## Online Appendix Tables

Table A1: Variation Over Time: GPA Changes During High School

|  | 10th Grade GPA |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| 9th Grade GPA | Quintile 1 | Quintile 2 | Quintile 3 | Quintile 4 | Quintile 5 |
| Quintile 1 | 0.64 | 0.25 | 0.08 | 0.02 | 0.00 |
| Quintile 2 | 0.28 | 0.38 | 0.24 | 0.09 | 0.01 |
| Quintile 3 | 0.09 | 0.27 | 0.34 | 0.25 | 0.05 |
| Quintile 4 | 0.02 | 0.09 | 0.24 | 0.41 | 0.24 |
| Quintile 5 | 0.00 | 0.01 | 0.05 | 0.21 | 0.73 |


|  | 11th Grade GPA |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| 9th Grade GPA | Quintile 1 | Quintile 2 | Quintile 3 | Quintile 4 | Quintile 5 |  |
| Quantile 1 | 0.56 | 0.26 | 0.13 | 0.04 | 0.01 |  |
| Quantile 2 | 0.28 | 0.31 | 0.25 | 0.13 | 0.03 |  |
| Quantile 3 | 0.13 | 0.23 | 0.31 | 0.24 | 0.09 |  |
| Quantile 4 | 0.05 | 0.12 | 0.25 | 0.34 | 0.25 |  |
| Quantile 5 | 0.01 | 0.03 | 0.09 | 0.24 | 0.63 |  |


|  | 12th Grade GPA |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| 9th Grade GPA | Quintile 1 | Quintile 2 | Quintile 3 | Quintile 4 | Quintile 5 |
| Quintile 1 | 0.50 | 0.27 | 0.15 | 0.07 | 0.02 |
| Quintile 2 | 0.26 | 0.30 | 0.24 | 0.15 | 0.05 |
| Quintile 3 | 0.15 | 0.24 | 0.27 | 0.23 | 0.11 |
| Quintile 4 | 0.07 | 0.14 | 0.23 | 0.30 | 0.25 |
| Quintile 5 | 0.02 | 0.05 | 0.11 | 0.24 | 0.58 |

Note: This table presents the transition matrix between 9th grade GPA and subsequent years of high school. Grade point averages for each year are weighted to account for advanced courses. Students are divided into quintiles in each year of interest, with Quintile 1 corresponding to the lowest GPAs and Quintile 5 corresponding to the highest GPAs.

Table A2: Robustness to Covariates: 9th to 11th Grade

|  | (1) | (2) | (3) | (4) | (5) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Admit Rate |  |  |  |  |  |
| GPA Grade 11 | $\begin{aligned} & 0.093^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.108^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.114^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.084^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.083^{* * *} \\ & (0.003) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & 0.087^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.099^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.106^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.071^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.070^{* * *} \\ & (0.003) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & 0.103^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.114^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.116^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.069^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.069^{* * *} \\ & (0.003) \end{aligned}$ |
| Attend Four-Year |  |  |  |  |  |
| GPA Grade 11 | $\begin{aligned} & 0.053^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.053^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.060^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.044^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.044^{* * *} \\ & (0.004) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & 0.051^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.053^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.058^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.039^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.038^{* * *} \\ & (0.004) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & 0.053^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.060^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.062^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.037^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.036^{* * *} \\ & (0.004) \end{aligned}$ |
| Drop Out Within 2 Years |  |  |  |  |  |
| GPA Grade 11 | $\begin{aligned} & -0.110^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.102^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.109^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.112^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.113^{* * *} \\ & (0.005) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & -0.031^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.026^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.037^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.042^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.041^{* * *} \\ & (0.005) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & -0.018^{* * *} \\ & (0.005) \\ & \hline \end{aligned}$ | $\begin{aligned} & -0.015^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.020^{* * *} \\ & (0.004) \\ & \hline \end{aligned}$ | $\begin{aligned} & -0.027^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.027^{* * *} \\ & (0.005) \end{aligned}$ |
| Graduate Within 5 Years |  |  |  |  |  |
| GPA Grade 11 | $\begin{aligned} & 0.175^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.159^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.173^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.175^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.164^{* * *} \\ & (0.005) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & 0.079 * * * \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.065^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.074^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.077^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.072^{* * *} \\ & (0.005) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & 0.056^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.044^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.051^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.055^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.048^{* * *} \\ & (0.005) \end{aligned}$ |
| Ln Income |  |  |  |  |  |
| GPA Grade 11 | $\begin{aligned} & 0.109^{* * *} \\ & (0.011) \end{aligned}$ | $\begin{aligned} & 0.098^{* * *} \\ & (0.011) \end{aligned}$ | $\begin{aligned} & 0.121^{* * *} \\ & (0.011) \end{aligned}$ | $\begin{aligned} & 0.122^{* * *} \\ & (0.011) \end{aligned}$ | $\begin{aligned} & 0.132^{* * *} \\ & (0.011) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & 0.067^{* * *} \\ & (0.012) \end{aligned}$ | $\begin{aligned} & 0.063^{* * *} \\ & (0.012) \end{aligned}$ | $\begin{aligned} & 0.083^{* * *} \\ & (0.013) \end{aligned}$ | $\begin{aligned} & 0.085^{* * *} \\ & (0.013) \end{aligned}$ | $\begin{aligned} & 0.093^{* * *} \\ & (0.013) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & 0.039^{* * *} \\ & (0.011) \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.030^{* * *} \\ & (0.011) \end{aligned}$ | $\begin{aligned} & 0.033^{* * *} \\ & (0.011) \end{aligned}$ | $\begin{aligned} & 0.035^{* * *} \\ & (0.012) \end{aligned}$ | $\begin{aligned} & 0.041^{* * *} \\ & (0.012) \end{aligned}$ |
| Demographics |  |  |  |  | X |
| HS by Cohort FEs |  |  |  | X | X |
| SAT and ACT Scores |  |  | X | X | X |
| Application FEs |  | X | X | X | X |

