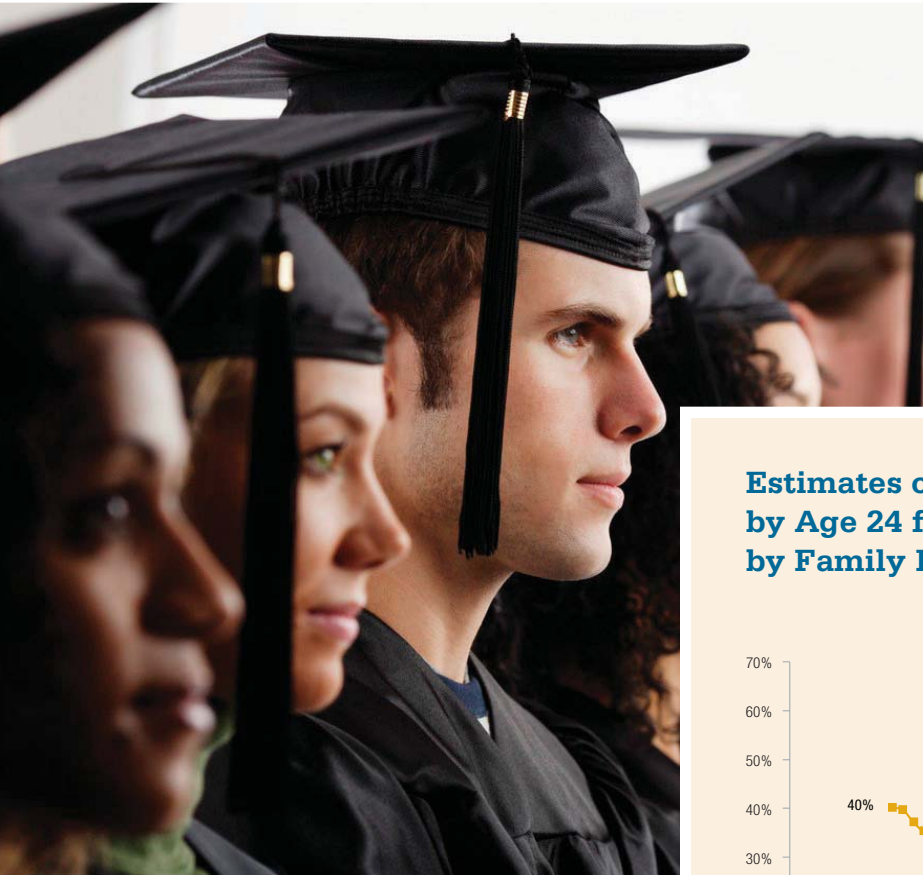


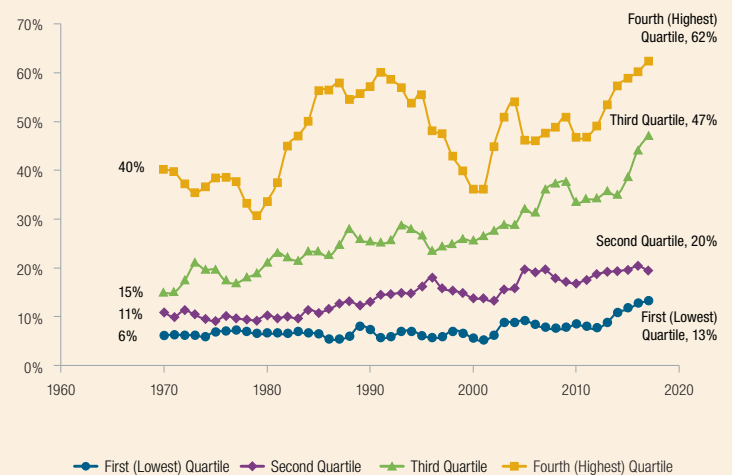
INDICATORS

OF HIGHER EDUCATION EQUITY IN THE UNITED STATES



2019 HISTORICAL TREND REPORT

Estimates of Bachelor's Degree Attainment by Age 24 for Dependent Family Members by Family Income Quartile: 1970 to 2017



When will the U.S.
close the gap in higher
education attainment by
family income?

The Pell Institute for the Study of Opportunity in Higher Education

conducts and disseminates research and policy analysis to encourage policymakers, educators, and the public to improve educational opportunities and outcomes of low-income, first-generation students, and students with disabilities. The Pell Institute is sponsored by the Council for Opportunity in Education (COE). The Pell Institute shares the mission of the Council to advance and defend the ideal of equal opportunity in postsecondary education. As such, the focus of the Council is to ensure that the least advantaged segments of the American population have a realistic chance to enter and graduate from a postsecondary institution.

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is dedicated to advancing higher education policy and practices that foster open, equitable, and democratic societies. Drawing on the intellectual resources of the University of Pennsylvania and a global alliance of higher education and academic leaders, Penn AHEAD achieves its mission by creating knowledge, improving practice, and building capacity. Through engagement with policymakers, institutional leaders, scholars, and practitioners, AHEAD produces research and applies research-based knowledge to address the most pressing issues pertaining to the public purposes of higher education in the U.S. and across the globe.

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DEDICATION & SPONSORS

SPECIAL DEDICATION ARNOLD MITCHEM & TOM MORTENSON

The *2019 Indicators of Higher Education Equity in the United States* report is once again dedicated to Arnold Mitchem and Tom Mortenson. Without the work of these two individuals, the report would not have been possible. Both have dedicated their careers to creating greater equity in educational opportunity. By producing this 2019 volume and continuing the Search for Solutions Shared Dialogues, we honor the legacy of their work and the seeds they have sown for increasing equity in higher education opportunity and outcomes in the United States.

SPECIAL THANKS FOR SUPPORT FROM:



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A number of persons at COE and Penn contributed to various aspects of this 2019 report. We especially thank Maureen Hoyler, President of COE, Kim Jones, Holly Hexter, and Jodi Koehn-Pike of COE for their assistance, feedback, and production support. This report series owes much to Colleen O'Brien, former Director of the Pell Institute and author of the 2004 and 2005 *Indicators* reports. Much of the trend data presented in this and earlier reports was originally compiled by Tom Mortenson, Senior Scholar at the Pell Institute, with the assistance of Nicole Brunt, for inclusion in the *Postsecondary Education Opportunity* Newsletter.

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FOREWORD

In 2004 and 2005, the Pell Institute for the Study of Opportunity in Higher Education (Pell Institute), sponsored by the Council for Opportunity in Education (COE), published two editions of *Indicators of Opportunity in Higher Education*. In 2015, we renewed the commitment to documenting trends in higher education equity by publishing an expanded annual trend report and initiating the Search for Solutions Shared Dialogues. The 2019 *Indicators of Higher Education Equity in the United States: Historical Trend Report* directly follows on these earlier efforts. This publication brings together again in partnership the Pell Institute with the Alliance for Higher Education and Democracy of the University of Pennsylvania (PennAHEAD). Both organizations have a core mission to promote a more open, equitable, and democratic system of higher education. The Pell Institute, with its historical and ongoing ties to the federal TRIO programs, has a special mission to promote more equitable opportunity for low-income and first-generation students, and students with disabilities. These reports draw from multiple sources of existing data to provide, in one place, indicators that describe trends in equity in postsecondary enrollment, choice, and degree attainment, as well as indicators of college affordability.

Purposes of the Report. The purposes of this equity indicators project are to:

- Report the status of higher education equity in the United States and identify changes over time in measures of equity;
- Identify policies and practices that promote and hinder progress; and
- Illustrate the need for increased support of policies, programs, and practices that not only improve overall attainment in higher education but also create greater equity in higher education opportunity and outcomes.

Focus on Inequities by Family Income. The first *Indicators* report in 2015 focused on equity in higher education based on measures of family income. Family income remains the primary focus of the subsequent reports. Recognizing the need to also address inequity based on other interrelated demographic characteristics, reports since 2016 also include selected indicators that highlight differences by race/ethnicity and socioeconomic status (SES). In these reports, SES is primarily measured by an index comprised of family income, parents' education, and parents' occupation developed by the National Center for Education Statistics (NCES).

Inclusion of State Data. The 2018 *Indicators* report added data describing higher education equity by U.S. state. The 2019 *Indicators* report continues the inclusion of state data. Considering indicators of equity by state is essential given the many differences across the 50 states in historical, demographic, economic, and political characteristics, as well as the characteristics of their K-12 and higher education systems.

Methodological Issues. This *Indicators* report presents data as far back as comparable data warrant, often beginning with 1970. Methodological Appendix A provides additional notes, tables, and figures.

Online Data Tool. To download the data files used to produce the figures in this report, find links to earlier reports, and access to the Search for Solutions Shared Dialogues Essays that periodically accompany the Indicators reports, please visit the Equity Indicators Website hosted by the Pell Institute: <http://pellinstitute.org/indicators/>.

The Search for Solutions Shared Dialogues Essays, Blog, Infographic Stories and Summary for Policy Makers. In addition to providing longitudinal indicators of equity, the *Indicators* project is also intended to advance productive conversation about effective policies and practices for improving equity in higher education opportunity and outcomes. To this end, the 2015 to 2017 *Indicators* reports include essays intended to connect the indicators to current policy debates. In 2018, the *Indicators* project launched the *Improving Equity in Higher Education Search for Solutions Blog* hosted by PennAHEAD (<http://www.ahead-penn.org/>) intended to further advance discussion of how to create meaningful improvements in higher education equity.

New for 2019. Throughout 2019, we will be adding to the *Indicators* website additional data visualizations and infographic stories for selected Indicators. We will also be posting a separate short Summary for Policy Makers that includes highlights of the 2019 *Indicators* report and outlines key policy implications. Please visit the Equity Indicators Website <http://pellinstitute.org/indicators/> to access these materials.

Introduction

We begin the fifth report in this series by renewing our original purpose in starting the Equity Indicators series of historical reports. Our hope was and remains that, by pulling together available historical statistics, we can understand how to foster the evolution of a dynamic higher educational system that provides equity of opportunity while respecting the diversity of talents and gifts among us. We believe that each person should have the opportunity to learn about, thrive in, and contribute to their particular time in history. We are committed to fostering a higher education system that does not function as a zero-sum game in which the provision of opportunity for one individual or group means that another individual or group has less opportunity. The historical trends and recent data suggest that creating a more equitable higher education system is a major challenge. However, learning from key concepts from systems thinking we are hopeful that we can evolve toward a more empathetic mode of thinking, learning, and communicating about our education system.¹ We hope that this empathetic thinking will lead to an awareness that everyone benefits from the development of a more egalitarian, inclusive, and diverse educational eco-system.

As adopted under President Jimmy Carter in the late 1970s, the original stated mission of the U.S. Department of Education reflected a clear civil rights focus and was to “ensure equal access to education.”² This historical trend report series and the associated dialogue pieces on our web site continue to draw inspiration from this original mission statement and from other historical statements concerning equal access to education. In this introduction, we briefly review again some of these articulations to highlight the current challenges and opportunities pertaining to equity in higher education in the United States.

The Dangers of a Higher Educational System that Functions to Sort Students. In the original report of this series we included a quote from the forward to President Truman’s 1947 Commission on Higher Education that called attention to the dangers of a higher education system that functioned not to provide opportunity but to sort students:

If the ladder of educational opportunity rises high at the doors of some youth and scarcely rises at the doors of others, while at the same time formal education is made a prerequisite to occupational and social

1 Richmond Barry, *Introduction to Systems Thinking, STELLA 1992-1997, 2000, 2001, 2004, 2005 isee systems*, Inc. “Being able to empathize is a skill that can be developed—and is in some ways, the ultimate Systems Thinking skill because it leads to extending the boundary of true caring beyond self (a skill almost everyone could use more of).” (p.30) . “The key to evolving our education system lies in tapping the potential synergies that exist in the mutually reinforcing processes of thinking, communicating and learning.” (p.33) Retrieved from: <https://www.fi.muni.cz/~xpelanek/IV109/jaro07/IST.pdf>.

2 The current U.S. Department of Education’s mission statement, adopted in 2005 under President Bush, is to “promote student achievement and preparation for global competitiveness by fostering educational excellence and ensuring equal access.” It can be found at <https://www2.ed.gov/about/overview/mission/mission.html>.

*advance, then education may become the means, not of eliminating race and class distinctions, but of deepening and solidifying them.*³

As in previous Indicators reports, the data in the 2019 *Indicators* show persisting inequality in higher education opportunity based on family income, race/ethnicity, parent education, and geographic location. While there has been an increase in postsecondary attainment since these words were articulated in the late 1940's, new forms of inequity and stratification are evolving, as education becomes one of the chief ways of differentiating wages and salaries and quality of life indicators.⁴

Higher Education as an International Human Right. Article 13 of the International Covenant on Economic, Social, and Cultural Rights of the United Nations declares:

*Higher education shall be made equally accessible to all, on the basis of capacity, by every appropriate means, and in particular by the progressive introduction of free education.*⁵

In the wake of growing student debt and a renewed focus on the rise of economic inequity in the United States, in recent years a number of proposals have been advanced for “tuition free” and “debt free” higher education. Scholars and politicians have begun again to speak of high-quality higher education as a human right.⁶ The U.S. has a core constitutional and founding commitment to equality of opportunity for all citizens. The U.S. Supreme Court has made rulings barring discrimination based on race/ethnicity within the United States and has ruled in favor of increasing diversity for the good of the institution in college admissions decisions in *Fisher v. Texas*. Thus far, the courts have not ruled on inequities in access to higher education based on family income, parents’ education, or socioeconomic status. If postsecondary education is necessary to obtain work that pays a living wage, then all individuals, regardless of family income, parents’ education, socioeconomic status, or other demographic characteristics, should have equal opportunity to participate, complete, and benefit.⁷

3 Truman, H.S. “Statement by the President making public a report of the Commission on Higher Education,” December 15, 1947. Retrieved from <http://www.presidency.ucsb.edu/ws/?pid=12802>.

4 Data from BLS document this trend and the increase in the gap in earnings by education level. <https://www.bls.gov/cps/earnings.htm#demographics>.

5 Tomaševski, K. (2001). *Special Rapporteur Report on the Right to Education Mission to the United States of America*, United Nations Commission on Human Rights, Economic, Social, and Cultural Rights. Retrieved from https://www.nesri.org/sites/default/files/Special_Rapporteur_Education_USA.pdf.
President Carter signed the U.N. Covenant in 1977, but thus far no President, Democrat or Republican, has presented the Covenant for ratification by the U.S. Senate. The U.N. Covenant has been ratified by 166 countries worldwide but the United States in one of a handful of counties worldwide that has not become a binding party to the Covenant.

6 With a stated goal of improving college affordability, several states (including Tennessee, Oregon, and New York) have adopted some type of “free tuition” programs. “Free community college” programs are also being created in local communities across the U.S. (For a database of current programs see: <http://www.ahead-penn.org/creating-knowledge/college-promise>).

7 The Truman Commission report foreshadows more recent arguments that question the validity, justice, and utility for a democracy of our education system’s focus on measuring merit and ranking at every level. In the wake of increasingly apparent difficulties in fairly implementing the so called “merit” system of admissions, these policies are receiving more critical interest. Lani Guinier (2016) argues in the *Tyranny of the Meritocracy, Democratizing Higher Education in America*, that: “The merit systems that dictate and justify the college admissions are functioning to select and privilege elite individuals” and exclude others rather than “creating learning communities geared to advance democratic societies.”

The United States has higher levels of income and wealth inequality and lower levels of measured intergenerational mobility than many other developed nations.⁸ Inequality is negatively related to various health and well-being indicators – indicators that are also falling in the U.S. relative to many other developed countries.⁹

A Question of Will. In 1967, in *Where do we go from here?* Reverend Martin Luther King, Jr. argued that: “*There is no deficit in human resources, the deficit is in human will.*”¹⁰ Fifty years later, these words could be applied to many current social problems, including persisting inequality in higher education opportunity and outcomes. This 2019 report and the dialogue questions we pose seek to place the *Indicators* within the wider discussion of equity and in the context of the role that higher education is playing in a society under conflict and stress.

Whether or not we believe that higher education is a civil right, an essential element of a full democratic society, or a fundamental requirement for achieving the American dream, the 2019 *Indicators* report, like previous reports, shows that higher education opportunity and outcomes remain highly inequitable across family income groups. On many indicators, gaps are larger now than in the past. The disinvestment of state funds for public colleges and universities since the 1980s and the declining value of federal student grant aid have aided in the creation of a higher education system that is stained with inequality. Once known for wide accessibility to and excellence within its higher education system, the U.S. now has an educational system that sorts students in ways that have profound implications for later life chances. More work is required to ensure that all youth have the opportunity to use their creative potential to realize the many benefits of higher education and advance the well-being and progress of the nation.¹¹

The Equity Indicators

Defining Equity of Higher Education Opportunity. We operationalize “equity” in terms of deviation from a distribution that would indicate “equal access to education.” For example, we observe differences across quartiles or quintiles of family income in the percentages of students entering college and receiving bachelor’s degrees. We also observe the extent to which the racial/ethnic distribution of the U.S. population differs from the racial/ethnic distribution of degree recipients.

The equity indicators tracked in this report address the following fundamental questions:

1. Equity Indicator 1: Who enrolls in postsecondary education?

- How do college participation rates of high school leavers vary by family income?
- How do college participation rates of high school graduates vary by family income?
- How do rates of postsecondary enrollment differ by race/ethnicity?
- How do rates of postsecondary enrollment differ by race/ethnicity and family income?

8 Major, L.E., & Manchin, S. (2018) *Social Mobility: And Its Enemies*. Pelican Books. With a focus on England, Lee Elliot Major and Stephan Manchin advocate a lottery system for students meeting transparent entrance requirements. Their views are summarized in a short blog: Why we should select students by lottery; <https://wonkhe.com/blogs/why-we-should-select-students-by-lottery/>.

9 It is not only the absolute level of income that reduces well-being, but also the degree of income inequity that is manifest in the state or nation. See Kerry, B., Pickett, K.E. & Wilkinson, R. (2010, August). The Spirit Level: Why Greater Equality Makes Societies Stronger. *Child Poverty Insights*, Social and Economic Policy, UNICEF Policy and Practice. http://www.unicef.org/social-policy/files/Insights_August2010_ENG%281%29.pdf.

10 Especially in the final years of his life Dr. King increasingly spoke of the interrelationships between civil rights and education, the economic system, poverty, militarism, and racism. <https://kairoscenter.org/wp-content/uploads/2014/11/King-quotes-2-page.pdf>.

11 Jeanna Smialek (2019) examines the business arguments for a more equitable system in “Inequality is Holding Economies Back. Education Could be One Solution in Countries Where Lack of Opportunity Mixed with High Inequality See Slower Growth.” <https://www.bloomberg.com/news/articles/2019-03-20/if-america-can-t-fix-education-it-won-t-beat-inequality>.

- How do the percentages of young adults that have not enrolled in postsecondary education within 8 to 10 years of expected high school graduation vary by parents' socioeconomic status (SES)?
- How do the rates of enrollment vary by parent education or first-generation status?
- What are the differences by state in estimated participation of low-income students in college?
- How do rates of postsecondary enrollment differ by state?

2. Equity Indicator 2: What type of postsecondary educational institution do students attend?

- How does the level of institution attended vary by family income?
- How does the control of institution attended vary by family income?
- How does the representation of low-income students vary by institutional level and control?
- How does the selectivity of institution attended vary by family income?
- How does the representation of low-income students vary by institutional selectivity?

3. Equity Indicator 3: Does financial aid eliminate the financial barriers to paying college costs?

- What are the trends in cost of attendance nationally and by state?
- What is the maximum Pell Grant relative to average college costs?
- What level of Pell Grant would be necessary to meet college costs?
- What is the unmet need by family income?

4. Equity Indicator 4: How do students in the United States pay for college?

- What share of higher education costs is paid by students and their families?
- What is the net price of attendance by family income?
- What is the percentage of family income needed to pay for college?
- What percent of students borrow and how much do they borrow nationally and by state?
- What is the level of state need-based aid?

5. Equity Indicator 5: How do educational attainment rates and early outcomes vary by family characteristics?

- How does dependent individuals' bachelor's degree attainment by age 24 vary by family income?
- How does dependent students' bachelor's degree attainment within 6 years of entering college vary by family income?
- How does the distribution of associate's, bachelor's, master's and doctoral degrees relative to the population differ by race/ethnicity?
- Are there differences in post-baccalaureate enrollment and average income for recent graduates by family income?
- How do degree attainment rates vary by state?

6. Equity Indicator 6: How does educational attainment in the U.S. compare with other countries?

- What percentage of 25- to 34-year-olds has completed a type A (bachelor's or above) tertiary degree?
- What percentage of 25- to 34-year-olds has completed a type A (bachelor's or above) or a type B (short-cycle or associate's) tertiary degree?

Setting the Stage

Before presenting the equity indicators, we first present key data on the structure and context of postsecondary education in the United States.¹² We review the number and percentage distribution of institutions and enrollment by institution level (2-year and 4-year), control (public, private non-profit, and private for-profit), and selectivity. We also report the percentage of youth that were eligible for the Federal Free or Reduced Price Lunch program and the receipt of Pell or other Federal Grants. We also observe changes in the percent of students that are potentially first-generation to attend college. In this 2019 edition, as in 2018, we also describe trends in the distribution of income and wealth within the United States, as these trends are critical to understanding educational equity issues. Throughout, we include attention to differences by state.

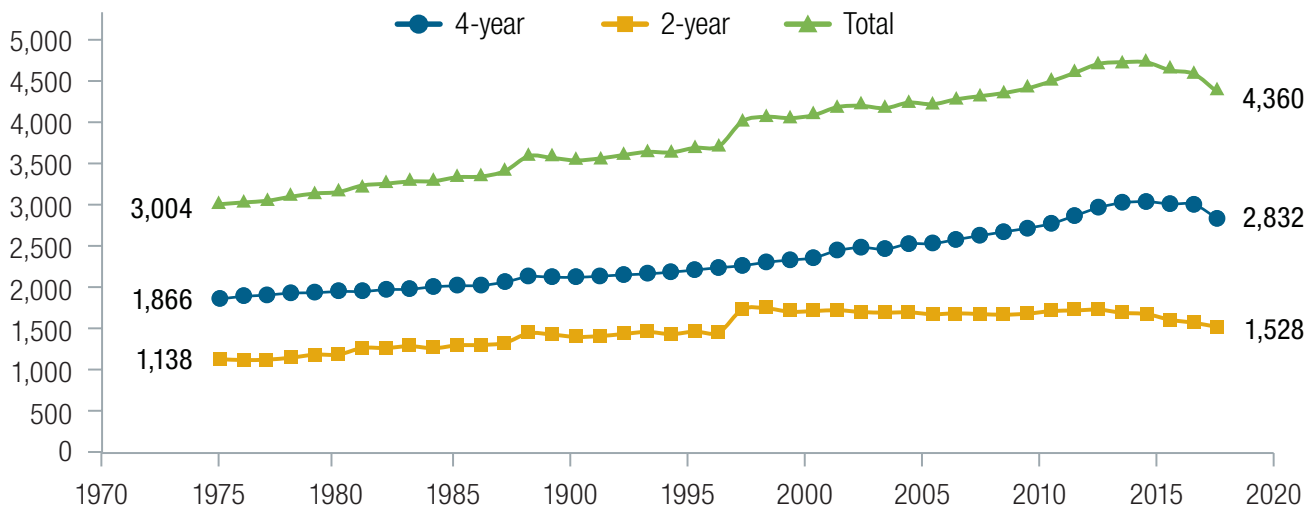
Institutional Type and Control. In 2016-17, there were 4,360 2-year and 4-year undergraduate degree-granting institutions in the United States; 35 percent were 2-year institutions and 65 percent were 4-year. There were also about 2,500 non-degree granting institutions, of which about 90 percent ($n = 2,000$) were private for-profit.¹³

STS Figure 1 illustrates trends in the numbers of 2- and 4-year degree-granting institutions in the United States from 1974-75 to 2016-17. Although the total number of 2- and 4-year degree-granting institutions declined from a peak of 4,726 in 2012-13 to 4,360 in 2016-17, taking a longer view, the total number of degree-granting institutions (including branch campuses) increased from 3,004 in 1974-75 to 4,360 in 2016-17, an increase of 45 percent. The increases from 1974-75 to 2016-17 were 34 percent for 2-year institutions and 52 percent for 4-year institutions. We also note the increase from 3,706 in 1995-96 to 4,009 in 1996-97 that occurred as a result of the change in reporting between 1995-96 and 1996-97 from “Institutions of Higher Education” to “Degree Granting Institutions.” Most of the increase at this time was due to increases from including more 2-year colleges in the newer classification (an increase from 1,462 to 1,703).

¹² To distinguish the Setting the Stage (STS) figures from those of the Equity Indicators Figures, we use STS in front of each of the figures in this section.

¹³ These totals exclude about 530 institutions that are not undergraduate degree-granting institutions but are specialized and graduate schools. U.S. Department of Education, National Center for Education Statistics, *Education Directory, Colleges and Universities, 1949-50 through 1965-66*; Higher Education General Information Survey (HEGIS), “Institutional Characteristics of Colleges and Universities” surveys, 1966-67 through 1985-86; Integrated Postsecondary Education Data System (IPEDS), “Institutional Characteristics Survey” (IPEDS-IC:86-99); and IPEDS Fall 2000 through Fall 2013, “Institutional Characteristics” component. *Digest of Education Statistics 2017*.

STS Figure 1: Number of degree-granting Title IV institutions in the United States by level: 1974-75 to 2016-17



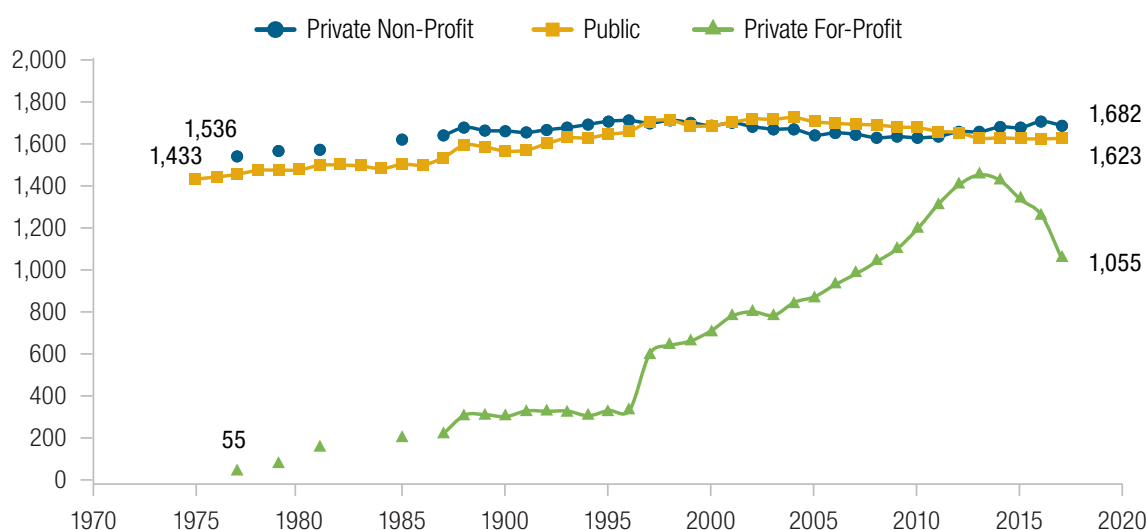
NOTE: Data represent 1974-75 to 2016-17 academic years. Data begin with 1975 due to lack of reporting coverage prior to 1975. Data through 1995-96 are for institutions of higher education, while later data are for degree-granting institutions. This change accounts for the increase in 2-year institutions in that year. Degree-granting institutions grant associate's or higher degrees and participate in Title IV federal financial aid programs. Changes in counts of institutions over time are also affected by the numbers of institutions submitting separate data for branch campuses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Education Directory, Colleges and Universities, 1949-50 through 1965-66*; Higher Education General Information Survey (HEGIS), "Institutional Characteristics of Colleges and Universities" surveys, 1966-67 through 1985-86; Integrated Postsecondary Education Data System (IPEDS), "Institutional Characteristics Survey" (IPEDS-IC:86-99); and IPEDS Fall 2000 through Fall 2013, "Institutional Characteristics" component. *Digest of Education Statistics 2017*, [Table 317.10]. Retrieved from https://nces.ed.gov/programs/digest/d17/tables/dt17_317.10.asp?current=yes.

STS Figure 2 shows trends in the number of institutions by control. Data in the Integrated Postsecondary Education Data System (IPEDS) prior to 1984-85 are not comprehensive, particularly for private for-profit institutions. For this reason, in this discussion we take 1985 as a starting point. Between 1984-85 and 2016-17, the number of public institutions increased by 8 percent and the number of private non-profit institutions increased by 4 percent. Starting from a much lower reported base, the number of private for-profit institutions increased by 393 percent, rising from 214 in 1984-85 to 1,055 by 2016-17.¹⁴ A peak in the number of private for-profit institutions (1,451) was reached in 2013, followed by a decline of 396 institutions by 2016-17.

Between 1995 and 2005, the number of for-profit institutions more than doubled, rising from 345 in 1994-95 to 879 in 2004-05, and then increased again to a peak of 1,451 in 2012-13. Since then, the number of for-profit institutions has fallen to 1,055 by 2016-17. The recent decline is attributable to the closing or consolidation of for-profit institutions, as well as the conversion of some for-profit institutions to non-profit status.

STS Figure 2: Number of degree-granting Title IV institutions in the United States by control: 1974-75 to 2016-17



NOTE: Data begin with 1975 due to reporting consistency issues prior to 1975. Data for private for-profit institutions are subject to coverage issues, especially prior to 1985. Data through 1995-96 are for institutions of higher education, while later data are for degree-granting institutions. This change accounts for the increase in private for-profit institutions between 1995 and 1996. Changes in counts of institutions over time are also affected by changes in the numbers of institutions submitting separate data for branch campuses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Education Directory, Colleges and Universities, 1949-50 through 1965-66*; Higher Education General Information Survey (HEGIS), "Institutional Characteristics of Colleges and Universities" surveys, 1966-67 through 1985-86; Integrated Postsecondary Education Data System (IPEDS), "Institutional Characteristics Survey" (IPEDS-IC:86-99); and IPEDS Fall 2000 through Fall 2013, "Institutional Characteristics" component, as included in *Digest of Education Statistics 2017*, [Table 317.10]. Retrieved from https://nces.ed.gov/programs/digest/d17/tables/dt17_317.10.asp?current=yes.

¹⁴ It is unknown how much of the increase is related to more coverage in reporting and participation in Title IV aid programs on the part of private for-profit institutions and how much reflects actual growth. Title IV institutions are eligible to participate in Title IV federal student financial assistance programs. Before 1995-96, NCES counted "institutions of higher education." Beginning in 1995-96, the numbers reflect "degree-granting institutions," defined by NCES as "institutions that grant associate's or higher degrees and participate in Title IV federal financial aid programs." *Digest of Education Statistics 2018*.

Enrollment Trends. In fall 2019, NCES estimates that approximately 17.1 million undergraduates will be enrolled in U.S. degree-granting higher education institutions (STS Figure 3). Enrollment since the 1970s shows an overall upward trend over time, with some periods of declines or no growth.¹⁵ Trends in enrollment are linked, at least in part, to trends in employment opportunities (e.g., the Great Recession between 2008 and 2010). In periods of fewer job opportunities and higher unemployment, college enrollment generally increases. Undergraduate enrollment increased sharply during the Great Recession, rising from 15.6 million in fall 2007 to a peak of 18.1 million in fall 2010, and then declined by 2 percent between fall 2011 and fall 2012 and by 1 percent between fall 2012 and fall 2014. Enrollment declined again between 2014 and 2016, reaching 16.9 million. In 2017, total undergraduate enrollment was estimated to be 16.9 million. NCES projections for 2019 are 17,069,000.

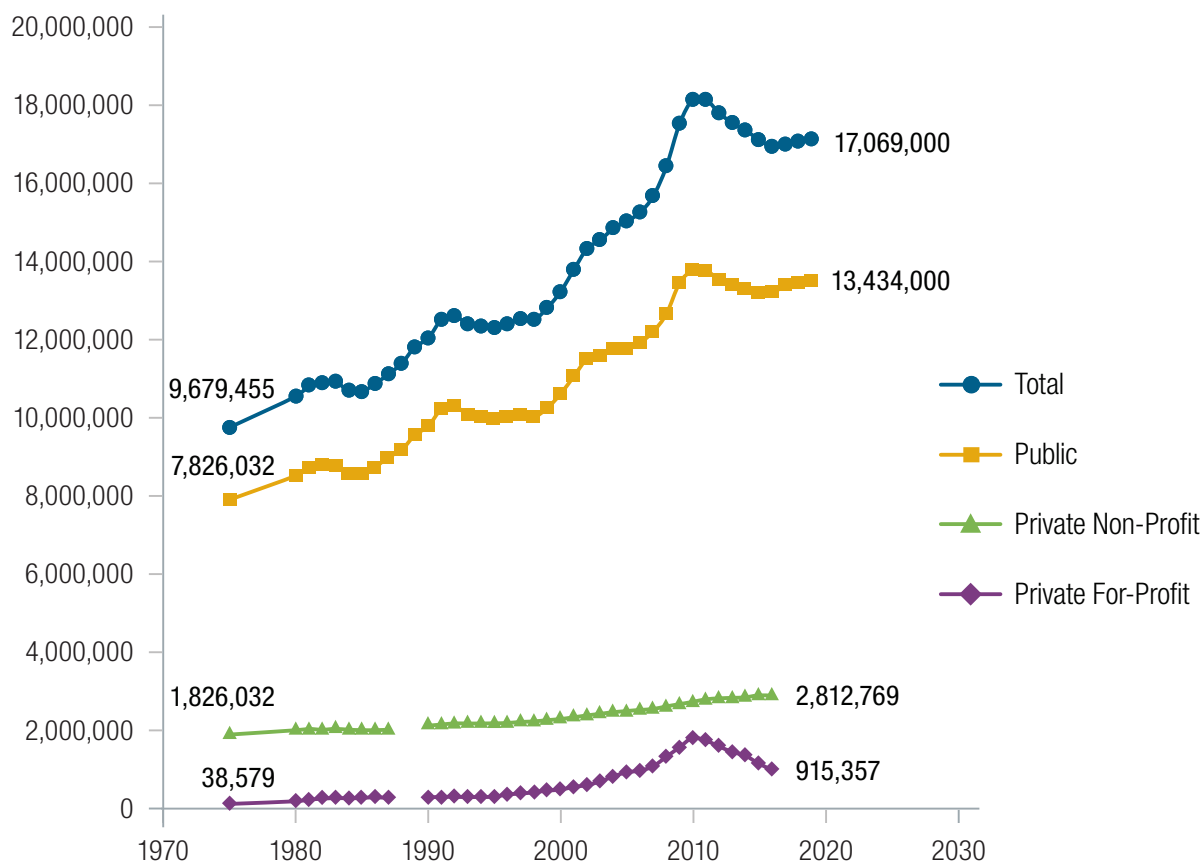
Enrollment by Institutional Control and Level. In fall 2016, public institutions accounted for 78 percent of undergraduate enrollments, private non-profit institutions accounted for 17 percent, and private for-profit institutions accounted for 5 percent (STS Figures 3 and 4).¹⁶ Because public institutions, on average, enroll larger numbers of students than private non-profit and private for-profit institutions, the distribution of enrollment by control is substantially different than the distribution of institutions. As tabulated by the numbers in Figure 2, in 2016-17, 37 percent of institutions were public, 39 percent were private non-profit, and 24 percent were private for-profit.

While there have been some declines in the share of enrollments in public institutions since 1975, public institutions have consistently enrolled over 70 percent of undergraduates. In 1975, 81 percent of undergraduates were enrolled in public institutions. The public share declined to 76 percent by fall 2010 and was 77 percent in 2014 and 2015. In 2016, the public share rose again to 78 percent. The share of undergraduates enrolled in private non-profit institutions fluctuated between 19 percent in 1975 and 15 percent in 2008. In 2016, about 16.7 percent of undergraduates were enrolled in private non-profit institutions (16.4 percent in 4-year and 0.3 percent in 2-year private non-profits). During the 1990s, approximately 2 percent of undergraduates were enrolled in private for-profit 2-year and 4-year institutions. The private for-profit share of 2-year and 4-year undergraduate enrollment increased during the 2000s, reaching a high of 10 percent in 2010 and then declining to 5.4 percent in fall 2016.

¹⁵ In most recently published estimates, NCES does not project undergraduate enrollment to reach the level of 2010 (18,082,427) by 2027. The projection now is 17,402,000 for 2027—the last year for which projections were made. NCES (2017). *Digest of Education Statistics 2017* [Table 303.70]. Retrieved from https://nces.ed.gov/programs/digest/d17/tables/dt17_303.70.asp?current=yes.

¹⁶ 2016 is the most recent year for which enrollment data are available disaggregated by institutional control. Total enrollment for 2017 onward are NCES estimates.

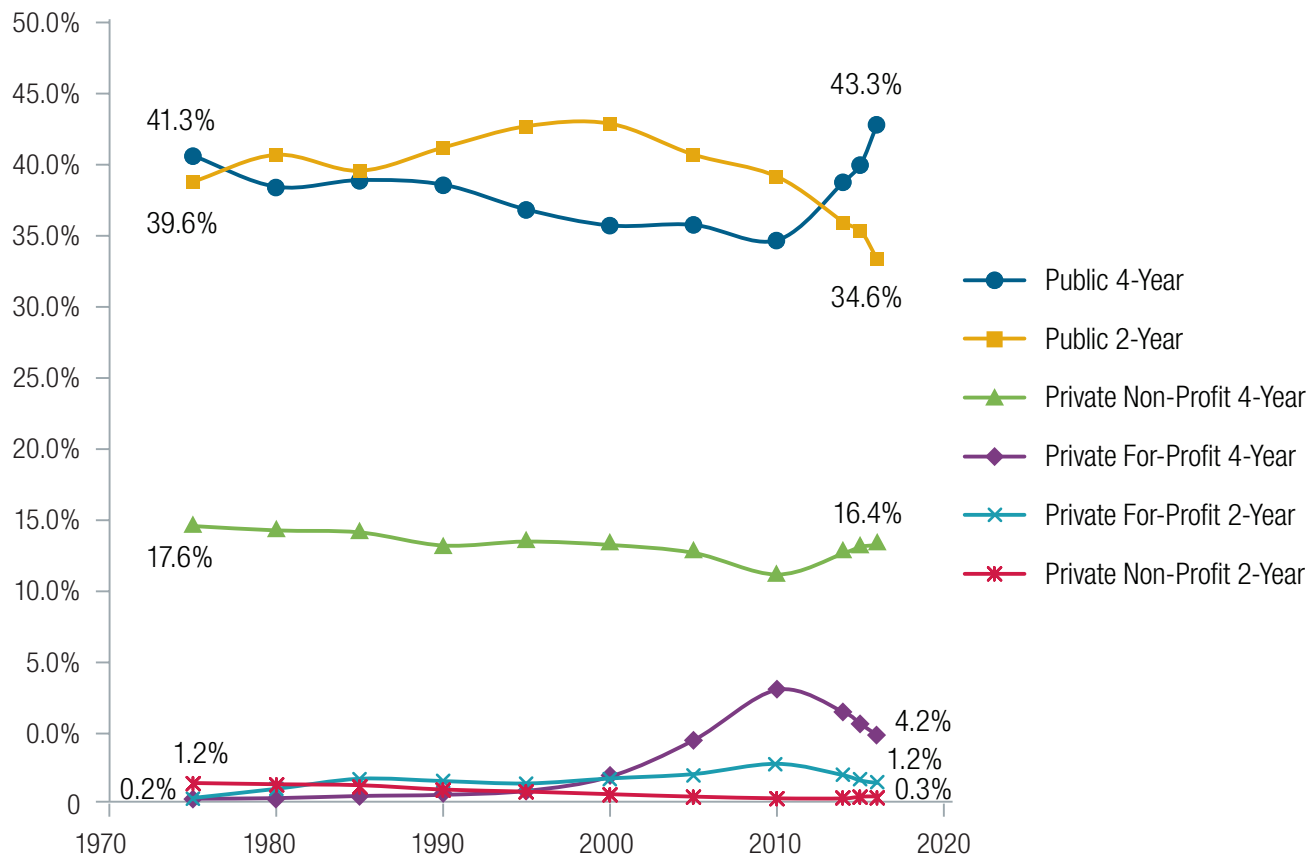
STS Figure 3: Total undergraduate fall enrollment in degree-granting institutions by institutional control: Fall 1975 to projected Fall 2019



NOTE: Total and public enrollment data for 2017 to 2019 are estimates. Estimates for 2017 to 2019 are not available for private non-profit or private for-profit institutions. For these groups, the last years displayed are 2016. Data include unclassified undergraduate students. Data through 1995 are for institutions of higher education, while later data are for degree-granting institutions. Degree-granting institutions grant associate's or higher degrees and participate in Title IV federal financial aid programs. The degree-granting classification is very similar to the earlier higher education classification, but it includes more 2-year colleges and excludes a few higher education institutions that did not grant degrees. Some data have been revised from previously published figures.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Higher Education General Information Survey (HEGIS), "Fall Enrollment in Colleges and Universities" surveys, 1970 through 1985; Integrated Postsecondary Education Data System (IPEDS), "Fall Enrollment Survey" (IPEDS-EF:86-99); IPEDS Spring 2001 through Spring 2017, Enrollment component; and Enrollment in Degree-Granting Institutions Projection Model, 2000 through 2027, as included in Digest of Education Statistics 2017, [Table 303.70]. Retrieved from https://nces.ed.gov/programs/digest/d17/tables/dt17_303.70.asp.

STS Figure 4: Percentage distribution of undergraduate fall enrollment in degree-granting institutions by institution control and level: 1975 to 2016

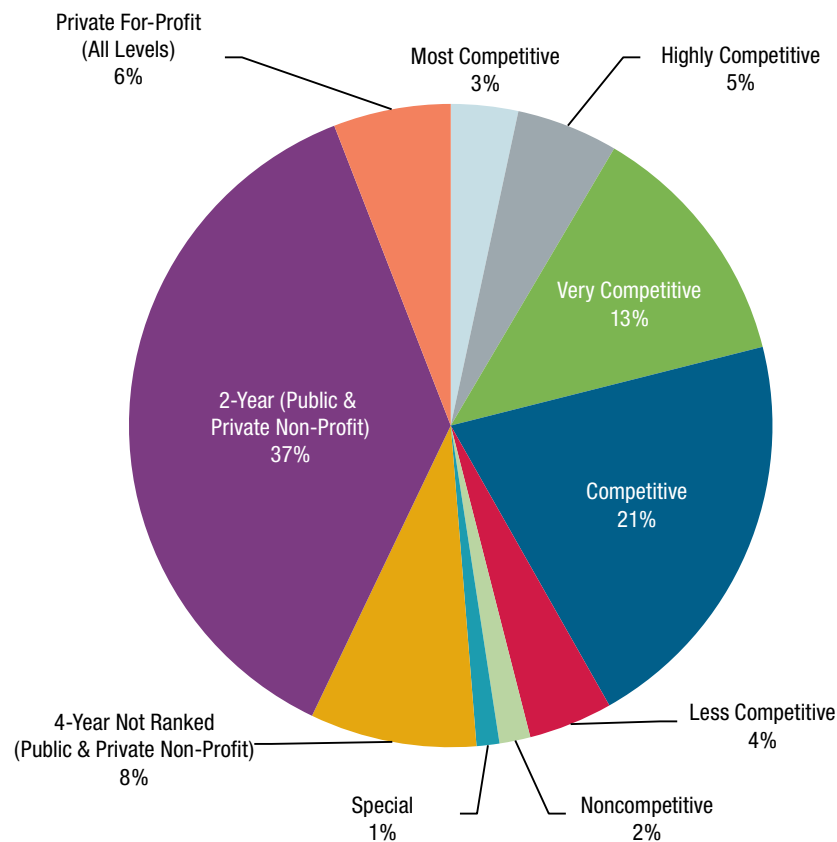


NOTE: This chart rounds to 1 decimal place to display less than 1 percent figures. See also notes for STS Figure 3.

SOURCE: U.S. Department of Education, National Center for Education Statistics (NCES), Integrated Postsecondary Data System (IPEDS), *Digest of Education Statistics 2017*, [Table 303.70]. Retrieved from https://nces.ed.gov/programs/digest/d17/tables/dt17_303.70.asp.

Enrollment by Institutional Competitiveness Index. STS Figure 5a presents the distribution of undergraduates enrolled (both full-time and part-time) at degree-granting institutions by institutional competitiveness, and STS Figure 5b presents the distribution of degree-granting institutions by institutional competitiveness. Selectivity is defined using Barron's Admissions Competitiveness Index for 2016. In fall 2015, 42 percent of undergraduate students were enrolled in 4-year institutions classified as "Competitive" or higher. Only 3 percent of students were enrolled in the nation's "Most Competitive" institutions. More than a third of students (37 percent) were attending 2-year institutions. The remaining students attended for-profit institutions (6 percent) or non-ranked 4-year public and non-profits (8 percent), or institutions designated by Barron's as "Special" (1 percent), "Noncompetitive" (2 percent), or "Less Competitive" (4 percent) 4-year institutions.

STS Figure 5a: Percentage distribution of total undergraduate enrollment by institutional competitiveness index: 2015

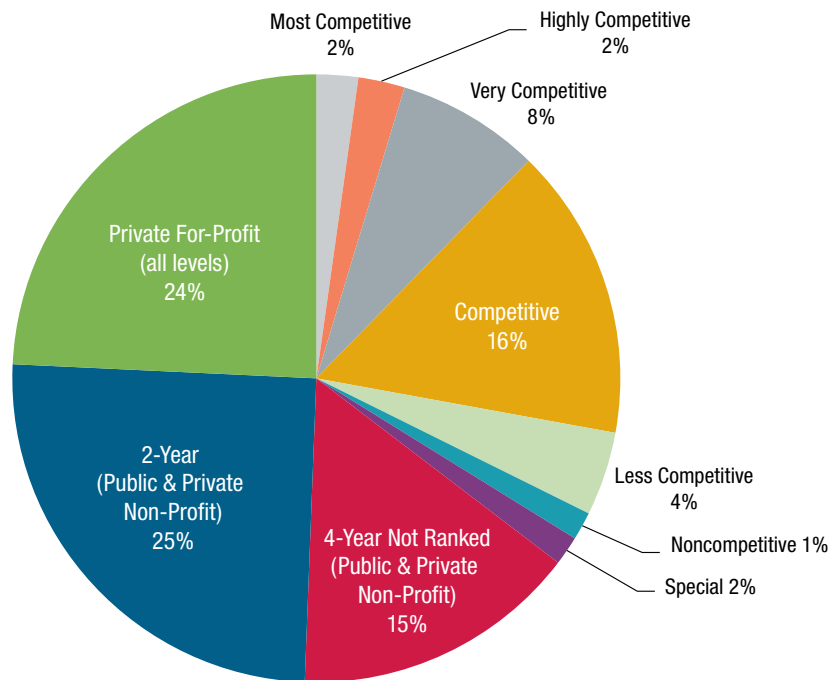


NOTE: This figure uses Barron's Admissions Competitiveness Index for 2016 and IPEDS fall 2015 enrollment data (full-and part-time enrollment captured by the "EFTOTLT" variable). Students attending institutions not ranked by Barron's are classified by institutional level and control. We include only public and private not-for-profit institutions in the categories of Barron's rankings. A small number of for-profit institutions are ranked by Barron's, but we include these institutions in the for-profit sector.

SOURCE: U.S. Department of Education, National Center for Education Statistics (NCES), Integrated Postsecondary Data System (IPEDS), and *Barron's Profiles of American Colleges* 32nd Edition (2016).

Number of Institutions by Competitiveness Index. STS Figure 5b, also using Barron's 2016 competitiveness index, shows the percentage distribution of degree-granting institutions in each category. The differences in the distributions in STS Figures 5a and 5b reflect differences in enrollment size among institutions of different competitiveness. For example, 2-year public and private non-profit institutions enroll 37 percent of undergraduate students (see STS Figure 5a) but comprise only 25 percent of all degree-granting institutions (STS Figure 5b). Non-ranked 4-year institutions enroll 8 percent of students but comprise 15 percent of institutions.

STS Figure 5b: Distribution of institutions by institutional competitiveness index: 2015



NOTE: This figure uses Barron's Competitiveness index for 2016 and IPEDS. We include only public and private not-for-profit institutions in the categories of Barron's rankings. A small number of for-profit institutions are ranked by Barron's, but we include these institutions in the for-profit sector.

SOURCE: U.S. Department of Education, National Center for Education Statistics (NCES), Integrated Postsecondary Data System (IPEDS) (2015) and *Barron's Profiles of American Colleges*, 32nd Edition (2016).

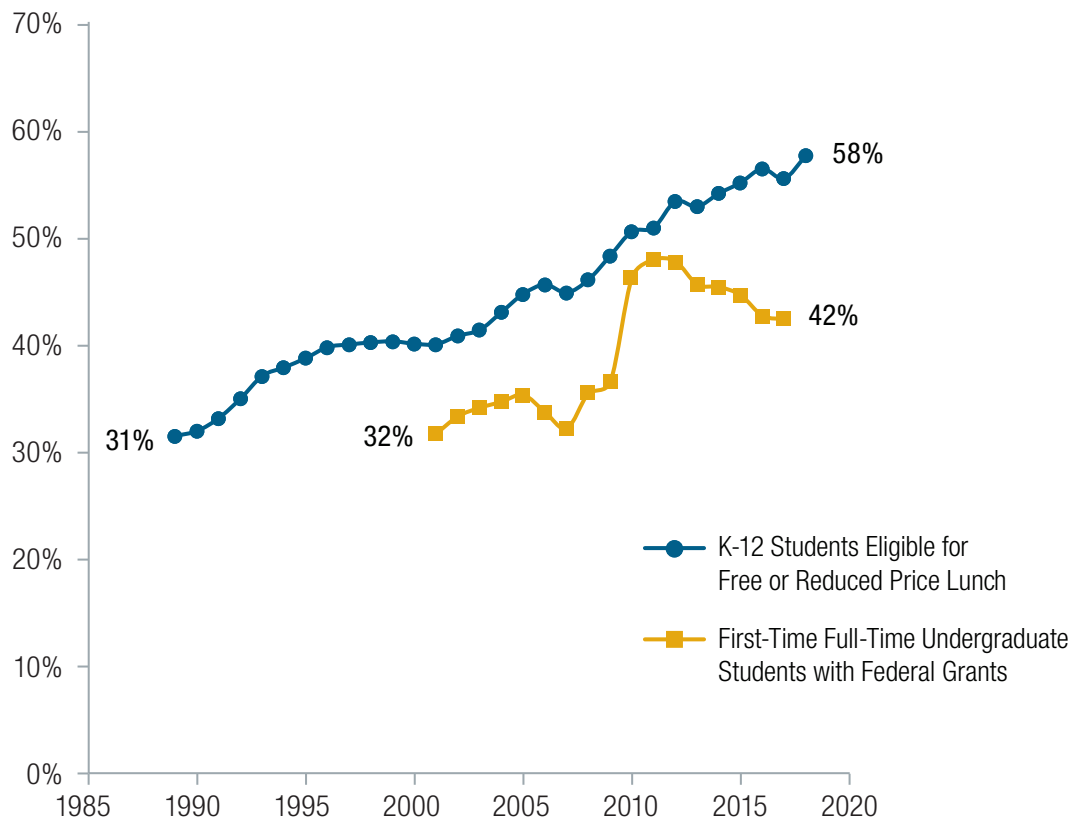
Growth of Students Classified as Eligible for Free or Reduced Price Lunch and Growth of Federal Grants (Pell and Other Grants). STS Figure 6a shows trends in the percentages of youth that are approved as eligible for free or reduced price lunches from 1989 to 2018 and the percent of full-time, first-time degree/certificate seeking undergraduate students enrolled in degree-granting postsecondary institutions who have Federal Grants from 2000-01 to 2016-17.

Both measures show an increase in the share of students enrolled in our nation's educational systems who are from low-income families. The percent of K-12 students eligible for free or reduced price lunches increased from 31 percent in 1989 to 55 percent in 2015, and to 58 percent in 2018. Some of the increase reflects changes in use patterns across school districts, in which schools with over a certain percentage of low-income students are able to enroll the entire school.

The percent of first-time, full-time undergraduates enrolled at public and private non-profit institutions who received Pell or other Federal Grants was 32 percent in 2001. This percentage fluctuated between 32 percent in 2001 and 35 percent in 2005.¹⁷ After 2007 (with the Great Recession), the share of first-time, full-time undergraduates receiving Federal Grants increased to a peak of 48 percent in 2011. This percentage declined to 45 percent in 2012-13 and further declined to 42 percent in 2016-17. Changes over time in participation in Federal Grants (most of which are awarded on the basis of financial need) reflect changes in the economic cycle, income eligibility levels, and the stagnation of family incomes in the United States.

¹⁷ While data are not shown in the STS Figure 6(a), the Federal Pell Grant Annual Report data <https://www2.ed.gov/finaid/prof/resources/data/pell-data.html> show that the percentage of undergraduates with Pell Grants rose from 13 percent in 1975 at the start of the Pell Grant program to 32 percent by 1992. The rates shown in STS Figure 6(a) for 2000 to 2016-17 are for full-time, first-time undergraduates. Estimates for all undergraduates are generally higher, at around 50 percent.

STS Figure 6a: Percentage of K-12 students approved for free or reduced price lunch (1989 to 2018) and percentage of first-time full-time degree-seeking undergraduates with Pell or other Federal Grants (2001 to 2017)

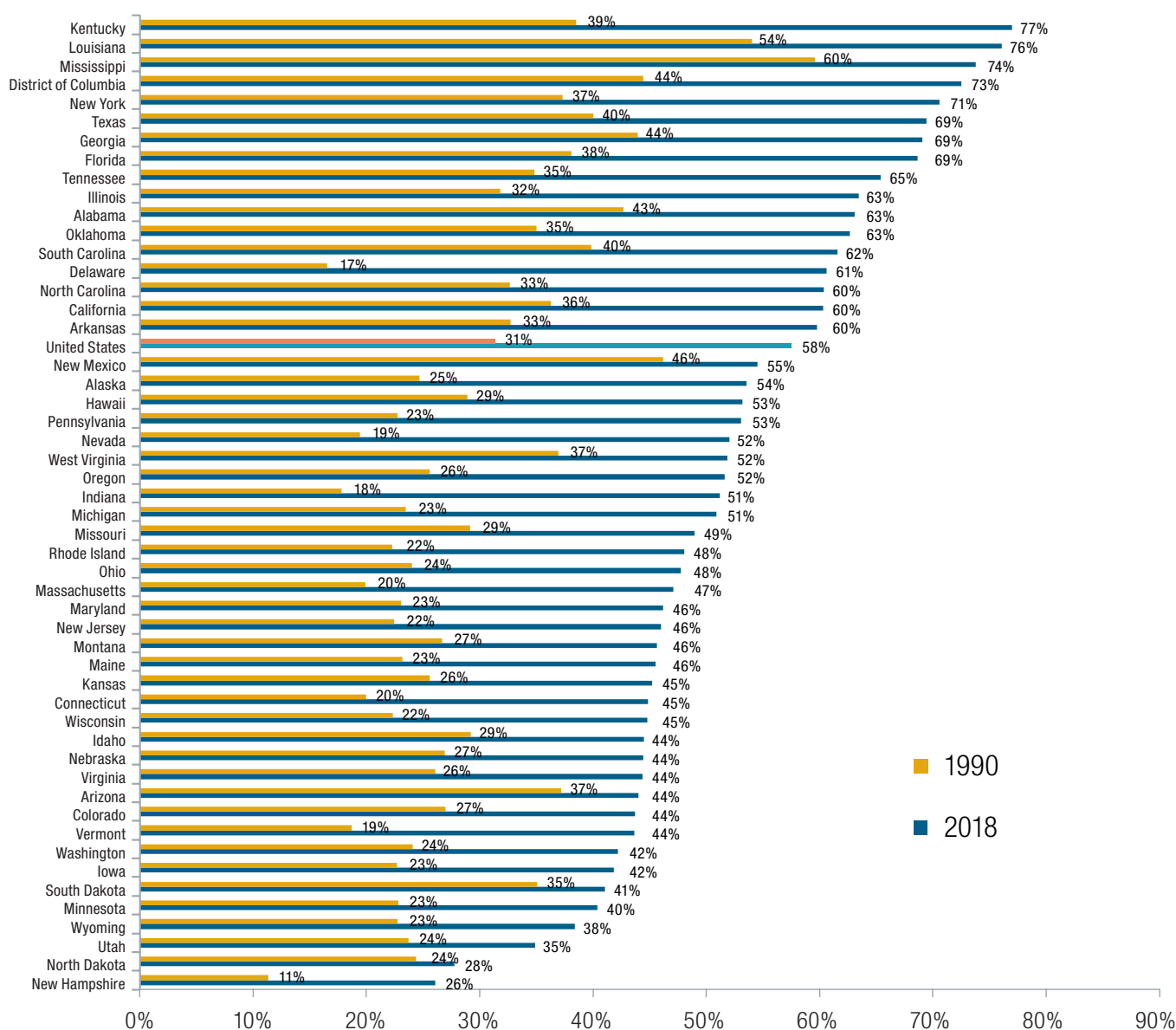


NOTE: Federal Grants include Pell Grants and other aid that does not have to be repaid. Totals for approved free or reduced price lunch include the 50 states, District of Columbia, Guam, Virgin Islands, Puerto Rico, and Department of Defense schools.

SOURCE: U.S. Department of Education, National Center for Education Statistics (2018). *Digest of Education Statistics 2018*, [Table 331.20]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_331.20.asp?current=yes. U.S. Department of Agriculture, Food and Nutrition Services, Free and Reduced Price Lunch data various years 1989 to 2018.

Growth of Students Classified as Eligible for Free or Reduced Price Lunch by State. STS Figure 6b compares the percent of students approved as eligible for the Federal Free or Reduced Price Lunch program by state. The figure shows the increase in the percent of students approved as eligible since 1990 as well as the wide variation by state.

STS Figure 6b: Percentage of K-12 students approved for free or reduced price lunch by state: 1990 and 2018



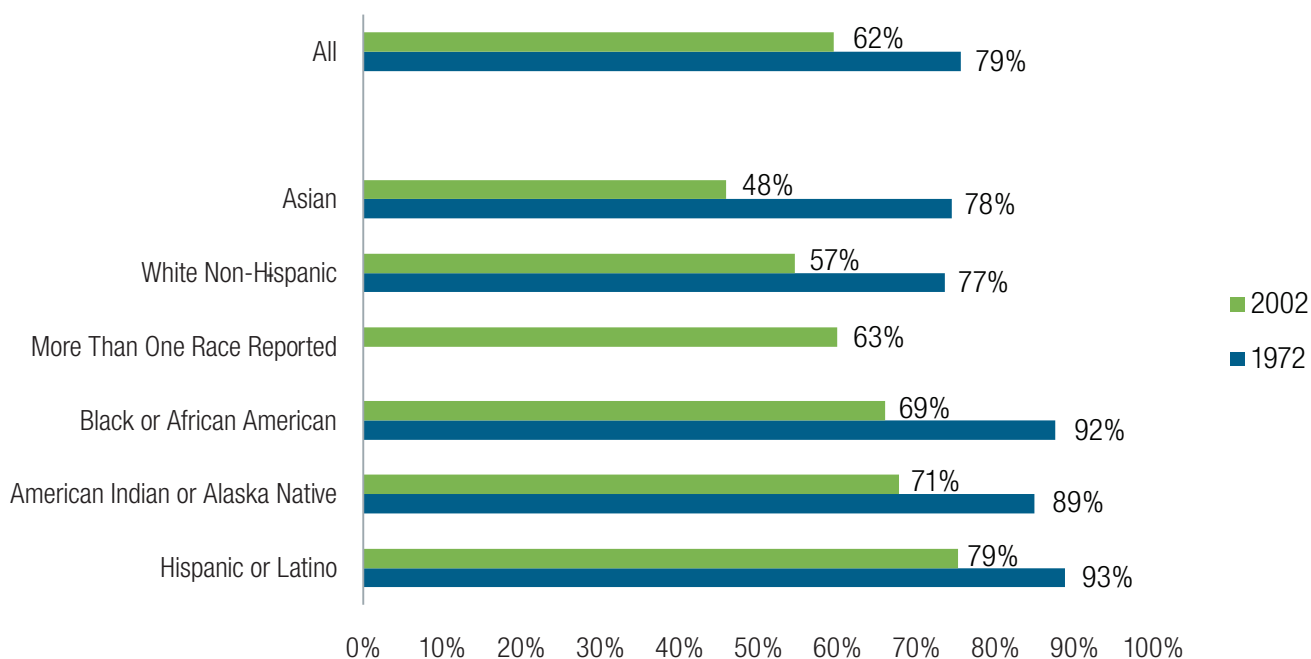
NOTE: Totals for approved free or reduced price lunch include the 50 states, District of Columbia, Guam, Virgin Islands, Puerto Rico, and Department of Defense schools.

SOURCE: U.S. Department of Agriculture, Food and Nutrition Services, Free and Reduced Price Lunch data various years 1989 to 2018, as compiled by Tom Mortenson and Nicole Brunt.

Percentage of Youth Who Are First Generation to College. Measures of educational achievement (e.g., test scores, college entrance rates, and college degree attainment) are highly correlated with parental education. STS Figure 7a uses data from the National Longitudinal Study of the High School Class of 1972 (NLS-72) and the Educational Longitudinal Study (ELS) of students who were 10th graders in 2002 and were scheduled to graduate in 2004.

Comparing the classes of 1972 and 2004 shows large declines in the percentages of high school students who would be first generation to college (defined as no parent has a bachelor's degree). In 1972, 93 percent of Hispanic students, 92 percent of Black students, 89 percent of American Indian or Alaska Native students, 77 percent of White students, and 78 percent of Asian students had the potential to be first generation to college. About 30 years later, by the high school class of 2004 (as measured by ELS), the percentages of high school students who had the potential to be first generation to college had declined to 79 percent for Hispanics, 71 percent for American Indian and Alaska Native, 69 percent for Blacks, 57 percent for Whites, and 48 percent for Asian students.

STS Figure 7a: Percentage of high school students who had the potential to be first-generation college by race/ethnicity: 1972 (National Longitudinal Study of High School Class of 1972) and 2004 (Educational Longitudinal Study: ELS:2002/2004)



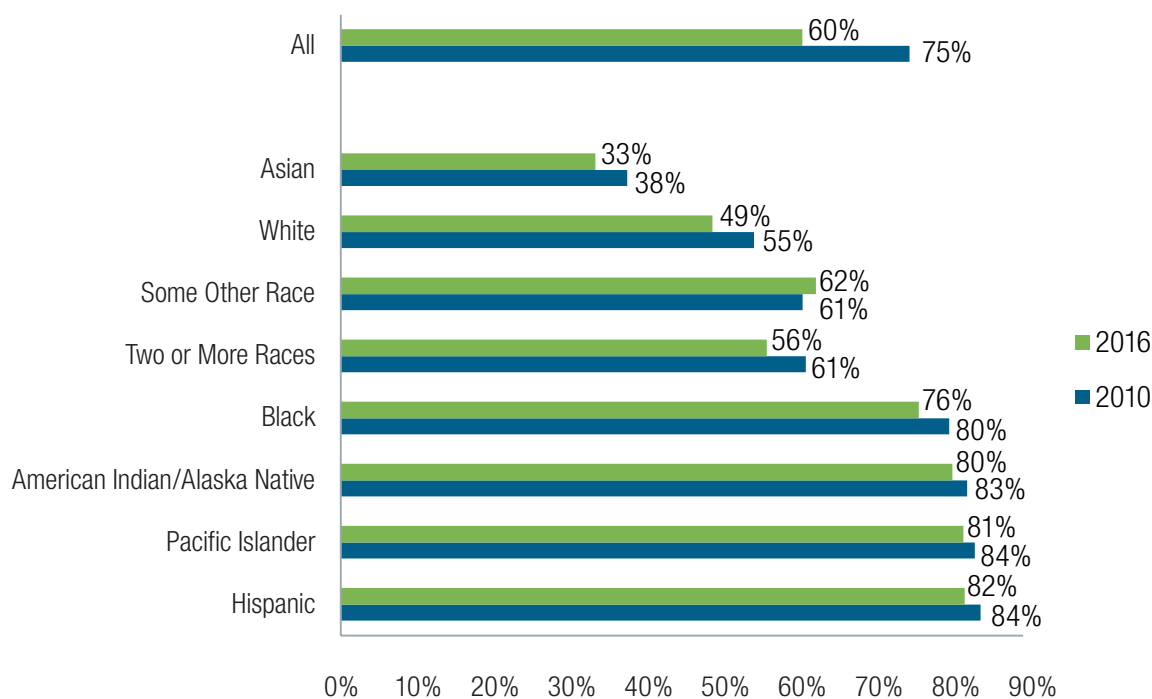
NOTE: First generation is defined as no parent or guardian has a bachelor's degree. The National Longitudinal Study (NLS) of High School Class of 1972 sampled high school seniors and the Educational Longitudinal Study (ELS:2002) sampled high school sophomores. This difference may impact the comparison between the two estimates as the NLS is limited to individuals who persisted to the senior year of high school while the ELS includes students who may leave high school between the sophomore and senior years.

SOURCE: Cahalan, M. & Curtin, T. (2004). *A Profile of the Upward Bound Program 2000-2001*. U.S. Department of Education, Office of Federal Trio Programs. Retrieved from <https://www2.ed.gov/programs/trioupbound/ubprofile-00-01.pdf>. [Figure 9], Tabulated from the National Longitudinal Study of 1972 (NLS-72) and Educational Longitudinal Study of Youth (ELS:2002/2004).

Data from the American Community Survey (ACS), as displayed in STS Figure 7b, give estimates for the percentages of parents of children under 18 who had not completed a bachelor's degree in 2010 and 2016 by race/ethnicity. While also showing declines in the share of students who had the potential to be first generation to college, the estimates are not directly comparable to those discussed above (which use data from the NCES high school longitudinal studies). The ACS is a household survey, and the estimates are for percentage of all children under 18 years old living in the household sampled. In addition, the ACS classifications reflect newer, more complex race/ethnicity categories.

While the percentages of children who would be the first in their families to obtain a bachelor's degree continue to decline, the ACS data also show that by 2016 rates of being first generation remain high especially among traditionally underrepresented minorities. In 2016, 82 percent of Hispanic children, 81 percent of Pacific Islander children, 80 percent of American Indian/Alaska Native children, 76 percent of Black children, 62 percent of children of "Some Other Race," and 56 percent of children of "Two or More Races" had the potential to be first generation to college. Among Whites, about half (49 percent) and among Asians, about one-third (33 percent) are potentially first-generation college. These data may overestimate potential first-generation status, as some of the parents may complete a bachelor's degree or higher by the time their children reach college age.

STS Figure 7b: Percentage of children under 18 with the potential to be first-generation college by race/ethnicity: 2010 and 2016



NOTE: First generation is defined as no parent or guardian has a bachelor's degree. These estimates are not directly comparable to estimates in STS Figure 7a as they reflect multiple children per household and are estimates based on parents of children under age 18 from the Census household survey.

SOURCE: U.S. Census Bureau, American Community Survey (2010 and 2016) as included in U.S. Department of Education, National Center for Education Statistics (2017). *Digest of Education Statistics 2017*, [Table 104.70]. Retrieved from https://nces.ed.gov/programs/digest/d17/tables/dt17_104.70.asp?current=yes.

