] | [0.766] | [0.826] |
| ry\_1830 | 1.080 | 1.192 | 0.181 | 0.164 | -1.329 | -1.228 |
|  | [0.474]\*\* | [0.478]\*\* | [0.435] | [0.439] | [0.797]\* | [0.812] |
| ry\_1831 | 0.230 | 0.126 | 0.136 | 0.040 | 0.013 | 0.187 |
|  | [0.536] | [0.535] | [0.468] | [0.467] | [0.946] | [0.912] |
| ry\_1832 | -0.064 | -0.107 | -0.196 | -0.324 | -0.543 | -0.726 |
|  | [0.497] | [0.502] | [0.443] | [0.443] | [0.938] | [0.944] |
| ry\_1833 | -0.166 | -0.115 | -0.458 | -0.378 | -1.507 | -1.118 |
|  | [0.476] | [0.465] | [0.419] | [0.405] | [0.882]\* | [0.885] |
| ry\_1834 | -0.155 | -0.051 | -0.056 | 0.001 | 0.211 | 0.210 |
|  | [0.445] | [0.437] | [0.382] | [0.374] | [0.739] | [0.726] |
| ry\_1835 | -0.188 | -0.093 | -0.574 | -0.530 | -1.319 | -1.410 |
|  | [0.459] | [0.454] | [0.396] | [0.391] | [0.758]\* | [0.742]\* |
| ry\_1836 | -0.640 | -0.507 | -0.780 | -0.721 | -0.942 | -1.058 |
|  | [0.454] | [0.450] | [0.385]\*\* | [0.379]\* | [0.735] | [0.713] |
| ry\_1837 | -0.648 | -0.540 | -0.723 | -0.653 | -0.575 | -0.583 |
|  | [0.452] | [0.444] | [0.370]\* | [0.362]\* | [0.670] | [0.656] |
| ry\_1838 | 0.042 | 0.187 | -0.279 | -0.224 | -0.911 | -1.002 |
|  | [0.437] | [0.432] | [0.363] | [0.356] | [0.673] | [0.650] |
| ry\_1839 | -0.235 | -0.184 | -0.245 | -0.228 | -0.387 | -0.497 |
|  | [0.422] | [0.419] | [0.369] | [0.362] | [0.726] | [0.707] |
| ry\_1840 | -0.385 | -0.355 | -0.451 | -0.414 | -0.567 | -0.563 |
|  | [0.424] | [0.419] | [0.371] | [0.365] | [0.757] | [0.744] |
| ry\_1841 | -0.810 | -0.735 | -0.736 | -0.718 | -0.381 | -0.441 |
|  | [0.417]\* | [0.414]\* | [0.367]\*\* | [0.361]\*\* | [0.738] | [0.730] |
| ry\_1842 | -0.171 | -0.077 | -0.282 | -0.202 | -0.427 | -0.340 |
|  | [0.441] | [0.433] | [0.381] | [0.373] | [0.753] | [0.757] |
| ry\_1843 | -0.030 | 0.077 | -0.137 | -0.075 | -0.396 | -0.439 |
|  | [0.435] | [0.429] | [0.383] | [0.372] | [0.817] | [0.783] |
| ry\_1844 | 0.033 | 0.121 | -0.177 | -0.110 | -0.641 | -0.671 |
|  | [0.429] | [0.420] | [0.380] | [0.369] | [0.785] | [0.761] |
| ry\_1845 | 0.197 | 0.241 | 0.049 | 0.086 | 0.077 | 0.097 |
|  | [0.406] | [0.400] | [0.363] | [0.356] | [0.782] | [0.772] |
| ry\_1846 | -0.344 | -0.296 | -0.449 | -0.430 | -0.828 | -0.936 |
|  | [0.487] | [0.476] | [0.419] | [0.408] | [0.718] | [0.703] |
| ry\_1847 | -0.606 | -0.499 | -0.616 | -0.557 | -0.536 | -0.611 |
|  | [0.453] | [0.439] | [0.386] | [0.376] | [0.744] | [0.736] |
| ry\_1848 | -0.719 | -0.627 | -0.843 | -0.800 | -1.156 | -1.307 |
|  | [0.474] | [0.468] | [0.403]\*\* | [0.395]\*\* | [0.726] | [0.726]\* |
| ry\_1849 | 0.129 | 0.061 | -0.201 | -0.306 | -0.922 | -1.012 |
| ry\_1850  base year | [0.431] | [0.422] | [0.377] | [0.367] | [0.712] | [0.700] |
| ry\_1851 | -0.153 | -0.144 | -0.495 | -0.513 | -1.825 | -1.894 |
|  | [0.412] | [0.406] | [0.370] | [0.362] | [0.886]\*\* | [0.884]\*\* |
| ry\_1852 | 0.331 | 0.330 | 0.144 | 0.130 | -0.321 | -0.319 |
|  | [0.410] | [0.404] | [0.368] | [0.360] | [0.910] | [0.902] |
| ry\_1853 | 0.240 | 0.296 | 0.222 | 0.232 | 0.313 | 0.262 |
|  | [0.436] | [0.429] | [0.393] | [0.386] | [1.025] | [1.043] |
| ry\_1854 | -0.276 | -0.216 | -0.518 | -0.502 | -1.158 | -1.223 |
|  | [0.438] | [0.433] | [0.419] | [0.413] | [1.077] | [1.057] |
| ry\_1855 | -0.369 | -0.408 | -0.554 | -0.595 | -1.459 | -1.369 |
|  | [0.441] | [0.438] | [0.400] | [0.397] | [1.020] | [1.027] |
| ry\_1856 | -0.190 | -0.055 | -0.654 | -0.589 | -2.314 | -2.336 |
|  | [0.451] | [0.439] | [0.405] | [0.392] | [0.861]\*\*\* | [0.844]\*\*\* |
| ry\_1857 | -0.292 | -0.328 | -0.518 | -0.556 | -1.206 | -1.304 |
|  | [0.433] | [0.423] | [0.377] | [0.367] | [0.757] | [0.743]\* |
| ry\_1858 | 0.140 | 0.120 | -0.055 | -0.114 | -0.686 | -0.788 |
|  | [0.402] | [0.394] | [0.365] | [0.356] | [0.988] | [0.966] |
| ry\_1859 | 0.039 | -0.027 | -0.121 | -0.230 | -0.805 | -1.027 |
|  | [0.408] | [0.403] | [0.364] | [0.357] | [0.808] | [0.790] |
| ry\_1860 | -0.041 | -0.069 | -0.075 | -0.137 | -0.062 | -0.268 |
|  | [0.398] | [0.392] | [0.352] | [0.344] | [0.690] | [0.680] |
| ry\_1861 | -0.054 | -0.154 | -0.269 | -0.371 | -1.030 | -1.154 |
|  | [0.419] | [0.412] | [0.376] | [0.368] | [0.842] | [0.828] |
| ry\_1862 | 0.178 | 0.026 | -0.047 | -0.228 | -1.243 | -1.383 |
|  | [0.426] | [0.415] | [0.380] | [0.368] | [0.784] | [0.767]\* |
| ry\_1863 | -0.097 | -0.293 | -0.189 | -0.359 | -0.600 | -0.675 |
|  | [0.545] | [0.542] | [0.507] | [0.500] | [1.620] | [1.558] |
| ry\_1864 | 0.419 | 0.341 | 0.252 | 0.198 | 0.153 | 0.450 |
|  | [0.682] | [0.647] | [0.593] | [0.575] | [1.005] | [1.049] |
| ry\_1865 | 0.139 | -0.024 | 0.064 | -0.090 | 0.101 | 0.232 |
|  | [0.519] | [0.517] | [0.474] | [0.469] | [0.913] | [0.860] |
| ry\_1866 | -0.209 | -0.362 | -0.341 | -0.496 | -0.599 | -0.702 |
|  | [0.391] | [0.386] | [0.354] | [0.347] | [0.981] | [0.964] |
| ry\_1867 | -0.113 | -0.242 | -0.258 | -0.390 | -0.500 | -0.608 |
|  | [0.389] | [0.383] | [0.348] | [0.340] | [0.764] | [0.752] |
| ry\_1868 | -0.307 | -0.401 | -0.344 | -0.473 | 0.083 | -0.112 |
|  | [0.400] | [0.395] | [0.360] | [0.353] | [0.828] | [0.831] |
| ry\_1869 | -0.137 | -0.244 | -0.351 | -0.485 | -1.547 | -1.805 |
|  | [0.401] | [0.392] | [0.365] | [0.355] | [0.949] | [0.927]\* |
| ry\_1870 | 0.568 | 0.298 | 0.481 | 0.215 | 1.567 | 1.681 |
|  | [0.443] | [0.439] | [0.411] | [0.404] | [1.141] | [1.251] |
| ry\_1871 | 0.192 | -0.117 | 0.078 | -0.248 | 1.634 | 1.571 |
|  | [0.438] | [0.437] | [0.408] | [0.404] | [1.317] | [1.248] |
| ry\_1872 | -0.034 | -0.259 | -0.165 | -0.417 | -0.144 | 0.200 |
|  | [0.432] | [0.427] | [0.394] | [0.388] | [1.036] | [1.014] |
| ry\_1873 | 0.389 | 0.181 | 0.279 | 0.054 | 0.144 | 0.197 |
|  | [0.459] | [0.460] | [0.420] | [0.416] | [1.136] | [1.104] |
| ry\_1874 | 0.163 | -0.043 | -0.143 | -0.419 | -2.495 | -2.727 |
|  | [0.420] | [0.421] | [0.389] | [0.386] | [1.164]\*\* | [1.110]\*\* |
| ry\_1875 | 0.338 | -0.063 | 0.165 | -0.240 | -0.544 | -1.247 |
|  | [0.440] | [0.444] | [0.408] | [0.409] | [1.320] | [1.444] |
| ry\_1876 | 0.571 | 0.130 | 0.253 | -0.166 | -2.209 | -2.377 |
|  | [0.460] | [0.470] | [0.429] | [0.434] | [1.357] | [1.306]\* |
| Philadelphia |  | -0.335 |  | -0.339 |  | -0.351 |
|  |  | [0.119]\*\*\* |  | [0.103]\*\*\* |  | [0.223] |
| Pittsburgh |  | -0.348 |  | -0.364 |  | -0.436 |
| Rural county |  | [0.125]\*\*\* |  | [0.115]\*\*\* |  | [0.353]  reference |
| Eastern PA |  | -0.194 |  | -0.177 |  | 0.146 |
| Western PA |  | [0.103]\* |  | [0.094]\* |  | [0.305]  reference |
| Professional |  | 0.304 |  | 0.341 |  |  |
|  |  | [0.264] |  | [0.265] |  |  |
| Proprietor |  | -0.340 |  | -0.289 |  | -1.115 |
|  |  | [0.215] |  | [0.206] |  | [0.748] |
| Sales |  | -0.513 |  | -0.393 |  |  |
|  |  | [0.546] |  | [0.536] |  |  |
| Service |  | -1.453 |  | -0.604 |  | -0.156 |
|  |  | [0.262]\*\*\* |  | [0.171]\*\*\* |  | [0.244] |
| Operative |  | -0.468 |  | -0.353 |  | 0.237 |
|  |  | [0.119]\*\*\* |  | [0.108]\*\*\* |  | [0.298] |
| Craftsman |  | -0.277 |  | -0.185 |  | 0.171 |
|  |  | [0.101]\*\*\* |  | [0.094]\*\* |  | [0.315] |
| Clerical |  | -0.839 |  | -0.779 |  |  |
|  |  | [0.228]\*\*\* |  | [0.224]\*\*\* |  |  |
| Farmer |  | 0.233 |  | 0.259 |  | -0.007 |
|  |  | [0.160] |  | [0.150]\* |  | [0.450] |
| no\_occ |  | -0.415 |  | -0.486 |  | -0.688 |
| Laborer |  | [0.260] |  | [0.236]\*\* |  | [0.706]  reference |
| Break |  | 0.553 |  | 0.607 |  | 2.769 |
|  |  | [0.265]\*\* |  | [0.264]\*\* |  | [1.531]\* |
| Burgl |  | -0.129 |  | -0.172 |  | -0.251 |
|  |  | [0.129] |  | [0.115] |  | [0.273] |
| Cntft |  | 0.358 |  | 0.323 |  | 0.642 |
|  |  | [0.159]\*\* |  | [0.155]\*\* |  | [0.827] |
| False |  | 1.419 |  | 1.437 |  | 1.656 |
|  |  | [0.420]\*\*\* |  | [0.400]\*\*\* |  | [0.925]\* |
| Forge |  | 0.221 |  | 0.236 |  | 0.588 |
|  |  | [0.172] |  | [0.166] |  | [0.706] |
| Fraud |  | 0.475 |  | 0.548 |  | 1.248 |
|  |  | [0.541] |  | [0.530] |  | [0.776] |
| Horse |  | 0.184 |  | 0.204 |  | -0.096 |
|  |  | [0.159] |  | [0.152] |  | [0.554] |
| Recev |  | -0.156 |  | -0.119 |  | 0.508 |
| Larceny |  | [0.220] |  | [0.212] |  | [0.807]  reference |
| Black |  |  | -0.845 | -0.698 |  |  |
|  |  |  | [0.116]\*\*\* | [0.124]\*\*\* |  |  |
| Mulatto |  |  | -0.425 | -0.247 | 0.505 | 0.508 |
| White |  |  | [0.134]\*\*\* | [0.144]\* | [0.176]\*\*\* | [0.180]\*\*\*  reference |
|  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| \_cons | 67.279 | 67.649 | 67.213 | 67.536 | 65.451 | 65.563 |
|  | [0.421]\*\*\* | [0.427]\*\*\* | [0.377]\*\*\* | [0.378]\*\*\* | [0.773]\*\*\* | [0.811]\*\*\* |
| *R*2 | 0.04 | 0.07 | 0.05 | 0.06 | 0.14 | 0.16 |
| *N* | 4,297 | 4,297 | 5,273 | 5,273 | 976 | 976 |

\* *p*<0.1; \*\* *p*<0.05; \*\*\* *p*<0.01

Robust standard errors

Finally, Figures A1.1.1 and A.1.1.2 plot the individual birth-year coefficients for the fully specified regressions for native-born, adult, white men and native-born, adult, African American men. The figures plot the estimated coefficients as well as the associated 95-percent confidence intervals.