Note: This table presents the relationship between grade point average in grades 9 to 11 and college and labor market outcomes. The results are estimated with no controls and with controls for college applications, entrance exam scores, high school cohorts, and race and gender. Grade point averages for each year are weighted to account for advanced courses. Standard errors are clustered at the high school by cohort level. The symbols *, ${ }^{* *}$, and $* * *$ indicate significance at the 10,5 , and 1 percent levels.

Table A3: Robustness to Covariates: 9th to 12th Grade

|  | (1) | (2) | (3) | (4) | (5) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Admit Rate |  |  |  |  |  |
| GPA Grade 12 | $\begin{aligned} & 0.036^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.041^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.042^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.029^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.029^{* * *} \\ & (0.003) \end{aligned}$ |
| GPA Grade 11 | $\begin{aligned} & 0.076^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.088^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.094^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.071^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.071^{* * *} \\ & (0.003) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & 0.081^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.092^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.098^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.066^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.065^{* * *} \\ & (0.003) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & 0.099^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.109^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.111^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.066^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.066^{* * *} \\ & (0.003) \end{aligned}$ |
| Attend Four-Year |  |  |  |  |  |
| GPA Grade 12 | $\begin{aligned} & 0.038^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.036^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.035^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.028^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.028^{* * *} \\ & (0.004) \end{aligned}$ |
| GPA Grade 11 | $\begin{aligned} & 0.034^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.035^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.044^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.031^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.031^{* * *} \\ & (0.004) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & 0.044^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.047^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.052^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.034^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.034^{* * *} \\ & (0.004) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & 0.048^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.056^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.058^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.034^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.034^{* * *} \\ & (0.004) \end{aligned}$ |
| Drop Out Within 2 Years |  |  |  |  |  |
| GPA Grade 12 | $\begin{aligned} & -0.103^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.103^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.111^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.113^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.116^{* * *} \\ & (0.005) \end{aligned}$ |
| GPA Grade 11 | $\begin{aligned} & -0.061^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & -0.053^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.057^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.060^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.062^{* * *} \\ & (0.005) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & -0.013^{* *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.009^{*} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.018^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.023^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.022^{* * *} \\ & (0.005) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & -0.007 \\ & (0.005) \\ & \hline \end{aligned}$ | $\begin{aligned} & -0.004 \\ & (0.004) \\ & \hline \end{aligned}$ | $\begin{aligned} & -0.008^{*} \\ & (0.004) \\ & \hline \end{aligned}$ | $\begin{aligned} & -0.016^{* * *} \\ & (0.004) \\ & \hline \end{aligned}$ | $\begin{aligned} & -0.017^{* * *} \\ & (0.004) \\ & \hline \end{aligned}$ |
| Graduate Within 5 Years |  |  |  |  |  |
| GPA Grade 12 | $\begin{aligned} & 0.149^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.144^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.156^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.158^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.148^{* * *} \\ & (0.005) \end{aligned}$ |
| GPA Grade 11 | $\begin{aligned} & 0.104^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.091^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.101^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.103^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.098^{* * *} \\ & (0.005) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & 0.053^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.041^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.047^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.051^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.049^{* * *} \\ & (0.005) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & 0.039^{* * *} \\ & (0.005) \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.029^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.033^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.039^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.035^{* * *} \\ & (0.005) \end{aligned}$ |
| Ln Income |  |  |  |  |  |
| GPA Grade 12 | $\begin{aligned} & 0.099^{* * *} \\ & (0.010) \end{aligned}$ | $\begin{aligned} & 0.097^{* * *} \\ & (0.010) \end{aligned}$ | $\begin{aligned} & 0.124^{* * *} \\ & (0.010) \end{aligned}$ | $\begin{aligned} & 0.125^{* * *} \\ & (0.010) \end{aligned}$ | $\begin{aligned} & 0.138^{* * *} \\ & (0.010) \end{aligned}$ |
| GPA Grade 11 | $\begin{aligned} & 0.062^{* * *} \\ & (0.012) \end{aligned}$ | $\begin{aligned} & 0.052^{* * *} \\ & (0.012) \end{aligned}$ | $\begin{aligned} & 0.064^{* * *} \\ & (0.012) \end{aligned}$ | $\begin{aligned} & 0.065^{* * *} \\ & (0.012) \end{aligned}$ | $\begin{aligned} & 0.072^{* * *} \\ & (0.012) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & 0.051^{* * *} \\ & (0.012) \end{aligned}$ | $\begin{aligned} & 0.047^{* * *} \\ & (0.012) \end{aligned}$ | $\begin{aligned} & 0.063^{* * *} \\ & (0.013) \end{aligned}$ | $\begin{aligned} & 0.065^{* * *} \\ & (0.013) \end{aligned}$ | $\begin{aligned} & 0.072^{* * *} \\ & (0.013) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & 0.028^{* *} \\ & (0.011) \end{aligned}$ | $\begin{aligned} & 0.020^{*} \\ & (0.011) \end{aligned}$ | $\begin{aligned} & 0.019^{*} \\ & (0.011) \end{aligned}$ | $\begin{aligned} & 0.022^{*} \\ & (0.012) \end{aligned}$ | $\begin{aligned} & 0.028^{* *} \\ & (0.012) \end{aligned}$ |
| Demographics |  |  |  |  | X |
| HS by Cohort FEs |  |  |  | X | X |
| SAT and ACT Scores |  |  | X | X | X |
| Application FEs |  | X | X | X | X |