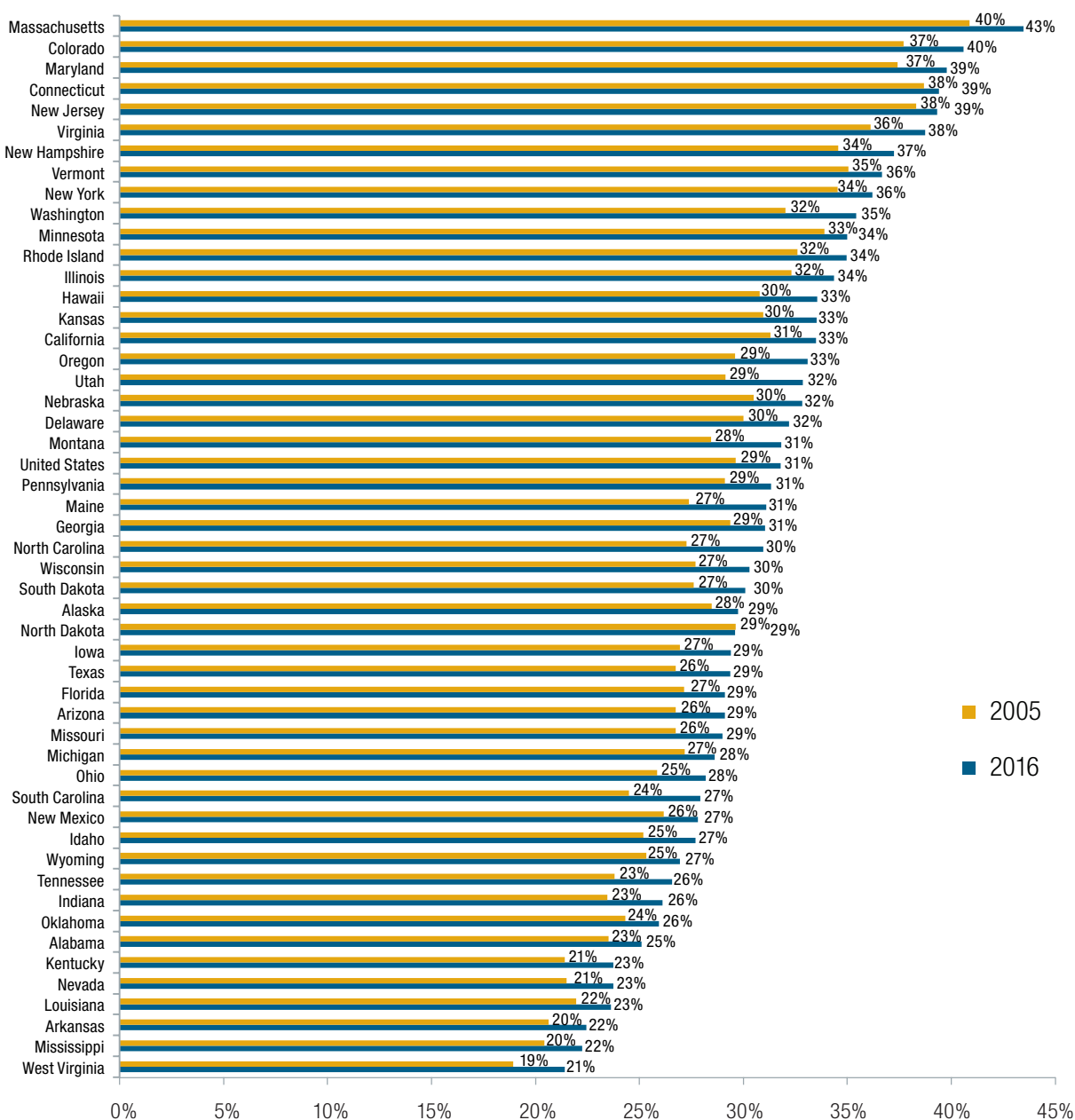
Differences in Educational Attainment of States. Educational attainment of the adult population is a strong positive predictor of educational achievement of youth, as measured by such indicators as scores on the National Assessment of Educational Progress (NAEP), high school completion, and college entrance and completion.¹⁸ Using 2005 and 2016 data from the Census Bureau American Community Survey, STS Figure 7c displays the percent of the population age 25 and older that has attained a bachelor's degree or higher.

In 2016, the percentage of adults 25 and older with at least a bachelor's degree ranged from 21 percent in West Virginia, 22 percent in Mississippi and Arkansas, and 23 percent in Louisiana, Nevada, and Kentucky to 39 percent in Maryland, Connecticut, and New Jersey, to 40 percent in Colorado and 43 percent in Massachusetts.

Overall, the United States had a 7 percent increase in the percentage of adults with at least a bachelor's degree, increasing from 29 percent in 2005 to 31 percent in 2016. The states with the largest percent increases between 2005 and 2016 were South Carolina (14 percent), North Carolina (14 percent), Maine (14 percent), West Virginia (13 percent), and Utah (13 percent).

18 Cahalan, M., & Maxwell, J. (2007). *Exploring Demographic and Selected State Policy Correlates of State Level Educational Attainment and Achievement Indicators*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL. Retrieved from <https://www.slideshare.net/cheersdotorg/exploring-demographic-and-selected-state-policy-correlates-of-state-level-educational-attainment-and-achievement-indicators-aera2007-cahalan>.

STS Figure 7c: Percentage of adults age 25 and over with a bachelor's degree or higher: 2005 and 2016



NOTE: Data are based on sample surveys of the entire population in the given age range residing within the United States, including both noninstitutionalized persons (e.g., those living in households, college housing, or military housing located within the United States) and institutionalized persons (e.g., those living in prisons, nursing facilities, or other healthcare facilities).

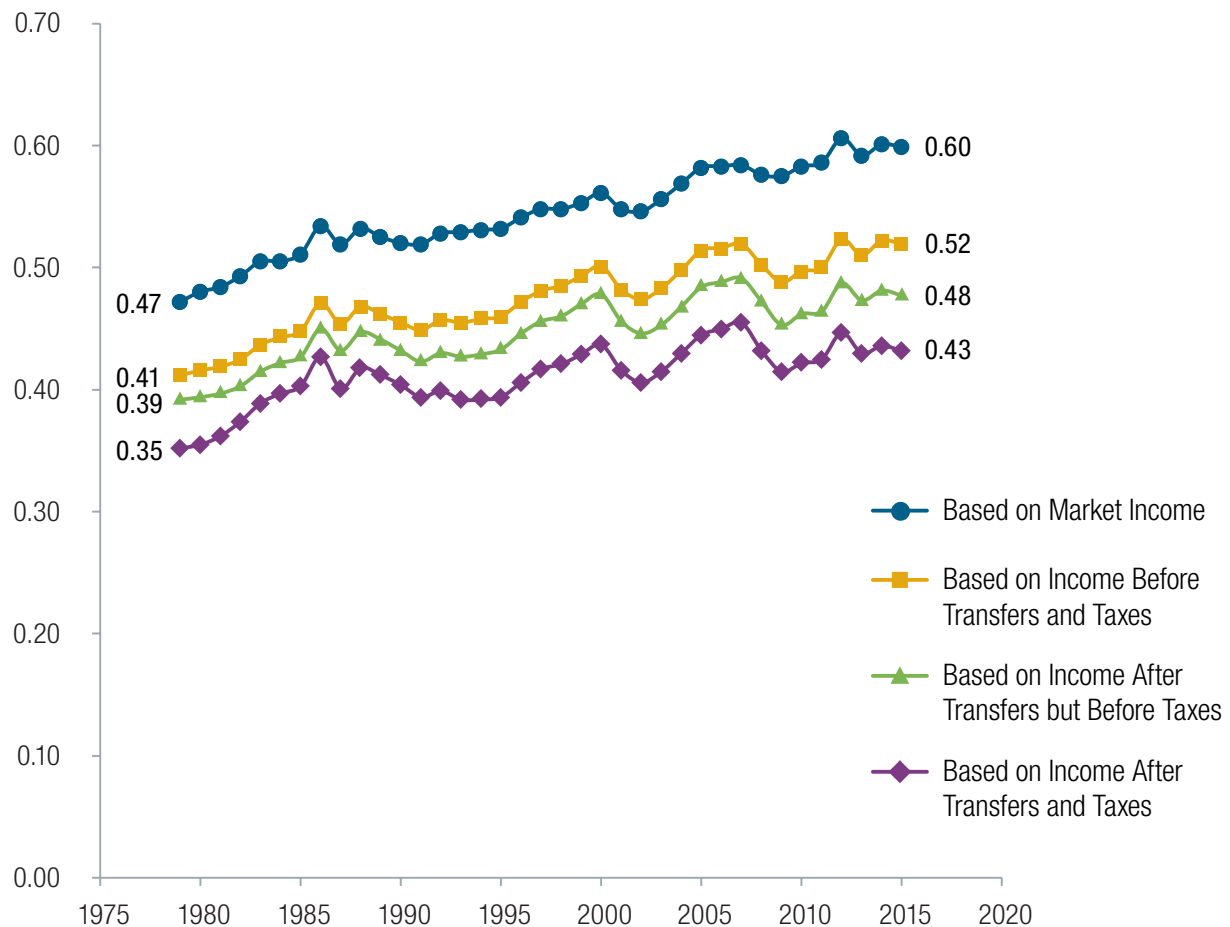
SOURCE: U.S. Department of Commerce, Census Bureau, 2016 American Community Survey (ACS) 1-Year Public Use Microdata Sample (PUMS) data. As included in U.S. Department of Education, National Center for Education Statistics (2017). *Digest of Education Statistics, 2017*, [Table 104.88]. Retrieved from https://nces.ed.gov/programs/digest/d17/tables/dt17_104.88.asp?current=yes.

Income and Wealth Inequality in the United States. Past editions of the *Indicators* reports document differences in college enrollment, completion, and attainment by income levels and other demographic characteristics. Beginning with the 2018 edition, we begin to look more closely at income and wealth equity distribution levels and educational attainment. STS Figures 8a to 8f present information on the distribution of income and wealth in the United States.¹⁹ The data come from the Census Bureau's household Current Population Survey (CPS),²⁰ the Internal Revenue Services' (IRS) Statistics of Income (SOI) data compiled from a large sample of individual income tax returns,²¹ and the Federal Reserve's triennial Survey of Consumer Finance.²² The Congressional Budget Office (CBO) has developed a model that combines CPS and SOI data to estimate household income both before and after taxes, as well as average taxes paid by income group back to 1979.²³

The Rise in the Gini Index. STS Figure 8a displays trends in the Gini index from 1979 to 2015 as published by the Congressional Budget Office. The Gini index is a measure of income inequality that ranges from zero (the most equal distribution) to 1.0 (the least equal distribution). Gini indexes are calculated using income measures adjusted for household size. The larger the Gini index, the higher the inequality. Market income consists of labor income, business income, capital gains (profits realized from the sale of assets), capital income excluding capital gains, income received in retirement for past services, and other sources of income. Before-tax income is market income plus government transfers. Government transfers are cash payments and in-kind benefits from social insurance and other government assistance programs, such as Social Security benefits. Transfers include payments and benefits from federal, state, and local governments. After-tax income is before-tax income minus federal taxes. Federal taxes include individual income taxes, payroll taxes, corporate income taxes, and excise taxes. STS Figure 8a shows that, for all three measures of income, the Gini coefficient increased from 1979 to 2015. The Market Income Gini Index was 0.60 in 2015, up from 0.47 in 1979. The After-Tax and Transfers Income Gini Index increased from 0.35 in 1979 to 0.43 in 2015.

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- 19 An excellent guide to data on income inequality is provided in *A Guide to Statistics on Historical Trends in Income Inequity* by Chad Stone, Danilo Trisi, Arlo Shermant and Emily Horton (2017) published by the Center on Budget and Policy Priorities <https://www.cbpp.org/research/poverty-and-inequality/a-guide-to-statistics-on-historical-trends-in-income-inequality>.
 - 20 The Census Bureau publishes annual reports on income, poverty, and health insurance coverage in the U.S. based on the CPS data <http://www.census.gov/topics/income-poverty/income.html>.
 - 21 IRS publishes an annual report on individual income tax returns based on the SOI Internal Revenue Service, "SOI Tax Stats — Individual Income Tax Returns Publication 1304," multiple years available <https://www.irs.gov/uac/soi-tax-stats-individual-income-tax-returns-publication-1304-complete-report>.
 - 22 The Federal Reserve collects income and wealth data in its triennial sample Survey of Consumer Finances (SCF). The last SCF was conducted in 2017 and covered information for 2016. Jesse Bricker *et al.* (2017, September). Changes in U.S. Family Finances from 2013 to 2016: Evidence from the Survey of Consumer Finances, Federal Reserve Bulletin, 103(3). Retrieved from <https://www.federalreserve.gov/publications/files/scf17.pdf>.
 - 23 Congressional Budget Office (November 8, 2018). *Distribution of Household Income, 2015* (November 2018). Retrieved from <https://www.cbo.gov/publication/54646>.

STS Figure 8a: Gini index based on market, before-tax, and after-tax income: 1979 to 2015



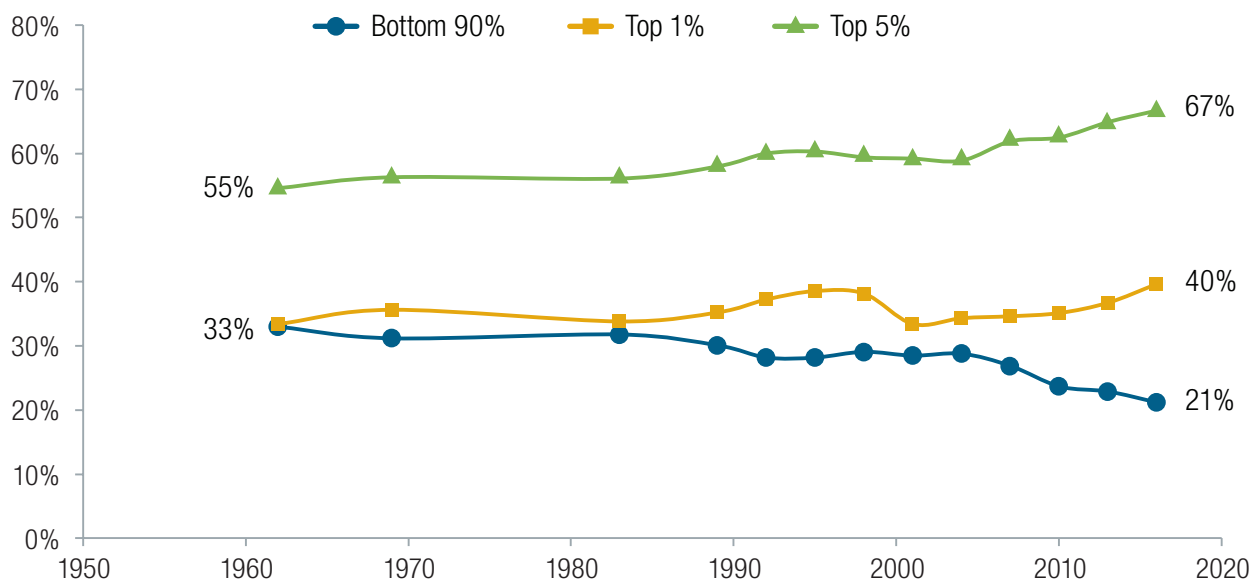
NOTE: The Gini index is a measure of income inequality that ranges from zero (the most equal distribution) to one (the least equal distribution). Gini indexes are calculated using income measures adjusted for household size. The larger the Gini index, the higher the inequality level. Market income consists of labor income, business income, capital gains (profits realized from the sale of assets), capital income excluding capital gains, income received in retirement for past services, and other sources of income. Before-tax income is market income plus government transfers. Government transfers are cash payments and in-kind benefits from social insurance and other government assistance programs. Transfers include payments and benefits from federal, state, and local governments. After-tax income is before-tax income minus federal taxes. Federal taxes include individual income taxes, payroll taxes, corporate income taxes, and excise taxes.

SOURCE: Congressional Budget Office (November 8, 2018). *Distribution of Household Income, 2015*. Retrieved from <https://www.cbo.gov/publication/54646>.

Rise in Share of Wealth Held by Top 1 Percent. STS Figure 8b(i), using data from the National Bureau of Economic Research presents data on the percent of wealth held by the top 1 percent, the top 5 percent and the bottom 90 percent from 1962 to 2016. These data show the rise in wealth inequality such that in 2016 the top 5 percent had over two-thirds of the nation's wealth, the top 1 percent held 40 percent and the bottom 90 percent had just 21 percent.

Related data is presented using IRS reports from Emmanuel Saez and Gabriel Zucman (2016),²⁴ in analyses of the share of wealth held by the top 1 percent and the top 0.5 percent of families in the U.S. from 1913 to 2012. The current concentration of wealth is now approaching the high rates observed during the Great Depression in the late 1920s. After World War II until the late 1970s, the concentration of wealth declined. During the 1980s this trend reversed and has accelerated in the last two decades. Those in the highest income categories now hold as large a share of the nation's wealth as they did in the 1920s.²⁵

STS Figure 8b(i): Share of wealth held by top 5 percent, top 1 percent, and bottom 90 percent in United States: Selected Years: 1962 to 2016



NOTE: Over the past century, the share of America's wealth held by the nation's wealthiest has changed markedly. That share peaked in the late 1920s, right before the Great Depression, then fell by more than half over the next three decades. But the equalizing trends of the mid-20th century have now been almost completely undone. The wealthiest in the nation now hold as large a wealth share as they did in the 1920s.

SOURCE: National Bureau of Economic Research, as cited on the Inequality.org website. Retrieved from <https://inequality.org/facts/wealth-inequality/#household-wealth>.

²⁴ Saez, E., & Zucman, G. (2016). Wealth Inequality in the United States since 1913: Evidence from Capitalized Income Tax Data. *Quarterly Journal of Economics*, 131(2), 519-578. Retrieved from <http://eml.berkeley.edu/~saez/SaezZucman2016QJE.pdf>.

²⁵ National Bureau of Economic Research, as cited in Institute for Policy Studies, Inequality.org website. Retrieved from <https://inequality.org/facts/wealth-inequality/#household-wealth>.

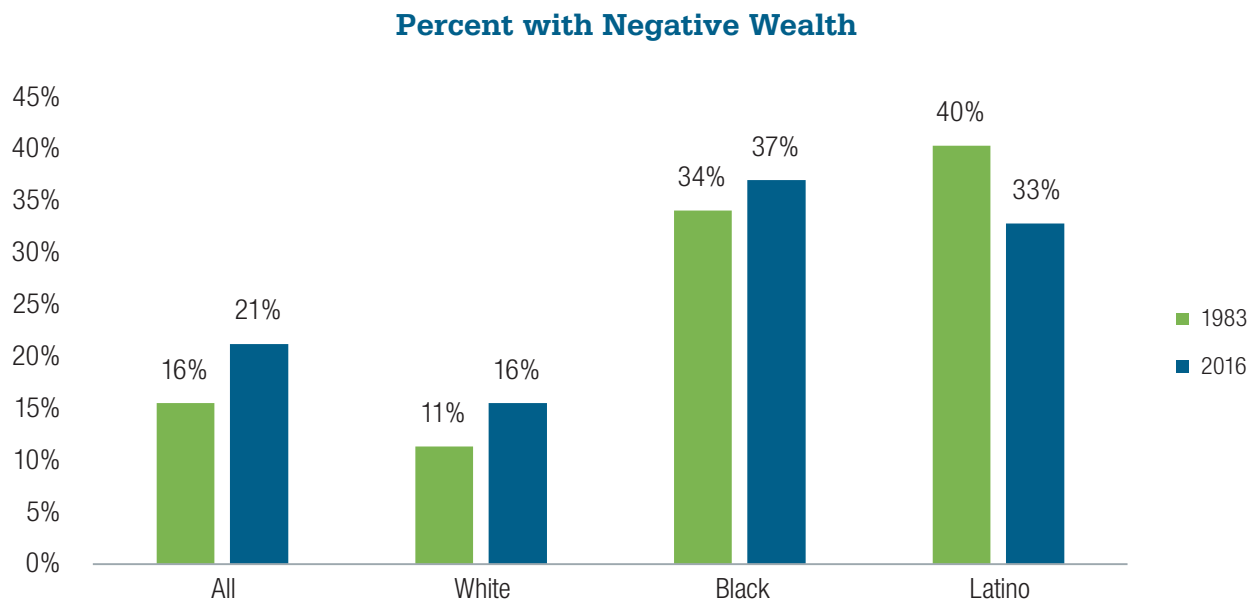
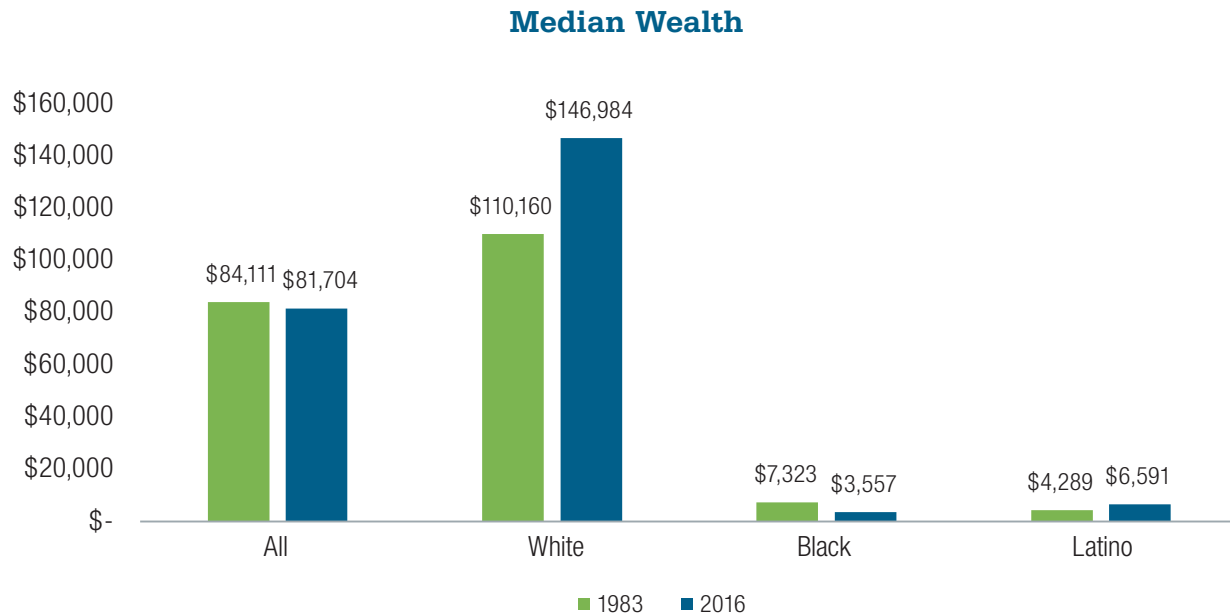
Wealth and Race/ethnicity. STS Figure 8b(ii) shows median family wealth and the percent of families with negative wealth by race/ethnicity in 1983 and 2016 in constant 2016 dollars. These are among the most unequal data reported in this *Indicators* report and have profound implications for issues of higher educational equity and justice in the United States.

Overall median family wealth declined by 2 percent in constant 2016 dollars between 1983 and 2016, falling from \$84,111 to \$81,704. But, the overall medians mask the stark contrast between the high median family wealth of Whites and the low median family wealth of Blacks and Latinos. Moreover, the median differences in family wealth increased between 1983 and 2016.

Between 1983 and 2016, White median family wealth increased by 33 percent in constant 2016 dollars, raising from \$110,160 to \$146,984. At the same time, Black median family wealth fell by 51 percent, declining from \$7,323 to \$3,557. In 1983 White median family wealth was 15 times higher than Black median family wealth; in 2016 it was 41 times higher. Latino median family wealth increased by 54 percent in constant 2016 dollars, increasing from \$4,289 in 1983 to \$6,591 in 2016. But, White median family wealth was 26 times higher than Hispanic family wealth in 1983 and 22 times higher in 2016.

Negative Family Wealth. Among the most disturbing of the wealth data by race/ethnicity is the percent of families with negative wealth, meaning that they owe more than they have in assets. The percent of all families with negative wealth was 21 percent in 2016, up from 16 percent in 1983. More than one-third (37 percent) of Black families and 33 percent of Hispanic families had negative wealth in 2016. The proportion of Black families with negative wealth increased from 34 percent in 1983 to 37 percent in 2016, while the percent of Latino families with negative family wealth declined from 40 percent in 1983 to 33 percent in 2016.

STS Figure 8b(ii): Median family wealth and percent of families with negative wealth by race/ethnicity: 1983 and 2016

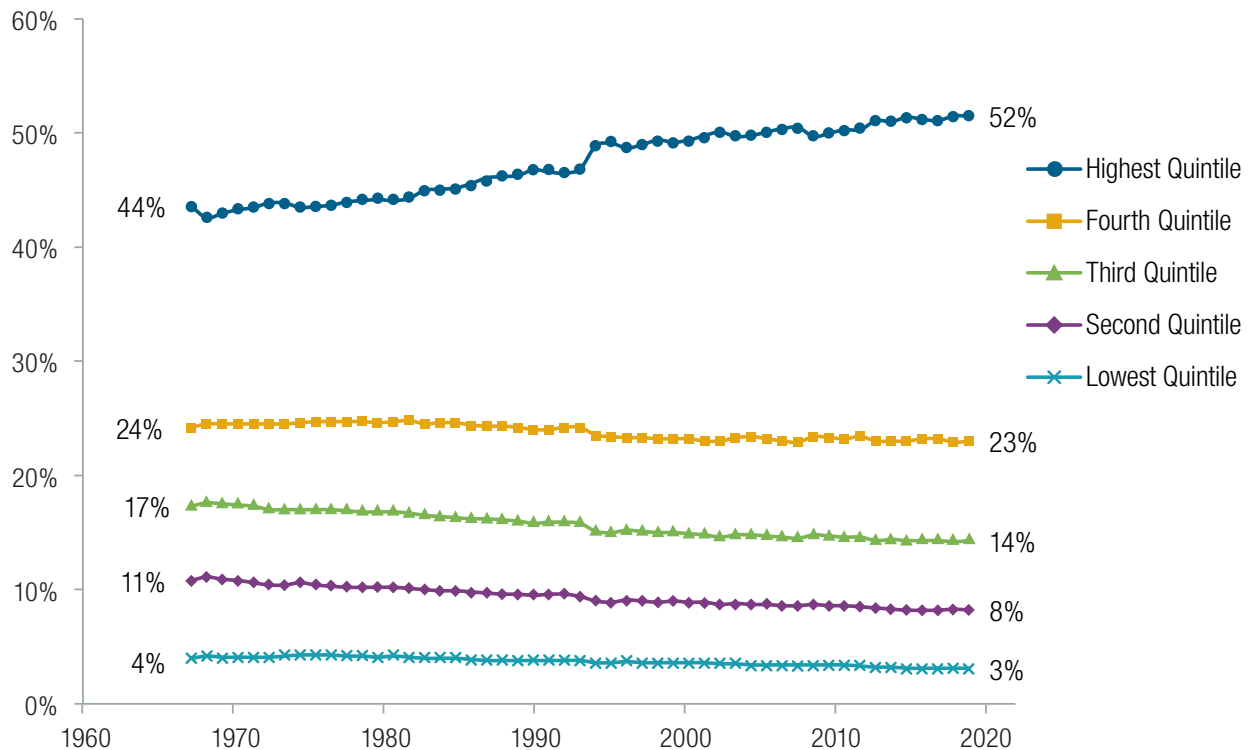


NOTE: This figure presents data on the median wealth of families by race/ethnicity in 2016 constant dollars. Also given is the percent of families that have zero or “negative” wealth (meaning the value of their debts exceeds the value of their assets).

SOURCE: Institute for Policy Studies, as cited on the Inequality.org website.
Retrieved from <https://inequality.org/facts/wealth-inequality/#household-wealth>.

Household Income Distribution by Quintiles. The Current Population Survey (CPS) data on household income by income quintiles from 1967 to 2017 also shows growing inequality (STS Figure 8c). The highest 20 percent of the nation's households had 52 percent of the income in 2017, up from 44 percent in 1967. The bottom 20 percent of households had 3 percent of the nation's household income in 2017, about the same share as in 1967 (4 percent).

STS Figure 8c: Shares of United States household income by quintiles: 1967-2017

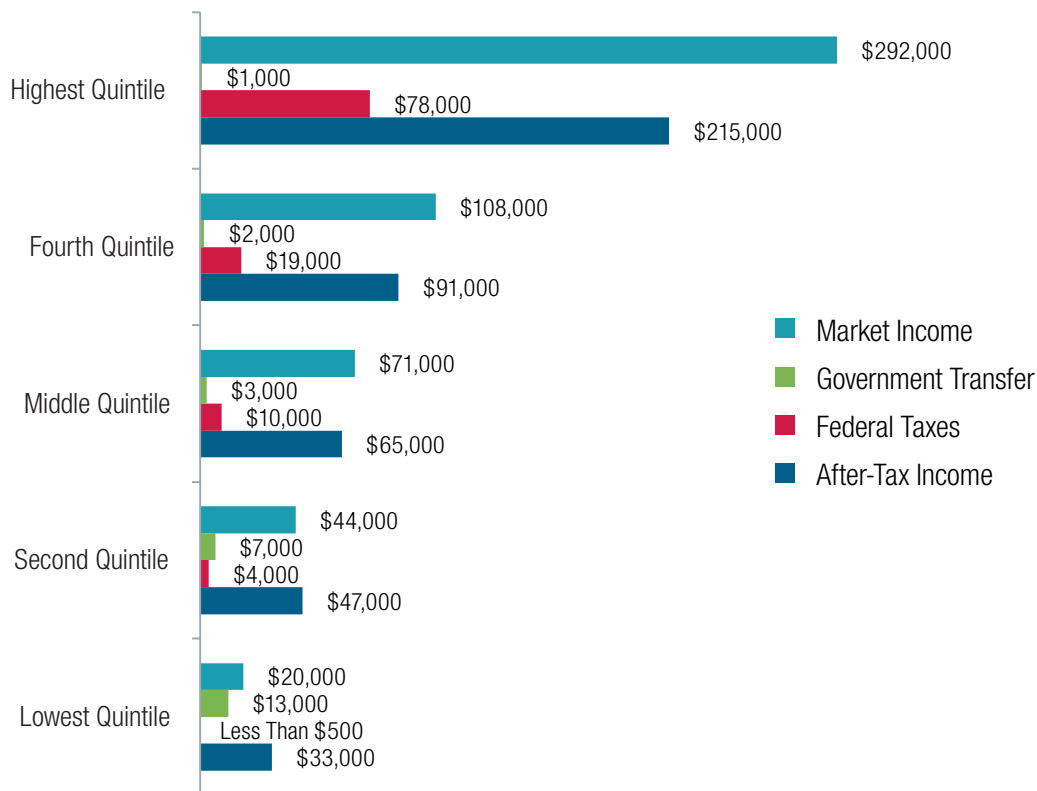


NOTE: Income in 2017 CPI-U-RS adjusted dollars. Beginning with 2010, standard errors calculated using replicate weights. For further explanation of income inequality measures, see “The Changing Shape of the Nation’s Income Distribution: 1947-1998,” Current Population Reports, Series P60-204.

SOURCE: Current Population Survey (CPS) Table A-2 Selected Measures of Household Income Dispersion: 1967-2017. Retrieved from <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-income-inequality.html>.

Range of Income. STS Figure 8d displays the average household income, government transfers, and taxes paid by income quintile. Quintile groupings are based on before-tax household income, adjusted for household size. In 2015, the highest 20 percent of households had a market income that was 15 times higher than the lowest quintile (\$292,000 versus \$20,000). After transfers and taxes, the highest quintile had an income that was, on average, 7 times higher than the household income of the lowest 20 percent (\$215,000 versus \$33,000). The disparity in household income between the top and bottom quintiles in the U.S. is among the largest level of inequality in the world.²⁶

STS Figure 8d: Average household market income, government transfers, federal taxes, and after-tax-income by before-tax income quintiles: 2015



NOTE: Market income consists of labor income, business income, capital gains (profits realized from the sale of assets), capital income excluding capital gains, income received in retirement for past services, and other sources of income. Government transfers are cash payments and in-kind benefits from social insurance and other government assistance programs. Those transfers include payments and benefits from federal, state, and local governments. Federal taxes include individual income taxes, payroll taxes, corporate income taxes, and excise taxes. After-tax income is before-tax income minus federal taxes. Income groups are created by ranking households by before-tax income, adjusted for household size. Quintiles (fifths) contain equal numbers of people.

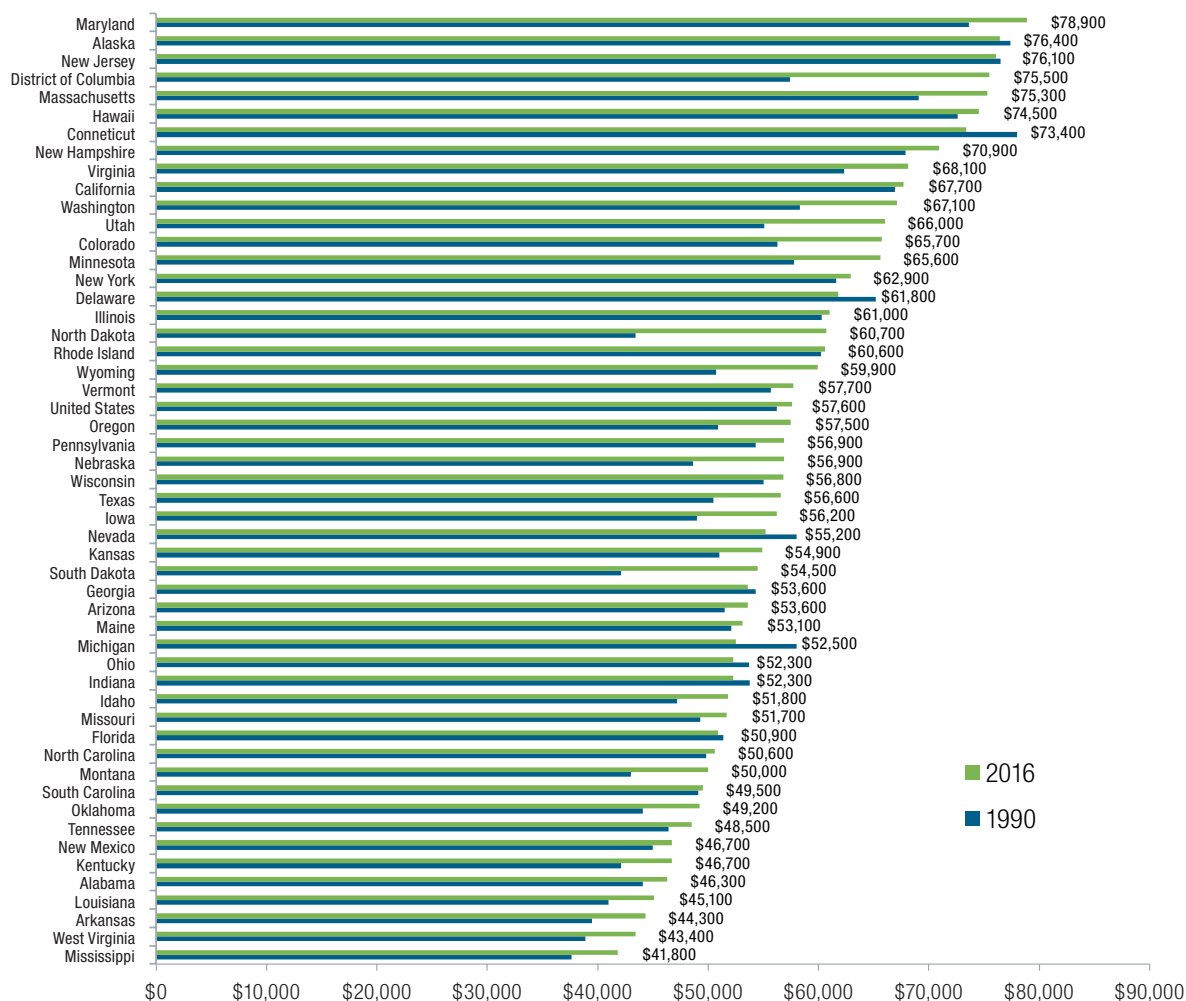
SOURCE: Congressional Budget Office (2018). *The Distribution of Household Income and Federal Taxes 2015*. Retrieved from https://www.cbo.gov/system/files?file=2018-11/54646-Distribution_of_Household_Income_2015_0.pdf.

²⁶ Pickett, K.E. & Wilkinson, R.G. (2015). Income Inequality and Health: A Causal Review. *Social Science & Medicine*, 128, 316-326; Wilkinson, R.G. & Pickett, K.E. (2006). Income Inequality and Population Health: A Review and Explanation of the Evidence. *Social Science & Medicine*, 62 (7), 1768-1784; Dorling, D. (2014). *Inequality and the 1%*. London: Verso.

Median Household Income by State. STS Figure 8e displays median household income by state in 1990 and 2016. The data on median income by state are from the Census and include all households. As indicated in the *Postsecondary Education Opportunity Newsletter*, the correlation between average per capita income and education levels was 0.79 in 2016, up from 0.41 in 1989.²⁷

Median household income varies widely across states, and in 2016 ranged from less than \$45,000 in Mississippi (\$41,800), West Virginia (\$43,400), and Arkansas (\$44,300), to more than \$70,000 in New Hampshire (\$70,900), Connecticut (\$73,400), Hawaii (\$74,500), Massachusetts (\$75,300), District of Columbia (\$75,500), New Jersey (\$76,100), Alaska (\$76,400), and Maryland (\$78,900).

STS Figure 8e: Median household income by state: 1990 and 2016



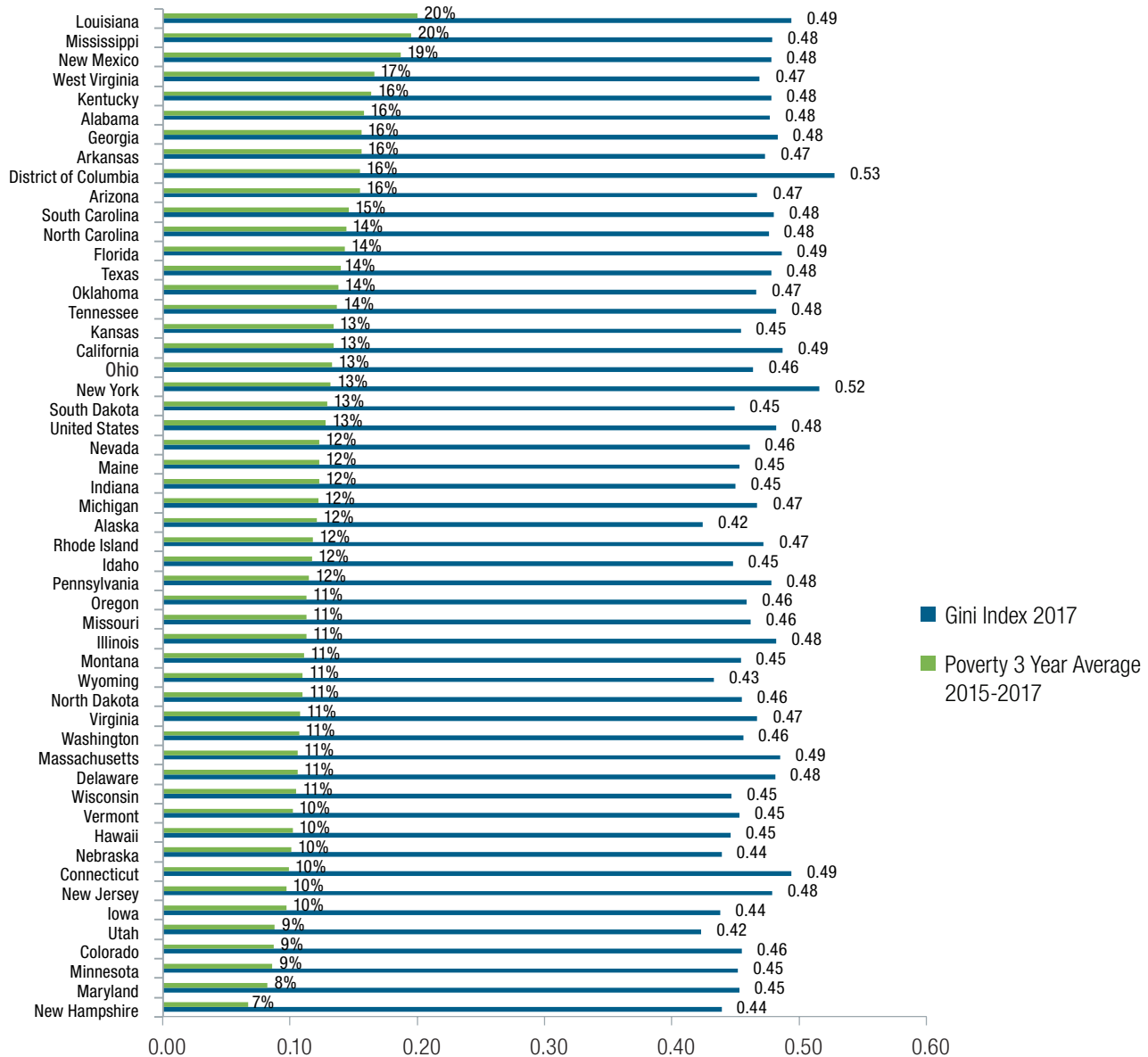
NOTE: Constant dollars adjusted by the Consumer Price Index research series using current methods (CPI-U-RS).

SOURCE: U.S. Department of Commerce, Census Bureau, 1990 Summary Tape File 3 (STF 3), "Median Household Income in 1989." <https://www.census.gov/hhes/www/income/data/historical/state/state1.html>; Decennial Census, 2000, Summary Social, Economic, and Housing Characteristics; Census 2000 Summary File 4 (SF 4). Retrieved from <https://www.census.gov/census2000/SF4.html>; and American Community Survey (ACS), selected years, 2005 through 2016. Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>. As included in U.S. Department of Education, National Center for Education Statistics (2017). NCES, *Digest of Education Statistics 2017*, [Table 102.30.]. Retrieved from https://nces.ed.gov/programs/digest/d17/tables/dt17_102.30.asp?current=yes.

²⁷ Mortenson, T. (2017). State Correlates of Educational Attainment. *Postsecondary Education Opportunity*, 293. Washington, DC: Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org.

Poverty and Gini Index by State. STS Figure 8f displays the percent in poverty and the Gini index by state. In 2016, average poverty rates ranged from 7 percent in New Hampshire and 8 percent in Maryland to 20 percent in Louisiana and Mississippi. Gini index rates ranged from .42 in Utah and Alaska, .43 in Wyoming to .52 in New York and .53 in the District of Columbia.

STS Figure 8f: Average poverty rate and Gini Inequality Index by state: 2015-2017



NOTE: Represents 3-year average percentage of people in poverty 2015-2017. The Gini index is a measure of income inequality ranging from 0 to 1.0, with 0 indicating complete equality (all households having an equal share of income) and one indicating complete inequality (one household having all the income and the rest having none). The 2017 Gini index for the U.S. was 0.481.

SOURCE: U.S. Census Bureau, Current Population Survey, 2015-2018 Annual Social and Economic Supplements (Poverty rates). Retrieved from <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-income-inequality.html>; America's Health Rankings analysis of U.S. Census Bureau, American Community Survey, As included in United Health Foundation (2018) America's Health Rankings [Gini Index]. Retrieved from <https://www.americashealthrankings.org/explore/annual/measure/gini>.

Inequality and Intergenerational Mobility. Elizabeth Jacobs and Liz Hipple reviewed recent social science literature on economic inequality and intergenerational mobility, asking the question: “*Are today’s inequalities limiting tomorrow’s opportunities?*”²⁸ Among the key findings of the research reviewed is that, in comparison to other developed countries, the United States has both very high levels of inequality and low levels of intergenerational mobility.²⁹

Research shows that the relationship between a parent and child’s economic outcomes is strongest in countries with high inequality (such as the United States) and lower inequality (such as Finland, Norway, and Denmark).³⁰ Economist Raj Chetty identified dramatic geographic variation in mobility across the United States and by race/ethnicity. The data also reveal that, in the United States, there has been an inflation-adjusted decline in mobility for each successive birth cohort since 1940.³¹

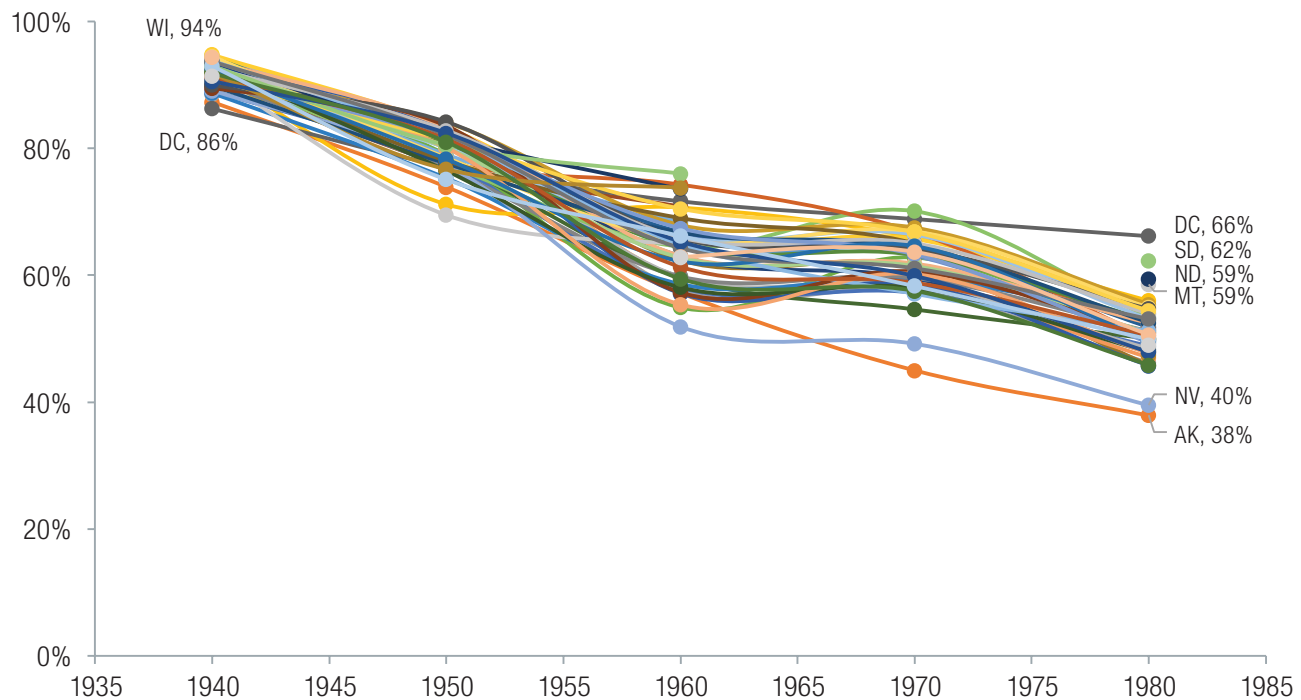
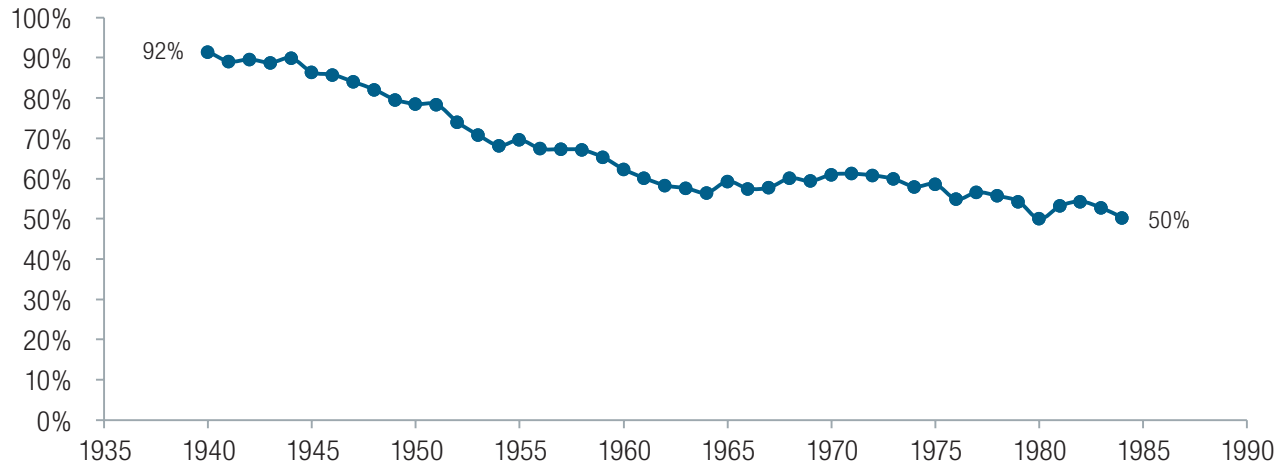
STS Figure 9 uses national and state data provided on the *Opportunity Insights* website to document the decline in the percent of children who at age 30 earn more than their parents as also measured at age 30. The data follow cohorts born from 1940 to 1984.³² The conclusion of the analyses is as follows:

*The rates of absolute mobility have fallen from approximately 90% for children born in 1940 to 50% for children born in the 1980s. Absolute income mobility has fallen across the entire income distribution, with the largest declines for families in the middle class.*³³

The data by state included in STS Figure 9 show that this measure of intergenerational mobility declined over the study period in all states. STS Figure 9 also shows an increase in the variation in this measure of mobility across states.

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- 28 Jacobs, E. & Hipple, L. (2018). *Are Today’s Inequalities Limiting Tomorrow’s Opportunities?: A Review of the Social Sciences Literature on Economic Inequality and Intergenerational Mobility*. Washington, DC: Washington Center for Equitable Growth. Retrieved from: <https://equitablegrowth.org/research-paper/are-todays-inequalities-limiting-tomorrows-opportunities/>.
- 29 Jantti, M., Bratsberg, B., Røed, K., Raaum, O., Naylor, R., Österbacka, E., Björklund, A., & Eriksson, T. (2006). *American Exceptionalism in a New Light: A Comparison of Intergenerational Earnings Mobility in the Nordic Countries, the United Kingdom, and the United States*. Bonn: Institute for the Study of Labor. Retrieved from <http://ftp.iza.org/dp1938.pdf>.
- 30 Corak, M. (2013). Income Inequality, Equality of Opportunity and Intergenerational Mobility. *Journal of Economic Perspectives*, 27(3), 79–102.
- 31 Chetty, R., Grusky, D., Hell, M., Hendren, N., Manduca, R., & Nrang, J. (2017). The Fading American Dream: Trends in Absolute Income Mobility since 1940. *Science*, 356 (6336), 398–406. Retrieved from <http://science.sciencemag.org/content/356/6336/398/tab-pdf>; Chetty, R., Friedman, J. N., Saez, E., Turner, N., & Yagan, D. (2017). *Mobility Report Cards: The Role of Colleges in Intergenerational Mobility*. Cambridge, MA: National Bureau of Economic Research. NBER Working Paper No. 23618. Retrieved from <https://www.nber.org/papers/w23618.pdf>; Chetty, R., Hendren, N., Jones, M.R., Porter, S.R. (2018). *Race and Economic Opportunity in the United States: An Intergenerational Perspective*. Cambridge, MA: National Bureau of Economic Research. NBER Working Paper No. 24441.
- 32 *Opportunity Insights* (<https://opportunityinsights.org>) is a non-partisan, not-for-profit organization based at Harvard University and directed by Raj Chetty, John Friedman, and Nathaniel Hendren. The website gives its’ mission as follows: “We conduct scientific research using “big data” on how to improve upward mobility and work collaboratively with local stakeholders to translate these research findings into policy change. We also train the next generation of social scientists and practitioners to improve opportunity for all.”
- 33 Chetty, R., et al. (2019). Retrieved from website in February 2019 <https://opportunityinsights.org/data/>.

STS Figure 9: Percent of cohorts of children who at age 30 have a higher inflation-adjusted income than their parents at age 30: 1940-1984 birth cohorts



NOTE: Absolute mobility is measured by comparing children's household incomes at age 30 (CPI adjusted) with their parents' household incomes at age 30. Rates of absolute mobility declined from about 90 percent for children born in the 1940s to 50 percent to those born in the 1980s. Absolute mobility declined across the entire distribution, with the largest declines in the middle-income groups.

SOURCE: Chetty, R., Grusky, D., Hell, M., Hendren, N., Manduca, R., & Nrang, J. (2017). The Fading American Dream: Trends in Absolute Income Mobility since 1940. *Science*, 356 (6336), 398–406. Retrieved from <http://science.sciencemag.org/content/356/6336/398/tab-pdf>; Opportunity Insights website, The Fading American Dream: Trends in Absolute Income Mobility since 1940 [Data file]. Retrieved from https://opportunityinsights.org/data/?geographic_level=0&topic=0&paper_id=546#resource-listing.

EQUITY INDICATOR 1:

WHO ENROLLS IN POSTSECONDARY EDUCATION?

In 2017, an estimated 78 percent of 18- to 24- year-olds from the highest family income quartile enrolled in postsecondary education compared with 48 percent of those in the lowest quartile. Among those who graduated from high school, college enrollment rates were 87 percent for those in the highest family income quartile and 63 percent for those in the lowest quartile.

Equity Indicators 1 (a-j): Definitions

Indicator 1 examines participation in postsecondary education by family income, race/ethnicity, parents' socioeconomic status, and state. The data are from three major sources. The first is the cross-sectional annual data from the U.S. Census Bureau's Current Population Survey (CPS) and the American Community Survey (ACS), which provides household-based national estimates and includes data on enrollment in any type of postsecondary institution. The second is the series of national high school longitudinal studies that have been conducted by the National Center for Education Statistics (NCES) at approximately 10-year intervals over the last 40 years. These studies include the High School Longitudinal Study (HSLS) of 9th graders in 2009; Education Longitudinal Study of 10th graders in 2002 (ELS: 2002); National Education Longitudinal Study of 8th graders in 1988 (NELS:88); and High School and Beyond Study of 1980 10th graders (HS&B:1980). For those studies for which sufficient time has elapsed, we report data from the follow-ups 8 or 10 years after expected high school graduation (2012, 2000, and 1992, respectively).³⁴ The most recent NCES High School Longitudinal Study began in 2009 with 9th graders and had an 11th grade survey in 2012. An update in 2013 collected information on high school completion and college enrollment in the fall after the expected on-time high school graduation. A second follow-up in 2016 provides data on students approximately 3 years after expected high school graduation. The third data source draws from free and reduced price lunch estimates from the U.S. Department of Agriculture and Pell award data to estimate enrollment of low-income students by state.³⁵

³⁴ NCES also sponsored a study of the High School Class of 1972. Because this study started with the senior class and had follow-up limitations, we do not include data from this study for college continuation rates. We use information from this study to observe trends in parents' education in the Setting the Stage section and Indicator 2d describing selectivity of intended institutions among high school seniors.

³⁵ Mortenson, T. (2019). Unequal Family Income and Unequal Opportunity for Higher Education 1970-2017. *Postsecondary Education Opportunity*, 302. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education.

Definitions of the indicators and information about classifications are noted below.

- **Cohort College Participation Rate**³⁶ is defined as the percent of dependent 18- to 24- year-olds who are not enrolled in high school but are enrolled in any type of postsecondary education, as measured by the Current Population Survey (CPS) and published by the Bureau of Labor Statistics (BLS).
- **High School Graduates College Continuation Rate** is defined as the percent of dependent 18- to 24- year-old high school graduates who are enrolled in college, as measured by the CPS and published by the BLS. The High School Graduates College Continuation Rate is higher than the Cohort College Participation Rate because it is contingent on high school completion.
- **Enrolled in postsecondary education within 8 or 10 years of expected high school graduation** is defined as the percent of students who, in nationally representative school-based longitudinal studies, self-reported having ever enrolled in any type of postsecondary educational institution, regardless of degree-granting status of the institution or the student's degree or certificate attainment status.
- **Income** is most frequently reported in this report in quartiles (4 equal-sized groups). Reflecting the approaches of a given data source, we also report divisions of family income in 3 categories (high, medium, or low) and 5 groups (quintiles). Using income quartiles or quintiles facilitates comparisons of changes over time, as they reflect the distribution in a given year. In 2017, family income quartiles for dependent 18- to 24-year-olds identified by the distribution of family income data in the CPS were:
 - *Lowest quartile*: Less than \$42,056
 - *Second quartile*: \$42,056 to \$74,904
 - *Third quartile*: \$74,904 to \$133,299
 - *Highest quartile*: \$133,299 and above

In 2017, the maximum income for the lowest quartile (\$42,056) was less than one-third (31 percent) of the **minimum** income level of the highest quartile (\$133,299). Reflecting growing income inequality in the United States, the difference between the highest and lowest family income quartiles has increased since 1987.³⁷

- **Race/Ethnicity**. We use the race and ethnicity categories and titles (for example, “Black,” “Black or African American”) in the charts and text as reported by each data source. As race/ethnicity categories have changed over time and vary by study, race/ethnicity categories and titles used in this report also vary based on the original data sources. The more recent studies use race and ethnicity variables that reflect federal requirements for collecting race separately from ethnicity and allow respondents to mark more than one choice for race. When the labeling for race/ethnicity has changed over time for the same data source, we report the current labels. See the notes to the figures for more detail.
- **Socioeconomic Status (SES)** is measured using the socioeconomic status (SES) composite included in the NCES longitudinal studies. NCES created the SES composite based on data from the parent questionnaires or data imputed from the student questionnaires. For the 5 NCES high school longitudinal studies, SES was derived using 5 equally-weighted components: father's/guardian's education, mother's/guardian's education, family income, father's/guardian's occupational prestige score, and mother's/guardian's occupational prestige score.³⁸

36 In the 2015 to 2017 editions of the *Indicators* report, we used the term Cohort College Continuation Rate. In the 2018 edition, we use Cohort College Participation Rate to avoid confusion with the High School Graduates College Continuation Rate. The former includes all members of a given age cohort whereas the latter includes only high school graduates.

37 See Appendix A for data on the upper limits of the lowest, second, and third quartiles based on the CPS data from 1987 to present.

38 Cahalan, M., Ingles, S., Burns, L., & Planty, M. (2006). *United States High School Sophomores: A Twenty-Two Year Comparison, 1980-2002*, Statistical Analysis Report (NCES 2006-327). Washington, DC: U.S. Department of Education.

Cautions and Limitations. This report relies on data compiled over long periods of time in an effort to observe trends. As noted throughout, data from sample surveys such as the CPS and NCES longitudinal studies are subject to sampling error and changes in definitions and study designs. For example, the income and race/ethnicity data in the CPS suffer from small sample sizes and larger sampling errors than the estimates for the whole population. To address this limitation, in many cases we use 3-year moving averages. As noted above, definitions of race/ethnicity have also changed over time. The NCES high school longitudinal studies have complex multi-level school and student sample designs and have cohorts starting in different grade levels, ranging from 8th to 12th grade. Caution is needed in interpreting the trend data in this report, especially with regard to conclusions that may be drawn from small changes.

Equity Indicator 1a: How Do Cohort College Participation Rates for High School Leavers Vary by Family Income?

Equity Indicator 1a shows the cohort college participation rate for recent school leavers (including individuals who did and did not complete high school) by family income quartile from 1970 to 2017.³⁹ For all income groups, the cohort college participation rate was higher in 2017 than in 1980. The college participation rate for the lowest income quartile was relatively stable from 1970 to 1990 but has generally increased since 1990.

In 2017, 78 percent of high school leavers between the ages of 18 and 24 from the highest family income quartile had enrolled in college, compared with 48 percent of those in the lowest quartile. College participation rates for high school leavers from the lowest quartile increased from 32 percent in 1990 to 48 percent in 2017. Over the same period, the share of high school leavers from the highest income quartile who were enrolled in college increased from 75 percent in 1990 to 78 percent in 2017. Because of differential rates of increase over this period, the gap in postsecondary education enrollment between those in the lowest and highest family income quartiles is smaller in 2017 (30 percentage points) than in 1970 (46 percentage points) and 1990 (43 percentage points).

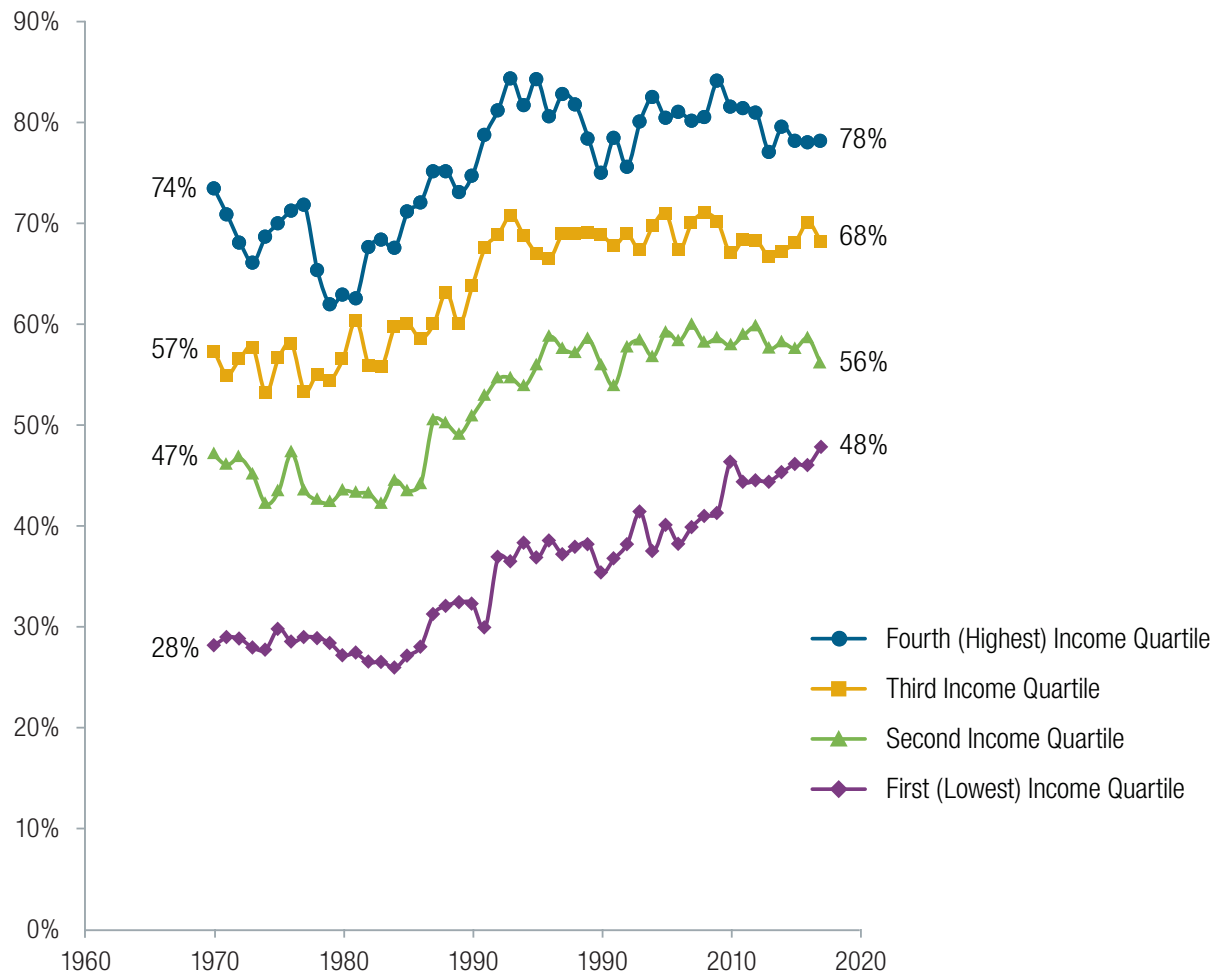
Since 1990, college participation rates increased for students in the lowest income quartile but remained relatively unchanged for students in the three higher income quartiles. Nonetheless, in 2017 college participation rates were 30 percentage points lower for students in the lowest income quartile than for those in the highest quartile.

Equity Indicator 1b: How Do High School Graduates College Continuation Rates Vary by Family Income?

Equity Indicator 1b shows similar trends in High School Graduates College Continuation Rates by family income quartile. For high school graduates in the highest family income quartile, the college continuation rate was 87 percent in 2017, up from 79 percent in 1990 (and 79 percent in 1970). For high school graduates in the lowest quartile, the college continuation rate was 63 percent in 2017, up from 48 percent in 1990 (and 46 percent in 1970). The gap in college continuation rates for high school graduates in the highest and lowest income quartiles was 24 percentage points in 2017, down from 31 percentage points in 1990 (and 33 percentage points in 1970).

³⁹ In the 2015 to 2017 editions of the *Indicators* report, we used the term Cohort College Continuation Rate. In the 2018 and 2019 editions we use Cohort College Participation Rate to avoid confusion with the High School Graduates College Continuation Rate. The former includes all members of a given age cohort, whereas the latter includes only high school graduates.

Equity Indicator 1a: Cohort College Participation Rates by family income quartile for dependent 18-to 24-year-olds: 1970 to 2017



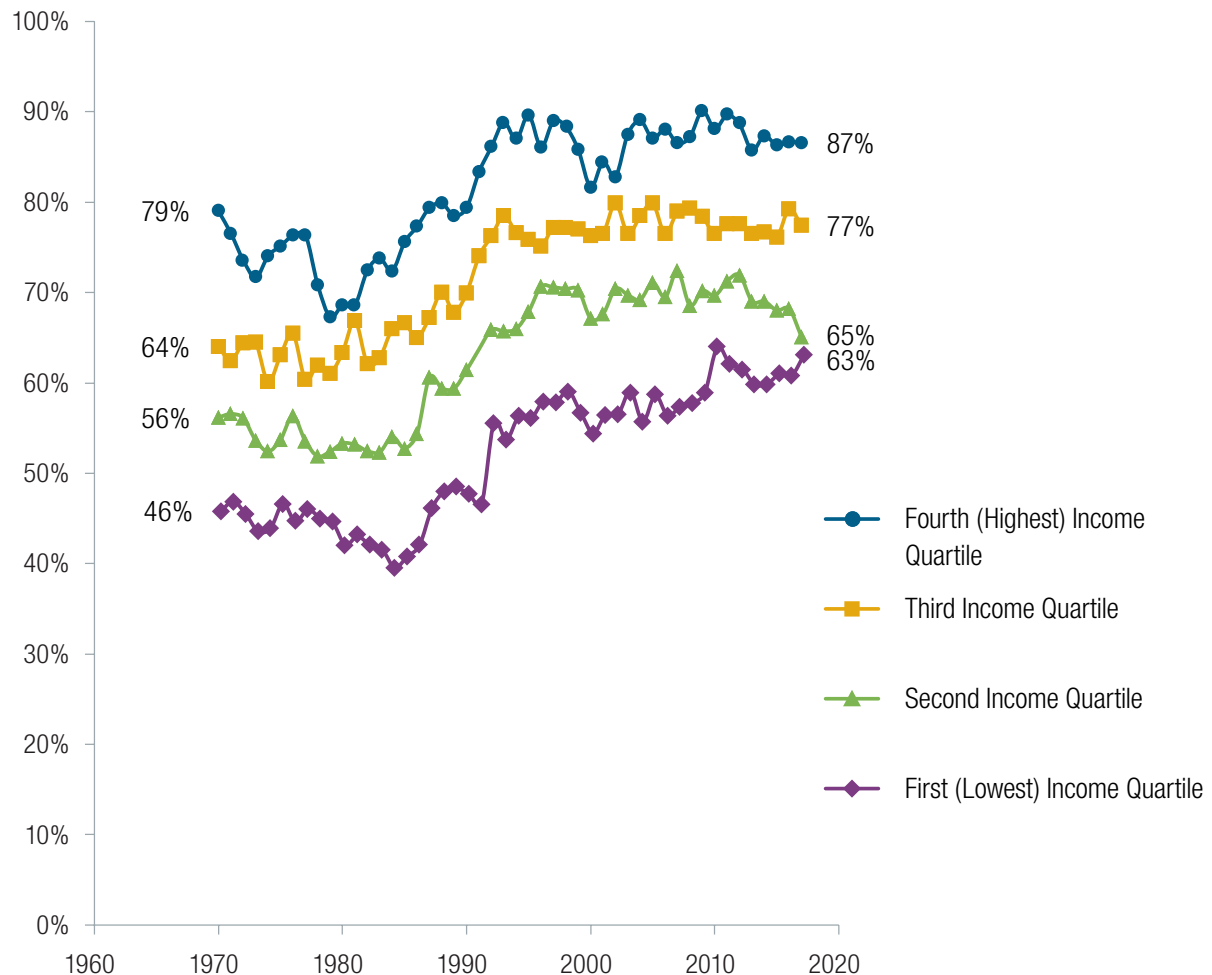
Indicator Status: High Inequality but Narrowing Gap

There was a 30 percentage-point gap in college enrollment between dependent 18- to 24-year-olds in the highest and lowest income quartiles in 2017, compared with a 43 percentage-point gap in 1990 and a 46 percentage-point gap in 1970.

NOTE: The Cohort College Participation Rate is tabulated based on the total number in the cohort year and includes those who have not completed high school. Information on school enrollment and work activity is collected monthly in the Current Population Survey (CPS), a national survey of about 60,000 households, which provides information on employment and unemployment. Each October, a supplement to the CPS gathers information about school enrollment.

SOURCE: Calculated from October Current Population Survey File (formerly Table 14 in Census Bureau's School Enrollment Report), tabulated using Census online data retrieval tool, DataFerrett, <https://dataferrett.census.gov/> U.S. Census Bureau; School Enrollment Data, 1970-2017, compiled by Nicole Brunt and Tom Mortenson.

Equity Indicator 1b: High School Graduates College Continuation Rates by family income quartile: 1970 to 2017



Indicator Status: High Inequality but Narrowing Gap

There was a 24 percentage-point gap in college continuation rates between high school graduates in the highest and lowest income quartiles in 2017, compared with a 31 percentage-point gap in 1990 and a 33 percentage-point gap in 1970.

NOTE: The High School Graduates College Continuation Rate is the percent of 18- to 24-year-old high school graduates who were enrolled in a postsecondary education institution of any type.

SOURCE: Calculated from October Current Population Survey File (formerly Table 14 in Census Bureau's School Enrollment Report), tabulated using Census online data retrieval tool, DataFerrett, <https://dataferrett.census.gov/> U.S. Census Bureau; School Enrollment Data, 1970-2017, compiled by Nicole Brunt and Tom Mortenson.