Figure A1.1.1

Estimated birth-year coefficients

White, native-born, male Pennsylvania prisoners, 22 – 50 years



Figure A1.1.2

Estimated birth-year coefficients

Black, native-born, male Pennsylvania prisoners, 22-50 years



The figures reveal the tenuousness of the “puzzle” interpretation. Although the white-only sample shows some evidence of declining height beginning circa 1820, we cannot reject the null that birth-year coefficients are zero (i.e., the 95-percent confidence interval typically includes zero). The African American-only diagram, alternatively, reveals a modest upward trend in heights, though the variance increases for cohorts coming of age in the Civil War (i.e., birth cohorts circa 1840). But here, too, drawing an inference that heights for free African Americans living in Pennsylvania is unwarranted given that the 95-percent confidence intervals include zero. If we were to accept two hypotheses: (1) that height data better reveals the well-being of lower income than higher income people;[[5]](#footnote-5) and (2) free African Americans were among the poorest of mid-nineteenth-century Americans,[[6]](#footnote-6) then we might be inclined to think that the biological well-being of this group was increasing. But we are not so inclined. We are more inclined to believe that there was differential selection into crime by whites on blacks on some variable(s) correlated with height. If that is the case, as seems likely, then these birth year and incarceration year effects have no simple interpretation.

A.1.2 Free African Americans living in Maryland and Virginia

A ten-fold increase in the free African-American population in Maryland and a five-fold increase in Virginia between the Revolution and the Civil War concerned contemporary whites who imposed a number of restrictions and regulations on manumission, the occupations African-Americans might pursue, and other features of free African-American life. One regulation imposed in both states in the post-Revolutionary era was that all free people of color were required to register with the county court and carry a notarized copy of the registration as proof of their freedom. County court clerks recorded information on the registrants, sometimes in special ledgers, sometimes in the regular court records. Most registrations included detailed descriptions of an individual registrant, including his or her name (including any known aliases), age, sex, height, complexion, any identifying scars or other notable physical attributes, and whether he or she were born free or manumitted. Some registrations included the county of birth; few reported an occupation. Komlos and Bodenhorn have used these data to investigate various features of the free African-American experience, including race- and complexion-based differences in height and whether African-American heights exhibited evidence of the antebellum puzzle.[[7]](#footnote-7)

One concern with the registration data is that, like in the prison sample, they may not be a true random draw from either the free-born or enslaved population. Virginia’s 1793 “black code” required all free and manumitted African Americans to register with the court clerk of the county in which they resided.[[8]](#footnote-8) Any free person who failed to do so was subject to arrest and liable for the jailor’s fees incurred before they appeared before the court and registered, which might be expected to have encouraged near universal registration because the law was enforced, even if selectively.[[9]](#footnote-9) But only a fraction of African Americans actually complied. In Campbell County, Virginia, for example, the clerk registered only 287 individuals between 1801 and 1850 even though the 1850 census enumerated 846 African-American residents. An effort to match registers (circa 1850 and 1860) to the 1850 and 1860 manuscript censuses for 17 Maryland and Virginia counties resulted in a 27 percent match rate, which may be only partly explained by the use of aliases, alternative spellings, and failure to match on common names.

A second feature of Virginia’s 1793 act, namely that any employer who hired a free person of color without a proper registration was subject to a $5 fine per violation, may have led to selective registration. Probably as a result of this provision in the law, most free-born registrants appear in the records between the ages of 17 and 25, or the ages at which young men and women left home and/or entered the wage labor market. If historical labor markets exhibit the same rewards to height observed in modern studies, African-American employment opportunities may have been correlated with height. Moreover, if the returns to height changed with changes in employment rates or wages (or other macroeconomic variables), dynamic selection may have operated in a way that improvements in labor market opportunities would have drawn differentially over cohorts and time from an otherwise stable height distribution. If this were the case, the selected data may reveal a (spurious) trend in height that would not appear in a representative random sample.

Because it includes only manumitted slaves, it is unlikely that the Maryland-Virginia registration sample includes a random draw of the slave population.[[10]](#footnote-10) Historical studies into manumission practices across the New World point toward non-random, or selective manumission. Manumitted slaves were disproportionately young, female, mixed-race, skilled workers or domestic servants that resided in urban places.[[11]](#footnote-11) Further, Shawn Cole found that slaves that achieved their freedom through self-purchase paid a 19 percent premium over market price adjusted for observable characteristics, which suggests that these slaves expected to realize productivities in freedom sufficient to compensate for the higher prices paid.[[12]](#footnote-12) Arthur Budros, too, found a correlation between manumission rates in south-central Virginia and changes in slave and commodity prices.[[13]](#footnote-13) One feature of manumission that is widely accepted is that it was used selectively to reward favored slaves and to provide incentives for slaves to behave and work hard.[[14]](#footnote-14) If the selection process into manumission responded to either short-run cycles or long-run trends in the southern economy, the potential for dynamic selection is evident.

The selection-diagnostic regressions we estimate, which includes registration-year and birth-year dummies, takes the same general form as in Equation (1) above. Thus, our regressions for free-born and manumitted African Americans take the following general forms:

hi = α + ∑c βc \* Iic + ∑t βt \* Iit + γi + ζi + ρi + εi (2)

Iic is an indicator variable equal to one if the individual is a member of cohort c (i.e., born in year c) and zero otherwise, so the term ∑c βc \* Iic captures a series of cohort or birth-year dummies. Iit is an indicator variable equal to one if the individual entered prison at time t and zero otherwise, so the term ∑t βt \* Iit captures a series of year-of-incarceration dummy variables, that proxy for year-specific macroeconomic effects. In some estimates were also include γ is a state and region-specific dummy variable related to county of registration; ζ is an urban residence dummy variable (Baltimore, Maryland and Lynchburg and Norfolk, Virginia); ρ represents a mixed-race dummy variable; and ε is the error term.[[15]](#footnote-15)

We follow the same procedures in our estimations here as above. We trim the sample to include heights within three standard deviations of mean height (59 to 75 inches for men and 55 to 70 inches for women) and drop observation year- birth year cells with less than five observations. We include only men between 22 and 50 years and women 20 to 50 years, or those likely to have attained terminal adult height. After trimming, we are left with more than 4,000 observations in each sex-status subsample. The sample includes birth years between 1752 and 1843 and registration years between 1800 and 1864, so it is not clear whether it will have much to say about the puzzle, the onset of which is typically dated for birth years circa 1840. For all subsamples, the OLS constant is the estimated height of 25 year olds born in 1800 and measured in 1825.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table A1.2.1 | | | | | |
| Summary statistics | | | | | |
| Maryland-Virginia African American sample | | | | | |
|  |  |  |  |  |  |
|  | Free-born | Slave-born |  | Free-born | Slave-born |
|  | Men | Men |  | Women | Women |
|  | (1) | (2) |  | (3) | (4) |
|  |  |  |  |  |  |
| Registration year | 1845.13 | 1832.34 |  | 1844.52 | 1834.48 |
|  | [13.16] | [16.79] |  | [12.57] | [15.45] |
| Birth year | 1817.04 | 1799.38 |  | 1816.84 | 1802.19 |
|  | [14.00] | [17.85] |  | [13.86] | [16.59] |
| Age | 28.09 | 32.97 |  | 27.67 | 32.29 |
|  | [6.79] | [7.53] |  | [7.36] | [7.93] |
| Height | 67.38 | 67.1 |  | 62.69 | 62.47 |
|  | [2.69] | [2.61] |  | [2.39] | [2.30] |
| Virginia residence | 0.64 | 0.27 |  | 0.61 | 0.23 |
| Maryland residence | 0.36 | 0.73 |  | 0.39 | 0.77 |
| Shore county | 0.6 | 0.59 |  | 0.67 | 0.71 |
| Piedmont county | 0.34 | 0.34 |  | 0.32 | 0.25 |
| Mountain county | 0.06 | 0.07 |  | 0.04 | 0.04 |
| City | 0.08 | 0.03 |  | 0.09 | 0.04 |
| Rural | 0.92 | 0.97 |  | 0.91 | 0.96 |
| Black | 0.8 | 0.87 |  | 0.8 | 0.86 |
| Mixed race | 0.2 | 0.13 |  | 0.2 | 0.14 |
|  |  |  |  |  |  |
| Notes: referecne categories are Maryland, Piedmont, rural and black | | | | | |
| Sources: Komlos, "Height"; Bodenhorn, "Mulatto Advantage." | | | | | |

Table A.1.2.1 reports the summary statistics of the variables included in the height regressions for African-American men and women. Slave-born African American men and women who were later manumitted tended to be born earlier and were observed earlier than free-born men and women. Slave-born men and women also tended to be about 4 to 5 years older at registration than free-born people. Finally, slave-born men and women were more likely to be observed in Maryland, which is consistent with Maryland’s more liberal attitudes toward manumission. Virginia imposed several restrictions on the manumission process that Maryland did not. Nearly two-thirds of all registrants resided east of the fall line and relatively close to the Atlantic coast.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Table A1.2.2 | | | | | | |
| Summary of OLS estimates of height, using Maryland-Virginia African-American sample | | | | | | |
| Selection diagnostic tests | | | | | | |
|  |  |  |  |  |  |  |
|  |  | Men | |  | Women | |
|  |  | Free-born | Slave-born |  | Free-born | Slave-born |
|  |  | Ages 22 - 50 | |  | Ages 20 - 50 | |
|  |  | Heights: 59 - 75 inches | |  | Heights: 55 - 70 inches | |
|  |  | (1) | (2) |  | (3) | (4) |
|  |  |  |  |  |  |  |
| Test all registration years zero |  | 1.39 | 0.68 |  | 1.12 | 1.29 |
| p-value of F test |  | (0.028) | (0.972) |  | (0.254) | (0.063) |
| degrees of freedom of F test |  | [59, 5675] | [62, 4317] |  | [59, 6420] | [63, 4489] |
|  |  |  |  |  |  |  |
| Test all birth years zero |  | 1.31 | 0.95 |  | 1.48 | 1.18 |
| p-value of F test |  | (0.046) | (0.597) |  | (0.006) | (0.129) |
| degrees of freedom of F test |  | [68, 5675] | [78, 4317] |  | [68, 6420] | [80, 4489] |
|  |  |  |  |  |  |  |
| Additional correlates |  |  |  |  |  |  |
| State |  | Yes | Yes |  | Yes | Yes |
| Region |  | Yes | Yes |  | Yes | Yes |
| City |  | Yes | Yes |  | Yes | Yes |
| Mixed race |  | Yes | Yes |  | Yes | Yes |
|  |  |  |  |  |  |  |
| Observations |  | 5808 | 4463 |  | 6553 | 4638 |
|  |  |  |  |  |  |  |
| Note: all regressions use robust standard errors and include all controls | | | | | | |

Table A1.2.2 provides a summary of the selection tests discussed at length in the paper. The statistics reported in this table, however, include the full set of observed controls – race, state, region, and urban residence. The inclusion of the added controls lowers the p-value of the value of the joint F-test on the registration years, but two remain statistically significant at usual levels.

Tables A1.2.3 – A1.2.6 report OLS estimates of the full set of variables.