Note: This table presents the relationship between grade point average in grades 9 to 12 and college and labor market outcomes. The results are estimated with no controls and with controls for college applications, entrance exam scores, high school cohorts, and race and gender. Grade point averages for each year are weighted to account for advanced courses. Standard errors are clustered at the high school by cohort level. The symbols $*, * *$, and $* * *$ indicate significance at the 10,5 , and 1 percent levels.

Table A4: Heterogeneous Effects: Admissions and Long-Run Outcomes

|  | Black <br> (1) | Hisp <br> (2) | White <br> (3) | Female <br> (4) | Male <br> (5) | Low Inc (6) | High Inc <br> (7) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Admit Rate |  |  |  |  |  |  |  |
| GPA Grade 12 | $\begin{aligned} & 0.042^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.032^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.024^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.030^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.025^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.032^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.026^{* * *} \\ & (0.004) \end{aligned}$ |
| GPA Grade 11 | $\begin{aligned} & 0.080^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.073^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.071^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.072^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.069^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.071^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.072^{* * *} \\ & (0.004) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & 0.082^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.055^{* * *} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & 0.063^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.062^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.071^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.065^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.068^{* * *} \\ & (0.004) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & 0.073^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.072^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.063^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.062^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.071^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.070^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.062^{* * *} \\ & (0.004) \end{aligned}$ |
| Mean Dep | . 630 | . 762 | . 807 | . 776 | . 76 | . 742 | . 797 |
| Drop Out in 2 Yrs |  |  |  |  |  |  |  |
| GPA Grade 12 | $\begin{aligned} & -0.105^{* * *} \\ & (0.012) \end{aligned}$ | $\begin{aligned} & -0.115^{* * *} \\ & (0.010) \end{aligned}$ | $\begin{aligned} & -0.120^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & -0.104^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & -0.129^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & -0.114^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.112^{* * *} \\ & (0.007) \end{aligned}$ |
| GPA Grade 11 | $\begin{aligned} & -0.050^{* * *} \\ & (0.013) \end{aligned}$ | $\begin{aligned} & -0.060^{* * *} \\ & (0.013) \end{aligned}$ | $\begin{aligned} & -0.065^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.062^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.060^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.053^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.068^{* * *} \\ & (0.007) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & -0.010 \\ & (0.012) \end{aligned}$ | $\begin{aligned} & -0.021 \\ & (0.014) \end{aligned}$ | $\begin{aligned} & -0.024^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.025^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.021^{* * *} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & -0.020^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.027^{* * *} \\ & (0.008) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & -0.015 \\ & (0.013) \end{aligned}$ | $\begin{aligned} & -0.008 \\ & (0.012) \end{aligned}$ | $\begin{aligned} & -0.019^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & -0.018^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & -0.016^{* *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.023^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & -0.008 \\ & (0.006) \end{aligned}$ |
| Mean Dep | . 23 | . 256 | . 262 | . 241 | . 271 | . 269 | . 239 |
| Grad in 5 Years |  |  |  |  |  |  |  |
| GPA Grade 12 | $\begin{aligned} & 0.140^{* * *} \\ & (0.013) \end{aligned}$ | $\begin{aligned} & 0.180^{* * *} \\ & (0.011) \end{aligned}$ | $\begin{aligned} & 0.158^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.149^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.152^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.158^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.157^{* * *} \\ & (0.007) \end{aligned}$ |
| GPA Grade 11 | $\begin{aligned} & 0.082^{* * *} \\ & (0.011) \end{aligned}$ | $\begin{aligned} & 0.093^{* * *} \\ & (0.014) \end{aligned}$ | $\begin{aligned} & 0.114^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.097^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.103^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.096^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.111^{* * *} \\ & (0.007) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & 0.057^{* * *} \\ & (0.011) \end{aligned}$ | $\begin{aligned} & 0.035^{* * *} \\ & (0.012) \end{aligned}$ | $\begin{aligned} & 0.055^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.048^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.045^{* * *} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & 0.053^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.050^{* * *} \\ & (0.008) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & 0.023^{* *} \\ & (0.011) \end{aligned}$ | $\begin{aligned} & 0.033^{* * *} \\ & (0.012) \end{aligned}$ | $\begin{aligned} & 0.048^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.034^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.033^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.034^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.045^{* * *} \\ & (0.007) \end{aligned}$ |
| Mean Dep | . 409 | . 456 | . 577 | . 583 | . 456 | . 475 | . 584 |
| Annual Income |  |  |  |  |  |  |  |
| GPA Grade 12 | $\begin{aligned} & 0.141^{* * *} \\ & (0.027) \end{aligned}$ | $\begin{aligned} & 0.107^{* * *} \\ & (0.023) \end{aligned}$ | $\begin{aligned} & 0.127^{* * *} \\ & (0.015) \end{aligned}$ | $\begin{aligned} & 0.128^{* * *} \\ & (0.014) \end{aligned}$ | $\begin{aligned} & 0.158^{* * *} \\ & (0.017) \end{aligned}$ | $\begin{aligned} & 0.129^{* * *} \\ & (0.013) \end{aligned}$ | $\begin{aligned} & 0.121^{* * *} \\ & (0.016) \end{aligned}$ |
| GPA Grade 11 | $\begin{aligned} & 0.074^{* *} \\ & (0.031) \end{aligned}$ | $\begin{aligned} & 0.082^{* *} \\ & (0.034) \end{aligned}$ | $\begin{aligned} & 0.050^{* * *} \\ & (0.017) \end{aligned}$ | $\begin{aligned} & 0.073^{* * *} \\ & (0.017) \end{aligned}$ | $\begin{aligned} & 0.070^{* * *} \\ & (0.021) \end{aligned}$ | $\begin{aligned} & 0.059^{* * *} \\ & (0.017) \end{aligned}$ | $\begin{aligned} & 0.072^{* * *} \\ & (0.017) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & 0.066^{* *} \\ & (0.032) \end{aligned}$ | $\begin{aligned} & 0.035 \\ & (0.041) \end{aligned}$ | $\begin{aligned} & 0.076 * * * \\ & (0.018) \end{aligned}$ | $\begin{aligned} & 0.091^{* * *} \\ & (0.017) \end{aligned}$ | $\begin{aligned} & 0.047^{* *} \\ & (0.019) \end{aligned}$ | $\begin{aligned} & 0.093^{* * *} \\ & (0.018) \end{aligned}$ | $\begin{aligned} & 0.035^{* *} \\ & (0.016) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & 0.070^{* *} \\ & (0.030) \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.011 \\ & (0.034) \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.005 \\ & (0.016) \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.015 \\ & (0.015) \end{aligned}$ | $\begin{aligned} & 0.042^{* *} \\ & (0.018) \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.009 \\ & (0.016) \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.037^{* *} \\ & (0.017) \\ & \hline \end{aligned}$ |
| Mean Dep | 35,989 | 43,124 | 44,938 | 41,016 | 45,879 | 41,568 | 44,503 |

