Figure 1: **Proportion of US 25-29 Year Olds with College Degrees, Over Time (Selected Years)**

Source: NCES, Digest of Education Statistics, 2017, Table 104.20

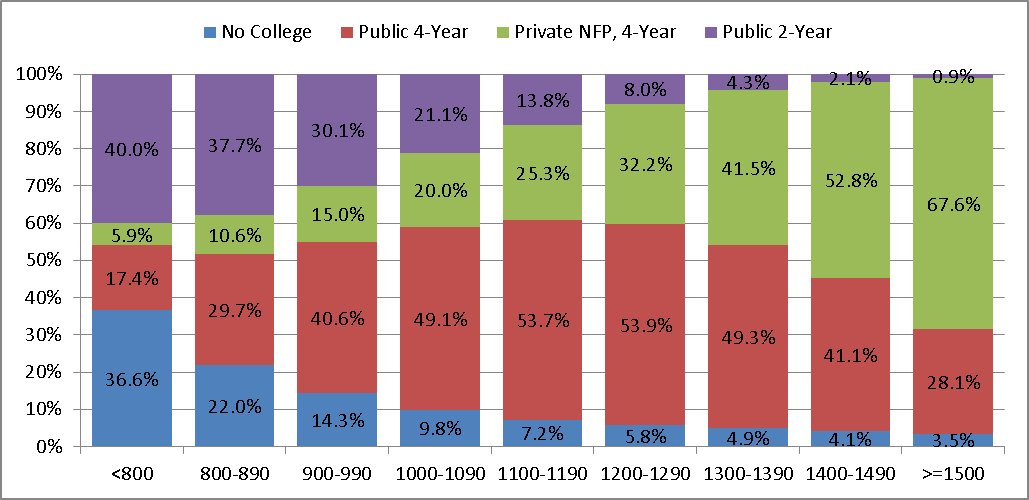
Figure 2: **Proportion of Recent US High School Graduates Enrolling in College, Over Time**

Source: NCES, Digest of Education Statistics 2017, Table 302.10

Figure 3: Choice of Program for Current College Students

Source: NCES, Digest of Education Statistics, 2017, Tables 303.25 and 303.55)

Figure 4: Choice of Program by SAT/PSAT Score

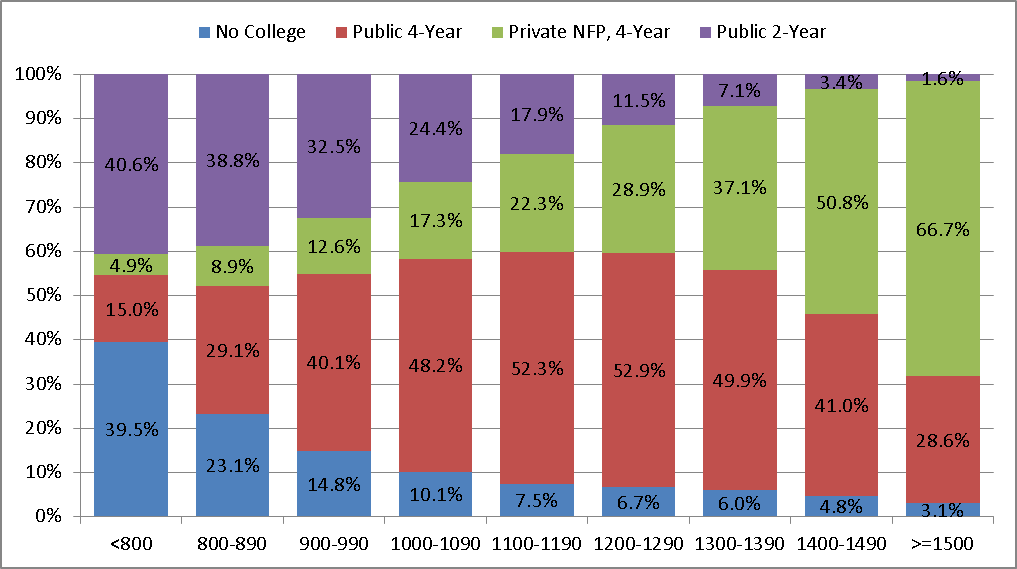


Source: College Board Data matched to National Student Clearinghouse, Cohort 2007

1. Note: We include PSAT/SAT takers regardless of the timing of the college enrollment (approx. 2 million students). We exclude a small number of students who enrolled in for-profit sector or nonprofit two-year institutions (30K), and also exclude students who do not have reported or predicted income (300K). We calculate predicted SAT score for students who only took PSAT. We do this by finding average SAT by PSAT bins (each section separately) for students who took both PSAT and SAT.