Table A1.2.3

OLS Estimates

Free-born black men

Maryland-Virginia Blacks

22 - 50 years

|  |  |  |
| --- | --- | --- |
| Variables | (1) | (2) |
|  |  | Controls |
| by\_1773 | 0.625 | 0.419 |
|  | [1.099] | [1.053] |
| by\_1774 | 0.817 | 0.531 |
|  | [0.691] | [0.775] |
| by\_1775 | -0.814 | -1.020 |
|  | [1.745] | [1.795] |
| by\_1776 | -0.878 | -1.057 |
|  | [0.881] | [0.857] |
| by\_1777 | -0.224 | -0.368 |
|  | [0.966] | [0.968] |
| by\_1778 | 0.719 | 0.836 |
|  | [0.819] | [0.825] |
| by\_1779 | -0.133 | -0.354 |
|  | [1.034] | [0.963] |
| by\_1780 | -1.263 | -1.363 |
|  | [0.686]\* | [0.626]\*\* |
| by\_1781 | -0.722 | -1.143 |
|  | [0.719] | [0.750] |
| by\_1782 | -1.319 | -1.369 |
|  | [0.757]\* | [0.756]\* |
| by\_1783 | 0.382 | 0.359 |
|  | [0.780] | [0.725] |
| by\_1784 | -0.686 | -0.843 |
|  | [0.703] | [0.707] |
| by\_1785 | 0.477 | 0.487 |
|  | [0.822] | [0.843] |
| by\_1786 | -0.050 | -0.201 |
|  | [0.647] | [0.613] |
| by\_1787 | -0.486 | -0.588 |
|  | [0.681] | [0.690] |
| by\_1788 | 0.152 | 0.093 |
|  | [0.481] | [0.473] |
| by\_1789 | 0.207 | 0.116 |
|  | [0.542] | [0.513] |
| by\_1790 | -0.448 | -0.429 |
|  | [0.574] | [0.555] |
| by\_1791 | -0.131 | -0.263 |
|  | [0.507] | [0.492] |
| by\_1792 | -0.575 | -0.595 |
|  | [0.518] | [0.517] |
| by\_1793 | 0.437 | 0.430 |
|  | [0.524] | [0.529] |
| by\_1794 | -0.277 | -0.404 |
|  | [0.567] | [0.576] |
| by\_1795 | -0.764 | -0.742 |
|  | [0.499] | [0.491] |
| by\_1796 | -0.488 | -0.404 |
|  | [0.491] | [0.480] |
| by\_1797 | -0.570 | -0.675 |
|  | [0.486] | [0.483] |
| by\_1798 | -0.121 | -0.044 |
|  | [0.422] | [0.416] |
| by\_1799 | -0.091 | -0.000 |
| by\_1800  base year | [0.429] | [0.430] |
| by\_1801 | 0.214 | 0.196 |
|  | [0.450] | [0.444] |
| by\_1802 | -0.166 | -0.116 |
|  | [0.415] | [0.411] |
| by\_1803 | 0.354 | 0.372 |
|  | [0.449] | [0.444] |
| by\_1804 | -0.684 | -0.589 |
|  | [0.396]\* | [0.393] |
| by\_1805 | 0.366 | 0.367 |
|  | [0.417] | [0.411] |
| by\_1806 | 0.117 | 0.204 |
|  | [0.394] | [0.387] |
| by\_1807 | -0.158 | -0.161 |
|  | [0.388] | [0.385] |
| by\_1808 | -0.230 | -0.123 |
|  | [0.393] | [0.387] |
| by\_1809 | 0.143 | 0.237 |
|  | [0.392] | [0.387] |
| by\_1810 | -0.644 | -0.584 |
|  | [0.389]\* | [0.382] |
| by\_1811 | -0.514 | -0.346 |
|  | [0.413] | [0.408] |
| by\_1812 | -0.561 | -0.437 |
|  | [0.418] | [0.412] |
| by\_1813 | 0.031 | 0.180 |
|  | [0.424] | [0.419] |
| by\_1814 | -0.193 | -0.051 |
|  | [0.396] | [0.387] |
| by\_1815 | -0.334 | -0.150 |
|  | [0.393] | [0.389] |
| by\_1816 | -0.222 | -0.034 |
|  | [0.384] | [0.382] |
| by\_1817 | -0.056 | 0.171 |
|  | [0.404] | [0.405] |
| by\_1818 | -0.575 | -0.285 |
|  | [0.418] | [0.414] |
| by\_1819 | -0.356 | -0.166 |
|  | [0.400] | [0.399] |
| by\_1820 | 0.248 | 0.388 |
|  | [0.389] | [0.384] |
| by\_1821 | -0.020 | 0.207 |
|  | [0.380] | [0.374] |
| by\_1822 | -0.246 | -0.011 |
|  | [0.378] | [0.373] |
| by\_1823 | 0.273 | 0.513 |
|  | [0.390] | [0.383] |
| by\_1824 | -0.161 | 0.123 |
|  | [0.386] | [0.381] |
| by\_1825 | -0.256 | 0.010 |
|  | [0.369] | [0.365] |
| by\_1826 | 0.119 | 0.344 |
|  | [0.386] | [0.381] |
| by\_1827 | -0.114 | 0.119 |
|  | [0.384] | [0.381] |
| by\_1828 | 0.264 | 0.558 |
|  | [0.380] | [0.377] |
| by\_1829 | -0.260 | 0.035 |
|  | [0.385] | [0.382] |
| by\_1830 | -0.262 | -0.009 |
|  | [0.381] | [0.377] |
| by\_1831 | -0.334 | -0.081 |
|  | [0.408] | [0.405] |
| by\_1832 | 0.014 | 0.285 |
|  | [0.423] | [0.422] |
| by\_1833 | -0.745 | -0.484 |
|  | [0.394]\* | [0.391] |
| by\_1834 | -0.418 | -0.132 |
|  | [0.405] | [0.400] |
| by\_1835 | -0.639 | -0.365 |
|  | [0.412] | [0.409] |
| by\_1836 | -0.829 | -0.552 |
|  | [0.436]\* | [0.435] |
| by\_1837 | -0.371 | -0.129 |
|  | [0.440] | [0.434] |
| by\_1838 | -1.135 | -0.820 |
|  | [0.462]\*\* | [0.463]\* |
| by\_1839 | -0.714 | -0.420 |
|  | [0.660] | [0.652] |
| by\_1840 | -1.170 | -0.968 |
|  | [0.742] | [0.736] |
| by\_1841 | 0.257 | 0.276 |
|  | [0.945] | [0.943] |
| ry\_1803 | 0.679 | 0.891 |
|  | [1.399] | [1.418] |
| ry\_1805 | -0.068 | 0.083 |
|  | [1.097] | [1.107] |
| ry\_1806 | 0.769 | 0.795 |
|  | [1.243] | [1.220] |
| ry\_1807 | -0.297 | 0.171 |
|  | [0.813] | [0.822] |
| ry\_1809 | -0.811 | -0.491 |
|  | [0.881] | [0.899] |
| ry\_1810 | 0.088 | 0.333 |
|  | [0.836] | [0.836] |
| ry\_1811 | 0.203 | 0.564 |
|  | [0.769] | [0.783] |
| ry\_1812 | 0.560 | 0.829 |
|  | [0.788] | [0.800] |
| ry\_1813 | 1.255 | 1.349 |
|  | [0.679]\* | [0.680]\*\* |
| ry\_1814 | 0.880 | 1.095 |
|  | [0.822] | [0.809] |
| ry\_1815 | 0.587 | 0.951 |
|  | [0.769] | [0.773] |
| ry\_1816 | 0.739 | 1.013 |
|  | [0.737] | [0.739] |
| ry\_1817 | 1.179 | 1.511 |
|  | [0.809] | [0.820]\* |
| ry\_1818 | -0.341 | -0.100 |
|  | [0.735] | [0.747] |
| ry\_1819 | 1.276 | 1.488 |
|  | [0.656]\* | [0.673]\*\* |
| ry\_1820 | 1.646 | 1.572 |
|  | [0.710]\*\* | [0.723]\*\* |
| ry\_1821 | -0.054 | 0.168 |
|  | [0.667] | [0.672] |
| ry\_1822 | 0.198 | 0.256 |
|  | [0.616] | [0.620] |
| ry\_1823 | 0.618 | 0.571 |
|  | [0.597] | [0.609] |
| ry\_1824 | 1.216 | 1.266 |
| ry\_1825  base year | [0.596]\*\* | [0.606]\*\* |
| ry\_1826 | 0.759 | 0.817 |
|  | [0.607] | [0.626] |
| ry\_1827 | 0.390 | 0.492 |
|  | [0.633] | [0.638] |
| ry\_1828 | 0.892 | 0.925 |
|  | [0.619] | [0.627] |
| ry\_1829 | 0.794 | 0.810 |
|  | [0.603] | [0.619] |
| ry\_1830 | -0.131 | 0.016 |
|  | [0.642] | [0.655] |
| ry\_1831 | 0.207 | 0.278 |
|  | [0.553] | [0.568] |
| ry\_1832 | 0.747 | 1.045 |
|  | [0.546] | [0.563]\* |
| ry\_1833 | 1.037 | 0.938 |
|  | [0.615]\* | [0.629] |
| ry\_1834 | 0.297 | 0.198 |
|  | [0.641] | [0.654] |
| ry\_1835 | 0.986 | 0.878 |
|  | [0.633] | [0.651] |
| ry\_1836 | 0.916 | 0.874 |
|  | [0.592] | [0.602] |
| ry\_1837 | 0.673 | 0.588 |
|  | [0.612] | [0.628] |
| ry\_1838 | 0.410 | 0.179 |
|  | [0.571] | [0.588] |
| ry\_1839 | 0.814 | 0.659 |
|  | [0.623] | [0.634] |
| ry\_1840 | 1.349 | 1.254 |
|  | [0.603]\*\* | [0.613]\*\* |
| ry\_1841 | 0.436 | 0.358 |
|  | [0.621] | [0.640] |
| ry\_1842 | 0.009 | -0.162 |
|  | [0.652] | [0.664] |
| ry\_1843 | 0.820 | 0.638 |
|  | [0.598] | [0.607] |
| ry\_1844 | 0.339 | 0.282 |
|  | [0.591] | [0.607] |
| ry\_1845 | 0.340 | 0.323 |
|  | [0.577] | [0.591] |
| ry\_1846 | 0.600 | 0.500 |
|  | [0.589] | [0.600] |
| ry\_1847 | 0.450 | 0.376 |
|  | [0.557] | [0.573] |
| ry\_1848 | 0.344 | 0.207 |
|  | [0.577] | [0.591] |
| ry\_1849 | 1.028 | 0.850 |
|  | [0.573]\* | [0.587] |
| ry\_1850 | 0.458 | 0.465 |
|  | [0.562] | [0.580] |
| ry\_1851 | 0.433 | 0.444 |
|  | [0.549] | [0.569] |
| ry\_1852 | 0.080 | 0.186 |
|  | [0.549] | [0.568] |
| ry\_1853 | 0.259 | 0.325 |
|  | [0.549] | [0.568] |
| ry\_1854 | 0.534 | 0.607 |
|  | [0.580] | [0.597] |
| ry\_1855 | 0.742 | 0.817 |
|  | [0.579] | [0.598] |
| ry\_1856 | 0.290 | 0.387 |
|  | [0.574] | [0.591] |
| ry\_1857 | 0.375 | 0.358 |
|  | [0.561] | [0.580] |
| ry\_1858 | 0.406 | 0.553 |
|  | [0.560] | [0.577] |
| ry\_1859 | 0.542 | 0.630 |
|  | [0.561] | [0.578] |
| ry\_1860 | 0.656 | 0.833 |
|  | [0.555] | [0.572] |
| ry\_1861 | 0.596 | 0.612 |
|  | [0.651] | [0.665] |
| ry\_1862 | 1.266 | 1.410 |
|  | [0.688]\* | [0.690]\*\* |
| ry\_1863 | 0.764 | 0.846 |
|  | [0.621] | [0.640] |
| ry\_1864 | 0.379 | 0.357 |
|  | [0.782] | [0.777] |
| va |  | 0.267 |
| md |  | [0.091]\*\*\*  reference |
| mulatto |  | 0.394 |
| black |  | [0.089]\*\*\*  reference |
| shore |  | -0.451 |
|  |  | [0.089]\*\*\* |
| mountain |  | 0.288 |
| piedmont |  | [0.176]  reference |
| city |  | -0.791 |
| rural |  | [0.147]\*\*\*  reference |
| \_cons | 67.075 | 66.935 |
|  | [0.555]\*\*\* | [0.578]\*\*\* |
| *R*2 | 0.03 | 0.05 |
| *N* | 5,808 | 5,808 |