Note: This table presents the relationship between grade point average in each year of high school and admission, college attendance, college dropout within 2 years, graduating within 5 years, and labor market income in 2010. The results are estimated separately by gender, race, and whether the high school attended had above or below average household resources (as measured by fraction of students with free lunch status). Grade point averages for each year are weighted to account for advanced courses. Each specification includes a high school by cohort fixed effect, SAT score, and an indicator for each university applied to. Standard errors are clustered at the high school by cohort level. The symbols *, **, and *** indicate significance at the 10,5 , and 1 percent levels.

Table A5: The Role of Sorting into Colleges on Long-Run Outcomes

|  | High School Attended FE (1) | Application Portfolio FE (2) | College Attended FE (3) |
| :---: | :---: | :---: | :---: |
| Drop Out Within 2 Yrs |  |  |  |
| GPA Grade 12 | $\begin{aligned} & -0.114^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.104^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.103^{* * *} \\ & (0.005) \end{aligned}$ |
| GPA Grade 11 | $\begin{aligned} & -0.066^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.053^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & -0.051^{* * *} \\ & (0.006) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & -0.028^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.010^{* *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.010^{* *} \\ & (0.005) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & -0.018^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & -0.007 \\ & (0.005) \\ & \hline \end{aligned}$ | $\begin{aligned} & -0.005 \\ & (0.005) \\ & \hline \end{aligned}$ |
| Observations | 61,628 | 61,628 | 61,628 |
| Mean Dep | . 253 | . 253 | . 253 |
| Graduate Within 5 Years |  |  |  |
| GPA Grade 12 | $\begin{aligned} & 0.161^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.144^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.144^{* * *} \\ & (0.005) \end{aligned}$ |
| GPA Grade 11 | $\begin{aligned} & 0.113^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.089^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.087^{* * *} \\ & (0.005) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & 0.056^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.038^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.034^{* * *} \\ & (0.005) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & 0.043^{* * *} \\ & (0.005) \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.026^{* * *} \\ & (0.005) \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.021^{* * *} \\ & (0.005) \\ & \hline \end{aligned}$ |
| Observations | 61,628 | 61,628 | 61,628 |
| Mean Dep | . 531 | . 531 | . 531 |
| Ln Income |  |  |  |
| GPA Grade 12 | $\begin{aligned} & 0.127^{* * *} \\ & (0.010) \end{aligned}$ | $\begin{aligned} & 0.095^{* * *} \\ & (0.010) \end{aligned}$ | $\begin{aligned} & 0.097^{* * *} \\ & (0.010) \end{aligned}$ |
| GPA Grade 11 | $\begin{aligned} & 0.070^{* * *} \\ & (0.012) \end{aligned}$ | $\begin{aligned} & 0.051^{* * *} \\ & (0.012) \end{aligned}$ | $\begin{aligned} & 0.054^{* * *} \\ & (0.012) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & 0.068^{* * *} \\ & (0.013) \end{aligned}$ | $\begin{aligned} & 0.050^{* * *} \\ & (0.012) \end{aligned}$ | $\begin{aligned} & 0.045^{* * *} \\ & (0.012) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & 0.025^{* *} \\ & (0.012) \end{aligned}$ | $\begin{aligned} & 0.017 \\ & (0.011) \end{aligned}$ | $\begin{aligned} & 0.017 \\ & (0.011) \end{aligned}$ |
| Observations | 36,220 | 36,220 | 36,220 |
| Mean Dep | 42,955 | 42,955 | 42,955 |

