

## GENERAL

**Adjusted data:** SHEF data are at times adjusted by several different metrics. Constant dollar refers to an inflation adjustment intended to make financial metrics more comparable over time. State-level data are generally adjusted by two comparison metrics. To adjust SHEF data, simply divide dollars by each adjustment index or by the product of multiple adjustments. For example, the adjusted figure for education appropriations is: *Education Appropriations / Net FTE / (HECA \* COLI \* EMI)*.

For more information about each adjustment, see the Data Adjustments section.

**Fiscal year (FY):** In most states, the fiscal year runs from July 1 to June 30. For example, fiscal 2019 refers to the period from July 1, 2018, to June 30, 2019. The corresponding academic year began in the fall of 2018. A few states have different fiscal years:

- New York, April 1 to March 31
- Texas, September 1 to August 31
- Alabama and Michigan, October 1 to September 30

Nineteen states have a biennial budget, which means their appropriations are set every other year. The remaining 31 states set their budgets annually. SHEF tracks this information for every agency that provides data.

**Determining sector:** In many states, the classification of colleges within the two sectors is less clear than it has been in the past as some community colleges have begun to offer and award bachelor's degrees. All data is reported by institutional **Carnegie Basic Classification**, regardless of the degree program in which individual students are enrolled.

For example, if a state has a two-year institution that also offers four-year degrees, providers classify all appropriations, tuition revenue, and FTE enrollment for that institution under the two-year sector. Institutions only offering graduate degrees should be included in the four-year sector. Institutions classified as Baccalaureate/Associate's Colleges, Technical Colleges, and degree-granting institutions that are considered "less-than-two-year" should be included in the two-year sector.

Funds that cannot be easily allocated to two-year or four-year institutions, or students attending those institutions (meaning state financial aid awards), are included under "uncategorizable." For example, appropriations that go to students attending private institutions are included here. The sum of the sector breakouts is equivalent to total state support.

**Total education revenues:** The sum of education appropriations and net tuition revenue, excluding any tuition revenue used for capital and debt service. It measures the amount of revenue available to public institutions to support instruction (excluding medical students). Very few public institutions have significant non-restricted revenue from gifts and endowments to support instruction. In some states, a portion of the net tuition revenue is used to fund capital debt service and similar non-operational activities. These sums are excluded from calculations used to determine total education revenues.

Calculation: *Total Education Revenues = Education Appropriations + Net Tuition Revenue - Tuition for Debt Service*

## STATE FUNDING

**Education appropriations (calculated):** State and local support available for public higher education operating expenses, defined to include state public financial aid and exclude spending for research, agricultural, and medical education, as well as support for independent institutions or students attending them. Since funding for medical education and other major non-instructional purposes varies substantially across states, excluding these funding components helps to improve the comparability of state-level data on a per-student basis.

Calculation: *Education Appropriations = Tax Appropriations + ARRA + Non-Tax Support + Non-Appropriated Support + Endowment + Previous Appropriations + Other Support - Return Appropriations + Multiyear Appropriations - Non-Credit - Independent Operating + Independent Aid - Out of State Aid + Local Support - Research Appropriations - Agricultural Extension Appropriations - Hospital Appropriations - Medical School Appropriations*

**Endowment income:** Interest or earnings received from state-funded endowments set aside and pledged to public sector institutions.

**General operating (calculated):** The portion of state and local support appropriated directly to public institutions for the purposes of general operations.

Calculation: *General Operating = Education Appropriations - State Public Financial Aid*

**Non-appropriated support:** Funding under state auspices for non-appropriated state support. These may include, but are not limited to, monies from receipt of lease income, cattle-grazing rights fees, and oil/mineral extraction fees on land set aside by the state for higher education.

**Non-tax support:** Funding under state auspices for appropriated non-tax state support set aside by the state for higher education. These may include, but are not limited to, monies from lotteries (including lottery scholarships), tobacco settlements, casinos, or other gaming sources.

### **Multiyear, previous, and return appropriations:**

Multiyear appropriations are portions of multiyear appropriations in the current year which are to be spread over other years.