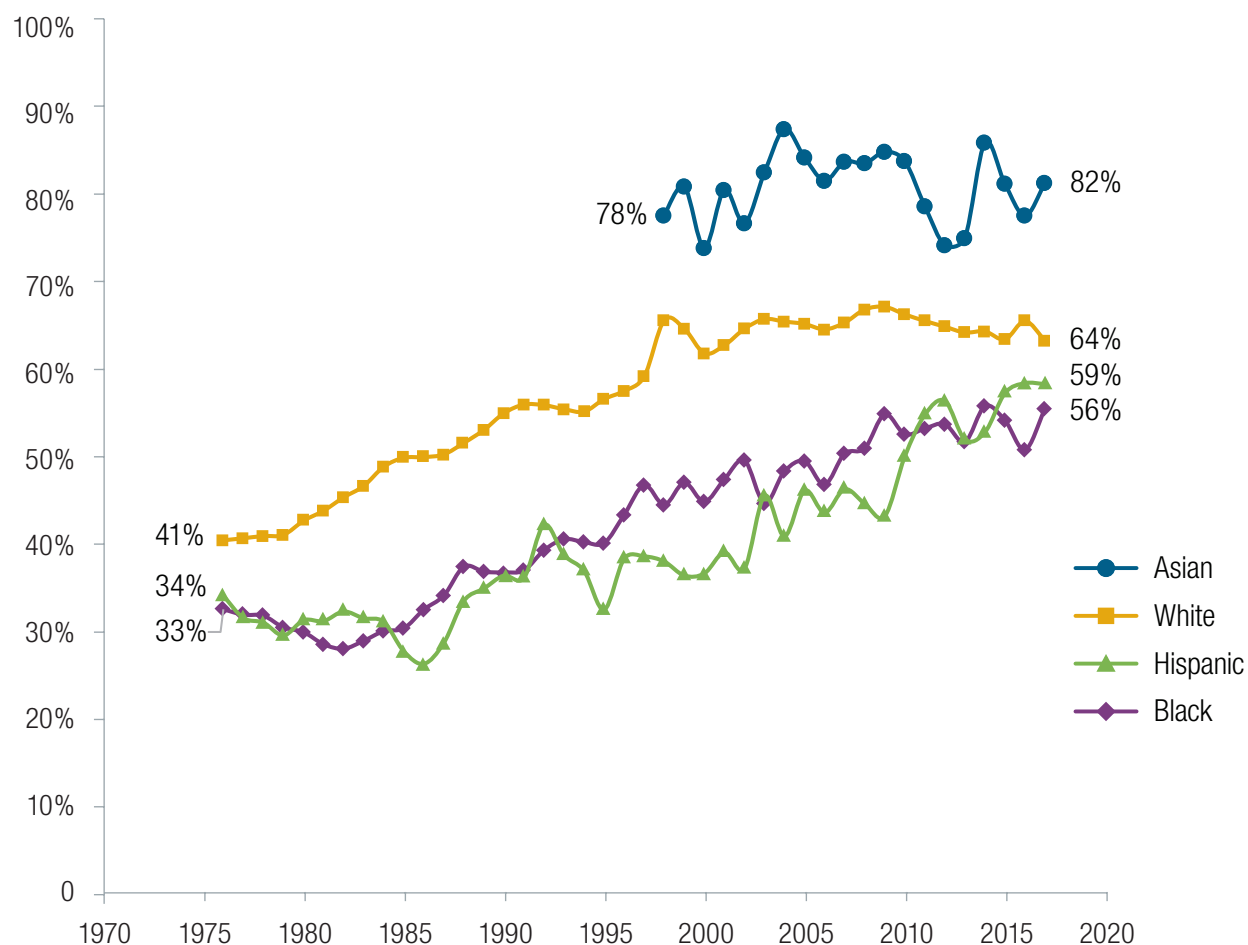
Equity Indicator 1c(i): How Do Cohort College Participation Rates of High School Leavers Vary by Race/Ethnicity?

Equity Indicator 1c(i) uses Current Population Survey (CPS) data to examine Cohort College Participation Rates for dependent 18- to 24-year-olds who are not enrolled in high school (high school graduates and non-graduates) by race/ethnicity from 1976 to 2017. Categories used for race/ethnicity in government statistics have changed over time. Data for Asians are not available until 1998. For Indicator 1c(i), the race categories (White, Black, Asian) exclude those of Hispanic ethnic origin. Estimates by race/ethnicity have larger sampling errors than estimates for the total population due to smaller population and sample sizes. Estimates are also impacted by changes in the age composition of the group and income distribution by race/ethnicity.⁴⁰ Year-to-year fluctuations may be related to sampling error or differences in how respondents chose to classify themselves. Readers are cautioned against using the point estimates to indicate small changes.

Indicator 1c(i) shows that, in 2017, 82 percent of Asian and 64 percent of White recent high school leavers were enrolled in college, compared with 59 percent of Hispanics and 56 percent of Blacks. In 1976, about 41 percent of White high school leavers were enrolled in college, compared with 33 percent of Blacks and 34 percent of Hispanics. Between 1976 and 2017, college participation rates were consistently higher for Asian and White high school leavers than for Black and Hispanic high school leavers.

⁴⁰ Pfeffer, F. T. , Danziger, S., & Schoeni, R. (2013). Wealth Disparities before and after the Great Recession. *Annals of the American Academy of Political and Social Science*, 650(1), 98–123. This paper reports that between 2007 and 2011, one-fourth of American families lost at least 75 percent of their wealth and more than half of all families lost at least 25 percent of their wealth. The analysis also shows that the large relative losses were disproportionately concentrated among lower income, less educated, and minority households.

Equity Indicator 1c(i): Cohort College Participation Rates of recent high school leavers by race/ethnicity: 1976 to 2017



Indicator Status: Gaps Persist by Race/Ethnicity

Among dependent 18- to 24-year-old individuals who are not enrolled in high school, Cohort College Participation Rates in 2017 were 8 percentage points higher for Whites than for Blacks, and 5 percentage points higher for Whites than for Hispanics. In 1976, college participation rates were 8 percentage points higher for White high school leavers than for Blacks and 7 percentage points higher than for Hispanics.

NOTE: Caution is needed in interpreting these data due to small sample sizes when CPS is broken down by race/ethnicity and changing categorization and self-reporting patterns over time. Race categories exclude persons of Hispanic ethnicity except where otherwise noted. The Cohort College Participation Rate is tabulated based on the total number in the cohort year and includes those who have not completed high school. Data for Asian students were reported beginning in 1998. Annual data collected by Census and reported by BLS are from the October supplement to the Current Population Survey (CPS), a nationwide survey of about 60,000 households. Numbers are revised slightly from those reported previously. Data represent 3-year moving average.

SOURCE: U.S. Census Bureau, 1976-2017, as adapted by Tom Mortenson, *Postsecondary Education Opportunity (PEO) Newsletters* and database, Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org Calculated from October Current Population Survey File (formerly Table 14 in Census Bureau's School Enrollment Report), tabulated using Census online data retrieval tool, DataFerrett, <https://dataferrett.census.gov/>.

Equity Indicator 1c(ii): How Do Cohort College Participation Rates of High School Leavers by Race/Ethnicity Vary by Family Income Quartiles?

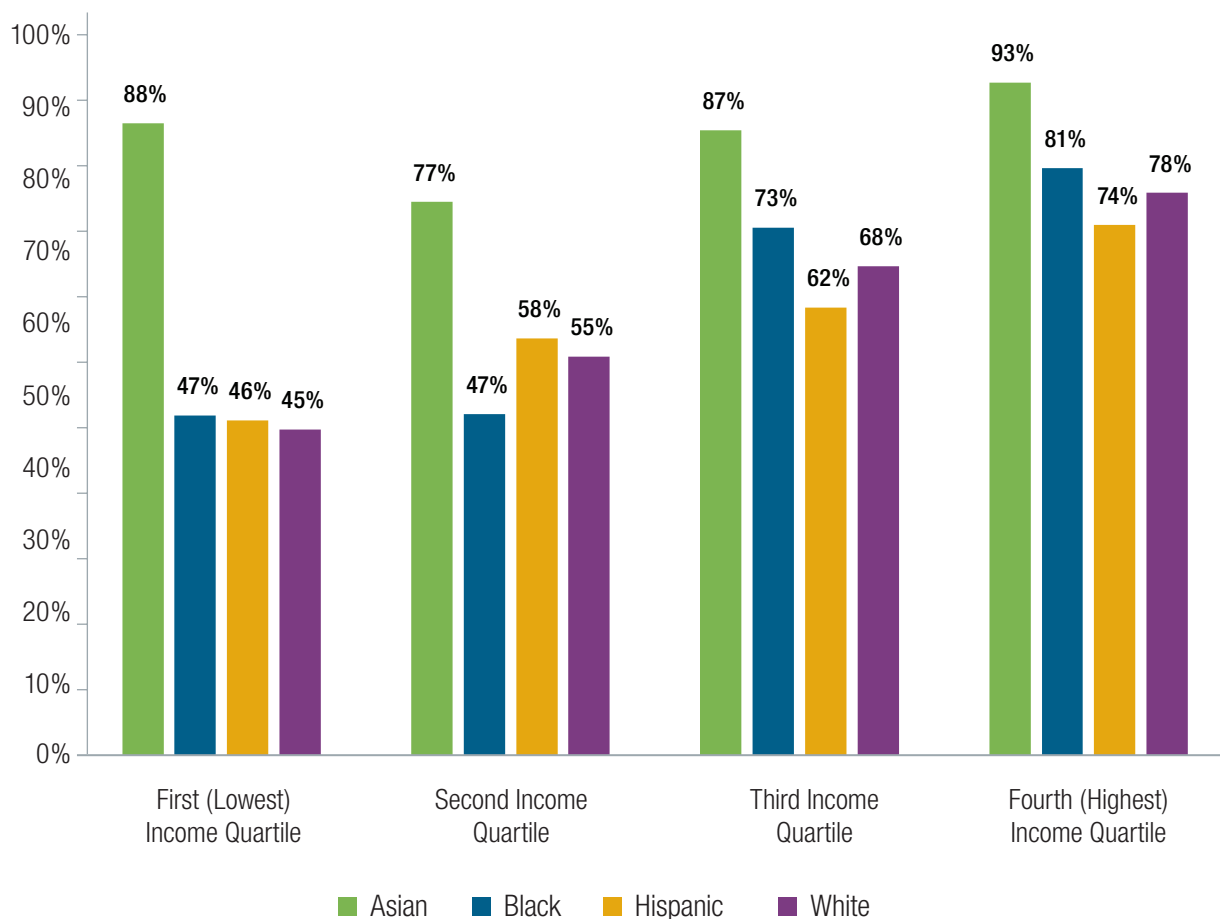
Equity Indicator 1c(ii) displays Cohort College Participation Rates for 2017 by race/ethnicity, disaggregated by family income quartile. Because the data are disaggregated by both income quartile and race/ethnicity, the cautions about interpreting differences across groups that are articulated above are even more important. The income quartiles were computed separately for each race/ethnicity group and thus reflect the distribution of income within each separate race/ethnicity group, with different income thresholds for the various quartiles.⁴¹

Despite the differences in income quartile thresholds, Indicator 1c(ii) shows that disaggregating by family income quartile reduces the differences by race/ethnicity observed in Indicator 1c(i).⁴² Blacks, Hispanics, and Whites, cohort participation rates are similar for those in the same quartile groupings. For example, for those in the first (lowest) income quartile, cohort college participation rates were 47 percent for Blacks, 46 percent for Hispanics, and 45 percent for Whites. For those in the highest income quartile, the 2017 cohort college participation rate was 81 percent for Blacks, 74 percent for Hispanics, and 78 percent for Whites. Asians (as a group, ignoring differences within this aggregated category) cohort college participation rates show a less clear pattern by family income quartile.

⁴¹ As shown in Appendix Figure A-3 and STS Figure 8b(ii) there are large differences in income and wealth between race/ethnicity groupings in the U.S. The income quartiles for each race/ethnicity represent different thresholds for the quartile groupings.

⁴² Given sampling error due to smaller sample sizes, caution is needed in interpreting these results., especially for small groups such as Asians.

Equity Indicator 1c(ii): Cohort College Participation Rates of dependent 18-to 24-year-olds who are not enrolled in high school by race/ethnicity and family income quartile: 2017



Indicator Status:

Estimated differences in college participation rates by race/ethnicity are reduced when race/ethnicity is disaggregated by family income quartile.

NOTE: Race categories exclude persons of Hispanic ethnicity. The Cohort College Participation Rate is tabulated based on the total number aged 18 to 24 and includes those who have not completed high school and are not enrolled in high school. Annual data collected by Census and reported by BLS are from the October supplement to the Current Population Survey (CPS), a nationwide survey of about 60,000 households. Caution is needed in using these data and comparing small differences in estimates across race/ethnicity categories. Due to small sample sizes, estimates for disaggregated data have larger sampling errors than estimates for the total. Income quartiles are calculated separately for each race/ethnicity groupings.

SOURCE: U.S. Census Bureau, 1976-2017, as adapted by Tom Mortenson, *Postsecondary Education Opportunity (PEO)* database. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org. Calculated from October Current Population Survey File School Enrollment Report, tabulated using Census online data retrieval tool, DataFerrett, <https://dataferrett.census.gov/>.

Equity Indicator 1d(i): How Do High School Graduates College Continuation Rates Vary by Race/Ethnicity?

Indicator 1d(i) uses CPS data to show variations by race/ethnicity in college continuation rates for recent high school graduates. This Indicator differs from Indicator 1c(i) in that high school completers with a regular diploma or a GED are the denominator rather than the entire age cohort of students. Therefore, High School Graduates College Continuation Rates are higher than the Cohort College Participation Rates displayed in Indicators 1c(i) and 1c(ii).⁴³ As with Indicators 1c(i) and 1c(ii), caution is needed in interpreting Indicator 1d due to larger sampling errors with disaggregated data, and changes over time in the race/ethnicity definitions and inclusions. Race categories exclude persons of Hispanic ethnicity. Prior to 2003, the Asian category included Pacific Islanders, and after 2002 White, Black, and Asian data exclude persons of “Two or More Races.” Because of sampling error concerns due to relatively smaller sample sizes, we report a 3-year moving average for the results. These rates, as with the rates reported for Indicator 1c(i), are also likely influenced by economic and political events and immigration patterns and policies.

For all groups, college continuation rates for high school graduates were substantially higher in 2017 than in 1976. Although there are some declines in rates over this period, college continuation rates were 42 percent higher in 2017 than 1976 for Whites (rising from 50 percent to 71 percent), 31 percent higher for Hispanics (rising from 54 percent to 71 percent), 42 percent higher for Blacks (rising from 45 percent to 64 percent), and 11 percent higher for Asians (rising from 81 percent to 90 percent).⁴⁴

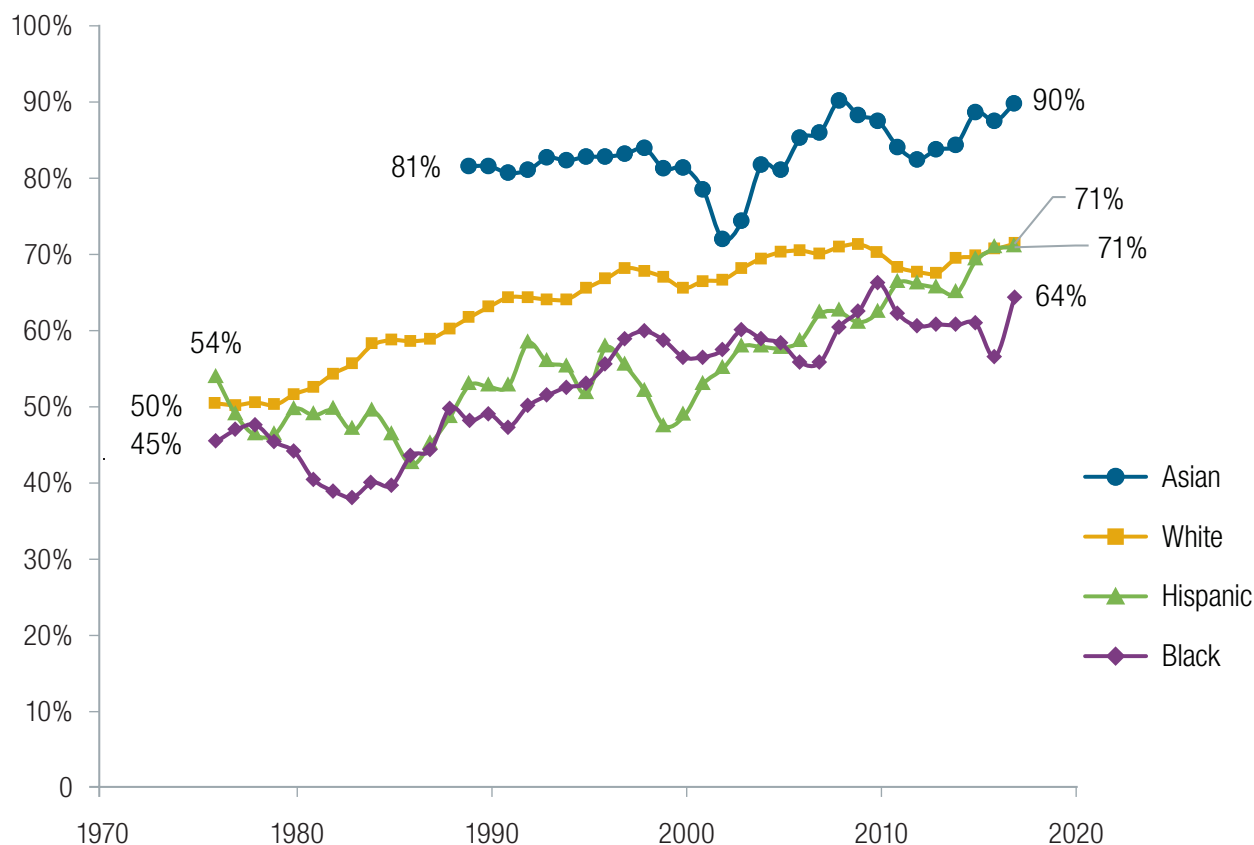
While caution is needed in interpreting this data, Indicator 1d(i) illustrates the gains that Hispanic recent high school graduates have made in college enrollment, especially since 2006.⁴⁵ In 2017 estimated rates of college enrollment were statistically equivalent for Hispanic and White high school graduates. College enrollment rates for Black high school graduates have also generally increased over time.

⁴³ Increases in the percent of high school completers may in the short run depress the percentages of high school graduates who enter college by race/ethnicity.

⁴⁴ Asian percent change calculated from 1989, the first year in which data is available.

⁴⁵ Musu-Gillette, L., Robinson, J., McFarland, J., KewalRamani, A., Zhang, A., & Wilkinson-Flicker, S. (2016). *Status and Trends in the Education of Racial and Ethnic Groups 2016* (NCES 2016-007). U.S. Department of Education, National Center for Education Statistics. Retrieved from <https://nces.ed.gov/pubs2016/2016007.pdf>; Ramos, D., & Taylor, M. (2017). Aligning Demographic Shifts and College Participation: Increasing Latino Degree Attainment. Retrieved from <https://www.higheredtoday.org/2017/01/25/aligning-demographic-shifts-college-participation-increasing-latino-degree-attainment/>.

Equity Indicator 1d(i): High School Graduates College Continuation Rates by race/ethnicity: 1976 to 2017



Indicator Status: Some Closing and Some Widening of the Gaps by Race/Ethnicity

Asians have the highest rates of college entrance among dependent 18- to 24-year-olds who have completed high school. In 2017, college enrollment rates were comparable for White and Hispanic recent high school graduates and 7 percentage points lower for Black recent high school graduates than for Whites and Hispanics.

NOTE: Caution is needed in interpreting this data due to sampling error and changes over time in race/ethnicity definitions and inclusions. Prior to 2003, Asian data include Pacific Islanders. After 2002, White, Black, and Asian data exclude persons of "Two or More Races." Race categories exclude persons of Hispanic ethnicity. The High School Graduates College Continuation Rate is the percent of dependent 18- to 24-year-old high school graduates who entered a postsecondary educational institution of any type. Annual data are from the October supplement to the Current Population Survey (CPS), a nationwide survey of about 60,000 households. Each October, a supplement to the CPS gathers information about school enrollment. A 3-year moving average is used because of higher levels of sampling error for disaggregated data. The 3-year average was calculated by averaging three years. For example, the percentage for 1977 was calculated by adding percentages for 1976, 1977 and 1978 and dividing by 3. The end point years (i.e., 1975 and 2017) were based on a 2-year average. Some data have been revised from previously published figures.

SOURCE: Bureau of Labor Statistics (BLS) and U.S. Census Bureau, 1976-2017, as adapted by Tom Mortenson, *Postsecondary Education Opportunity (PEO)* database. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org. Calculated from October Current Population Survey File School Enrollment Report, tabulated using Census online data retrieval tool, DataFerrett, <https://dataferrett.census.gov/>.

Equity Indicator 1d(ii): How Do the High School Graduates College Continuation Rates Vary by Race/Ethnicity and Family Income Quartile?

Equity Indicator 1d(ii) displays the High School Graduates College Continuation Rate in 2017 by race/ethnicity disaggregated by family income quartile. As noted in discussion of Indicator 1c(ii), the income quartiles are computed separately for the race/ethnicity groups and reflect the actual distribution among the various race/ethnicity groups. As noted above, increases in high school graduation rates may be followed by lower college entrance rates for a group in the short term. Differences across groups should be interpreted with caution, due to small sample sizes and the increase in standard errors for data disaggregated by both race/ethnicity and family income quartiles.

As with Indicator 1c(ii), this figure shows that observed differences by race/ethnicity in college continuation rates of high school graduates are reduced when taking into account family income quartiles. Among Black high school graduates, college enrollment rates ranged from 61 percent for those in the lowest family income quartile (for Blacks) to 88 percent for those in the highest income quartile (for Blacks). Among White high school graduates, college entrance rates ranged from 60 percent for those in the lowest quartile (for Whites) to 86 percent in the highest quartile. Among Hispanic high school graduates, college enrollment rates ranged from 62 percent in the lowest income quartile (for Hispanics) to 84 percent in the highest quartile (for Hispanics).

Equity Indicator 1e: How Do Rates of Enrolling in College Within 8 or 10 Years of Scheduled High School Graduation Vary by Race/Ethnicity?

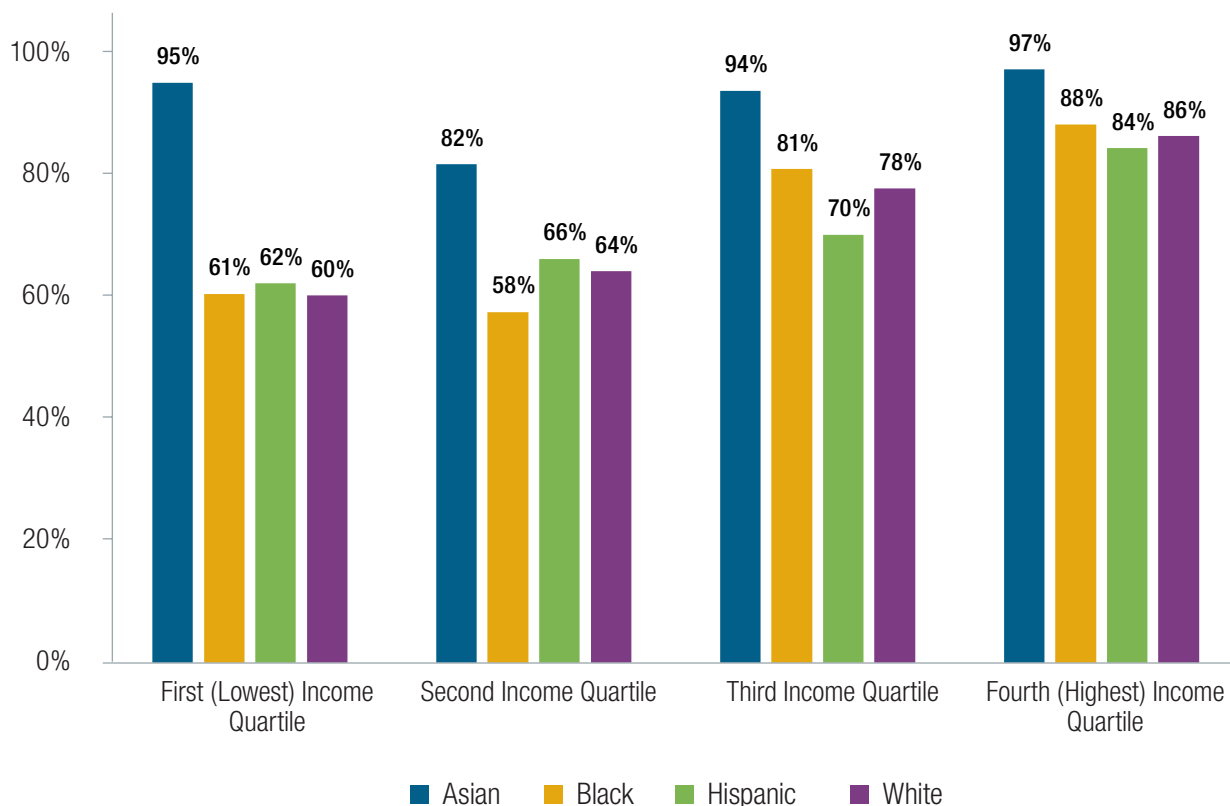
The high school longitudinal studies conducted by the National Center for Education Statistics (NCES) approximately every 10 years shed light on longitudinal trends in college enrollment within 8 or 10 years of expected high school graduation. Because college enrollment is measured within 8 or 10 years of expected high school graduation, the high school longitudinal studies report higher rates of college enrollment than the CPS/BLS data for recent school leavers.

Some caution is needed when using these 3 studies to observe trends over time. The High School and Beyond (HS&B:1980) and Educational Longitudinal Study (ELS:2002) sampled high school 10th graders, while the National Educational Longitudinal Study (NELS:88) sampled 8th graders. Unlike the NELS, the HS&B and ELS do not account for youth who left high school prior to the spring of the sophomore year.⁴⁶

Considering data across the 3 national high school longitudinal studies shows a narrowing of the racial/ethnic gap in college enrollment. Among 1980 high school 10th graders (HS&B:1980/1992), 61 percent of Blacks and 53 percent of Hispanics reported attending a postsecondary educational institution within 10 years of scheduled high school completion, compared with 69 percent of Whites. Twenty-two years later, among 2002 10th graders (ELS:2002), 82 percent of Blacks and 79 percent of Hispanics enrolled in postsecondary education within 8 years of expected high school graduation, compared with 87 percent of Whites.

⁴⁶ Because the National Longitudinal Study (NLS) of the class of 1972 began with high school seniors, we do not include these data in the trend analyses for Indicator 1.

Equity Indicator 1d(ii): High School Graduates College Continuation Rates by race/ethnicity and family income quartiles: 2017



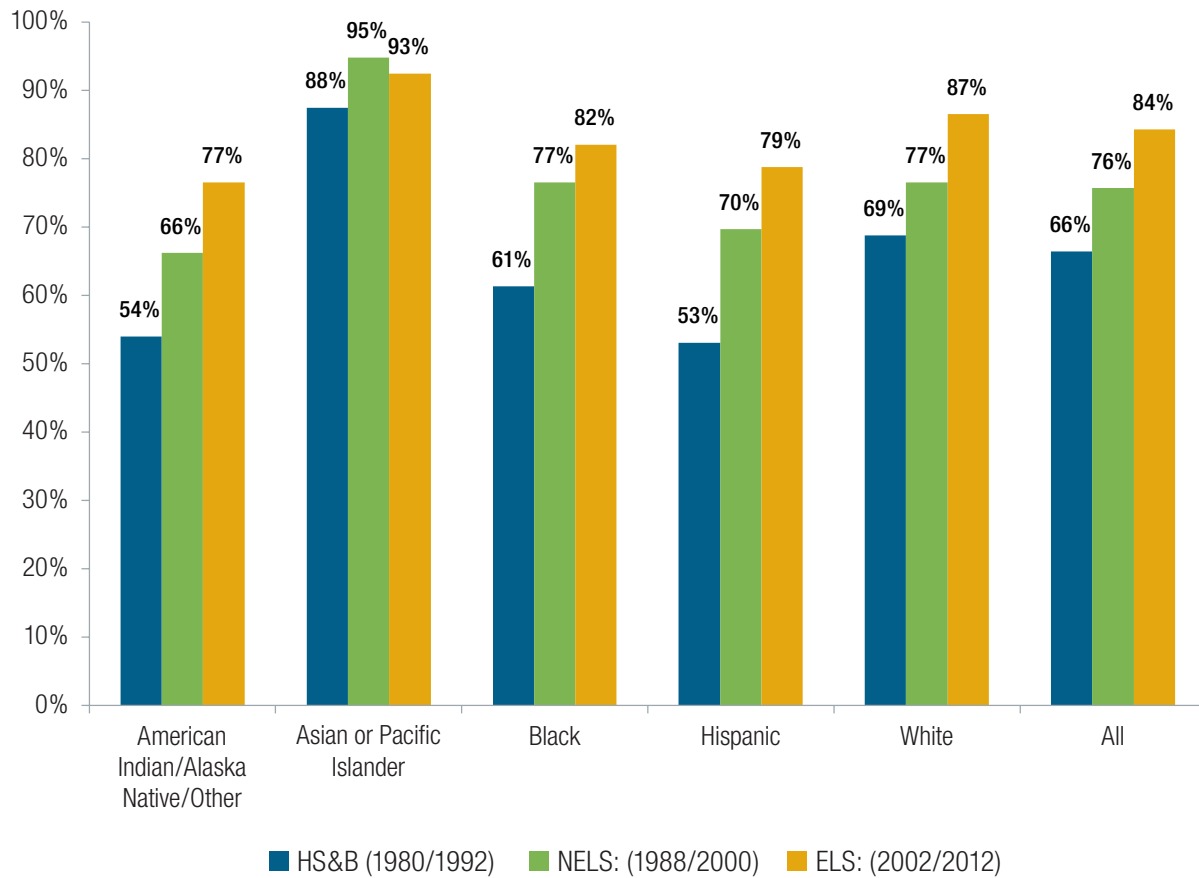
Indicator Status:

Observed differences in college enrollment by race/ethnicity are reduced when the data are disaggregated by family income quartile within each racial/ethnic group.

NOTE: Caution is needed in interpreting this data, as CPS sample survey data disaggregated by income quartile and race/ethnicity are subject to large sampling errors. Race categories exclude persons of Hispanic ethnicity. High School Graduates College Continuation Rate is the percent of 18- to 24-year-old high school graduates who enrolled in a postsecondary educational institution of any type. Annual data collected by Census and reported by BLS yearly are from the October supplement to the Current Population Survey (CPS), a national of about 60,000 households. Each October, a supplement to the CPS gathers information about school enrollment. Due to small sample sizes, estimates for disaggregated data have larger sampling errors than estimates for the total.

SOURCE: Bureau of Labor Statistics (BLS) and U.S. Census Bureau, 1976-2017, as adapted by Tom Mortenson, *Postsecondary Education Opportunity (PEO)* database. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org. Calculated from October Current Population Survey File School Enrollment Report, tabulated using Census online data retrieval tool, DataFerrett, <https://dataferrett.census.gov/>.

Equity Indicator 1e: Percentage of young adults who reported enrolling in postsecondary education within 8 or 10 years of expected high school graduation by race/ethnicity: High School Longitudinal Studies (HS&B:1980/1992; NELS:1988/2000; ELS:2002/2012)



Indicator Status: Persisting but Narrowing Gap

The gap in postsecondary enrollment between Black and White youth narrowed from 8 percentage points for 1980 10th graders to 5 percentage points for 2002 10th graders. Over the same period the gap in postsecondary enrollment between Hispanic and White youth declined from 16 to 8 percentage points.

NOTE: Race categories exclude persons of Hispanic ethnicity. For ELS, the “American Indian/Alaska Native/Other” category includes college enrollment rates for students of “other” racial/ethnic groups, including American Indians/Alaska Natives, as the sample size for American Indian/Alaska Natives alone was too small for reliable estimates. ELS and HS&B began tracking students when they were in the 10th grade in high school. NELS:88 began with 8th grade.

SOURCE: Lauff, E. & Ingels, S. J. (2014). *Education Longitudinal Study of 2002 (ELS:2002): A First Look at 2002 High School Sophomores 10 Years Later* (NCES 2014-363). U.S. Department of Education; Ingels, S. J., Kaufman, P., Curtin, T. R., Alt, M. N. & Chen, X. (2002). *Initial Results from the Fourth Follow-up to the National Education Longitudinal Study of 1988: Coming of Age in the 1990s: The Eighth-grade Class of 1988 12 Years Later* (NCES 2002-321). U.S. Department of Education, Office of Educational Research and Improvement; Tuma, J. , Geis, S., & Carroll (1995). *High School and Beyond Educational Attainment of 1980 High School Sophomores by 1992: 1992 Descriptive Summary of 1980 High School Sophomores 12 Years Later* (NCES 95-304). U.S. Department of Education, National Center for Education Statistics.

Equity Indicator 1f: How Do Rates of Not Enrolling in Postsecondary Education within 8 or 10 Years of Expected High School Graduation Vary by Parents' Socioeconomic Status (SES)?

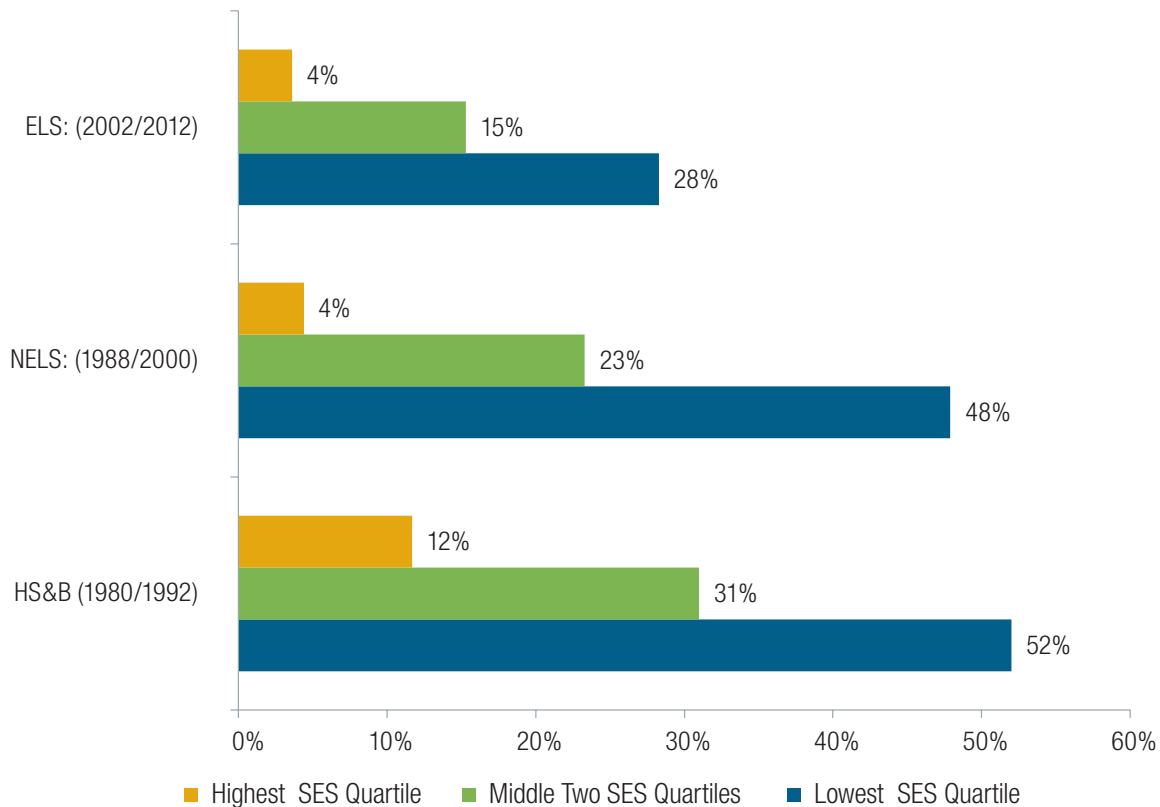
Indicator 1f documents the percent of young adults who reported that they had not enrolled in postsecondary education within 8 or 10 years of their scheduled high school graduation by parents' socioeconomic status (SES), using data from the three NCES-sponsored high school longitudinal studies. SES is a composite that reflects parents' and guardians' highest level of education, occupation, and income. This composite is measured consistently across the three NCES longitudinal studies.⁴⁷

Across the three longitudinal studies, the percent of youth who reported no participation in postsecondary education declined for all levels of SES, including those in the lowest SES quartile. Despite this progress, considerable differences in rates of non-enrollment based on SES persist. The percentage of youth in the lowest SES quartile reporting no postsecondary educational enrollment within 8 or 10 years of scheduled high school graduation declined from 52 percent of 1980 10th graders (HS&B), to 48 percent of 1988 8th graders (NELS), to 28 percent of 2002 10th graders (ELS).

In all three studies, young adults from the highest SES quartile average considerably lower rates of non-enrollment than those in the lowest SES quartile. Only 4 percent of those in the highest SES quartile in both ELS:2002 (sampled as 10th graders) and NELS:88 (sampled as 8th graders) reported no postsecondary enrollment within 8 or 10 years of high school graduation, down from 12 percent of 1980 10th graders (HS&B).

⁴⁷ SES is a composite measure that NCES derived in a comparable manner for the three high school longitudinal studies. NCES imputed SES for all sample members, including those with missing data for the parent income variable. We use the SES composite rather than family income for this indicator, as SES is considered more reliable than a single measure of family income. The latter tends to have a high rate of missing data and is subject to reporting error.

Equity Indicator 1f: Percentage of young adults who reported no postsecondary enrollment within 8 or 10 years of expected high school graduation by parents' socioeconomic status (SES): High School Longitudinal Studies (HS&B:1980/1992; NELS:1988/2000; ELS:2002/2012)



Indicator Status: High Inequality but Narrowing Gap

The gap in the percentage of youth in the highest and lowest SES quartiles who reported no postsecondary enrollment within 8 or 10 years of scheduled high school graduation was 24 percentage points for 10th graders in 2002, down from 44 percentage points for 1988 8th graders and 40 percentage points for 1980 10th graders.

NOTE: ELS and HS&B sampled students when they were in the 10th grade (high school sophomores). NELS:88 sampled 8th graders. Some differences in findings across longitudinal studies are expected due to the longer time period for dropping out of high school for students sampled in 8th grade rather than 10th grade.

SOURCE: Lauff, E. & Ingels, S. J. (2014). Education Longitudinal Study of 2002 (ELS:2002): *A First Look at 2002 High School Sophomores 10 Years Later* (NCES 2014-363). U.S. Department of Education; Ingels, S. J., Kaufman, P., Curtin, T. R., Alt, M. N., & Chen, X. (2002). *Initial Results from the Fourth Follow-up to the National Education Longitudinal Study of 1988: Coming of Age in the 1990s: The Eighth-Grade Class of 1988 12 Years Later* (NCES 2002-321). U.S. Department of Education, Office of Educational Research and Improvement; Tuma, J. , Geis, S., & Carroll (1995). *High School and Beyond Educational Attainment of 1980 High School Sophomores by 1992: 1992 Descriptive Summary of 1980 High School Sophomores 12 Years Later* (NCES 95-304). U.S. Department of Education, National Center for Education Statistics.

Indicator 1g(i) and (ii): What Does the Most Recent NCES High School Longitudinal Study Tell Us About College Entrance?

Indicators 1g(i) and 1g(ii) examine data from the High School Longitudinal Study (HSL:2009), the most recent high school cohort study sponsored by the National Center for Education Statistics. This study began in 2009 with a nationally representative sample of 9th graders and followed up with the cohort in 2012 (when most were in 11th grade), 2013 (the fall after scheduled high school graduation), and in 2016 (approximately 3 years after scheduled high school graduation).

Enrollment in college in the fall after scheduled high school graduation. Indicator 1g (i) uses parents' socioeconomic status (SES) quintiles (five equal-sized groups) and shows 2-year and 4-year enrollment and non-enrollment in 2013, the fall after scheduled high school graduation. The findings from these data are consistent with the previous NCES high school studies and with Census data reported earlier in this report, despite the methodological differences between the studies.

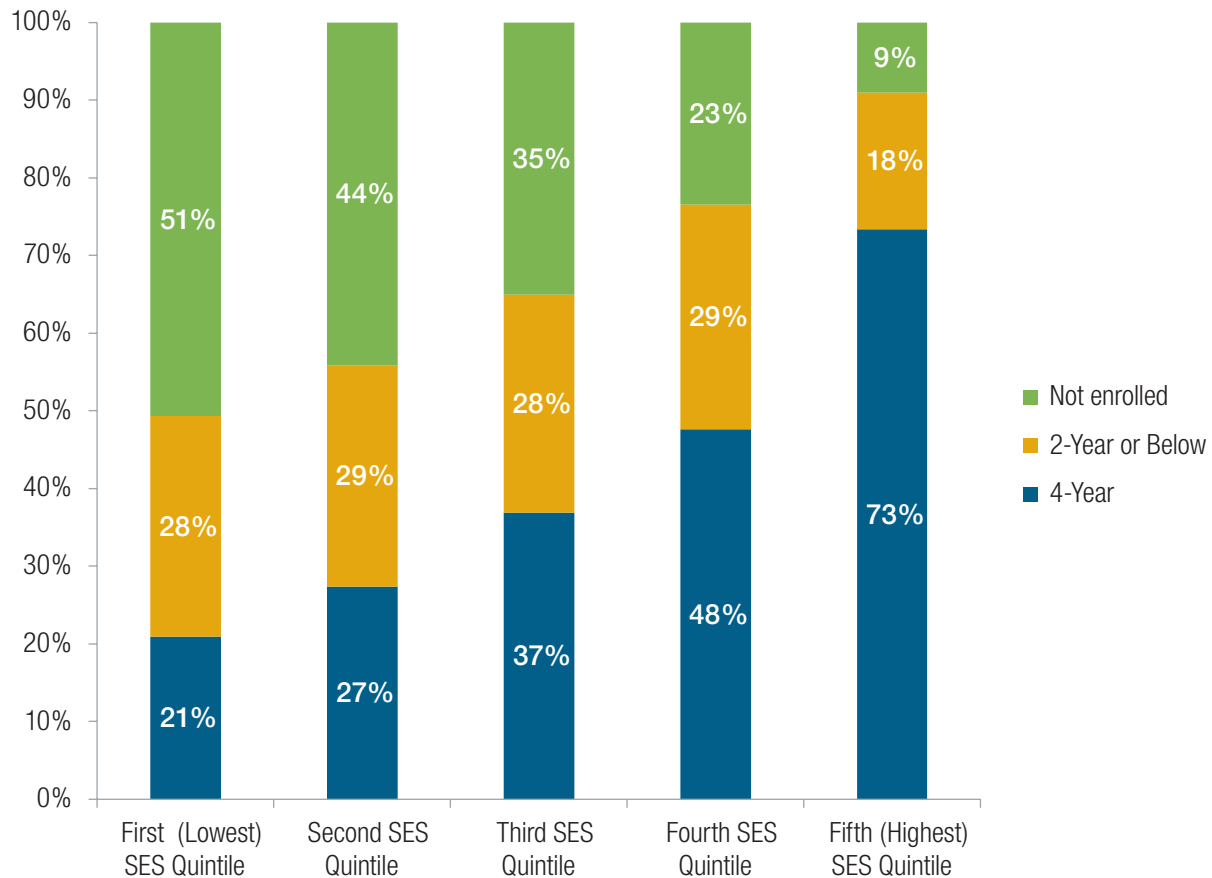
Half (51 percent) of 2009 9th graders from the lowest SES quintile were not enrolled in college the fall after their 2013 scheduled high school graduation, compared with 9 percent of those in the highest SES family quintile.

Youth in the highest SES quintile were more than 3 times as likely as those in the lowest quintile to be enrolled in a 4-year institution (73 percent for the highest quintile and 21 percent for the lowest). A higher share of 2009 9th graders in the lowest SES quintile than in the highest SES quintile enrolled in 2-year colleges (28 percent versus 18 percent).

Enrollment in college within 3 years of scheduled high school graduation. Indicator 1g(ii) presents the percentage of the 2009 9th grade cohort who attended college by February 2016 (approximately 3 years after scheduled high school graduation) by SES quintiles and race/ethnicity. Nearly half (47 percent) of 2009 9th graders from the lowest SES quintile had not attended college within three years of scheduled high school graduation, compared with 8 percent of those in the highest SES quintile.

Among 2009 9th graders, rates of attending college within 3 years of scheduled high school graduation ranged from 47 percent for American Indian/Alaska Native students, to 62 percent for Black/African-Americans, to 66 percent for Hispanics, to 70 percent for "More than One Race," to 73 percent for Whites, to 84 percent for Asians.

Equity Indicator 1g(i): Percentage distribution of 2009 9th graders by enrollment status in the fall after scheduled high school graduation by parents' socioeconomic status (SES): High School Longitudinal Study (HSLs:2009/2013)



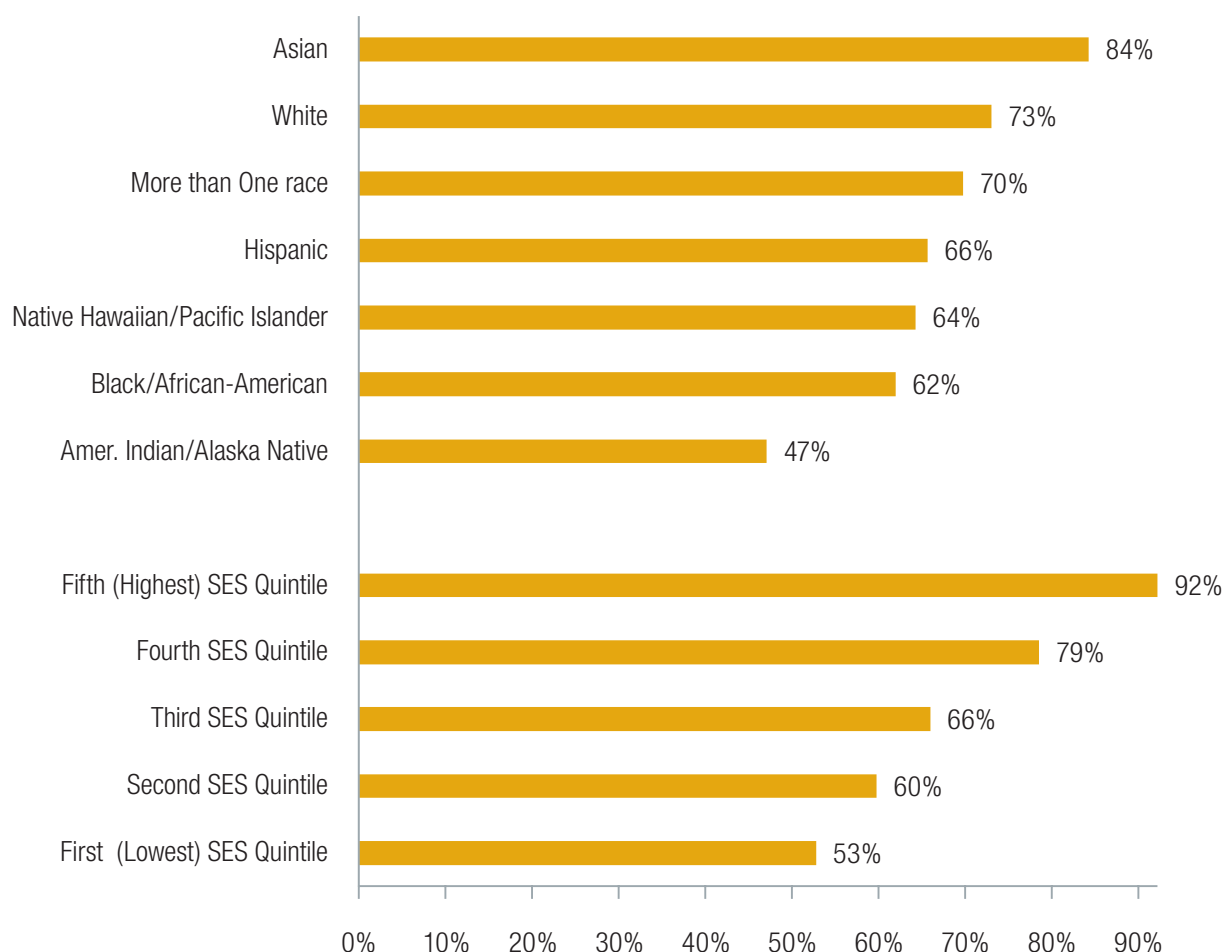
Indicator Status: High Inequality

Half (51 percent) of 2009 9th graders from the lowest SES quintile were not in college in the fall after their scheduled high school graduation, compared with 9 percent of those from the highest SES quintile.

NOTE: The High School Longitudinal Study (HSLs:2009) began with a nationally representative sample of 9th graders in 2009 and included follow-ups in 2012 (typically the 11th grade) and 2013, the fall after scheduled high school graduation.

SOURCE: Tabulated with NCES PowerStats, using data from the High School Longitudinal Study (HSLs:2009/2013).

Equity Indicator 1g(ii): Percentage distribution of 2009 9th graders by whether they ever attended college within 3 years after scheduled high school graduation by race/ethnicity and by parents' socioeconomic status (SES): High School Longitudinal Study (HSLs:2009/2016)



Indicator Status: High Inequality

Rates of attending college within 3 years of high school graduation ranged from 47 percent for American Indian/Alaska Natives to 84 percent for Asians. About half (53 percent) of 2009 9th graders in the lowest SES quintile enrolled in college within 3 years of scheduled high school graduation, compared with 92 percent of those in the highest quintile.

NOTE: The High School Longitudinal Study (HSLs:2009) began with a nationally representative sample of 9th graders in 2009. Data in this chart are from the 2016 follow up, approximately 3 years after scheduled high school graduation.

SOURCE: Tabulated with NCES PowerStats, using data from the High School Longitudinal Study (HSLs:2009/2016).

Indicator 1h: What Are the Differences in High School Completion and College Entrance by Parents' Educational Attainment?

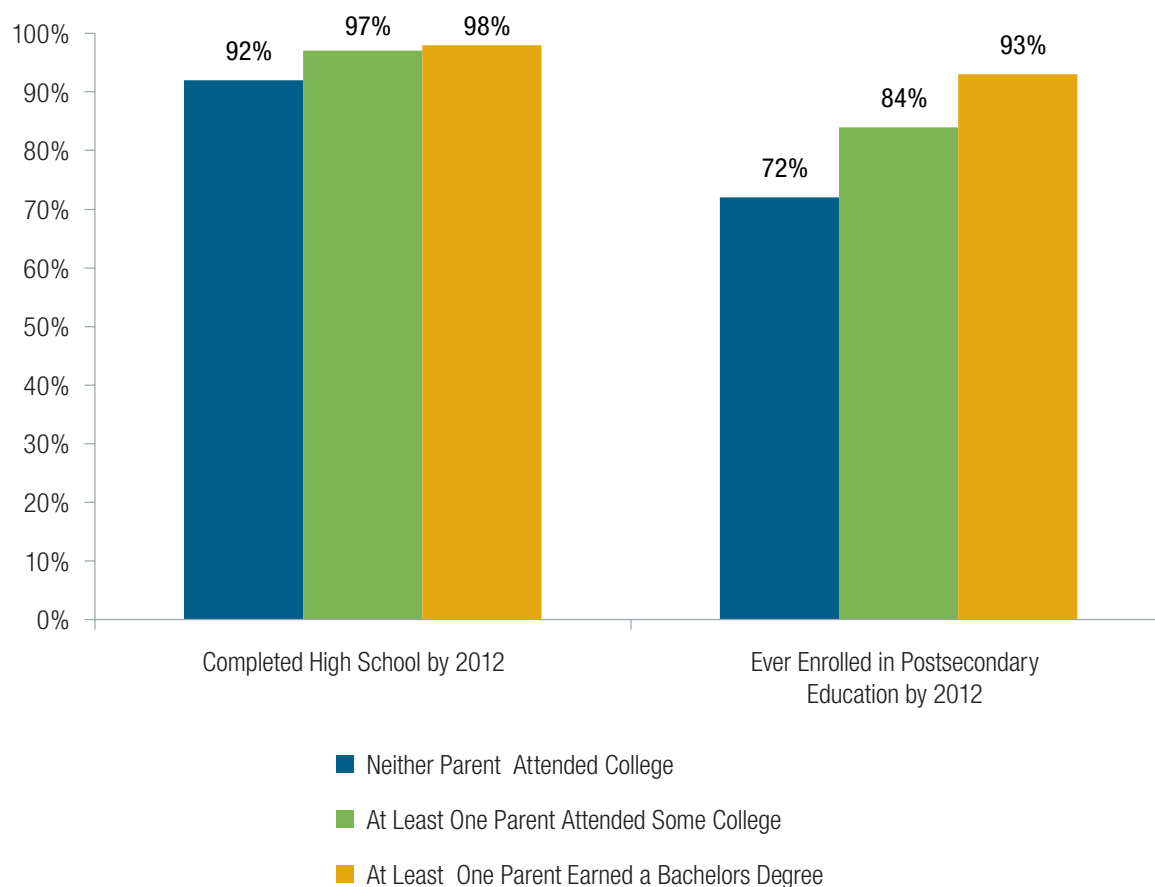
Indicator 1h uses the ELS:2002/2012 data to examine differences in high school completion and college entrance by first-generation college status. First-generation college status can be defined in different ways. Eligibility for many Federal Programs (including the TRIO programs), as authorized in the Higher Education Opportunity Act (HEOA), defines first-generation as neither parent having a bachelor's degree. Alternatively, first-generation college may be defined as neither parent has gone to college. A recently published analysis by NCES in 2018 examines college outcomes for students who meet various definitions.⁴⁸

Indicator 1h shows that, by 8 years after scheduled high school graduation, virtually all youth whose parents had a bachelor's degree (98 percent) or some college (97 percent), and 92 percent of those whose parents had "no college," had completed a high school credential.

Rates of enrolling in college within 8 years after high school graduation increased with parents' education. Indicator 1h shows that 72 percent of youth with neither parent having attended college had enrolled in college, compared with 84 percent of youth with at least one parent who attended some college, and 93 percent of youth with at least one parent who had attained a bachelor's degree or higher.

⁴⁸ Cataldi, E. F., Bennett, C.T., & Chen X. (2018). *First-Generation Students College Access, Persistence, and Postbachelor's Outcomes* (NCES 2018-421). Washington, DC: U.S. Department of Education.

Equity Indicator 1h: Percentages of 10th grade students who completed high school and enrolled in postsecondary education within 8 years of their scheduled high school graduation by highest level of education among either parent (ELS:2002/2012)



Indicator Status: High Inequality

There is a 21 percentage-point gap in the rate of enrolling in college within 8 years of scheduled high school graduation between 2002 10th graders who have at least one parent with a bachelor's degree and 2002 10th graders for whom neither parent has attended college.

NOTE: The "Completed High School by 2012" group includes students who earned a regular high school diploma, a General Education Development (GED) certificate, or other high school equivalency such as a certificate of attendance.

SOURCE: Table C-2a and C-4a in Chen, X., Lauff, E., Arbeit, C., Henke, R., Skomsvold, P., and Hufford, J. (2017). *Early Millennials: The Sophomore Class of 2002 a Decade Later* (NCES 2017-437), U.S. Department of Education. Washington, DC: National Center for Education Statistics, as included in Cataldi, E. F., Bennett, C.T., & Chen, X. (2018). *First-Generation Students College Access, Persistence, and Postbachelor's Outcomes* (NCES 2018-421). Washington, DC: U.S. Department of Education, Figure 2.

Indicator 1i(i) and 1i(ii): What Are the Estimated College Participation Rates of Low-Income Students by State?

The Office of Postsecondary Education (OPE) reports the numbers and amount of Pell Grants awarded each year for dependent and independent students by state.⁴⁹ This information does not provide direct estimates of the percent of low-income youth within the state that are enrolled in college.⁵⁰ These participation rates may be estimated using annual data from the U.S. Department of Education on public school enrollment by state and annual data from the U.S. Department of Agriculture on the percent of enrollment approved for free or reduced price lunches in the applicable time period by state. Tom Mortenson has used these three sources (Pell Grants awarded, school enrollment, and free and reduced price lunch enrollment) to estimate an indicator of college participation rates for low-income students by state for the years 1998 to 2016.

These comparisons are limited due to differential use of free and reduced lunch among states and migration of Pell recipients into and out of states. As such, we urge caution in interpreting this Indicator.⁵¹ Indicator 1i(i) presents the estimates by state for 2016 and Indicator 1i(ii) plots the state data from 1989 to 2016.

Using this approach, the national estimated college participation rate for low-income students was 34 percent in 2016. This rate ranged from 10 percent in Alaska, 21 percent in Oklahoma and Wyoming, 22 percent in New Mexico, and 23 percent in West Virginia, to 50 percent in New Hampshire, 53 percent in New York, and 56 percent in New Jersey.

States with the highest estimated rates tended to be located in the Northeast (NJ, NY, NH, MA, CT, and RI). States with the lowest rates were observed by Mortenson to have strong energy-producing industries (AK, OK, WY, NM, WV, KY, LA, and TX) where higher-paying jobs may be available without a college degree.⁵²

Indicator 1i(ii) shows variation over time in college participation rates by state. For virtually all states, college participation rates increased during the Great Recession and then declined somewhat in the recovery period. The national average college participation rate for low-income students was 26 percent in 2008, rose to 39 percent in 2011 and 2012, and has since declined to 34 percent. Changes in college participation rates over time may also be impacted by the availability of Year Round Pell from 2008 to 2011.

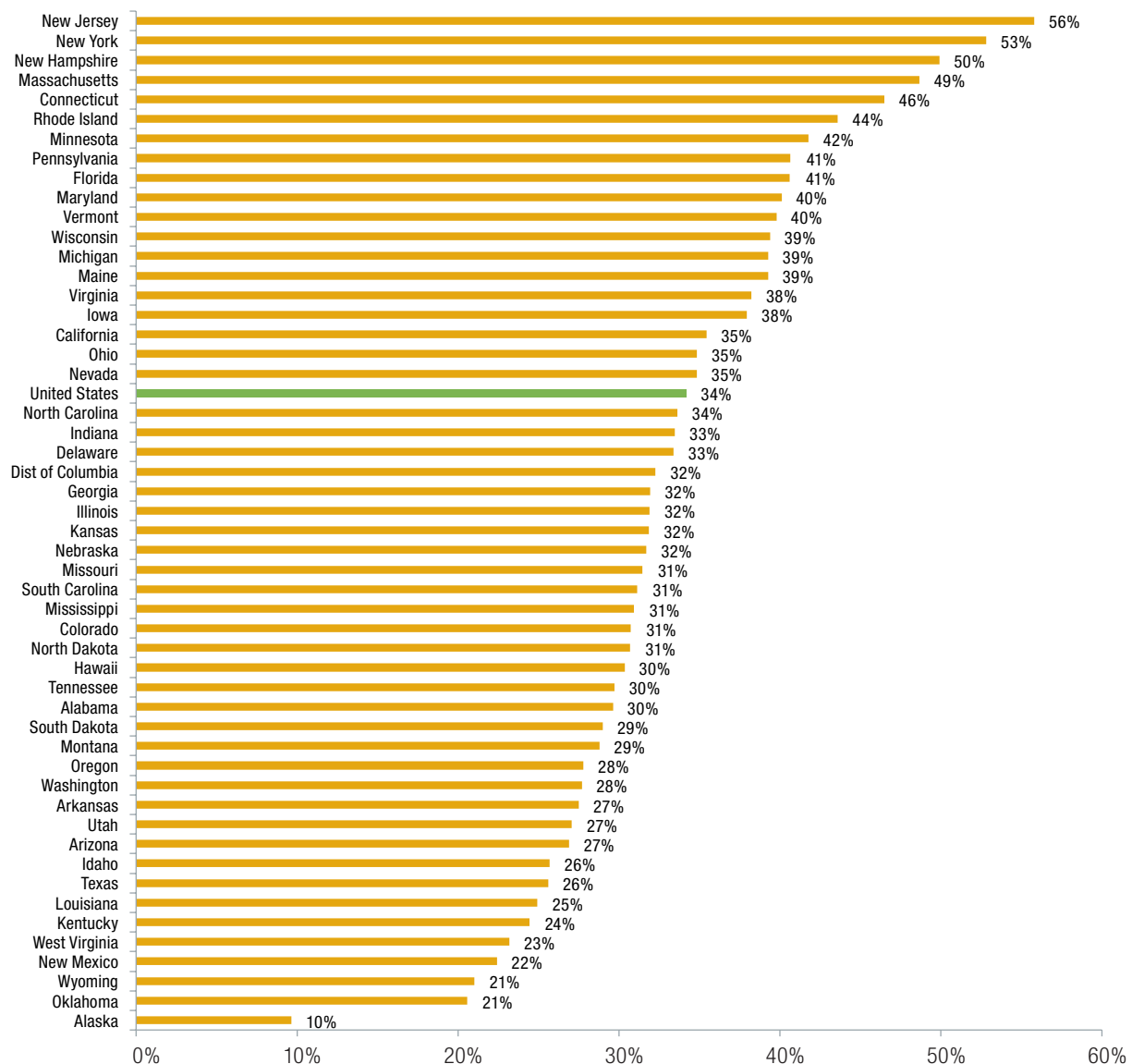
⁴⁹ U.S. Department of Education, Office of Postsecondary Education, Office of Student Financial Aid, Federal Pell Grant Program Annual Data Reports, <https://www2.ed.gov/finaid/prof/resources/data/pell-data.html>.

⁵⁰ Mortenson T. (2017). College Participation Rates for Students from Low-income Families by State and Sector: 1998 to 2016, *Postsecondary Education Opportunity*, 290. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org.

⁵¹ While caution is needed due to variation in state use of the federal school lunch program, estimates tabulated in the same manner over time provide a consistent indicator of change and some indication of differences by state.

⁵² Mortenson, T. (2017). College Participation Rates for Students from Low-income Families by State and Sector: 1998 to 2016, *Postsecondary Education Opportunity*, 290. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org.

Equity Indicator 1i(i): Estimated college participation rates for students from low-income families by state: 2016



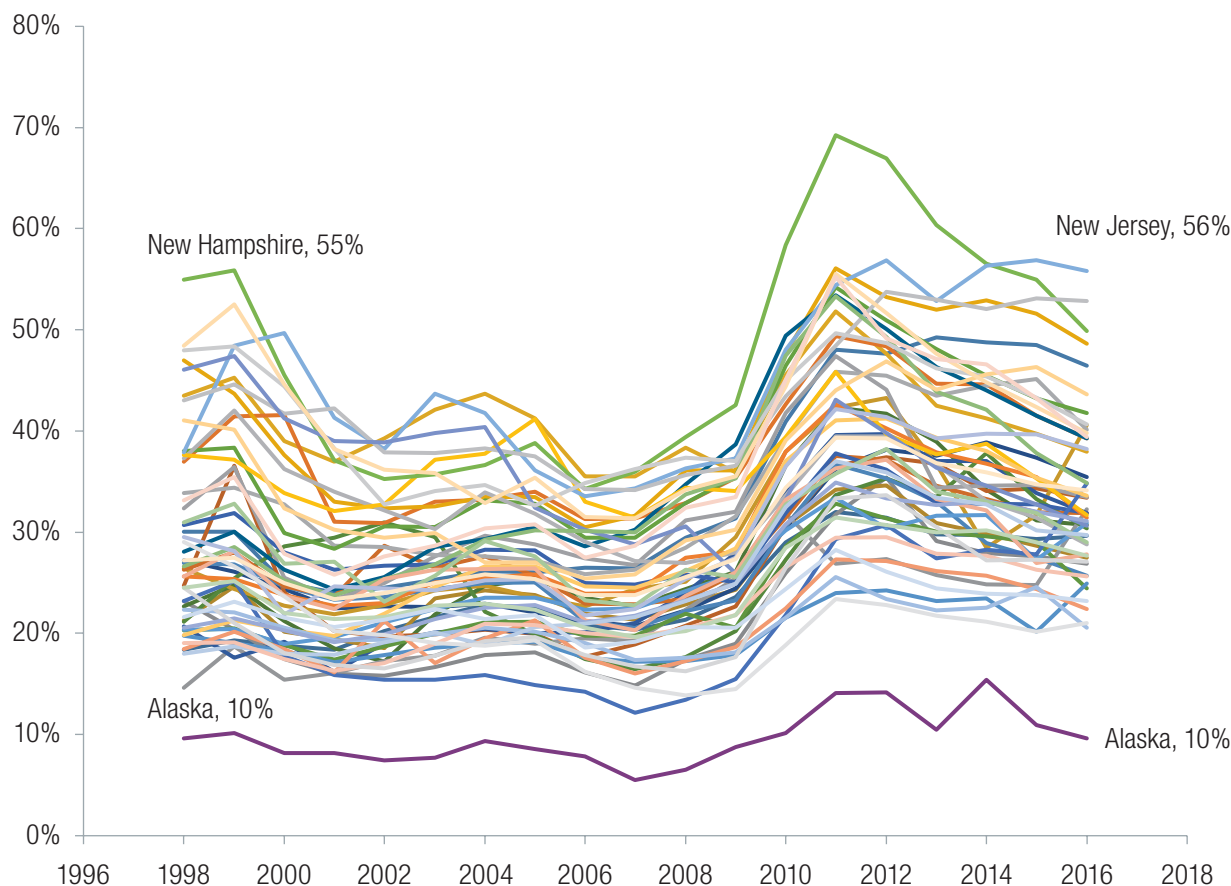
Indicator Status:

College participation rates vary by state and region, with higher rates in Northeast than in other parts of the U.S.

NOTE: Caution is needed in reviewing this data to differential use of free and reduced lunch and migrations in and out of states among Pell Grant recipients. Participation rates for low-income students are estimated based on: 1) public school enrollment; 2) numbers and percent of 4th to 9th graders that were approved for free or reduced price lunch 9 years earlier; and 3) numbers of dependent Pell Grant recipients from each state in a given year.

SOURCE: Mortenson, T. (2017). College Participation Rates for Students from Low-income Families by State and Sector: 1998 to 2016, *Postsecondary Education Opportunity*, 290. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org.

Equity Indicator 1i(ii): Trends in estimated college participation rates for students from low-income families by state: 1998 to 2016



Indicator Status:

While the 50 lines show variation in enrollment rates by state, virtually all states show an increase in enrollment during the Great Recession followed by some decline in the recovery period.

NOTE: Participation rates for low-income students are estimated based on: 1) public school enrollment figures; 2) percent of 4th to 9th graders nine years earlier that were approved for a free or reduced price 9 years earlier, and 3) number of dependent Pell Grant recipients from each state in a given year.

SOURCE: Mortenson, T. (2017). College participation rates for students from low-income families by state and sector: 1998 to 2016, *Postsecondary Education Opportunity*, 290. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org.

Indicator 1j: What Are the Enrollment Rates of 18- to 24-Year-Olds by Race/Ethnicity by State?

The American Community Survey collects postsecondary enrollment data for 18- to 24-year-olds, with sample sizes sufficient to estimate data by state and by some race/ethnicity categories. Equity Indicator 1j(i) shows this data for the total state population for 2016 and Equity Indicators 1j(ii) and 1j (iii) show data for the two largest racial/ethnic minoritized groups (Hispanics and Blacks, respectively) compared to Whites. Data are based on sample surveys of the population of 18- to 24-year-olds residing in the United States, including both noninstitutionalized persons (e.g., those living in households, college housing, or military housing located within the United States) and institutionalized persons (e.g., those living in prisons, nursing facilities, or other healthcare facilities). Race categories exclude persons of Hispanic ethnicity.

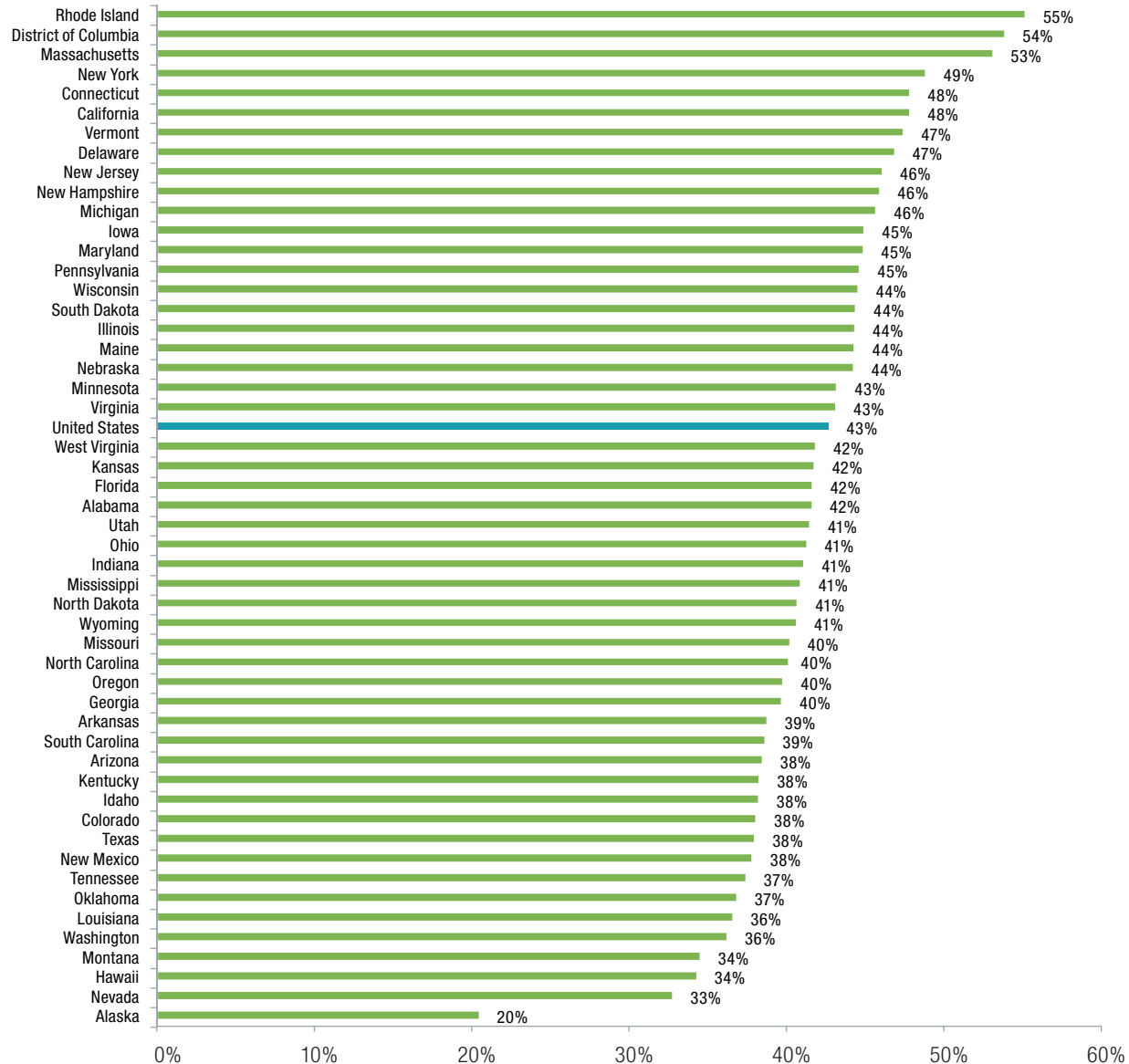
In 2017, 43 percent of 18 to 24 year olds nationwide were enrolled in some type of postsecondary education.⁵³ Enrollment rates exceed 50 percent in Rhode Island (55 percent), District of Columbia (54 percent), and Massachusetts (53 percent). The lowest enrollment rates were in Alaska (20 percent), Nevada (33 percent), and Hawaii (34 percent) and Montana (34 percent).