Figure 5

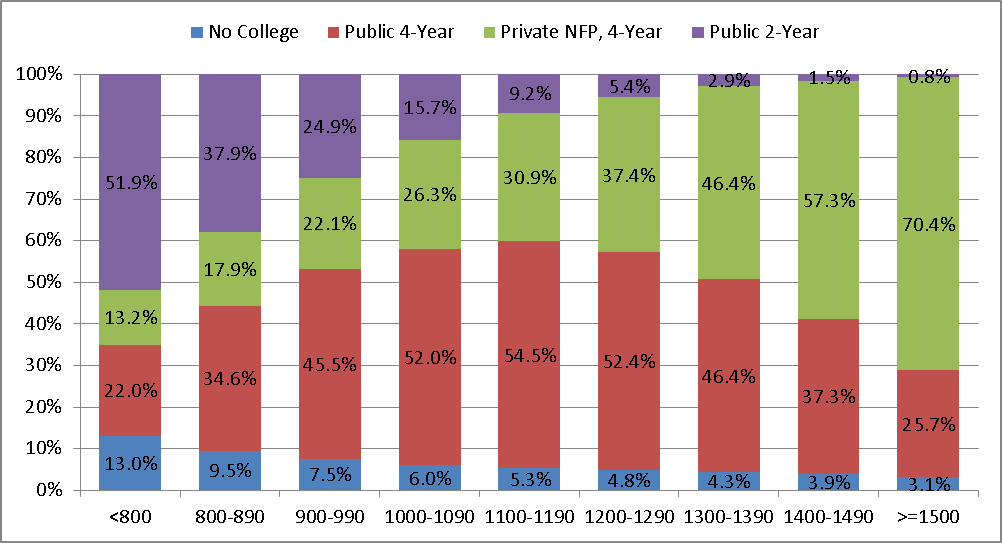
Figure 5a: Choice of Program by SAT/PSAT Score for Low-Income Students



Source: College Board Data matched to National Student Clearinghouse, Cohort 2007

1. Note: We include PSAT/SAT takers regardless of the timing of the college enrollment (approx. 2 million students). We exclude a small number of students who enrolled in for-profit sector or nonprofit two-year institutions (30K), and also exclude students who do not have reported or predicted income (300K). We calculate predicted SAT score for students who only took PSAT. We do this by finding average SAT by PSAT bins (each section separately) for students who took both PSAT and SAT.

Figure 5b: Choice of Program by SAT/PSAT for High-Income Students



Source: College Board Data matched to National Student Clearinghouse, Cohort 2007

1. Note: We include PSAT/SAT takers regardless of the timing of the college enrollment (approx. 2 million students). We exclude a small number of students who enrolled in for-profit sector or nonprofit two-year institutions (30K), and also exclude students who do not have reported or predicted income (300K).We calculate predicted SAT score for students who only took PSAT. We do this by finding average SAT by PSAT bins (each section separately) for students who took both PSAT and SAT.

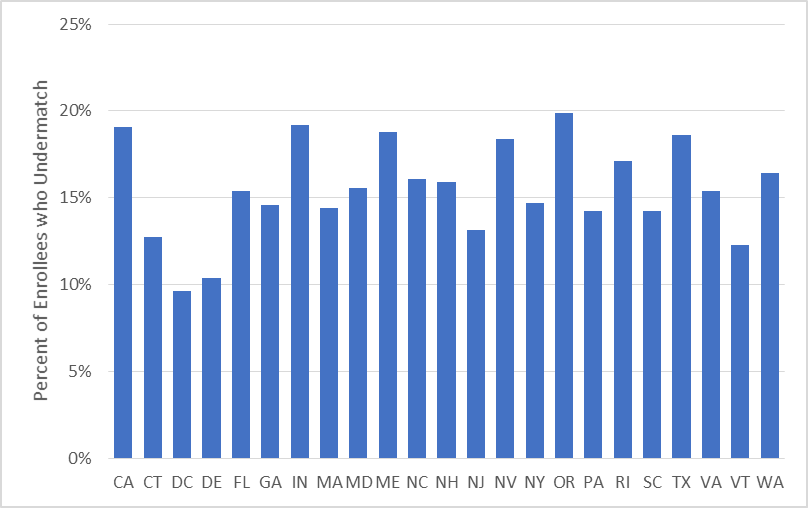
Figure 6: Six-Year Bachelor’s Degree Completion Rates by SAT/PSAT Score, Family Income, and Institution Sector



Source: College Board Data Matched to National Student Clearinghouse

1. Note: The sample includes PSAT/SAT takers who enrolled in public or private nonprofit colleges on-time (within 180 days of graduating from high school). Six-year bachelor’s degree completion rate from first institution attended is calculated among students who first enroll in 4-year sector. Otherwise, for students who first enroll in 2-year sector, NSC tracks bachelor’s degree completion at first four institutions a student attended. We calculate predicted SAT score for students who only took PSAT. We do this by finding average SAT by PSAT bins (each section separately) for students who took both PSAT and SAT.