Previous appropriations are portions of multiyear appropriations from previous years.

Return appropriations are appropriations returned to the state.

**Other support:** Other support is any other state funds not included above.

**State and local support (calculated):** State and local support is a broad measure of how much money the state provides to support all higher education. This measure does not include any sums for capital outlays and debt service or sums derived from federal sources, student tuition and fees, or auxiliary enterprises.

State and local support consists of state tax appropriations and local tax support plus additional non-tax funds (e.g., lottery revenue) that support or benefit higher education, and funds appropriated to other state entities for specific higher education expenditures or benefits (e.g., employee fringe benefits disbursed by the state treasurer). State and local support for 2009-2012 also includes federal American Reinvestment and Recovery Act (ARRA) revenue provided to stabilize these sources of revenue for higher education.

Calculation: *State and Local Support = Tax Appropriations + ARRA + Non-Tax Support + Non-Appropriated Support + Endowment + Previous Appropriations + Other Support - Return Appropriations - Multiyear Appropriations + Local Support*

**State tax appropriations:** Appropriations from state government taxes for public and private higher education institution and agency annual operating expenses, excluding capital outlay (for new construction or debt retirement) and revenue from auxiliary enterprises.

**Total state support (calculated):** Total state support for all higher education is calculated by adding the primary sources of state funding and subtracting from that sum appropriations expected to be returned to the state and appropriations in the current year intended for use in other years (in other words, any appropriated funds that are not usable in the fiscal year for which they are appropriated).

State support includes:

- Sums appropriated for state aid to local public community colleges and operation of state-supported community colleges, and for vocational-technical two-year colleges or institutes that are predominantly for high school graduates and adult students;
- Sums appropriated to statewide coordinating boards or governing boards, either for board expenses or for allocation by the board to other institutions or both;
- Sums appropriated for state scholarships or other state-level student financial aid programs;
- Sums destined for higher education but designated to some other state agency (as in the case of funds intended for faculty fringe benefits that are appropriated to the state treasurer);
- Appropriations directed to private institutions of higher education at all levels; and
- Sums for students enrolled in dual credit or dual enrollment.

State support does not include:

- Sums for capital outlays and debt service; and
- Sums derived from federal sources, student fees, and auxiliary enterprises.

Calculation: *State Support = Tax Appropriations + ARRA + Non-Tax Support + Non-Appropriated Support + Endowment + Previous Appropriations + Other Support - Return Appropriations - Multiyear Appropriations*

**Total state support at two-year institutions:** Total state support allocated to public Carnegie Associate's Colleges, Mixed Baccalaureate/Associate's Colleges, Special Focus Two-Year Institutions, Technical Colleges, and those that are considered degree-granting "less-than-two-year" institutions but are not in the Carnegie Classification.

**Total state support at four-year institutions:** Total state support allocated to public Carnegie Baccalaureate, Master's, and Doctoral Colleges, and Special Focus Four-Year Institutions. Includes graduate programs, research, agricultural extension, and medical funding at four-year institutions.

**Uncategorizable total state support:** Total state support that cannot be allocated to the two-year or four-year sector. May include funds allocated to state agencies, student financial aid, non-credit and continuing education, and independent institutions.

## OTHER PUBLIC FUNDING SOURCES

**ARRA:** Federal American Reinvestment and Recovery Act (ARRA) revenue provided during the Great Recession to stabilize state and local sources of revenue for higher education.

**Appropriations derived from federal sources:** State appropriated funds derived from federal sources.

**Independent capital appropriations:** Sums to independent (private) institutions for capital outlay (new construction and debt service/retirement).

**Local appropriations:** The sum of all tax appropriations from any government entity below the state level to public institutions for operating expenses. Excludes any grants from local nonprofit organizations such as chambers of commerce, charitable foundations, and other entities.

**Tuition offsets:** Tuition charges collected by the institutions and remitted to the state as an offset to the state appropriations.

## SPECIFIC USES OF STATE SUPPORT

**Agriculture and extension appropriations:** Appropriated sums for agricultural experiment stations and cooperative extension services.