Indicator 1j(ii) and 1j(iii) show that, for most states, the percentages of Hispanic and Black 18- to 24-year-olds enrolled in postsecondary education are less than the percentage of Whites. Overall Nationwide in 2017, enrollment rates of 18- to 24-year olds ranged from 22 percent of American Indian/Alaska Natives, 36 percent for Hispanics and Blacks, 44 percent for those of two or more races, to 45 percent of Whites, to 67 percent of Asians.⁵⁴

⁵³ These enrollment rates represent the percent of 18- to 24- year-olds enrolled in degree granting postsecondary institutions in the reference year. They are generally lower than the figures on the percent of 18- to 24- year-olds who participated in college between ages 18 to 24.

⁵⁴ U.S. Department of Education (2018). *Digest of Education Statistics 2017*, [Table 302.65.]. Percentage of 18- to 24-year-olds enrolled in degree-granting postsecondary institutions, by race/ethnicity and state: 2016. Retrieved from https://nces.ed.gov/programs/digest/d17/tables/dt17_302.65.asp?current=yes.

Equity Indicator 1j(i): Percentage of 18- to 24- year-olds enrolled in degree-granting postsecondary institutions by state: 2017



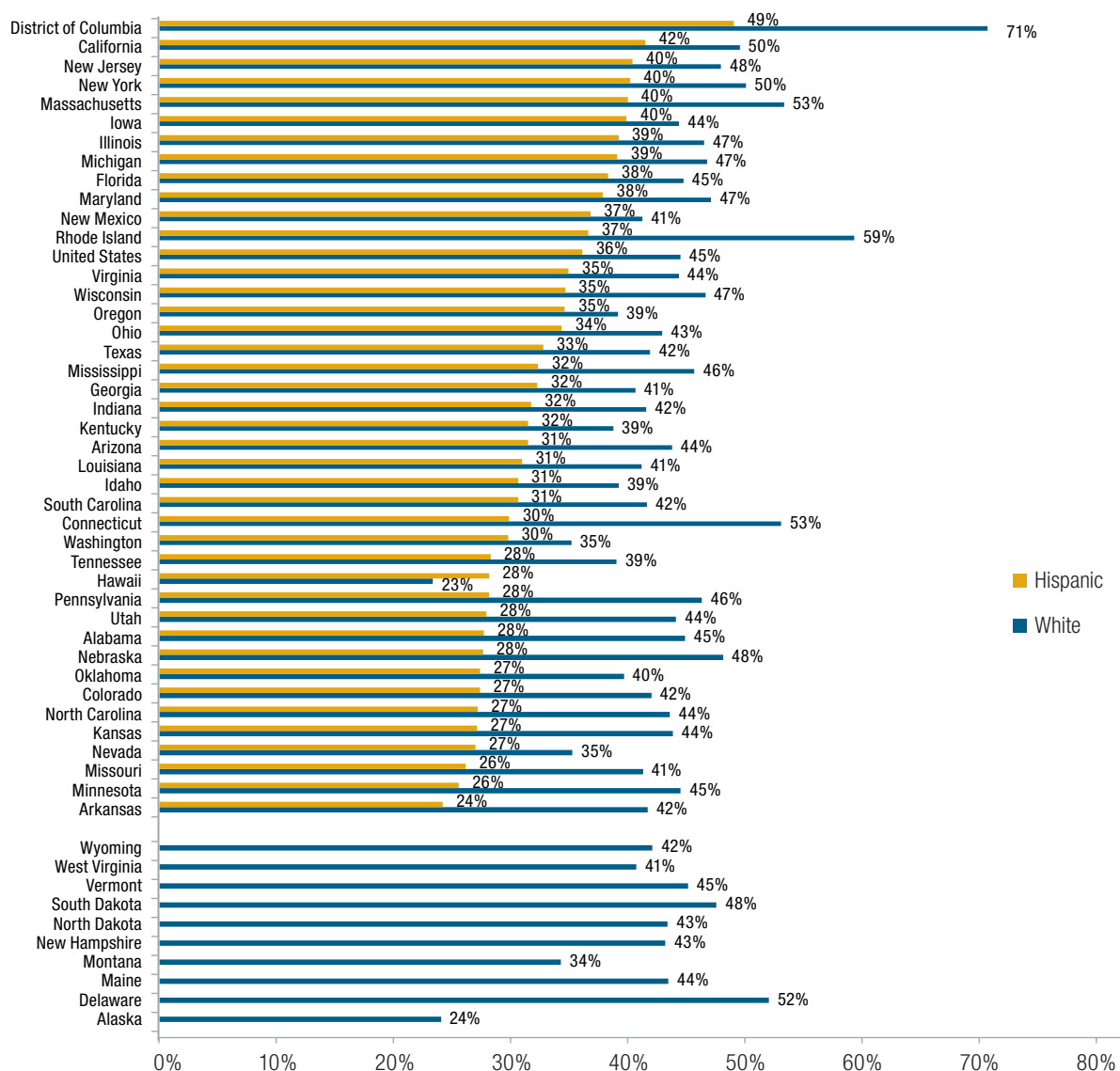
Indicator Status:

College participation rates vary by state, with higher rates in the Northeast than in other parts of the U.S.

NOTE: Data are based on sample surveys of the population 18- to 24-year olds residing within the United States, including both noninstitutionalized persons (e.g., those living in households, college housing, or military housing located within the United States) and institutionalized persons (e.g., those living in prisons, nursing facilities, or other healthcare facilities).

SOURCE: U.S. Department of Commerce, Census Bureau, American Community Survey (ACS), 2007. U.S. Department of Education (2018). Digest of Education Statistics 2018, . *Digest of Education Statistics 2018*, [Table 302.65]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_302.65.asp?current=yes.

Equity Indicator 1j(ii): Percentages of Hispanic and White 18- to 24 -year-olds enrolled in degree-granting postsecondary institutions by state: 2017



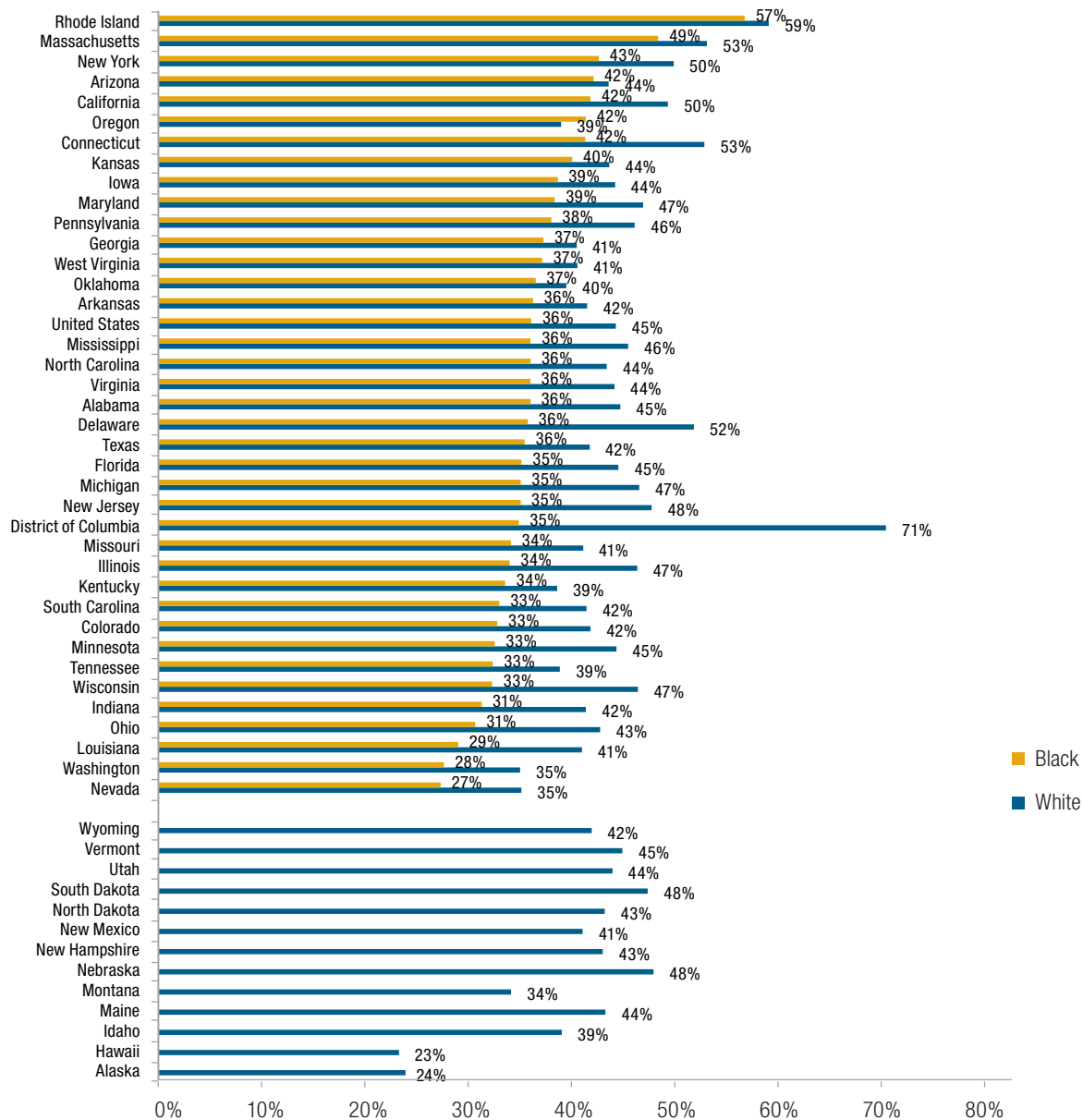
Indicator Status:

College participation rates for Hispanics range from 24 percent in Arkansas to 49 percent in District of Columbia.

NOTE: States with no entry for Hispanics are those with too few sample members for estimation. Reporting standards were not met because there are too few cases for a reliable estimate or the coefficient of variation (CV) is 50 percent or greater. Race categories exclude persons of Hispanic ethnicity.

SOURCE: U.S. Department of Commerce, Census Bureau, American Community Survey (ACS), 2017. *Digest of Education Statistics 2018*, [Table 302.65]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_302.65.asp?current=yes.

Equity Indicator 1j(iii): Percentage of Black and White 18- to 24- year-olds enrolled in degree-granting postsecondary institutions by state: 2017



Indicator Status:

College participation rates for Blacks range from 27 percent in Nevada to 57 percent in Rhode Island.

NOTE: States with no entry for Blacks are those with too few sample members for estimation. Reporting standards were not met because there are too few cases for a reliable estimate or the coefficient of variation (CV) is 50 percent or greater. Race categories exclude persons of Hispanic ethnicity.

SOURCE: U.S. Department of Commerce, Census Bureau, American Community Survey (ACS), 2017. U.S. Department of Education (2018). *Digest of Education Statistics 2018*, [Table 302.65]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_302.65.asp?current=yes.

EQUITY INDICATOR 2:

WHAT TYPE OF POSTSECONDARY EDUCATIONAL INSTITUTION DO STUDENTS ATTEND?

In 2017, 59 percent of degree-seeking undergraduates who received Federal Pell or other grants were enrolled at a 4-year institution rather than a 2-year institution. By comparison, among undergraduates who did not receive a Federal grant, 77 percent attended a 4-year institution rather than a 2-year institution.

Among 2009 9th graders who graduated from high school in 2013, those from the highest SES quintile were 8 times as likely to attend a “most” or “highly” selective college as students from the lower SES quintile (33 percent versus 4 percent).

Equity Indicator 2(a-f): Definitions

The sources of data for Equity Indicator 2 are: 1) Integrated Postsecondary Education Data System (IPEDS), which has collected institutional-level data on U.S. postsecondary educational institutions since 1986⁵⁵; 2) five NCES high school longitudinal studies, and 3) 2016 Barron’s Admissions Competitiveness Index.

- **IPEDS Federal Grant Aid.** IPEDS does not collect data on students’ family income but does collect aggregate data on institutional characteristics that provide reasonable proxies.⁵⁶ In Indicator 2, we report the percentage of full-time, first-time degree seeking undergraduate students receiving “Federal Grants.” Federal Grant aid is comprised primarily of Pell Grants but also includes Federal Supplemental Educational Opportunity Grants (FSEOG) and grants from federal agencies other than the U.S. Department of Education, such as the Departments of Veterans Affairs and Labor.⁵⁷ We report Federal Grant aid because separate Pell Grant data are not reported in IPEDS before 2009 and because receipt of Federal Grant aid is a reasonable proxy for Pell-specific measures.⁵⁸ In this report Federal Grant aid is also referred to as “Pell or other Federal Grants.”

⁵⁵ In 1986 the IPEDS system was initiated. Prior to this date the U.S. Department of Education collected institutional data through other data collection systems such as the Higher Education General Information Survey (HEGIS) series, the immediate predecessor to IPEDS.

⁵⁶ Current IPEDS measures include the percent of undergraduates receiving Pell Grants, percent of full-time, first-time (FTFT) undergraduates receiving Pell Grants, and percent of full-time, first-time (FTFT) undergraduates receiving Federal Grant aid.

⁵⁷ National Center for Education Statistics, IPEDS Data Center. Retrieved from <https://nces.ed.gov/ipeds/datacenter/selectVariables.aspx>.

⁵⁸ Others also use Federal Grant aid as a proxy for receiving Federal Pell Grants. See Giancola, J. & Kahlenberg, R. (2016). *True merit: Ensuring our brightest students have access to our best colleges and universities*. Lansdowne: Jack Kent Cooke Foundation. Retrieved from http://www.jkcf.org/assets/1/7/JKCF_True_Merit_Report.pdf.

- **Federal Pell Grant Receipt.** Eligibility for Pell Grants for both dependent and independent students is based on family income, family size, number of family members attending college, and other factors. Pell Grants are targeted to students from low-income families and independent students with low-incomes. In the 2016-17 award year, 7.1 million students received a Pell Grant at a total cost of \$26.6 billion. This figure was down from a peak of 9.4 million students in 2011-12 during the Great Recession.⁵⁹ In the 2018-19 award year, the maximum Pell Grant award was \$6,095.
- **Level and Control of Postsecondary Institutions.** Indicator 2 reports differences in enrollment by Federal Grant receipt by institutional level (2-year versus 4-year institution) and control (public, private non-profit, and private for-profit).
- **High School Longitudinal Studies Data by Family Socioeconomic Status and Institutional Selectivity.** The five NCES high school longitudinal studies include the National Longitudinal Study, representing the scheduled high school graduating class of 1972 (NLS); High School and Beyond Study, representing the scheduled high school graduating class of 1982 (HS&B); National Education Longitudinal Study, representing the scheduled high school graduating class of 1992 (NELS); Education Longitudinal Study, representing the scheduled high school graduating class of 2004 (ELS); and High School Longitudinal Study (HSLs) representing the scheduled high school graduating class of 2013. As discussed in Indicator 1, a socioeconomic status (SES) composite is included in each of the NCES high school longitudinal studies. The SES composite is based on data from the parent questionnaires or imputed from the student questionnaires and, for the five NCES longitudinal studies, are based on five equally weighted, components. These components are: father's/guardian's education, mother's/guardian's education, family income, father's/guardian's occupational prestige score, and mother's/guardian's occupational prestige score. This Indicator uses data from a published study by Michael Bastedo and Ozan Jaquette and an analytic dataset constructed by merging the high school longitudinal data with the Barron's Admissions Competitiveness Index.⁶⁰ We also use data from the High School Longitudinal Study (HSLs) to examine selectivity of institutions attended by 2009 9th graders who graduated high school by 2013. Due to differences in survey design and study methodology, we present this data in a separate chart rather than with the earlier four NCES studies.⁶¹

59 U.S. Department of Education (n.d.). *Federal Pell Grant Program End-of-Year Report 2016-17*. Retrieved from <https://www2.ed.gov/finaid/prof/resources/data/pell-data.html>;

Federal Student Aid (n.d.). Title IV Program Volume Reports. *Aid Recipients Summary* [Data file]. Retrieved from <https://studentaid.ed.gov/sa/sites/default/files/fsawg/datacenter/library/AidRecipientsSummary.xls>.

60 Figures are adapted from Bastedo, M. & Jaquette, O. (2011). Running in place: Low-income students and the dynamics of higher education stratification. *Educational Evaluation and Policy Analysis*, 33, 318-339, Appendix 6. Retrieved from <http://www-personal.umich.edu/~bastedo/papers/EEPA-Appendix.pdf>.

61 The High School Longitudinal Study (HSLs:2009) sampled 9th graders and completed follow-ups in 2012 (11th grade) and 2013 (the fall after expected high school graduation date). For these reasons HSLs:2009 is not directly comparable to the earlier four studies which started in 10th or 8th grade and had follow-ups in 12th grade. The 12th grade data on anticipated college were used in the Bastedo and Jaquette (2011) analyses on selectivity for the four earlier NCES longitudinal studies. The HSLs used quintiles for the SES classification rather than quartiles.

- **Institutional Selectivity.** Selectivity is measured using Barron's Admissions Competitiveness Index, which is based on such measures as percent of applicants admitted, students' high school class rank, and students' college entrance exam scores.⁶² NCES publishes Barron's datasets corresponding to years in which students in the longitudinal studies typically first enrolled in a postsecondary institution. The competitiveness indices include "most competitive," "highly competitive," "very competitive," "competitive," and "less competitive." We coded institutions not included in Barron's Admissions Competitiveness Index based on level and control using IPEDS data.⁶³ We used the 2016 Barron's index for all years in Indicator 2e. Reflecting high consistency in Barron's methodology across years, only a small share of institutions change competitiveness classification over time.⁶⁴

Equity Indicator 2a: How Does the Level of Institution Attended Vary by Pell or Other Federal Grant Receipt?

Indicator 2a shows that, among full-time, first-time (FTFT) degree-seeking undergraduates, those who received Pell and other Federal Grants are consistently less likely than those who do not receive Federal Grants to attend 4-year institutions than 2-year institutions. In 2016-17, 59 percent of Federal Grant recipients were enrolled at 4-year rather than 2-year institutions, compared with 77 percent of non-recipients. The difference in the percentages of Federal Grant recipients and non-recipients attending 4-year rather than 2-year colleges widened from 13 percentage points in 2001 to 18 percentage points in 2017.

Equity Indicator 2b: How Does the Control of Institution Attended Vary by Receipt of Pell or Other Federal Grants?

Most students attend public institutions rather than private non-profit or private for-profit institutions. Indicator 2b shows that, in 2016-17, 69 percent of Pell and other Federal Grant recipients and 71 percent of non-recipients were attending public institutions.

The distribution of full-time, first time (FTFT) undergraduates who did not receive Federal Grants across public, private non-profit, and private for-profit institutions remained relatively stable over the past decade. About 70 percent of non-recipients were enrolled at public institutions, 25 percent were enrolled at private non-profit institutions, and 5 percent were enrolled in private for-profit institutions.

In contrast, the distribution of FTFT undergraduates who received Pell and other Federal Grant shifted across these three sectors over the past decade. The proportion of FTFT undergraduates receiving Pell and other Federal Grants enrolled at for-profit institutions increased from 18 percent in 2004 to 23 percent in 2006, reached a high of 31 percent in 2010, and declined to 11 percent in 2015-16 and 2016-2017.

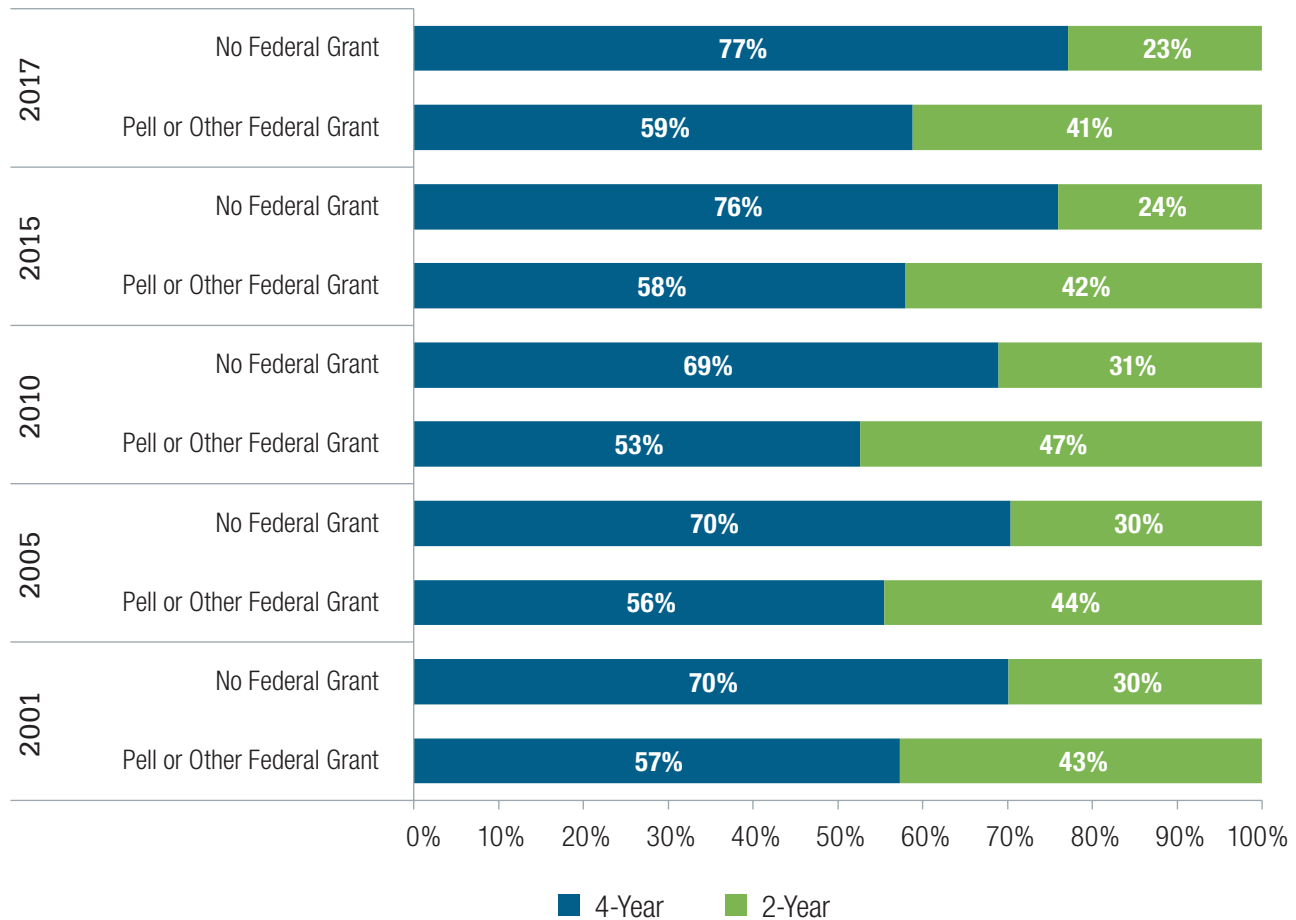
In 2016-2017, as in prior years, Federal Grant recipients were 3 times as likely as those who did not receive Federal Grants to be enrolled at for-profit institutions rather than public or private non-profit institutions (11 percent versus 4 percent).

⁶² For more information on Barron's Admissions Competitiveness Index as it pertains to Indicators 2d and 2e, see Bastedo and Jaquette (2011), including their online Appendix Table 2. Retrieved from <http://www-personal.umich.edu/~bastedo/papers/EEPA-Appendix.pdf>.

⁶³ National Center for Education Statistics.(n.d.). Barron's Admissions Competitiveness Index Data Files:1972, 1982, 1992, 2008, 2014. [Data file]. Retrieved from <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2016332>.

⁶⁴ Bastedo and Jaquette (2011) also used one year of the Barron's selectivity index in their study (cited above).

Equity Indicator 2a: Percentage distribution of full-time, first-time degree-seeking undergraduate students who did and did not receive Pell or other Federal Grants by level of institution attended: 2001, 2005, 2010, 2015, and 2017



Indicator Status: High Inequality and Widening Gap

The difference in the percentages of Federal Grant recipients and non-recipients attending 4-year rather than 2-year colleges widened from 13 percentage points in 2001 to 18 percentage points in 2017.

NOTE: Federal Grant aid is comprised primarily of Pell Grants but also includes Federal Supplemental Educational Opportunity Grants (FSEOG) and grants from federal agencies other than the U.S. Department of Education such as the Department of Veterans Affairs and the Department of Labor.

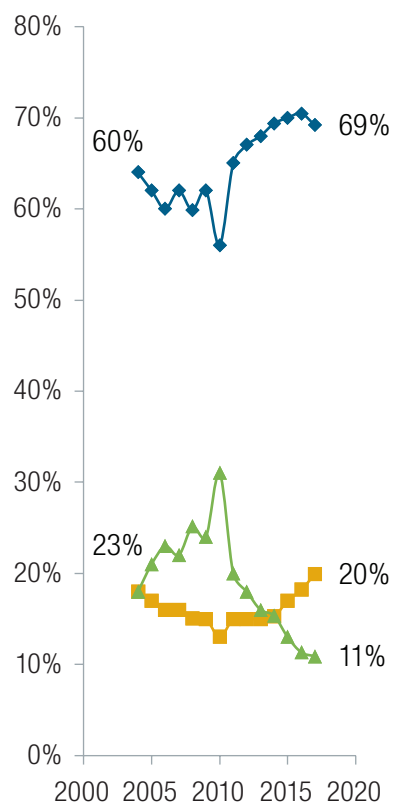
SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), as included in *Digest of Education Statistics 2018*, [Table 331.20].

Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_331.20.asp?current=yes.

Equity Indicator 2b: Percentage distribution of full-time, first-time degree-seeking undergraduate students by control of institution attended by receipt of federal grant status: 2004 to 2017

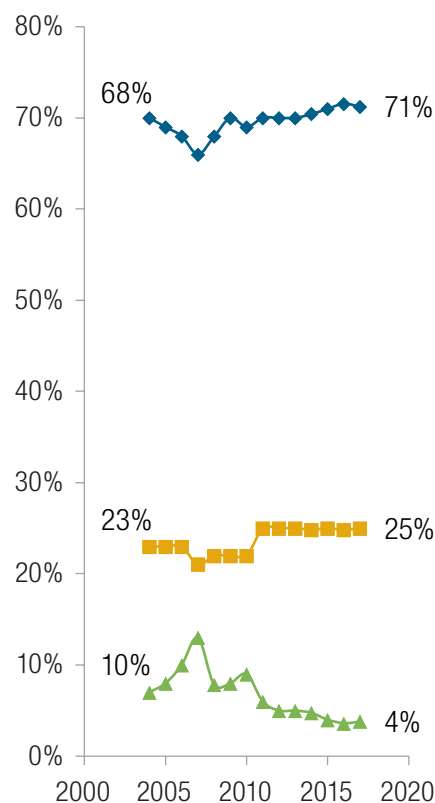
Federal Grant Recipients

- Federal Grant Public
- Federal Grant Private Non-Profit
- Federal Grant Private For-Profit



Federal Grant Non-Recipients

- No Federal Grant Public
- No Federal Grant Private Non-Profit
- No Federal Grant Private For-Profit



Indicator Status:

Pell and other Federal Grant recipients were 3 times as likely as Federal Grant non-recipients to attend a private for-profit institution in 2017, up from 2 times as likely in 2004. The percentage of Pell and other Federal Grant recipients attending public institutions increased by 5 percentage points between 2004 and 2017, while the percentage of non-recipients attending public institutions increased by 1 percentage point.

NOTE: Federal Grant aid is comprised primarily of Pell Grants but also includes Federal Supplemental Educational Opportunity Grants (FSEOG) and grants from federal agencies other than the U.S. Department of Education such as the Departments of Veterans Affairs and Labor.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS). (2017), as included in *Digest of Education Statistics 2018*, [Table 331.20].

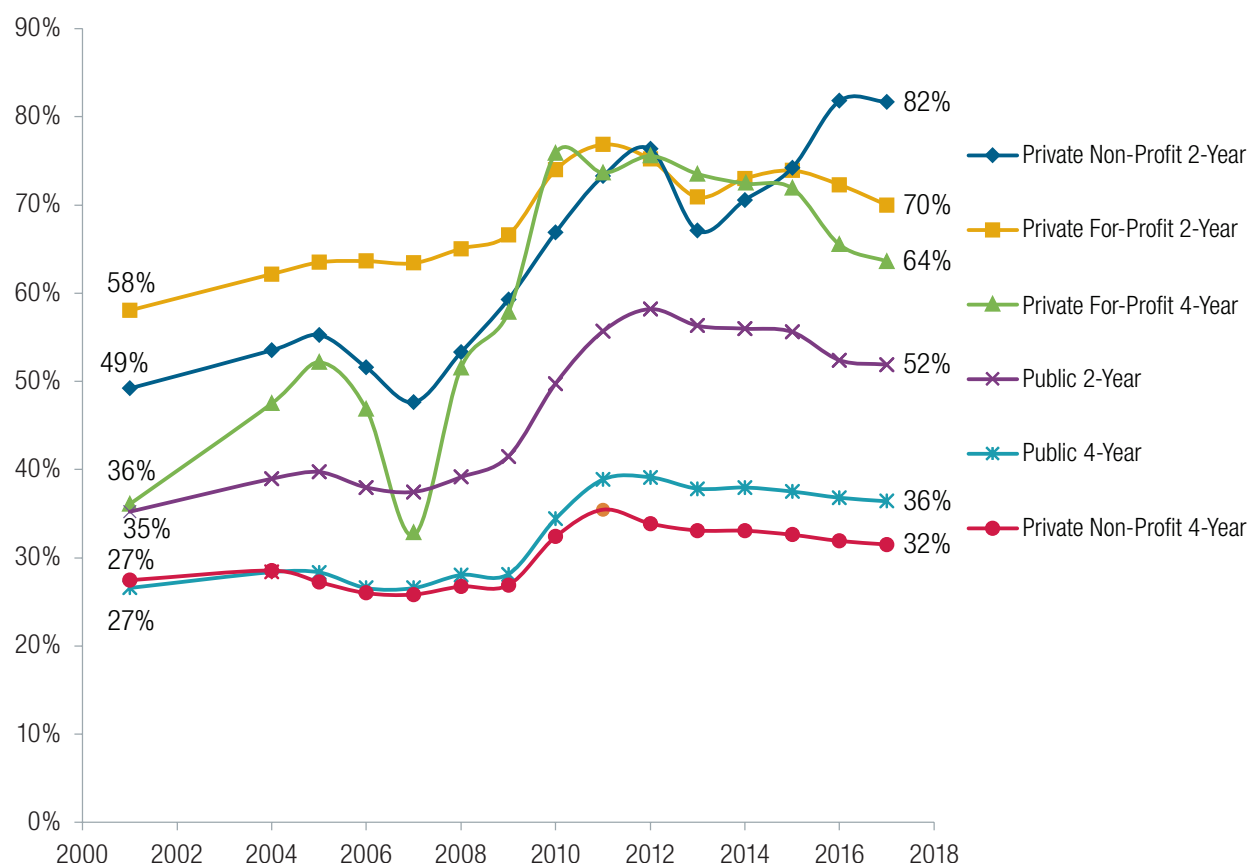
Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_331.20.asp?current=yes.

Equity Indicator 2c: How Does the Percent of Students Receiving Federal Grants Vary by Institutional Level and Control?

The percentage of full-time, first-time (FTFT) undergraduates who receive Pell and other Federal Grants is higher at for-profit institutions than public institutions of the same level (4-year or 2-year). In 2016-17, two-thirds (64 percent) of FTFT undergraduates attending private for-profit 4-year institutions received Pell or other Federal Grants, compared with about a third of FTFT undergraduates attending public 4-year (36 percent) and private non-profit 4-year (32 percent) institutions. About 70 percent of FTFT undergraduates at private for-profit 2-year institutions and 82 percent of those attending private non-profit 2-year institutions received Federal Grants in 2016-17, compared with half (52 percent) of FTFT undergraduates attending public 2-year institutions.

Indicator 2c shows that the share of FTFT undergraduate students receiving Pell or other Federal Grants was lower in all institutional sectors, except the private non-profit 2-year sector, in 2016-17 than in 2014-15. Between 2015 and 2017, the percentage of FTFT undergraduates receiving Pell and other Federal Grants declined by 8 percentage points at private for-profit 4-year institutions (from 72 percent to 64 percent), 4 percentage points at private for-profit 2-year institutions (from 74 percent to 70 percent), 4 percentage points at public 2-year institutions (from 56 percent to 52 percent), 2 percentage points at public 4-year institutions (from 38 percent to 36 percent), and 1 percentage point at private non-profit 4-year institutions (from 33 percent to 32 percent). At private non-profit 2-year institutions, the percentage of FTFT undergraduates receiving Federal Grants increased from 74 percent in 2015 to 82 percent in 2017.

Equity Indicator 2c: Percentage of full-time, first-time degree/certificate-seeking undergraduate students receiving Pell or other Federal Grants by institutional type and control: 2001 to 2017



Indicator Status: High Inequality

In 2017, 82 percent of FTFT undergraduates attending private non-profit 2-year institutions received Federal Grants, compared with about a third of students attending public 4-year and private non-profit 4-year institutions. The gap in the share of enrolled students at public 4-year institutions and private for-profit 4-year institutions receiving Federal Grants was 9 percentage points in 2001 (27 percent versus 36 percent) and 28 percentage points in 2017 (36 percent versus 64 percent).

NOTE: Federal Grant aid for undergraduates is comprised primarily of Pell Grants but also includes Federal Supplemental Educational Opportunity Grants (FSEOG) and grants from federal agencies other than the U.S. Department of Education such as the Department of Veterans Affairs and Department of Labor.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), as included in *Digest of Education Statistics 2018*, [Table 331.20].

Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_331.20.asp?current=yes.

Equity Indicator 2d: How Does the Percentage Distribution of Students by Socioeconomic Status Vary by the Selectivity of the Institution?

Equity Indicator 2d presents the distribution of students by socioeconomic status (SES) in each selectivity category of the postsecondary institutional destinations of seniors in the high school graduating classes of 1972, 1982, 1992, and 2004.⁶⁵ As institutional selectivity increases, the share of students who come from the lowest SES quartile declines. This pattern is consistent over time.

Data from the Educational Longitudinal Study (ELS) for the high school class of 2004 show that, of the approximately 2 percent of all students (See Appendix Figure A-4) who planned to attend the “most competitive” institutions, 69 percent were from the highest SES quartile, 19 percent were from the third SES quartile, 8 percent were from the second SES quartile, and 4 percent were from the lowest SES quartile.⁶⁶ The representation of students in the highest SES quartile who had institutional destinations in “most competitive” institutions decreased from 78 percent in 1972 to 69 percent in 2004. The representation of students from the lowest SES quartile planning to attend the “most competitive” institutions remained virtually unchanged (5 percent in 1972 and 4 percent in 2004).

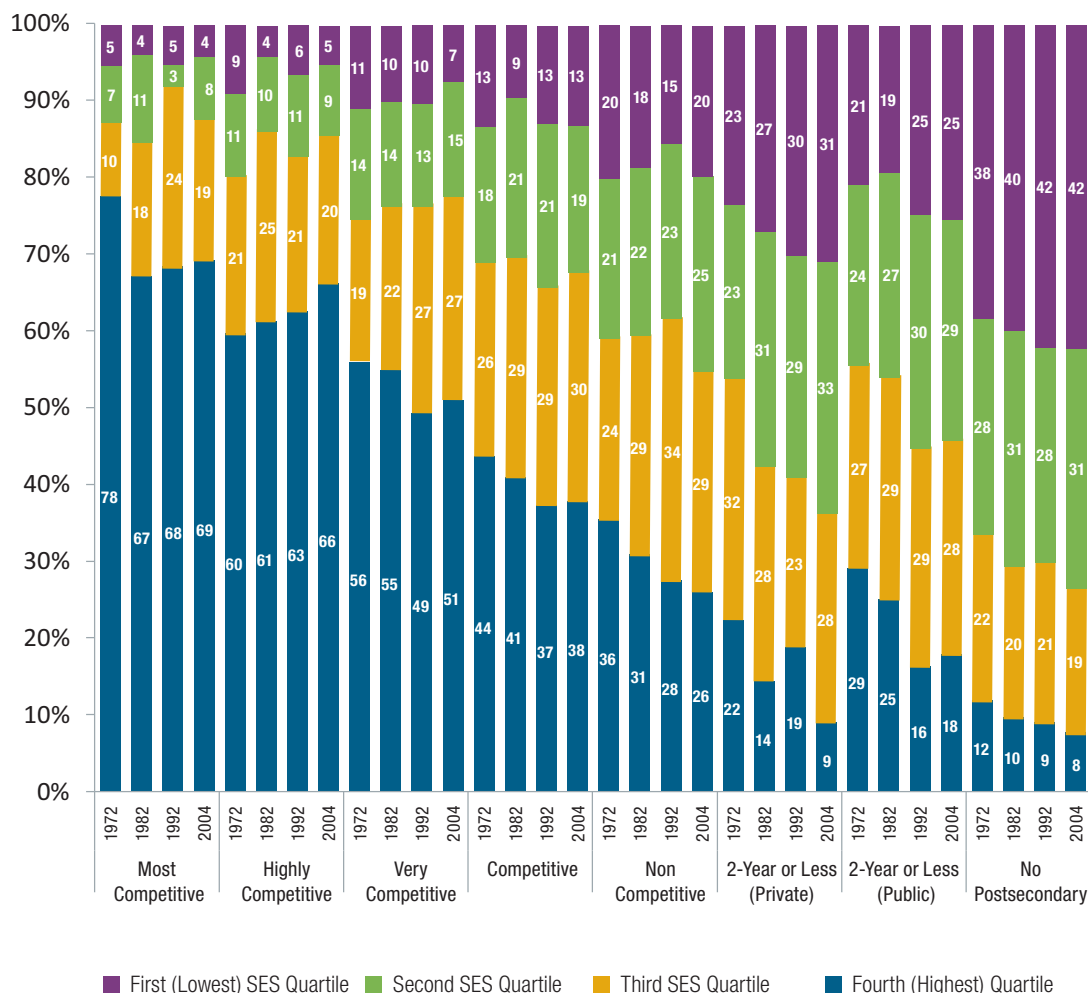
In both 1972 and 2004, among students whose institutional destination was the “most competitive” colleges and universities, 88 percent came from the two highest family income quartiles and 12 percent came from the bottom half of the SES distribution.

At the same time, the representation of youth from the lowest SES quartile increased among those whose institutional destination was a public 2-year or less institution (from 21 percent in 1972 to 25 percent in 2004) and private 2-year or less institution (from 23 percent in 1972 to 31 percent in 2004) and among those with no postsecondary education plans (from 38 percent in 1972 to 42 percent in 2004).

⁶⁵ See Appendix A (Appendix Figure A-4 and A-5) for the data on which Indicator 2d is based. The data are adapted from the analysis of Bastedo and Jaquette (2011). Running in Place: Low-income Students and the Dynamics of Higher Education Stratification, *Educational Evaluation and Policy Analysis*, 33(3), 318-339, Appendix Table 6. Retrieved from <http://www.personal.umich.edu/~bastedo/papers/EEPA-Appendix.pdf>.

⁶⁶ Across the four studies, the percentages of all graduating high school students who had institutional destinations among the “most competitive” colleges were 1.9 percent in 1972, 2.0 percent in 1982, 3.6 percent in 1992, and 2.4 percent in 2004. See Appendix A for the distribution of institutional destinations by SES quartile as published by Bastedo and Jaquette (2011) as cited above.

Equity Indicator 2d: Percentage distribution of each selectivity category of institutional destinations by parents' socioeconomic status (SES) for high school class cohorts: 1972, 1982, 1992, and 2004



Indicator Status: High Inequality and Persisting Gaps

In the three most recent high school longitudinal studies, among those graduating seniors planning to enroll in the “most competitive” institutions, 4 percent to 5 percent were from the lowest SES quartile and 67 percent to 69 percent were from the highest SES quartile.

NOTE: This Indicator draws from high school longitudinal studies survey data of institutional destination of high school seniors. Among the students from the class of 2004 who reported planning to enroll in a “Most Competitive” institution, 4 percent were from the lowest SES quartile and 69 percent were from the highest SES quartile. As the data in Appendix A (Figure A-4) reveal, in 2004 the percentage of students planning to attend the “Most Competitive” institutions ranged from 0.5 percent for the first (lowest) SES quartile to 6.2 percent for the fourth (highest) SES quartile. Only 2 percent of all students planned to attend a “Most Competitive” institution in 2004.

SOURCE: U.S. Department of Education, NCES, NLS; HS&B, NELS, and ELS; Adapted from Bastedo, M. N., & Jaquette, O. (2011). Running in Place: Low-income Students and the Dynamics of Higher Education Stratification, *Educational Evaluation and Policy Analysis*, 33(3), 318-339. Retrieved from <http://www-personal.umich.edu/~bastedo/papers/EEPA-Appendix.pdf> used with permission. See Appendix A.

Equity Indicator 2e: How Does the Average Percentage of Students Receiving Pell or Other Federal Grants Vary by Institutional Competitiveness?

Using IPEDS data combined with the 2016 Barron's Admissions Competitiveness Index, Indicator 2e shows the average percentage of first-time, full time (FTFT) undergraduates who received Pell or other Federal Grants from academic years 1999-2000 to 2016-2017 by admissions selectivity.

Indicator 2e shows a consistent negative association between the selectivity of the institution and the average percent of students who receive Pell or other Federal Grants. As institutional competitiveness increases, the institutional average percentage of students receiving Federal Grants decreases. In 2016-2017, only 16 percent of students enrolled at the "Most Competitive" institutions received Pell or other Federal Grants, compared with 59 percent of students enrolled at "Noncompetitive" institutions.

Although the representation of students receiving Federal Grants was higher in 2016-17 than in 1999-00 in all institutional selectivity categories, differences in average rates of Federal Grants recipients by institutional selectivity also increased over this period. The average percentage of students receiving Federal Grants at the "Most Competitive" institutions was just one percentage point higher in 2016-17 than in 1999-00 (16 percent versus 15 percent). In contrast, the share of FTFT undergraduates receiving Federal Grants was 17 percentage points higher in 2017 than in 2000 at 2-year public institutions (55 percent versus 38 percent), 9 percentage points higher at "Noncompetitive" institutions (59 percent versus 50 percent), and 14 percentage points higher at for-profit 2-year and 4-year institutions (68 percent versus 54 percent).⁶⁷

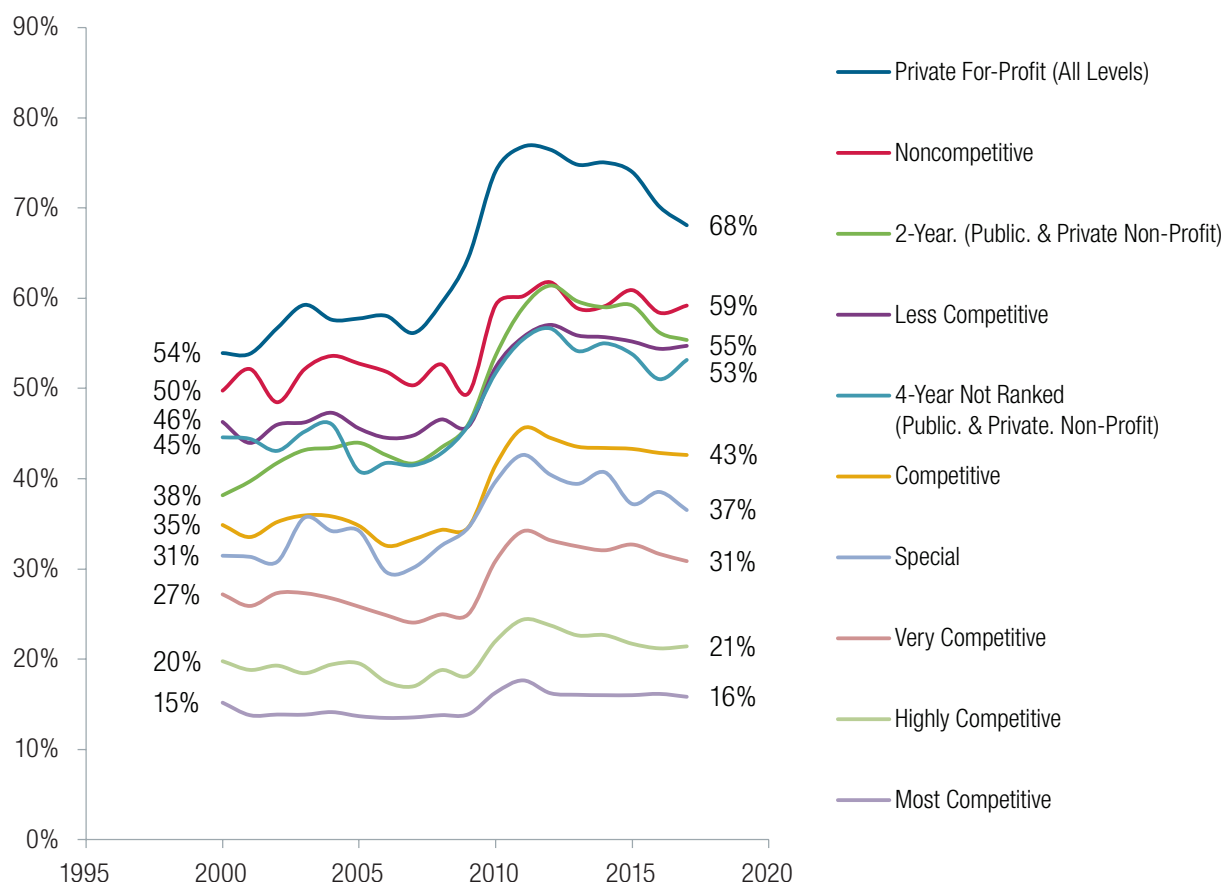
Equity Indicator 2f: How Does Immediate College Enrollment by Competitiveness of the Institution Vary by Socioeconomic Status (SES)?

The NCES High School Longitudinal Study, combined with the Barron's Admissions Competitiveness Index, provides information on the competitiveness of the institutions attended by 2009 9th graders who graduated from high school by 2013. While the classifications of institutional competitiveness are different than those reported in Indicators 2d and 2e, the patterns are similar.

Among 2009 9th graders who graduated from high school by 2013, those from the highest SES quintile were 8 times as likely to be enrolled in a "most" or "highly" competitive institution in the fall following scheduled high school graduation (2013) as students from the lowest SES quintile (33 percent versus 4 percent). Almost two-thirds (63 percent) of students from the highest SES quintile were enrolled in the "most," "highly," or "moderately" competitive institutions, compared with 15 percent of those in the lowest SES quintile. About 7 percent of students from the highest quintile were not enrolled in the fall after the scheduled high school graduation, compared with 40 percent of students in the lowest SES quintile.

⁶⁷ We include only public and private not-for-profit institutions in the categories of Barron's rankings. A small number of for-profit institutions are ranked by Barron's (22 institutions in 2016-2017), but we include these institutions in the for-profit sector.

Equity Indicator 2e: Average percentage of full-time, first-time degree/certificate-seeking undergraduate students who were awarded Pell or other Federal Grants by institutional selectivity: 1999-2000 to 2016-2017



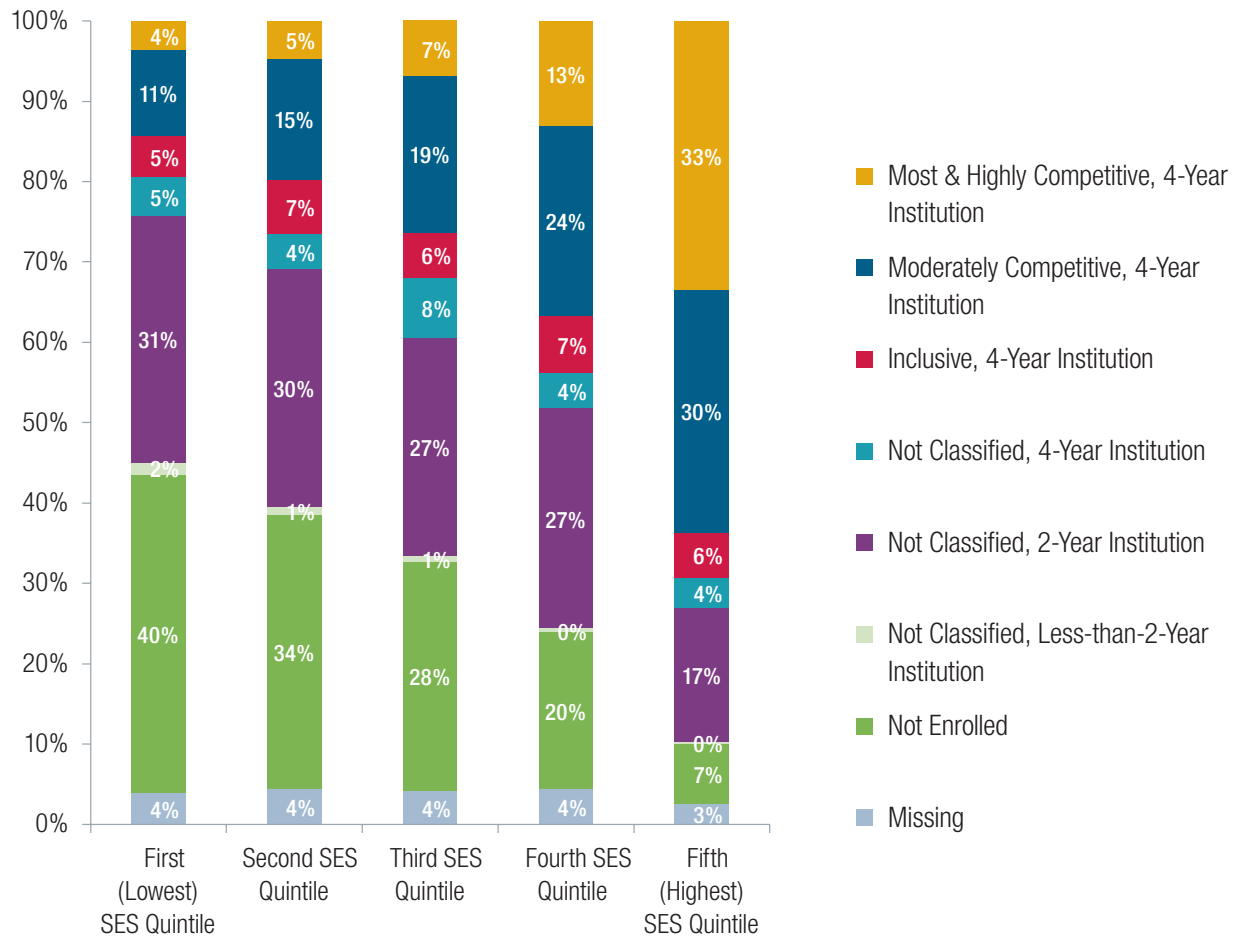
Indicator Status: High Inequality and Widening Gaps

The representation of low-income students declines, on average, as institutional selectivity increases. The gap in the average share of undergraduates receiving Pell or other Federal Grants at the “most competitive” and “less competitive” institutions widened from 31 percentage points (15 percent versus 46 percent) in 2000 to 39 percentage points (16 percent versus 55 percent) in 2017.

NOTE: Federal Grant aid is comprised primarily of Pell Grants, but also includes Federal Supplemental Educational Opportunity Grants (FSEOG) and grants from federal agencies other than the U.S. Department of Education such as the Departments of Veterans Affairs and Labor. Data represent institutional averages in each category.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2017, and Barron’s Admissions Competitiveness Index, 2016.

Equity Indicator 2f: Percentage distribution of 2009 9th graders who graduated from high school by institutional selectivity of enrollment in the fall after scheduled high school graduation (in 2013) by SES quintile



Indicator Status: High Inequality

Among 2009 9th graders who graduated from high school by 2013, 4 percent of those from the lowest SES quintile were enrolled in a “most” or “highly” competitive institution in the fall after scheduled high school graduation, compared with 33 percent of students from the highest SES quintile.

NOTE: This chart is based on those who graduated from high school in 2013 and excludes 9th graders in 2009 who had not yet completed a regular high school diploma or GED by 2013. Sample members were surveyed in summer or fall of 2013.

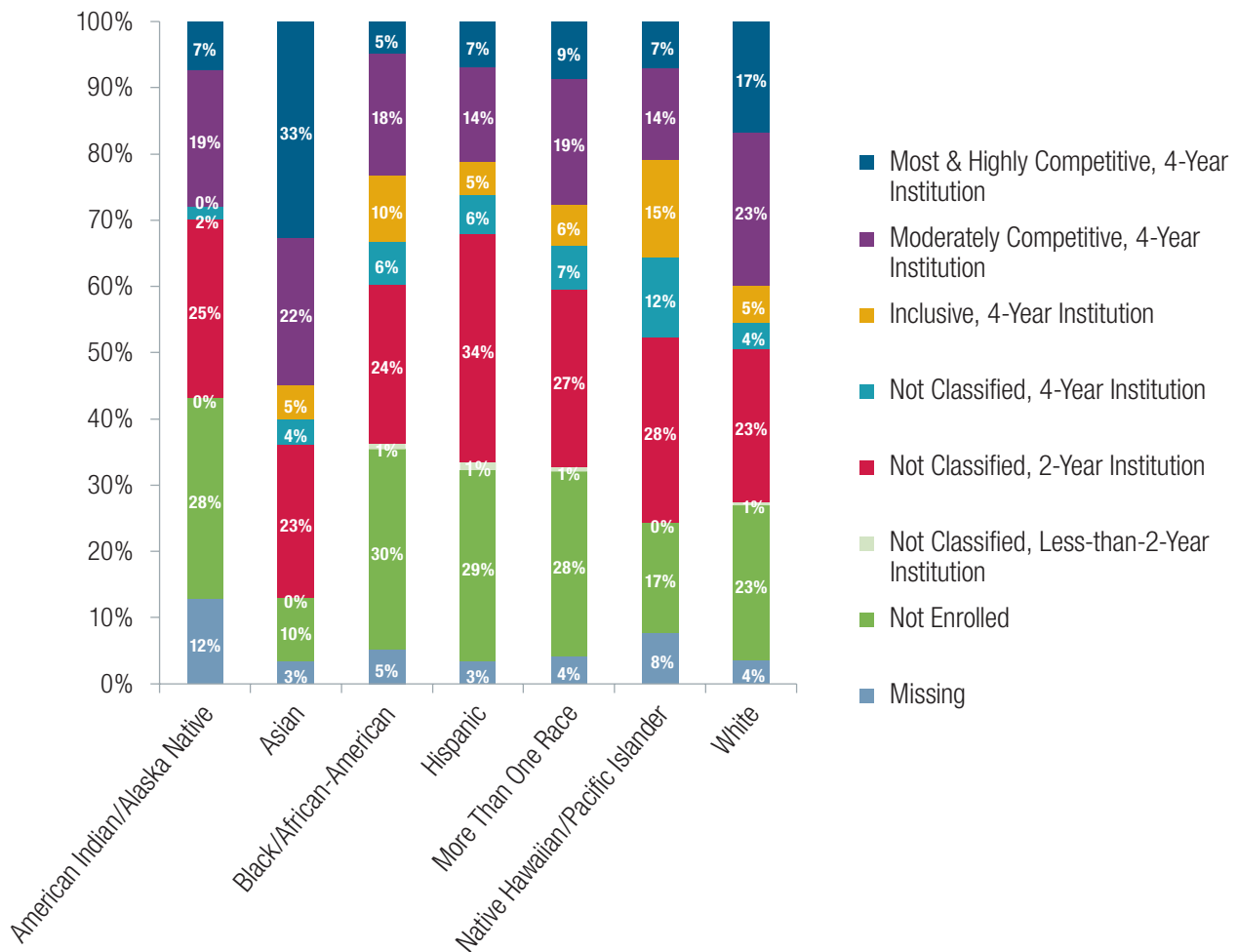
SOURCE: Tabulated using NCES PowerStats with data from the High School Longitudinal Study (HSL:2009).

Equity Indicator 2g: How Does Immediate College Enrollment by Competitiveness of the Institution Vary by Race/Ethnicity?

Indicator 2g also utilizes information from the High School Longitudinal Study to consider differences in the competitiveness of the higher education institutions attended by 2013 high school graduates who were 9th graders in 2009 by race/ethnicity.

Among 2009 9th graders who graduated from high school by 2013, 30 percent of Blacks and 29 percent of Hispanics were not enrolled in a higher education institution in fall 2013, compared with 23 percent of Whites and 10 percent of Asians. About a third (34 percent) of Hispanics were enrolled at two-year institutions, compared with about a fourth of students from other groups. A third (33 percent) of Asians and 17 percent of Whites were enrolled at “most” or “highly” competitive institutions, compared with 7 percent of Hispanics and 5 percent of Blacks.

Equity Indicator 2g: Percentage distribution of 2009 9th graders who graduated from high school by 2013 by institutional selectivity of enrollment in the fall after scheduled high school graduation by race/ethnicity



Indicator Status: High Inequality

Among 2009 9th graders who graduated from high school by 2013, 33 percent of Asians and 17 percent of Whites were enrolled at “most” or “highly” competitive institutions, compared with 7 percent of Hispanics and 5 percent of Blacks.

NOTE: This chart is based on those who graduated from high school in 2013 and excludes 9th graders in 2009 who had not yet completed a regular high school diploma or GED by 2013. Sample members were surveyed in summer or fall of 2013. Caution is needed for data on American Indian/Alaska Native, More than One Race, and Native Hawaiian/Pacific Islander as the estimates are not stable.

SOURCE: Tabulated using NCES PowerStats with data from the High School Longitudinal Study (HSL:2009).

EQUITY INDICATOR 3:

DOES FINANCIAL AID ELIMINATE THE FINANCIAL BARRIERS TO PAYING COLLEGE COSTS?

The maximum Federal Pell Grant covered 67 percent of average college costs in 1980 but only 25 percent of average college costs in 2018. If it had covered two-thirds of average college costs, the maximum Federal Pell Grant would have been \$15,969 rather than \$5,920 in 2017-18.

Equity Indicator 3(a-c): Definitions

Indicator 3 tracks statistics related to college cost and the amount of cost covered by Federal Grants. Drawing on definitions developed by researchers and the federal government for federal student financial aid programs, we rely on the following measures.

- **College Cost** is reported annually by institutions to the U.S. Department of Education through IPEDS and includes tuition, fees, and room and board. Average costs in this report are weighted by undergraduate full-time enrollment but do not take into account residency status. For public institutions, in-state tuition and required fees are used.
- **Cost of Attendance (COA)** is the total cost, on average, to attend college each year. The COA includes tuition and fees; on-campus room and board (or a housing and food allowance for off-campus students); and allowances for books, supplies, transportation, loan fees, and, if applicable, dependent care. It can also include other expenses like an allowance for the rental or purchase of a personal computer, costs related to a disability, and costs for eligible study-abroad programs. The COA is institutionally derived and used by the federal government in determining a student's financial need.
- **Total Federal Aid vs. Federal Grant Aid.** Total Federal Aid as defined by the U.S. Department of Education includes grants, loans, and work-study to help students pay for college. We use the term Federal Grant Aid to include federal financial assistance for college that does not have to be repaid (e.g., federal loans) and does not have a work requirement (e.g., federal work-study).

- **Maximum Pell Grant** is the largest Pell Grant award allowed by federal law. The average Pell Grant award is lower than the maximum. The maximum Pell award for the AY2018-19 award year (July 1, 2018 to June 30, 2019) is \$6,095.
- **Expected Family Contribution (EFC)** is calculated by the federal government from information submitted on the Free Application for Federal Student Aid (FAFSA) and determines a student's eligibility for federal student aid. The EFC is determined using formulas mandated by Congress in the Higher Education Act of 1965, as amended, which take into account indicators of financial strength such as income, assets, and family size. The EFC is combined with the cost of attendance (COA) and the student's enrollment intensity (e.g., full-time, part-time) to determine the amount of the Federal Pell Grant award. Tuition may be used to calculate the amount of the Pell Grant award for students enrolled at low-tuition schools (if tuition is less than the current maximum Pell Grant). The lower the EFC, the greater a student's demonstrated financial need. The amount of the Federal Pell Grant award generally increases as the EFC decreases. An applicant with the minimum EFC of zero will generally receive the maximum Pell award up to the applicant's COA for the year. Proportionally smaller awards are made to part-time students.
- **Unmet Need** is the financial need remaining after the Expected Family Contribution (EFC) and all grants and other discounts (but not loans) are subtracted from the cost of attendance (COA).

Equity Indicator 3a(i to iv): What Are the Trends in Average College Costs?

Average college costs for all institutions, weighted by full-time undergraduate enrollment, were 2.5 times higher (in constant 2017-18 dollars) in 2017-18 than in 1974-75. Indicator 3a(i) shows that cost increases have largely occurred since 1980. In 1980, average costs were lower in constant dollars (\$8,978) than in 1974-75 (\$9,501). After 1980, average costs rose steadily to \$23,835 in 2017-18.⁶⁸

Average costs were about twice as high at 4-year private non-profit and for-profit institutions than 4-year public institutions in both 1974-75 (\$16,309 vs. \$7,889, in 2017-18 dollars) and 2017-18 (\$43,139 vs. \$20,050).

Costs were about twice as high at 2-year private institutions than at 2-year public institutions in 1974-75 (\$12,413 vs. \$6,415, in 2017-18 dollars) and 2.5 times higher in 2017-18 (\$25,596 vs. \$10,281).⁶⁹

The difference in costs between 2-year and 4-year public colleges has increased since 1974-75, with most of the increase occurring after 1980. In constant 2017-18 dollars, average costs at 4-year public institutions were 23 percent higher than 2-year public costs in 1974-75 (\$7,889 vs. \$6,415, in 2017-18 dollars). By 2017-18, average costs were 95 percent higher for 4-year public institutions than 2-year public colleges (\$20,050 vs. \$10,281).

Between 1974-75 and 2015-16, average costs for 4-year public postsecondary institutions increased 2.5 times in constant dollars while average costs for 2-year public institutions increased 1.6 times. Over the same period, average costs for 4-year private institutions rose 2.6 times and average private 2-year costs rose 2 times.

By comparison, median family income of U.S. householders over age 25 increased only 1.3 times (30 percent) between 1975 and 2016 (rising from \$55,665 to \$72,707 in constant 2016 dollars), with most of the increase occurring prior to 1999.⁷⁰

⁶⁸ U.S. Department of Education, National Center for Education Statistics. (2018). *Digest of Education Statistics 2018*, [Table 330.10]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_330.10.asp?current=yes.

⁶⁹ U.S. Department of Education, National Center for Education Statistics (2018). *Digest of Education Statistics 2018*, [Table 330.10]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_330.10.asp?current=yes.
“Private” includes private non-profit and private for-profit institutions. Most of the 4-year private enrollment is in the non-profit sector, and most of the 2-year private enrollment is in the for-profit sector. Data are for the entire academic year and represent average total charges for full-time attendance. Tuition and fees are weighted by the number of full-time equivalent undergraduates, but are not adjusted to reflect student residency status.

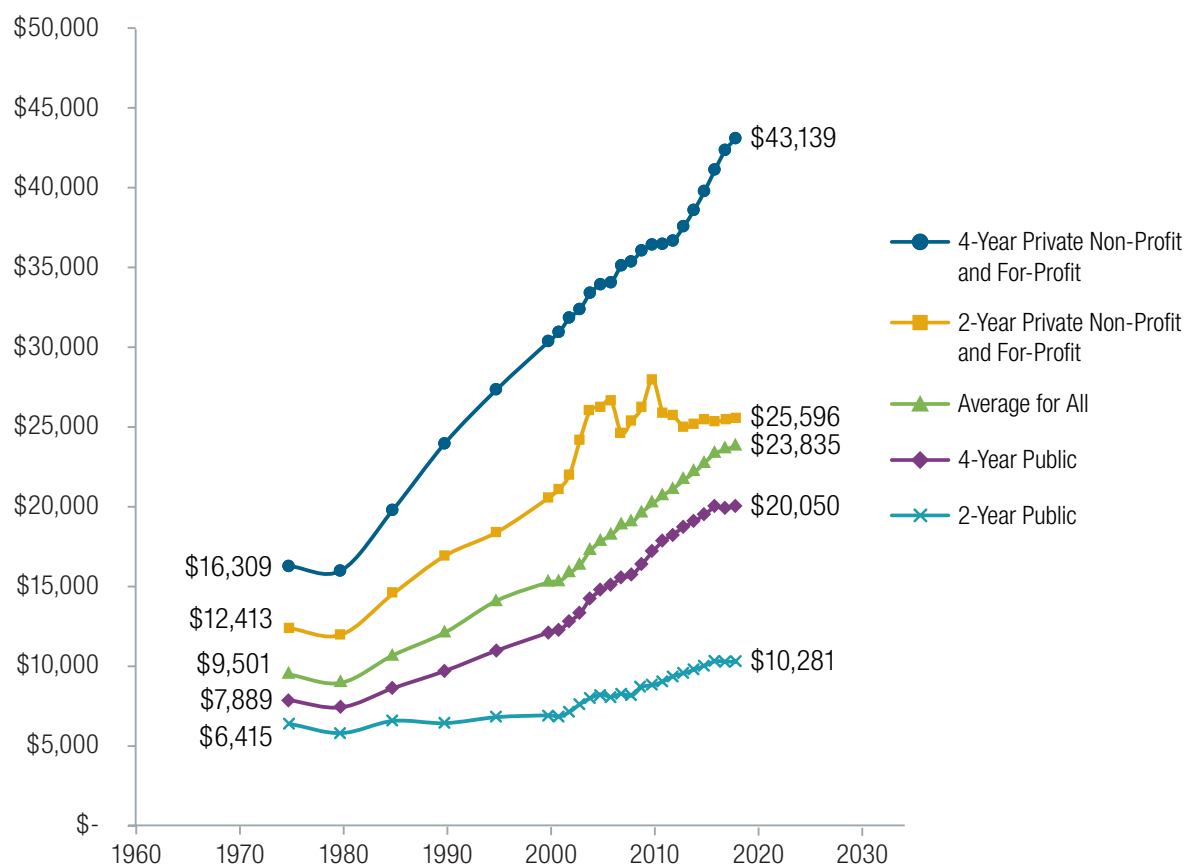
⁷⁰ See Appendix A, Figure A-1 for median income for families with children.

Average College Costs Vary by State. States differ in the organization and structure of higher education, particularly with regard to the availability of public and private 2-year and 4-year institutions, degree of state support for higher education, and amount and characteristics of financial aid for students. Indicators 3a(ii) to 3a(iv) show the most recent (2016-17) average college costs for full-time undergraduates, weighted by enrollment, by state as reported by NCES.⁷¹

Indicator 3a(ii) shows that average in-state tuition and fees and room and board costs at 4-year public institutions in 2016-17 ranged from less than \$15,000 in Utah, Wyoming, Idaho, and Florida to more than \$25,000 in Pennsylvania, New Jersey, Vermont, and New Hampshire. Indicator 3a(iii) shows that, at 4-year private institutions, average costs (tuition and fees, room and board) varied from \$13,010 in Idaho and \$15,212 in Utah to more than \$55,000 in the District of Columbia and Massachusetts. For 2-year public institutions, Indicator 3a(iv) shows that average tuition and fees (not including room and board costs) were \$1,262 in California and \$1,590 in New Mexico, compared with \$7,002 in New Hampshire.

⁷¹ Additional breakouts by level and control and in-state and out of state are available at the following NCES website: https://nces.ed.gov/programs/digest/d17/tables/dt17_330.20.asp?current=yes.

