College Affordability in SREB States: 2018 Technical Guide

Susan Lounsbury, director,
Educational Data Services, SREB

Christiana Datubo-Brown, research associate,
Educational Data Services, SREB

SREB | Southern Regional Education Board

Introduction

The state and regional affordability profiles were first released in 2016 as part of SREB's initiative on college affordability and in support of SREB's Commission on College Affordability. The profiles have been updated annually and modified somewhat each year to maintain currency. The original guide was developed by Dr. William Doyle, associate professor, Public Policy and Higher Education, Vanderbilt University, and Dr. Darcie Harvey, senior policy analyst, Higher Education Policy Institute. The 2018 technical guide was updated by SREB's Education Data Services staff, Dr. Susan Lounsbury, director, and Christiana Datubo-Brown, research associate.

This technical guide includes descriptions of each data indicator in the SREB report for each state. Each indicator includes the following information:

- **Sources**: where the raw data used to calculate the indicator can be found.

- **Description**: definition of the indicator.

- **Notes**: includes a detailed methodology section for those indicators that require

  additional explanation.

- **Availability**: How to find the data used to calculate the indicator.

It is our intent that the analysis undertaken to determine college affordability in any SREB state report can be replicated by others. Please contact us with questions or clarifications.

Some links may require cutting and pasting.

Net Price as a Percent of Income

Sources:

IPEDS Student financial aid data files, 2010-11 to 2015-16:

http://nces.ed.gov/ipeds/datacenter/data/SFA1516.zip,

http://nces.ed.gov/Ipeds/datacenter/data/SFA1415.zip,

http://nces.ed.gov/Ipeds/datacenter/data/SFA1314.zip,

 http://nces.ed.gov/Ipeds/datacenter/data/SFA1213.zip,

http://nces.ed.gov/Ipeds/datacenter/data/SFA1112.zip,

http://nces.ed.gov/Ipeds/datacenter/data/SFA1011.zip,

IPEDS Instructional activity data files, 2011 to 2016:

http://nces.ed.gov/ipeds/datacenter/data/EFIA2016.zip,

http://nces.ed.gov/Ipeds/datacenter/data/EFIA2015.zip,

http://nces.ed.gov/Ipeds/datacenter/data/EFIA2014.zip,

http://nces.ed.gov/Ipeds/datacenter/data/EFIA2013.zip,

http://nces.ed.gov/Ipeds/datacenter/data/EFIA2012.zip,

http://nces.ed.gov/Ipeds/datacenter/data/EFIA2011.zip,

IPEDS Directory information, 2010 to 2015:

https://nces.ed.gov/ipeds/datacenter/data/HD2015.zip

http://nces.ed.gov/Ipeds/datacenter/data/HD2014.zip

http://nces.ed.gov/Ipeds/datacenter/data/HD2013.zip

http://nces.ed.gov/Ipeds/datacenter/data/HD2012.zip

http://nces.ed.gov/Ipeds/datacenter/data/HD2011.zip

http://nces.ed.gov/Ipeds/datacenter/data/HD2010.zip

American Community Survey data files, 2010 to 2015 5-year averages:

http://www2.census.gov/programs-surveys/acs/data/pums/2015/5-Year/csv_hus.zip

http://www2.census.gov/programs-surveys/acs/data/pums/2014/5-Year/csv_hus.zip

http://www2.census.gov/programs-surveys/acs/data/pums/2013/5-Year/csv_hus.zip

http://www2.census.gov/programs-surveys/acs/data/pums/2012/5-Year/csv_hus.zip

http://www2.census.gov/programs-surveys/acs/data/pums/2011/5-Year/csv_hus.zip

http://www2.census.gov/programs-surveys/acs/data/pums/2010/5-Year/csv_hus.zip

Description:

Family ability to pay is defined as the ratio of net price (after grant aid is deducted) to family income. These calculations are conducted by family income level, then averaged across family incomes for the final figure reported. Sources and definitions for each are defined below.

- Numerator: net price for students in each sector

- Denominator: family income

Notes:

The descriptions below cover data and methods for both the overall ability to pay measures and the tables in each state profile.