**Dual enrollment appropriations:** Any state or local funding to postsecondary institutions that supports dual enrollment programs. Dual enrollment refers to students who enroll in college courses offered by an institution of higher education while enrolled in high school, as part of a state, local, or postsecondary system program. May include dual credit, concurrent enrollment, and joint enrollment programs.

- Includes all postsecondary courses, regardless of course delivery mode, course location, course instructor, and whether secondary credit is also offered.
- Excludes credit-by-exam models (AP, IB), articulated credit, and any other courses or programs in which postsecondary credit is not awarded immediately following completion of the course.
- Excludes in-kind donations, state K-12 funding, and other outside sources of funding.

**Hospital appropriations:** Appropriated sums for teaching or affiliated hospital operations and public service patient care. Includes all medical, dental, veterinary, optometry, pharmacy, mental health, nursing, and other health science institutes, clinics, laboratories, dispensaries, etc., primarily serving the public.

**Independent operating:** Sums of state support allocated to independent (private) institutions for operating expenses.

**Independent support:** The sum of state allocations for independent operating expenses and financial aid awarded to students attending independent institutions.

**Medical school appropriations:** Appropriated sums for the direct operation and administrative support of the four major types of medical schools (medicine, dentistry, veterinary medicine, and osteopathic medicine) and centers corresponding to medical enrollments.

**Non-credit:** State funding for students in non-credit continuing or adult education courses and non-credit extension courses which are not part of a regular program leading to a degree or certificate.

**RAM (calculated):** The portion of total state and local appropriations targeted by legislative budget line-item identification or institutional designation for the direct operations of research, agriculture, public health care services, and medical schools. Does not include discretionary use by faculty of unrestricted appropriations supplemented by other revenues for short-term research primarily performed as an adjunct component of instruction (departmental research of an unsponsored nature). When unknown, appropriations for sponsored research are estimated as equal to total research expenditures less state grants and contracts for research and federal and private revenues restricted for research. Does not include any tuition revenues used for research.

Calculation:  $RAM = \text{Research Appropriations} + \text{Agriculture and Extension Appropriations} + \text{Hospital Appropriations} + \text{Medical School Appropriations}$

**Research appropriations:** Appropriated sums for research centers, laboratories, and institutes and appropriated sums separately budgeted by institutions for organized research. Generally, these are ongoing programs. Includes all health and science research.

## FINANCIAL AID

**Total student financial aid (calculated):** Allocations to state scholarships or other state financial aid for students attending all institution types. Includes all aid that is not expected to be repaid, such as conditional and non-conditional grant and scholarship programs, work-study, and state-funded tuition waivers. Excludes any allocation to state loan programs. In some states, financial aid used for student tuition cannot be separated from aid used for living expenses.

Calculation: *Total Student Financial Aid = Independent Financial Aid + Out-of-State Financial Aid + State Public Financial Aid*

**Independent financial aid:** Allocations to state scholarships or other state financial aid for students attending in-state independent (private) institutions. Includes all aid that is not expected to be repaid, such as conditional and non-conditional grant and scholarship programs, work-study, and state-funded tuition waivers. Excludes any allocation to state loan programs.

**Out-of-state financial aid:** Allocations to state scholarships or other state financial aid for students attending public and independent out-of-state institutions. Includes all aid that is not expected to be repaid, such as conditional and non-conditional grant and scholarship programs, work-study, and state-funded tuition waivers. Excludes any allocation to state loan programs.

**State aid as a percent of education appropriations (calculated):** Allocations to state scholarships or other state financial aid for students attending public in-state institutions, as a proportion of total state and local support available for public higher education operating expenses (which excludes spending for research, agricultural, and medical education).

Calculation: *State Aid as a Percent of Education Appropriations = State Public Financial Aid / Education Appropriations*

**State public financial aid:** Allocations to state scholarships or other state financial aid for students attending public in-state institutions. Includes all aid that is not expected to be repaid, such as conditional and non-conditional grant and scholarship programs, work-study, and state-funded tuition waivers. Excludes any allocation to state loan programs. In some states, financial aid used for student tuition cannot be separated from aid used for living expenses.