\* *p*<0.1; \*\* *p*<0.05; \*\*\* *p*<0.01

Robust standard errors

Table A1.2.4

OLS Estimates

Slave-born black men

Maryland-Virginia Blacks

22 - 50 years

|  |  |  |
| --- | --- | --- |
| Variables | (1) | (2) |
|  |  | Controls |
| by\_1757 | 0.265 | 0.191 |
|  | [0.768] | [0.761] |
| by\_1760 | -0.566 | -0.636 |
|  | [0.902] | [0.911] |
| by\_1761 | -0.043 | -0.169 |
|  | [0.799] | [0.791] |
| by\_1762 | -0.739 | -0.815 |
|  | [1.038] | [1.000] |
| by\_1763 | 0.288 | 0.290 |
|  | [0.761] | [0.760] |
| by\_1764 | -0.201 | -0.279 |
|  | [0.968] | [0.983] |
| by\_1765 | -0.030 | -0.074 |
|  | [0.521] | [0.513] |
| by\_1766 | 0.858 | 0.779 |
|  | [0.601] | [0.591] |
| by\_1767 | 0.858 | 0.750 |
|  | [0.745] | [0.757] |
| by\_1768 | -0.459 | -0.593 |
|  | [0.731] | [0.746] |
| by\_1769 | -0.454 | -0.426 |
|  | [0.538] | [0.539] |
| by\_1770 | -0.723 | -0.740 |
|  | [0.519] | [0.522] |
| by\_1771 | -0.036 | -0.014 |
|  | [0.533] | [0.535] |
| by\_1772 | 0.507 | 0.473 |
|  | [0.462] | [0.462] |
| by\_1773 | -0.262 | -0.282 |
|  | [0.473] | [0.476] |
| by\_1774 | 0.581 | 0.483 |
|  | [0.463] | [0.459] |
| by\_1775 | 0.026 | -0.048 |
|  | [0.563] | [0.566] |
| by\_1776 | -0.035 | -0.051 |
|  | [0.429] | [0.429] |
| by\_1777 | 0.188 | 0.139 |
|  | [0.435] | [0.429] |
| by\_1778 | -0.610 | -0.691 |
|  | [0.470] | [0.463] |
| by\_1779 | -0.087 | -0.127 |
|  | [0.463] | [0.463] |
| by\_1780 | 0.248 | 0.197 |
|  | [0.444] | [0.443] |
| by\_1781 | -0.144 | -0.208 |
|  | [0.443] | [0.436] |
| by\_1782 | -0.161 | -0.195 |
|  | [0.450] | [0.443] |
| by\_1783 | 0.595 | 0.532 |
|  | [0.423] | [0.422] |
| by\_1784 | 0.545 | 0.504 |
|  | [0.405] | [0.406] |
| by\_1785 | 0.282 | 0.293 |
|  | [0.389] | [0.387] |
| by\_1786 | 0.019 | 0.086 |
|  | [0.414] | [0.413] |
| by\_1787 | 0.207 | 0.213 |
|  | [0.365] | [0.367] |
| by\_1788 | -0.145 | -0.130 |
|  | [0.388] | [0.386] |
| by\_1789 | 0.748 | 0.729 |
|  | [0.385]\* | [0.379]\* |
| by\_1790 | -0.064 | -0.043 |
|  | [0.388] | [0.387] |
| by\_1791 | 0.522 | 0.510 |
|  | [0.391] | [0.390] |
| by\_1792 | -0.131 | -0.069 |
|  | [0.397] | [0.397] |
| by\_1793 | -0.459 | -0.421 |
|  | [0.397] | [0.388] |
| by\_1794 | -0.007 | 0.032 |
|  | [0.383] | [0.388] |
| by\_1795 | 0.275 | 0.222 |
|  | [0.360] | [0.356] |
| by\_1796 | 0.511 | 0.471 |
|  | [0.360] | [0.356] |
| by\_1797 | 0.048 | 0.044 |
|  | [0.348] | [0.342] |
| by\_1798 | -0.224 | -0.182 |
|  | [0.387] | [0.378] |
| by\_1799 | 0.274 | 0.323 |
| by\_1800  base year | [0.369] | [0.369]  reference |
| by\_1801 | 0.547 | 0.580 |
|  | [0.376] | [0.373] |
| by\_1802 | -0.026 | -0.028 |
|  | [0.410] | [0.407] |
| by\_1803 | 0.314 | 0.390 |
|  | [0.400] | [0.401] |
| by\_1804 | 0.026 | 0.051 |
|  | [0.392] | [0.384] |
| by\_1805 | 0.030 | 0.122 |
|  | [0.375] | [0.373] |
| by\_1806 | -0.078 | -0.038 |
|  | [0.424] | [0.416] |
| by\_1807 | 0.270 | 0.306 |
|  | [0.381] | [0.383] |
| by\_1808 | 0.238 | 0.289 |
|  | [0.411] | [0.415] |
| by\_1809 | 0.071 | 0.177 |
|  | [0.421] | [0.416] |
| by\_1810 | -0.417 | -0.288 |
|  | [0.346] | [0.345] |
| by\_1811 | -0.002 | 0.125 |
|  | [0.418] | [0.418] |
| by\_1812 | 0.006 | 0.141 |
|  | [0.415] | [0.427] |
| by\_1813 | -0.076 | 0.062 |
|  | [0.397] | [0.391] |
| by\_1814 | -0.172 | -0.067 |
|  | [0.447] | [0.449] |
| by\_1815 | 0.247 | 0.343 |
|  | [0.399] | [0.396] |
| by\_1816 | 0.807 | 0.935 |
|  | [0.451]\* | [0.453]\*\* |
| by\_1817 | 0.097 | 0.247 |
|  | [0.413] | [0.410] |
| by\_1818 | 0.501 | 0.630 |
|  | [0.427] | [0.425] |
| by\_1819 | 0.296 | 0.448 |
|  | [0.447] | [0.450] |
| by\_1820 | 0.311 | 0.412 |
|  | [0.398] | [0.394] |
| by\_1821 | 0.810 | 0.967 |
|  | [0.417]\* | [0.410]\*\* |
| by\_1822 | 0.438 | 0.619 |
|  | [0.433] | [0.430] |
| by\_1823 | 0.920 | 1.029 |
|  | [0.410]\*\* | [0.411]\*\* |
| by\_1824 | 0.506 | 0.574 |
|  | [0.411] | [0.407] |
| by\_1825 | 0.141 | 0.345 |
|  | [0.480] | [0.483] |
| by\_1826 | 0.569 | 0.801 |
|  | [0.433] | [0.442]\* |
| by\_1827 | 0.588 | 0.699 |
|  | [0.438] | [0.444] |
| by\_1828 | 0.344 | 0.416 |
|  | [0.474] | [0.478] |
| by\_1829 | 0.480 | 0.581 |
|  | [0.531] | [0.534] |
| by\_1830 | 0.759 | 0.811 |
|  | [0.612] | [0.600] |
| by\_1831 | 0.042 | 0.209 |
|  | [0.620] | [0.603] |
| by\_1832 | 0.152 | 0.229 |
|  | [0.613] | [0.600] |
| by\_1833 | 0.050 | 0.250 |
|  | [0.640] | [0.619] |
| by\_1834 | 0.211 | 0.166 |
|  | [0.987] | [0.972] |
| by\_1835 | 0.541 | 0.560 |
|  | [0.955] | [0.921] |
| by\_1836 | 0.836 | 0.791 |
|  | [1.579] | [1.539] |
| by\_1837 | -0.766 | -0.904 |
|  | [0.779] | [0.785] |
| ry\_1800 | 0.271 | 0.165 |
|  | [0.572] | [0.572] |
| ry\_1802 | 0.329 | -0.043 |
|  | [0.835] | [0.836] |
| ry\_1803 | -1.330 | -1.618 |
|  | [0.796]\* | [0.805]\*\* |
| ry\_1804 | -0.074 | -0.428 |
|  | [0.844] | [0.846] |
| ry\_1805 | 0.804 | 0.639 |
|  | [1.312] | [1.323] |
| ry\_1806 | -0.496 | -0.503 |
|  | [0.507] | [0.499] |
| ry\_1807 | -0.114 | 0.057 |
|  | [0.396] | [0.394] |
| ry\_1808 | 0.291 | 0.459 |
|  | [0.466] | [0.466] |
| ry\_1809 | -0.099 | 0.034 |
|  | [0.400] | [0.395] |
| ry\_1810 | -0.212 | -0.106 |
|  | [0.373] | [0.373] |
| ry\_1811 | 0.041 | 0.108 |
|  | [0.402] | [0.395] |
| ry\_1812 | -0.351 | -0.294 |
|  | [0.402] | [0.403] |
| ry\_1813 | -0.150 | -0.138 |
|  | [0.449] | [0.437] |
| ry\_1814 | 0.371 | 0.385 |
|  | [0.490] | [0.477] |
| ry\_1815 | -0.054 | 0.092 |
|  | [0.366] | [0.365] |
| ry\_1816 | 0.234 | 0.339 |
|  | [0.389] | [0.388] |
| ry\_1817 | -0.419 | -0.385 |
|  | [0.456] | [0.452] |
| ry\_1818 | 0.385 | 0.416 |
|  | [0.399] | [0.394] |
| ry\_1819 | -0.311 | -0.243 |
|  | [0.402] | [0.400] |
| ry\_1820 | 0.010 | -0.080 |
|  | [0.435] | [0.414] |
| ry\_1821 | 0.179 | 0.078 |
|  | [0.435] | [0.428] |
| ry\_1822 | 0.488 | 0.442 |
|  | [0.421] | [0.415] |
| ry\_1823 | -0.027 | -0.156 |
|  | [0.378] | [0.378] |
| ry\_1824 | 0.385 | 0.289 |
| ry\_1825  base year | [0.416] | [0.417]  reference |
| ry\_1826 | -0.033 | -0.099 |
|  | [0.402] | [0.400] |
| ry\_1827 | 0.533 | 0.401 |
|  | [0.377] | [0.373] |
| ry\_1828 | -0.047 | -0.134 |
|  | [0.372] | [0.368] |
| ry\_1829 | -0.255 | -0.214 |
|  | [0.355] | [0.349] |
| ry\_1830 | 0.118 | 0.091 |
|  | [0.395] | [0.388] |
| ry\_1831 | 0.055 | 0.011 |
|  | [0.406] | [0.407] |
| ry\_1832 | 0.248 | 0.234 |
|  | [0.346] | [0.342] |
| ry\_1833 | 0.223 | -0.017 |
|  | [0.445] | [0.436] |
| ry\_1834 | 0.432 | 0.144 |
|  | [0.453] | [0.459] |
| ry\_1835 | 0.498 | 0.344 |
|  | [0.451] | [0.452] |
| ry\_1836 | 0.183 | -0.060 |
|  | [0.421] | [0.424] |
| ry\_1837 | -0.033 | -0.171 |
|  | [0.461] | [0.463] |
| ry\_1838 | 0.504 | 0.193 |
|  | [0.501] | [0.497] |
| ry\_1839 | 0.403 | 0.108 |
|  | [0.449] | [0.443] |
| ry\_1840 | 0.362 | 0.030 |
|  | [0.502] | [0.500] |
| ry\_1841 | -0.094 | -0.352 |
|  | [0.486] | [0.489] |
| ry\_1842 | 0.387 | 0.105 |
|  | [0.525] | [0.523] |
| ry\_1843 | -0.286 | -0.529 |
|  | [0.440] | [0.432] |
| ry\_1844 | 0.239 | -0.015 |
|  | [0.519] | [0.516] |
| ry\_1845 | 0.588 | 0.278 |
|  | [0.403] | [0.403] |
| ry\_1846 | 0.369 | 0.209 |
|  | [0.477] | [0.474] |
| ry\_1847 | 0.395 | 0.125 |
|  | [0.410] | [0.410] |
| ry\_1848 | 0.563 | 0.392 |
|  | [0.442] | [0.439] |
| ry\_1849 | 0.072 | -0.279 |
|  | [0.437] | [0.442] |
| ry\_1850 | 0.424 | 0.124 |
|  | [0.415] | [0.421] |
| ry\_1851 | 0.222 | -0.086 |
|  | [0.429] | [0.430] |
| ry\_1852 | 0.118 | 0.023 |
|  | [0.452] | [0.454] |
| ry\_1853 | 0.303 | 0.114 |
|  | [0.402] | [0.406] |
| ry\_1854 | 0.164 | 0.099 |
|  | [0.449] | [0.446] |
| ry\_1855 | 0.202 | 0.029 |
|  | [0.436] | [0.434] |
| ry\_1856 | 0.634 | 0.453 |
|  | [0.472] | [0.469] |
| ry\_1857 | -0.116 | -0.339 |
|  | [0.446] | [0.443] |
| ry\_1858 | 0.133 | 0.123 |
|  | [0.460] | [0.462] |
| ry\_1859 | 0.197 | 0.066 |
|  | [0.503] | [0.498] |
| ry\_1860 | -0.128 | -0.086 |
|  | [0.437] | [0.441] |
| ry\_1861 | 0.254 | 0.139 |
|  | [0.524] | [0.536] |
| ry\_1862 | 0.605 | 0.765 |
|  | [0.665] | [0.680] |
| ry\_1863 | -0.570 | -0.565 |
|  | [0.596] | [0.574] |
| va |  | 0.396 |
| md |  | [0.107]\*\*\*  reference |
| mulatto |  | 0.206 |
| black |  | [0.124]\*  reference |
| shore |  | -0.235 |
|  |  | [0.095]\*\* |
| mountain |  | 0.501 |
| piedmont |  | [0.171]\*\*\*  reference |
| city |  | -0.581 |
| rural |  | [0.226]\*\*  reference |
| \_cons | 66.811 | 66.843 |
|  | [0.366]\*\*\* | [0.370]\*\*\* |
| *R*2 | 0.03 | 0.05 |
| *N* | 4,463 | 4,463 |