Figure 7: The Number and Proportion of Undermatched Students by State



Source: Authors’ calculations

1. Note: Includes only students who enrolled in college on time (within 180 days of graduating from high school) and in states where College Board has high PSAT/SAT coverage. Colleges are classified as a reach, match, safety, or undermatch following the definition established in Hoxby and Avery (2013) and used in Hoxby and Turner (2013). Essentially, the percentile of a student’s SAT score is compared to the percentile associated with the average SAT score among students enrolled at their chosen college. If that difference is within five percentile points of zero in either direction, the student-college combination is considered an academic match. Lower academic-match colleges (“safety schools”) are those with average SAT percentiles 5 to 15 points below the student’s SAT percentile, while academic reaches are colleges with average SAT percentiles more than 5 points above the student’s SAT percentile. We classify a student as undermatched if she enrolls in a college where her own SAT percentile is more than 15 points higher than the percentile of the college’s average SAT. Institutions with admission rate of less than or equal to 20 percent are always considered reach colleges. For colleges that do not report average SAT/ACT in IPEDS, we calculate average SAT using a cohort of 2007 SAT-takers.

Table 1: Summary Statistics Simulation Sample (n = 1,388,012): 2007 Cohort

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Table 1. Summary Statistics Simulation Sample (n = 1,388,012): 2007 Cohort | | | | |  |
|  | **Variable** | **Mean** | **Std. Dev** | **Min** | **Max** |  |
|  | *Student demographic characteristics* |  |  |  |  |  |
|  | *Gender* |  |  |  |  |  |
|  | Male | 0.449 | 0.497 | 0 | 1 |  |
|  | *Race/Ethnicity* |  |  |  |  |  |
|  | White | 0.659 | 0.474 | 0 | 1 |  |
|  | Black | 0.105 | 0.307 | 0 | 1 |  |
|  | Hispanic | 0.106 | 0.307 | 0 | 1 |  |
|  | Asian | 0.078 | 0.268 | 0 | 1 |  |
|  | Other | 0.052 | 0.222 | 0 | 1 |  |
|  | *Family Income* |  |  |  |  |  |
|  | >$40K | 0.160 | 0.366 | 0 | 1 |  |
|  | $40K-$70K | 0.267 | 0.442 | 0 | 1 |  |
|  | $70K-$100k | 0.350 | 0.477 | 0 | 1 |  |
|  | >$100k | 0.224 | 0.417 | 0 | 1 |  |
|  | *Parent's Education* |  |  |  |  |  |
|  | HS or Less | 0.101 | 0.302 | 0 | 1 |  |
|  | Some College | 0.183 | 0.386 | 0 | 1 |  |
|  | Bachelor's or Higher | 0.423 | 0.494 | 0 | 1 |  |
|  | Missing | 0.293 | 0.455 | 0 | 1 |  |
|  | *Student Academic Characteristics* |  |  |  |  |  |
|  | PSAT or SAT score/100 | 10.29 | 1.93 | 4 | 16 |  |
|  | PSAT Taker | 0.849 | 0.358 | 0 | 1 |  |
|  | SAT Taker | 0.781 | 0.414 | 0 | 1 |  |
|  | Num. of Days Between HS Graduation and College Entrance | 73.85 | 10.60 | -2158 | 179 |  |