Note: This table presents the relationship between grade point average in each year of high school and college drop out within 2 years, graduating within 5 years, and labor market income in 2010. The specification is estimated with high school fixed effects (column 1), application portfolio fixed effects (column 2), and college attended fixed effects (column 3). Grade point averages for each year are weighted to account for advanced courses. Standard errors are clustered at the high school by cohort level. The symbols *, ${ }^{* *}$, and ${ }^{* * *}$ indicate significance at the 10,5 , and 1 percent levels.

Table A6: GPA Trajectories and Long-Run Outcomes: Grades 9 to 11

|  | Admit Rate <br> (1) | Attend 4-Year (2) | Drop Out in 2 Yrs <br> (3) | Graduate in 5 Yrs <br> (4) | Employed (5) | Ln Income (if employed) (6) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| GPA Trend - Neg Bin 5 | $\begin{aligned} & \hline-0.004 \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.001 \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.070^{* * *} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & -0.091^{* * *} \\ & (0.009) \end{aligned}$ | $\begin{aligned} & 0.003 \\ & (0.010) \end{aligned}$ | $\begin{aligned} & -0.061^{* * *} \\ & (0.023) \end{aligned}$ |
| GPA Trend - Neg Bin 4 | $\begin{aligned} & 0.008^{* *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.013^{*} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.041^{* * *} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & -0.042^{* * *} \\ & (0.009) \end{aligned}$ | $\begin{aligned} & -0.001 \\ & (0.010) \end{aligned}$ | $\begin{aligned} & -0.021 \\ & (0.023) \end{aligned}$ |
| GPA Trend - Neg Bin 3 | $\begin{aligned} & -0.003 \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.007 \\ & (0.008) \end{aligned}$ | $\begin{aligned} & 0.010 \\ & (0.008) \end{aligned}$ | $\begin{aligned} & -0.028^{* * *} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & 0.002 \\ & (0.009) \end{aligned}$ | $\begin{aligned} & -0.004 \\ & (0.021) \end{aligned}$ |
| GPA Trend - Neg Bin 2 | $\begin{aligned} & -0.001 \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.006 \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.008 \\ & (0.008) \end{aligned}$ | $\begin{aligned} & -0.014^{*} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & -0.000 \\ & (0.010) \end{aligned}$ | $\begin{aligned} & 0.001 \\ & (0.023) \end{aligned}$ |
| GPA Trend - Neg Bin 1 | $\begin{aligned} & 0.000 \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.003 \\ & (0.008) \end{aligned}$ | $\begin{aligned} & -0.004 \\ & (0.008) \end{aligned}$ | $\begin{aligned} & 0.002 \\ & (0.009) \end{aligned}$ | $\begin{aligned} & -0.013 \\ & (0.010) \end{aligned}$ | $\begin{aligned} & 0.018 \\ & (0.022) \end{aligned}$ |
| GPA Trend - Pos Bin 1 | $\begin{aligned} & 0.003 \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.000 \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.001 \\ & (0.008) \end{aligned}$ | $\begin{aligned} & 0.005 \\ & (0.008) \end{aligned}$ | $\begin{aligned} & -0.005 \\ & (0.010) \end{aligned}$ | $\begin{aligned} & 0.008 \\ & (0.023) \end{aligned}$ |
| GPA Trend - Pos Bin 2 | $\begin{aligned} & 0.006 \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.002 \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.014^{*} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & 0.024^{* * *} \\ & (0.009) \end{aligned}$ | $\begin{aligned} & -0.007 \\ & (0.010) \end{aligned}$ | $\begin{aligned} & 0.040^{*} \\ & (0.022) \end{aligned}$ |
| GPA Trend - Pos Bin 3 | $\begin{aligned} & 0.005 \\ & (0.004) \end{aligned}$ | $\begin{aligned} & 0.007 \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.015^{*} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & 0.019^{* *} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & -0.000 \\ & (0.010) \end{aligned}$ | $\begin{aligned} & -0.003 \\ & (0.024) \end{aligned}$ |
| GPA Trend - Pos Bin 4 | $\begin{aligned} & 0.018^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.021^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.024^{* * *} \\ & (0.009) \end{aligned}$ | $\begin{aligned} & 0.030^{* * *} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & -0.014 \\ & (0.011) \end{aligned}$ | $\begin{aligned} & 0.022 \\ & (0.023) \end{aligned}$ |
| GPA Trend - Pos Bin 5 | $\begin{aligned} & 0.016^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.021^{* * *} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & -0.020^{* *} \\ & (0.009) \end{aligned}$ | $\begin{aligned} & 0.033^{* * *} \\ & (0.009) \end{aligned}$ | $\begin{aligned} & -0.032^{* * *} \\ & (0.010) \end{aligned}$ | $\begin{aligned} & 0.052^{* *} \\ & (0.024) \end{aligned}$ |
| Observations | 92,580 | 92,580 | 61,628 | 61,628 | 61,628 | 36,220 |
| Mean Dep | . 769 | . 769 | . 253 | . 531 | . 588 | 44679 |

Note: This table presents the relationship between trends in grade point average between 9th and 11th grade and college admissions, attendance, drop out within 2 years, graduation within 5 years, employment in 2010, and labor market income. GPA trends are divided into bins with Neg Bin 5 being the largest negative trend and Pos Bin 5 being the largest positive trend. Each specification includes a high school by cohort fixed effect, SAT score, an indicator for each university application, and the overall GPA for 9th to 11th grade. Standard errors are clustered at the high school by cohort level. The symbols *, **, and *** indicate significance at the 10,5 , and 1 percent levels.