Equity Indicator 3a(i): Average college costs (undergraduate tuition, fees, and room and board) charged for full-time students in degree-granting postsecondary institutions, by institutional level and control: 1974-75 to 2017-18 (constant 2017-18 dollars)



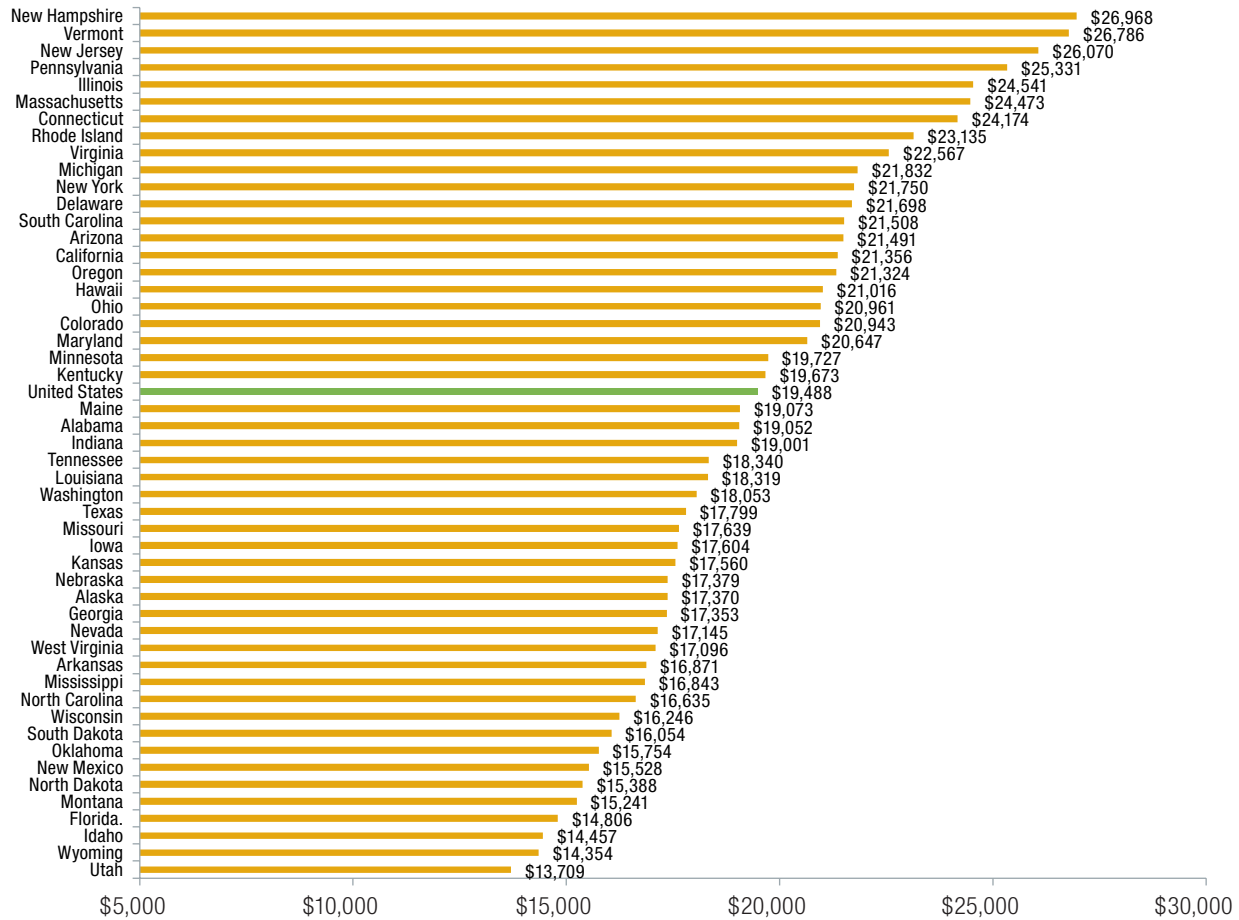
Indicator Status: Large Increases in College Costs and Growing Difference in Costs between Institution Sectors.

In constant dollars, between 1974-75 and 2017-18, average costs increased 2.5 times for 4-year public postsecondary institutions and 1.6 times for 2-year public institutions.

NOTE: Data are for the entire academic year and are average charges for full-time students. Tuition and fees were weighted by the number of full-time-equivalent undergraduates, but not adjusted to reflect student residency. Room and board are based on full-time students. Data through 1995-96 are for institutions of higher education, while later data are for degree-granting institutions. Degree-granting institutions grant associate's degrees or higher and participate in Title IV federal financial aid programs. The degree-granting classification is very similar to the earlier higher education classification, but includes more 2-year colleges and excludes a few higher education institutions that did not grant degrees. Because of the small number of institutions, data for private 2-year colleges must be interpreted with caution. Some data have been revised from previously published figures. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics (2018). *Digest of Education Statistics 2018*, [Table 330. 10]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_330.10.asp?current=yes.

Equity Indicator 3a(ii): Average costs (undergraduate tuition, fees, and room and board) charged by 4-year public colleges and universities for full-time in-state students by state: 2016-17



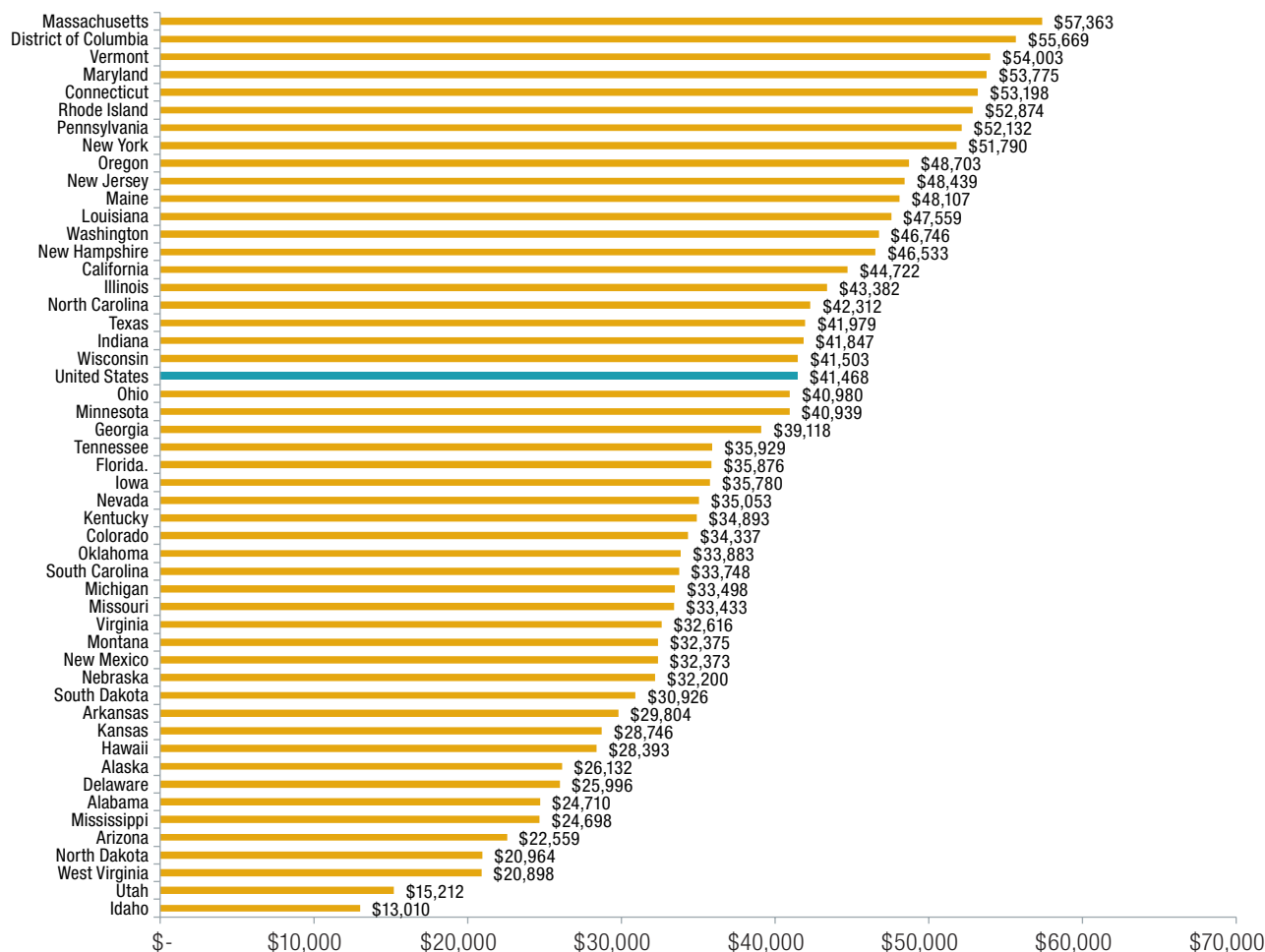
Indicator Status:

Wide variation in average costs across states.

NOTE: Data are for the entire academic year and are average charges for full-time students. Tuition and fees are weighted by the number of full-time-equivalent undergraduates, but not adjusted to reflect student residency. Room and board are based on full-time students.

SOURCE: U.S. Department of Education, National Center for Education Statistics (2017). *Digest of Education Statistics 2017*, [Table 330.20]. Retrieved from https://nces.ed.gov/programs/digest/d17/tables/dt17_330.20.asp?current=yes.

Equity Indicator 3a(iii): Average costs (undergraduate tuition, fees, and room and board) charged by 4-year private colleges and universities for full-time students by state: 2016-17



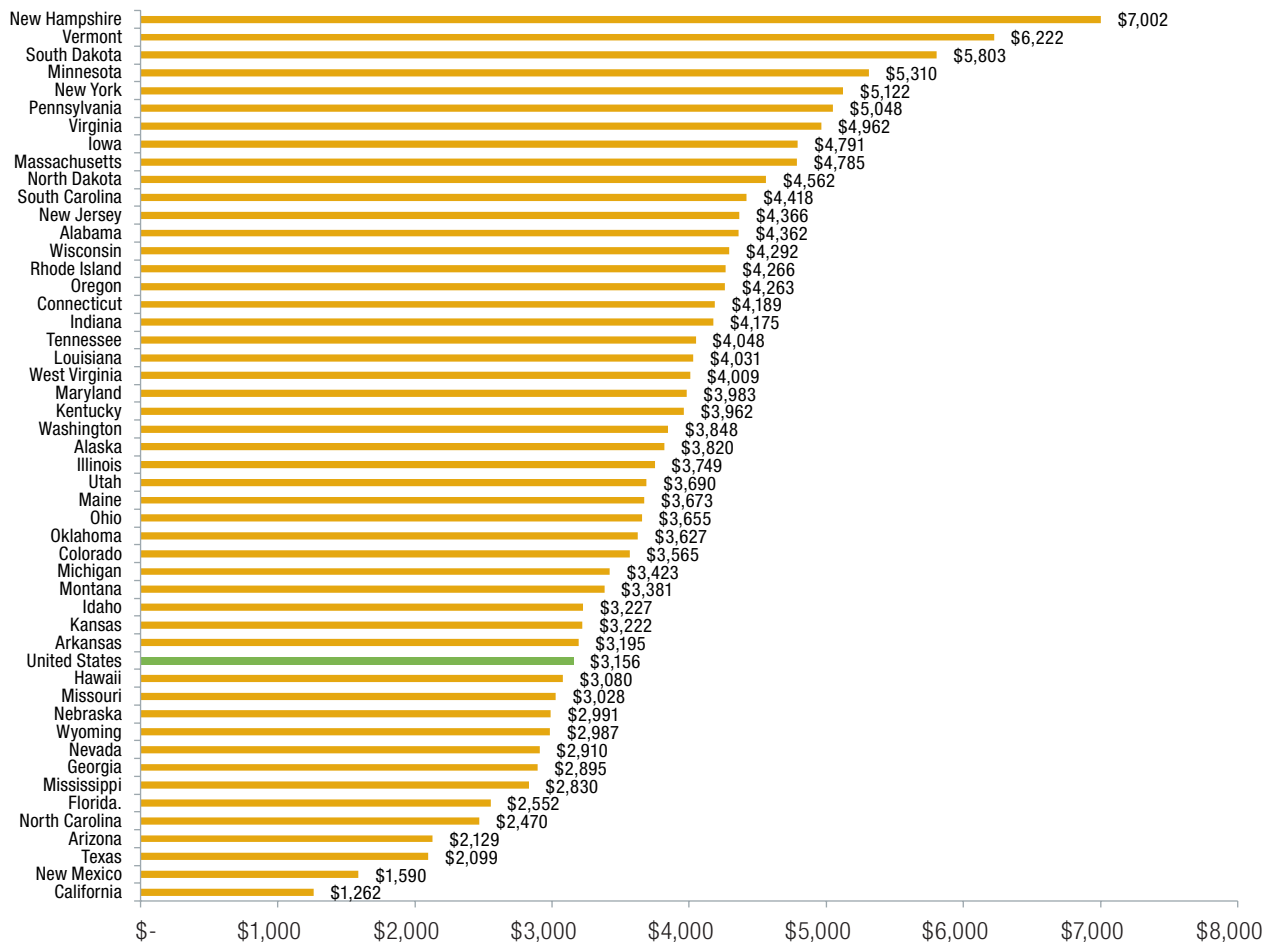
Indicator Status:

Wide variation in average costs across states.

NOTE: Data are for the entire academic year and are average charges for full-time students. Tuition and fees are weighted by the number of full-time-equivalent undergraduates, but not adjusted to reflect student residency. Room and board are based on full-time students. Figure excludes Wyoming as 4-year private costs are not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics (2017). *Digest of Education Statistics 2017*, [Table 330.20]. Retrieved from https://nces.ed.gov/programs/digest/d17/tables/dt17_330.20.asp?current=yes.

Equity Indicator 3a(iv): Average costs (undergraduate tuition and fees) charged by public 2-year institutions for full-time in-state students by state: 2016-17



Indicator Status:

Wide variation in average college costs across states. In 2016-17, average costs (undergraduate tuition and fees) of attending a public 2-year institution ranged from \$1,262 in California to \$7,002 in New Hampshire.

NOTE: Data are for the entire academic year and are average charges for full-time students. Tuition and fees are weighted by the number of full-time-equivalent undergraduates, but not adjusted to reflect student residency. Figure excludes Delaware and District of Columbia as these costs are not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics (2017). *Digest of Education Statistics 2017*, [Table 330.20]. Retrieved from https://nces.ed.gov/programs/digest/d17/tables/dt17_330.20.asp?current=yes.

Equity Indicator 3b(i to iii): What are the Maximum and Average Pell Grant Awards Relative to Average College Costs?

The maximum Federal Pell Grant is set by Congress.⁷² The average Pell Grant award is lower than the maximum Pell Grant. The actual Pell award is based on tuition and fees and intensity of enrollment, as well as a student's Expected Family Contribution (EFC). In 2016-17, 27 percent of recipients received the maximum award.⁷³

Indicator 3b(i) shows trends in average college costs (tuition and required fees plus room and board), maximum Pell Grant award, and average Pell Grant award, in constant 2017-18 dollars, from 1974-75 to 2017-18. Average college costs increased in 2017-18 constant dollars from \$9,501 in 1975 to \$23,835 in 2018. Over the same period, the maximum Pell award increased from \$5,203 to \$5,920 and the average Pell award increased from \$3,132 to \$4,013 (all in constant dollars).

Indicator 3b(ii) shows trends in the percentage of average costs covered by the maximum Pell Grant. In constant 2017-18 dollars, the percent of average college costs covered by the maximum Pell Grant has declined over time, falling from highs of about 67 percent in 1976 and 1980, to 40 percent by 1987. Since then the percentage of average costs covered by the maximum Pell Grant has fluctuated, but declined from 38 percent in 1988 to 26 percent in 2007, and was about 25 percent in 2016-17 and 2017-18. The downward trend over time has occurred because increases in the maximum Pell Grant between 1974-75 and 2017-2018 (14 percent in constant dollars) have not kept pace with increases in average college costs (151 percent in constant 2017-18 dollars).

Early Congressional committee supporters expressed hope that the Pell Grant would be funded at a level to cover close to three-fourths of the average yearly costs at public colleges.⁷⁴ This goal was never reached, but maximum Pell awards came closer to this goal in the early years of the program than in recent years.

Indicator 3b(iii) shows the actual maximum Pell Grant award compared with what the maximum would be if it were to cover two-thirds of average costs each year. If it had covered two-thirds of average college costs in 2017-18, the maximum Pell would have been \$15,969 rather than \$5,920.

The average costs considered in Indicator 3b include tuition and required fees, and room and board charges, but not transportation or other costs. The College Board reports student budgets for full-time students based on their Annual Survey of College Costs.⁷⁵ The student budgets for 2018-19, including tuition and fees, room and board, books and supplies, transportation, and other expenses, as published by the College Board, were:

- \$17,930 at 2-year public institutions for commuter students within district;
- \$25,890 at 4-year public institutions for in-state students living on campus;
- \$41,950 at 4-year public institutions for out-of-state students living on campus, and
- \$52,500 at 4-year private non-profit institutions for students living on campus.

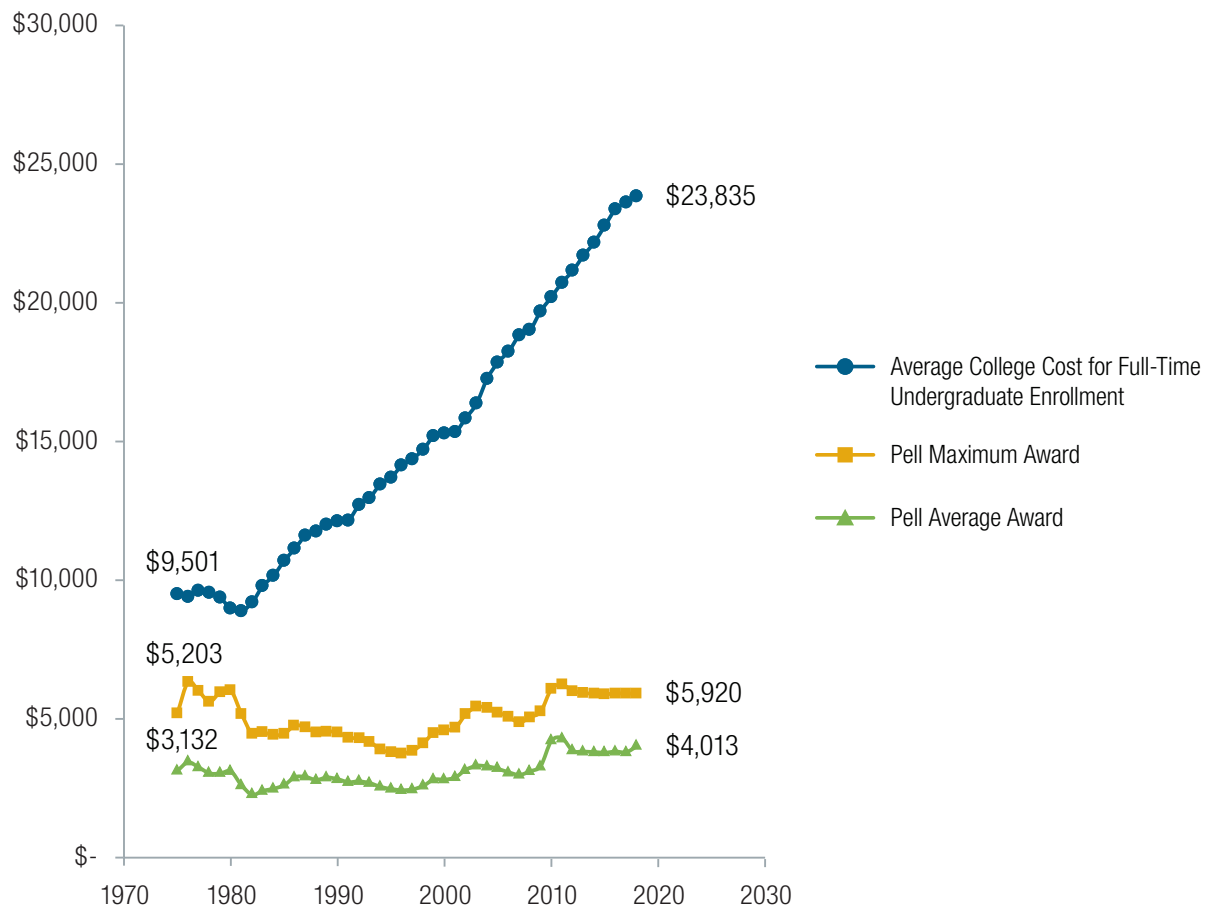
⁷² The Higher Education Act of 1965, as amended (HEA), provides for an automatic annual increase of the maximum Pell Grant award based on estimated changes in the Consumer Price Index (CPI). The Federal Pell Grant award is \$6,095 for the 2018–19 award year (July 1, 2018, to June 30, 2019).

⁷³ College Board (2017). *Trends in Student Aid*. Retrieved from <https://trends.collegeboard.org/student-aid>.

⁷⁴ Mensel, F. (2013). Birth of the Pell Grant: The Community College Role, *Reflections on Pell*, 5-55, Washington, DC: Council for Opportunity in Education, Pell Institute for the Study of Opportunity in Higher Education. Retrieved from http://www.pellinstitute.org/downloads/publications-Reflections_on_Pell_June_2013.pdf.

⁷⁵ College Board (2018). *Annual Survey of Colleges*, Figure 1: Average Estimated Full-Time Undergraduate Budgets (Enrollment Weighted) by Sector, 2018-2019. Retrieved from <https://trends.collegeboard.org/sites/default/files/2018-trends-in-college-pricing.pdf>.

Equity Indicator 3b(i): Average college costs (tuition and required fees plus room and board) for full-time undergraduate enrollment and maximum and average Pell Grant awards: 1974-75 to 2017-18 (constant 2017-18 dollars)



Indicator Status: Widening Gap between Average College Costs and Pell Awards

From 1974-75 to 2017-2018, average college costs in constant dollars increased by 151 percent, while the maximum Pell Grant increased by 14 percent and the average Pell Grant by 28 percent (in constant dollars).

NOTE: College costs are weighted by undergraduate total full-time enrollment at all types of institutions, as reported by NCES.

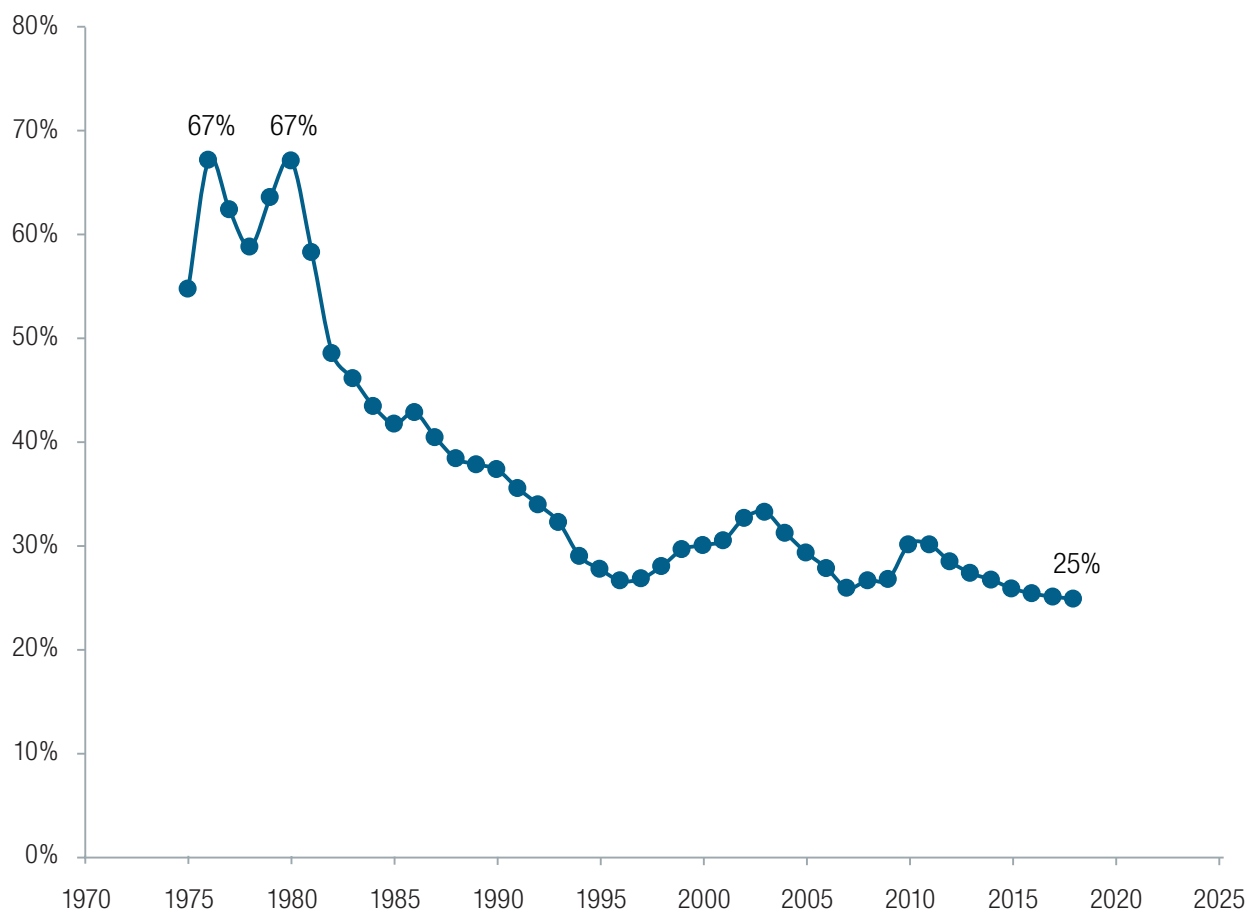
https://nces.ed.gov/programs/digest/d18/tables/dt18_330.10.asp?current=yes.

College costs are reported in Equity Indicator 3a and represent the average for all types of institutions. College costs include tuition, fees, and room and board. The maximum Pell Grant is the highest amount allowed by law. The average Pell Grant awarded each year is lower than the maximum, as most students do not receive the maximum. In 2015-16, about 27 percent of recipients receive the maximum Pell Grant award.

SOURCE: U.S. Department of Education (2018). *Summary Pell Grant Statistics for Cross-Year Comparison, Pell End of Year Report*, various years. Retrieved from <https://www2.ed.gov/finaid/prof/resources/data/pell-data.html>. College Board, *Trends in Student Aid*, Table 8. Federal Pell Grants in Current and in 2017 Dollars, 1973-74 to 2017-18. National Center for Education Statistics (2018). *Digest of Education Statistics 2018*, [Table 330.10].

Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_330.10.asp?current=yes.

Equity Indicator 3b(ii): Percentage of average college costs (tuition and required fees plus room and board) covered by the maximum Pell Grant: 1974-75 to 2017-18 (constant 2017-18 dollars)



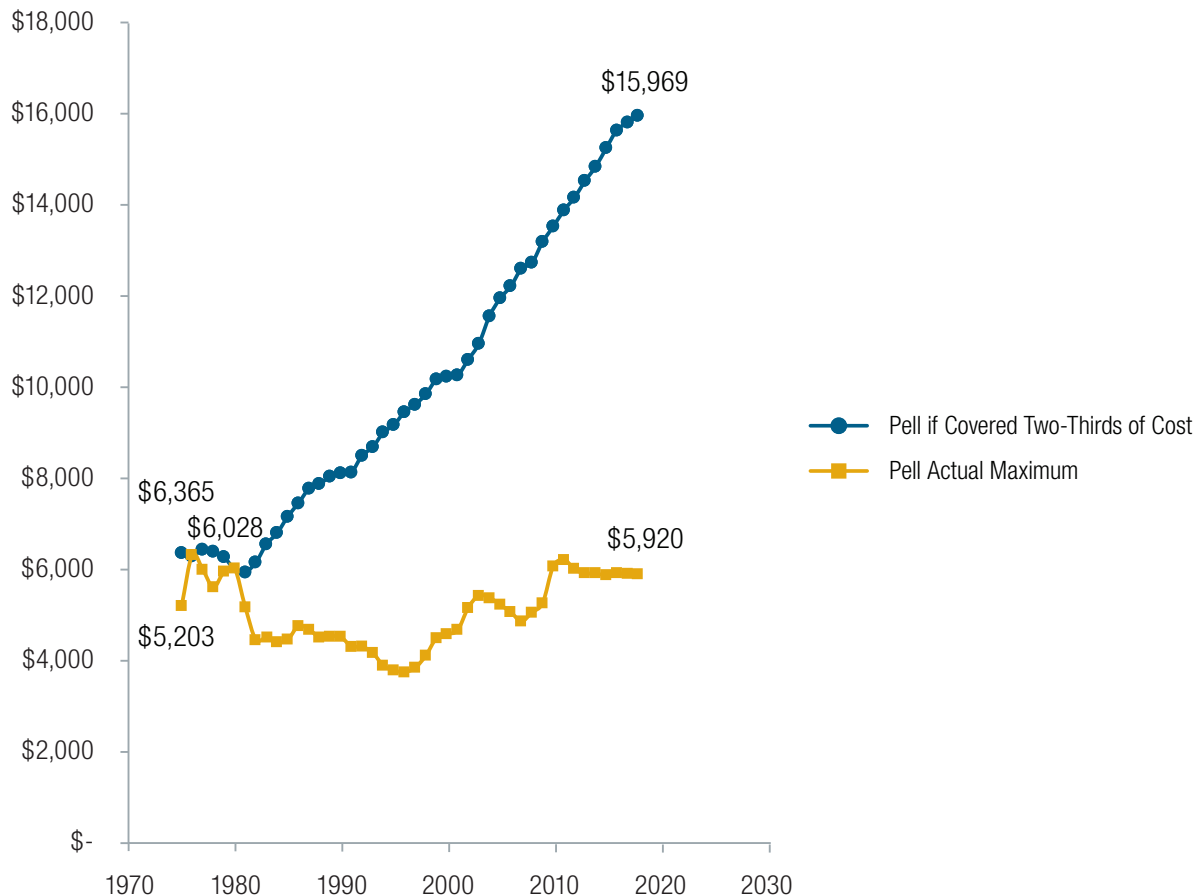
Indicator Status: Declining Opportunity

In constant 2017-18 dollars, the percentage of average college costs covered by the maximum Pell Grant declined from 67 percent in 1975-76 to 28 percent in 1995-96. In 2017-18, the maximum Pell Grant covered 25 percent of college costs.

NOTE: Figure 3b(ii) shows the maximum Pell Grant as a percent of average college cost weighted by full-time undergraduate enrollment, among all types of institutions.

SOURCE: U.S. Department of Education (2018). *Summary Pell Grant Statistics for Cross-Year Comparison, Pell End of Year Report*, various years. Retrieved from <https://www2.ed.gov/finaid/prof/resources/data/pell-data.html>; College Board, *Trends in Student Aid*. Retrieved from <https://trends.collegeboard.org/student-aid>; National Center for Education Statistics (2018). *Digest of Education Statistics 2018*, [Table 330.10]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_330.10.asp?current=yes.

Equity Indicator 3b(iii): Maximum Pell Grant if the Pell Grant maximum covered two-thirds of average college costs (tuition and fees; room and board): 1974-75 to 2017-18 (constant 2017-18 dollars)



Indicator Status: Reduced Opportunity

The maximum Pell Grant in 2017-18 would be \$15,969 (in constant 2017-18 dollars) rather than \$5,920 if it covered about two-thirds of college costs as in 1976 and 1980.

NOTE: Figure 3b(iii) shows what the maximum Pell Grant would need to be to cover two-thirds of the average college costs for a given year. College Cost is reported annually by institutions to the U.S. Department of Education through IPEDS and includes tuition, fees, and room and board. Average costs in this report are weighted by undergraduate full-time enrollment but do not take into account residency status. For public institutions, in-state tuition and required fees are used.

SOURCE: U.S. Department of Education (2018). *Summary Pell Grant Statistics for Cross-Year Comparison, Pell End of Year Report*, various years. Retrieved from <https://www2.ed.gov/finaid/prof/resources/data/pell-data.html>. College Board (2018). Trends in Higher Education, [Figure 21A]. Retrieved from <https://www.trends.collegeboard.org/student-aid/figures-tables/maximum-and-average-pell-grants-over-time>. National Center for Education Statistics (2018). *Digest of Education Statistics 2018*, [Table 330.10]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_330.10.asp?current=yes.

Indicator 3c: What is the Unmet Financial Need for Dependent Undergraduates by Family Income Quartile?

Indicator 3c displays trends in “unmet need” for dependent full-time undergraduates by family income quartile. We define unmet need as the cost of attendance (COA) remaining after subtracting Expected Family Contribution (EFC) and all grants and other discounts that do not have to be repaid. Discounts, as measured here, do not include loans.

The data in Indicator 3c are from the National Postsecondary Student Aid Study (NPSAS) for the years 1990, 1993, 1996, 2000, 2004, 2008, 2012, and 2016 and reflect the family income quartiles of the nationally representative samples of the study in the data collection year.⁷⁶ Data for 2016 were available for the first time for this 2019 *Indicators* report, and NPSAS numbers for prior years have been re-tabulated to reflect 2016 constant dollars. The data reflect the quartile groups from the income distribution of the NPSAS sample in a given year.

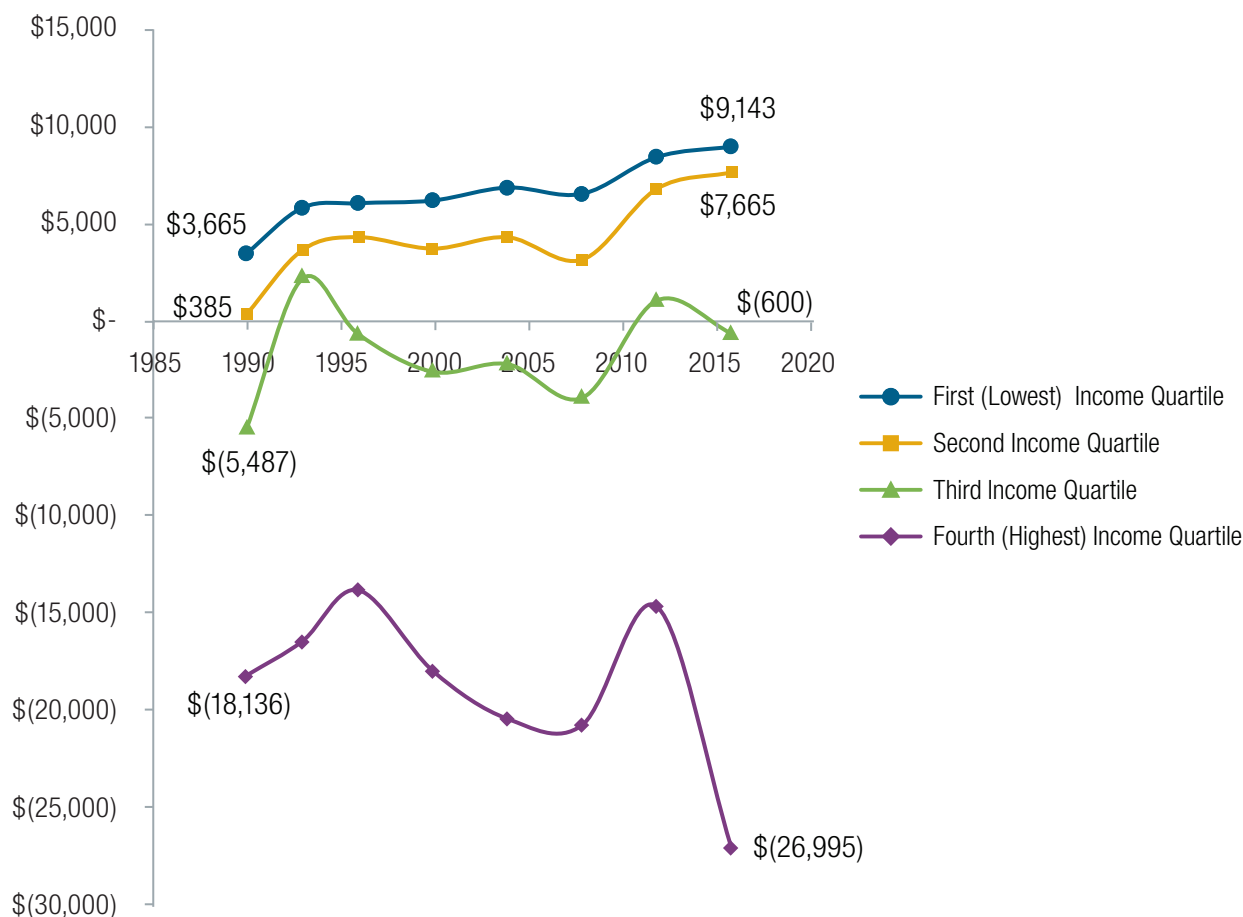
Although more likely to attend community colleges and other institutions with lower average COA, dependent full-time undergraduates in the lowest family income quartile averaged increasingly high levels of unmet need over the period of 1990 to 2016. Average unmet financial need for full-time dependent undergraduates in the lowest family income quartile was two and a half times as high in 2016 than in 1990 (in constant 2016 dollars) (\$9,143 vs. \$3,665).

Students in the second-lowest family income quartile also averaged high levels of unmet need. In 2016, their unmet need averaged \$7,665, up from \$3,189 (in 2016 dollars) in 2008. In contrast, students in the third highest quartile had a small negative unmet need (-\$600), while students in the fourth/highest quartile had a very large negative unmet need (-\$26,995).⁷⁷

⁷⁶ The data files for the 2015-16 NPSAS became available in 2018 and tables were updated to include 1990 to 2016 and prepared in constant 2016 dollars.

⁷⁷ Over the period of NPSAS studies, the percent of students with an Expected Family Contribution (EFC) of zero also increased. For example, according to NPSAS: 2012, 23 percent of dependent students had an EFC of zero, up from 10 percent in 2000. The percent of families with an EFC greater than the cost of attendance decreased from 28 percent in 2000 to 17 percent in 2012 (NPSAS:2000 and NPSAS:2012).

Equity Indicator 3c: Unmet financial need of dependent full-time undergraduates by family income quartile: 1990 to 2016



Indicator Status: High Inequality

For dependent full-time undergraduates in the lowest family-income quartile, average unmet financial need was 2.5 times higher in 2016 than in 1990 (in constant 2016 dollars).

NOTE: Data points are for years when NPSAS was conducted: 1990, 1993, 1996, 2000, 2004, 2008, 2012 and 2016. Unmet need is defined as what remains after Expected Family Contribution (EFC) and all discounts and grants that do not have to be repaid are subtracted from average COA. Loans are not considered in this calculation.

SOURCE: U.S. Department of Education, National Postsecondary Student Aid Study (NPSAS), 1990, 1993, 1996, 2000, 2004, 2008, 2012 and 2016, as analyzed by Tom Mortenson and published in "Trends in Financial Barriers to Higher Education For Dependent Undergraduate Students 1990 to 2016," *Postsecondary Education Opportunity*, 300. Retrieved from www.postsecondary.org.

EQUITY INDICATOR 4:

HOW DO STUDENTS IN THE UNITED STATES PAY FOR COLLEGE?

Since 1980, the percent of college costs paid by state and local public funds has decreased, and the percent of costs paid by students and their families has increased. The net average price of attendance represented 94 percent of the average family income for those in the lowest family income quartile in 2016.

Equity Indicator 4(a-e): Sources and Definitions

Indicator 4 reports how students and families pay college costs. We include data from the following sources.

- National Income and Product Accounts (NIPA). Available since 1952, these data identify the percent of total higher education funding from State and Local Government Expenditures, Federal Government Expenditures, and Personal Consumption Expenditures. Personal Consumption Expenditures represent costs that are borne by students and their families.
- The Grapevine Project of the Center for the Study of Education Policy at Illinois State University and the State Higher Education Executive Officers (SHEEO). The Grapevine project compiles data on state appropriations and need-based funding.⁷⁸
- The National Association of State Student Grant & Aid Programs (NASSGAP) information on state grant programs.
- U.S. Department of Education, Office of Postsecondary Education (OPE), Annual Pell Grant Award End of Year Reports. These reports are published yearly since the beginning of the Pell program in the mid-1970s.⁷⁹
- National Center for Education Statistics (NCES), National Postsecondary Student Aid Studies (NPSAS) that have been conducted at approximately 4-year intervals from 1990 to 2016.
- The Institute for College Access and Success (TICAS) Project on Student Debt, which collects voluntary data on student debt levels from institutions across the nation.

⁷⁸ Palmer, J. (2019). About the Grapevine Data. Retrieved from <https://education.illinoisstate.edu/grapevine/about/>.

⁷⁹ U.S. Department of Education (n.d.) Federal Pell Grant Program Annual Data Reports. Retrieved from <https://www2.ed.gov/finaid/prof/resources/data/pell-data.html>.

Key terms used in this chapter are defined as followed:

- **Net Price** is cost of attendance (COA) minus all grant aid. The Higher Education Act of 1965 (HEA), as amended, requires the U.S. Department of Education to make publicly available information about the average net price of each postsecondary institution that participates in Title IV federal student aid programs. The HEA defines institutional net price as “the average yearly price actually charged to first-time, full-time undergraduate students receiving student aid at an institution of higher education after deducting aid.” Essentially, net price moves beyond an institution’s “sticker price” and provides students and families with an idea of how much a first-time, full-time undergraduate student who was awarded aid pays to attend a particular institution after grant and scholarship aid, but not loan aid, is subtracted from the published cost of attendance (COA).
- **Net Price of Attendance as a Percent of Average Family Income** uses data from the various NPSAS 1990-2016 surveys. Average family income for a quartile reflects the distribution of the NPSAS sample in the study year for dependent undergraduate students. For the 2016 NPSAS, average family incomes for each quartile were as follows: First (lowest), \$16,105; Second, \$50,736; Third, \$96,689; Fourth (highest), \$214,338.⁸⁰
- **Dependent Student** status has a particular definition for financial aid eligibility and is defined as a student who is an undergraduate, unmarried, not a veteran, and younger than 24 years of age. For dependent students, parents’ income and assets are used to determine the Expected Family Contribution (EFC) even if the parents have no intention of helping pay students’ college expenses. In exceptional cases (e.g., parental child abuse, parental communication with the child prohibited by a court), the institution’s financial aid office may change a student’s status from dependent to independent.
- **Debt Burden** is the average cumulative debt for those graduating with a bachelor’s degree in a given year. Data are from the NPSAS surveys administered between 1990 and 2016 and the TICAS Project on Student Debt annual survey. We report debt burden among those who have any debt.

Equity Indicator 4a(i-iii): What are the Trends in Financing of Higher Education in the United States?

Equity Indicators 4a(i-iii) present data on funding for higher education. We first give a national overview of the distribution of funding responsibilities for higher education and then look at trend data on state appropriations and need-based aid.

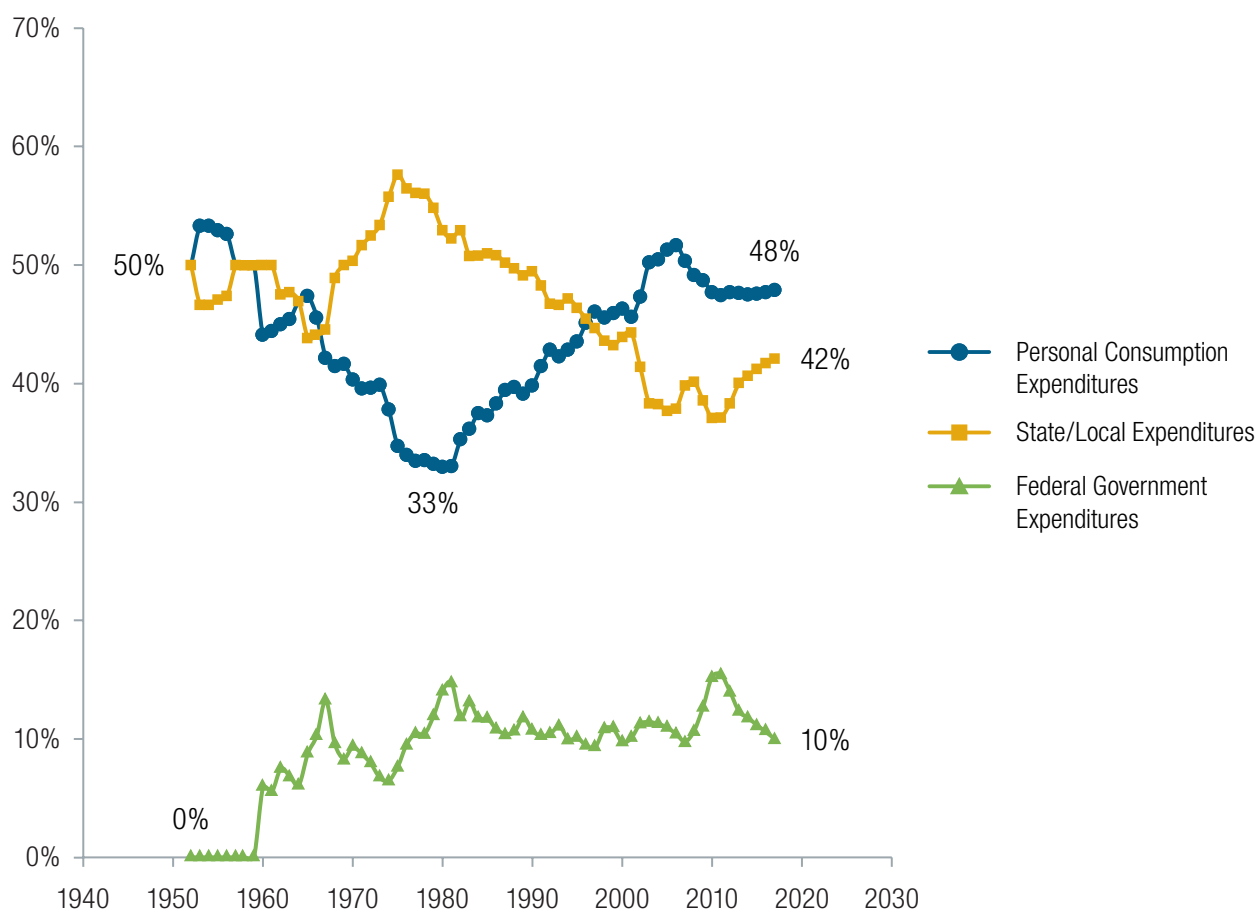
Trend in the Percentage of Higher Education Costs Paid by Students and their Families. Equity Indicator 4a(i) describes trends in the sources of funding for public and private higher education institutions, as reported in the National Income and Product Accounts (NIPA) from 1952 to 2017. The indicator considers changes in the relative contributions of state and local public expenditures, federal expenditures, and personal consumption expenses (students and parents). Since 1975, the percentage of higher education costs covered by state and local governments has declined, while the share covered by students and parents has increased.

Students and families now pay the largest portion of college costs. State and local sources accounted for 58 percent of higher education expenditures in 1975, but just 42 percent in 2017. The percent of total costs borne by parents and students fluctuated around 33 percent from 1975 to 1981, but was at 48 percent in 2017.

⁸⁰ Mortenson, T. (2018). Trends in Financial Barriers to Higher Education for Dependent Undergraduate Students: 1990 to 2016, *Postsecondary Opportunity Newsletter*, 300. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org.

The share of higher education costs provided by the federal government was about the same in 2017 as in 1976 (10 percent). During the Great Recession, the federal government provided additional funding through the American Recovery and Reinvestment Act of 2009. This funding temporarily raised the share of costs covered by the federal government to 15 percent in 2010 and 2011.

Equity Indicator 4a(i): Percentage distribution of higher education funding responsibilities: 1952 to 2017



Indicator Status:

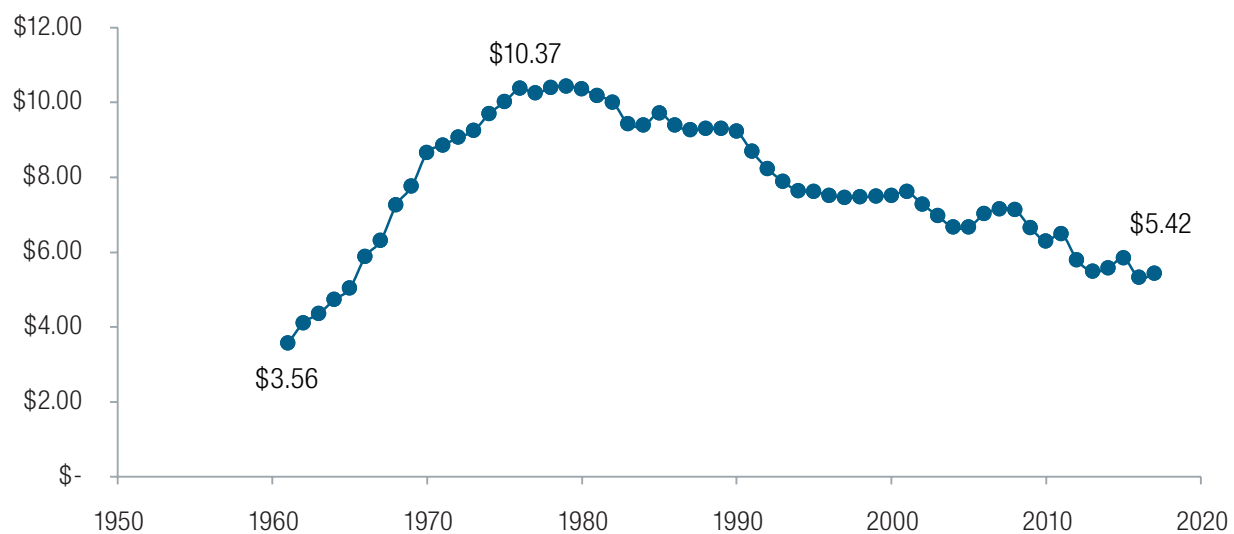
The share of higher education expenditures paid by students and families increased from one-third (33 percent) in the late 1970s to almost one-half (48 percent) in 2017.

NOTE: National Income and Product Accounts (NIPA) data are periodically updated.

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis (2018). National Income and Product Accounts (NIPA). [Table 1.1.5] [Table 2.4.5] [Table 3.16] Retrieved from <https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=2#reqid=19&step=2&isuri=1&1921=survey>. Accessed on January 26, 2018, and tabulated by Tom Mortenson *Higher Education's Share of Gross Domestic Product and Distribution of Higher Education Funding Responsibilities: 1952 to 2017*.

Equity Indicator 4a(ii) shows data on state appropriations compiled by the Grapevine Project for FY1961 to FY2017 combined with data on personal income as reported by the Bureau of Economic Analysis.⁸¹ State appropriations are considered per \$1,000 of personal income and reported in constant dollars. These data document the increase in state support in the 1960s to the late 1970s with a peak of \$10.37 in 1976, and then the subsequent general decline after 1980.⁸² Using this measure of state appropriation per \$1,000 of personal income, FY2017 state funding for higher education was 72 percent of the FY2000 state effort and 52 percent of the FY1980 effort. State appropriations per \$1,000 of personal income were \$10.36 in 1980 and \$5.42 in 2017.

Equity Indicator 4a(ii): State fiscal support for higher education per \$1,000 of personal income: FY1961 to FY2017



Indicator Status:

Considered relative to per capita income, state appropriations for higher education have declined since 1980. FY2017 state funding for higher education was 72 percent of the FY2000 effort and 52 percent of the FY1980 effort.

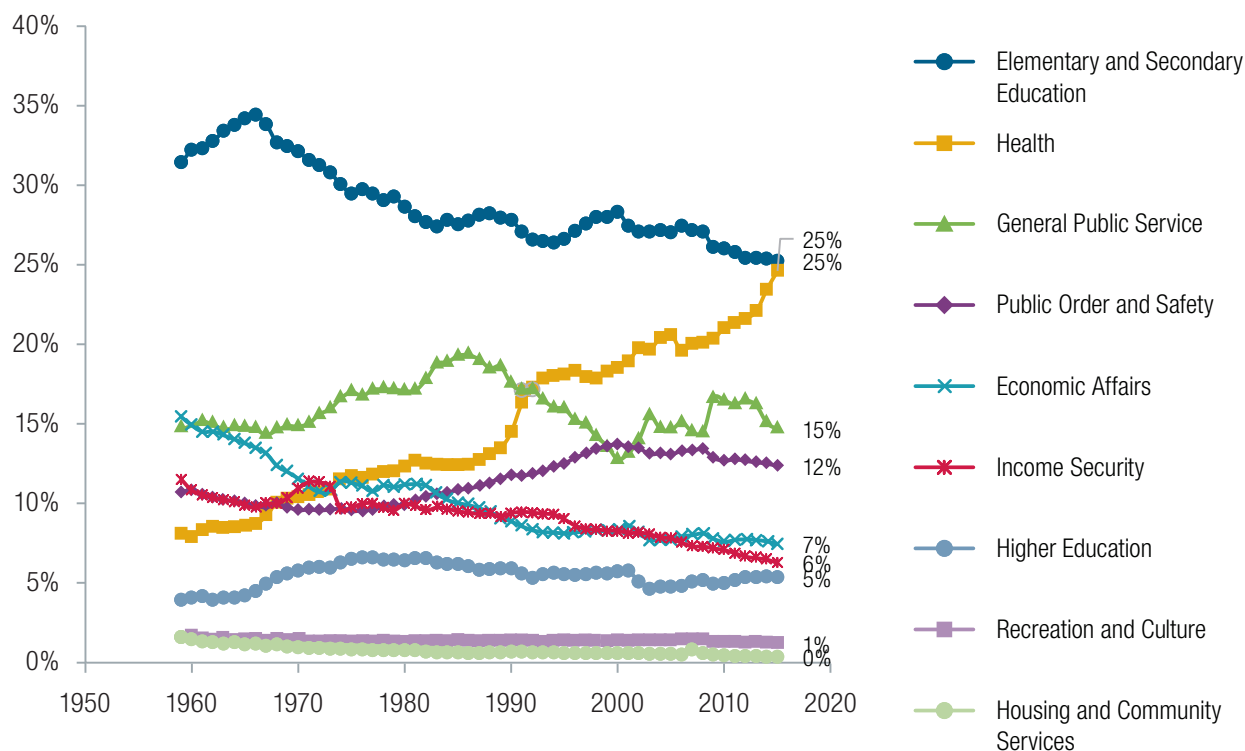
SOURCE: Mortenson, T. (2017). State Fiscal Investment Effort in Higher Education: FY1961 to FY2017, *Postsecondary Education Opportunity*, 292. Washington, DC: The Pell Institute for Study of Opportunity in Higher Education. Per capita income data from Bureau of Economic Analysis, <https://bea.gov/regional/index.htm>; State appropriation data compiled by the Grapevine Project, <https://education.illinoisstate.edu/grapevine/>. Grapevine is an annual compilation of data on state fiscal support for higher education. This is a joint project of the Center for the Study of Education Policy at Illinois State University and the State Higher Education Executive Officers (SHEEO).

⁸¹ The Grapevine Project at Illinois State University has collected data on state appropriations since 1961. Since 2010, these data have been jointly collected and reported with the State Higher Education Executive Officers (SHEEO). Grapevine (n.d.) About the Grapevine Data. Retrieved from <https://education.illinoisstate.edu/grapevine/about/>.

⁸² Mortenson, T. (2017). State Fiscal Investment Effort in Higher Education: FY1961 to FY2017, *Postsecondary Education Opportunity*, 292. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org.

Equity Indicator 4a(iii) shows changes in the relative distribution of state appropriations by function since 1959. Since 1959 the proportion of state appropriations allocated to health increased from 8 percent in 1959 to 25 percent in 2015. Over the same period the proportion of state appropriations allocated to elementary and secondary education declined from a peak of 34 percent in the 1960's to 25 percent in 2015. The share of state appropriations allocated to higher education increased from 4 percent in 1959 to 7 percent in the late 1970s and early 1980s. In 2015, 5 percent of state appropriations were allocated to higher education.

Equity Indicator 4a(iii): Distribution of state appropriations by function: 1959-2015



Indicator Status:

The share of state appropriations allocated to higher education increased from 4 percent in 1959 to 7 percent in the late 1970s and early 1980s. In 2015, 5 percent of state appropriations were allocated to higher education.

NOTE: 0% indicates less than 1 percent.

SOURCE: Mortenson, T. (2017). State Fiscal Investment Effort in Higher Education: FY1961 to FY2017, *Postsecondary Education Opportunity*, 292. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org; Per capita income data from Bureau of Economic Analysis. Retrieved from <https://bea.gov/regional/index.htm>; State appropriation data compiled by the Grapevine Project. Retrieved from <https://education.illinoisstate.edu/grapevine/>. Grapevine is an annual compilation of data on state fiscal support for higher education. It is a joint project of the Center for the Study of Education Policy at Illinois State University and the State Higher Education Executive Officers (SHEEO).

Equity Indicator 4a(iv-vi): State Need-Based Aid Relative to Pell Grant Aid

Award Numbers. In FY2016, 7.6 million undergraduate students received Federal Pell Grants and 2.3 million undergraduates received state need-based grants (Equity Indicator 4a(iv)). Between 1979 and 2016, the number of Federal Pell recipients was 354 percent higher in 2016 than in 1979, while the number of state need-based aid recipients was 86 percent higher.

State Need-Based Aid as a Percent of Pell Grants. As we do not have student level data, we do not know the extent to which comparative figures on Pell and state need-based aid recipients represents separate individuals. However, the yearly figures give some indication of the percent of Pell recipients who also had state need-based aid. For 2016, state need-based aid recipients constituted approximately 30 percent of the number of Pell Grant recipients, down from 56 percent in 2002 and 72 percent in 1979 (Equity Indicator 4a(v)).⁸³ State need-based grant dollars represented 30 percent of Pell Grant dollars in 2016, down from 43 percent in 2007 and 52 percent in 1979.

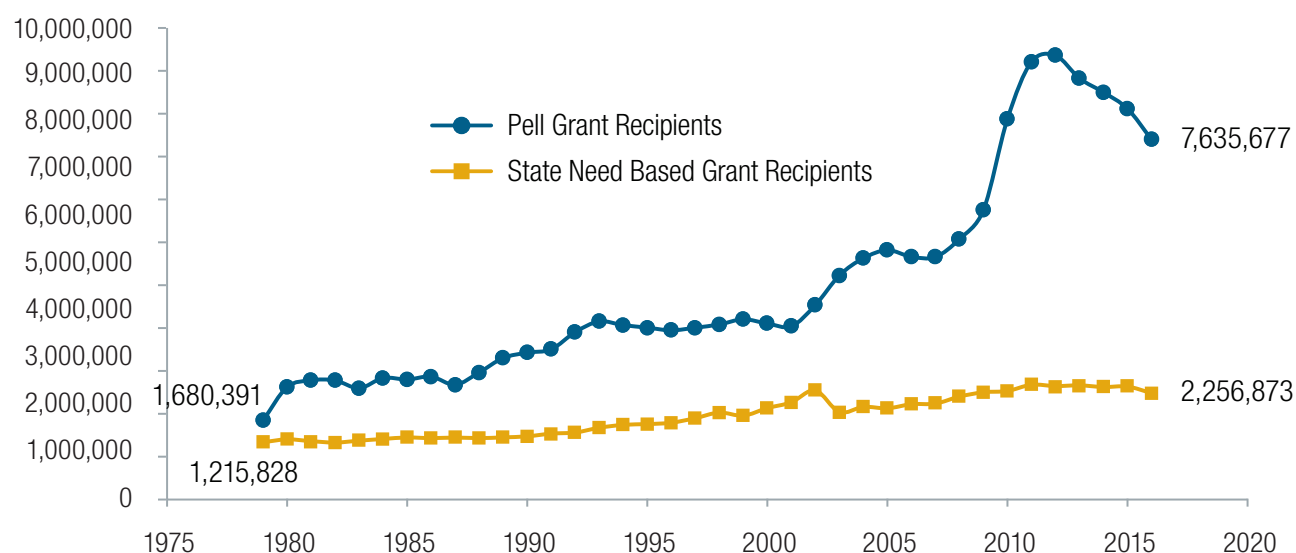
In FY2016, \$28.5 billion was awarded in Federal Pell Grants and \$8.1 billion was awarded across the nation in state-sponsored need-based grants. To put these dollars in perspective, in FY2016 the federal military spending budget was \$598 billion and in FY2019 the appropriated military spending budget is \$892 billion.⁸⁴

State Differences. Equity Indicator 4a(vi) gives state need based recipients considered as a percent of the number of Pell grant recipients in the state in the same year. As noted above, we do not have student level data, so we do not know the extent to which this represents separate individuals. In 2016, the state need-based grant aid considered as a percent of Pell Grants ranged 0 in Georgia, New Hampshire, and Wyoming to 71 percent in North Dakota, to 74 percent in Minnesota, to 88 percent in Vermont.

⁸³ Mortenson, T. (2018). State Need-based Grants for Financially Needy Undergraduates: 1979 to 2016, *Postsecondary Education Opportunity*, 296. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. ; Mortenson, T. (2017). State Fiscal Investment Effort in Higher Education: FY1961 to FY2017, *Postsecondary Education Opportunity*, 292. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org.

⁸⁴ Military spending in FY2016 was \$598 billion. Keller, J. (2017). Which Countries Spent the Most on Military Might in 2016, in One Chart. Task & Purpose. Retrieved from <https://taskandpurpose.com/global-military-spending-2016>; Estimated U.S. military spending for FY2019 is \$892 billion. Taken from the spending bill signed by President Trump on August 13, 2018. It covers the period October 1, 2018 through September 30, 2019. Military spending is the second largest item in the federal budget after Social Security. Amadeo, K. (2019). US Military Budget, Its Components, Challenges, and Growth: Why Military Spending is More than You Think it is. The balance. Retrieved from <https://www.thebalance.com/u-s-military-budget-components-challenges-growth-3306320>.

Equity Indicator 4a(iv): Numbers of Pell and state need-based grant aid recipients: 1979-2016



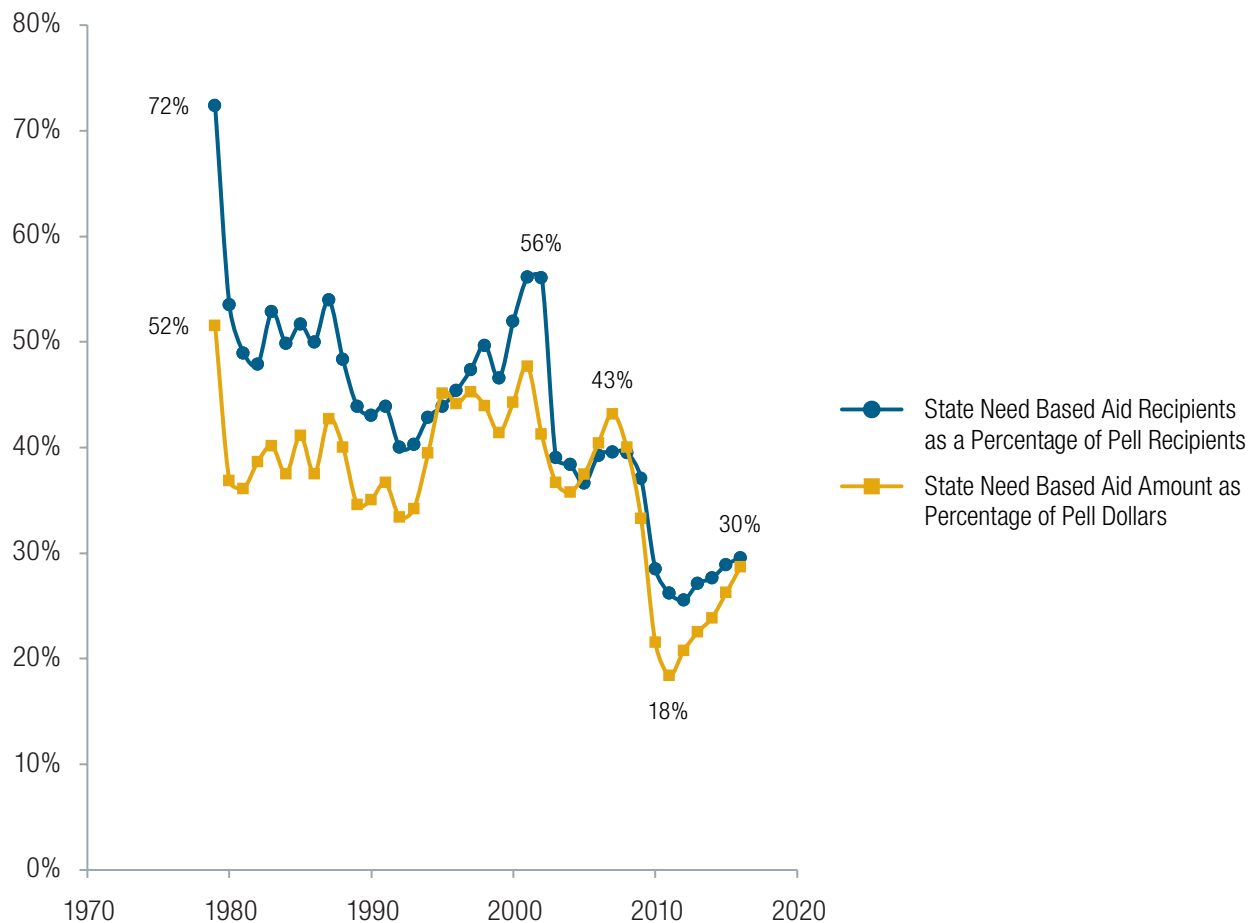
Indicator Status:

In FY2016, 7.6 million undergraduate students received Federal Pell Grants and 2.3 million undergraduates received state need-based grants. Between 1979 and 2016, the number of Federal Pell recipients was 354 percent higher in 2016 than in 1976, while the number of state need-based aid recipients was 86 percent higher.

NOTE: Annual state student financial program data is collected through the National Association of State Student Grant & Aid Programs (NASSGAP) <https://www.nassgapsurvey.com/>. Annual data on Federal Pell Grants is compiled and reported by the U.S. Department of Education and is available at <https://www2.ed.gov/finaid/prof/resources/data/pell-data.html>.

SOURCE: Mortenson, T. (2018). State Need-based Grants for Financially Needy Undergraduates: 1979 to 2016, *Postsecondary Education Opportunity*, 296. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org.

Equity Indicator 4a(v): State need-based grant dollars and recipients as a percent of total Pell dollars and recipients: 1979-2016



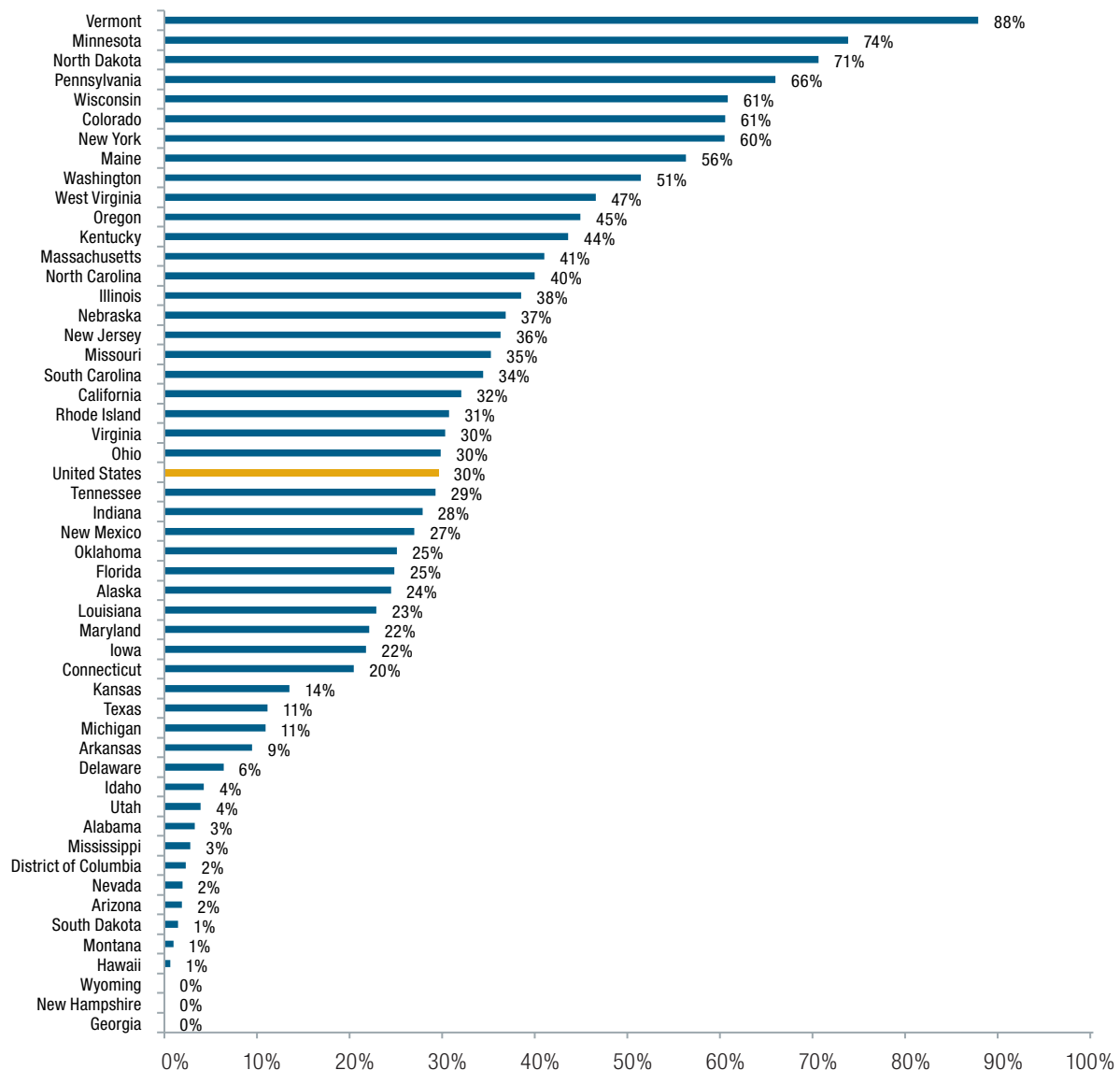
Indicator Status:

In 2016 the number of state need-based aid recipients was 30 percent of the number of Pell Grant recipients, down from 56 percent in 2002 and 72 percent in 1979. State need-based grant dollars represented 30 percent of Pell Grant dollars in 2016, down from 43 percent in 2007 and 52 percent in 1979.