Source: Authors’ calculations

Table 2: College Characteristics by Initial Enrollment Choice: 2007 Cohort

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Variable** | **Mean** | **Std. Dev** | **Min** | **Max** |  |
|  |  |  |  |  |  |  |
|  | Pct. Graduating Within 6 Years | 0.502 | 0.500 | 0 | 1 |  |
|  |  |  |  |  |  |  |
|  | *Academic Alignment with First College* |  |  |  |  |  |
|  | Undermatch | 0.164 | 0.370 | 0 | 1 |  |
|  | Safety | 0.136 | 0.342 | 0 | 1 |  |
|  | Match | 0.247 | 0.431 | 0 | 1 |  |
|  | Reach | 0.453 | 0.498 | 0 | 1 |  |
|  |  |  |  |  |  |  |
|  | Enrolled In-State | 0.778 | 0.415 | 0 | 1 |  |
|  | Enrolled in Public 2- or 4-Year College | 0.757 | 0.429 | 0 | 1 |  |
|  |  |  |  |  |  |  |
|  | *First College Characteristics* |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  | *Average College SAT/ACT* |  |  |  |  |  |
|  | >= 1300 | 0.059 | 0.236 | 0 | 1 |  |
|  | 1200 - 1290 | 0.100 | 0.299 | 0 | 1 |  |
|  | 1100 - 1190 | 0.230 | 0.421 | 0 | 1 |  |
|  | 1000 - 1090 | 0.212 | 0.409 | 0 | 1 |  |
|  | < 1000 | 0.137 | 0.343 | 0 | 1 |  |
|  | Two-Year | 0.263 | 0.440 | 0 | 1 |  |
|  |  |  |  |  |  |  |
|  | Number of Full-time First-time undergraduates/100 | 22.998 | 18.597 | 0.07 | 75.88 |  |
|  | Tuition and Fees, 2007-08/$1,000 | 10.035 | 10.049 | 0.48 | 39.24 |  |
|  | Net Tuition & Fees | 5856 | 6505 | -3294 | 29737 |  |
|  | Number Receiving Any Financial Aid | 1694 | 1469 | 6 | 6523 |  |
|  | Percentage Receiving Any Financial Aid | 73.755 | 18.286 | 14 | 100 |  |
|  | Instruction Expenses Per FTE/$1,000 | 8.263 | 6.960 | 0 | 78.381 |  |
|  |  |  |  |  |  |  |
|  | *Size* |  |  |  |  |  |
|  | < 5K | 0.210 | 0.407 | 0 | 1 |  |
|  | 5K - 10K | 0.183 | 0.387 | 0 | 1 |  |
|  | 10K - 20K | 0.245 | 0.430 | 0 | 1 |  |
|  | > 20K | 0.361 | 0.480 | 0 | 1 |  |
|  | *Urbanicity* |  |  |  |  |  |
|  | City | 0.564 | 0.496 | 0 | 1 |  |
|  | Suburban | 0.228 | 0.419 | 0 | 1 |  |
|  | Town | 0.130 | 0.336 | 0 | 1 |  |
|  | Rural | 0.079 | 0.270 | 0 | 1 |  |
|  | *Region* |  |  |  |  |  |
|  | New England | 0.079 | 0.270 | 0 | 1 |  |
|  | Mid-East | 0.220 | 0.414 | 0 | 1 |  |
|  | Great Lakes | 0.122 | 0.327 | 0 | 1 |  |
|  | Plains | 0.041 | 0.199 | 0 | 1 |  |
|  | Southeast | 0.251 | 0.434 | 0 | 1 |  |
|  | Southwest | 0.098 | 0.297 | 0 | 1 |  |
|  | Rocky Mount | 0.025 | 0.155 | 0 | 1 |  |
|  | Far West | 0.164 | 0.370 | 0 | 1 |  |
|  |  |  |  |  |  |  |

Source: Authors’ calculations

Table 3a: Simulation of Free Community College Policy on Enrollments, Graduation and Earnings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Variable | N | Mean | SD |  | N | Mean | SD |
| Net Tuition and Fees Original | 1,806,094 | 4697.06 | 5873.76 |  | 291,567 | 614.31 | 1848.18 |
| Net Tuition Fees Room and Board Original | 1,805,428 | 13034.60 | 7328.89 |  | 291,353 | 11063.20 | 6058.95 |
| Size of Community College Subsidy | 629,182 | 566.71 | 799.05 |  | 131,896 |  |  |
| Size of Community College Subsidy Including Zeroes | 2,291,621 | 201.46 | 480.88 |  | 390,728 |  |  |
| Start at Two Year Institution | 2,291,621 | 0.275 | 0.447 |  | 390,728 | 0.338 | 0.473 |
| Start at Four Year Institution | 2,291,621 | 0.521 | 0.500 |  | 390,728 | 0.414 | 0.493 |
| Not Enrolled | 2,291,621 | 0.204 | 0.403 |  | 390,728 | 0.248 | 0.432 |
| Start at Two Year Institution NEW | 2,291,621 | 0.340 | 0.412 |  | 390,728 | 0.365 | 0.458 |
| Start at Four Year Institution NEW | 2,291,621 | 0.488 | 0.469 |  | 390,728 | 0.402 | 0.479 |
| Not Enrolled NEW | 2,291,621 | 0.172 | 0.343 |  | 390,728 | 0.233 | 0.409 |
| Obtain Bachelors Within 6 Years: Original | 2,291,621 | 0.386 | 0.487 |  | 390,728 | 0.250 | 0.433 |
| Obtain Bachelor's Within 6 Years NEW | 2,291,621 | 0.376 | 0.464 |  | 390,728 | 0.247 | 0.424 |
| Obtain Associates Within 4 Years: Original | 2,291,621 | 0.058 | 0.233 |  | 390,728 | 0.065 | 0.247 |
| Obtain Associates Within 4 Years: NEW | 2,291,621 | 0.070 | 0.229 |  | 390,728 | 0.071 | 0.245 |
| Expected Median Income Original | 1,986,342 | 36209.7 | 15734.7 |  | 338,991 | 32704.5 | 14095.2 |
| Expected Median Income New | 1,986,342 | 36147.5 | 14744.8 |  | 338,991 | 32738.5 | 13669.6 |