\* *p*<0.1; \*\* *p*<0.05; \*\*\* *p*<0.01

Robust standard errors

Table A1.2.5

OLS Estimates

Free-born women

Maryland-Virginia Blacks

20 - 50 years

|  |  |  |
| --- | --- | --- |
| Variables | (1) | (2) |
|  |  | Controls |
| by\_1772 | -0.933 | -0.762 |
|  | [1.090] | [1.025] |
| by\_1775 | -0.349 | -0.458 |
|  | [1.302] | [1.336] |
| by\_1776 | -0.492 | -0.581 |
|  | [0.581] | [0.575] |
| by\_1777 | -0.328 | -0.410 |
|  | [0.594] | [0.572] |
| by\_1779 | -1.502 | -1.514 |
|  | [0.841]\* | [0.832]\* |
| by\_1780 | -0.732 | -0.797 |
|  | [1.006] | [1.097] |
| by\_1781 | -0.474 | -0.585 |
|  | [0.432] | [0.426] |
| by\_1782 | 0.194 | 0.203 |
|  | [0.639] | [0.640] |
| by\_1783 | -0.410 | -0.437 |
|  | [0.578] | [0.566] |
| by\_1784 | -0.688 | -0.749 |
|  | [0.584] | [0.584] |
| by\_1785 | -0.613 | -0.631 |
|  | [0.550] | [0.537] |
| by\_1786 | -0.738 | -0.644 |
|  | [0.754] | [0.752] |
| by\_1787 | -0.179 | -0.216 |
|  | [0.526] | [0.516] |
| by\_1788 | -0.604 | -0.650 |
|  | [0.570] | [0.582] |
| by\_1789 | -0.898 | -0.947 |
|  | [0.422]\*\* | [0.413]\*\* |
| by\_1790 | 1.074 | 1.010 |
|  | [0.560]\* | [0.569]\* |
| by\_1791 | 0.344 | 0.284 |
|  | [0.541] | [0.544] |
| by\_1792 | -1.021 | -0.938 |
|  | [0.411]\*\* | [0.398]\*\* |
| by\_1793 | -0.017 | -0.048 |
|  | [0.447] | [0.447] |
| by\_1794 | -0.699 | -0.699 |
|  | [0.460] | [0.449] |
| by\_1795 | -0.752 | -0.793 |
|  | [0.460] | [0.440]\* |
| by\_1796 | -0.375 | -0.338 |
|  | [0.418] | [0.417] |
| by\_1797 | -0.330 | -0.243 |
|  | [0.370] | [0.365] |
| by\_1798 | -0.648 | -0.611 |
|  | [0.363]\* | [0.361]\* |
| by\_1799 | -0.155 | -0.089 |
| by\_1800  base year | [0.412] | [0.407]  reference |
| by\_1801 | -0.246 | -0.230 |
|  | [0.348] | [0.344] |
| by\_1802 | -0.469 | -0.401 |
|  | [0.335] | [0.333] |
| by\_1803 | -0.636 | -0.564 |
|  | [0.339]\* | [0.339]\* |
| by\_1804 | -0.338 | -0.290 |
|  | [0.359] | [0.357] |
| by\_1805 | -0.464 | -0.420 |
|  | [0.300] | [0.297] |
| by\_1806 | -0.804 | -0.744 |
|  | [0.331]\*\* | [0.330]\*\* |
| by\_1807 | -0.312 | -0.257 |
|  | [0.322] | [0.319] |
| by\_1808 | -0.701 | -0.630 |
|  | [0.316]\*\* | [0.312]\*\* |
| by\_1809 | -0.875 | -0.812 |
|  | [0.290]\*\*\* | [0.286]\*\*\* |
| by\_1810 | -0.549 | -0.481 |
|  | [0.289]\* | [0.285]\* |
| by\_1811 | -0.834 | -0.755 |
|  | [0.293]\*\*\* | [0.291]\*\*\* |
| by\_1812 | -0.639 | -0.593 |
|  | [0.292]\*\* | [0.288]\*\* |
| by\_1813 | -0.830 | -0.723 |
|  | [0.339]\*\* | [0.338]\*\* |
| by\_1814 | -0.428 | -0.379 |
|  | [0.341] | [0.342] |
| by\_1815 | -0.688 | -0.652 |
|  | [0.324]\*\* | [0.322]\*\* |
| by\_1816 | -0.620 | -0.527 |
|  | [0.344]\* | [0.339] |
| by\_1817 | -0.341 | -0.258 |
|  | [0.315] | [0.311] |
| by\_1818 | -0.412 | -0.314 |
|  | [0.323] | [0.320] |
| by\_1819 | -0.514 | -0.418 |
|  | [0.327] | [0.323] |
| by\_1820 | -0.369 | -0.293 |
|  | [0.324] | [0.319] |
| by\_1821 | -0.970 | -0.871 |
|  | [0.317]\*\*\* | [0.313]\*\*\* |
| by\_1822 | -0.514 | -0.404 |
|  | [0.314] | [0.311] |
| by\_1823 | -0.750 | -0.615 |
|  | [0.310]\*\* | [0.305]\*\* |
| by\_1824 | -0.783 | -0.665 |
|  | [0.310]\*\* | [0.306]\*\* |
| by\_1825 | -0.928 | -0.806 |
|  | [0.300]\*\*\* | [0.297]\*\*\* |
| by\_1826 | -0.831 | -0.710 |
|  | [0.321]\*\*\* | [0.318]\*\* |
| by\_1827 | -1.018 | -0.906 |
|  | [0.320]\*\*\* | [0.317]\*\*\* |
| by\_1828 | -0.804 | -0.684 |
|  | [0.327]\*\* | [0.323]\*\* |
| by\_1829 | -0.989 | -0.853 |
|  | [0.304]\*\*\* | [0.302]\*\*\* |
| by\_1830 | -1.301 | -1.173 |
|  | [0.309]\*\*\* | [0.308]\*\*\* |
| by\_1831 | -1.135 | -1.001 |
|  | [0.322]\*\*\* | [0.319]\*\*\* |
| by\_1832 | -1.056 | -0.938 |
|  | [0.318]\*\*\* | [0.316]\*\*\* |
| by\_1833 | -1.453 | -1.297 |
|  | [0.324]\*\*\* | [0.322]\*\*\* |
| by\_1834 | -0.662 | -0.587 |
|  | [0.353]\* | [0.351]\* |
| by\_1835 | -0.936 | -0.813 |
|  | [0.352]\*\*\* | [0.348]\*\* |
| by\_1836 | -0.965 | -0.886 |
|  | [0.354]\*\*\* | [0.350]\*\* |
| by\_1837 | -1.220 | -1.117 |
|  | [0.345]\*\*\* | [0.343]\*\*\* |
| by\_1838 | -1.289 | -1.166 |
|  | [0.344]\*\*\* | [0.341]\*\*\* |
| by\_1839 | -1.755 | -1.708 |
|  | [0.424]\*\*\* | [0.420]\*\*\* |
| by\_1840 | -1.560 | -1.417 |
|  | [0.464]\*\*\* | [0.458]\*\*\* |
| by\_1841 | -1.950 | -1.920 |
|  | [0.725]\*\*\* | [0.716]\*\*\* |
| by\_1842 | 0.865 | 0.891 |
|  | [0.812] | [0.790] |
| by\_1843 | -1.655 | -1.538 |
|  | [0.705]\*\* | [0.692]\*\* |
| ry\_1802 | 0.956 | 0.592 |
|  | [1.169] | [1.180] |
| ry\_1806 | -0.101 | 0.107 |
|  | [1.088] | [1.123] |
| ry\_1807 | -0.076 | 0.289 |
|  | [0.765] | [0.769] |
| ry\_1808 | -0.480 | -0.297 |
|  | [0.752] | [0.794] |
| ry\_1809 | -0.440 | -0.287 |
|  | [0.661] | [0.646] |
| ry\_1810 | -1.088 | -0.970 |
|  | [0.828] | [0.788] |
| ry\_1811 | -1.289 | -0.985 |
|  | [0.689]\* | [0.676] |
| ry\_1812 | -0.073 | 0.170 |
|  | [0.762] | [0.749] |
| ry\_1813 | -1.620 | -1.488 |
|  | [0.780]\*\* | [0.776]\* |
| ry\_1814 | 2.118 | 2.213 |
|  | [0.913]\*\* | [0.915]\*\* |
| ry\_1815 | 0.445 | 0.836 |
|  | [0.599] | [0.606] |
| ry\_1816 | -0.363 | -0.112 |
|  | [0.739] | [0.712] |
| ry\_1817 | -0.042 | 0.119 |
|  | [0.531] | [0.530] |
| ry\_1818 | 0.274 | 0.556 |
|  | [0.561] | [0.553] |
| ry\_1819 | -0.630 | -0.351 |
|  | [0.476] | [0.481] |
| ry\_1820 | 0.676 | 0.449 |
|  | [0.613] | [0.613] |
| ry\_1821 | -0.001 | 0.203 |
|  | [0.695] | [0.695] |
| ry\_1822 | 0.227 | 0.259 |
|  | [0.545] | [0.535] |
| ry\_1823 | -0.238 | -0.309 |
|  | [0.533] | [0.539] |
| ry\_1824 | -0.261 | -0.289 |
| ry\_1825  base year | [0.464] | [0.462]  reference |
| ry\_1826 | -0.466 | -0.354 |
|  | [0.452] | [0.456] |
| ry\_1827 | 0.075 | 0.149 |
|  | [0.451] | [0.450] |
| ry\_1828 | 0.289 | 0.176 |
|  | [0.498] | [0.502] |
| ry\_1829 | 0.324 | 0.313 |
|  | [0.523] | [0.523] |
| ry\_1830 | -0.002 | 0.046 |
|  | [0.447] | [0.448] |
| ry\_1831 | 0.376 | 0.349 |
|  | [0.394] | [0.398] |
| ry\_1832 | -0.133 | 0.172 |
|  | [0.360] | [0.363] |
| ry\_1833 | -0.063 | -0.173 |
|  | [0.474] | [0.470] |
| ry\_1834 | -0.580 | -0.655 |
|  | [0.461] | [0.468] |
| ry\_1835 | 0.863 | 0.753 |
|  | [0.474]\* | [0.474] |
| ry\_1836 | 0.372 | 0.429 |
|  | [0.442] | [0.440] |
| ry\_1837 | 0.463 | 0.435 |
|  | [0.447] | [0.449] |
| ry\_1838 | -0.364 | -0.318 |
|  | [0.429] | [0.431] |
| ry\_1839 | 0.499 | 0.429 |
|  | [0.466] | [0.466] |
| ry\_1840 | -0.352 | -0.197 |
|  | [0.422] | [0.424] |
| ry\_1841 | 0.394 | 0.413 |
|  | [0.485] | [0.481] |
| ry\_1842 | 0.056 | 0.144 |
|  | [0.470] | [0.468] |
| ry\_1843 | 0.127 | 0.062 |
|  | [0.433] | [0.434] |
| ry\_1844 | 0.404 | 0.337 |
|  | [0.434] | [0.438] |
| ry\_1845 | 0.068 | 0.059 |
|  | [0.424] | [0.426] |
| ry\_1846 | -0.059 | -0.129 |
|  | [0.428] | [0.428] |
| ry\_1847 | 0.199 | 0.110 |
|  | [0.389] | [0.394] |
| ry\_1848 | 0.138 | 0.033 |
|  | [0.420] | [0.424] |
| ry\_1849 | 0.448 | 0.263 |
|  | [0.433] | [0.438] |
| ry\_1850 | 0.129 | 0.115 |
|  | [0.388] | [0.396] |
| ry\_1851 | 0.141 | 0.131 |
|  | [0.383] | [0.390] |
| ry\_1852 | 0.079 | 0.023 |
|  | [0.388] | [0.395] |
| ry\_1853 | 0.329 | 0.319 |
|  | [0.389] | [0.395] |
| ry\_1854 | 0.254 | 0.265 |
|  | [0.412] | [0.415] |
| ry\_1855 | -0.192 | -0.201 |
|  | [0.450] | [0.450] |
| ry\_1856 | 0.322 | 0.400 |
|  | [0.408] | [0.414] |
| ry\_1857 | 0.183 | 0.168 |
|  | [0.396] | [0.401] |
| ry\_1858 | 0.152 | 0.277 |
|  | [0.393] | [0.398] |
| ry\_1859 | 0.162 | 0.243 |
|  | [0.408] | [0.412] |
| ry\_1860 | -0.036 | 0.170 |
|  | [0.398] | [0.401] |
| ry\_1861 | 0.207 | 0.126 |
|  | [0.518] | [0.517] |
| ry\_1862 | 0.192 | 0.364 |
|  | [0.574] | [0.574] |
| ry\_1863 | 0.527 | 0.494 |
|  | [0.466] | [0.470] |
| ry\_1864 | 0.540 | 0.397 |
|  | [0.570] | [0.581] |
| va |  | 0.402 |
| md |  | [0.080]\*\*\*  reference |
| mulatto |  | 0.168 |
| black |  | [0.080]\*\*  reference |
| shore |  | -0.127 |
|  |  | [0.079] |
| mountain |  | 0.485 |
| piedmont |  | [0.169]\*\*\*  reference |
| city |  | -0.476 |
| rural |  | [0.114]\*\*\*  reference |
| \_cons | 63.317 | 63.015 |
|  | [0.405]\*\*\* | [0.414]\*\*\* |
| *R*2 | 0.03 | 0.05 |
| *N* | 6,553 | 6,553 |