Net Price:

Net price data is taken from the IPEDS student financial aid survey, completed by all Title IV eligible institutions. NCES defines net price for students as follows:

> IPEDS calculates the average net price for full-time, first-time degree/certificate-seeking undergraduates paying the in-state or in-district tuition rate who received Title IV federal student aid by income level. Title IV federal student aid includes federal grants and federal student loans. IPEDS uses the following categories of income levels: $0-30,000, $30,001-48,000, $48,001-75,000, $75,001-110,000, and $110,001 and more.

> Average net price is generated by subtracting the average amount of federal, state or local government, or institutional grant and scholarship aid from the total cost of attendance. Total cost of attendance is the sum of published tuition and required fees (lower of in-district or in-state), books and supplies, and the weighted average room and board and other expenses.

The weighted average for room and board and other expenses is generated as follows:

((cost of on-campus room, board and other expenses * number of students living on-campus)

+ (cost for off-campus (with family) room, board and other expenses * number of students living off-campus with family)

+ (cost for off-campus (not with family) room, board and other expenses * number of students living off-campus not with family))

divided by the total number of first-time, full-time degree and certificate seeking students

Students whose living arrangements are unknown are excluded from the calculation. For some institutions, the number of students by living arrangement will be known, but dollar amounts will not be known. In this case, the number of students with no corresponding dollar amount will be excluded from the denominator.

This data file includes public institutions with standard academic calendars (semester, quarter, trimester, 4-1-4) that report financial aid data for students enrolled for the fall term who received aid anytime during the full aid year.

Title IV aid to students includes grant aid, work study aid, and loan aid: Federal Pell Grant, Federal Supplemental Educational Opportunity Grant (FSEOG), Academic Competitiveness Grant (ACG), National Science and Mathematics Access to Retain Talent Grant (National SMART Grant), Teacher Education Assistance for College and Higher Education (TEACH) Grant, Federal Work-Study, Federal Perkins Loan, Subsidized Direct or FFEL Stafford Loan, and Unsubsidized Direct or FFEL Stafford Loan.

Full-time, first-time degree/certificate-seeking undergraduates include students enrolled in a four- or five-year bachelor's degree program, an associate degree program, or a vocational or technical program below the baccalaureate level who have no prior postsecondary experience and are enrolled for 12 or more semester credits, or 12 or more quarter credits, or 24 or more contact hours a week each term.

In-state tuition is the tuition charged by institutions to students who meet the state's or institution's residency requirements. In-district tuition is the tuition charged by the institution to students residing in the locality in which they attend school and may be a lower rate than in-state tuition if offered by the institution.

Source: IPEDS Student financial aid data dictionary. The variables used are: *NPIS412, NPIS422, NPIS432, NPIS442, and NPIS452* for public institutions. Source Document: http://nces.ed.gov/Ipeds/datacenter/data/SFA1516_Dict.zip

For more information on net price, see the IPEDS FAQ on net price: https://nces.ed.gov/ipeds/Section/Institutional_net_price

Enrollment:

Net price is averaged at the sector level within each state. These averages are weighted by full-time undergraduate enrollment to reflect enrollment patterns within the states. Full-time equivalent (FTE) enrollment for undergraduates comes from the IPEDS instructional activity website. The variable used for the affordability profile analysis is estimated full-time equivalent undergraduate enrollment (variable name *fteug*), defined by IPEDS as follows:

> For institutions with a semester, trimester, or 4-1-4 plan, the number of FTE undergraduates is the sum of undergraduate credit hours divided by 30 and contact hours divided by 900. For institutions with a quarter plan, undergraduate credit hours are divided by 45 and contact hours are divided by 900. For institutions with continuous enrollment over a 12-month period, undergraduate credit hours are divided by 30 and contact hours are divided by 900.

Source: http://nces.ed.gov/Ipeds/datacenter/data/EFIA2016_Dict.zip

Income Levels:

IPEDS collects net price data for five income levels: families with yearly incomes from $0 to $30,000, from $30,001 to $48,000, from $48,001 to $75,000, from $75,001 to $110,000, and $110,001 and above. The variables used are: *NPIS412, NPIS422, NPIS432, NPIS442, NPIS452*.