Source: Authors’ calculations

1. Note: Using the entire cohort of SAT/PSAT takers, we simulate the impacts of free community college on student choices and outcomes. We show outcomes for all students and for low income students (family income of <$40k). Predicted earnings and graduation vary at the student level and are dependent on student demographics, state and test scores. Elasticities of enrollment and graduation with respect to the price of community college are taken from the literature as described in the text and summarized in Appendix Table 2.

Table 3b: Simulation of Free Community College Policy: Detailed Results for Educational Attainment

**Proportion of Students in the Sample at Each Level of Educational Attainment**

|  |  |  |
| --- | --- | --- |
| **Attainment Level** | **Original (Actual Outcome)** | **Free Community College**  **(Projected Outcome)** |
| **No College** | 20.4% | 17.2% |
| **Some College, No Degree** | 35.2% | 38.2% |
| **Associates Degree** | 5.8% | 7.0% |
| **BA Degree** | 38.6% | 37.6% |

**Cumulative Distribution for Educational Attainment**

|  |  |  |
| --- | --- | --- |
|  | **Original (Actual Outcome)** | **Free Community College**  **(Projected Outcome)** |
| **No College** | 20.4% | 17.2% |
| **Some College, No Degree** | 55.6% | 55.4% |
| **Associates Degree** | 61.4% | 62.4% |
| **BA Degree** | 100% | 100% |

Source: Authors’ calculations

Table 4a Simulation of Reduced Tuition at Public 4 Year Colleges: Impacts on Enrollments, Graduation and Earnings

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | All Students | | |  | Low Income Students | | | |
| Variable | N | Mean | SD |  | N | Mean | SD | | | |
| Net Tuition and Fees Original | 1,806,094 | 4697.06 | 5873.76 |  | 291,567 | 614.31 | | 1848.18 | |
| Net Tuition Fees Room and Board Original | 1,805,428 | 13034.58 | 7328.89 |  | 291,353 | 11063.22 | | 6058.95 | |
| Reduction in Tuition at Public Four Years | 781,811 | 399.10 | 340.83 |  | 115,840 | 18.45 | | 69.95 | |
| Reduction in Tuition at Public Four Years Including Zeroes | 2,291,621 | 188.44 | 270.14 |  | 390,728 | 7.52 | | 39.64 | |
| Start at Two Year Institution | 2,291,621 | 0.275 | 0.447 |  | 390,728 | 0.338 | 0.473 | | | |
| Start at Four Year Institution | 2,291,621 | 0.521 | 0.500 |  | 390,728 | 0.414 | 0.493 | | | |
| Start at Four Year Public Institution | 2,291,621 | 0.348 | 0.476 |  | 390,728 | 0.302 | 0.459 | | | |
| Not Enrolled | 2,291,621 | 0.204 | 0.403 |  | 390,728 | 0.248 | 0.432 | | | |
| Start at Two Year Institution NEW | 2,291,621 | 0.273 | 0.443 |  | 390,728 | 0.336 | 0.470 | | | |
| Start at Four Year Institution NEW | 2,291,621 | 0.525 | 0.496 |  | 390,728 | 0.418 | 0.489 | | | |
| Start at Four Year Public Institution NEW | 2,291,621 | 0.360 | 0.468 |  | 390,728 | 0.311 | 0.453 | | | |
| Not Enrolled NEW | 2,291,621 | 0.202 | 0.400 |  | 390,728 | 0.246 | 0.429 | | | |
| Obtain Bachelors Within 6 Years: Original | 2,291,621 | 0.386 | 0.487 |  | 390,728 | 0.250 | 0.433 | | | |
| New Bachelor's Rate within 6 Years | 2,291,621 | 0.389 | 0.484 |  | 390,728 | 0.253 | 0.430 | | | |
| Expected Median Income Original | 1,986,342 | 36209.7 | 15734.7 |  | 338,991 | 32704.5 | 14095.2 | | | |
| Expected Median Income New | 1,986,342 | 36147.5 | 14744.8 |  | 338,991 | 32738.5 | 13669.6 | | | |

Source: Authors’ calculations

1. Note: We simulate the impacts of a ten percent cut in tuition and fees at each four year public college. Responses of enrollment and graduation to tuition and fees are taken from estimates in the literature as detailed in Appendix Table 3 and the text.