NOTE: Annual state student financial program data is collected through the National Association of State Student Grant & Aid Programs (NASSGAP) <https://www.nassgapsurvey.com/>. Annual data on Federal Pell Grants is compiled and reported by the U.S. Department of Education and is available at <https://www2.ed.gov/finaid/prof/resources/data/pell-data.html>.

SOURCE: Mortenson, T. (2018). State Need-based Grants for Financially Needy Undergraduates: 1979 to 2016, *Postsecondary Education Opportunity*, 296. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org.

Equity Indicator 4a(vi): State need-based grant recipients as a percentage of Pell recipients by state: 2016



Indicator Status:

In 2016, the percent of Pell recipients who also received state need-based grant aid ranged 0 in Georgia, New Hampshire, and Wyoming to 71 percent in North Dakota, to 74 percent in Minnesota, to 88 percent in Vermont.

NOTE: Annual state student financial program data is collected through the National Association of State Student Grant & Aid Programs (NASSGAP) <https://www.nassgapsurvey.com/>. Annual data on Federal Pell Grants is compiled and reported by the U.S. Department of Education and is available at <https://www2.ed.gov/finaid/prof/resources/data/pell-data.html>.

SOURCE: Mortenson, T. (2018). State Need-based Grants for Financially Needy Undergraduates: 1979 to 2016, *Postsecondary Education Opportunity*, 296. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org.

Equity Indicator 4b(i): What Is the Net Price of Attendance by Family Income?

Using NPSAS data from 1990 to 2016,⁸⁵ Indicator 4b(i) tracks the net price of attendance. The net price of attendance is the cost of attendance (COA) minus all grant aid.⁸⁶ Net price does not include loans. Indicator 4b(i) shows that, when grant aid and discounts are taken into account, average net price increased in constant dollars for all quartiles. The rate of increase was greater for the top two income quartiles than the bottom two quartiles.

Equity Indicator 4b(i) also shows that the difference in average net price of attendance between dependent full-time students in the highest and lowest family income quartiles increased between 1990 and 2016. In 1990, average net price (in 2016 dollars) ranged from \$11,409 for those in the lowest income quartile to \$19,003 for those in the highest income quartile. In 2016, average net price ranged from \$15,196 for those in the lowest income quartile to \$30,179 for those in the highest income quartile.

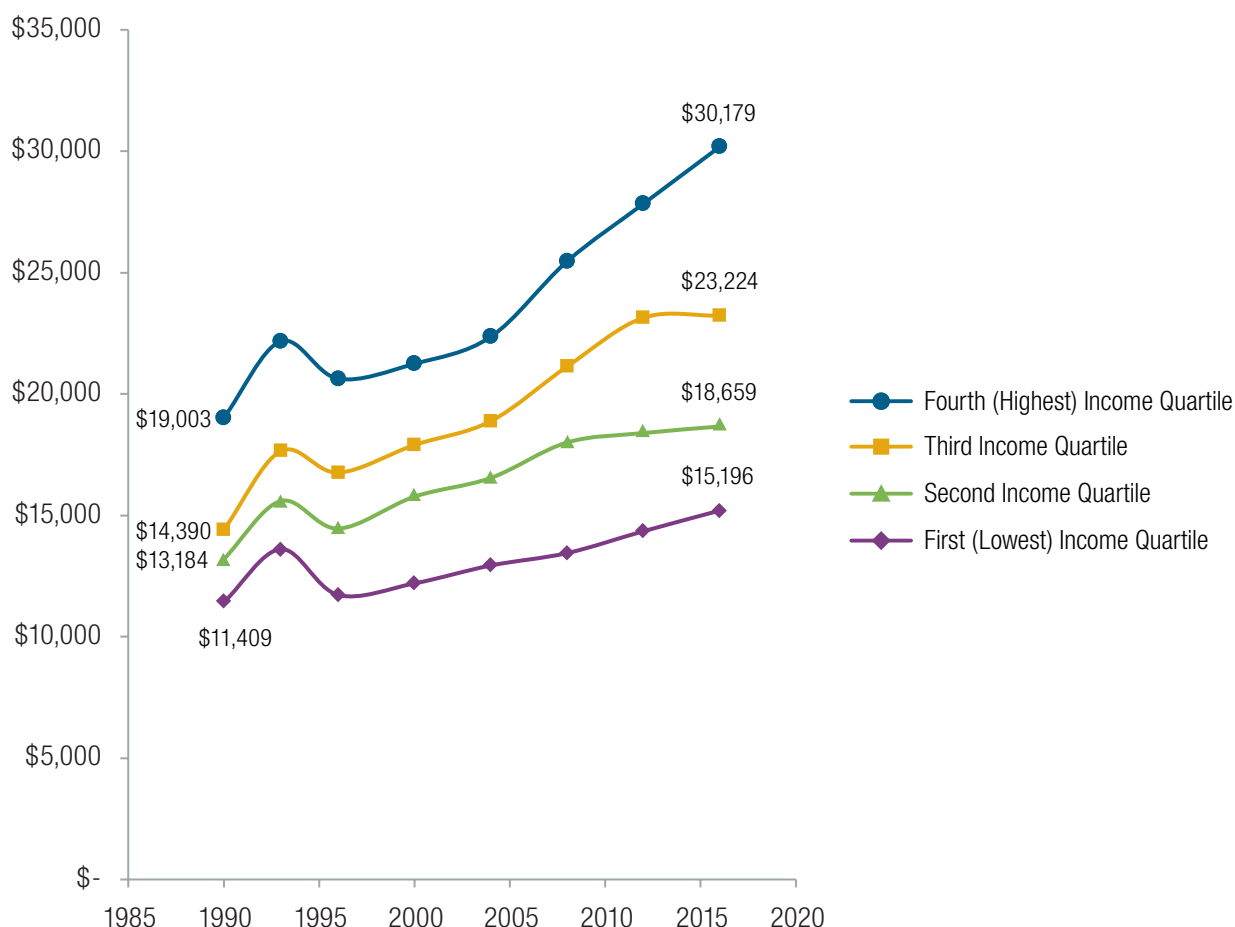
The implication of the widening gap in average net price by family income is ambiguous. On the one hand, a widening gap may signify that institutions have allocated available financial aid to students with the greatest financial need. On the other hand, the widening gap may indicate that net price has not risen as rapidly at the colleges most frequently attended by low-income students as the colleges attended by more affluent students. The latter explanation may also suggest that colleges in the United States have over time become more segregated by family income and that students are increasingly sorted by family income into colleges they can afford to attend.

If low-income students are receiving a higher education of equivalent quality as other students in terms of the learning experience and market value upon completion, then this net price differential would signal an increase in equity. In so far as differences in net price reflect differences in educational quality and market rewards, then the increasing difference in average net price for students in the upper- and lower-family income quartiles may reflect growing inequity and increased stratification of the nation's higher education system.

⁸⁵ NPSAS data are collected approximately every 4 years. Indicator 4b(i) used 1990, 1993, 1996, 2000, 2004, 2008, 2012, and 2016 waves of this cross-sectional survey. For the first time, the 2019 *Indicators* report includes data from the 2016 NPSAS.

⁸⁶ The Higher Education Act of 1965 (HEA), as amended, requires the U.S. Department of Education to make publicly available information about the average net price of each postsecondary institution that participates in Title IV federal student aid programs.

Equity Indicator 4b(i): Average net price for dependent full-time undergraduate students by family income quartile: 1990 to 2016 (constant 2016 dollars)



Indicator Status: Increased Differentiation in Net Price by Family Income Quartile

Average net price was 99 percent lower for students in the lowest family income quartile than for students in the highest family income quartile in 2016. In 1990, average net price of attendance was 67 percent lower for those in the lowest than highest family income quartile.

NOTE: Net price of attendance is defined as cost of attendance (COA) minus all grant aid and discounts but not loans.

SOURCE: U.S. Department of Education, National Postsecondary Student Aid Study (NPSAS), 1990, 1993, 1996, 2000, 2004, 2008, 2012 and 2016; Mortenson, T. (2018). Trends in Financial Barriers to Higher Education for Dependent Undergraduate Students 1990 to 2016, *Postsecondary Education Opportunity*, 300, and Mortenson, T. (2018). Financial Barriers to Higher Education for Dependent Undergraduate Students: 2015-16, *Postsecondary Education Opportunity*, 299. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org.

Equity Indicator 4b(ii): What Percentage of Family Income Is Needed to Pay the Average Net Price of Attendance?

Indicator 4b(ii) tracks average net price of attendance as a percentage of average family income by NPSAS family income quartiles for dependent students.⁸⁷ The Indicator displays the average net price for all students by family income quartile. The net price is the price that the student paid to attend their individual institution.

Indicator 4b(i) shows that net price (cost of attendance less grants and scholarships) has increased at a slower rate for students in the lowest quartile than for students in the highest quartile. However, Indicator 4b(ii) shows that net price as a percent of parents' family income has increased, especially for students in the lowest income quartile.

In 2016, average net price as a percent of average family income was 94 percent for students in the lowest family income quartile, compared with 37 percent for students in the second lowest family income quartile, 24 percent for students in the third highest income quartile, and 14 percent for students in the highest income quartile.

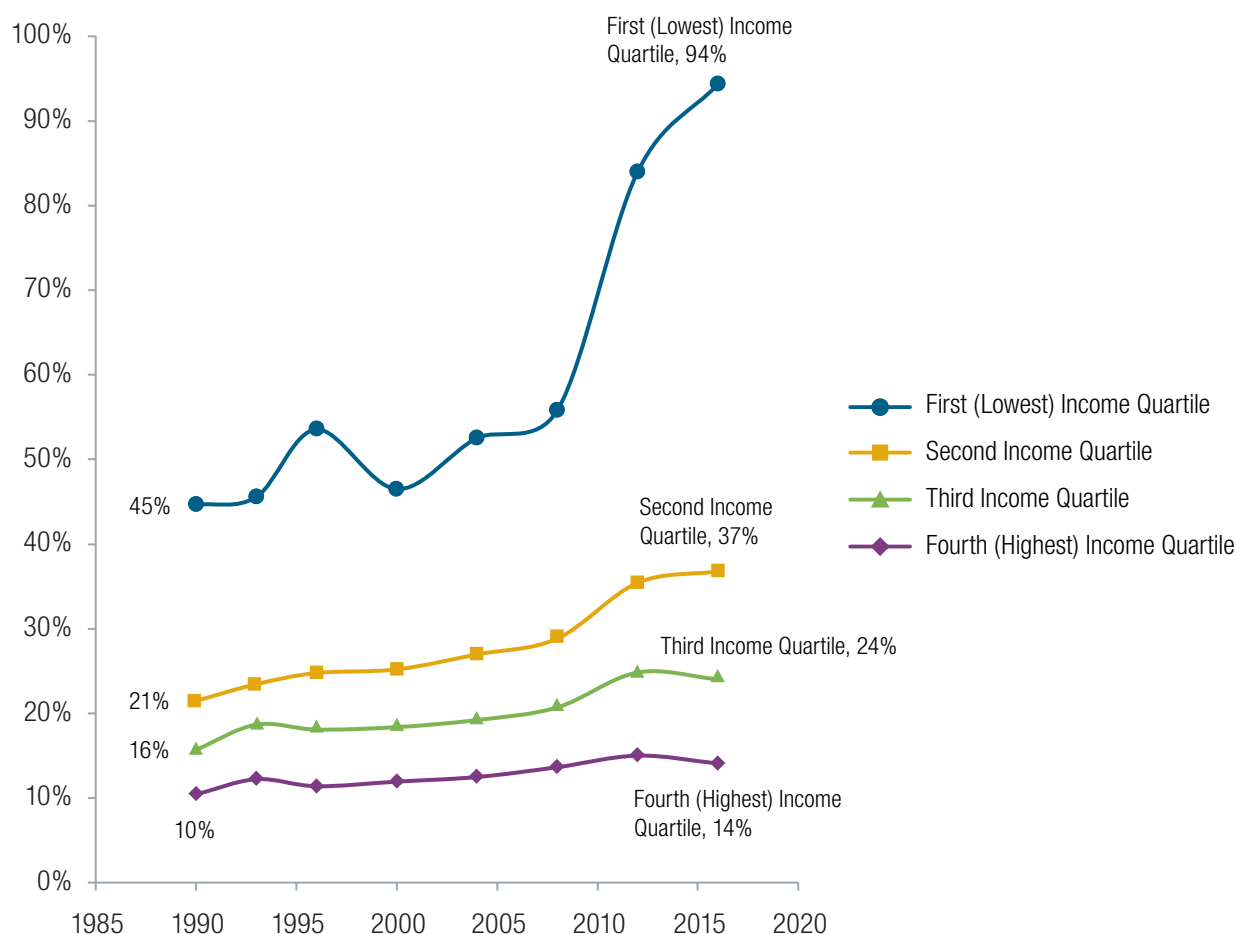
Between 1990 and 2008, average net price as a percentage of family income increased for students in all four family income quartiles. For students in the lowest family income quartile, the percentage increased from 45 percent in 1990 to 56 percent in 2008. Between 2008 and 2012, in the wake of the Great Recession, the increase in average net price as a percentage of family income was especially high for students in the lowest income quartile. For these students, average net price as a percentage of average family income increased from 56 percent in 2008 to 84 percent in 2012, before rising again to 94 percent in 2016.⁸⁸

Between 2012 and 2016 (the so called end of the Great Recession), net price relative to family income declined for those in the highest income quartile from 15 percent to 14 percent and declined from 25 percent to 24 percent for those in the third income quartile. For those in the second lowest income quartile, net price as a percent of family income increased from 35 percent in 2012 to 37 percent in 2016. For those in the lowest income quartile, net price as a percent of family income increased from 84 percent in 2012 to 94 percent of average family income in 2016.

⁸⁷ Net price is different from "out-of-pocket price," as the latter accounts for both grants and loans. See Horn, L. & Paslov, J. (2014). *Out-of-pocket Net Price for College*. Washington, DC: U.S. Department of Education, National Center for Education Statistics, NCES 2014-902.

⁸⁸ Choitz, V., & Reimherr, P. (2013). *Mind the Gap: High Unmet Financial Need Threatens Persistence and Completion for Low-income Community College Students*. Washington, DC: Center for Postsecondary and Economic Success at CLASP.

Equity Indicator 4b(ii): Average net price as a percentage of average family income by income quartile for dependent full-time undergraduate students: 1990 to 2016



Indicator Status: High Inequality: Widening Differences in College Cost Burden

In 2016, average net price represented 94 percent of average family income for dependent students in the lowest income quartile, compared with 14 percent of average family income for students in the highest income quartile. In 1990, average net price was 45 percent of family income for dependent students in the lowest quartile and 10 percent for the highest quartile.

NOTE: Net Price is tabulated after taking into account all grants and scholarships, but does not take into account loans. Family income quartiles are based on the distribution of family income in each NPSAS survey. For the 2016 NPSAS average family incomes for each quartile were as follows: First (lowest), \$16,105; Second, \$50,736; Third, \$96,689; Fourth (highest), \$214,338.

SOURCE: U.S. Department of Education, National Postsecondary Student Aid Study (NPSAS), 1990, 1993, 1996, 2000, 2004, 2008, 2012 and 2016; Mortenson, T. (2018). Trends in Financial Barriers to Higher Education for Dependent Undergraduate Students 1990 to 2016, *Postsecondary Education Opportunity*, 300, and Mortenson, T. (2018). Financial Barriers to Higher Education for Dependent Undergraduate Students 2015-16, *Postsecondary Education Opportunity*, 299. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org.

Equity Indicator 4c: What Percentage of Students Borrow? How Do Rates of Borrowing Vary by the Type of Institution Students Attend and Students' Race/Ethnicity?

Using NPSAS data, Indicators 4c(i) through 4c(iv) show increases in the percentages of bachelor's and associate's degree completers who ever received loans by institutional control and race/ethnicity.

Indicator 4c(i) shows that, since 1990, the percentage of bachelor's degree completers who had ever borrowed rose from approximately 51 percent in 1990 to 69 percent in 2016. Borrowing rates in 2016 were highest among students attending private for-profit institutions (87 percent).⁸⁹

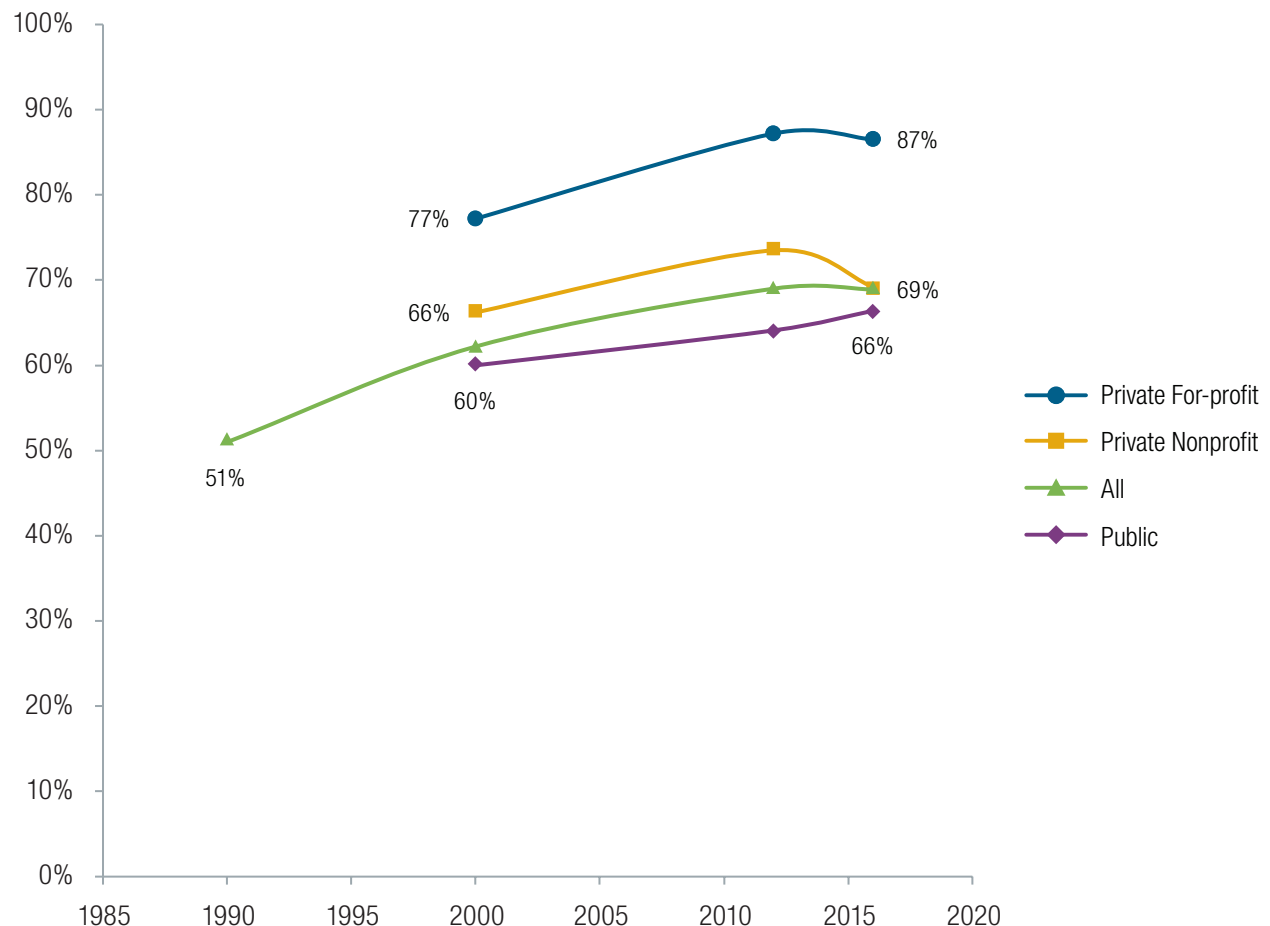
Indicator 4c(ii) shows that borrowing rates for 2016 associate's degree completers were much higher for those who attended private for-profit (88 percent) and private non-profit (84 percent) institutions than for those who attended public institutions (41 percent).

Indicator 4c(iii) shows that, between 2000 and 2016, borrowing rates among bachelor's degree completers varied by race/ethnicity. Borrowing rates increased for Black bachelor's degree completers (from 81 percent in 2000 to 85 percent in 2016) and for Pacific Islander bachelor's degree completers (from 67 percent in 2000 to 89 percent in 2016). In contrast, borrowing rates for Asian bachelor's degree completers decreased from 50 percent in 2000 to 45 percent in 2016.

Indicator 4c (iv) shows that, in 2016, borrowing rates were higher for Black and American Indian/Alaska Native (67 percent) associate's degree completers than among White (50 percent), Hispanic (35 percent), and Asian associate's degree completers (27 percent). Borrowing rates among Black associate's degree completers increased from 45 percent in 2000 to 67 percent in 2016.

⁸⁹ Data for 1990 are for the percentage of undergraduate students, age 18 to 24, in their 4th (senior) year or above who ever received loans. Data for 2000, 2012 and 2016 are for bachelor's degree completers in NPSAS year.

Equity Indicator 4c(i): Percentage of bachelor's degree completers who ever received student loans by institutional control: Selected years from 1990 to 2016



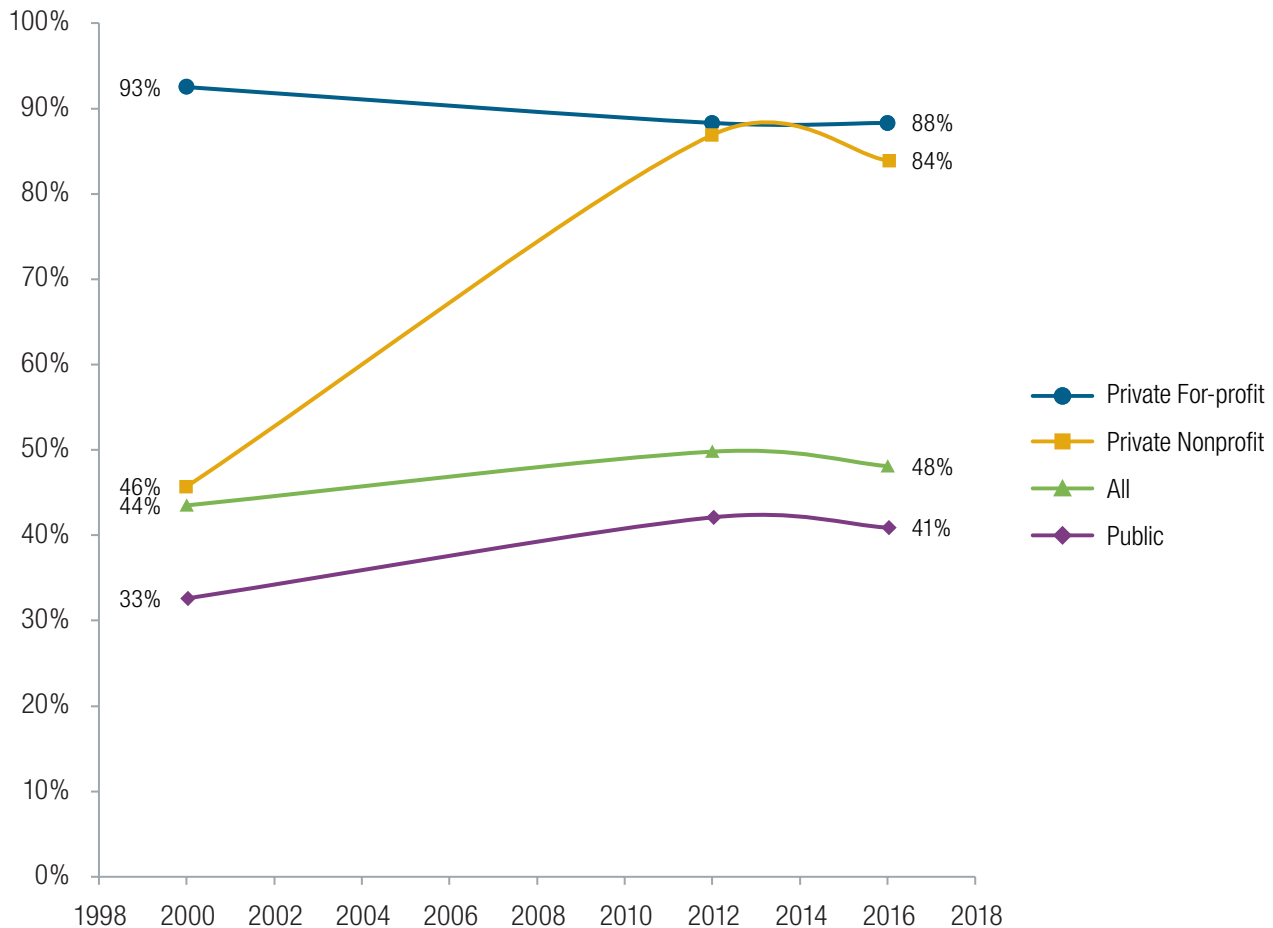
Indicator Status:

Use of loans among bachelor's degree completers increased from 51 percent in 1990 to 69 percent in 2016. Borrowing rates are highest for bachelor's degree completers at private for-profit institutions (87 percent in 2016).

NOTE: Data for 1990 may not be precisely comparable with later years and are for the percentage of undergraduate students, age 18 to 24, in their 4th (senior) year or above who ever received loans. Data for 2000, 2012 and 2016 are for bachelor's degree completers in NPSAS year.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989-90, 1999-2000, 2011-2012, 2015-16, National Postsecondary Student Aid Study (NPSAS:1990, NPSAS:2000, NPSAS, 2012, NPSAS 2016). *Digest of Education Statistics 2018*, Table [331.95]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_331.95.asp?current=yes.

Equity Indicator 4c(ii): Percentage of associate's degree completers who ever received student loans by institutional control and level: 2000, 2012 and 2016



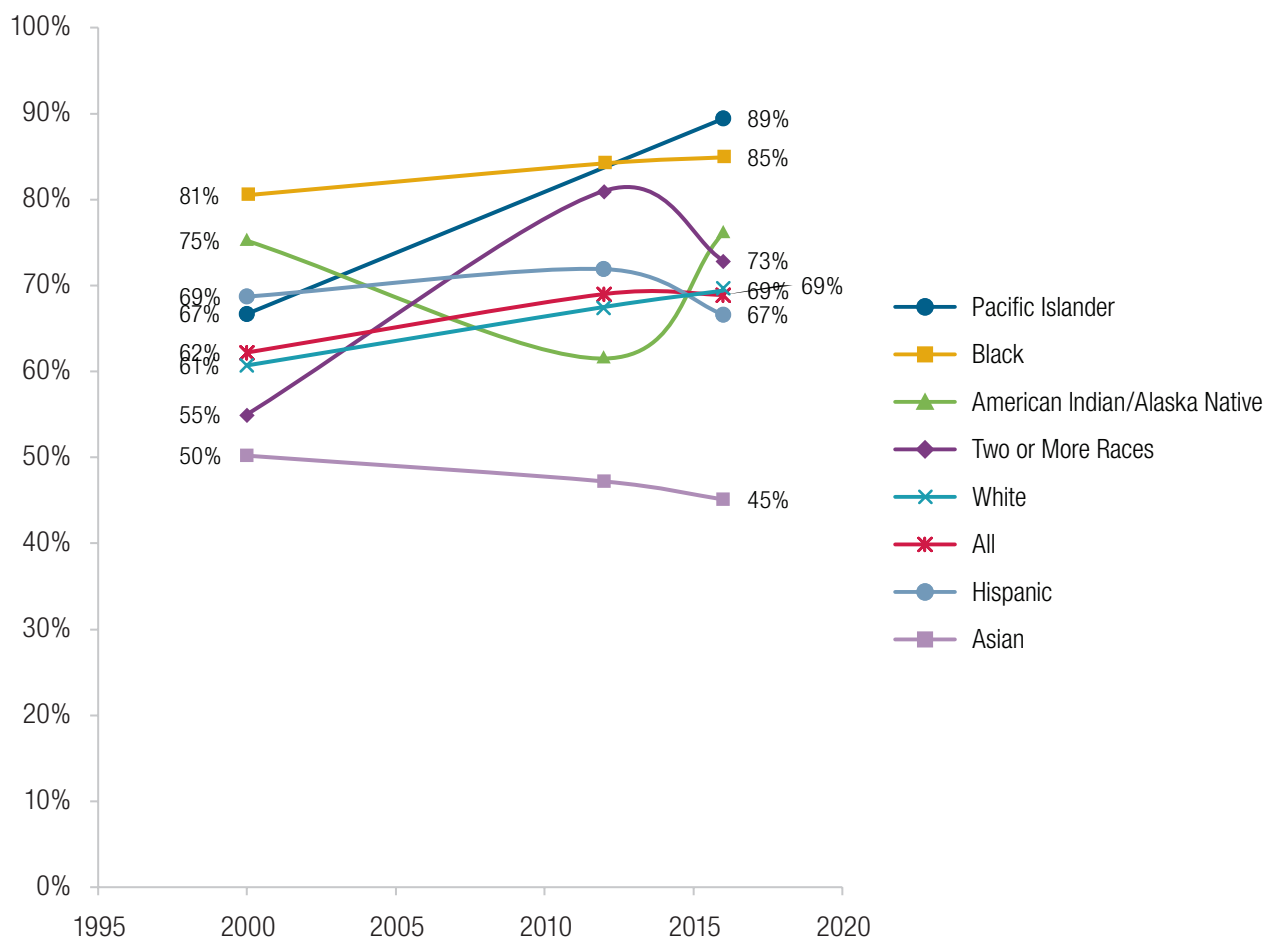
Indicator Status:

In 2016, over 80 percent of associate's degree completers at private nonprofit and private for-profit institutions borrowed, compared with 41 percent of associate's degree completers at public institutions.

NOTE: Data are from NPSAS: 2000, 2012, and 2016 and represent the percentage of associate's degree completers who ever borrowed.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1999–2000, 2011–12, and 2015–16 National Postsecondary Student Aid Study (NPSAS:2000, NPSAS:12, and NPSAS:16). *Digest of Education Statistics 2018*, Table [331.95]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_331.95.asp?current=yes.

Equity Indicator 4c(iii): Percentage of bachelor's degree completers who ever received student loans by race/ethnicity: 2000, 2012, and 2016



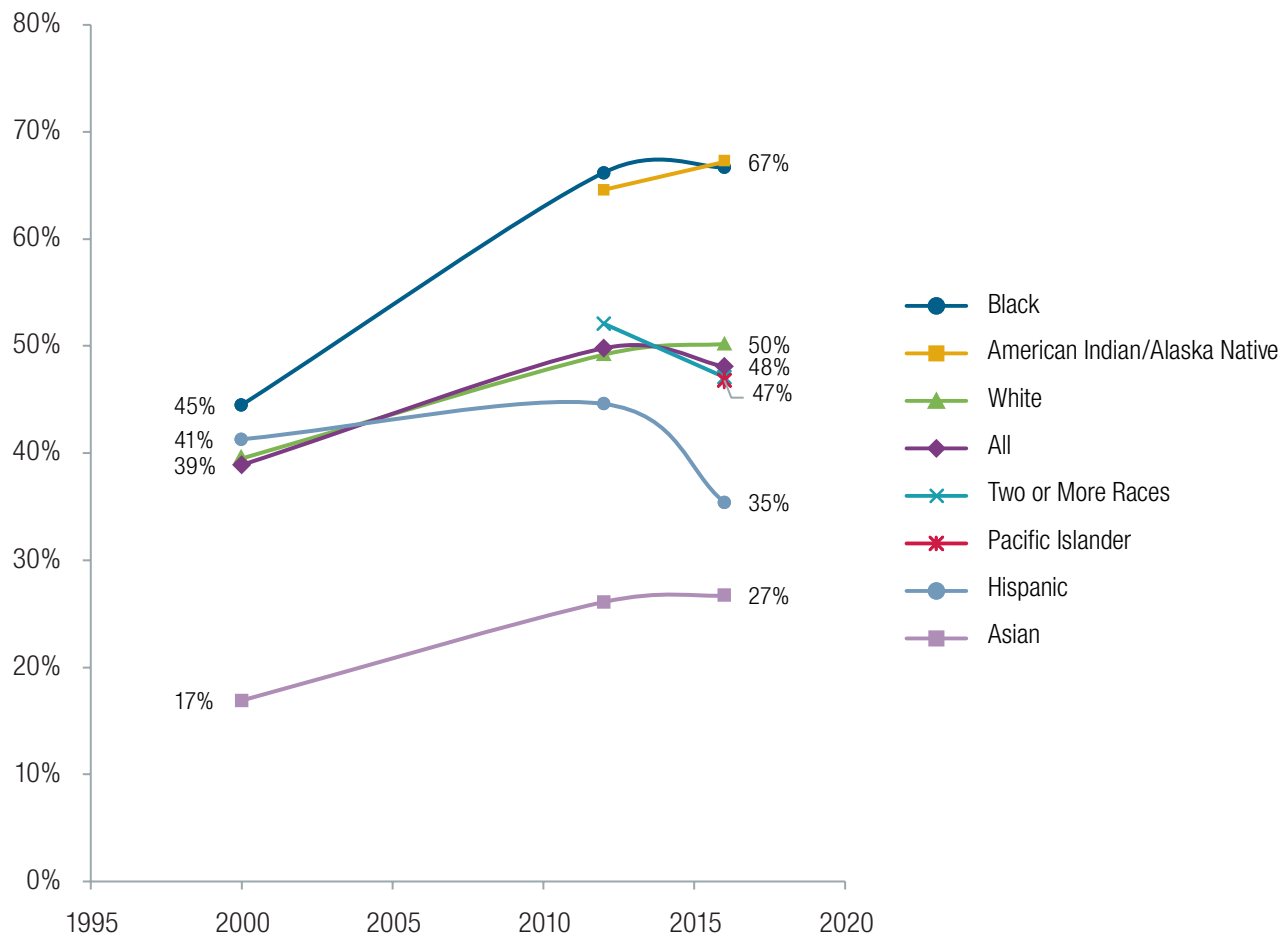
Indicator Status:

In 2016, 89 percent of Pacific Islander and 85 percent of Black bachelor's degree completers borrowed, compared with 69 percent of White, 67 percent of Hispanic, and 45 percent of Asian bachelor's degree completers.

NOTE: Data are from NPSAS: 2000, 2012, and 2016 and represent the percentage of bachelor's degree completers who borrowed. Due to sampling error, for small population groups, caution is needed in interpreting data variation over the separate NPSAS surveys.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1999–2000, 2011–12, and 2015–16 National Postsecondary Student Aid Study (NPSAS:2000, NPSAS:12, and NPSAS:16). *Digest of Education Statistics 2018*, Table [331.95]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_331.95.asp?current=yes.

Equity Indicator 4c(iv): Percentage of associate's degree completers who ever received student loans by race/ethnicity: 2000, 2012, and 2016



Indicator Status:

In 2016, 67 percent of Black and American Indian/Alaska Native associate's degree completers had ever borrowed, compared with 50 percent of White, 47 percent of Pacific Islander, 35 percent of Hispanic, and 27 percent of Asian associate's degree completers.

NOTE: Data are from NPSAS: 2000, 2012, and 2016 and represent the percentage of associates degree completers who ever borrowed.

SOURCE: Department of Education, National Center for Education Statistics, 1999–2000, 2011–12, and 2015–16 National Postsecondary Student Aid Study (NPSAS:2000, NPSAS:12, and NPSAS:16). *Digest of Education Statistics 2018*, Table[331.95]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_331.95.asp?current=yes.

Indicator 4d: How Much Do Students Borrow? How Does the Amount Students Borrow Vary by the Type of Institution Students Attend and Students' Race/Ethnicity?

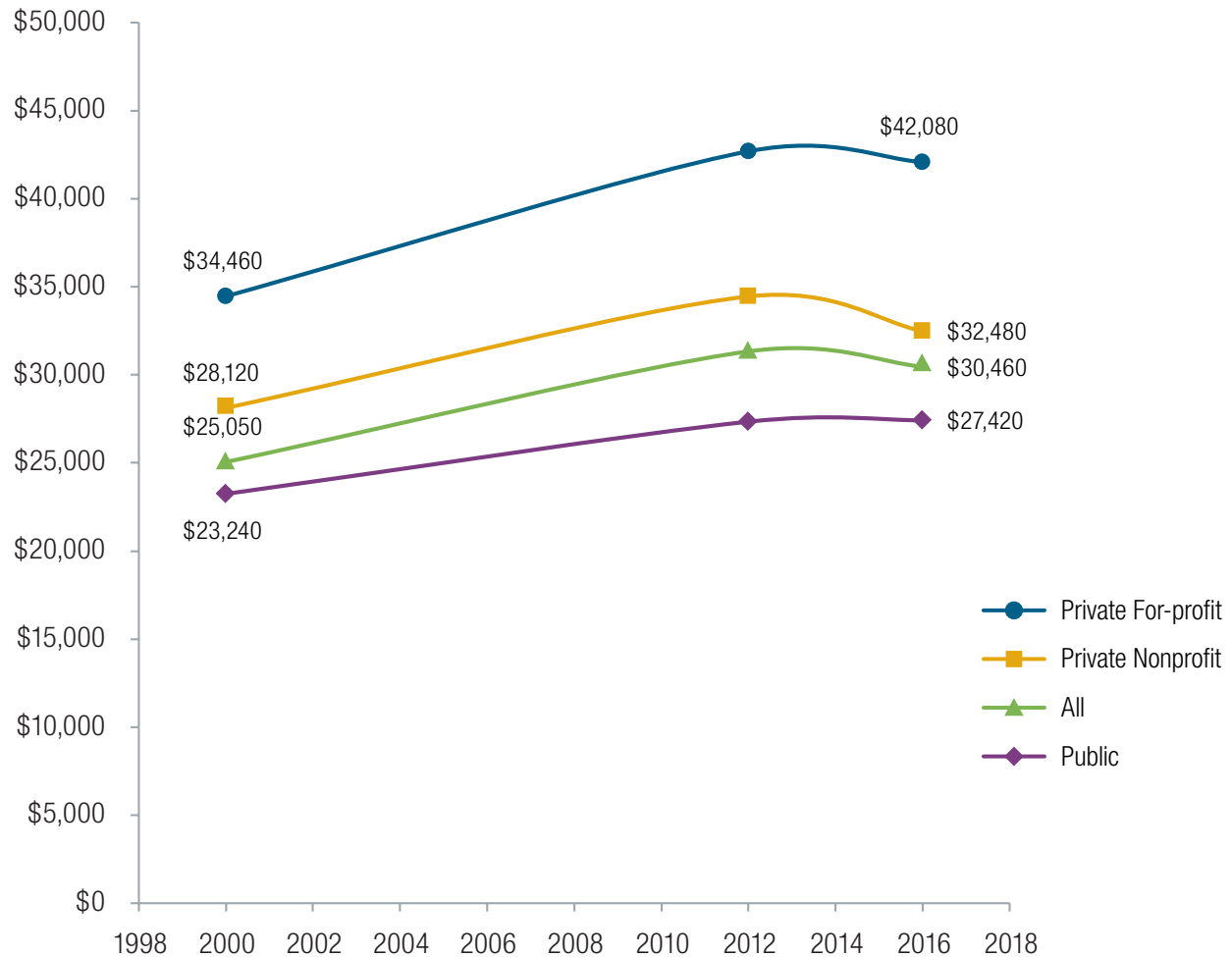
Indicators from 4d(i) to 4d(iv) present the average cumulative amount borrowed among those who borrowed. The average cumulative amount borrowed by bachelor's degree completers increased by 22 percent between 2000 and 2016 in constant 2016 dollars (from \$25,050 in 2000 to \$30,460 in 2016). In 2016, the average cumulative amount borrowed by bachelor's degree completers ranged from \$27,420 at public institutions, to \$32,480 at private non-profit institutions, to \$42,080 at private for-profit institutions (Indicator 4d(ii)).

Over this same period, the average cumulative amount borrowed among associate's degree completers increased by 39 percent in constant 2016 dollars, rising from \$13,600 in 2000 to \$18,900 in 2016. In 2016, the average cumulative amount borrowed among associate's degree completers ranged from \$15,920 at public institutions, to \$25,280 at private non-profit institutions, to \$26,900 at private for-profit institutions.

Black degree completers average the highest cumulative loan amounts among bachelor's degree completers. In 2016, Black bachelor's degree completers averaged \$34,630 in cumulative loans, compared with \$27,000 for Hispanics and \$25,920 for Asians.

Cumulative loan amount increased between 2000 and 2016 by 67 percent among Black associate's degree completers, rising from \$13,620 in 2000 to \$22,710 in 2016 in constant 2016 dollars. By comparison, average cumulative loans increased by 39 percent in constant dollars among all associate's degree completers, rising from \$13,600 in 2000 to \$18,900 in 2016.

Equity Indicator 4d(i): Average cumulative loan amounts for bachelor's degree completers who ever received student loans by institution control: 2000, 2012, and 2016 (constant 2016-17 dollars)



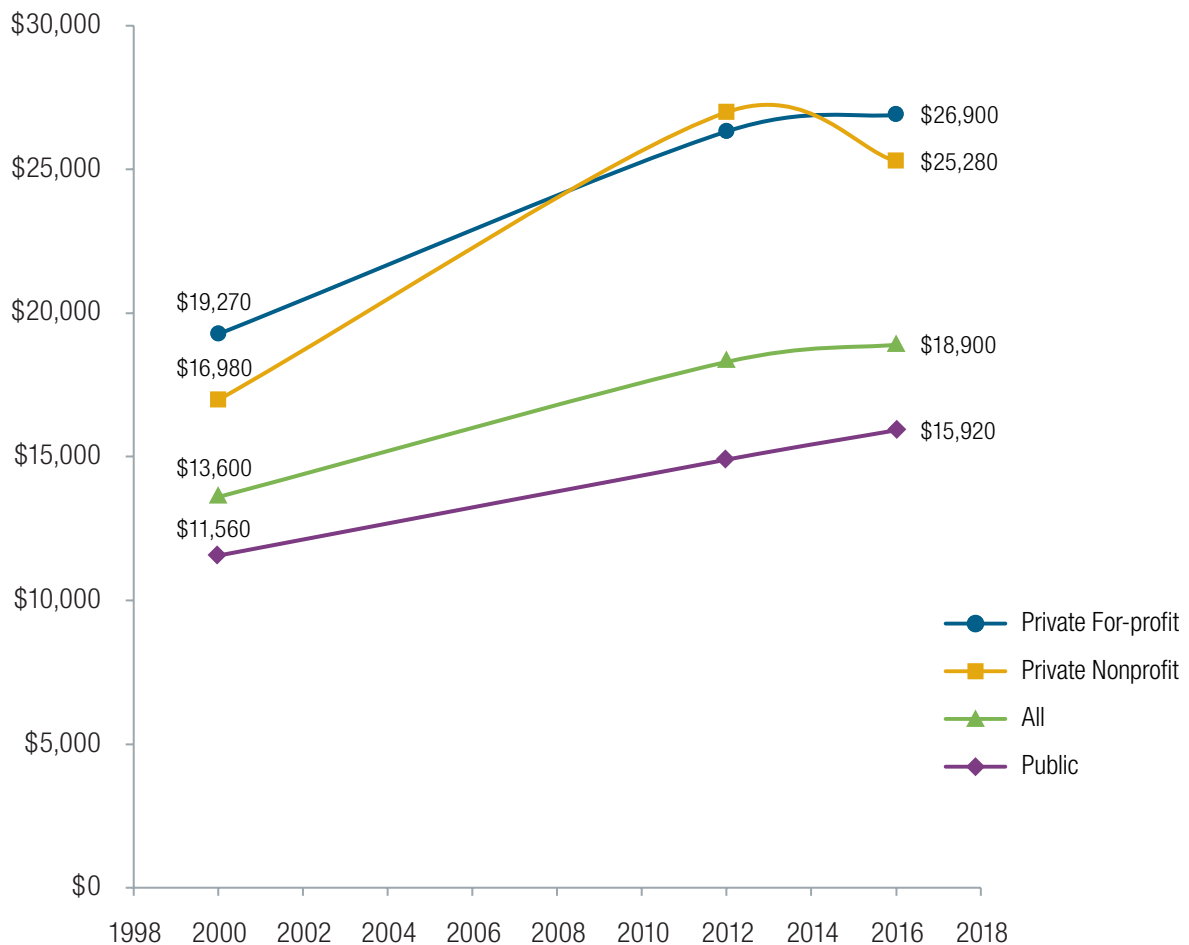
Indicator Status: Increase in Cumulative Loan Amounts

The average cumulative amount borrowed by bachelor's degree completers increased by 22 percent between 2000 and 2016 in constant 2016-17 dollars.

NOTE: Data are from NPSAS: 2000, 2012 and 2016 and represent cumulative loan amounts among bachelor's degree completers having loans.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1999–2000, 2011–12, and 2015–16 National Postsecondary Student Aid Study (NPSAS:2000, NPSAS:12, and NPSAS:16). *Digest of Education Statistics 2018*, Table [331.95]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_331.95.asp?current=yes.

Equity Indicator 4d(ii): Average cumulative loan amounts for associate's degree completers who ever received student loans by institution control: 2000, 2012, and 2016 (constant 2016-17 dollars)



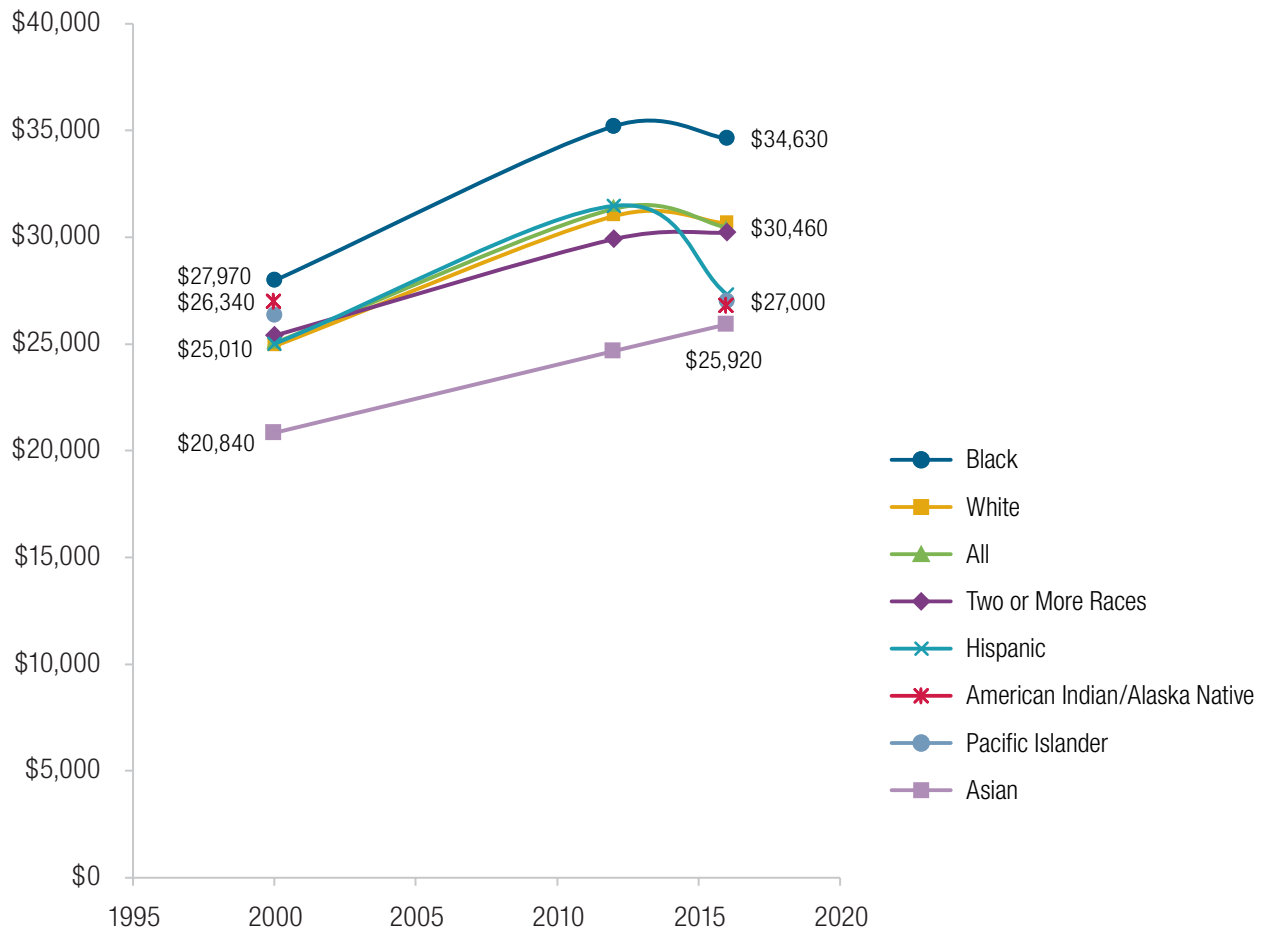
Indicator Status: Increase in Cumulative Loan Amounts

The average amount borrowed among associate's degree completers increased between 2000 and 2016 by 39 percent in constant 2016-17 dollars, rising from \$13,600 in 2000 to \$18,900 in 2016.

NOTE: Data are from NPSAS: 2000, 2012 and 2016 and represent cumulative loan amounts among associate's degree completers having loans.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1999–2000, 2011–12, and 2015–16 National Postsecondary Student Aid Study (NPSAS:2000, NPSAS:12, and NPSAS:16). *Digest of Education Statistics 2018*, Table [331.95]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_331.95.asp?current=yes.

Equity Indicator 4d(iii): Average cumulative loan amounts for bachelor's degree completers who ever received student loans by race/ethnicity: 2000, 2012, and 2016 (constant 2016-17 dollars)



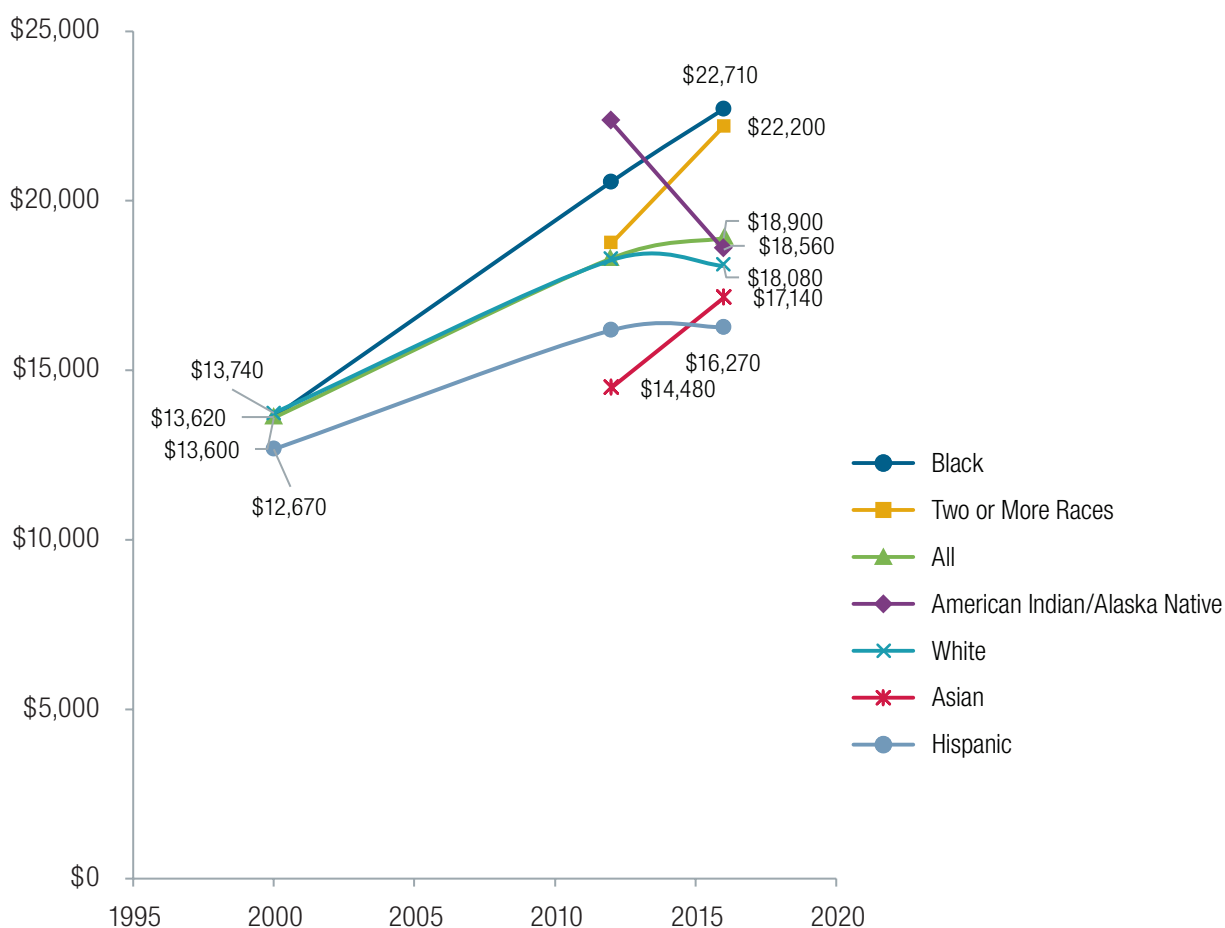
Indicator Status: Increase in Cumulative Loan Amounts

Black bachelor's degree completers average higher cumulative loan amounts than bachelor's degree completers of other racial/ethnic groups.

NOTE: Data are from NPSAS: 2000, 2012 and 2016 and represent cumulative loan amounts among bachelor's degree completers who reported having loans.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1999–2000, 2011–12, and 2015–16 National Postsecondary Student Aid Study (NPSAS:2000, NPSAS:12, and NPSAS:16). *Digest of Education Statistics 2018*, Table [331.95]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_331.95.asp?current=yes.

Equity Indicator 4d(iv): Average cumulative loan amounts for associate's degree completers who ever received student loans by race/ethnicity: 2000, 2012, and 2016 (constant 2016-17 dollars)



Indicator Status: Increase in Cumulative Loan Amounts

Cumulative loan amounts increased by 67 percent in constant dollars between 2000 and 2016 among Black associate's degree completers.

NOTE: Data are from NPSAS: 2000, 2012 and 2016 and represent the cumulative loan amounts among associate's degree completers who reported having loans.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1999–2000, 2011–12, and 2015–16 National Postsecondary Student Aid Study (NPSAS:2000, NPSAS:12, and NPSAS:16). *Digest of Education Statistics 2018*, Table [331.95]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_331.95.asp?current=yes.

Equity Indicator 4e: What Are Rates of Borrowing and Average Amount Borrowed by State?

Indicators 4e(i) and 4e(ii) show the estimated percentages of 2017 bachelor's degree recipients who borrowed and, among those who borrowed, the average cumulative amounts borrowed, by state. The federal government does not collect cumulative student debt from institutions. As such, this indicator relies on data from the *2017 Annual Survey of College Debt* by TICAS, a voluntary data collection from over 1,000 4-year institutions. To estimate state level student loan debt, TICAS uses the most recent available figures, which were provided by more than half of all public and nonprofit bachelor's degree-granting 4-year colleges. TICAS warns that some caution is warranted when using their data. To estimate state averages, TICAS estimates the percent of students borrowing and the average debt amount borrowed for states that have sufficient usable data from which to calculate state estimates.⁹⁰ The limitations of relying on voluntarily-reported data underscore the need for federal collection of cumulative student debt data for all institutions.

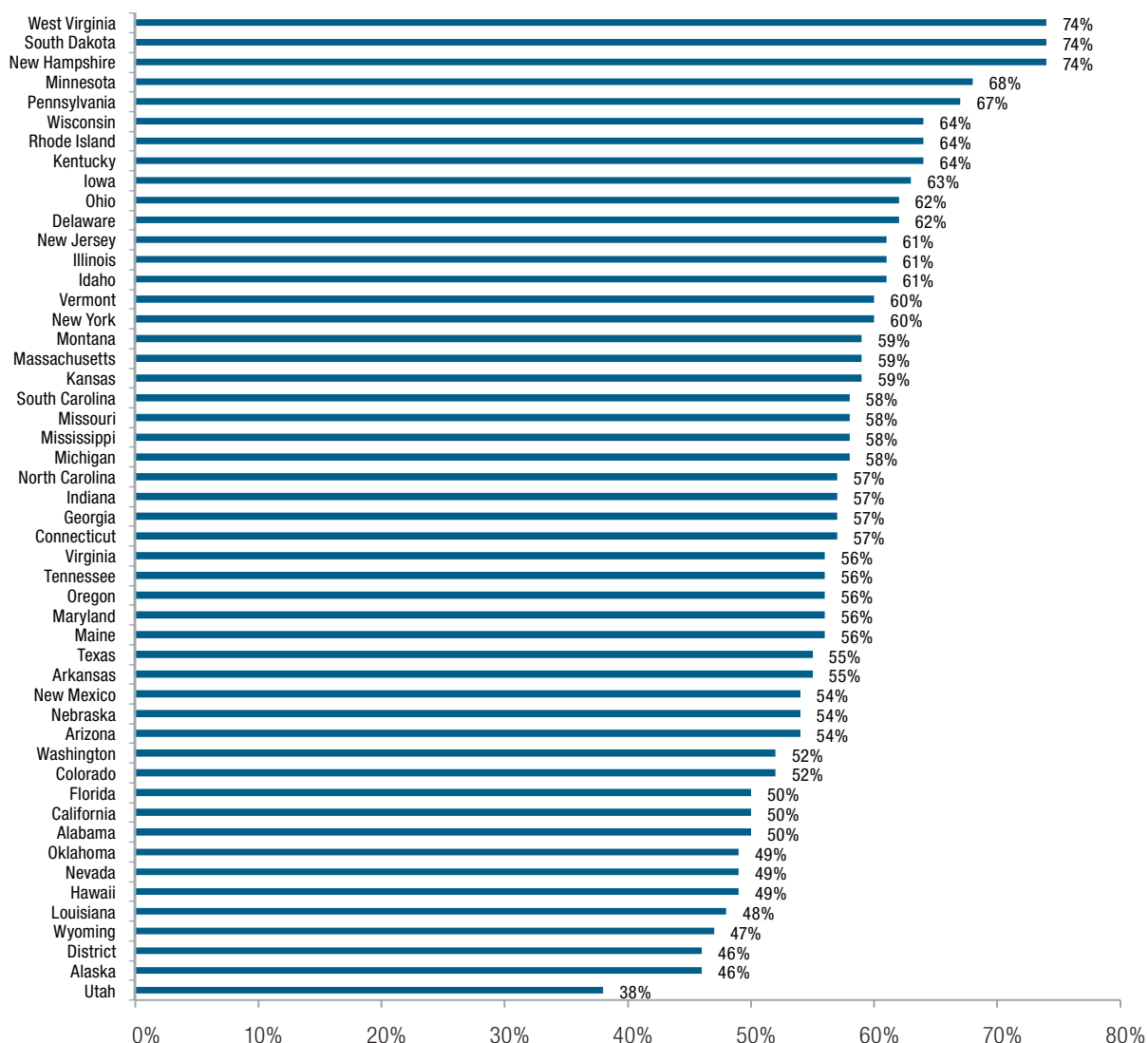
As with all state comparisons, caution is needed in interpreting differences by state. States may have higher or lower rates of borrowing and amounts borrowed because of many reasons including differences in the rate at which low-income and middle-income students participate in college, the availability of need-based grant aid, average college costs in the state, and economic differences between the states.

Indicator 4e(i) shows that 74 percent of bachelor's degree recipients graduated with debt in 2017 in West Virginia, South Dakota, and New Hampshire. By comparison, fewer than 50 percent of bachelor's degree recipients graduated with debt in Utah (38 percent), Alaska (46 percent), District of Columbia (46 percent), Wyoming (47 percent), Louisiana (48 percent), Hawaii (49 percent), Nevada (49 percent), and Oklahoma (49 percent).

Indicator 4e(ii) shows that the average amount borrowed by those who borrowed ranged from less than \$23,000 in Utah (\$18,838), New Mexico (\$21,237), Nevada (\$22,064), Wyoming (\$22,524), and California (\$22,785), to more than \$36,000 in Rhode Island (\$36,250), Pennsylvania (\$36,854), and Connecticut (\$38,510).

⁹⁰ TICAS does not tabulate average rates of borrowing for states in which less than 30 percent of bachelor's degree recipients are represented in the data submitted by institutions within the state. The state-level report by TICAS covers 78 percent of all bachelor's degree recipients at public and non-profit 4-year colleges in 2016-17. Cheng, D., & Gonzalez, V. (2018). *Student Debt and the Class of 2017, 13th Annual Report*. Oakland: The Institute for College Access & Success (TICAS). Retrieved from https://ticas.org/sites/default/files/pub_files/classof2017.pdf.

Equity Indicator 4e(i): Percentage of bachelor's degree recipients with debt by state: 2017



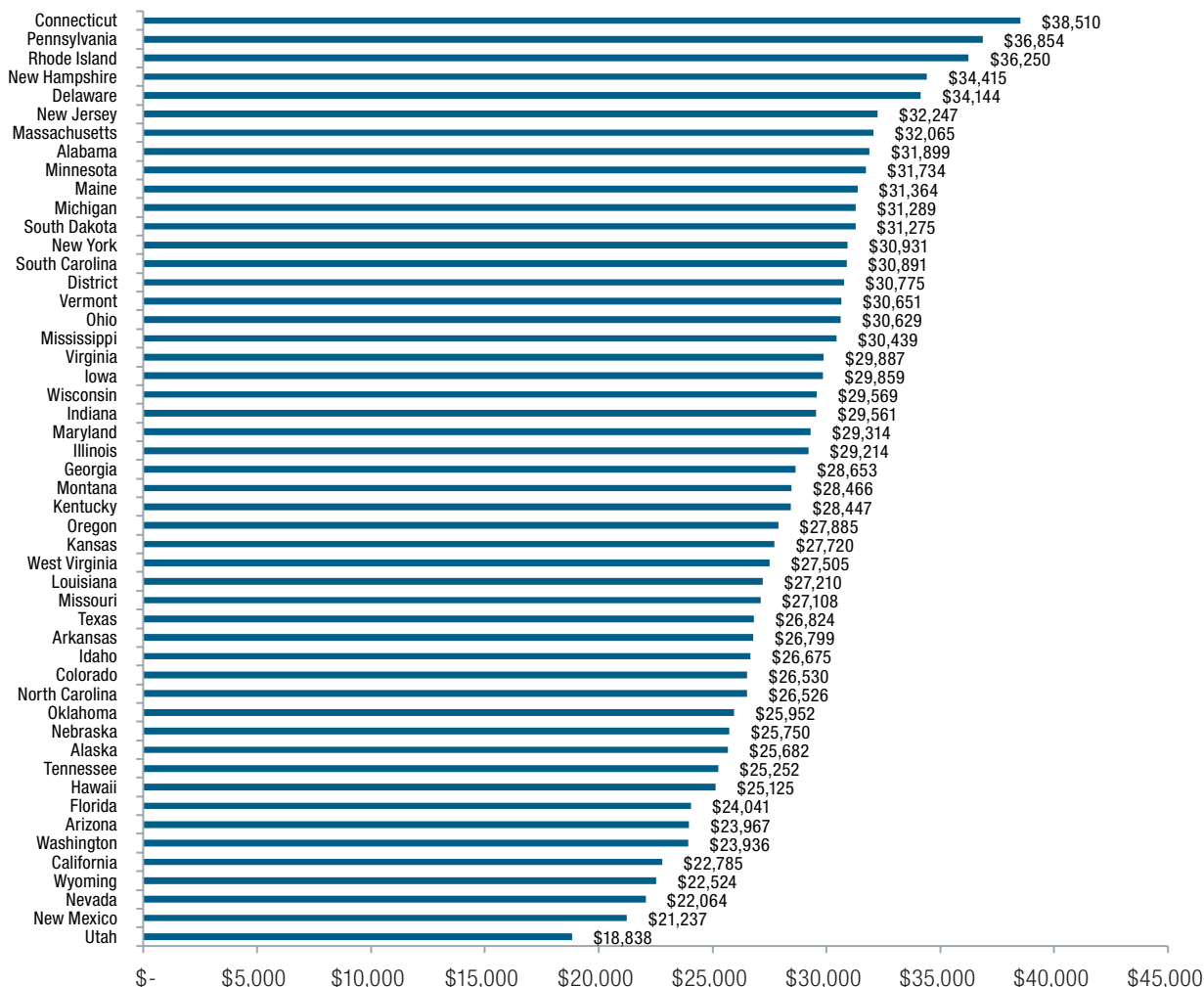
Indicator Status:

The percentage of 2017 bachelor's degree recipients who borrowed ranged from 38 percent in Utah to 74 percent in West Virginia, South Dakota, and New Hampshire.

NOTE: To estimate state averages, TICAS used the most recent available figures, which were provided voluntarily by more than half of all public and nonprofit bachelor's degree-granting 4-year colleges. The college- and state-level debt data used for the report are available online at ticas.org.

SOURCE: Cheng, D., & Gonzalez, V. (2018). *Student Debt and the Class of 2017, 13th Annual Report*. Oakland: The Institute for College Access & Success (TICAS). Retrieved from https://ticas.org/sites/default/files/pub_files/classof2017.pdf.

Equity Indicator 4e(ii): Average amount of debt among bachelor's degree recipients who borrowed by state: 2017



Indicator Status:

The average amount borrowed among 2017 bachelor's degree recipients who borrowed ranged from \$18,838 in Utah to \$38,510 in Connecticut.

NOTE: To estimate state averages, TICAS used the most recent available figures, which were provided voluntarily by more than half of all public and nonprofit bachelor's degree-granting 4-year colleges. The college- and state-level debt data used for the report are available online at ticas.org.

SOURCE: Cheng, D., & Gonzalez, V. (2018). *Student Debt and the Class of 2017, 13th Annual Report*. Oakland: The Institute for College Access & Success (TICAS). Retrieved from https://ticas.org/sites/default/files/pub_files/classof2017.pdf.

EQUITY INDICATOR 5:

HOW DO EDUCATIONAL ATTAINMENT RATES AND EARLY OUTCOMES VARY BY FAMILY CHARACTERISTICS?

In 2017, estimated bachelor's degree attainment rates by age 24 based on CPS household survey data were 4.8 times greater for dependent family members from the highest family income quartile than for those from the lowest family income quartile (62 percent vs. 13 percent). In 1970, those in the highest income quartile were 6.7 times as likely as those in the lowest quartile to attain a bachelor's degree by age 24 (40 percent vs. 6 percent).

Equity Indicator 5 (a-f): Definitions

Equity Indicator 5 draws on multiple sources of data to describe educational attainment and early graduation outcomes by sociodemographic characteristics. The sources of data are: 1) Current Population Survey (CPS) data from 1970 to 2017 on estimated dependent family members' bachelor's degree attainment rates by family income; 2) NCES high school longitudinal studies tracing high school students' bachelor's degree attainment 8 or 10 years after expected high school graduation year; 3) Beginning Postsecondary Students Longitudinal Studies (BPS) following first-time college entrants through 5 or 6 years after college entrance and through 3 years after college entrance; 4) IPEDS Completions Surveys' data on degrees awarded by race/ethnicity in 1980 and 2017; 5) Baccalaureate and Beyond Longitudinal Study (B&B) data for 2008 graduates at the 4-year (2012) follow-up; 6) Census Bureau data on educational attainment rates by state for various age groupings; and 7) IPEDS Graduation Rate data by state. We utilize multiple data sources for Indicator 5 because of the limitations of each source, as described below. Indicator 5 focuses primarily on bachelor's degree attainment, with some attention to associate's, master's, and doctoral degree attainment by race/ethnicity. Definitions of terms not already provided in the report are presented below.

- **Estimated rates of bachelor's degree attainment by age 24 for dependent family members.**

This Indicator reports 3-year moving average estimated rates of bachelor's degree attainment by age 24 by family income quartile for primary dependent family members using data from the October supplement to the Current Population Survey (CPS). CPS is the only available national annual data source that measures attainment, but the data have important limitations and caution is warranted when interpreting the results. The CPS household survey data are reported in aggregate for cross-sectional groupings and include only individuals who were considered "dependent family members"

of the household at the time of the CPS survey. Recent years have seen differential changes across income groupings in dependency patterns and length of time for bachelor's degree completion. We use data from the NCES longitudinal studies to improve the calibration of the CPS estimates.⁹¹

- **Percentage of first-time beginning postsecondary dependent students earning bachelor's degrees within 5 or 6 years of initial enrollment by family income quartile and TRIO eligibility.** These measures use data from the Beginning Postsecondary Students Longitudinal Study (BPS). BPS tracked students first enrolling in a postsecondary educational institution in academic years 1989-90, 1996-97, and 2003-04. Bachelor's degree attainment rates are shown by parent income quartile for dependent students. We also use BPS data to examine differences in attainment by TRIO eligibility criteria (i.e., low-income and first-generation college status).⁹²
- **Percentage of first-time beginning postsecondary dependent students who persisted or earned a postsecondary credential 3 years after enrolling in postsecondary by TRIO eligibility and family income quartile.** These measures use data from the most recent BPS cohort beginning in 2011-12 for whom 6-year follow-up data is not yet available.
- **Distributions of associate's, bachelor's, master's, and doctoral degrees conferred by race/ethnicity compared to population distributions.** These measures use the annual IPEDS Completion Surveys to report the distributions of degrees conferred. We use Census data for comparisons to the U.S. population distribution by race/ethnicity in 1980 and 2017.
- **Further education, early career earnings, and unemployment for recent bachelor's degree recipients.** Using data from NCES's Baccalaureate and Beyond Longitudinal Study (B&B), this Indicator reports post-baccalaureate enrollment, annual income, and unemployment for 2008 bachelor's degree recipients. Data are from the 4-year follow up in 2012 by parents' income quartile.
- **Educational Attainment by State** uses data from the decennial census and the American Community Survey from 1940 to 2017 for the total population age 25 and older and for those age 24 to 35 in 2000 and 2015.
- **IPEDS Graduation Rates by State** provides cohort data on first-time, full-time bachelor's degree-seeking students earning any formal award (certificate, associate's, or bachelor's degree) at the institution of first enrollment within 6 years by state of institution in 2000 and 2015.