## TUITION AND FEES

**Gross tuition and fee revenue:** Gross tuition plus mandatory “education and general” fees from public institutions. Includes revenue from all fees required of such a large portion of all students that a student who does not pay the fee is the exception. Gross tuition and fee revenue includes state and institutional financial aid.

**Institutional discounts and waivers:** Institutional student aid transferred to a student’s account and tuition charges that are waived and not collected from a student. Excludes institutional dollars that would not otherwise be available (e.g., restricted funds from institutionally managed endowments or designated for tuition grants).

**Medical tuition and fee revenue:** Tuition and mandatory education and general fees paid by public medical students.

**Net tuition revenue (calculated):** Gross tuition and fee revenue less state-funded student aid, institutional tuition discounts and waivers, and tuition revenue paid by medical students. This is a measure of the resources available from tuition and fees to support instruction and related operations at public higher education institutions and includes revenue from in-state and out-of-state students as well as undergraduate and graduate students. Net tuition revenue generally reflects the share of instructional support received from students and their families, although it is not the same as and does not take into account many factors that need to be considered in analyzing the “net price” students pay for higher education.

Calculation: *Net Tuition Revenue = Gross Tuition - Discounts and Waivers - State Public Financial Aid - Medical Tuition*

**Net tuition revenue at two-year institutions:** Net tuition revenue at public Carnegie Associate’s Colleges, Mixed Baccalaureate/Associate’s Colleges, Special Focus Two-Year Institutions, Technical Colleges, and those that are considered degree-granting “less-than-two-year” institutions but are not in the Carnegie Classification. Not available for Minnesota or New Jersey.

**Net tuition revenue at four-year institutions:** Net tuition revenue at public Carnegie Baccalaureate, Master’s, and Doctoral Colleges, and Special Focus Four-Year Institutions. Includes graduate programs, research, agricultural extension, and medical funding at four-year institutions. Not available for Minnesota or New Jersey.

**Student share:** The student share is a measure of the proportion of total education revenue at public institutions that comes from students and their families (measured as net tuition revenue). Net tuition revenue used for capital debt service is included in net tuition revenue, but excluded from total education revenue in calculating this figure.

Calculation: *Student Share = Net Tuition Revenue / Total Education Revenue*

**Tuition and fees used for debt service:** Tuition and fee revenue used for capital debt service/retirement of capital improvement. Excludes any revenue paid by students for auxiliary enterprise debt service. Tuition and fees used for debt service are not excluded from net tuition and fees.

## ENROLLMENT

**Dual FTE enrollment:** Annual full-time equivalent enrollment calculated for students who enroll in college courses offered by an institution of higher education while enrolled in high school as part of a state, local, or postsecondary system program. May include dual credit, concurrent enrollment, and joint enrollment programs.

- Includes all postsecondary courses, regardless of course delivery mode, course location, course instructor, and whether secondary credit is also offered.
- Excludes credit-by-exam models (AP, IB), articulated credit, and any other courses or programs in which postsecondary credit is not awarded immediately following completion of the course.

**Gross full-time equivalent (FTE) enrollment:** Full-time equivalent enrollment calculated from coursework creditable for a degree plus coursework in a vocational or technical program which results in a certificate or some other formal recognition.

The FTE calculation differs for the type and level of instruction:

- Contact hour courses: One annual FTE is the sum of total contact hours divided by 900.
- Undergraduate credit hour courses: One annual FTE is the sum of total credits divided by 30 (for semester-based calendar systems) or 45 (for quarter systems).

**Graduate and first-professional credit hour courses:** One annual FTE is the sum of total credits divided by 24 (for semester systems) or 36 (for quarter systems).

**Medical FTE enrollment:** FTE enrollment in schools of medicine, dentistry, veterinary medicine, and osteopathic medicine.

**Net full-time equivalent (FTE) enrollment (calculated):** A measure of enrollment equal to one student enrolled full time for one academic year, calculated from the aggregate number of enrolled credit hours (including summer session enrollments). SHEF excludes most non-credit or non-degree program enrollments but includes coursework in a vocational or technical program which results in some formal recognition; medical school enrollments also are excluded. The use of FTE enrollment reduces multiple types of enrollment to a single measure to compare changes in total enrollment across states and sectors and to provide a straightforward method for analyzing revenue on a per-student basis.