Table 4b: Simulation of Zero Tuition For Students with Family Income Less Than $60,000 at Public 4 Year Colleges: Impacts on Enrollments, Graduation and Earnings

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | All Students | | |  | Low Income Students | | | |
| Variable | N | Mean | SD |  | N | Mean | SD | | | |
| Net Tuition and Fees Original | 1,806,094 | 4697.06 | 5873.76 |  | 291,567 | 614.31 | | 1848.18 | |
| Net Tuition Fees Room and Board Original | 1,805,428 | 13034.58 | 7328.89 |  | 291,353 | 11063.22 | | 6058.95 | |
| Reduction in Tuition at Public Four Years | 228,361 | 1973.85 | 2885.09 |  | 115,840 | 184.54 | | 699.52 | |
| Reduction in Tuition at Public Four Years Including Zeroes | 2,291,621 | 264.38 | 1131.04 |  | 390,728 | 75.23 | | 396.43 | |
| Start at Two Year Institution | 2,291,621 | 0.275 | 0.447 |  | 390,728 | 0.338 | 0.473 | | | |
| Start at Four Year Institution | 2,291,621 | 0.521 | 0.500 |  | 390,728 | 0.414 | 0.493 | | | |
| Start at Four Year Public Institution | 2,291,621 | 0.348 | 0.476 |  | 390,728 | 0.302 | 0.459 | | | |
| Not Enrolled | 2,291,621 | 0.204 | 0.403 |  | 390,728 | 0.248 | 0.432 | | | |
| Start at Two Year Institution NEW | 2,291,621 | 0.267 | 0.435 |  | 390,728 | 0.315 | 0.441 | | | |
| Start at Four Year Institution NEW | 2,291,621 | 0.534 | 0.487 |  | 390,728 | 0.454 | 0.460 | | | |
| Start at Four Year Public Institution NEW | 2,291,621 | 0.379 | 0.464 |  | 390,728 | 0.393 | 0.422 | | | |
| Not Enrolled NEW | 2,291,621 | 0.198 | 0.393 |  | 390,728 | 0.231 | 0.403 | | | |
| Obtain Bachelors Within 6 Years: Original | 2,291,621 | 0.386 | 0.487 |  | 390,728 | 0.250 | 0.433 | | | |
| New Bachelor's Rate within 6 Years | 2,291,621 | 0.396 | 0.478 |  | 390,728 | 0.279 | 0.412 | | | |
| Expected Median Income Original | 1,941,617 | 36531.64 | 15707.45 |  | 335,738 | 32807.91 | 14095.85 | | | |
| Expected Median Income New | 1,941,617 | 36528.11 | 15545.98 |  | 335,738 | 32818.77 | 13974.90 | | | |

Source: Authors’ calculations

1. Note: We simulate the impacts of going to zero tuition and fees at each four year public college for students with family income of less than $60,000 per year. Responses of enrollment and graduation to tuition and fees are taken from estimates in the literature as detailed in Appendix Table 3 and the text.

Table 5: Simulation of Increased Per Student Spending at Public 4 and 2 Year Colleges: Impacts on Enrollments, Graduation and Earnings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | All Students | | |  | Low Income Students | | |
| Variable | N | Mean | SD |  | N | Mean | SD | |
|  |  |  |  |  |  |  |  | |
| Net Tuition and Fees Original | 1,806,094 | 4,697 | 5873.76 |  | 291,567 | 614.314 | 1848.18 |
| Net Tuition Fees Room and Board Original | 1,805,428 | 13034.6 | 7328.89 |  | 291,353 | 11063.2 | 6058.95 |
| Spending Boost Per Student | 1,764,494 | 364.104 | 765.736 |  | 282,942 | 477.485 | 898.807 |
| Spending Boost Per Student W/ Zeroes | 2,291,621 | 284.791 | 687.899 |  | 390,728 | 352.754 | 791.687 |
| Start at Two Year Institution | 2,291,621 | 0.275 | 0.447 |  | 390,728 | 0.338 | 0.473 | |
| Start at Four Year Institution | 2,291,621 | 0.521 | 0.5 |  | 390,728 | 0.414 | 0.493 | |
| Not Enrolled | 2,291,621 | 0.204 | 0.403 |  | 390,728 | 0.248 | 0.432 | |
| Start at Two Year Institution NEW | 2,291,621 | 0.279 | 0.444 |  | 390,728 | 0.344 | 0.47 | |
| Start at Four Year Institution NEW | 2,291,621 | 0.528 | 0.493 |  | 390,728 | 0.424 | 0.485 | |
| Not Enrolled NEW | 2,291,621 | 0.193 | 0.382 |  | 390,728 | 0.232 | 0.406 | |
| Obtain Bachelors Within 6 Years: Original | 2,291,621 | 0.386 | 0.487 |  | 390,728 | 0.25 | 0.433 | |
| New Bachelor's Rate within 6 Years | 2,291,621 | 0.397 | 0.486 |  | 390,728 | 0.263 | 0.434 | |
| Expected Median Income Original | 1,941,617 | 36531.64 | 15707.45 |  | 335,738 | 32807.91 | 14095.85 | |
| Expected Median Income New | 1,941,617 | 36566.61 | 15413.46 |  | 335,738 | 32919.03 | 13095.01 | |

