Technical Appendix

The following steps describe how the figures in Table I of this report were calculated.

Step 1: Define initial universe of public colleges and universities

Using the “Compare Institutions” option in the National Center for Education Statistics Integrated Postsecondary Education Data System (IPEDS), select institutions by groups (EZ Groups.)

Select “Title IV participating” and “U.S. Only”

Under “Special Characteristics,” “Sector” select:
  - Public, 4-year or above
  - Public, 2-year
  - Public, less-than-2-year

This selects 1,883 institutions.

Exclude institutions classified by Carnegie Classification 2021: Basic as “Not applicable” (Value = -2). This eliminates 309 institutions, leaving 1,574 institutions.

Note: Some higher education funding analyses use more restrictive criteria by eliminating all Special Focus institutions (CC 25-31) in order to focus on mainstream institutions, and because the per-student revenue at such institutions can be unusual and thus distort institution-level equity analyses. Because this analysis aggregates institution-level data up to the state level, I have included Special Focus institutions.
Step 2: Define revenues

For public institutions, which report revenue using GASB 34/35 standards, Fiscal Year 2021, select:

- Tuition and fees, after deducting discounts and allowances
- Federal appropriations
- Federal nonoperating grants (which includes Pell grant revenues)
- State appropriations
- Local appropriations
- Capital appropriations

Note: This analysis excludes “Investment Income” from the definition of income. Investment income in the form of returns from college and university endowments is a significant and, in some cases, very substantial source of revenue for some institutions. Many public institutions with unusually large endowments are also wealthy in other respects, have selective admissions, and receive disproportionately large levels of per-student funding from state appropriations. Because low-income and underrepresented minority students often struggle to gain access to such institutions, endowment earnings are certainly relevant to the equity focus of the analyses presented in this report.

However, the amount of investment income that an institution earns in a given year is highly idiosyncratic based on the time frame, movement of equity markets, etc. Particularly in years with large earnings, much of that revenue is not available for spending in that year. To provide a concrete example, the University of Michigan earned almost $5 billion on its endowment in 2021, a 41 percent increase, which, if included in this analysis, would significantly change the calculated results for the entire state of Michigan for the time period in question. This percentage increase was very atypical. Investment income also lies outside the central focus of this analysis: how states design their systems for determining how much money public colleges and universities receive in combined public appropriations and tuition revenue per year, as a matter of public policy (or lack thereof).

Because investment income has a significant effect on the availability of resources at some institutions over time, and that the main conclusion of this analysis is that state higher education funding systems are systematically biased against underrepresented minority students, the exclusion of investment income likely make these conclusions conservative. Including investment income would probably show that the problem is even worse.
Step 3: Define students

- In IPEDS, in the “Fall Enrollment” survey, for “Fall 2021,” select: “Total enrollment.”
- For “Fall Enrollment,” “Fall 2021,” select, under “Gender, attendance status, level of student,” “Undergraduate total” and then the total for each available racial/ethnic category.
- In the “Student Financial Aid” survey, for “Financial Aid to all undergraduate students,” “2020–21,” select “Number of undergraduate students awarded Pell grants.”
- Exclude institutions with no revenues.
- Exclude institutions with no undergraduate students.

Note: The District of Columbia is excluded from this analysis because it only has one public institution and so there is no way to compare revenues among multiple institutions. Delaware is excluded because it only has three public institutions and revenue data are missing for the University of Delaware. Pennsylvania is excluded because there were insufficient and/or comparatively unusable revenue and enrollment data for Temple University, the Penn State University system, and the University of Pittsburgh.

Step 4: Calculate and compare total statewide institutional revenue per URM and non-URM student

For each institution:
- Calculate Total Revenues as the sum of tuition; federal nonoperating grants; and federal, state, local, and capital appropriations.
- Divide that sum by Total Enrollment to calculate Revenue per Student.
- Multiply Revenue per Student by the number of undergraduates who are a member of an underrepresented minority group, defined as American Indian or Alaska Native, Black or African American, Hispanic, or Native Hawaiian or Other Pacific Islander.
- Multiply Revenue per Student by the number of students who are not a member of an underrepresented minority group.

Then, for each state:
- Sum the total institutional revenue for URM students for all institutions.
- Sum the number of URM students for all institutions.
- Calculate the quotient of those two amounts.
- Repeat for non-URM student revenues and students.