\* *p*<0.1; \*\* *p*<0.05; \*\*\* *p*<0.01

Robust standard errors

Table A1.2.6

OLS Estimates

Slave-born back women

Maryland-Virginia Blacks

20 - 50 years

|  |  |  |
| --- | --- | --- |
| Variables | (1) | (2) |
|  |  | Controls |
| by\_1752 | -0.222 | -0.265 |
|  | [0.912] | [0.912] |
| by\_1757 | 0.617 | 0.598 |
|  | [0.782] | [0.781] |
| by\_1761 | -2.135 | -2.266 |
|  | [1.108]\* | [1.158]\* |
| by\_1763 | -1.977 | -1.951 |
|  | [0.989]\*\* | [0.982]\*\* |
| by\_1764 | 0.502 | 0.448 |
|  | [0.345] | [0.324] |
| by\_1765 | -0.377 | -0.432 |
|  | [0.749] | [0.746] |
| by\_1766 | -0.190 | -0.261 |
|  | [0.482] | [0.482] |
| by\_1767 | -0.845 | -0.829 |
|  | [0.736] | [0.733] |
| by\_1768 | 0.376 | 0.239 |
|  | [0.498] | [0.491] |
| by\_1769 | -1.420 | -1.427 |
|  | [0.587]\*\* | [0.582]\*\* |
| by\_1770 | -0.519 | -0.597 |
|  | [0.547] | [0.544] |
| by\_1771 | -0.411 | -0.527 |
|  | [0.554] | [0.554] |
| by\_1772 | 0.286 | 0.140 |
|  | [0.514] | [0.518] |
| by\_1773 | 0.193 | 0.186 |
|  | [0.429] | [0.425] |
| by\_1774 | -0.190 | -0.232 |
|  | [0.388] | [0.395] |
| by\_1775 | -0.247 | -0.291 |
|  | [0.426] | [0.421] |
| by\_1776 | -0.166 | -0.161 |
|  | [0.402] | [0.405] |
| by\_1777 | -0.588 | -0.605 |
|  | [0.428] | [0.423] |
| by\_1778 | 0.235 | 0.243 |
|  | [0.457] | [0.454] |
| by\_1779 | -0.472 | -0.492 |
|  | [0.399] | [0.400] |
| by\_1780 | -0.473 | -0.518 |
|  | [0.363] | [0.362] |
| by\_1781 | -0.333 | -0.440 |
|  | [0.359] | [0.352] |
| by\_1782 | -0.671 | -0.720 |
|  | [0.406]\* | [0.403]\* |
| by\_1783 | -0.208 | -0.263 |
|  | [0.345] | [0.349] |
| by\_1784 | -0.208 | -0.327 |
|  | [0.401] | [0.405] |
| by\_1785 | -0.489 | -0.554 |
|  | [0.338] | [0.338] |
| by\_1786 | -0.216 | -0.223 |
|  | [0.368] | [0.365] |
| by\_1787 | -0.337 | -0.374 |
|  | [0.332] | [0.329] |
| by\_1788 | -0.184 | -0.246 |
|  | [0.317] | [0.317] |
| by\_1789 | -0.471 | -0.534 |
|  | [0.353] | [0.352] |
| by\_1790 | -0.337 | -0.400 |
|  | [0.309] | [0.309] |
| by\_1791 | -0.268 | -0.281 |
|  | [0.325] | [0.320] |
| by\_1792 | -0.372 | -0.357 |
|  | [0.315] | [0.312] |
| by\_1793 | 0.110 | 0.099 |
|  | [0.315] | [0.312] |
| by\_1794 | 0.581 | 0.545 |
|  | [0.321]\* | [0.319]\* |
| by\_1795 | 0.188 | 0.163 |
|  | [0.370] | [0.366] |
| by\_1796 | -0.287 | -0.304 |
|  | [0.305] | [0.306] |
| by\_1797 | -0.395 | -0.385 |
|  | [0.340] | [0.338] |
| by\_1798 | -0.362 | -0.403 |
|  | [0.326] | [0.322] |
| by\_1799 | -0.195 | -0.312 |
| by\_1800  base year | [0.300] | [0.297]  reference |
| by\_1801 | -0.503 | -0.505 |
|  | [0.331] | [0.328] |
| by\_1802 | -0.144 | -0.107 |
|  | [0.306] | [0.304] |
| by\_1803 | -0.319 | -0.349 |
|  | [0.318] | [0.318] |
| by\_1804 | -0.105 | -0.124 |
|  | [0.308] | [0.305] |
| by\_1805 | -0.175 | -0.209 |
|  | [0.348] | [0.343] |
| by\_1806 | 0.053 | 0.050 |
|  | [0.309] | [0.305] |
| by\_1807 | -0.353 | -0.368 |
|  | [0.320] | [0.315] |
| by\_1808 | -0.008 | -0.013 |
|  | [0.297] | [0.296] |
| by\_1809 | -0.109 | -0.101 |
|  | [0.336] | [0.330] |
| by\_1810 | -0.170 | -0.221 |
|  | [0.332] | [0.329] |
| by\_1811 | 0.091 | 0.084 |
|  | [0.326] | [0.323] |
| by\_1812 | 0.310 | 0.313 |
|  | [0.339] | [0.338] |
| by\_1813 | 0.007 | 0.024 |
|  | [0.333] | [0.333] |
| by\_1814 | 0.205 | 0.184 |
|  | [0.346] | [0.341] |
| by\_1815 | -0.025 | -0.080 |
|  | [0.343] | [0.344] |
| by\_1816 | -0.075 | -0.058 |
|  | [0.314] | [0.311] |
| by\_1817 | -0.209 | -0.173 |
|  | [0.348] | [0.347] |
| by\_1818 | 0.297 | 0.257 |
|  | [0.364] | [0.362] |
| by\_1819 | -0.162 | -0.098 |
|  | [0.331] | [0.327] |
| by\_1820 | -0.098 | -0.204 |
|  | [0.322] | [0.321] |
| by\_1821 | -0.227 | -0.247 |
|  | [0.397] | [0.392] |
| by\_1822 | 0.436 | 0.441 |
|  | [0.379] | [0.375] |
| by\_1823 | 0.528 | 0.445 |
|  | [0.379] | [0.376] |
| by\_1824 | -0.048 | -0.026 |
|  | [0.378] | [0.371] |
| by\_1825 | -0.035 | -0.010 |
|  | [0.402] | [0.396] |
| by\_1826 | -0.237 | -0.249 |
|  | [0.433] | [0.434] |
| by\_1827 | -0.374 | -0.359 |
|  | [0.396] | [0.387] |
| by\_1828 | 0.265 | 0.173 |
|  | [0.436] | [0.428] |
| by\_1829 | 0.391 | 0.412 |
|  | [0.521] | [0.525] |
| by\_1830 | -0.829 | -0.943 |
|  | [0.418]\*\* | [0.422]\*\* |
| by\_1831 | -0.446 | -0.542 |
|  | [0.528] | [0.513] |
| by\_1832 | -0.013 | -0.011 |
|  | [0.508] | [0.504] |
| by\_1833 | 0.227 | 0.222 |
|  | [0.462] | [0.457] |
| by\_1834 | 0.868 | 0.685 |
|  | [0.512]\* | [0.510] |
| by\_1835 | 0.099 | -0.106 |
|  | [0.508] | [0.517] |
| by\_1836 | -0.108 | -0.420 |
|  | [0.553] | [0.551] |
| by\_1837 | -0.658 | -0.768 |
|  | [0.434] | [0.437]\* |
| by\_1838 | -0.463 | -0.572 |
|  | [0.925] | [0.864] |
| by\_1839 | -0.200 | -0.521 |
|  | [0.785] | [0.785] |
| by\_1840 | -0.280 | -0.500 |
|  | [0.609] | [0.666] |
| ry\_1799 | -1.342 | -1.597 |
|  | [0.897] | [0.905]\* |
| ry\_1800 | -0.989 | -1.219 |
|  | [0.543]\* | [0.554]\*\* |
| ry\_1801 | -0.041 | -0.412 |
|  | [0.606] | [0.596] |
| ry\_1802 | 0.359 | -0.152 |
|  | [0.569] | [0.579] |
| ry\_1804 | -0.774 | -1.158 |
|  | [0.656] | [0.684]\* |
| ry\_1806 | -0.029 | -0.287 |
|  | [0.663] | [0.684] |
| ry\_1807 | -0.941 | -0.864 |
|  | [0.386]\*\* | [0.390]\*\* |
| ry\_1808 | 0.327 | 0.413 |
|  | [0.493] | [0.503] |
| ry\_1809 | -0.498 | -0.383 |
|  | [0.410] | [0.414] |
| ry\_1810 | -0.278 | -0.213 |
|  | [0.498] | [0.503] |
| ry\_1811 | -0.551 | -0.506 |
|  | [0.400] | [0.404] |
| ry\_1812 | -0.406 | -0.342 |
|  | [0.430] | [0.435] |
| ry\_1813 | -0.792 | -0.802 |
|  | [0.460]\* | [0.466]\* |
| ry\_1814 | -0.799 | -0.713 |
|  | [0.440]\* | [0.446] |
| ry\_1815 | -0.089 | 0.008 |
|  | [0.372] | [0.379] |
| ry\_1816 | -0.636 | -0.552 |
|  | [0.404] | [0.407] |
| ry\_1817 | -0.715 | -0.733 |
|  | [0.449] | [0.450] |
| ry\_1818 | -0.692 | -0.676 |
|  | [0.388]\* | [0.398]\* |
| ry\_1819 | -0.317 | -0.245 |
|  | [0.365] | [0.369] |
| ry\_1820 | -1.027 | -1.114 |
|  | [0.464]\*\* | [0.463]\*\* |
| ry\_1821 | -0.283 | -0.357 |
|  | [0.418] | [0.422] |
| ry\_1822 | -0.578 | -0.575 |
|  | [0.400] | [0.403] |
| ry\_1823 | -0.067 | -0.194 |
|  | [0.420] | [0.424] |
| ry\_1824 | -0.304 | -0.375 |
| ry\_1825  base year | [0.401] | [0.404]  reference |
| ry\_1826 | -0.514 | -0.553 |
|  | [0.378] | [0.381] |
| ry\_1827 | -0.012 | -0.132 |
|  | [0.385] | [0.388] |
| ry\_1828 | -0.693 | -0.794 |
|  | [0.409]\* | [0.413]\* |
| ry\_1829 | -1.205 | -1.181 |
|  | [0.380]\*\*\* | [0.380]\*\*\* |
| ry\_1830 | -0.421 | -0.431 |
|  | [0.387] | [0.391] |
| ry\_1831 | -0.617 | -0.712 |
|  | [0.388] | [0.393]\* |
| ry\_1832 | -0.806 | -0.730 |
|  | [0.321]\*\* | [0.326]\*\* |
| ry\_1833 | -0.827 | -0.878 |
|  | [0.379]\*\* | [0.385]\*\* |
| ry\_1834 | -0.885 | -0.926 |
|  | [0.430]\*\* | [0.435]\*\* |
| ry\_1835 | -0.486 | -0.575 |
|  | [0.412] | [0.412] |
| ry\_1836 | -0.765 | -0.812 |
|  | [0.400]\* | [0.401]\*\* |
| ry\_1837 | -0.674 | -0.757 |
|  | [0.401]\* | [0.402]\* |
| ry\_1838 | -0.290 | -0.448 |
|  | [0.409] | [0.412] |
| ry\_1839 | -0.905 | -0.955 |
|  | [0.404]\*\* | [0.407]\*\* |
| ry\_1840 | -1.062 | -1.182 |
|  | [0.384]\*\*\* | [0.387]\*\*\* |
| ry\_1841 | -0.684 | -0.738 |
|  | [0.383]\* | [0.388]\* |
| ry\_1842 | -1.007 | -1.115 |
|  | [0.442]\*\* | [0.439]\*\* |
| ry\_1843 | -0.916 | -1.052 |
|  | [0.431]\*\* | [0.428]\*\* |
| ry\_1844 | -0.809 | -0.905 |
|  | [0.432]\* | [0.429]\*\* |
| ry\_1845 | -1.229 | -1.333 |
|  | [0.381]\*\*\* | [0.385]\*\*\* |
| ry\_1846 | -0.863 | -0.910 |
|  | [0.402]\*\* | [0.408]\*\* |
| ry\_1847 | -0.947 | -1.158 |
|  | [0.369]\*\* | [0.379]\*\*\* |
| ry\_1848 | -0.772 | -0.824 |
|  | [0.411]\* | [0.420]\*\* |
| ry\_1849 | -1.156 | -1.319 |
|  | [0.415]\*\*\* | [0.417]\*\*\* |
| ry\_1850 | -1.225 | -1.376 |
|  | [0.399]\*\*\* | [0.402]\*\*\* |
| ry\_1851 | -1.088 | -1.253 |
|  | [0.442]\*\* | [0.451]\*\*\* |
| ry\_1852 | -0.783 | -0.875 |
|  | [0.438]\* | [0.440]\*\* |
| ry\_1853 | -0.999 | -1.163 |
|  | [0.404]\*\* | [0.406]\*\*\* |
| ry\_1854 | -1.283 | -1.251 |
|  | [0.447]\*\*\* | [0.450]\*\*\* |
| ry\_1855 | -0.862 | -0.864 |
|  | [0.436]\*\* | [0.445]\* |
| ry\_1856 | -1.269 | -1.341 |
|  | [0.443]\*\*\* | [0.443]\*\*\* |
| ry\_1857 | -1.301 | -1.360 |
|  | [0.421]\*\*\* | [0.426]\*\*\* |
| ry\_1858 | -1.434 | -1.388 |
|  | [0.407]\*\*\* | [0.409]\*\*\* |
| ry\_1859 | -1.476 | -1.479 |
|  | [0.412]\*\*\* | [0.421]\*\*\* |
| ry\_1860 | -1.243 | -1.101 |
|  | [0.395]\*\*\* | [0.401]\*\*\* |
| ry\_1861 | -0.376 | -0.679 |
|  | [0.613] | [0.610] |
| ry\_1862 | -1.030 | -0.866 |
|  | [0.566]\* | [0.579] |
| ry\_1863 | -1.044 | -0.940 |
|  | [0.571]\* | [0.583] |
| ry\_1864 | 0.407 | 0.187 |
|  | [1.006] | [0.986] |
| va |  | 0.408 |
| md |  | [0.100]\*\*\*  reference |
| mulatto |  | 0.214 |
| black |  | [0.101]\*\*  reference |
| shore |  | -0.251 |
|  |  | [0.089]\*\*\* |
| mountain |  | 0.260 |
| piedmont |  | [0.199]  reference |
| city |  | -0.359 |
| rural |  | [0.200]\*  reference |
| \_cons | 63.372 | 63.499 |
|  | [0.363]\*\*\* | [0.372]\*\*\* |
| *R*2 | 0.04 | 0.05 |
| *N* | 4,638 | 4,638 |

\* *p*<0.1; \*\* *p*<0.05; \*\*\* *p*<0.01

Robust standard errors

Figures A1.2.1 through A1.2.4 plot the individual birth-year coefficients for each of the subsamples of African Americans discussed above. With the exception of free-born women, the much-discussed puzzle is not evident in these diagrams. The estimated coefficients do not follow a notable trend and the 95-percent confidence intervals include zero in three of the four instances.

Figure A1.2.1

Estimated birth-year coefficients

Free-born, black men registering in Maryland and Virginia, 22 – 50 years



Figure A1.2.2

Estimated birth-year coefficients

Slave-born, black men registering in Maryland and Virginia, 22 – 50 years



Figure A1.2.3

Estimated birth-year coefficients

Free-born, black women registering in Maryland and Virginia, 20 – 50 years



Figure A1.2.4

Estimated birth-year coefficients

Slave-born, black women registering in Maryland and Virginia, 20 – 50 years



A.1.3 Amherst College students

John Murray collected information on nearly 2500 Amherst College students who matriculated between 1861 and 1900.[[16]](#footnote-16) Students’ heights were often recorded by Edward Hitchcock, a professor of physical education and one of the leading American anthropometrists of the nineteenth century. Students were often measured more than once during their time at Amherst and Murray’s dataset includes heights measured near the date at which the student left the college. Hitchcock recorded heights in meters to the third decimal place so that data heaping on round numbers or quarter-inches as is common in many American datasets is not an issue. We convert the metric values in the dataset into inches to make them comparable to the previously analyzed groups.