Source: Authors’ calculations

1. Note: We simulate the impacts of raising per student spending on outcomes. At each public four year institution, we raise spending by 30 percent of the gap between that institution and the average per student spending at in state private institutions. At two year institutions, we raise spending by 20 percent of the current level. Elasticities of enrollment and graduation with respect to spending are taken from Deming and Walters 2017. We show outcomes for all students and for low income students (family income of <$40k). Predicted earnings and graduation vary at the student level and are dependent on student demographics, state and test scores.

Table 6: Simulation of BISPO Impacts on Enrollments, Graduation and Earnings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | All Students |  |  |  | Low Income Students |  |  |
| Variable | N | Mean | SD |  | N | Mean | SD |
|  |  |  |  |  |  |  |  |
| Obtain Bachelors Within 6 Years: Original | 2,308,129 | 0.342 | 0.314 |  | 398,085 | 0.223 | 0.263 |
| New Bachelor's Rate within 6 Years | 2,307,979 | 0.352 | 0.317 |  | 398,041 | 0.235 | 0.272 |
| Net Cost of Attendance | 1,529,297 | $16,526 | $8,606 |  | 269,668 | $10,580 | $5,974 |
| New Net Cost of Attendance | 1,545,919 | $16,582 | $8,474 |  | 272,633 | $10,563 | $5,828 |
| Instructional Spending per FTE Original | 1,841,825 | $7,658 | $6,770 |  | 301,327 | $6,354 | $5,171 |
| Instructional Spending per FTE NEW | 1,841,825 | $7,824 | $6,780 |  | 301,327 | $6,576 | $5,257 |
| Total Expenditures per FTE Original | 1,841,825 | $20,130 | $17,352 |  | 301,327 | $16,956 | $14,033 |
| Total Expenditures per FTE NEW | 1,841,825 | $20,711 | $17,480 |  | 301,327 | $17,672 | $14,389 |
| Start at Two Year Institution | 2,308,129 | 0.274 | 0.446 |  | 398,085 | 0.336 | 0.472 |
| Start at Four Year Institution | 2,308,129 | 0.524 | 0.499 |  | 398,085 | 0.421 | 0.494 |
| Not Enrolled | 2,308,129 | 0.202 | 0.401 |  | 398,085 | 0.243 | 0.429 |
| Start at Four Year Public Institution | 2,308,129 | 0.343 | 0.475 |  | 398,085 | 0.295 | 0.456 |
| Start at Two Year Institution NEW | 2,308,129 | 0.247 | 0.431 |  | 398,085 | 0.304 | 0.460 |
| Start at Four Year Institution NEW | 2,308,129 | 0.551 | 0.497 |  | 398,085 | 0.453 | 0.498 |
| Not Enrolled NEW | 2,308,129 | 0.202 | 0.402 |  | 398,085 | 0.243 | 0.429 |
| Start at Four Year Public Institution NEW | 2,308,129 | 0.375 | 0.484 |  | 398,085 | 0.334 | 0.472 |
| Expected Median Income Original | 1,996,778 | $36,078 | $15,760 |  | 344,192 | $32,519 | $14,084 |
| Expected Median Income New | 1,999,027 | $36,646 | $15,931 |  | 345,678 | $33,322 | $14,588 |

Source: Authors’ calculations

1. Note: We simulate the impacts of moving undermatched students to better in-state public institution. We assume a constraint of an increase of no more than 1 standard deviation in cohort size at any public institution. We show outcomes for all students and for low income students (family income of <$40k). Predicted earnings and graduation vary at the student level and are dependent on student demographics, state and test scores.