⁹¹ Because of the relationships among family income, dependency status, and degree attainment, CPS data published in the 2015 Indicators report overestimated bachelor's degree attainment for the highest income quartile. In 2016, we reported the 100 percent distribution of bachelor's degrees in the text and attainment estimates in the methodological appendix. For the 2017 to 2019 Indicators reports, we returned the CPS attainment rate indicator to the main body of the report. The 2016 methodological appendix and 2017 to 2019 Indicator 5a have updated CPS attainment rate estimates with improved calibration from NCES longitudinal survey data from the appropriate time periods. In 2019, we include the percentage distribution of bachelor's degrees awarded by income quartile in Equity Indicator 5a(ii). Caution is warranted when interpreting CPS estimates given the many underlying assumptions.

⁹² TRIO is a set of federal competitive grant programs first authorized under the HEA of 1965, as amended most recently in 2008. TRIO programs are designed to increase college access and degree completion for low-income students, first-generation college students, and students with disabilities. The first three TRIO programs began in 1964, 1965, and 1968, respectively. TRIO now consists of eight programs that collectively provide services from middle school through graduate school. The eight TRIO programs are: Upward Bound (UB), Upward Bound Math Science (UBMS), Veterans Upward Bound (VUB), Talent Search, Student Support Services (SSS), Educational Opportunity Centers (EOC), Ronald E. McNair Post-Baccalaureate Achievement Program (McNair), and a training program for TRIO project staff. In 2018, over 3,100 TRIO projects were housed at colleges and universities and community organizations, with projects in all 50 states, Washington, D.C., and U.S. territories. (See Federal TRIO Programs, <https://www2.ed.gov/about/offices/list/ope/trio/index.html>) While federal TRIO program services have been found to increase college entrance, persistence and completion, they are estimated to reach less than 5 percent of the eligible population in any given year. Cahalan, M. (2013). *Widening participation in higher education in the United States of America: Report submitted to HEFCE and OFFA by CFE and Edge Hill University*. Retrieved from http://www.hefce.ac.uk/media/hefce/content/pubs/indirreports/2013/wpinternationalresearch/2013_WPeffectivenessUS.pdf.

Equity Indicator 5a(i) and 5a(ii): How Do Estimates of Dependent Family Members' Bachelor's Degree Attainment Rates Vary by Family Income Quartile?

Equity Indicator 5a(i) reports a 3-year moving average of the estimated rates of bachelor's degree attainment by age 24 for dependent family members using data from the annual Current Population Survey (CPS) from 1970 to 2017.⁹³ Estimates are derived using aggregate cross-sectional CPS data with calibration from the NCES longitudinal studies from similar time frames. Equity Indicator 5a(ii), also using CPS data, reports the 100 percent distribution of bachelor's degrees estimated by family income quartiles over the period.

Indicator 5a(i) shows that bachelor's degree attainment rates increased in each family income quartile over the period but remain highly unequal. In 2017, an estimated 13 percent of dependent family members in the lowest family income quartile had attained a bachelor's degree by age 24, compared with 20 percent of those in the second quartile, 47 percent of those in the third quartile, and 62 percent of those in the highest quartile.

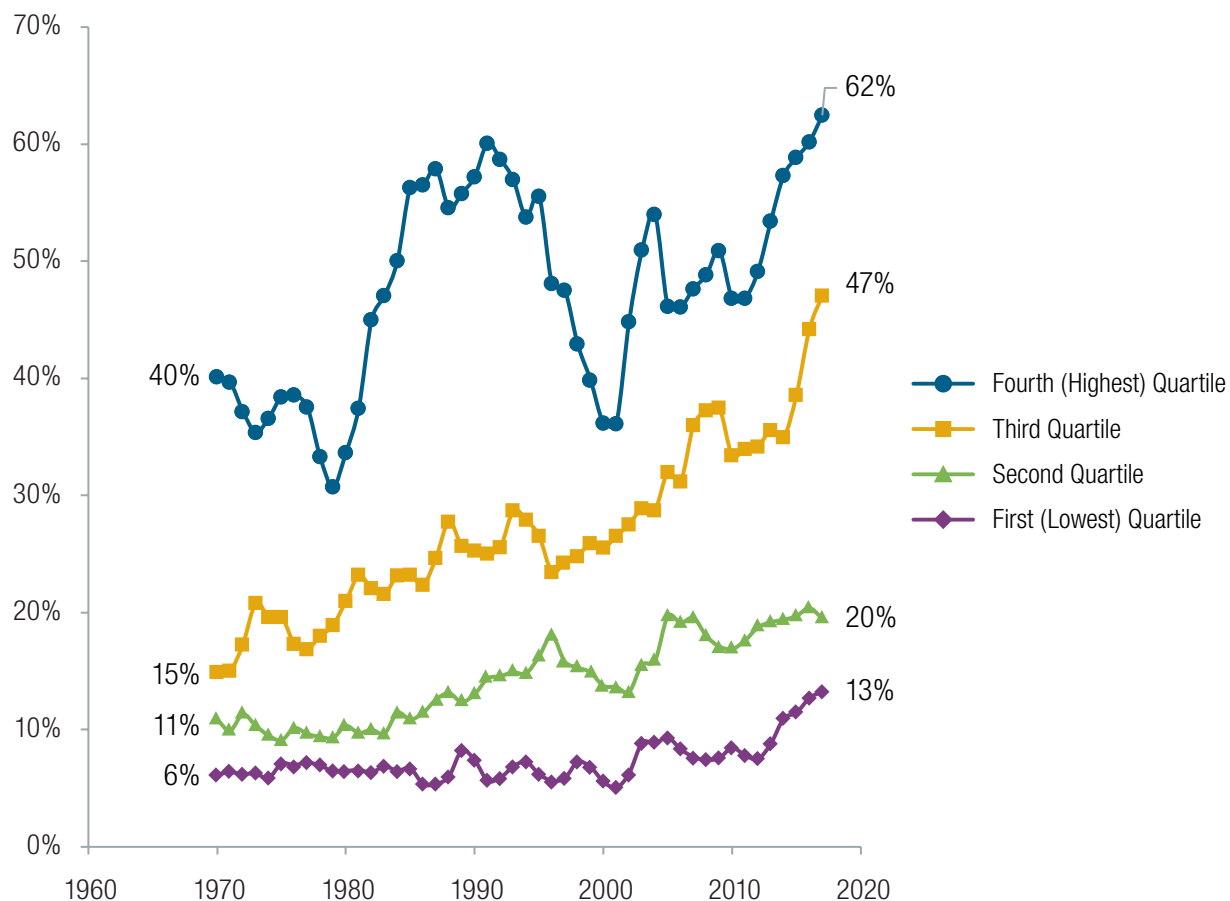
The gap in bachelor's degree attainment rates by age 24 between dependent family members in the highest and lowest quartiles was 49 percentage points in 2017. Estimated bachelor's degree attainment rates by age 24 were 4.8 times higher for dependent family members in the highest income quartile than for the lowest income quartile (62 percent vs. 13 percent) in 2017. In 1970, dependent family members in the highest income quartile were 6.7 times as likely as those in the lowest quartile to attain a bachelor's degree by age 24 (40 percent vs. 6 percent).

The rate of increase in bachelor's degree attainment for dependent family members by age 24 between 1970 and 2017 was highest for the third quartile, with a 216 percent increase (from 15 percent in 1970 to 47 percent in 2017). The rate of increase in bachelor's degree attainment was lowest for the highest quartile (at 56 percent), with attainment rates increasing from 40 percent to 62 percent. Bachelor's degree attainment rates increased by 115 percent for the lowest quartile, increasing from 6 percent in 1970 to 13 percent in 2017, and by 79 percent for the second lowest quartile, increasing from 11 percent to 20 percent.

Distribution by Family Income Quartile. Equity Indicator 5a(ii) displays the 100 percent distribution of bachelor's degrees completed by dependent family members age 18 to 24 by family income quartile. This chart shows that the upper two quartiles have consistently accounted for over 70 percent of the bachelor's degrees completed by dependent students age 18 to 24. In 2017, dependent family members in the top two income quartiles accounted for 76 percent of the bachelor's degrees awarded, with 43 percent going to the top/highest quartile and 33 percent to the third highest quartile. Only 25 percent of bachelor's degrees were completed by dependent family members age 18 to 24 in the lowest two income quartiles, with 14 percent and 11 percent, respectively, going to the second lowest and lowest quartiles. Despite small fluctuations, this distribution has remained remarkably stable over the 47 years between 1970 and 2017.

⁹³ Indicator 5a (i) reports a 3-year moving average of the estimated bachelor's degree attainment rate by age 24 for dependent family members. Because we report a moving average, estimates for individual years will be slightly different from year to year.

Equity Indicator 5a (i): Estimated bachelor's degree attainment by age 24 for dependent family members by family income quartile: 1970 to 2017



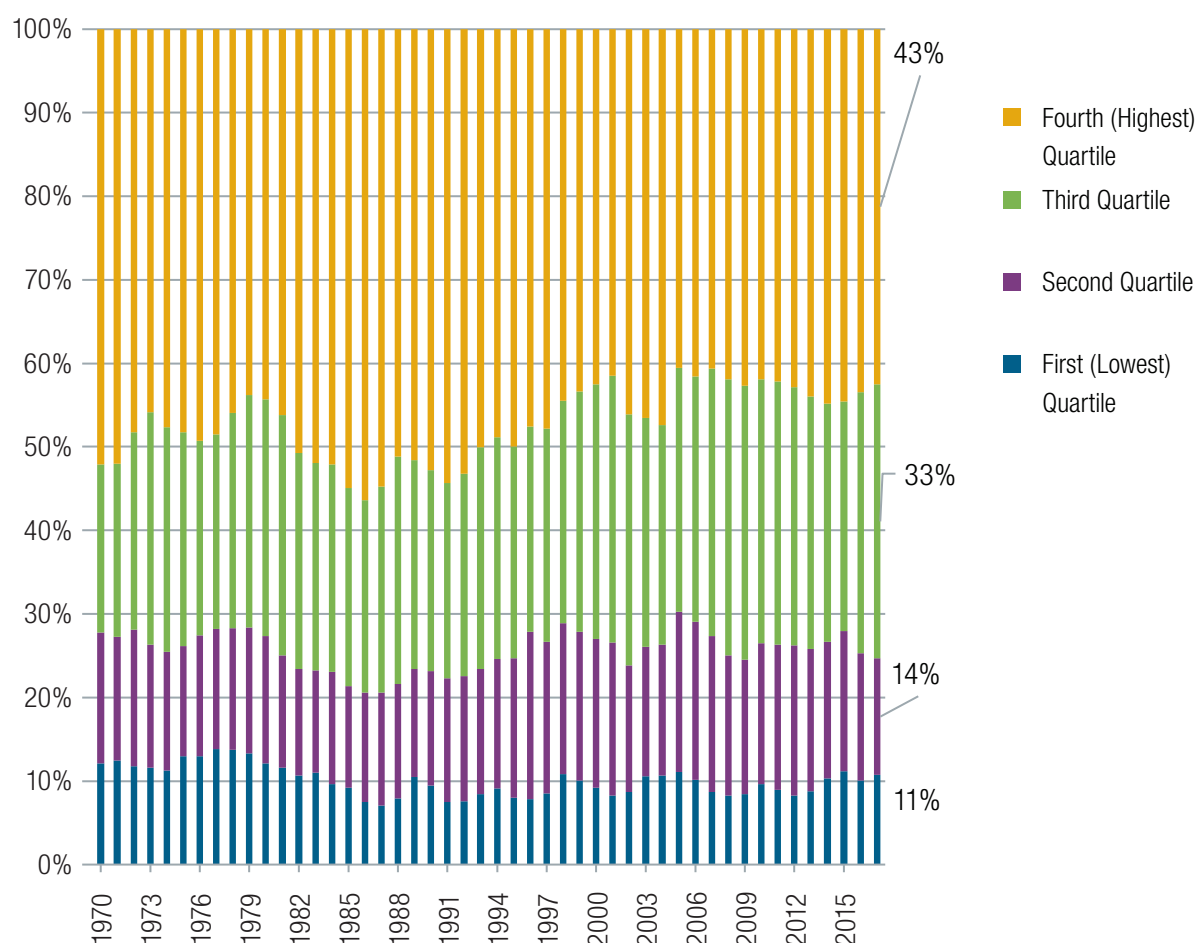
Indicator Status: High Persisting Inequality

Estimated bachelor's degree attainment rates by age 24 are 4.8 times higher for dependent family members in the highest income quartile than for those in the lowest income quartile (62 percent vs. 13 percent). In 1970, dependent family members in the highest income quartile were 6.7 times as likely as those in the lowest quartile to have a bachelor's degree by age 24 (40 percent vs. 6 percent).

NOTE: This figure reports a 3-year moving average of the estimated bachelor's degree attainment rate by age 24 for dependent family members using the CPS data with calibrations from the NCES high school longitudinal studies. Due to estimation assumptions and sampling error, caution is warranted when interpreting changes (especially large single year fluctuations) over time. See Appendix A for further discussion of the methodology and limitations.

SOURCE: U.S. Census Bureau, Current Population Survey, October Education Supplement, 1970-2017. Data from 1970 to 1986 consider unmarried 18- to 24-year-olds and data from 1987 to 2017 are based on dependent 18- to 24-year-olds. These data were previously published in Table 14 in Census Bureau P20 report on School Enrollment. After 2006, the Census Bureau no longer published Table 14. Data were tabulated using the Census Bureau table production tool (2006-2017). Mortenson, T. (in press). Estimated Baccalaureate Degree Attainment by Age 24 by Family Income Quartiles: 1970 to 2017, *Postsecondary Education Opportunity*. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education.

Equity Indicator 5a(ii) Estimated distribution of bachelor's degrees attained by dependent family members by age 24 by family income quartile: 1970 to 2017



Indicator Status: High Persisting Inequality

In 2017, the upper two quartiles accounted for 76 percent of the bachelor's degrees completed by dependent students age 18 to 24, with 43 percent going to those in the top family income quartile and 33 percent to those in the second highest family income quartile. The bottom half of family income distribution accounts for about 25 percent of degrees, with 14 percent and 11 percent, respectively, going to the second and first (lowest) income quartiles.

NOTE: This figure reports a 100 percent distribution of bachelor's degrees reported for dependent 18-to 24-year-olds using the CPS data. Details do not sum to 100 percent due to rounding. Due to estimation assumptions and sampling error, caution is warranted when interpreting changes over time, especially large single year fluctuations. See Appendix A for further discussion of the methodology and limitations.

SOURCE: U.S. Census Bureau, Current Population Survey, October Education Supplement, 1970-2017. Data from 1970 to 1986 consider unmarried 18- to 24-year-olds and data from 1987 to 2016 are based on dependent 18- to 24-year-olds. These data were previously published in Table 14 in Census Bureau P20 report on School Enrollment. After 2006, the Census Bureau no longer published Table 14. Data were tabulated using the Census Bureau table production tool (2006-2017). Mortenson, T. (in press). Estimated Baccalaureate Degree Attainment by Age 24 by Family Income Quartiles: 1970 to 2017, *Postsecondary Education Opportunity*. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education.

Equity Indicator 5b: What Percentage of Youth Attain at Least a Bachelor's Degree in 8 or 10 Years of Expected High School Graduation by Socioeconomic Status (SES)?

Equity Indicator 5b uses data from three NCES high school longitudinal studies that report bachelor's degree attainment rates for students 8 or 10 years after their expected high school graduation.⁹⁴ For this Indicator we use socioeconomic status (SES), a composite measure based on parental income, education, and occupation, rather than a single measure of self-reported income.⁹⁵

As noted in the discussions of other indicators in this report, comparisons of bachelor's degree attainment across the three longitudinal studies are limited by differences in the starting year. High School and Beyond (HS&B:1980) sampled 1980 high school 10th graders and followed the cohort until 1992, 10 years after expected high school graduation in 1982. The National Education Longitudinal Study of 1988 (NELS:88) sampled 8th graders in 1988 and followed students until 2000, 8 years after their expected high school graduation in 1992. The Educational Longitudinal Study of 2002 (ELS:2002) sampled 2002 10th graders and followed them until 2012, 8 years after their expected high school graduation in 2004. Because NELS:88 began with 8th graders rather than students in high school, data from NELS:88 might be expected to report a higher percentage of students who did not complete high school than the HS&B and ELS studies that began in 10th grade. Other observed differences in bachelor's degree attainment over time may reflect differences in the willingness of high-poverty schools to participate in the three studies,⁹⁶ thereby altering the composition of schools and students (despite non-response adjustments by NCES) in the three samples.⁹⁷

With these cautions in mind, Indicator 5b shows that the share of youth attaining a bachelor's degree within 8 or 10 years of their expected high school graduation varies substantially by parents' socioeconomic status (SES) in all three studies. In the most recent study (ELS:2002), 10th graders from the highest SES quartile were 4 times as likely to attain a bachelor's degree in 8 years as 10th graders from the lowest SES quartile. Indicator 5b shows that 60 percent of 2002 10th graders from the highest SES quartile attained a bachelor's degree within 8 years, compared with 15 percent of those from the lowest quartile, 22 percent of those from the second quartile, and 37 percent of those from the third SES quartile.

The percentage of individuals from the lowest SES quartile who attained at least a bachelor's degree within 8 or 10 years of their expected high school graduation was virtually the same for the HS&B:80 cohort (7 percent) as

⁹⁴ In 2009, NCES began another nationally representative survey of high school students: the High School Longitudinal Study of 2009 (HSLs). This study began with 9th graders in 2009. Data for bachelor's degree attainment within 8 or 10 years of expected high school graduation are not yet available from this source, as this latest longitudinal study sampled 9th graders who had an expected high school graduation of 2013.

⁹⁵ SES is a composite measure that NCES derived in a comparable manner for the three studies. We use the SES measure rather than family income as SES is a more robust measure than the single measure of self-reported family income. The latter tends to have a high rate of missing data and is subject to reporting error in the high school studies.

⁹⁶ While NCES adjusted for non-response and has engaged in increased follow-up efforts, over time there has been growing reluctance of high-poverty schools to participate in the (voluntary) NCES-sponsored sample surveys. This unwillingness to participate was especially pronounced in ELS:2002.

⁹⁷ See methodological appendices: Lauff, E., & Ingels, S. J. (2014). *A First Look at 2002 High School Sophomores 10 Years Later, Educational Longitudinal Study of 2002 (ELS:2002)* (NCES 2014-363). U.S. Department of Education; Ingels, S. J., Kaufman, P., Curtin, T. R., Alt, M. N., & Chen, X. (2002). *Coming of Age in the 1990s: The Eighth Grade Class of 1988 12 Years Later. Initial Results from the Fourth Follow-up to the National Education Longitudinal Study of 1988* (NCES 2002-321). Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement; Tuma, J., Geis, S., & Carroll, C. D. (1995). *High School and Beyond: Educational Attainment of 1980 High School Sophomores by 1992. 1992 Descriptive Summary of 1980 High School Sophomores 12 years later*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

for the NELS:88 cohort (8 percent). But the percentage of individuals from the lowest SES quartile who attained at least a bachelor's degree nearly doubled to 15 percent for the 2002 10th graders in ELS. As noted above, some of the increase in educational attainment between 1988 8th graders and 2002 10th graders may be related to the fact that the NELS:88 sampled cohort was younger than the ELS:2002, and consequently had two additional years to potentially drop out of high school. This difference would downward bias bachelor's degree completion rates compared with a study (like ELS:2002) that had an older entering cohort. Census Bureau data show that high school non-completion rates are higher for those with lower incomes than for those with higher incomes (see Appendix A). Thus, this caution may be more applicable for understanding trends over time in completion rates for the lowest quartile than the highest quartile.⁹⁸

Over the three study periods, the highest SES quartile has shown less variability in high school dropout rates and less gain in both high school and bachelor's degree completion rates than the bottom three SES quartiles. For youth in the highest SES quartile, the percentages attaining at least a bachelor's degree within 8 or 10 years of expected high school graduation were similar in the two most recent studies (62 percent for NELS and 60 percent for ELS), but higher than the earlier study (52 percent for HS&B).

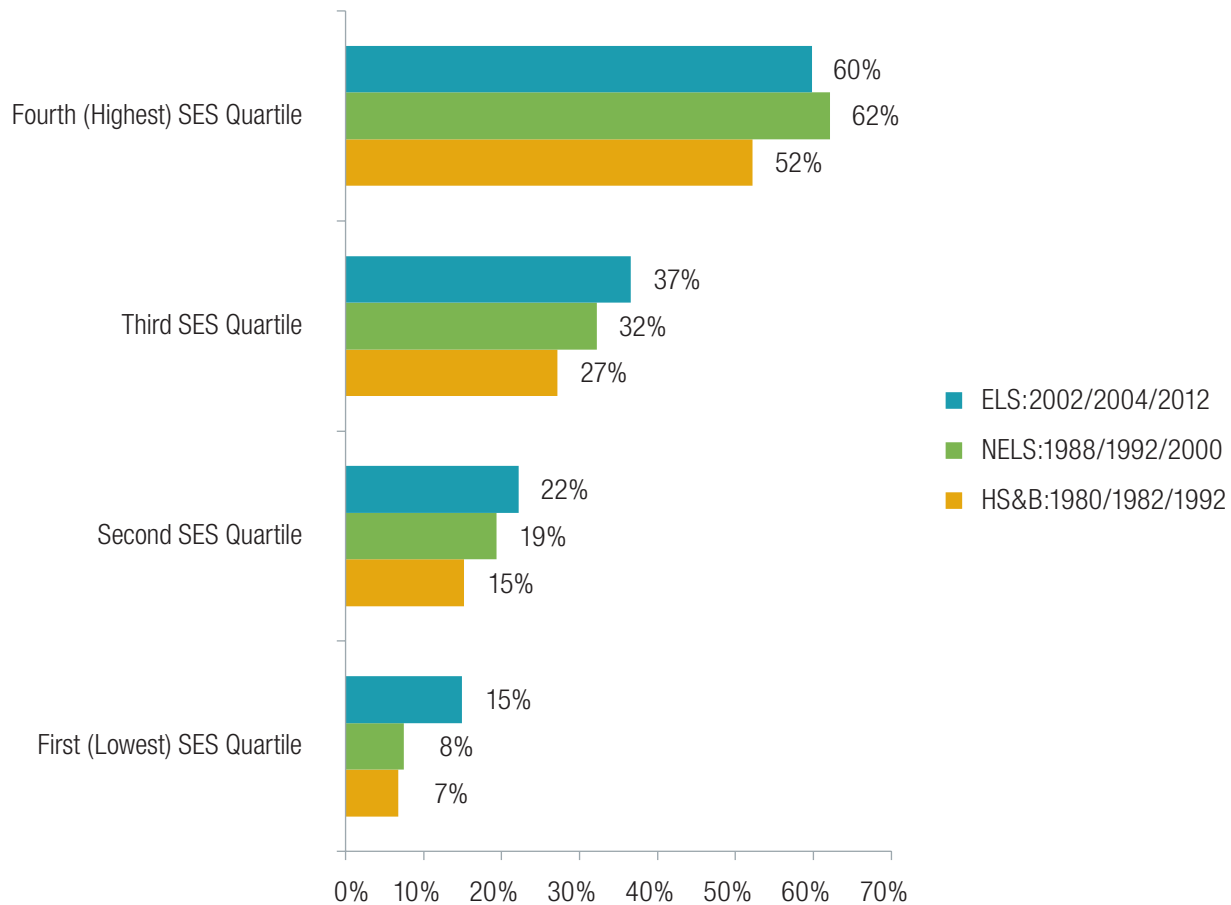
Bachelor's degree attainment rates also increased across the three cohorts for youth in the middle SES quartiles. Attainment rates for youth in the second SES quartile increased from 15 percent in the HS&B:1980 cohort, to 19 percent in the NELS:88 cohort, to 22 percent in the ELS:2002 cohort. For those in the third SES quartile, bachelor's degree attainment rates increased from 27 percent, to 32 percent, to 37 percent.

Although differing in methods, time periods, and populations measured estimates of the differences in bachelor's degree attainment of the highest and lowest quartiles in the NCES longitudinal studies show a correspondence with the CPS data shown in Indicator 5a(i). These data show the highest quartile was about 6 to 7 times higher in the 1970's and 1980's and was about 4 to 5 times higher in the more recent period.⁹⁹ The ELS class of 2004 study found in the 2012 follow-up 8 years after scheduled high school graduation that bachelor's degree attainment rates were 4 times higher for students in the highest SES quartile compared with the lowest quartile (60 percent vrs. 15 percent). The HS&B study of the class of 1982 found in the 10 year follow-up conducted in 1992 that the highest SES category was 7.4 times as likely to attain a bachelors degree by 10 years after scheduled high school graduation (52 percent versus 7 percent).

98 Although SES and income are different measures, family income is one component of the SES-derived variable from the NCES high school longitudinal studies (the other components are parents' education and occupation). In the high school longitudinal studies there is a high degree of overlap between the distributions for SES and income within the samples. Parental education has generally been found to be more highly associated with educational attainment than parental income. See Cahalan, M., & Maxwell, J. (2007). *Exploring Demographic and Selected State Policy Correlates of State Level Educational Attainment and Achievement Indicators*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL. Retrieved from <https://www.slideshare.net/cheersdotorg/exploring-demographic-and-selected-state-policy-correlates-of-state-level-educational-attainment-and-achievement-indicators-aera2007-cahalan>.

99 In 2017, estimated bachelor's degree attainment rates by age 24 based on CPS household survey data were 4.8 times greater for dependent family members from the highest family income quartile than for those from the lowest family income quartile (62 percent vs. 13 percent). In 1970, those in the highest income quartile were 6.7 times as likely as those in the lowest quartile to attain a bachelor's degree by age 24 (40 percent vs. 6 percent).

Equity Indicator 5b: Percentage of youth attaining a bachelor's degree or higher within 8 or 10 years of expected high school graduation by parents' socioeconomic status (SES) quartile: 10th grade cohort from HS&B 1980; 8th grade cohort from NELS 1988; 10th grade cohort from ELS 2002



Indicator Status: High Inequality and Persisting Gap

For the ELS:2002 cohort, 10th graders from the highest SES quartile were 4 times as likely to attain a bachelor's degree within 8 years of expected high school graduation as 10th graders from the lowest SES quartile (60 percent vs. 15 percent). The magnitude of the gap in attainment between the highest and lowest SES quartiles for the 2002 10th grade cohort (45 percentage points) was the same as for the HS&B 1980 10th grade cohort (45 percentage points).

NOTE: Comparisons across surveys are limited due to differences in survey methods, as described in the text.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B:1980-class of 1982-1992 follow-up), National Education Longitudinal Study (NELS:1988-class of 1992-2000 follow-up), and Educational Longitudinal Study (ELS:2002-class of 2004-2012 follow-up). Data tabulated using NCES Data Analysis System (DAS).

Equity Indicator 5c(i): What Percentage of Beginning First-Time Dependent Postsecondary Students Obtain a Bachelor's Degree by Parents' Income Quartile?

Whether first enrolling in a 4-year or 2-year-or-less postsecondary institution, most students report aspiring to obtain a bachelor's degree.¹⁰⁰ Indicator 5c(i) describes the percent of dependent students who first enrolled in any type of postsecondary education institution who earned a bachelor's degree within 5 or 6 years of initial enrollment.¹⁰¹ Data for this Indicator come from three waves of NCES's longitudinal Beginning Postsecondary Students (BPS) studies. These surveys track students who first enrolled in academic years 1989-90, 1995-96, and 2003-04 through the follow-up studies conducted in 1994, 2001, and 2009, respectively.

The share of dependent students who earned a bachelor's degree within 5 or 6 years of initial enrollment increases with family income quartile. Among dependent students who first enrolled in the 2003-04 academic year, the percentage obtaining a bachelor's degree within 6 years increased from 26 percent for those in the lowest income quartile, to 36 percent for those in the second quartile, to 46 percent for those in the third quartile, to 59 percent for those in the highest quartile.

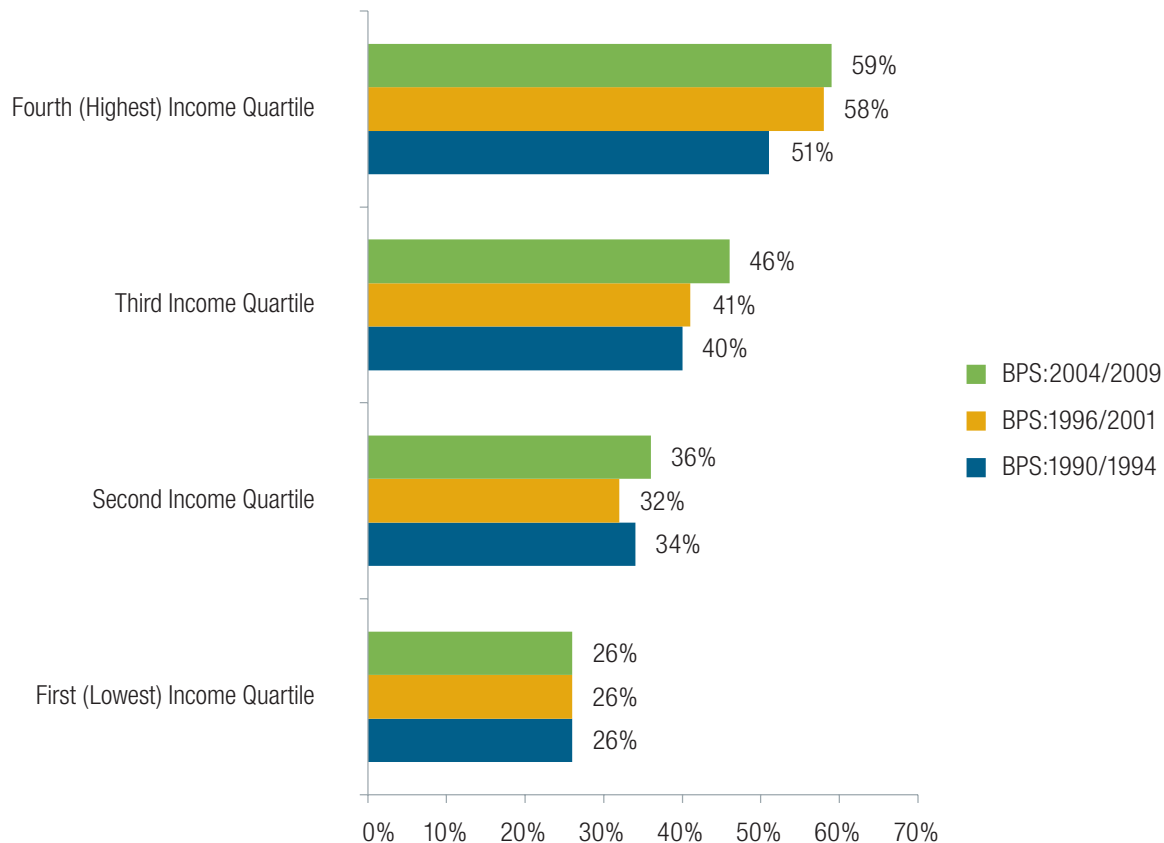
The percentage of dependent students from the lowest income quartile who obtained a bachelor's degree or higher within 5 or 6 years of initial enrollment remained unchanged at 26 percent for all three cohorts. For those in the highest income quartile, the percentage of dependent students obtaining a bachelor's degree increased from 51 percent for those who entered in 1989-90, to 58 percent for those who entered in 1995-96, and to 59 percent for those who entered in 2003-04.

The 5- or 6-year bachelor's degree completion rate also showed little change for those in the second quartile (34 percent for those who enrolled in 1989-90; 32 percent for those who enrolled in 1995-96, and 36 percent for those who enrolled in 2003-04). For dependent students in the third income quartile, the percentages obtaining a bachelor's degree were 40 percent for those who entered in 1989-90, 41 percent for those who first entered in 1995-96, and 46 percent for those who first entered in 2003-04. Consistent with these relatively stable rates, the gap in bachelor's degree completion rates between those in the highest and lowest family income quartiles remained virtually unchanged for those first entering in 1995-96 and 2003-04 (at approximately 33 percentage points).

100 For example, data from ELS:2002 show that 80 percent of all high school students, and 60 percent of those in the lowest SES quartile, hoped to obtain a bachelor's degree or higher. See Cahalan, M., Ingels, S., Burns, L., & Planty, M. (2006). *United States High School Sophomores: A Twenty-two Year Comparison, 1980–2002: Statistical Analysis Report* (NCES 2006–327). Washington, DC: U.S. Department of Education. Retrieved from <http://files.eric.ed.gov/fulltext/ED493609.pdf>. Similarly, data from the Condition of College and Career Readiness 2014 by ACT indicate that 80 percent of first-generation college students expect to obtain a bachelor's degree or higher. ACT (2014). *The Condition of College & Career Readiness 2014*. Retrieved from <https://www.act.org/content/dam/act/unsecured/documents/CCCR14-NationalReadinessRpt.pdf>.

101 BPS includes first-time enrollees in 4-year, 2-year, and less-than-2-year institutions.

Equity Indicator 5c(i): Percentage of dependent first-time students who obtained a bachelor's degree or higher within 5 or 6 years of first enrolling in a 4-year or 2-year-or-less postsecondary education institution by parents' family income quartile: BPS:1989-90 (1994 follow-up), BPS:1995-96 (2001 follow-up), and BPS:2003-04 (2009 follow-up)



Indicator Status: High and Persistent Inequality

The percentage of dependent first-time postsecondary education students in the lowest family income quartile who obtained a bachelor's degree within 5 or 6 years of first enrolling remained unchanged over the BPS survey waves at 26 percent. Bachelor's degree completion rates were approximately 33 percentage points lower for those in the lowest than highest income quartile for those who first enrolled in 1995-96 and 2003-04, up from a gap of 25 percentage points for those who first enrolled in 1989-90.

NOTE: Income quartiles are based on applicable BPS sample parents' income at the start of the study. For example, dependent BPS:2004 parent income levels by quartile were as follows: Lowest, less than \$32,000; Second, \$32,000- \$59,999; Third, \$60,000-\$91,999; Highest, \$92,000 or more. The BPS:2004 quartiles reflect 2002 parent family incomes for the first-time, college-going population entering in 2003-04, and thus are not comparable to the CPS income distribution. CPS reflects the income distribution of families of 18- to 24-year-olds for the entire nation for the year specified.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Beginning Postsecondary Students Longitudinal Studies (BPS:1989-90/1996; BPS:1996/2001; BPS:2003-2004/2009). Data tabulated using NCES Data Analysis System (DAS). See also Radford, A., Berkner, L., Wheelless, S., & Shepherd, B. (2010). *Persistence and Attainment of 2003-04 Beginning Postsecondary Students: After 6 Years*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

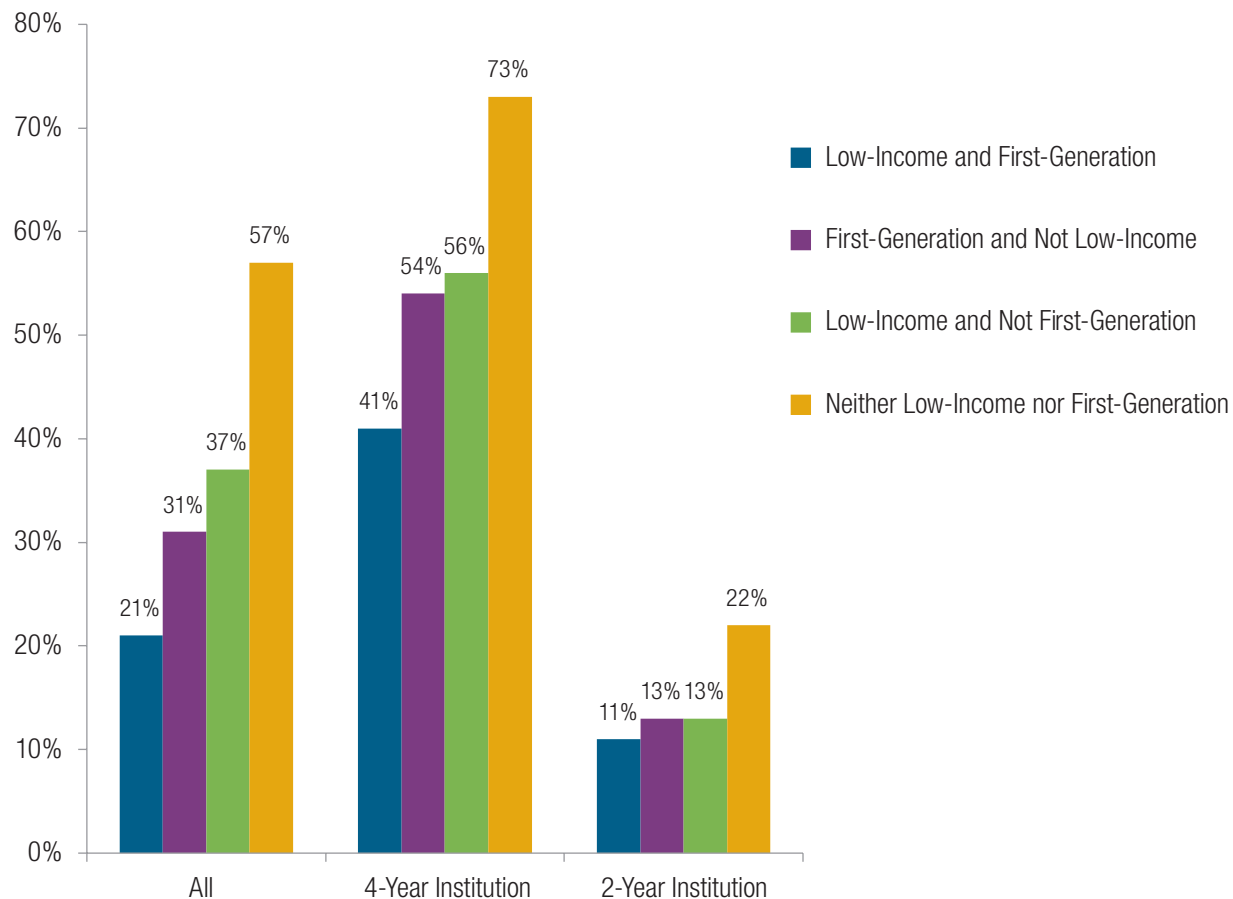
Equity Indicator 5c(ii): What Percentage of Beginning First-Time TRIO Eligible and Non-TRIO-Eligible Students Complete Bachelor's Degrees within 6 Years?

Using data from the 2009 follow-up of the 2003-04 Beginning Postsecondary Students (BPS:2004/2009) survey, Indicator 5c(ii) shows rates of completing a bachelor's degree within 6 years of first enrolling in a 2-year or 4-year institution. The analyses is limited to dependent students. Students are classified as to whether they would qualify for the Federal TRIO programs based on their parents' income and first-generation college status. Family-income thresholds for TRIO eligibility are established by law and reflect an adjusted income that is at or below 150 percent of the federal poverty level. First-generation is defined as neither parent nor guardian having attained a bachelor's degree. Eligibility requirements vary by TRIO program, but for most TRIO programs, two-thirds of participants must be both low-income and first-generation, or students with disabilities. The other one-third must be either low-income or first-generation.

Indicator 5c(ii) shows that 6-year bachelor's degree completion rates for dependent students who first enrolled in a 4-year or 2-year institution 2003-04 ranged from 21 percent for beginning postsecondary students who were both low-income and first-generation to 57 percent among students who were neither low-income nor first-generation. Dependent students who were first-generation but not low-income had a bachelor's degree completion rate of 31 percent, while students who were low-income and not first-generation had a bachelor's degree completion rate of 37 percent.

Indicator 5c(ii) also shows that dependent students who first enrolled at a 2-year institution were less likely to obtain a bachelor's degree in 6 years than students who first enrolled in a 4-year institution regardless of family income and first-generation status grouping. For both those who first enrolled in a 2-year institution and those who first enrolled in a 4-year institution, dependent students who were neither low-income nor first-generation college had considerably higher rates of obtaining a bachelor's degree in 6 years than students who were both low-income and first-generation (73 versus 41 percent for those who first enrolled in a 4-year institution; 22 percent versus 11 percent for those who first enrolled in a 2-year institution).

Equity Indicator 5c(ii): Percentage of dependent first-year students who first enrolled in a postsecondary education institution in academic year 2003-04 who completed a bachelor's degree or higher within 6 years, by low-income and first-generation status and institutional level of initial enrollment



Indicator Status: High Inequality

Among dependent students who first enrolled in 2003-04, 6-year bachelor's degree completion rates were 36 percentage points lower for those who were low-income and first-generation than for those who were neither low-income nor first-generation (BPS:2004/2009). This pattern holds for students who first entered 2-year and 4-year institutions.

NOTE: For this classification, TRIO eligibility criteria were used. TRIO income thresholds are established by law and are set at an adjusted income at or below 150 percent of the federal poverty line. First-generation is defined as neither parent nor guardian having attained a bachelor's degree. In any given year, TRIO programs are able to serve less than 5 percent of eligible low-income and first-generation students.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Beginning Postsecondary Students Longitudinal Studies (BPS:1996/2001; BPS:2004/2009). Data were tabulated using NCES PowerStats.

Equity Indicator 5c(iii) and 5c(iv): What Percentage of Dependent Students who Started their Postsecondary Education in 2011-12 Persisted or Obtained a Postsecondary Credential within 3 Years?

Indicator 5c(iii) and 5c(iv) use data from the Beginning Postsecondary Students (BPS:2012/14) study to show enrollment and degree status of students who first enrolled in 2011-12 in June 2014, approximately 3 years after initial enrollment.¹⁰² Indicator 5c(iii) shows enrollment and degree status using the same TRIO eligibility status groupings as in Equity Indicator 5c(ii). Indicator 5c(iv) shows enrollment and degree status by family income quartile.

Persistence or Attainment at 3 Years. Among dependent students who first enrolled in 2011-12 that were both low-income and first generation, 36 percent were found to be not enrolled and to not have obtained any form of postsecondary credential after 3 years. In contrast, among students who were neither low-income nor first-generation, 15 percent were not enrolled and had not attained a postsecondary credential. This indicates that students who are not low-income and not first-generation are two times more likely to be able to persist in college as those who are low-income and first generation, despite the fact that low-income students are more likely to be enrolled in less than 4-year programs.

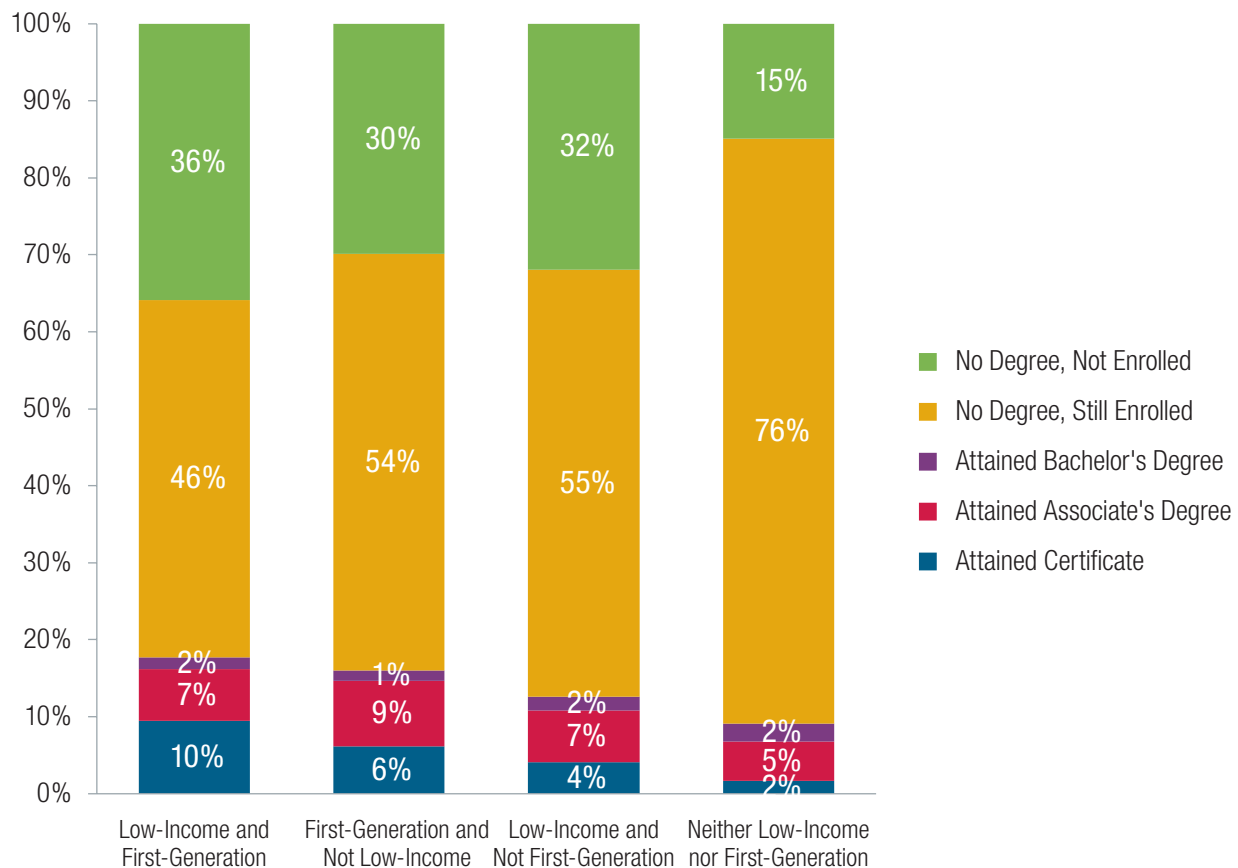
Among dependent students, who were neither low-income nor first-generation, 85 percent were still enrolled (76 percent) or had attained a postsecondary degree or credential (9 percent). In contrast among those students who were both low-income and first-generation, 64 percent were either still enrolled or had obtained a postsecondary degree or credential by 3 years after they first enrolled. Among the 64 percent, 46 percent were still enrolled, 10 percent had obtained a postsecondary certificate, 7 percent had attained an associate's degree, and 2 percent had attained a bachelor's degree.

Indicator 5c(iv) shows a similar pattern when considering persistence and attainment of dependent students who first enrolled in 2011-12 by family income quartiles. Only 14 percent of those from the highest income quartile were not enrolled and had no degree 3 years after initial enrollment, compared with 35 percent of those from the lowest income quartile, 28 percent of those from the second lowest income quartile, and 24 percent of those from the third highest income quartile.

About 9 percent of dependent students from the lowest income quartile had attained a certificate after 3 years, compared with 7 percent of those from the second income quartile, 3 percent of those from the third income quartile, and 2 percent of those from the highest income quartile.

¹⁰² Students in the 2011-12 cohort had a 6-year follow up in 2017-18, but these data are not yet available.

Equity Indicator 5c(iii): Enrollment and degree status by June 2014 (3-year follow-up) of dependent students who first enrolled in a 4-year or 2-year institution in 2011-12 by low-income and first-generation status



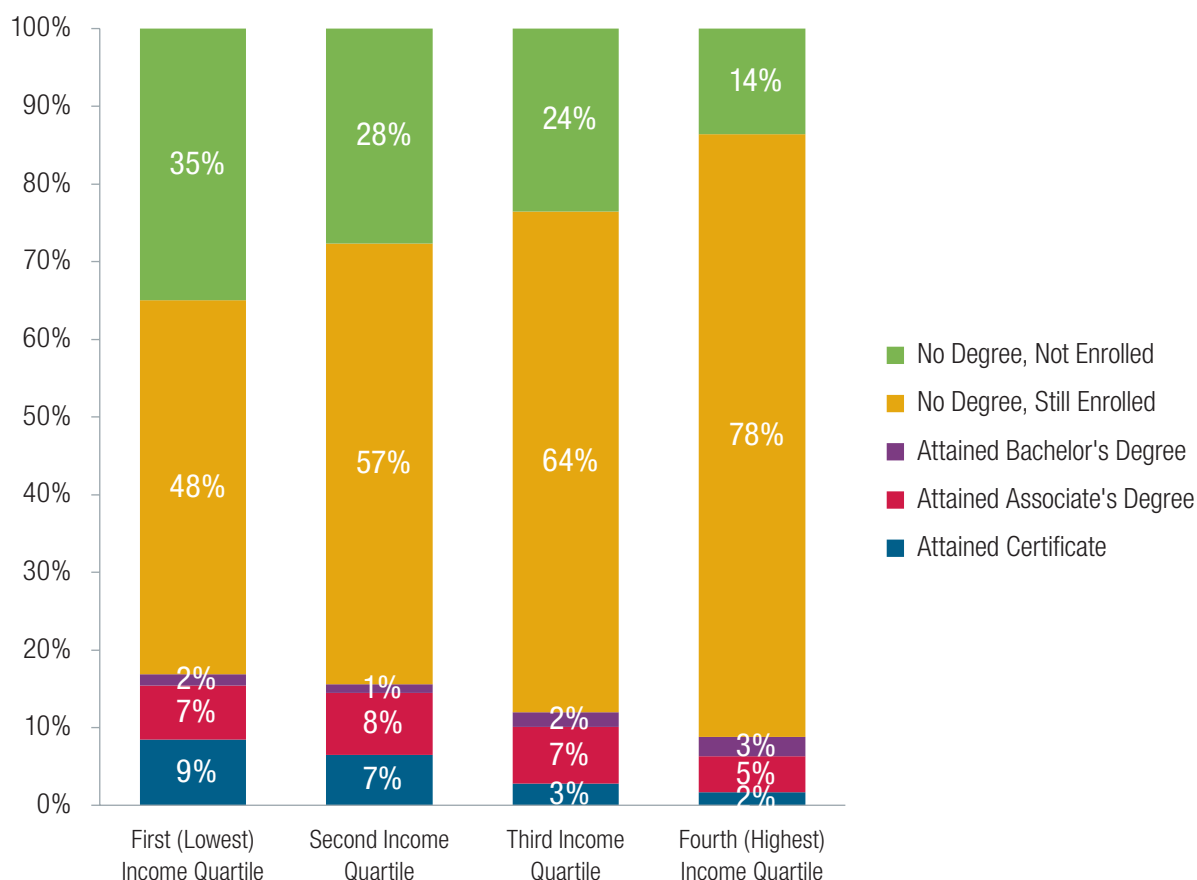
Indicator Status: High Inequality

Low-income and first-generation students were twice as likely to leave postsecondary education without attaining a degree by the third year as students who were neither low-income nor first-generation.

NOTE: Percentages may not sum to 100 due to rounding. The BPS 3-year follow-up of the 2011-12 entering cohort covered enrollment and degree status through June 2014. For this classification, TRIO eligibility criteria were used. TRIO income thresholds are established by law and are set at an adjusted income at or below 150 percent of the federal poverty line. First-generation is defined as neither parent nor guardian having attained a bachelor's degree. In any given year, TRIO programs are able to serve less than 5 percent of eligible low-income and first-generation students.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Beginning Postsecondary Students Longitudinal Studies (BPS:2012/14). Data were tabulated using NCES PowerStats.

Equity Indicator 5c(iv): Enrollment and degree status by June 2014 (3-year follow-up) of dependent students who first enrolled in a 4-year or 2-year institution in 2011-12 by family income quartile



Indicator Status: High Inequality

Students from the lowest income quartile are more than twice as likely to leave postsecondary education without attaining a degree by the 3rd year as students from the highest income quartile.

NOTE: The BPS 3-year follow-up of the 2011-12 entering cohort covered enrollment and degree status through June 2014. Family income quartiles are from the NPSAS:2012 for the BPS cohort of entering first-time dependent students.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Beginning Postsecondary Students Longitudinal Studies (BPS:2012/14). Data were tabulated using NCES PowerStats.

Equity Indicator 5d(i) and 5d(ii): What is the Distribution of Degrees Awarded to U.S. Citizens by Race and Ethnicity?

Indicator 5d uses data from the Integrated Postsecondary Education Data System (IPEDS) on degrees conferred to U.S. citizens by race/ethnicity in 1980 and 2017. We compare the distribution of the total civilian population and the 18- to 24-year-old population in the same years. Indicator 5d(i) examines associate's and bachelor's degrees conferred, and Indicator 5d(ii) examines master's and doctoral degrees conferred. Race and ethnicity are dynamic classifications, and changes in racial/ethnic classification over time should be considered when interpreting these data, especially for relatively small population categories such as American Indian/Alaska Natives and Asian and Pacific Islanders. The statistics are also impacted by the introduction of the "Two or More Races" category, a category that was not present in the 1980 classifications. Race/ethnicity classifications are self-reported using varying categories in the data collection instruments, and some change in distribution of degrees by race/ethnicity over time may be attributable to differences in population self-identifications as well as changes in the categories used in data collection instruments.

As Indicators 5d(i) and 5d(ii) indicate, the U.S. population distribution has undergone considerable demographic change since 1980. Younger individuals represent a higher share of the Black and Hispanic populations than of the White population. In 1980, Whites were 80 percent of the total population (and 77 percent of 18-to 24-year-olds). Blacks were 12 percent of the total (and 13 percent of 18- to 24-year-olds). Hispanics were 7 percent of the total (and 8 percent of 18- to 24-year-olds). Asian/Pacific Islanders were 2 percent of the total (and 2 percent of 18- to 24-year-olds) and American Indian/Alaska Natives were about 0.6 percent of the total (and 0.7 percent of 18- to 24-year-olds). By 2017, Whites were 61 percent of the total population and 54 percent of those age 18 to 24. Blacks were 13 percent of the total population and 14 percent of those age 18 to 24. Hispanics were 18 percent of the total population and 22 percent of those age 18 to 24. The Asian category was 6 percent of both the civilian population and the population age 18 to 24. American Indian/Alaska Natives were 0.7 percent of the total population and 0.9 percent of those age 18 to 24.¹⁰³

Bearing in mind cautions associated with changes in classifications, Indicator 5d suggests some progress as well as the need for more progress in aligning the racial/ethnic representation of degree recipients to that of the total population and the population age 18 to 24.¹⁰⁴ In 1980, Blacks were about 12 percent of the total U.S. civilian population and 13 percent of the 18- to 24-year-old population, yet attained 9 percent of associate's degrees, 7 percent of bachelor's degrees, 6 percent of master's degrees, and 4 percent of doctoral degrees. Thus, Blacks were 69 percent as likely to have parity with the population age 18 to 24 among associate's degree recipients, about half (54 percent) as likely to be represented among bachelor's degree recipients, about half (46 percent) as likely to have obtained a master's degree, and about a third (31 percent) as likely to have obtained a doctoral degree relative to their representation in the U.S. population age 18 to 24.

By 2017, Blacks were closer to parity in the percentage of degrees earned, but continued to be underrepresented relative to their representation in the population. In 2017, Blacks were 14 percent of the population age 18 to 24, but received 13 percent of associate's degrees (93 percent parity), 11 percent of bachelor's degrees (79 percent of parity), 14 percent of master's degrees (100 percent parity), and 9 percent of doctoral degrees (64 percent of parity).

¹⁰³ In 2017, but not 1980, Native Hawaiian and Other Pacific Islanders were classified separately from the Asian population by the Census Bureau and were 0.2 percent of the U.S. population.

¹⁰⁴ Caution is needed in these comparisons, due to changes in the race and ethnicity classifications over time, such as the separation of Hispanics from race/ethnicity classifications and the introduction of the "Two or More Races" category. NCES has data on degrees conferred from 1976. However, data identifying those of Hispanic origin were not available until 1980. The category "Two or More Races" was not used until 2010 following new OMB regulations.

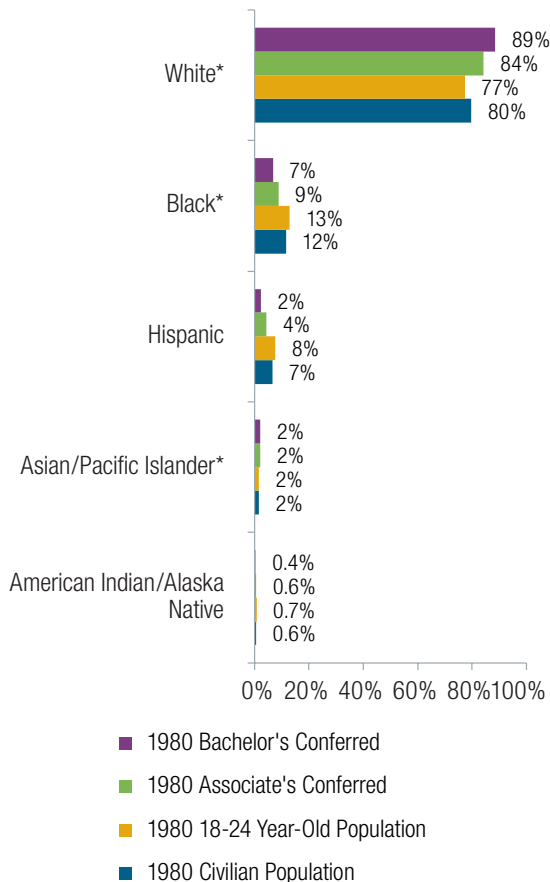
In 1980, those of Hispanic origin represented 7 percent of the total civilian population and 8 percent of the population age 18 to 24, yet received 4 percent of associate's degrees and 2 percent of bachelor's, master's and doctoral degrees conferred. By 2017, Hispanics were about 18 percent of the civilian population and 22 percent of those age 18 to 24, but received 21 percent of associate's degrees (95 percent of parity relative to the population age 18 to 24); 14 percent of bachelor's degrees (64 percent of parity), 10 percent of master's degrees (45 percent of parity), and 8 percent of doctoral degrees (36 percent of parity).

In 1980, those of Asian/Pacific Islander origin represented 2 percent of the total civilian population and 2 percent of persons age 18 to 24. In 1980 Asians received 2 percent each of the associate's, bachelor's, master's, and doctoral degrees conferred. By 2017, Asians represented 6 percent of the civilian population and the population age 18 to 24, and received 6 percent of the associate's degrees (100 percent of parity), 8 percent of bachelor's degrees (133 percent of parity), 7 percent of master's degrees (117 percent of parity), and 13 percent of doctoral degrees (217 percent of parity).

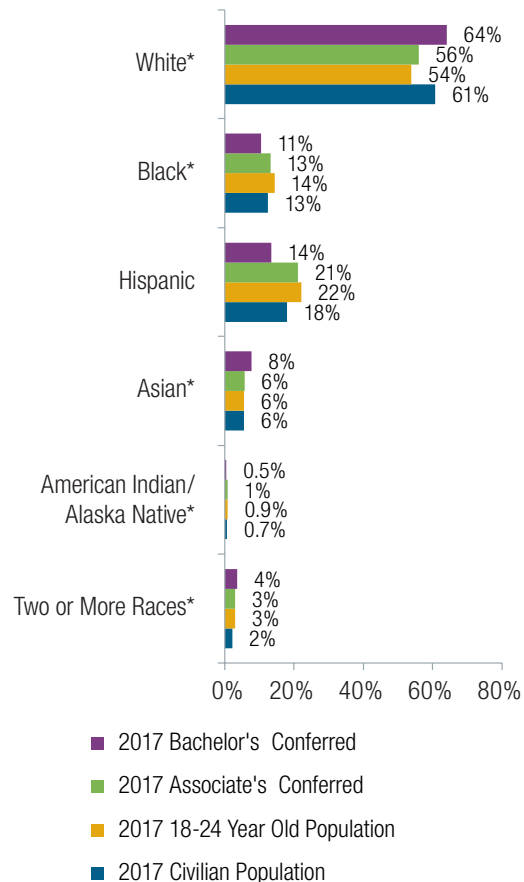
In 2017, Whites remained overrepresented in degrees conferred relative to their representation in the total population (61 percent) and population age 18 to 24 (54 percent). Whites were awarded 56 percent of associate's degrees (104 percent of parity relative to population age 18 to 24), 64 percent of bachelor's degrees (119 percent of parity), 66 percent of master's degrees (122 percent of parity), and 68 percent of doctoral degrees (126 percent of parity).

Equity Indicator 5d(i): Distributions of associate's and bachelor's degrees conferred to U.S. citizens and distribution of the civilian population by race/ethnicity: 1980 and 2017

1980 Associate's and Bachelor's



2017 Associate's and Bachelor's



Indicator Status: Gains in Equity since 1980

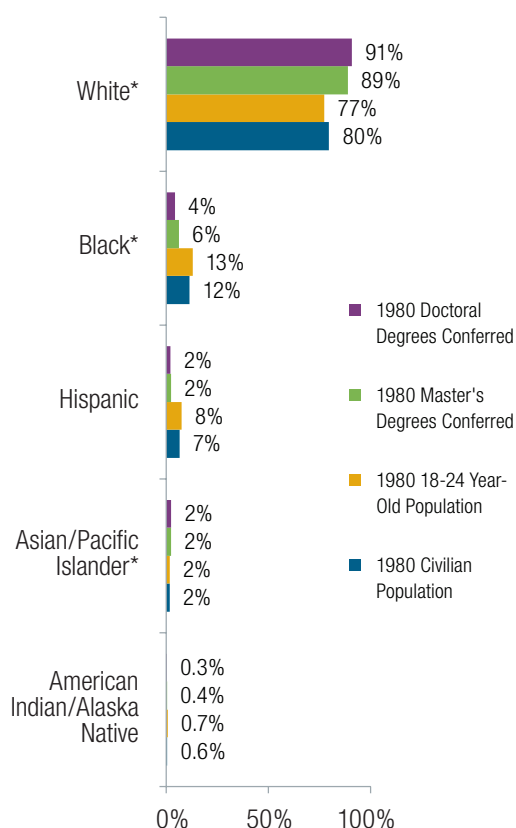
The representation of Blacks and Hispanics among degree recipients has increased since 1980, but, in 2017, Blacks and Hispanics continued to be underrepresented among degree recipients relative to their representation in the population.

NOTE: *The categories (White, Black, Asian/Pacific Islanders, American Indian/Alaska Native and "Two or More Races") exclude Hispanics. Race/ethnicity categories reflect the titles used at the time of reporting. Caution is warranted in interpreting this Indicator as categories for race and ethnicity classifications have changed over time. The category "Two or More Races" was not included in 1980. In 2017, in the population figures by the Census Bureau, Native Hawaiian and Other Pacific Islanders were classified separately from Asians and were 0.2 percent of the U.S. population. The inclusion of the "Two or More Races" category likely reduced the percent of persons who classified themselves as Black, American Indian/Alaska Native or Asian.

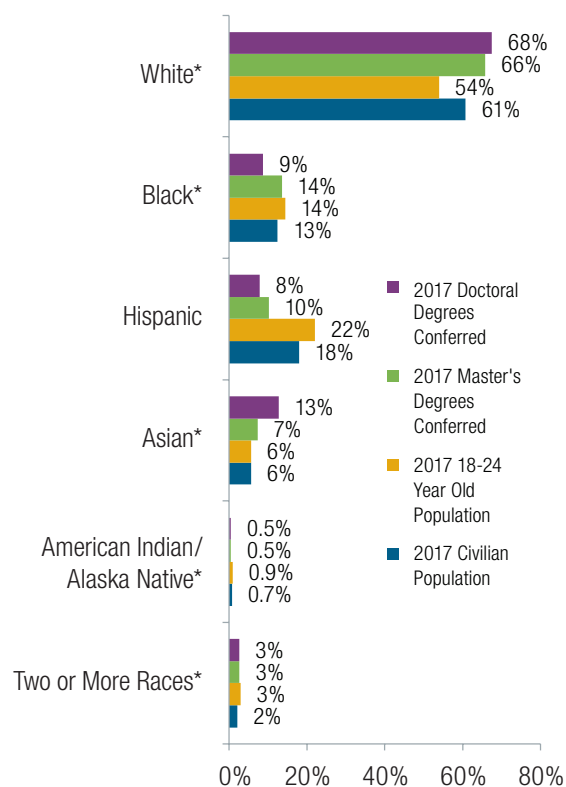
SOURCE: U.S. Department of Education, National Center for Education Statistics (2018). *Digest of Education Statistics 2018* [Table 101.20] [Table 321.20] [Table 322.20]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_321.20.asp?current=yes. Hobbs, F., & Stoops, N. (2002). *Demographic Trends in the 20th Century*. Washington, DC: U.S. Census Bureau. Retrieved from <https://www.census.gov/prod/2002pubs/censr-4.pdf>, U.S. Census Bureau (n.d.). Quick Facts. Retrieved from <https://www.census.gov/quickfacts/fact/table/US/PST045218>.

Equity Indicator 5d(ii): Distributions of master's and doctoral degrees conferred to U.S. citizens and distribution of the civilian population by race/ethnicity: 1980 and 2017

1980 Doctoral and Master's Degrees



2017 Doctoral and Master's Degrees



Indicator Status: Gains in Equity Since 1980

The representation of Blacks and Hispanics among recipients of advanced degrees has increased since 1980, but, in 2017, Blacks and Hispanics continued to be underrepresented among degree recipients relative to their representation in the population.

NOTE: *The categories (White, Black, Asian/Pacific Islanders, American Indian/Alaska Native and Two or More Races) exclude Hispanics. Race/ethnicity categories reflect the titles used at the time of reporting. Caution is warranted in interpreting this Indicator as categories for race and ethnicity classifications have changed over time. The category "Two or More Races" was not included in 1980. In 2017 Census Bureau data, Native Hawaiian and Other Pacific Islanders were classified separately from Asians and were 0.2 percent of the U.S. population. The inclusion of the "Two or More Races" category likely reduced the percent of persons who classified themselves as Black, American Indian/Alaska Native or Asian.

SOURCE: U.S. Department of Education, National Center for Education Statistics (2018). *Digest of Education Statistics 2018* [Table 101.20] [Table 321.20] [Table 322.20]. Retrieved from https://nces.ed.gov/programs/digest/d18/tables/dt18_321.20.asp?current=yes. Hobbs, F., & Stoops, N. (2002). *Demographic Trends in the 20th Century*. Washington, DC: U.S. Census Bureau. Retrieved from <https://www.census.gov/prod/2002pubs/censr-4.pdf>, U.S. Census Bureau (n.d.). Quick Facts. Retrieved from <https://www.census.gov/quickfacts/fact/table/US/PST045218>.

Equity Indicator 5e: What are the Differences in After Graduation Outcomes by Parent Income Quartiles?

Using data from the NCES Baccalaureate and Beyond Longitudinal Study (B&B) for the 2008 cohort of graduating bachelor's degree recipients, Indicators 5e(i), 5e(ii), and 5e(iii) report selected outcomes 4 years after graduation (in 2012). The analyses include only those who were classified as dependent students for financial aid purposes when they were first surveyed in NPSAS:2008. Data are displayed according to parents' income quartile as derived from NPSAS:2008. While the B&B is a stratified nationally representative sample of graduating seniors, caution is warranted when interpreting the data displayed in the indicators. Disaggregating the sample by multiple categories (such as dependent students' parents' income, post-baccalaureate degree program enrollment, and employment status) increases sampling errors, especially for categories that have a small number of graduates.

Enrollment of 2008 Bachelor's Degree Recipients in Further Schooling by 2012. Indicator 5e(i) presents the percent of graduates who had enrolled in further schooling and the highest post-baccalaureate degree program in which 2008 bachelor's degree graduates had enrolled 4 years after graduation (in 2012) by parents' income quartile.¹⁰⁵ About half (47 percent) of all 2008 bachelor's degree recipients who were financially dependent enrolled in some form of further schooling within 4 years of their graduation.

Indicator 5e(i) shows that enrollment in graduate school or other further schooling was more frequent among dependent bachelor's degree recipients from the highest family income quartile (51 percent), than among dependent bachelor's degree recipients from the three lower quartiles, ranging from 44 percent to 46 percent. The higher rate of post-baccalaureate enrollment for those in the highest-income quartile is attributable to the higher rate of enrollment in doctoral degree programs among bachelor's degree recipients in the highest family income quartile. About 14 percent of dependent bachelor's degree recipients in the highest family income quartile enrolled in a doctoral degree program within 4 years of graduation, compared with 8 percent to 9 percent of dependent bachelor's degree recipients in the lowest three income quartiles. Rates of enrollment in master's degree programs did not vary by parents' income quartile (26 percent to 29 percent).