Calculation:  $Net\ FTE = Gross\ FTE - Medical\ FTE$

**Net FTE enrollment at two-year institutions:** Net FTE enrollment at public Carnegie Associate's Colleges, Mixed Baccalaureate/Associate's Colleges, Special Focus Two-Year Institutions, Technical Colleges, and those that are considered degree-granting "less-than-two-year" institutions but are not in the Carnegie Classification.

**Net FTE enrollment at four-year institutions:** Net FTE enrollment at public Carnegie Baccalaureate, Master's, and Doctoral Colleges, and Special Focus Four-Year Institutions. Includes graduate programs, research, agricultural extension, and medical funding at four-year institutions.

## DATA ADJUSTMENTS

**Consumer Price Index (CPI):** A measure of change over time in the prices consumers pay for a variety of goods and services in the U.S.

Developed by the [Bureau of Labor Statistics](#), CPI is a well-known measure of inflation, but less precisely reflects changing costs in the higher education sector. CPI is presented as an alternative to HECA throughout the interactive visualizations in the SHEF report. CPI is most appropriately used when considering a consumer (student) perspective, rather than a state or institutional perspective.

**Cost of Living Index (COLI):** The cost of living varies greatly across the 50 states, from 82.7 percent of the U.S. average in Mississippi to 1.36 times the U.S. average in New York. While a cost of living adjustment does not solve the problem of differing intrastate costs of living, it offers a way to get a rough estimate of these differences by adjusting for interstate unit cost data. Financial metrics in the SHEF report are adjusted down in states with a high cost of living and up in states with a low cost of living. This allows for more accurate comparisons on a state's contribution to public higher education.

State-level comparisons in SHEF are adjusted by the state-level Cost of Living Index (COLI), calculated annually by the [Council for Community and Economic Research \(C2ER\)](#). This index is based on county-level data collected by C2ER. A state index is calculated based on the weighted average of all the counties in each state. COLI is referenced in the Census Bureau's Statistical Abstract of the U.S., and has also been used by the U.S. Bureau of Labor Statistics and the President's Council of Economic Advisors, among others.

The data is updated yearly, includes Alaska and Hawaii, and has [publicly available methods](#). The state-level index is not available for Washington, D.C.

SHEEO applies the latest COLI to all prior-year data. Regional comparisons include an adjusted version of COLI, weighted by the proportion of FTE enrollment in each state.

**Enrollment Mix Index (EMI):** Enrollment mix differences pose a challenge for interstate financial comparisons. Each level of higher education, from the first years of undergraduate work through doctoral studies, is progressively more expensive. A state or institution with a large proportion of enrollment in graduate programs will generally have a higher cost per FTE than a state or institution with a larger proportion of enrollment in undergraduate and two-year degree programs.

SHEEO developed an adjustment for interstate enrollment mix differences based on the proportion of enrollment in each state compared to the national proportions of enrollment by Carnegie Classification. Financial metrics in the SHEF report are adjusted down in states with a more expensive enrollment mix and up in states with a less expensive enrollment mix. This allows for more accurate comparisons on a state's contribution to public higher education.

To calculate EMI, Integrated Postsecondary Education Data System (IPEDS) data are used to develop a national average cost per fall FTE for each of the Carnegie Classifications of institutions. The most recent calculation used financial information from fiscal year 2017 and fall 2016 FTE enrollment data.

The proportion of each state's FTE in each Carnegie Classification is multiplied by the national average cost per FTE for that classification. For each state, the products for each classification are summed, which yields the state's enrollment mix unit cost for the year. The ratio of enrollment mix unit cost to aggregated national unit cost constitutes each state's enrollment mix "index."

SHEEO updates the EMI in odd years of the SHEF report and applies the latest EMI to all prior-year data. Regional comparisons include an adjusted version of EMI, weighted by the proportion of FTE enrollment in each state. EMI is not calculated for Washington, D.C.