Murray readily acknowledges that the Amherst sample is unlikely to be representative of the general American population. The college was populated by well-to-do young men; only a small proportion was “poor boys” who worked to finance their educations.[[17]](#footnote-17) Students were overwhelmingly from substantial middle-class families that had access to more economic resources than the typical American family. One advantage of the Amherst data is that over the period under study the demographic and socioeconomic characteristics of the student body remained fairly stable so long as age and a constant proportion of students receiving financial aid are good measures of similarity over time. But, again, enrollments may have been subject to a dynamic selection process on some feature correlated with height as the North American economy evolved for birth cohorts between 1830s and the 1870s.

The selection-diagnostic regressions we estimate, which includes measurement-year and birth-year dummies, takes the same general form as in Equation (1) above. Thus, our regressions for Amherst students take the following general forms:

hi = α + ∑c βc \* Iic + ∑t βt \* Iit + γi + ζi + ρi + εi (3)

Iic is an indicator variable equal to one if the individual is a member of cohort c (i.e., born in year c) and zero otherwise, so the term ∑c βc \* Iic captures a series of cohort or birth-year dummies. Iit is an indicator variable equal to one if the individual entered prison at time t and zero otherwise, so the term ∑t βt \* Iit captures a series of year-of-incarceration dummy variables, that proxy for year-specific macroeconomic effects. In some estimates were also include γ is a state dummy variable to capture the student’s home state; and ε is the error term.

|  |  |  |  |
| --- | --- | --- | --- |
| Table A1.3.1 | | | |
| Summary statistics | | | |
| Amherst College students | | | |
|  |  |  |  |
|  |  | 22-25 years | 22-29 years |
|  |  | (1) | (2) |
|  |  |  |  |
| Measurement year | | 1881.48 | 1880.9 |
|  |  | (11.48) | (11.53) |
| Birth year |  | 1857.8 | 1856.69 |
|  |  | (11.57) | (11.85) |
| Age |  | 22.95 | 23.49 |
|  |  | (1.04) | (1.70) |
| Height |  | 68.02 | 68.11 |
|  |  | (2.30) | (2.31) |
|  |  |  |  |
| Source: Murray, "Standards." | | | |

Table A3.1.1 reports the summary statistics for the Amherst College sample.

|  |  |  |  |
| --- | --- | --- | --- |
| Table A1.3.2 | | | |
| Summary of OLS estimates of height, using Amherst College sample | | | |
| Selection diagnostic tests | | | |
|  |  |  |  |
|  |  | Amherst men | |
|  |  | Ages; 22 - 25 | Ages: 22 - 29 |
|  |  | Heights: 59 - 75 inches | |
|  |  | (1) | (2) |
|  |  |  |  |
|  |  |  |  |
| Test all measurement years zero |  | 2.12 | 1.88 |
| p-value of F test |  | (0.000) | (0.003) |
| degrees of freedom of F test |  | [32, 725] | [32, 856] |
|  |  |  |  |
| Test all birth years zero |  | 1.88 | 1.65 |
| p-value of F test |  | (0.000) | (0.005) |
| degrees of freedom of F test |  | [41, 725] | [45, 856] |
|  |  |  |  |
| Additional correlates |  |  |  |
| Home state |  | Yes | Yes |
|  |  |  |  |
| Observations |  | 814 | 948 |
|  |  |  |  |
| Note: all regressions use robust standard errors and include all correlates | | | |

Table A1.3.2 reports the joint F-test selection diagnostics. The inclusion of additional controls does not alter the interpretation. The test rejects the null of no selection, so we can conclude that Amherst students were subject to height-based dynamic selection during the second half of the nineteenth century.

Table A1.3.3 reports the estimated OLS coefficients. 1862 is the excluded b irth year????? And 1878 or 1879 – both are missing in table; assuming one is dropped because of small cell???

Table A1.3.3

OLS estimates

Amherst College Students

22 - 25 years

|  |  |  |
| --- | --- | --- |
| Variables | (1) | (2) |
|  |  | Controls |
| by\_1835 | -7.130 | -7.462 |
|  | [2.790]\*\* | [2.835]\*\*\* |
| by\_1836 | -7.308 | -7.770 |
|  | [2.776]\*\*\* | [2.807]\*\*\* |
| by\_1837 | -8.523 | -8.840 |
|  | [2.703]\*\*\* | [2.752]\*\*\* |
| by\_1838 | -9.139 | -9.483 |
|  | [2.661]\*\*\* | [2.714]\*\*\* |
| by\_1839 | -7.342 | -7.721 |
|  | [2.646]\*\*\* | [2.694]\*\*\* |
| by\_1840 | -8.493 | -8.780 |
|  | [2.601]\*\*\* | [2.647]\*\*\* |
| by\_1841 | -8.648 | -8.892 |
|  | [2.508]\*\*\* | [2.537]\*\*\* |
| by\_1842 | -9.708 | -9.826 |
|  | [2.594]\*\*\* | [2.621]\*\*\* |
| by\_1843 | -7.837 | -7.944 |
|  | [2.443]\*\*\* | [2.468]\*\*\* |
| by\_1844 | -7.309 | -7.463 |
|  | [2.460]\*\*\* | [2.487]\*\*\* |
| by\_1845 | -9.037 | -9.224 |
|  | [2.386]\*\*\* | [2.413]\*\*\* |
| by\_1846 | -7.633 | -7.753 |
|  | [2.368]\*\*\* | [2.404]\*\*\* |
| by\_1847 | -9.348 | -9.654 |
|  | [2.326]\*\*\* | [2.352]\*\*\* |
| by\_1848 | -8.001 | -8.130 |
|  | [2.311]\*\*\* | [2.351]\*\*\* |
| by\_1849 | -8.762 | -8.853 |
|  | [2.290]\*\*\* | [2.327]\*\*\* |
| by\_1850 | -8.962 | -8.953 |
|  | [2.229]\*\*\* | [2.264]\*\*\* |
| by\_1851 | -8.204 | -8.303 |
|  | [2.235]\*\*\* | [2.278]\*\*\* |
| by\_1852 | -7.788 | -7.921 |
|  | [2.215]\*\*\* | [2.260]\*\*\* |
| by\_1853 | -8.339 | -8.371 |
|  | [2.137]\*\*\* | [2.181]\*\*\* |
| by\_1854 | -6.190 | -6.310 |
|  | [2.130]\*\*\* | [2.176]\*\*\* |
| by\_1855 | -6.675 | -6.719 |
|  | [2.051]\*\*\* | [2.086]\*\*\* |
| by\_1856 | -6.033 | -6.054 |
|  | [2.069]\*\*\* | [2.099]\*\*\* |
| by\_1857 | -4.027 | -4.009 |
|  | [0.898]\*\*\* | [0.890]\*\*\* |
| by\_1858 | 2.587 | 2.293 |
|  | [1.092]\*\* | [1.056]\*\* |
| by\_1859 | 0.580 | 0.597 |
|  | [0.898] | [0.890] |
| by\_1860 | -0.203 | -0.208 |
|  | [0.738] | [0.762] |
| by\_1861 | 1.279 | 1.209 |
| by\_1862 | [0.857] | [0.857]  reference |
| by\_1863 | 1.513 | 1.455 |
|  | [0.727]\*\* | [0.750]\* |
| by\_1864 | 0.409 | 0.343 |
|  | [0.812] | [0.831] |
| by\_1865 | 0.680 | 0.591 |
|  | [0.738] | [0.751] |
| by\_1866 | 0.068 | -0.036 |
|  | [0.863] | [0.876] |
| by\_1867 | 0.025 | -0.087 |
|  | [0.994] | [0.993] |
| by\_1868 | 0.507 | 0.272 |
|  | [1.108] | [1.134] |
| by\_1869 | -0.786 | -0.922 |
|  | [1.173] | [1.192] |
| by\_1870 | -0.113 | -0.260 |
|  | [1.209] | [1.230] |
| by\_1871 | 0.851 | 0.691 |
|  | [1.314] | [1.336] |
| by\_1872 | 1.590 | 1.388 |
|  | [1.401] | [1.420] |
| by\_1873 | 0.825 | 0.582 |
|  | [1.430] | [1.445] |
| by\_1874 | 2.043 | 1.783 |
|  | [1.634] | [1.683] |
| by\_1875 | 0.698 | 0.590 |
|  | [1.882] | [1.938] |
| by\_1876 | 1.396 | 1.154 |
|  | [1.908] | [1.957] |
| by\_1877 | 0.138 | -0.293 |
|  | [2.337] | [2.276] |
| ry\_1861 | 8.963 | 9.424 |
|  | [2.666]\*\*\* | [2.713]\*\*\* |
| ry\_1862 | 8.612 | 9.032 |
|  | [2.606]\*\*\* | [2.661]\*\*\* |
| ry\_1863 | 9.215 | 9.656 |
|  | [2.585]\*\*\* | [2.632]\*\*\* |
| ry\_1864 | 10.245 | 10.604 |
|  | [2.506]\*\*\* | [2.541]\*\*\* |
| ry\_1866 | 8.267 | 8.478 |
|  | [2.441]\*\*\* | [2.466]\*\*\* |
| ry\_1867 | 8.147 | 8.255 |
|  | [2.459]\*\*\* | [2.494]\*\*\* |
| ry\_1868 | 8.840 | 9.093 |
|  | [2.371]\*\*\* | [2.391]\*\*\* |
| ry\_1869 | 8.991 | 9.224 |
|  | [2.338]\*\*\* | [2.375]\*\*\* |
| ry\_1870 | 10.419 | 10.716 |
|  | [2.302]\*\*\* | [2.314]\*\*\* |
| ry\_1871 | 8.887 | 9.136 |
|  | [2.266]\*\*\* | [2.299]\*\*\* |
| ry\_1872 | 9.171 | 9.160 |
|  | [2.276]\*\*\* | [2.308]\*\*\* |
| ry\_1873 | 10.132 | 10.261 |
|  | [2.229]\*\*\* | [2.272]\*\*\* |
| ry\_1874 | 8.931 | 8.997 |
|  | [2.191]\*\*\* | [2.231]\*\*\* |
| ry\_1875 | 8.772 | 8.965 |
|  | [2.147]\*\*\* | [2.192]\*\*\* |
| ry\_1876 | 9.056 | 9.190 |
|  | [2.105]\*\*\* | [2.148]\*\*\* |
| ry\_1879 | 6.483 | 6.612 |
|  | [1.925]\*\*\* | [1.958]\*\*\* |
| ry\_1883 | 1.654 | 1.129 |
|  | [0.791]\*\* | [0.822] |
| ry\_1884 | -0.491 | -0.563 |
| ry\_1885 | [0.734] | [0.739]  reference |
| ry\_1886 | 0.170 | 0.236 |
|  | [0.752] | [0.769] |
| ry\_1887 | -0.546 | -0.382 |
|  | [0.879] | [0.907] |
| ry\_1888 | -0.114 | 0.035 |
|  | [0.767] | [0.787] |
| ry\_1889 | 1.013 | 1.173 |
|  | [0.940] | [0.968] |
| ry\_1890 | 0.753 | 0.839 |
|  | [0.939] | [0.944] |
| ry\_1891 | 0.630 | 0.885 |
|  | [1.162] | [1.176] |
| ry\_1892 | 0.460 | 0.699 |
|  | [1.152] | [1.166] |
| ry\_1893 | 1.160 | 1.244 |
|  | [1.222] | [1.263] |
| ry\_1894 | 1.364 | 1.530 |
|  | [1.346] | [1.366] |
| ry\_1895 | 0.050 | 0.337 |
|  | [1.367] | [1.392] |
| ry\_1896 | -0.822 | -0.499 |
|  | [1.470] | [1.489] |
| ry\_1897 | 0.427 | 0.594 |
|  | [1.646] | [1.686] |
| ry\_1898 | -0.256 | -0.034 |
|  | [1.690] | [1.745] |
| ry\_1899 | 0.029 | 0.271 |
|  | [1.936] | [1.991] |
| farwest |  | 0.629 |
|  |  | [0.483] |
| plains |  | 1.173 |
|  |  | [0.631]\* |
| oldnw |  | 0.637 |
|  |  | [0.344]\* |
| midatl |  | -0.440 |
|  |  | [1.149] |
| south |  | -0.325 |
|  |  | [0.762] |
| conn |  | 0.158 |
|  |  | [0.342] |
| maine |  | 0.118 |
|  |  | [0.345] |
| newhampshire |  | -0.005 |
|  |  | [0.433] |
| newjersey |  | 0.160 |
|  |  | [0.698] |
| newyork |  | 0.017 |
|  |  | [0.260] |
| ohio |  | -0.071 |
|  |  | [0.404] |
| penn |  | -0.100 |
|  |  | [0.514] |
| rhode |  | 2.997 |
|  |  | [0.546]\*\*\* |
| vermont |  | 0.707 |
| massachusetts |  | [0.377]\*  reference |
| \_cons | 67.294 | 67.164 |
|  | [0.463]\*\*\* | [0.463]\*\*\* |
| *R*2 | 0.12 | 0.14 |
| *N* | 814 | 814 |

\* *p*<0.1; \*\* *p*<0.05; \*\*\* *p*<0.01

Robust standard errors

Massachusetts is the excluded home state. Because there were few observations in states outside New England, some states are combined into regions: Far West includes California, Oregon, and Colorado; Plains include Iowa, Kansas, Minnesota and Texas; Old Northwest includes Illinois, Indiana, Michigan and Wisconsin; Mid-Atlantic includes Delaware, District of Columbia, Maryland and Pennsylvania, and South includes Florida, Georgia, North Carolina and Virginia. Measurement years 1865, and 1880 through 1882 were dropped because they included less than two observations.