Table A7: GPA Trajectories and Long-Run Outcomes: Grades 9 to 12

|  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | Admit | Attend | Drop Out | Graduate |  | Ln Income |
| Rate | $4-$ Year |  |  |  |  |  |
| in 2 Yrs | in 5 Yrs | Employed | (if employed) |  |  |  |
|  | $(1)$ | $(2)$ | $(3)$ | $(4)$ | $(5)$ | $(6)$ |
| GPA Trend - Neg Bin 5 | $0.030^{* * *}$ | 0.004 | $0.102^{* * *}$ | $-0.103^{* * *}$ | -0.004 | $-0.067^{* * *}$ |
|  | $(0.005)$ | $(0.007)$ | $(0.009)$ | $(0.009)$ | $(0.011)$ | $(0.023)$ |
| GPA Trend - Neg Bin 4 | $0.015^{* * *}$ | 0.003 | $0.042^{* * *}$ | $-0.049^{* * *}$ | 0.012 | $-0.050^{* *}$ |
|  | $(0.004)$ | $(0.007)$ | $(0.008)$ | $(0.009)$ | $(0.009)$ | $(0.023)$ |
| GPA Trend - Neg Bin 3 | $0.016^{* * *}$ | 0.013 | $0.026^{* * *}$ | $-0.023^{* * *}$ | -0.002 | -0.011 |
|  | $(0.004)$ | $(0.008)$ | $(0.008)$ | $(0.009)$ | $(0.010)$ | $(0.022)$ |
| GPA Trend - Neg Bin 2 | $0.007^{*}$ | 0.009 | 0.012 | -0.009 | 0.000 | 0.029 |
|  | $(0.004)$ | $(0.007)$ | $(0.008)$ | $(0.009)$ | $(0.010)$ | $(0.023)$ |
| GPA Trend - Neg Bin 1 | $0.009^{* *}$ | 0.004 | $0.018^{* *}$ | -0.011 | 0.008 | 0.015 |
|  | $(0.004)$ | $(0.007)$ | $(0.008)$ | $(0.009)$ | $(0.010)$ | $(0.020)$ |
| GPA Trend - Pos Bin 1 | 0.003 | 0.008 | 0.006 | 0.011 | -0.007 | 0.016 |
|  | $(0.004)$ | $(0.007)$ | $(0.008)$ | $(0.009)$ | $(0.009)$ | $(0.023)$ |
| GPA Trend - Pos Bin 2 | 0.007 | -0.000 | -0.007 | $0.024^{* * *}$ | -0.004 | 0.027 |
|  | $(0.004)$ | $(0.007)$ | $(0.008)$ | $(0.009)$ | $(0.010)$ | $(0.022)$ |
| GPA Trend - Pos Bin 3 | 0.004 | 0.011 | $-0.014^{*}$ | $0.023^{* * *}$ | -0.000 | $0.040^{*}$ |
|  | $(0.004)$ | $(0.007)$ | $(0.008)$ | $(0.009)$ | $(0.010)$ | $(0.021)$ |
| GPA Trend - Pos Bin 4 | -0.002 | 0.003 | $-0.026^{* * *}$ | $0.026^{* * *}$ | -0.012 | $0.054^{* *}$ |
|  | $(0.004)$ | $(0.007)$ | $(0.009)$ | $(0.009)$ | $(0.010)$ | $(0.024)$ |
| GPA Trend - Pos Bin 5 | -0.008 | $0.013^{*}$ | $-0.036^{* * *}$ | $0.054^{* * *}$ | $-0.020^{*}$ | $0.057^{* *}$ |
|  | $(0.005)$ | $(0.007)$ | $(0.009)$ | $(0.009)$ | $(0.010)$ | $(0.024)$ |
| Observations | 92,580 | 92,580 | 61,628 | 61,628 | 61,628 | 36,220 |
| Mean Dep | .769 | .769 | .253 | .531 | .588 | 44679 |

Note: This table presents the relationship between trends in grade point average between 9th and 12th grade and college admissions, attendance, drop out within 2 years, graduation within 5 years, employment in 2010, and labor market income. GPA trends are divided into bins with Neg Bin 5 being the largest negative trend and Pos Bin 5 being the largest positive trend. Each specification includes a high school by cohort fixed effect, SAT score, an indicator for each university application, and the overall GPA for 9th to 12th grade. Standard errors are clustered at the high school by cohort level. The symbols *, **, and *** indicate significance at the 10,5 , and 1 percent levels.