Table 7: Decomposition Analysis of Effects of the Different Interventions

Change in 4-Year Public College Enrollment

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Baseline Enrollment Choice** | **Free 2-Year College** | **Reduced Public College Tuition** | **Targeted Elimination of Public College Tuition and Fees** | **Increased Funding for Public Colleges** | **BISPO with Limited Supply** |
| **Not Enrolled** | +15.5% \* | + 0.7% | + 2.6% | + 3.4% | X |
| **Enrolled in 2-Year College** | X | + 0.7% | + 2.8% | 0 | + 9.8% |
| **Enrolled in 4-Year Public College** | -6.8% | X | X | X | X |
| **Enrolled in 4-Year Private College** | -5.8% | + 5.0% \*\* | + 10.5% \*\* |  | + 3.1% |

Source: Authors’ calculations

1. \* Our simulation estimates that a free two-year college program would induce 15.5 percent of the students who did not previously enroll to enroll at a two-year college.
2. \*\* With reduced public college tuition, our simulation estimates that 5.0 percent of the students who previously enrolled at a four-year private college would switch to a four-year public college; with the targeted elimination of tuition and fees at four-year public colleges, our simulation estimate that 5.0 percent of the students who previously enrolled at a four-year private college would switch to a four-year public college
3. A value of “X” in a given cell indicates that, by assumption (or design), this policy has no effect on four-year college enrollment for this subgroup of students. By assumption, our simulations of BISPO policies do not affect the choices or outcomes of students who did not enroll in college in the baseline case.

Change in Probability of Completing a BA Degree

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Baseline Enrollment Choice** | **Free 2-Year College** | **Reduced Public College Tuition** | **Targeted Elimination of Public College Tuition and Fees** | **Increased Funding for Public Colleges** | **BISPO with Limited Supply** |
| **Not Enrolled** | + 1.5% | + 0.4% | + 1.3% | + 2.1% | X |
| **Enrolled in 2-Year College** | + 0.1% | + 0.2% | + 0.7% | + 0.1% | + 3.0% |
| **Enrolled in 4-Year Public College** | -2.8% | + 0.5% | + 1.5% | + 1.8% | + 0.4% |
| **Enrolled in 4-Year Private College** | -2.4% | + 0.1% | + 0.2% | 0 | + 0.3% |

Source: Authors’ calculations

1. Note: A value of “X” in a given cell indicates that, by assumption (or design), this policy has no effect on four-year college enrollment for this subgroup of students. By assumption, our simulations of BISPO policies do not affect the choices or outcomes of students who did not enroll in college in the baseline case.

Table 8: Projected Cost-Benefit Ratios for Each Simulated Policy

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Cost Per Student-Year** | **Change in BA Completion Rate** | **Cost Per Additional BA** |
| **Free Community College** | $151.6 | - .010 | NA |
| **Reduced Four-Year Tuition and Fees** | $187.5 | + .003 | $269,875 |
| **Targeted Elimination of Four-Year Tuition and Fees** | $264.4 | + .010 | $114,068 |
| **Increased Spending at Public Colleges** | $280.9 | + .010 | $121,293 |
| **BISPO Limited Supply** | $581 | + .010 | $250,876 |
| **BISPO Unlimited Supply** | $1,545 | $ .019 | $351,122 |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Cost Per Student-Year** | **Change in Median Income per year** | **Cost Per Additional $ in Median Income** |
| **Free Community College** | $151.6 | - $61 | NA |
| **Reduced Four-Year Tuition and Fees** | $187.5 | + $320 | $2.53 |
| **Targeted Elimination of Four-Year Tuition and Fees** | $264.4 | + $357 | $3.20 |
| **Increased Spending at Public Colleges** | $280.9 | + $676 | $1.79 |
| **BISPO Limited Supply** | $581 | + $568 | $4.42 |
| **BISPO Unlimited Supply** | $1,545 | + $1,445 | $4.62 |

Source: Authors’ calculations

1. Note: We compute cost-benefit ratios for projected increases in BA completion and median income that result from each policy. Tables 3 through 6 report costs in per-year units of 2007 dollars. We convert 2007 dollars to 2019 dollars using a 1.27 multiplier and convert per-year to lifetime costs using an estimate of 3.4 years of enrollment per student who enrolls in a four-year college. This estimate is based on the rough averages that 60 percent of students who enroll initially in a four-year college complete a BA degree, with an average of 4.6 years of enrollment per student who completes a BA degree and an average of 1.5 years of enrollment per student who does not complete a BA degree.