Table A1.3.4 report the estimated coefficients for the expanded sample of Amherst students, ages 22 through 29 years.

Table A1.3.4

OLS estimates

Amherst College Students

22 - 29 years

|  |  |  |
| --- | --- | --- |
| Variables | (1) | (2) |
|  |  | Controls |
| by\_1832 | 0.910 | 0.293 |
|  | [2.065] | [2.149] |
| by\_1833 | 1.197 | 0.868 |
|  | [1.578] | [1.548] |
| by\_1834 | 1.241 | 0.628 |
|  | [1.564] | [1.498] |
| by\_1835 | 1.278 | 1.003 |
|  | [1.641] | [1.620] |
| by\_1836 | 2.338 | 1.861 |
|  | [1.603] | [1.573] |
| by\_1837 | 0.988 | 0.734 |
|  | [1.584] | [1.548] |
| by\_1838 | -0.193 | -0.533 |
|  | [1.608] | [1.588] |
| by\_1839 | 1.493 | 1.147 |
|  | [1.452] | [1.410] |
| by\_1840 | 0.214 | -0.065 |
|  | [1.477] | [1.433] |
| by\_1841 | -1.177 | -1.536 |
|  | [1.450] | [1.414] |
| by\_1842 | -2.270 | -2.628 |
|  | [1.465] | [1.428]\* |
| by\_1843 | -0.380 | -0.731 |
|  | [1.358] | [1.315] |
| by\_1844 | -0.236 | -0.642 |
|  | [1.360] | [1.310] |
| by\_1845 | -1.360 | -1.777 |
|  | [1.374] | [1.332] |
| by\_1846 | -0.849 | -1.283 |
|  | [1.357] | [1.318] |
| by\_1847 | -1.906 | -2.445 |
|  | [1.286] | [1.254]\* |
| by\_1848 | -1.218 | -1.611 |
|  | [1.351] | [1.313] |
| by\_1849 | -1.960 | -2.359 |
|  | [1.282] | [1.238]\* |
| by\_1850 | -2.013 | -2.350 |
|  | [1.231] | [1.184]\*\* |
| by\_1851 | -1.382 | -1.829 |
|  | [1.289] | [1.239] |
| by\_1852 | -1.215 | -1.654 |
|  | [1.172] | [1.120] |
| by\_1853 | -2.181 | -2.548 |
|  | [1.150]\* | [1.102]\*\* |
| by\_1854 | -0.127 | -0.636 |
|  | [1.175] | [1.137] |
| by\_1855 | -0.589 | -0.977 |
|  | [1.030] | [0.983] |
| by\_1856 | -0.068 | -0.532 |
|  | [0.785] | [0.693] |
| by\_1857 | 0.936 | 0.538 |
|  | [1.296] | [1.247] |
| by\_1858 | 1.130 | 1.005 |
|  | [1.365] | [1.337] |
| by\_1859 | 0.921 | 0.940 |
|  | [0.742] | [0.732] |
| by\_1860 | -0.382 | -0.368 |
|  | [0.640] | [0.654] |
| by\_1861 | 0.830 | 0.786 |
| by\_1862 | [0.723] | [0.725]  reference |
| by\_1863 | 0.705 | 0.714 |
|  | [0.624] | [0.638] |
| by\_1864 | -0.575 | -0.510 |
|  | [0.728] | [0.737] |
| by\_1865 | -0.046 | -0.076 |
|  | [0.620] | [0.622] |
| by\_1866 | -0.584 | -0.499 |
|  | [0.665] | [0.665] |
| by\_1867 | -0.590 | -0.504 |
|  | [0.751] | [0.761] |
| by\_1868 | 0.338 | 0.385 |
|  | [0.834] | [0.856] |
| by\_1869 | -0.871 | -0.762 |
|  | [0.829] | [0.842] |
| by\_1870 | -0.169 | -0.084 |
|  | [0.880] | [0.887] |
| by\_1871 | 0.323 | 0.378 |
|  | [0.971] | [0.972] |
| by\_1872 | 0.727 | 0.758 |
|  | [1.031] | [1.046] |
| by\_1873 | -0.197 | -0.123 |
|  | [1.074] | [1.082] |
| by\_1874 | 0.875 | 0.859 |
|  | [1.268] | [1.294] |
| by\_1875 | -0.518 | -0.459 |
|  | [1.528] | [1.557] |
| by\_1876 | 0.180 | 0.219 |
|  | [1.561] | [1.587] |
| by\_1877 | -1.075 | -1.213 |
|  | [2.061] | [1.987] |
| ry\_1861 | -0.404 | 0.026 |
|  | [1.505] | [1.470] |
| ry\_1862 | -0.353 | 0.016 |
|  | [1.485] | [1.452] |
| ry\_1863 | 0.205 | 0.610 |
|  | [1.482] | [1.449] |
| ry\_1864 | 2.426 | 2.822 |
|  | [1.459]\* | [1.432]\*\* |
| ry\_1866 | 0.735 | 1.111 |
|  | [1.354] | [1.311] |
| ry\_1867 | 1.205 | 1.486 |
|  | [1.419] | [1.385] |
| ry\_1868 | 1.383 | 1.768 |
|  | [1.343] | [1.295] |
| ry\_1869 | 1.765 | 2.159 |
|  | [1.329] | [1.294]\* |
| ry\_1870 | 2.784 | 3.337 |
|  | [1.268]\*\* | [1.222]\*\*\* |
| ry\_1871 | 1.956 | 2.387 |
|  | [1.267] | [1.227]\* |
| ry\_1872 | 1.976 | 2.290 |
|  | [1.288] | [1.234]\* |
| ry\_1873 | 3.077 | 3.456 |
|  | [1.247]\*\* | [1.211]\*\*\* |
| ry\_1874 | 1.910 | 2.311 |
|  | [1.209] | [1.161]\*\* |
| ry\_1875 | 2.476 | 2.967 |
|  | [1.158]\*\* | [1.123]\*\*\* |
| ry\_1876 | 2.600 | 3.034 |
|  | [1.120]\*\* | [1.065]\*\*\* |
| ry\_1879 | 0.543 | 0.988 |
|  | [0.867] | [0.804] |
| ry\_1883 | 0.030 | 0.021 |
|  | [1.467] | [1.444] |
| ry\_1884 | -0.161 | -0.314 |
| ry\_1885 | [0.681] | [0.686]  reference |
| ry\_1886 | 0.621 | 0.605 |
|  | [0.644] | [0.647] |
| ry\_1887 | 0.432 | 0.429 |
|  | [0.648] | [0.653] |
| ry\_1888 | 0.457 | 0.493 |
|  | [0.631] | [0.632] |
| ry\_1889 | 1.776 | 1.713 |
|  | [0.683]\*\*\* | [0.685]\*\* |
| ry\_1890 | 1.265 | 1.112 |
|  | [0.728]\* | [0.736] |
| ry\_1891 | 0.856 | 0.804 |
|  | [0.861] | [0.866] |
| ry\_1892 | 0.812 | 0.696 |
|  | [0.743] | [0.755] |
| ry\_1893 | 1.002 | 0.765 |
|  | [0.877] | [0.894] |
| ry\_1894 | 1.588 | 1.543 |
|  | [0.980] | [0.989] |
| ry\_1895 | 0.706 | 0.646 |
|  | [0.977] | [0.990] |
| ry\_1896 | 0.138 | 0.104 |
|  | [1.086] | [1.096] |
| ry\_1897 | 1.481 | 1.431 |
|  | [1.275] | [1.285] |
| ry\_1898 | 0.890 | 0.814 |
|  | [1.256] | [1.286] |
| ry\_1899 | 1.166 | 1.201 |
|  | [1.580] | [1.606] |
| farwest |  | 0.974 |
|  |  | [0.458]\*\* |
| plains |  | 0.469 |
|  |  | [0.797] |
| oldnw |  | 0.525 |
|  |  | [0.330] |
| midatl |  | -0.257 |
|  |  | [1.047] |
| south |  | 0.213 |
|  |  | [0.664] |
| conn |  | 0.167 |
|  |  | [0.321] |
| maine |  | 0.355 |
|  |  | [0.335] |
| newhamp |  | 0.218 |
|  |  | [0.387] |
| newjer |  | 0.069 |
|  |  | [0.585] |
| newyork |  | 0.247 |
|  |  | [0.240] |
| ohio |  | 0.163 |
|  |  | [0.392] |
| penn |  | 0.022 |
|  |  | [0.477] |
| rhode |  | 2.560 |
|  |  | [0.470]\*\*\* |
| vermont |  | 0.766 |
| massachusetts |  | [0.350]\*\*  Reference |
| \_cons | 67.369 | 67.210 |
|  | [0.436]\*\*\* | [0.439]\*\*\* |
| *R*2 | 0.11 | 0.12 |
| *N* | 948 | 948 |

\* *p*<0.1; \*\* *p*<0.05; \*\*\* *p*<0.01

Robust standard errors

Massachusetts is the excluded home state. Because there were few observations in states outside New England, some states are combined into regions: Far West includes California, Oregon, and Colorado; Plains include Iowa, Kansas, Minnesota and Texas; Old Northwest includes Illinois, Indiana, Michigan and Wisconsin; Mid-Atlantic includes Delaware, District of Columbia, Maryland and Pennsylvania, and South includes Florida, Georgia, North Carolina and Virginia. Measurement years 1865, and 1880 through 1882 were dropped because they included less than two observations.

Figure A1.3.1

Amherst College students, 22-25 years



Figure A1.3.2

Amherst College students, 22-29 years



Figure A1.3.1 and A1.3.2 plot the estimated birth-year coefficients for the two Amherst student samples. The first includes the plot for the younger group of 22 to 25 year olds. Two features are striking: (1) the estimated change in heights could be as much as 25 inches (if the 95-percent confidence intervals are used); and (2) there is a remarkable increase in heights for the birth cohorts of the late 1850s. The first result is simply implausible. The second result does follow from the 1857 cohort, which had a mean height nearly 2 inches taller than surrounding cohorts. Figure A1.3.2, which includes students as old as 29 years yields more plausible estimates. Moreover, they are approximately consistent with the “puzzle” in that there is a modest estimated downturn in heights in the antebellum era. But, again, we note that the 95-percent confidence intervals include zero. Thus we cannot reject the null hypothesis that heights, for these young men, followed neither trend nor cycle in the nineteenth century.

1. For studies of US prisons, see Komlos and Coclanis, “On the Puzzling Cycle;” Carson, “Inequaltiy in the American South;” Maloney and Carson, “Living Standards;” Tatarek, “Geographical Height Variation;” Sunder, “Height of Tennessee Convicts.” Nicholas and Steckel, “Heights and Living Standards;” Riggs, “Standard of Living;” Nicholas and Oxley, “Living Standards,” investigate heights using prison records from Great Britain. Frank, “Stature” and Twrdek and Manzel,” use heights from South American prisons. [↑](#footnote-ref-1)
2. Bodenhorn, Moehling and Price, “Short Criminals.” [↑](#footnote-ref-2)
3. Moehling and Piehl, “Immigration, Crime and Incarceration .” [↑](#footnote-ref-3)
4. The included crimes are arson, house breaking, burglary, counterfeiting, forgery, fraud, horse theft, larceny, and receiving stolen goods. Larceny is the most common crime. Urban places are Philadelphia and Pittsburgh. Occupations are divided into nine categories, including professionals, proprietors, service, operatives, craftsmen, farmers, clerks, farmers and no reported occupation. [↑](#footnote-ref-4)
5. See, for example, Carson, “Inequality.” [↑](#footnote-ref-5)
6. See Berlin, *Slaves without Masters*. [↑](#footnote-ref-6)
7. Komlos, “Toward;” Bodenhorn, “Troublesome Caste;” Bodenhorn, “Mulatto Advantage.” [↑](#footnote-ref-7)
8. Hening, *New Virginia Justice,* 546. Maryland lawmakers debated, but did not enact, a similar law in 1830 and 1831. See Wright, *Free Negro*, 269. Even without the employer law, there were strong incentives for Maryland’s free blacks to register is they expected to be out and about between home and work. Having a copy of one’s freedom papers would have reduced a free person being mistaken for and detained as a runaway slave. [↑](#footnote-ref-8)
9. See, for example, Rothman, *Notorious in the Neighborhood*, ch. 3. [↑](#footnote-ref-9)
10. Maryland data from Komlos, *Heights of African Americans*; Virginia data from Bodenhorn, “Mulatto Advantage,” and additional counties. [↑](#footnote-ref-10)
11. Bodenhorn, “Manumission,” 146-147 and sources discussed therein. [↑](#footnote-ref-11)
12. Cole, “Capitalism and Freedom.” [↑](#footnote-ref-12)
13. Budros, “Social Shocks.” [↑](#footnote-ref-13)
14. Whitman, *Price of Freedom*; Wolf, *Race and Liberty*. [↑](#footnote-ref-14)
15. The included crimes are arson, house breaking, burglary, counterfeiting, forgery, fraud, horse theft, larceny, and receiving stolen goods. Larceny is the most common crime. Urban places are Philadelphia and Pittsburgh. Occupations are divided into nine categories, including professionals, proprietors, service, operatives, craftsmen, farmers, clerks, farmers and no reported occupation. [↑](#footnote-ref-15)
16. Murray, “Standards of the Present.” [↑](#footnote-ref-16)
17. Murray, “Standards of the Present,” 591. [↑](#footnote-ref-17)