Table A8: The Effect of Subject Area on Long-Run Outcomes

|  | Admit Rate <br> (1) | Attend 4-Year <br> (2) | Drop Out in 2 Yrs <br> (3) | Graduate in 5 Yrs <br> (4) | Employed <br> (5) | Ln Income (if employed) (6) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| GPA Grade 12 | $\begin{aligned} & \hline 0.023^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.031^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & -0.064^{* * *} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & \hline 0.094^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & \hline 0.011 \\ & (0.008) \end{aligned}$ | $\begin{aligned} & 0.074^{* * *} \\ & (0.018) \end{aligned}$ |
| GPA Grade 11 | $\begin{aligned} & 0.067^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.039^{* * *} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & 0.006 \\ & (0.010) \end{aligned}$ | $\begin{aligned} & 0.030^{* * *} \\ & (0.010) \end{aligned}$ | $\begin{aligned} & 0.004 \\ & (0.011) \end{aligned}$ | $\begin{aligned} & -0.019 \\ & (0.025) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & 0.065^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.045^{* * *} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & 0.041^{* * *} \\ & (0.009) \end{aligned}$ | $\begin{aligned} & -0.015 \\ & (0.009) \end{aligned}$ | $\begin{aligned} & 0.020^{* *} \\ & (0.010) \end{aligned}$ | $\begin{aligned} & -0.016 \\ & (0.024) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & 0.066^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.043^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.042^{* * *} \\ & (0.009) \end{aligned}$ | $\begin{aligned} & -0.024^{* * *} \\ & (0.009) \end{aligned}$ | $\begin{aligned} & 0.029^{* * *} \\ & (0.010) \end{aligned}$ | $\begin{aligned} & -0.051^{* *} \\ & (0.022) \end{aligned}$ |
| Math GPA | $\begin{aligned} & -0.024^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.038^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & -0.045^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.038^{* * *} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & 0.002 \\ & (0.008) \end{aligned}$ | $\begin{aligned} & 0.093^{* * *} \\ & (0.019) \end{aligned}$ |
| English GPA | $\begin{aligned} & 0.021^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.014^{*} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & -0.083^{* * *} \\ & (0.010) \end{aligned}$ | $\begin{aligned} & 0.094^{* * *} \\ & (0.009) \end{aligned}$ | $\begin{aligned} & -0.025^{* * *} \\ & (0.010) \end{aligned}$ | $\begin{aligned} & 0.051^{* *} \\ & (0.022) \end{aligned}$ |
| Science GPA | $\begin{aligned} & -0.001 \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.005 \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.041^{* * *} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & 0.028^{* * *} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & -0.012 \\ & (0.009) \end{aligned}$ | $\begin{aligned} & 0.073^{* * *} \\ & (0.020) \end{aligned}$ |
| History GPA | $\begin{aligned} & 0.027^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.022^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.051^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.063^{* * *} \\ & (0.008) \end{aligned}$ | $\begin{aligned} & -0.010 \\ & (0.009) \end{aligned}$ | $\begin{aligned} & 0.057^{* * *} \\ & (0.018) \end{aligned}$ |
| Elective GPA | $\begin{aligned} & -0.010^{* *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & -0.024^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & -0.023^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & 0.028^{* * *} \\ & (0.007) \end{aligned}$ | $\begin{aligned} & -0.011 \\ & (0.008) \end{aligned}$ | $\begin{aligned} & 0.042^{* *} \\ & (0.017) \end{aligned}$ |
| Observations | 92,580 | 92,580 | 61,628 | 61,628 | 61,628 | 36,220 |
| Mean Dep | . 769 | . 666 | . 253 | . 531 | . 588 | 44679 |

Note: This table presents the relationship between grade point average in each year of high school and in each subject area with college and labor market outcomes. College and labor market outcomes are estimated conditional on attendance. Grade point averages for each year are weighted to account for advanced courses. Each specification includes a high school by cohort fixed effect, SAT score, demographics, and an indicator for each university application. Standard errors are clustered at the high school by cohort level. The symbols *, **, and $* * *$ indicate significance at the 10,5 , and 1 percent levels.

Table A9: Four Point GPA Scale and Advanced Placement Controls

| Four Point Scale | Admit Rate <br> (1) | Attend 4-Year <br> (2) | Drop Out in 2 Yrs <br> (3) | Graduate in 5 Yrs <br> (4) | Employed (5) | Ln Income (if employed) (6) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| GPA Grade 12 | $\begin{aligned} & 0.031^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.034^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & \hline-0.117^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.159^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.007 \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.142^{* * *} \\ & (0.011) \end{aligned}$ |
| GPA Grade 11 | $\begin{aligned} & 0.060^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.024^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & -0.061^{* * *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.091^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.013^{* *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.064^{* * *} \\ & (0.013) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & 0.058^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.022^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.026^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.054^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.004 \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.075^{* * *} \\ & (0.013) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & 0.069^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.025^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & -0.030^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.048^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.017^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.036^{* * *} \\ & (0.013) \end{aligned}$ |
| Observations | 92,580 | 92,580 | 61,628 | 61,628 | 61,628 | 36,220 |
| Mean Dep | . 769 | . 666 | . 253 | . 531 | . 588 | 44,679 |
| AP Controls | (7) | (8) | (9) | (10) | (11) | (12) |
| GPA Grade 12 | $\begin{aligned} & 0.053^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.070^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & -0.112^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.157^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & \hline 0.008^{*} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.119^{* * *} \\ & (0.011) \end{aligned}$ |
| GPA Grade 11 | $\begin{aligned} & 0.092^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.067^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.060^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.110^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & -0.013^{* *} \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.067^{* * *} \\ & (0.013) \end{aligned}$ |
| GPA Grade 10 | $\begin{aligned} & 0.082^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.048^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & -0.020^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.053^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.002 \\ & (0.006) \end{aligned}$ | $\begin{aligned} & 0.069^{* * *} \\ & (0.013) \end{aligned}$ |
| GPA Grade 9 | $\begin{aligned} & 0.094^{* * *} \\ & (0.003) \end{aligned}$ | $\begin{aligned} & 0.052^{* * *} \\ & (0.004) \end{aligned}$ | $\begin{aligned} & -0.008^{*} \\ & (0.004) \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.039^{* * *} \\ & (0.005) \end{aligned}$ | $\begin{aligned} & 0.005 \\ & (0.005) \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.025^{* *} \\ & (0.012) \end{aligned}$ |
| Observations | 92,580 | 92,580 | 61,628 | 61,628 | 61,628 | 36,220 |
| Mean Dep | . 769 | . 666 | . 253 | . 531 | . 588 | 44,679 |