Family Income:

Averages are calculated at the state level using data from the American Community Survey. For each state, average family income is calculated, both overall and for each of the income groups as defined by IPEDS ($0-$30,000, $30,001-$48,000, $48,001-$75,000, $75,001-$110,000, $110,001+). Family income is defined by the Census Bureau in the American Community Survey as follows:

> In compiling statistics on family income, the incomes of all members 15 years old and over related to the householder are summed and treated as a single amount. Although the family income statistics cover the past 12 months, the characteristics of individuals and the composition of families refer to the time of interview. Thus, the income of the family does not include amounts received by individuals who were members of the family during all or part of the past 12 months if these individuals no longer resided with the family at the time of interview. Similarly, income amounts reported by individuals who did not reside with the family during the past 12 months but who were members of the family at the time of interview are included. However, the composition of most families was the same during the past 12 months as at the time of interview.

Source: https://www.socialexplorer.com/data/ACS2016_5yr/documentation/c593e252-75ae-4ce5-b3f2-ad9f46b7ca7c#c593e252-75ae-4ce5-b3f2-ad9f46b7ca7c

Variables used are: *FINCP* (family income) and *WGTP* (family weight).

Institutional Sectors:

Higher education institutions are grouped into four sectors, based on SREB institutional categories: Public Four-Year Type 1 institutions include SREB Four-Year 1 and Four-Year 2 institutions, defined as:

> Institutions awarding at least 30 doctoral degrees that are distributed among at least five CIP categories (2-digit classification)

Four-Year Type 2 institutions include all other SREB Four-Year institutions.

Public Two-Year institutions include all SREB Two-Year Colleges.

Technical Colleges include all SREB Technical Colleges or Institutes. Data for this sector are reported when more than 5 percent of FTE attend these institutions.

Source: http://www.sreb.org/criteria-and-definitions

Please note: These calculations exclude service academies, Community College of the Air Force, specialty health care institutions, and tribal institutions.

Sector Averages:

Sector-level averages are calculated as the simple average across all income levels for that sector. Weighted averages are not used for this calculation because accurate overall information about enrollment patterns by income across institutions is not available.

Availability:

IPEDS data files were downloaded directly from the IPEDS dataset, with data organization and calculations conducted by the authors. Similarly, the American Community Survey data were downloaded from the Census Bureau, with calculations conducted by the authors. Code is available upon request.

State Grant Funding

Need-based grants per student and other grants per student

Sources:

Grants: National Association of State Student Grant & Aid Programs (NASSGAP), personal communication from NASSGAP staff drawn from 2011 and 2016 Annual Surveys. The survey includes total state grant dollars for undergraduate students at public higher education institutions. The survey contains five different types of aid: need-based only, need-based and non-need-based (grants that have a need and a non-need component), non-need based only, special purpose grants, and uncategorized grants. This analysis has up to five categories: Need-based only, need-based and non-need based, non-need based only, special, and uncategorized financial aid.

Enrollment: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Reported full-time equivalent (FTE) undergraduate and graduate enrollment 2011 and 2016.

Description:

This indicator measures a state's commitment to provide aid based on need and aid based on other criteria. The indicator is calculated using the following formula for need-based grants per student (a similar calculation is used for the other two types of grant aid):

> *Numerator:* Total amount of grant dollars for need-based financial aid/other financial aid for public and private undergraduate students in the state.

> *Denominator:* Total number of public undergraduate full-time equivalent students enrolled in the fall.

Notes:

None.

Availability:

Data were generously provided by the National Association of State Student Grant and Aid Programs for all SREB states.

Tuition at Lowest-Priced Colleges as a Percent of Income

Sources:

Tuition:

IPEDS student charges data files

https://nces.ed.gov/ipeds/datacenter/data/IC2015_AY.zip

https://nces.ed.gov/ipeds/datacenter/data/IC2010_AY.zip

Institutional Information:

IPEDS directory Files

http://nces.ed.gov/Ipeds/datacenter/data/HD2015.zip

http://nces.ed.gov/Ipeds/datacenter/data/HD2014.zip

http://nces.ed.gov/Ipeds/datacenter/data/HD2013.zip

http://nces.ed.gov/Ipeds/datacenter/data/HD2012.zip

http://nces.ed.gov/Ipeds/datacenter/data/HD2011.zip

http://nces.ed.gov/Ipeds/datacenter/data/HD2010.zip

Income:

American Community Survey data files, 2010-2015 5-year averages

http://www2.census.gov/programs-surveys/acs/data/pums/2015/5-Year/csv_hus.zip

http://www2.census.gov/programs-surveys/acs/data/pums/2014/5-Year/csv_hus.zip

http://www2.census.gov/programs-surveys/acs/data/pums/2013/5-Year/csv_hus.zip

http://www2.census.gov/programs-surveys/acs/data/pums/2012/5-Year/csv_hus.zip

http://www2.census.gov/programs-surveys/acs/data/pums/2011/5-Year/csv_hus.zip

http://www2.census.gov/programs-surveys/acs/data/pums/2010/5-Year/csv_hus.zip

Enrollment:

IPEDS Instructional activity data files, 2011-2016:

http://nces.ed.gov/Ipeds/datacenter/data/EFIA2016.zip,

http://nces.ed.gov/Ipeds/datacenter/data/EFIA2015.zip,

http://nces.ed.gov/Ipeds/datacenter/data/EFIA2014.zip,

http://nces.ed.gov/Ipeds/datacenter/data/EFIA2013.zip,

http://nces.ed.gov/Ipeds/datacenter/data/EFIA2012.zip ,

http://nces.ed.gov/Ipeds/datacenter/data/EFIA2011.zip

Description:

Creating and preserving low-priced options for college is an important state strategy to ensure access for low-income students and families who would otherwise be priced out of higher education. This indicator measures this aspect of affordability with the following formula:

- *Numerator:* Average cost of lowest-priced sector by state, weighted by FTE enrollment.
- *Denominator:* Average Family Income for families in the lowest income category (those making less than $30,000 per year). This is the same data used in the net price calculation described above.

Institutional Sectors:

Higher education institutions are grouped into four sectors, based on SREB institutional categories:

Public Four-Year Type 1 institutions include SREB Four-Year 1 and Four-Year 2 institutions, defined as: institutions awarding at least 30 doctoral degrees that are distributed among at least five CIP categories (2-digit classification)

Four-Year Type 2 institutions include all other SREB Four-Year institutions.

Public Two-Year institutions include all SREB Two-Year Colleges.

Technical Colleges include all SREB Technical Colleges or Institutes. Data for this sector are reported when more than 5 percent of FTE attend these institutions.

Source: http://www.sreb.org/criteria-and-definitions

Only tuition from the lowest-priced sector in the state is included.

Tuition:

Variable *TUITION1* is used. Tuition is defined as:

> Charges to full-time undergraduate students for the full academic year 2015-16

> In-district average tuition

> IN-DISTRICT TUITION - The tuition charged by the institution to those students residing in the locality in which they attend school. This may be a lower rate than in-state tuition if offered by the institution.

> TUITION - Amount charged to students for instructional services. Tuition may be charged per term, per course, or per credit.

> UNDERGRADUATE - A student enrolled in a 4- or 5-year bachelor's degree program, an associate degree program, or a vocational or technical program below the baccalaureate.

> FULL-TIME UNDERGRADUATE STUDENT - A student enrolled for 12 or more semester credits, or 12 or more quarter credits, or 24 or more contact hours a week each term.

> ACADEMIC YEAR - The period of time generally extending from September to June; usually equated to 2 semesters or trimesters, 3 quarters, or the period covered by a 4-1-4 plan.

Source: IC 2013 data dictionary, https://nces.ed.gov/ipeds/datacenter/data/IC2015_AY_Dict.zip

<u>Borrowing Among Graduates</u>

Sources:

Borrowing:

College Scorecard Data, https://collegescorecard.ed.gov/data/

(Variable=*grad_dbt_mdn*)

Enrollment:

IPEDS Instructional activity data files, 2011 to 2016:

http://nces.ed.gov/Ipeds/datacenter/data/EFIA2016.zip,

http://nces.ed.gov/Ipeds/datacenter/data/EFIA2015.zip,

http://nces.ed.gov/Ipeds/datacenter/data/EFIA2014.zip,

http://nces.ed.gov/Ipeds/datacenter/data/EFIA2013.zip,

http://nces.ed.gov/Ipeds/datacenter/data/EFIA2012.zip,

http://nces.ed.gov/Ipeds/datacenter/data/EFIA2011.zip

IPEDS Directory information, 2010 to 2015:

http://nces.ed.gov/Ipeds/datacenter/data/HD2015.zip
http://nces.ed.gov/Ipeds/datacenter/data/HD2014.zip
http://nces.ed.gov/Ipeds/datacenter/data/HD2013.zip
http://nces.ed.gov/Ipeds/datacenter/data/HD2012.zip
http://nces.ed.gov/Ipeds/datacenter/data/HD2011.zip
http://nces.ed.gov/Ipeds/datacenter/data/HD2010.zip
http://nces.ed.gov/Ipeds/datacenter/data/HD2010.zip