**Higher Education Cost Adjustment (HECA):** SHEEO developed the Higher Education Cost Adjustment (HECA) to estimate inflation in the costs paid by colleges and universities. Prior-year data in SHEF are adjusted up by HECA to match the comparable amount in today's dollars.

HECA is constructed from two federally developed and maintained price indices—the **Employment Cost Index (ECI)** and the **Gross Domestic Product Implicit Price Deflator (GDP IPD)**. The ECI reflects employer compensation costs, including wages, salaries, and benefits. The GDP IPD reflects general price inflation in the U.S. economy. The HECA has the following advantages:

1. It is constructed from measures of inflation in the broader U.S. economy;
2. It is simple, straightforward to calculate, and transparent; and
3. The underlying indices are developed and routinely updated by the Bureau of Labor Statistics and Economic Analysis.

Because the best available data suggest that faculty and staff salaries account for roughly 75% of college and university expenditures, the HECA is based on a market basket with two components—personnel costs (75% of the index) and non-personnel costs (25%). SHEEO constructed the HECA based on the growth of the ECI (for 75% of costs) and the growth of the GDP IPD (for 25% of costs).

## STATE EFFORT AND CAPACITY

**Actual tax revenue (ATR):** The total general revenues derived from taxation by state and local governments.

Source: [U.S. Census Bureau, Annual Surveys of State and Local Government Finances](#)

**Allocation to higher education (calculated):** Higher education support as a proportion of actual tax revenues and lottery profits. The percent of revenues allocated to higher education compares available state and local funds from taxable revenues and lottery profits relative to the amount of these funds appropriated to higher education. It provides a direct assessment of a state's inclination to allocate tax revenues to higher education.

Calculation:  $Allocation\ to\ Higher\ Education = Total\ State\ and\ Local\ Support / (Actual\ Tax\ Revenues + Lottery\ Profits)$

**Effective tax rate (calculated):** Actual tax revenue per capita divided by total taxable resources per capita, expressed as a percentage.

Sources: Population and Actual Tax Revenue from the U.S. Census Bureau; Total Taxable Resources from the Bureau of Economic Analysis, Office of Economic Policy, U.S. Department of the Treasury.

Calculation:  $Effective\ Tax\ Rate = Actual\ Tax\ Revenues / Total\ Taxable\ Resources$

**Lottery profits:** Total lottery revenues from all lotto games and gaming operations, where applicable, that are transferred to beneficiaries.

Source: [North American Association of State and Provincial Lotteries](#)

**Personal income:** The income received by all persons from participation in production, from government and business transfer payments, and from government interest. Personal income is the sum of net earnings by place of residence, rental income, personal dividend income, personal interest income, and transfer payments. Net earnings are earnings by place of work (wage and salary disbursements, and proprietors' income) less personal contributions for social insurance, including an adjustment to convert earnings by place of work to earnings by place of residence. Personal income is measured before the deduction of personal income taxes.

Source: [U.S. Department of Commerce, Bureau of Economic Analysis, Regional Income Division](#).

**Population:** The number of individuals (both civilian and military) who reside in a state.

Source: [U.S. Department of Commerce, Bureau of Economic Analysis, Regional Income Division](#).

**Support per capita (calculated):** Higher education support per capita normalizes state funding for a state's population. It assesses effort because states with larger populations generally should have a broader tax base and, therefore, may be able to direct greater resources toward higher education.

Calculation: *Total State and Local Support / Population*

**Support per \$1,000 personal income (calculated):** Higher education support per \$1,000 of personal income measures the amount a state pays for higher education relative to its capacity to pay. It provides context regarding the scale of support for higher education in relation to a state's available tax base since most state revenue comes from income and sales or consumption taxes.

Calculation: *Support Per \$1,000 of Personal Income = Total State and Local Support / Personal Income (in thousands)*

**Total taxable resources (TTR):** The unduplicated sum of the income flows produced within a state (gross state product) and the income flows received by its residents (state personal income) which a state can potentially tax, minus components presumed not taxable by the state plus various components of income derived from out-of-state sources.

Sources: [U.S. Department of the Treasury](#)