Note: This table presents the relationship between grade point average in each year of high school on college and labor market outcomes. The top panel does not weight advanced classes and is thus based on a four point scale. The bottom panel includes an indicator for taking each available AP course, the GPA earned in each of these courses, and the score earned on each AP exam. College and labor market outcomes are estimated conditional on attendance. Each specification includes a high school by cohort fixed effect. Standard errors are clustered at the high school by cohort level. The symbols *, **, and *** indicate significance at the 10,5 , and 1 percent levels.

Table A10: Evidence of Student Effort: Non-Academic Courses

| Academic vs Non-Academic | Admit | Attend <br> Rate <br> $(1)$ | Drop Out <br> in 2 Year <br> $(2)$ | Graduate <br> in 5 Yrs <br> $(3)$ | Employed <br> $(4)$ | Ln Income <br> (if employed) <br> $(5)$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 0.001 | $0.014^{* * *}$ | $-0.045^{* * *}$ | $0.055^{* * *}$ | $0.022^{* * *}$ | $0.057^{* * *}$ |
|  | $(0.003)$ | $(0.004)$ | $(0.006)$ | $(0.005)$ | $(0.005)$ | $(0.013)$ |
| Non-Academic GPA Grade 11 | $0.014^{* * *}$ | 0.006 | $-0.009^{*}$ | $0.030^{* * *}$ | 0.002 | $0.021^{*}$ |
|  | $(0.003)$ | $(0.004)$ | $(0.005)$ | $(0.005)$ | $(0.005)$ | $(0.012)$ |
| Non-Academic GPA Grade 10 | $0.017^{* * *}$ | $0.012^{* * *}$ | -0.008 | $0.024^{* * *}$ | $0.019^{* * *}$ | $0.027^{*}$ |
|  | $(0.003)$ | $(0.005)$ | $(0.005)$ | $(0.005)$ | $(0.005)$ | $(0.014)$ |
| Non-Academic GPA Grade 9 | $0.024^{* * *}$ | $0.015^{* * *}$ | 0.005 | $0.017^{* * *}$ | $0.017^{* * *}$ | $0.033^{* * *}$ |
|  | $(0.003)$ | $(0.004)$ | $(0.006)$ | $(0.006)$ | $(0.006)$ | $(0.013)$ |
| Academic GPA 12 | $0.025^{* * *}$ | $0.019^{* * *}$ | $-0.074^{* * *}$ | $0.104^{* * *}$ | -0.005 | $0.080^{* * *}$ |
|  | $(0.002)$ | $(0.004)$ | $(0.005)$ | $(0.005)$ | $(0.004)$ | $(0.009)$ |
| Academic GPA 11 | $0.056^{* * *}$ | $0.018^{* * *}$ | $-0.043^{* * *}$ | $0.068^{* * *}$ | -0.007 | $0.035^{* * *}$ |
|  | $(0.003)$ | $(0.004)$ | $(0.005)$ | $(0.005)$ | $(0.005)$ | $(0.010)$ |
| Academic GPA 10 | $0.054^{* * *}$ | $0.028^{* * *}$ | $-0.008^{*}$ | $0.027^{* * *}$ | 0.000 | $0.031^{* * *}$ |
|  | $(0.003)$ | $(0.004)$ | $(0.005)$ | $(0.005)$ | $(0.005)$ | $(0.011)$ |
| Academic GPA 9 | $0.046^{* * *}$ | $0.020^{* * *}$ | $-0.011^{* *}$ | $0.022^{* * *}$ | 0.006 | 0.014 |
|  | $(0.003)$ | $(0.004)$ | $(0.005)$ | $(0.005)$ | $(0.004)$ | $(0.011)$ |
| Observations | 92,580 | 92,580 | 61,628 | 61,628 | 61,628 | 36,220 |
| Mean Dep | .769 | .666 | .253 | .531 | .588 | 44,679 |

Note: This table presents the relationship between grade point average in academic and non-academic classes college and labor market outcomes. College and labor market outcomes are estimated conditional on attendance. Grade point averages for each year are weighted to account for advanced courses. Each specification includes a high school by cohort fixed effect, SAT score, demographics, and an indicator for each university application. Standard errors are clustered at the high school by cohort level. The symbols *, ${ }^{* *}$, and ${ }^{* * *}$ indicate significance at the 10,5 , and 1 percent levels.