Description:

Borrowing among graduates:

College scorecard data, "The median debt for students who have completed." Variable used: *GRAD_DEBT_MDN*.

This is the median loan debt accumulated at the institution by all student borrowers of federal loans who graduate in a given fiscal year. The measure represents the sum of all undergraduate federal loans over students' college education at the institution for which the median debt is

reported — e.g., if a student receives a federal loan for $2,000 for each of eight semesters at one institution, cumulative debt is recorded as $16,000 for that institution.

The state profiles use cumulative debt for students who completed only. Students who withdrew without completing are not included.

Enrollment:

Graduates' debt is averaged at the sector level within each state. These averages are weighted by full-time undergraduate enrollment in order to reflect enrollment patterns within the states. Full-time equivalent (FTE) enrollment for undergraduates comes from the IPEDS instructional activity website. The variable used for the profiles' analysis is estimated full-time equivalent undergraduate enrollment (variable name *fteug*), defined by IPEDS as follows:

> For institutions with a semester, trimester, or 4-1-4 plan, the number of FTE undergraduates is the sum of undergraduate credit hours divided by 30 and contact hours divided by 900. For institutions with a quarter plan, undergraduate credit hours are divided by 45 and contact hours by 900. For institutions with continuous enrollment over a 12-month period, undergraduate credit hours are divided by 30 and contact hours by 900.

Source: http://nces.ed.gov/Ipeds/datacenter/data/EFIA2016_Dict.zip

Changes in Tuition:

Sources:

CPI is for the South Urban area, Bureau of Labor Statistics; Tuition and Fees are from NCES, Digest of Education Statistics; Median Household Income is from U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements.

CPI data for the Southern Region are from the St. Louis Federal Reserve, Indicator "CUUR0300SA0"

U.S. Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers: All items in South Urban [CUUR0300SA0], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/CUUR0300SA0

Household Income data for each state from the St. Louis Federal Reserve, Indicator "MEHOINUS<ST>A672N"

U.S. Bureau of the Census, Real Median Household Income in Alabama (and other states) [MEHOINUSALA672N], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/MEHOINUSALA672N

Description:

This figure compares changes in average prices (Consumer Price Index—CPI), changes in median household income, and changes in college prices to address whether college price has become less or more affordable for families.

Contextual Indicators

Sources:

Lumina Foundation. (2018). *A Stronger Nation*, 2017, retrieved from: http://strongernation.luminafoundation.org/report/2018/#nation and individual state higher education master plans

U.S. Census Bureau, American Fact Finder, *Current Population Survey,* Table 19, Percent of Persons in Poverty, by State 2007 to 2009 (2010) and 2013 to 2015 (2017); American Community Survey 2015, Table S1701, Percent of Children Under 18 Years Below Poverty Level in the Past 12 Months (2017) – www.census.gov.

National College Access Network, #FormYourFuture FAFSA Tracker, accessed at https://public.tableau.com/views/FormYourFutureFAFSATracker-2018-19FAFSACycleThroughJune292018/CurrentWeekRanking?:embed=y&:display_count=yes, and National FAFSA Completion Rates for High School Seniors and Graduates, accessed at http://www.collegeaccess.org/FAFSACompletionRate

U.S. Department of Education, Integrated Postsecondary Education Data System, Directory Files 2015, 12-Month Enrollment Instructional Activity Files 2011 and 2016. Institutional sectors based on SREB-State Data Exchange categories

Nedelkoska, L. and G. Quintini, "Automation, skills use and training," OECD, 2018. https://www.oecd-ilibrary.org/docserver/2e2f4eea-en.pdf?expires=1547648723&id=id&accname=guest&checksum=E09C8A478FE9A656415A44044DDF85C2