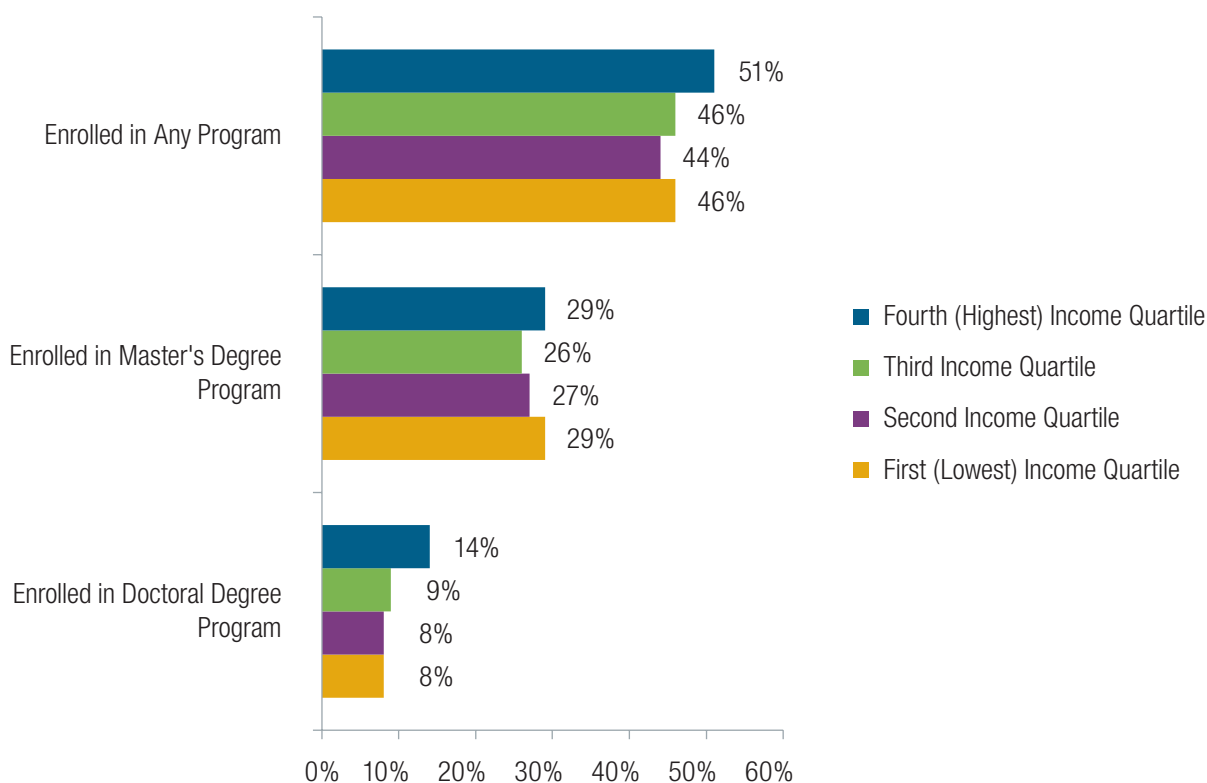
Annualized Income by the 4-Year Follow-Up. Indicator 5e(ii) displays average annualized income in 2012 for 2008 bachelor's degree recipients who were dependent students by parents' income quartile. The average annualized income reported in Indicator 5e(ii) excludes those who were enrolled in any educational program and includes those who were employed full-time or part-time having one job or more jobs in 2012, 4 years after graduation.¹⁰⁶

Indicator 5e(ii) shows that average annualized income for dependent bachelor's degree recipients who were not enrolled in educational programs 4 years after graduation was higher for those whose parents' income was in the highest quartile than for other graduates. There is little difference in average annualized income for bachelor's degree recipients from the first through third family income quartiles. The mean annualized income of dependent bachelor's degree recipients whose parents' income was in the top quartile was about \$51,000, while the average annualized income for bachelor's degree recipients in the other three family income quartiles was about \$43,000.

¹⁰⁵ Most respondents were enrolled in master's and doctoral degree programs, but the analyses also include the approximately 0.8 percent of respondents who reported enrollment in a post-master's certificate and 2.8 percent who reported enrollment in a post-baccalaureate certificate program.

¹⁰⁶ The mean incomes reported in the 2017 Indicators 5e(i) and 5e(ii) did not exclude those who were enrolled in further schooling and thus are lower than those reported in the 2018 and 2019 Indicator 5e(ii).

Equity Indicator 5e(i): Percentage of dependent students who received bachelor's degrees in 2008 who had enrolled in graduate school or other further schooling programs by parents' family income quartile: 2012 (4-year follow-up)



Indicator Status:

Among dependent students who received bachelor's degrees in 2008, the rate of enrolling in a doctoral degree program within four years of graduation was higher for those in the highest family income quartile than for those in lower income quartiles (14 percent versus 8 percent to 9 percent).

NOTE: In addition to master's and doctoral degree programs, "Enrolled in Any Program" also includes small percentages of individuals enrolled in other programs (e.g., post-baccalaureate certificates, post-master's degree certificates, undergraduate certificates, associate's degrees, and additional bachelor's degrees).

SOURCE: U.S. Department of Education, National Center for Education Statistics. Baccalaureate and Beyond Longitudinal Study (B&B 2008/2012). Data were tabulated using NCES PowerStats.

Equity Indicator 5e(ii): Average annualized income for dependent students who received bachelor's degrees in 2008 who were not enrolled in education and who were employed at the 4-year follow-up in 2012 by parents' income quartile



Indicator Status:

Average annualized income of 2008 bachelor's degree recipients who were not enrolled in education and who were employed was higher at the 4-year follow-up for those from the highest income quartile than those from lower income quartiles.

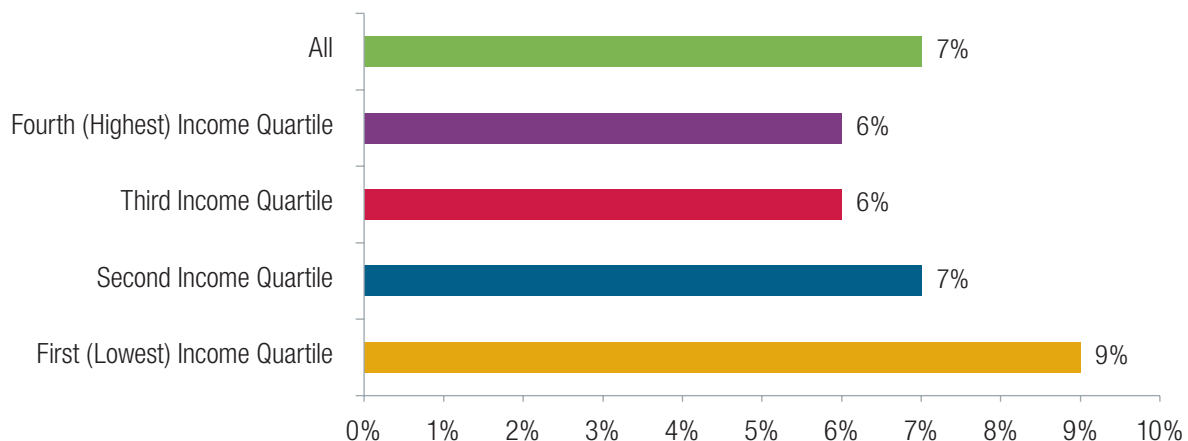
NOTE: Mean annualized incomes are for dependent 2008 bachelor's degree recipients who were not enrolled in any educational program at the time of the 2012 follow-up and who were employed full-time or part-time with one job or more jobs. The mean incomes reported in the 2017 Equity Indicators 5e(i) and 5e(ii) did not exclude those who were enrolled in further schooling and thus are lower than those reported in the 2018 and 2019 as Indicator 5e(ii).

SOURCE: U.S. Department of Education, National Center for Education Statistics, Baccalaureate and Beyond Longitudinal Study (B&B 2008/2012). Data were tabulated using NCES PowerStats.

Unemployment among Bachelor's Degree Recipients at the Time of the 4-Year Follow-Up. Indicator 5e(iii) shows the percentage of dependent bachelor's degree recipients who were not employed, not enrolled in further education, and did not report they were out of the labor force for family or other reasons when they were surveyed 4 years after graduation (in 2012).¹⁰⁷

Indicator 5e(iii) shows that 9 percent of bachelor's degree recipients from the lowest family income quartile were "unemployed" 4 years after graduation, compared with 7 percent of those in the second lowest income quartile and 6 percent of those from the top two income quartiles.¹⁰⁸

Equity Indicator 5e(iii): Percentage of dependent students who received bachelor's degrees in 2008 who were "unemployed" (not enrolled in further schooling, not employed, and in the labor force) at the time of the 4-year follow-up in 2012



Indicator Status:

Bachelor's degree recipients who were in the lowest family income quartile were "unemployed" at a rate 50 percent higher than that of the highest two income quartiles (9 percent versus 6 percent).

NOTE: "Unemployed" bachelor's degree recipients were not employed and not enrolled in education programs, and did not report that they were out of the labor force.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Baccalaureate and Beyond Longitudinal Study (B&B 2008/2012). Data were tabulated using NCES PowerStats.

¹⁰⁷ This indicator represents the percentage of non-employed graduates who were not enrolled in further schooling in 2012. It excludes those who indicated that they were "out of the labor force" for any reason.

¹⁰⁸ In 2012, during the Great Recession, the unemployment rate reported by BLS based on CPS data was 8.3 percent overall and 4.3 percent for college graduates over age 25. Recent college graduates typically have higher unemployment rates than older graduates. For younger college graduates, the national unemployment rate was 10.4 percent in 2010 and 9.4 percent in 2012. Discussion of college graduates' employment has also focused on underemployment defined as those working in jobs that did not require a college degree. For 2012, the U.S. Census Bureau Current Population Survey estimated that 44 percent of recent college graduates age 22 to 27 were "underemployed" by this definition. <https://www.theatlantic.com/business/archive/2013/06/44-of-young-college-grads-are-underemployed-and-thats-good-news/277325>. For discussion of employment and underemployment trends see: Wething, H. Sabadish, N., and Shierholz, H. (2012). *Labor Market for Young Graduates*. Economic Policy Institute. Retrieved from <https://www.epi.org/publication/bp340-labor-market-young-graduates/>. and https://fredblog.stlouisfed.org/2014/03/unemployment-rates-by-educational-attainment/?utm_source=series_page&utm_medium=related_content&utm_term=related_resources&utm_campaign=fredblog.

Equity Indicator 5f(i to v): What are Differences in Educational Attainment by State?

Equity Indicator 5f(i-v) describes educational attainment by state. The Indicator draws on data from the following sources: the Census Bureau's decennial censuses and the American Community Survey (ACS), and the institutional data on 6-year graduation rates as reported to NCES through IPEDS. To provide context to current differences by state, we first use Census data to look at historical differences in attainment of the population 25 years of age and older from 1940 to 2017. Given the relationship between high school graduation and college entrance, this historical review includes both high school and college attainment rates. We then use data from IPEDS to show 6-year graduation rates in 2000 and 2015. Finally, we observe differences in attainment of bachelor's degrees by state for 24- to 35-year-olds in the same period using the data from American Community Survey.

Interpreting state-by-state comparisons is complex. State educational attainment rates are influenced by historical events, geographic patterns, age distributions of a state's population, and demographic migrations into and out of the state, as well as the characteristics and structures of a state's higher education system and state policies that influence educational attainment.

State Variation in High School and College Attainment Rates: 1940 to 2017. Indicators 5f(i) to (iii) use Census Bureau data to show the percent of the population 25 years of age and older that has attained high school credentials and a bachelor's degree or higher by state. The data from 1940 to 2000 are from the decennial census, and the 2010, 2015, and 2017 data are from the American Community Survey.¹⁰⁹ We provide data from 1940 to give historical context to recent observed differences by state. To display the range of variation by state and changes in that variation over time, Indicator 5f(i) plots high school and bachelor's degree attainment rates at 10-year intervals without identifying individual states. Indicators 5f(ii) and 5f(iii) present the same information in bar charts displaying high school and bachelor's degree attainment rates for individual states for 1940 and 2017.

Over the 77 years from 1940 to 2017, there has been a convergence across states in the percent of the population age 25 and older with a high school diploma or other credential. At the same time, there has been increased divergence by state in the percentage that has attained at least a bachelor's degree.

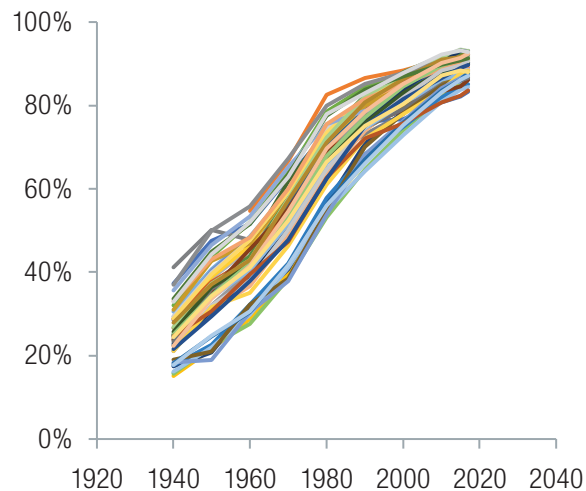
High School Attainment of Population 25 and older: 1940 and 2017. As displayed in Indicator 5f(ii), the percent of the population age 25 and older with a high school diploma or the equivalent averaged 24 percent for the United States as a whole in 1940 and ranged from 15 percent to 41 percent across states. The states with the lowest high school attainment rates in 1940 were: Arkansas (15 percent), Kentucky, Alabama, and Mississippi (16 percent), Georgia (17 percent), and Louisiana, West Virginia, Tennessee, and South Carolina (18 percent). The states with the highest high school completion rates were: District of Columbia (41 percent), California (37 percent), Utah (37 percent), and Nevada (36 percent).

By 2017, 88 percent of the U.S. population age 25 and older had attained at least a high school credential. High school attainment continued to vary across states, ranging from 83 percent in California and 84 percent in Texas and Mississippi to at least 90 percent in 30 states. Among the states, New Hampshire, Minnesota, Montana, Wyoming, North Dakota, and Vermont had the highest high school attainment rates in 2017 (93 percent).

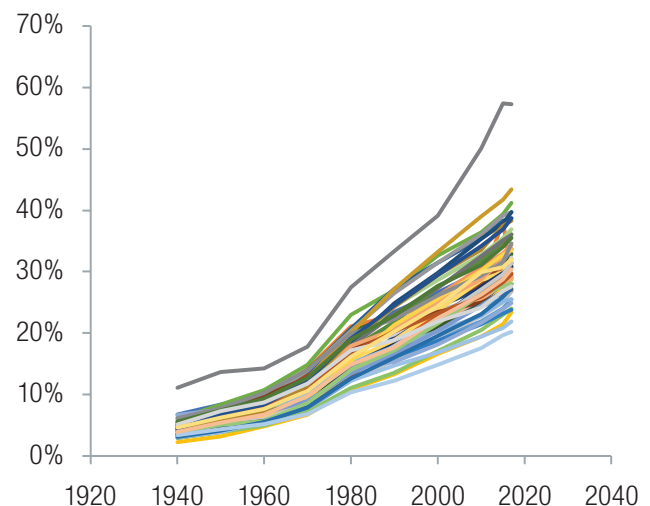
¹⁰⁹ The sample design for American Community Survey is representative at the state level. However, all sample surveys are subject to sampling error. The Census Bureau publishes tables for download with sampling errors for these statistics at the following site: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_S1501&src=pt. Data are also available from the NCHEMS Information System, <http://www.higheredinfo.org/>. The data from the decennial census are not subject to sampling error, but are subject to coverage error.

Equity Indicator 5f(i): Scatter plots of the percentage of the population age 25 and older who had attained a high school diploma or equivalent credential and who had attained a bachelor's degree or higher by state: 1940-2017

High School Diploma or Equivalent Credential



Bachelor's Degree or Higher



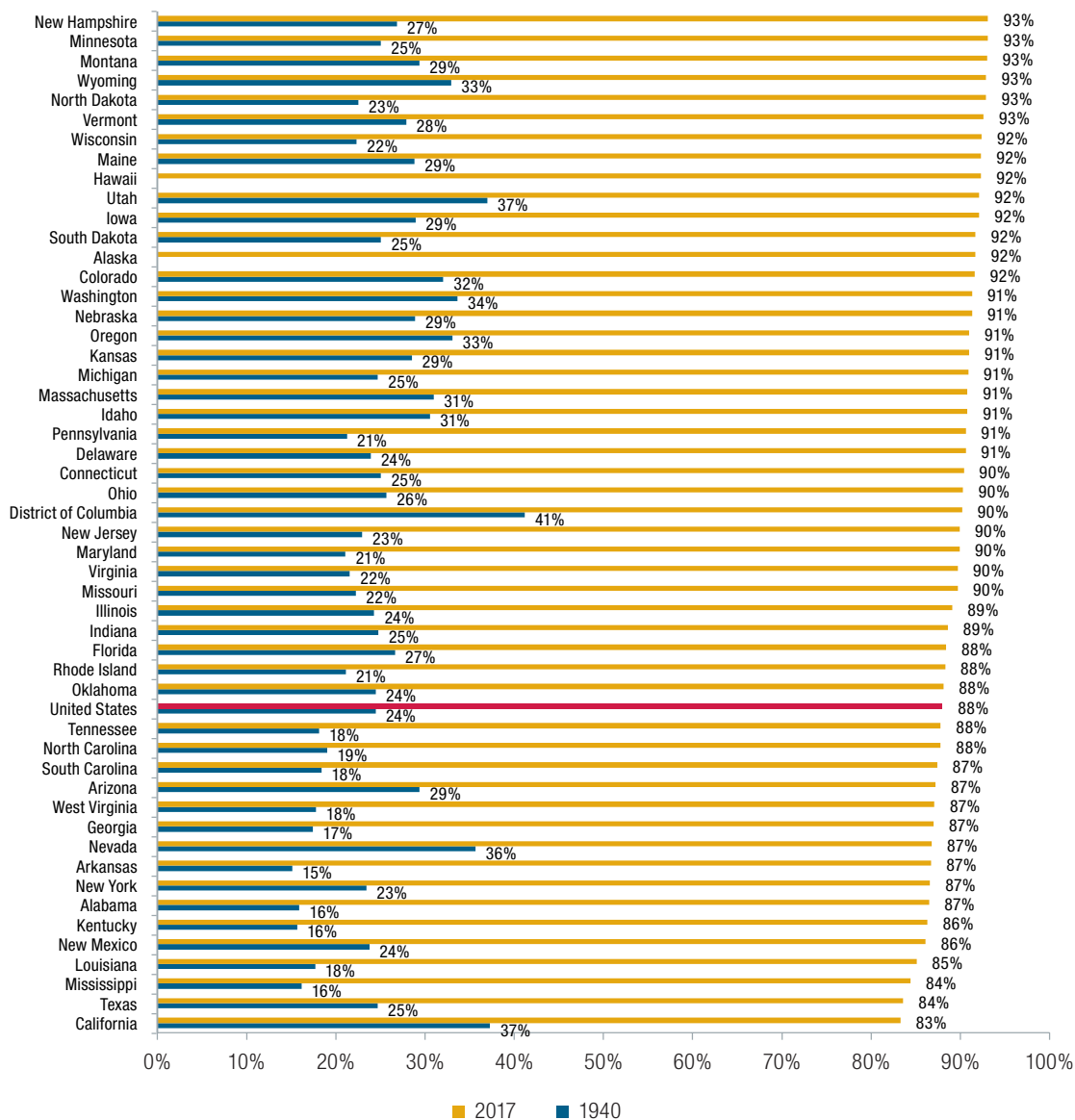
Indicator Status:

Differences across states in high school attainment rates lessened over the 75-year period from 1940 to 2017. Over the same period, differences by state in bachelor's degree attainment rates increased.

NOTE: Data from 1940 to 2000 are from the decennial census. Data from 2010, 2015, and 2017 are from the American Community Survey.

SOURCE: U.S. Census Bureau (2015). *A Half-century of Learning: Historical Statistics on Educational Attainment in the United States, 1940 to 2000*. [Tables]. Retrieved from <https://www.census.gov/data/tables/time-series/demo/educational-attainment/educational-attainment-1940-2000.html>. U.S. Census Bureau (n.d.). American Community Survey, 2005, 2010, 2015, 2017 1-Year Estimates, [Table S. 1501]. Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>.

Equity Indicator 5f(ii): Percentage of the population age 25 and older with a high school diploma or equivalent credential by state: 1940 and 2017



Indicator Status:

By 2017, at least 90 percent of the population age 25 and older in 30 states had completed high school.

NOTE: Data from 1940 to 2000 are from the decennial census. Data from 2010 and 2015 are from the American Community Survey.

SOURCE: U.S. Census Bureau (2015). *A Half-century of Learning: Historical Statistics on Educational Attainment in the United States, 1940 to 2000*. [Tables]. Retrieved from <https://www.census.gov/data/tables/time-series/demo/educational-attainment/educational-attainment-1940-2000.html>. U.S. Census Bureau (n.d.). American Community Survey, 2005, 2010, 2015, 2017 1-Year Estimates, [Table S. 1501]. Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>.

Percent of Population who Attained a Bachelor's Degree or Higher: 1940 and 2017. In 1940, 5 percent of the U.S. population age 25 and older had attained at least a bachelor's degree. While 11 percent of the population age 25 and older had attained at least a bachelor's degree in the District of Columbia, in the 50 states bachelor's degree attainment rates ranged from 2 percent to 7 percent. Bachelor's degree attainment rates were lowest in Arkansas (at 2 percent) and highest in California and Nevada (at 7 percent).

In 2017, 32 percent of the U.S. population age 25 and older had attained at least a bachelor's degree. Bachelor's degree attainment rates continued to be highest in the District of Columbia (57 percent) followed by Massachusetts (43 percent). Among the 50 states, bachelor's degree attainment rates were no more than 25 percent in 6 states: West Virginia (20 percent), Mississippi (22 percent), Arkansas (23 percent), Louisiana (24 percent), Kentucky, (24 percent) and Nevada (25 percent). Four states had bachelor's degree attainment rates of 40 percent or higher: Massachusetts (43 percent), Colorado (41 percent) Maryland (40 percent), and New Jersey (40 percent).

Differences in Graduation Rates of Bachelor's Degree-Seeking Students by State. In 1997, as mandated by Congress, NCES through IPEDS began collecting graduation rates from institutions participating in the federal financial aid system (Title IV). The number of students upon which the calculations are based has increased from 958,000 in the 1991/1997 cohort to 1.79 million students in the 2009/2015 cohort.

Based on IPEDS data, Indicator 5f(iv) reports the percentage of first-time, full-time bachelor's degree-seeking students earning any formal award (certificate, associate's degree, or bachelor's degree) at the institution of first enrollment within 6 years by state of institution in 2015. The national 6-year completion rate at the first institution in which the student was enrolled was 54 percent in 2015 and has only varied from 52 percent to 56 percent over the period since the first cohorts began in 1991/1997.

In 2015, 6-year completion rates for bachelor's degree-seeking students who first enrolled in a 4-year institution in 2009 ranged from 32 percent in Alaska, 33 percent in Nevada, and 39 percent in Georgia, to 68 percent in Rhode Island, 68 percent in Connecticut, and 71 percent in Massachusetts. Completion rates measure completion at the institution of first enrollment; they do not take into account transfers among institutions.¹¹⁰

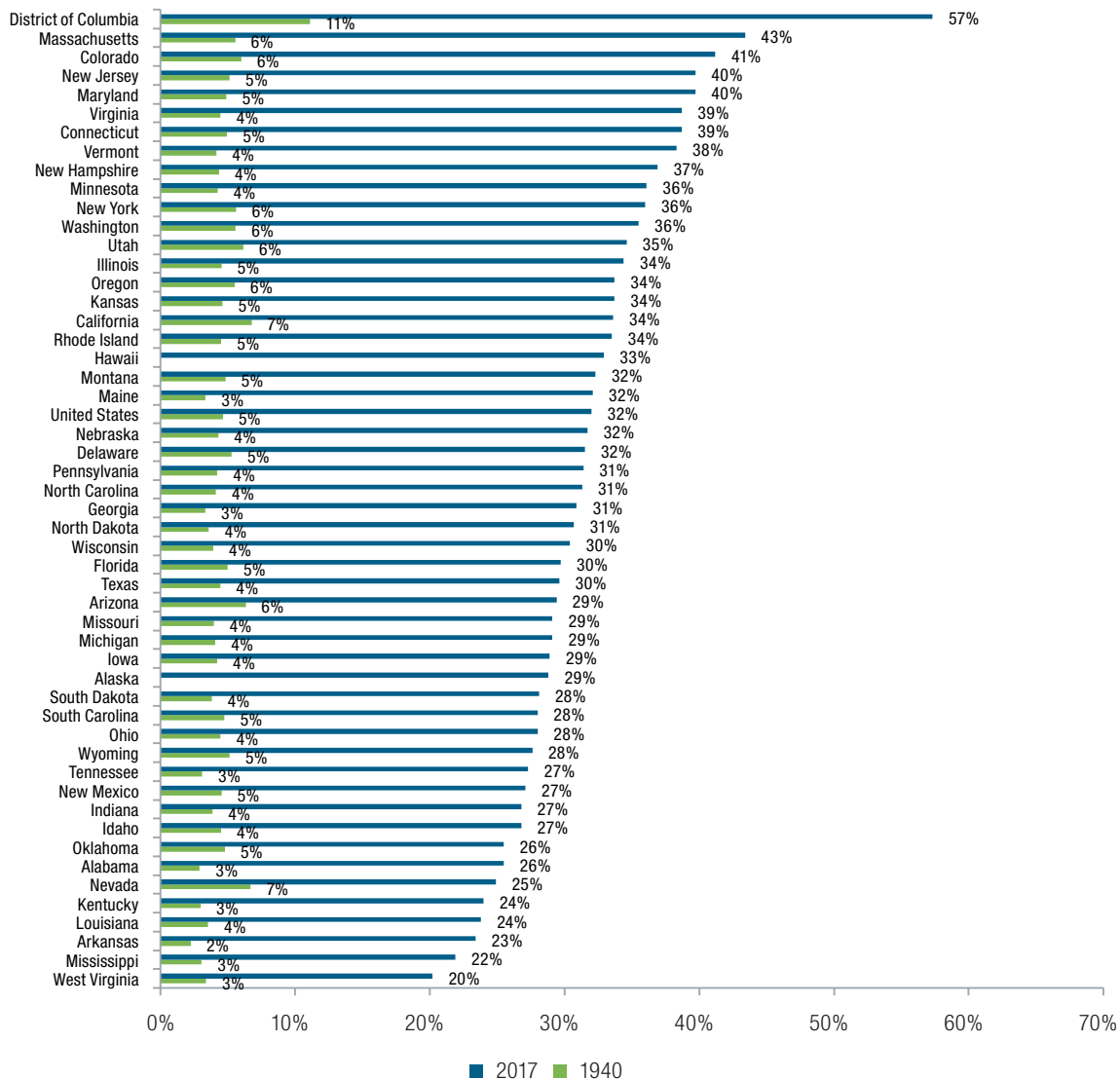
Bachelor's Degree Attainment Rates for the 25- to 34-Year-Old Population by State. Equity Indicator 5f(v) uses data from the American Community Survey to show bachelor's degree attainment for the population age 25 to 34 in 2005 and 2015.¹¹¹ Nationwide, the percentage of 25- to 34-year-olds with at least a bachelor's degree increased from 30 percent in 2005 to 34 percent in 2015.

In 2015, bachelor's degree attainment rates for adults age 25 to 34 were less than 25 percent in Nevada (22 percent), New Mexico (22 percent), Mississippi (23 percent), and Arkansas (24 percent) and more than 40 percent in Minnesota (41 percent), New Hampshire (41 percent), Connecticut (44 percent), New Jersey (44 percent), New York (44 percent), and Massachusetts (51 percent).

¹¹⁰ Institutions do not include transfer students from the data reported in Indicator 5f(iv).

¹¹¹ Indicator 5f(v) shows attainment rates for the population age 25 to 34, while Indicator 5f(iii) shows attainment for the population age 25 and older. Generally, attainment rates are higher for the younger age grouping than for the total adult population.

Equity Indicator 5f(iii): Percentage of the population 25 years of age and older with a bachelor's degree or higher by state: 1940 and 2017



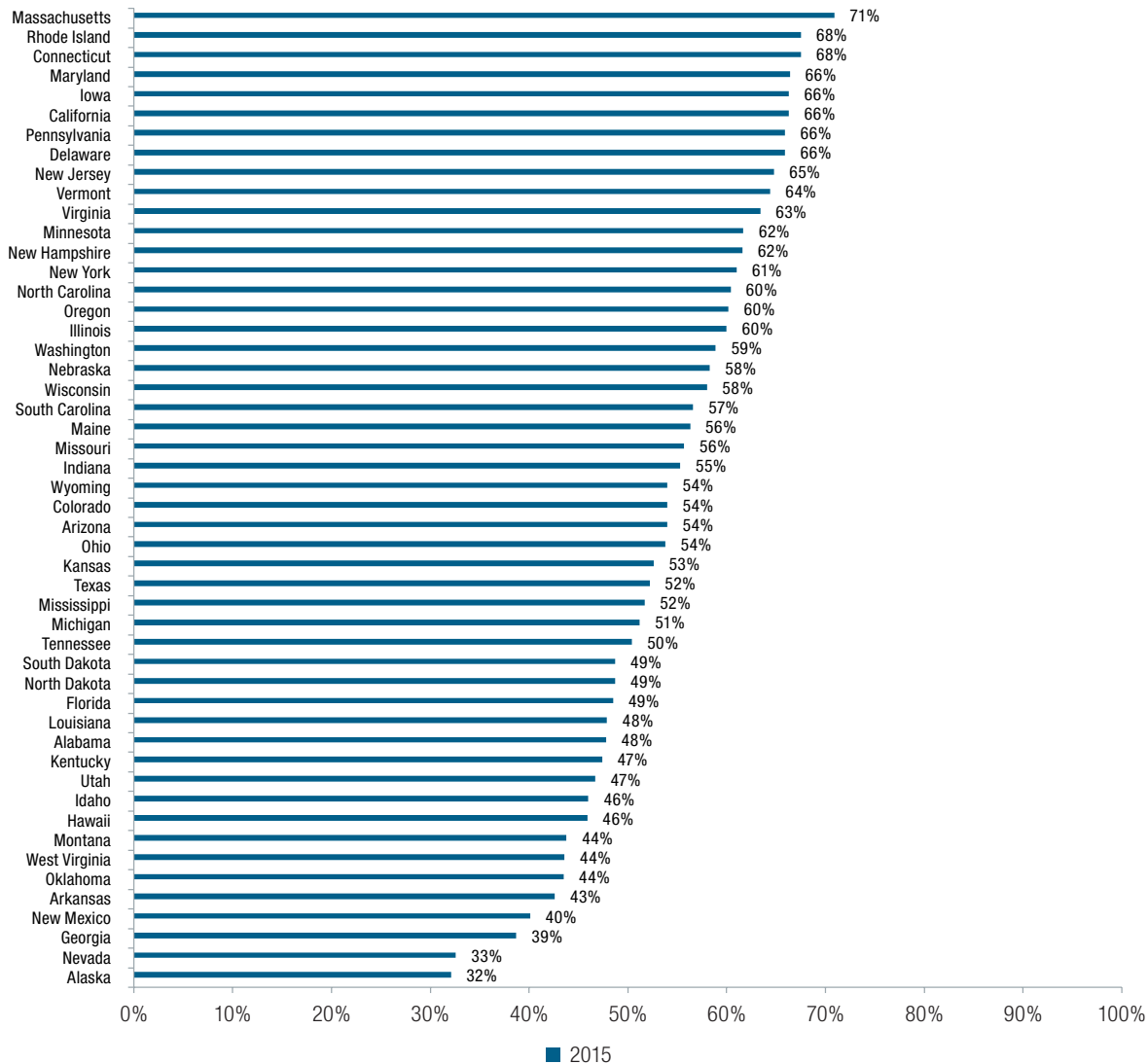
Indicator Status:

Excluding the District of Columbia, bachelor's degree attainment rates ranged across states from 2 percent to 7 percent in 1940 (a 5 percentage point difference). In 2017, bachelor's degree attainment rates ranged across states from 20 percent to 43 percent (a 23 percentage point difference).

NOTE: Data from 1940 are from the decennial census. Data from 2017 are from the American Community Survey (ACS) and are subject to sampling error.

SOURCE: U.S. Census Bureau (2015). *A Half-century of Learning: Historical Statistics on Educational Attainment in the United States, 1940 to 2000*. [Tables]. Retrieved from <https://www.census.gov/data/tables/time-series/demo/educational-attainment/educational-attainment-1940-2000.html>. U.S. Census Bureau (n.d.). American Community Survey, 2005, 2010, 2015, 2017 1-Year Estimates, [Table S. 1501]. Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>.

Equity Indicator 5f(iv): Percentage of first-time, full-time bachelor's degree-seeking students earning any formal award (certificate, associate's degree, or bachelor's degree) at the institution of first enrollment within 6 years by state of institution: 2015



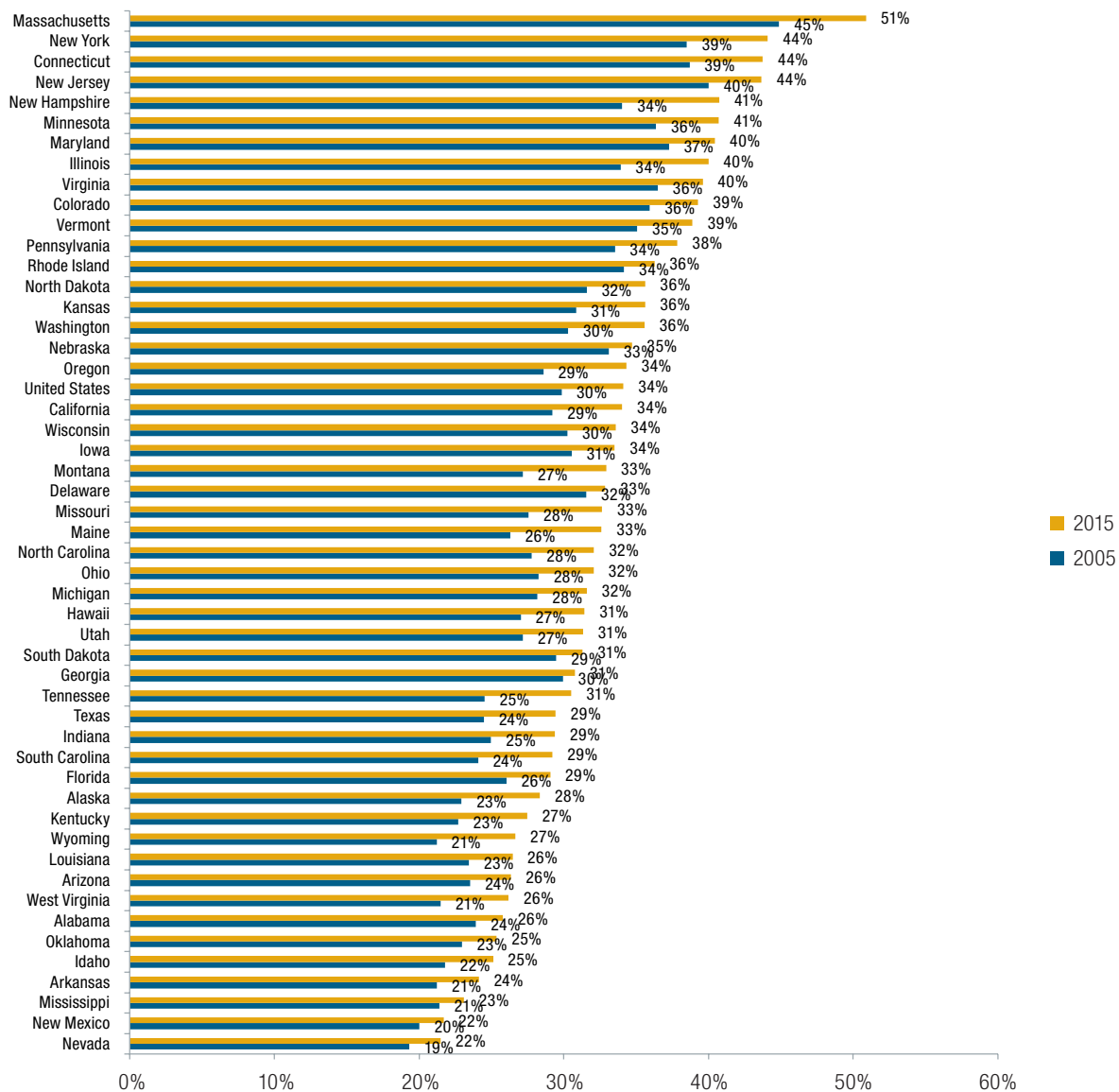
Indicator Status:

Six-year completion rates for bachelor's degree-seeking students who first enrolled in 2009 ranged from a low of 32 percent in Alaska to a high of 71 percent in Massachusetts.

NOTE: The Graduation Rate Survey of IPEDS completion rate is the percentage of first-time full-time bachelor's degree-seeking students earning any formal award (certificate, associate's degree, or bachelor's degree) within 6 years at institutions participating in the federal financial aid system (Title IV). Completion rates are calculated by IPEDS based on the total number of students in a state in a given cohort who began 6 years before the expected 6-year graduation date. The calculation does not account for transfers across institutions.

SOURCE: U.S. Department of Education, National Center for Educational Statistics. IPEDS Graduation Rate Survey, Washington, D.C.: U.S. Department of Education.

Equity Indicator 5f(v): Percentage of population age 25 to 34 who had attained a bachelor's degree by state: 2005 and 2015



Indicator Status:

By 2015, 6 states had bachelor's degree attainment rates for the population age 25 to 34 of more than 40 percent (Massachusetts, New York, Connecticut, New Jersey, New Hampshire, and Minnesota). At the same time, 4 states had bachelor's degree attainment rates for the population 25 to 34 below 25 percent (Nevada, New Mexico, Mississippi, Arkansas).

NOTE: The American Community Survey data are based on sample surveys; thus they contain statistical errors that are associated with any sample survey.

SOURCE: U.S. Census Bureau, 2005 and 2015 American Community Survey. <https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>; NCHEMS Information System. <http://www.higheredinfo.org/>.

EQUITY INDICATOR 6:

HOW DOES EDUCATIONAL ATTAINMENT IN THE U.S. COMPARE WITH OTHER COUNTRIES?

Among countries reporting bachelor's attainment information, the U.S. has fallen from 2nd in 2000 to 17th in 2017 in tertiary-type A (bachelor's) degree attainment of adults age 25 to 34.

Equity Indicator 6 compares educational attainment in the United States with other countries. The current stated mission of the U.S. Department of Education reflects interest in international comparison as the Department seeks “to promote student achievement and preparation for global competitiveness by fostering educational excellence and ensuring equal access.”¹¹² Indicator 6 uses data from the Organisation for Economic Co-operation and Development (OECD) to compare educational attainment in the United States with other countries. Since 1991, OECD has reported educational attainment by country in its annual report, *Education at a Glance*. Differences across countries in educational systems and degree classifications, as well as reporting issues from year to year, limit international comparisons. However, OECD strives to apply common definitions across countries and collect and report data in a consistent manner over time.¹¹³

Equity Indicator 6(a-b): Definitions

Indicator 6 tracks the percentage of the population that has attained tertiary degrees in different countries. Indicator 6a reports tertiary-type A degree attainment and Indicator 6b combines attainment of tertiary-type A degrees (the equivalent of a bachelor's degree or above) with tertiary-type B degrees (the equivalent of an associate's degree). For both Indicators, we present attainment for the population age 25 to 34 in the years 2000 and 2017.¹¹⁴

¹¹² For a detailed comparison of widening participation policies in 6 countries (Australia, Ireland, Netherlands, Norway, South Africa, United States), see Higher Education Funding Council for England (2013). *International Research on the Effectiveness of Widening Participation*. London, England: Author. Retrieved from <http://www.hefce.ac.uk/pubs/rereports/year/2013/wpeffectiveness/>.

¹¹³ For more information on the methods used and limitations of international comparisons, see OECD (2018). *Education at a Glance 2018: OECD Indicators*. Paris, France: OECD Publishing. Retrieved from https://www.oecd-ilibrary.org/education/education-at-a-glance-2018_eag-2018-en.

¹¹⁴ For detailed analysis on upper secondary graduation rates and bachelor's degree attainment rates between 1996 and 2017, see Mortenson, T. (2019). *Make American Education Great Again. Postsecondary Education Opportunity*, 301. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education. Retrieved from www.postsecondary.org.

As defined in the OECD's glossary of statistical terms:¹¹⁵

- **Tertiary-type A programs** are largely theory-based and are designed to provide sufficient qualifications for entry to advanced research programs and professions with high skill requirements. Tertiary-type A programs have a minimum cumulative theoretical duration of 3 years full-time equivalent study at the tertiary level, although they typically last 4 or more years. These programs are not exclusively offered at universities. This classification is comparable to the BA or BS or above in the U.S. system. Starting in May 2014, OECD began to use a more detailed classification of levels of education to align with the International Standard Classification of Education (ISCED 2011).¹¹⁶ These are the ISCED 2011 level 5 (short-cycle tertiary education), level 6 (bachelor's or equivalent level), level 7 (master's or equivalent level), and level 8 (doctoral or equivalent level). In this report, we combine levels 6 through 8 and refer to this category as tertiary-type A (the equivalent of a bachelor's degree or higher).
- **Tertiary-type B programs** are typically shorter than tertiary-type A degrees and focus on practical, technical, or occupational skills for direct entry into the labor market, although some theoretical foundations may be covered in the programs. These programs have a minimum duration of 2 years full-time equivalent study at the tertiary level. We present data on ISCED 2011 level 5 (short-cycle tertiary education) as equivalent to tertiary-type B programs (the equivalent of an associate's degree or higher). We use the terms tertiary-type B programs, short-cycle tertiary education, and associate's degree interchangeably.

Additional Caution Needed in International Comparisons. Due to differences in higher education systems and reporting differences across countries, caution is needed in interpreting these results. Some countries do not separate reporting by the categories as defined above and reporting varies from year to year. For example, in 2017, 5 countries (Argentina, Brazil, Colombia, Saudi Arabia, and Switzerland) did not separate short-cycle degrees (type B) from bachelor's (type A) and other degree categories; hence, we show the same reported percentages for these nations in Indicator 6a and 6b. The reporting year is 2015 for Brazil, Chile, and the Russian Federation, 2014 for Saudi Arabia, 2011 for India, and 2010 for China, and 2017 for all other countries.

¹¹⁵ OECD (2008). *OECD Glossary of Statistical Terms*. Paris: OECD Publishing. Retrieved from <https://www.oecd-ilibrary.org/docserver/9789264055087-en.pdf?expires=1547740564&id=id&accname=guest&checksum=9637B7EB5841A0919D29F5A76A643EF8>.

¹¹⁶ OECD (2018). *Education at a Glance 2018: OECD Indicators*. Paris: OECD Publishing. Retrieved from <https://www.oecd-ilibrary.org/docserver/eag-2018-en.pdf?expires=1547740694&id=id&accname=guest&checksum=CBE5CD6CC2BEEE334DB3EB2F8DB1B21B>.

Equity Indicator 6a: What Percentage of 25- to 34-Year-Olds Has Completed a Type A (Bachelor's or above) Tertiary Degree?

Using the OECD classifications described above and excluding those countries that did not separately report bachelor's degree attainment, in 2017 Lithuania (56 percent) had the highest rate of bachelor's degree attainment among the 25- to 34-year-old population. The U.S. ranked 2nd out of 30 countries on this indicator in 2000 (with a 30 percent attainment rate), but 17th out of the 41 countries reporting bachelor's degree attainment in 2017 (with a 37 percent attainment rate). In 2017, the bachelor's degree attainment rate of the U.S. was the same as the average for all OECD nations reporting these data.

Equity Indicator 6a shows that each of the countries that ranked above the U.S. in 2017 (and reported data in both 2000 and 2017) had attainment rates for 25- to 34-year-olds below that of the U.S. in 2000 (30 percent). These countries were Luxembourg, Korea, Iceland, Belgium, the Netherlands, Ireland, United Kingdom, Poland, Denmark, Greece, Finland, New Zealand, Australia, and Japan.

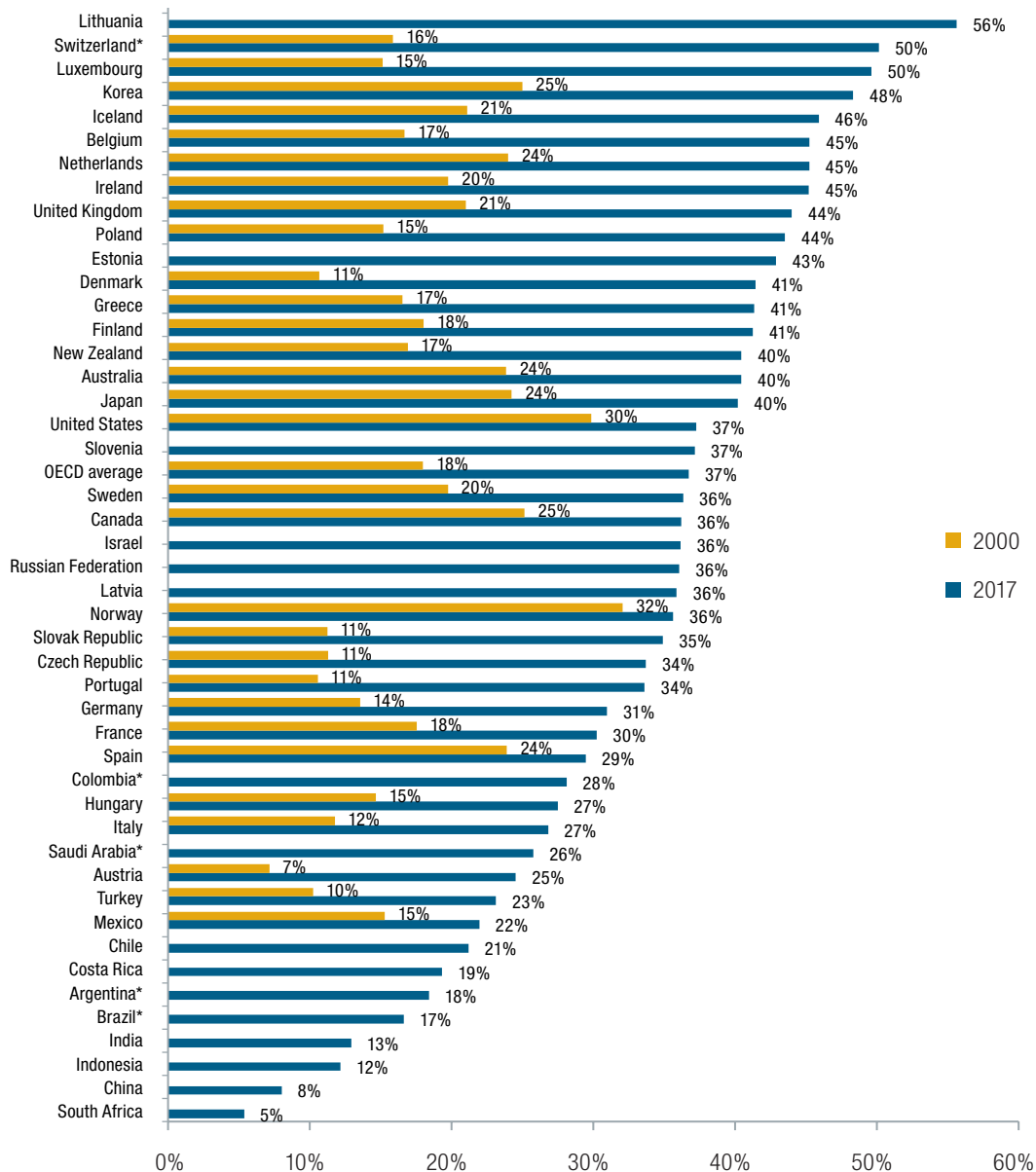
The rate of increase in bachelor's degree attainment in the U.S. was lower than the average rate of increase among countries that now have higher attainment rates than the U.S. In the U.S., the percentage of adults age 25 to 34 with at least a bachelor's degree increased by 23 percent between 2000 and 2017. For countries with higher rates of bachelor's degree attainment than the U.S. in 2017, the average rate of increase in attainment between 2000 and 2017 was 140 percent.

Variation within the United States and International Variation. Indicator 5f(v), in the previous section, displays rates of attaining at least a bachelor's degree among the 25- to 34-year-old population in 2000 and 2015 for each of the 50 U.S. states.

In the U.S. the share of adults age 25 to 34 with at least a bachelor's degree in 2015 ranged from 22 percent in Nevada and New Mexico to 51 percent in Massachusetts. Indicator 6a shows that, across nations, bachelor's degree attainment rates in 2017 ranged from 5 percent in South Africa to 56 percent in Lithuania.¹¹⁷ Massachusetts (at 51 percent) had a bachelor's degree attainment rate in 2015 for 25 to 34 year-olds that was similar to the rate of Luxembourg, the country with the second highest attainment rate in 2017 (50 percent). The U.S. states with the next highest rates of bachelor's degree attainment in 2015 were New York, Connecticut, and New Jersey, at 44 percent.

¹¹⁷ Although displayed in Indicator 6a, the five countries that did not separate type A and type B degrees are not included in the comparisons noted in the text for Indicator 6a.

Equity Indicator 6a: Percentage of adults age 25 to 34 with a type A (equivalent of bachelor's degree or above) tertiary degree: 2000 and 2017



NOTE: Caution is needed in making international comparisons given differences in educational degree classifications among countries and reporting differences across years. *Brazil, Argentina, Columbia, Saudi Arabia, and Switzerland did not separate short-cycle degree (type B) from bachelor's (type A) and other degree categories. We report the same attainment rates for type A (Indicator 6a) and type A and B combined (Indicator 6b) for these countries.

SOURCE: Organisation for Economic Co-operation and Development (n.d.). OECD Stat Educational Attainment and Labour Market Outcomes by Skills: Fields of Education and Labour Market Outcomes [Data file]. Retrieved from: <http://stats.oecd.org/>, OECD. (2018). *Education at a Glance 2018: OECD Indicators*, Figure A1.2. Percentage of 25-34 Year-olds with Tertiary Education by Level of Tertiary Education (2017). Paris: OECD Publishing. Retrieved from: <https://www.oecd-ilibrary.org/docserver/eag-2018-en.pdf?expires=1547740694&id=id&accname=guest&checksum=CBE5CD6CC2BEEF334DB3EB2F8DB1B21B>.

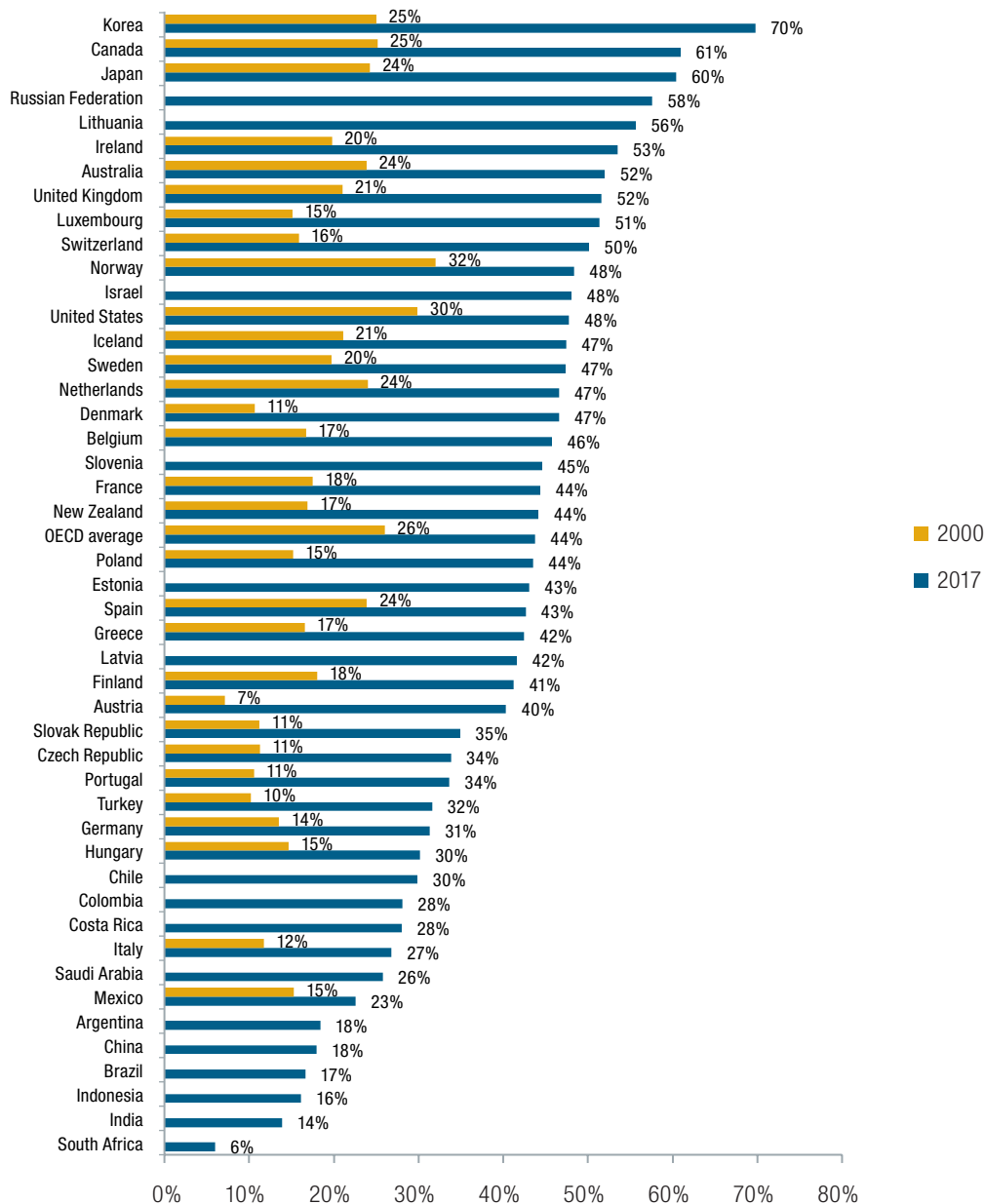
Equity Indicator 6b: What Percentage of 25- to 34-Year-Olds has Completed a Type A (Bachelor's or above) or a Type B (Short-Cycle or Associate's) Tertiary Degree?

In 2017, 48 percent of adults age 25 to 34 in the U.S. had attained the equivalent of at least a 2-year (type B) or 4-year or above (type A) tertiary degree. The U.S. ranked 13th of 46 countries on this indicator in 2017, down from 2nd of 30 countries in 2000.

By 2017, at least half of the 25- to 34-year-old population had attained a type A or type B tertiary degree in 10 countries: Korea (70 percent), Canada (61 percent), Japan (60 percent), Russian Federation (58 percent), Lithuania (56 percent), Ireland (53 percent), Australia (52 percent), United Kingdom (52 percent), and Luxembourg (51 percent).

Between 2000 and 2017, the share of the U.S. population age 25 to 34 that had attained a type A or type B tertiary degree increased by 60 percent, rising from 30 percent in 2000 to 48 percent in 2017. The average rate of type A or type B attainment for adults age 25 to 34 among all OECD countries rose from 26 percent in 2000 to 44 percent in 2017, a 69 percent increase.

Equity Indicator 6b: Percentage of adults age 25 to 34 with a type A (bachelor's or above) or type B (short-cycle or associate's) tertiary degree: 2000 and 2017



NOTE: Caution is needed in making international comparisons given differences in educational degree classifications among countries and reporting differences across years.

SOURCE: Organisation for Economic Co-operation and Development (n.d.). OECD Stat Educational Attainment and Labour Market Outcomes by Skills: Fields of Education and Labour Market Outcomes Retrieved from: <http://stats.oecd.org/>; OECD (2018). *Education at a Glance 2018: OECD Indicators*, Figure A1.2. Percentage of 25-34 Year-olds with Tertiary Education, by Level of Tertiary Education (2017). Paris: OECD Publishing. Retrieved from: <https://www.oecd-ilibrary.org/docserver/eag-2018-en.pdf?expires=1547740694&id=id&accname=guest&checksum=CBE5CD6CC2BEEE334DB3EB2F8DB1B21B>.

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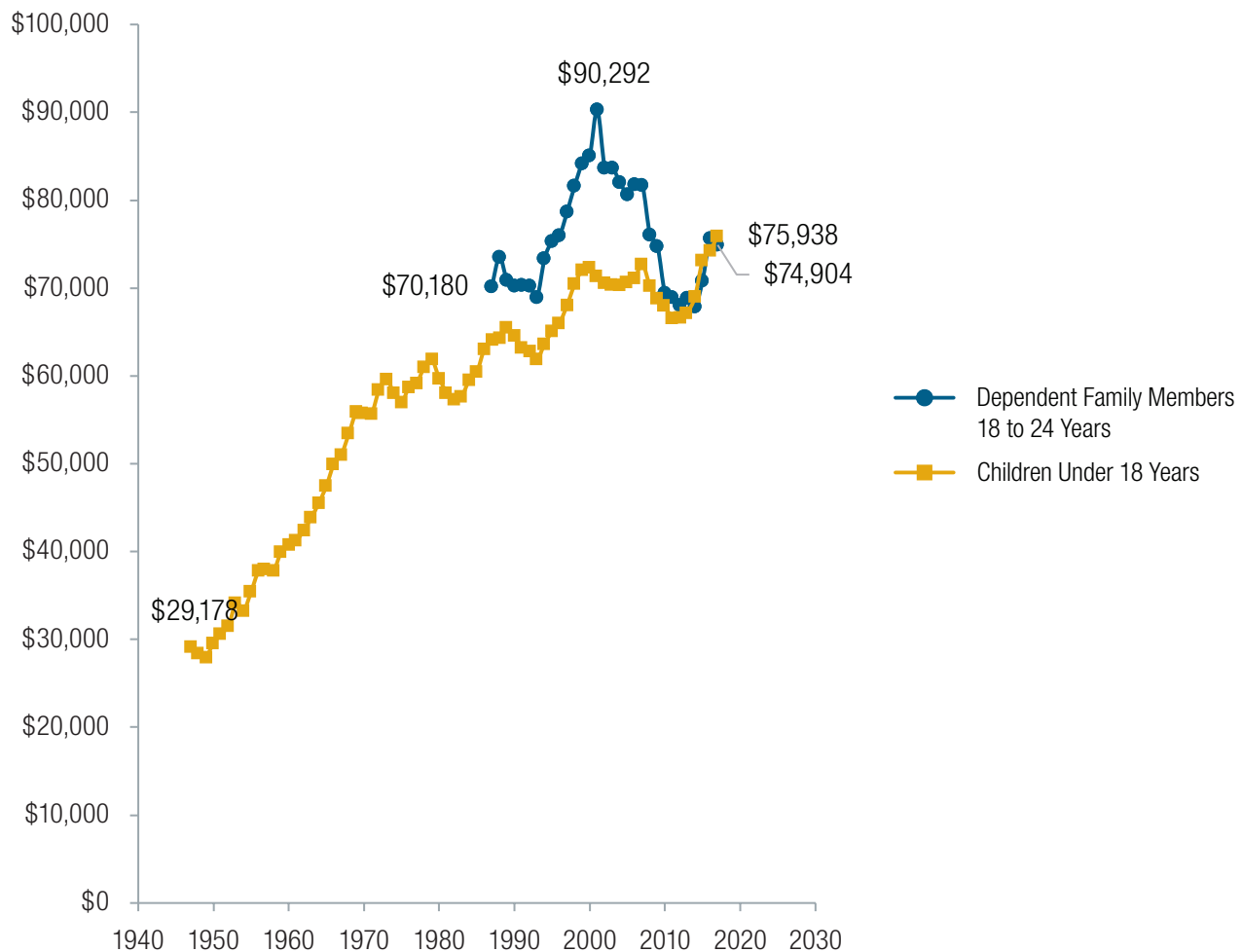
Appendix A: Additional Methodological Notes and Figures

This Appendix includes additional methodological notes and figures and tables not included in the report body. Notes and Figures are ordered under the headings of the sections in which the notes and figures are applicable.

Setting the Stage (STS)

- **STS Figures 5a and 5b:** The data sources for STS Figure 5 are IPEDS and Barron's *Profiles of American Colleges* (2016). The latter provides a competitiveness index of 4-year colleges and universities. The following notes provide details on the coding of institutions by competitiveness and the assigning of codes to institutions not ranked by Barron's. The competitiveness index categories from Barron's were matched (by name and state) to institutional enrollment data found in IPEDS. For those institutions that appeared in IPEDS but were not ranked by Barron's, the institutional sector was used to develop the remaining categories (e.g., "4-Year Not Ranked" and "Private For-Profit"). All for-profit institutions were classified as "private for-profit" institutions even if ranked by Barron's. All institutions that were administrative units or had zero undergraduate enrollment (e.g., medical schools) were omitted from the analyses as these schools do not enroll undergraduates (the variable we're counting for this indicator). To determine enrollment share by competitiveness category, we first added total fall enrollment (IPEDS variable "DRVEF2015_RV" defined as "Total undergraduate men and women enrolled for credit in the fall of the academic year"). For each category, we then divided the number of students in each selectivity category by total undergraduates. Enrollment includes both part-time and full-time students.
- **Additional Figures:** Appendix Figure A-1 shows the median family income for families with children from 1947 to 2017. Appendix Figure A-2 shows the upper limits of each family income quartile from 1987 to 2017 in constant 2017 dollars. Appendix Figure A-3 shows median income for families with children age 18 to 24 by race/ethnicity in 2017.

**Appendix Figure A-1: Median family income for families with children:
1947 to 2017**

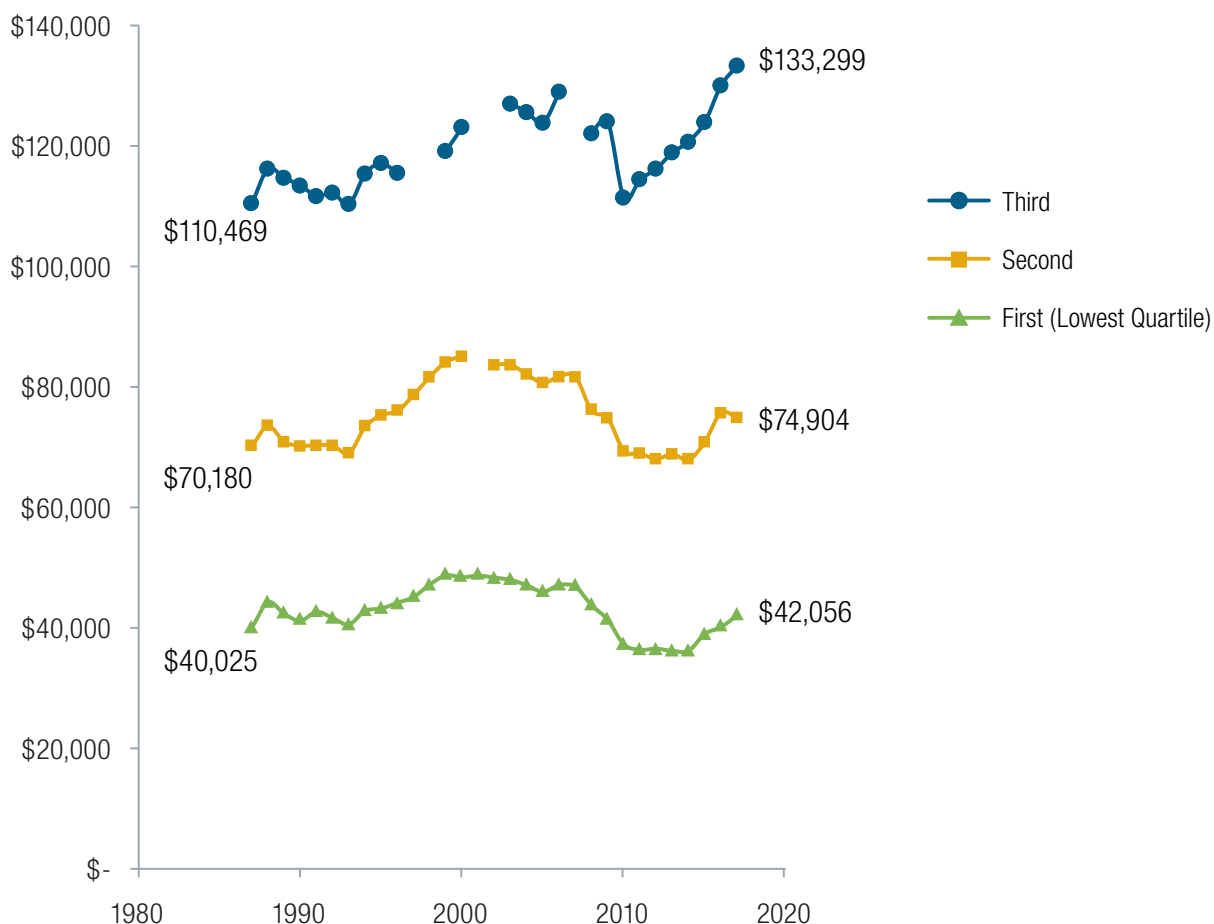


This chart reveals the growth in median family income to a peak in around 2000, followed by fluctuations and sharp declines into the Great Recession, followed by increases in more recent years. For those with dependent family members age 18 to 24, there has not yet been a recovery to the pre-Great Recession levels.

NOTE: Data are in constant 2017 dollars

SOURCE: U.S. Census Bureau, CPS data. Calculated from the October Current Population Survey File <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-income-families.html>; <https://www2.census.gov/programs-surveys/cps/tables/time-series/historical-income-families/f09ar.xls> and compiled by Tom Mortenson.

Appendix Figure A-2: Upper limits for the first (lowest), second, and third income quartiles for families of dependent 18- to 24-year olds in constant 2017 dollars: 1987 to 2017

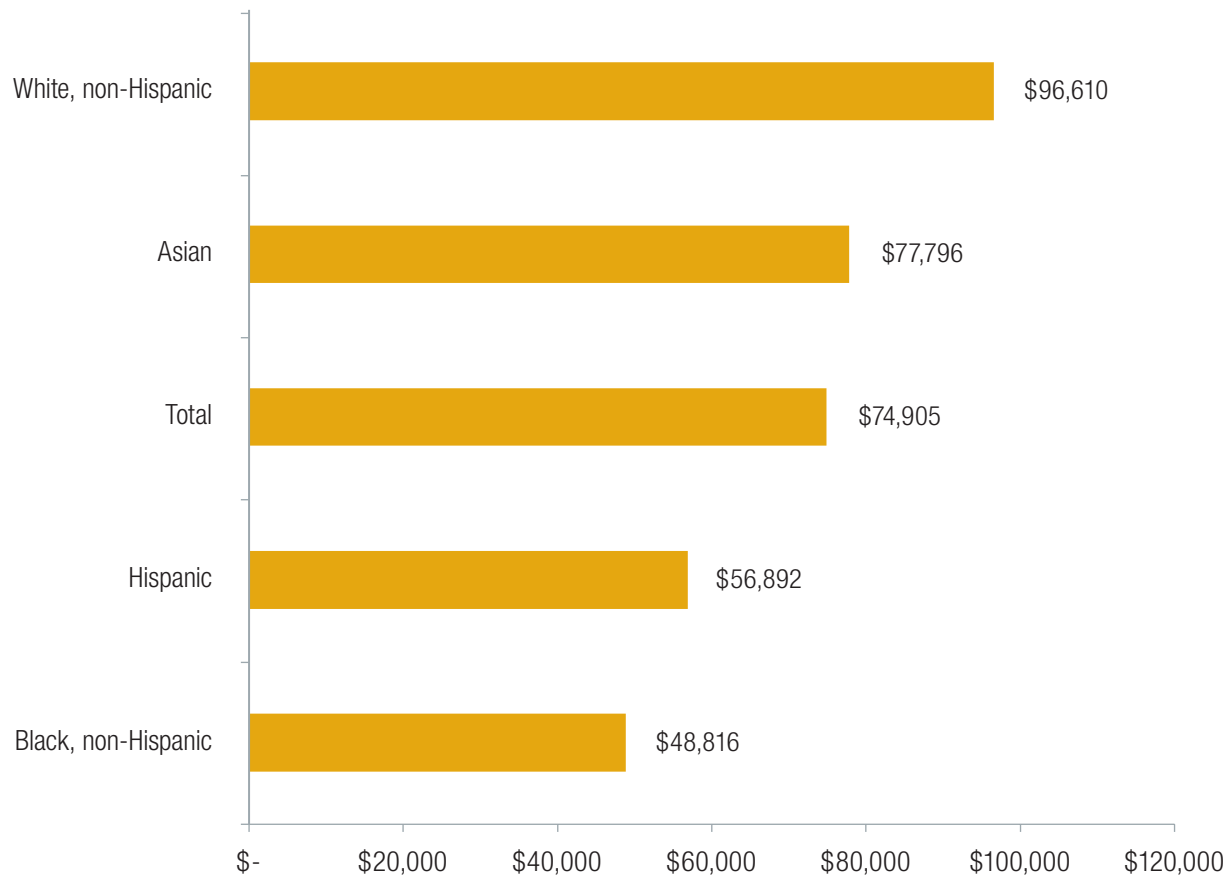


This chart reveals the gradual widening of the gap between the upper limit of the third quartile and the bottom two quartiles in family income.

NOTE: Upper family income limits of the quartiles in constant 2017 dollars using the revised CPI-U-RS. The upper limit of the third quartile is the minimum for the fourth (highest) quartile. The fourth (highest) quartile minimum is thus \$133,299. The maximum for the fourth (highest) quartile is not reported.

SOURCE: U.S. Census Bureau, CPS data. Calculated from the October Current Population Survey File (Formerly Table 14 in the Census Bureau's School Enrollment Report) and compiled by Tom Mortenson.

Appendix Figure A-3: Median family income for families with children age 18 to 24, by race/ethnicity: 2017



This chart reveals the wide gap in median income among parents of college-age students, ranging from \$48,816 among Black families to \$96,610 among White-non-Hispanic families.

SOURCE: U.S. Census Bureau, CPS data. Calculated from the October Current Population Survey File (Formerly Table 14 in the Census Bureau's School Enrollment Report) and compiled by Tom Mortenson.

Equity Indicator 2: What Type of Postsecondary Educational Institution Do Students Attend?

- **Indicator 2d:** This Indicator uses a data table in the online appendix (<http://www-personal.umich.edu/~bastedo/papers/EEPA-Appendix.pdf>) to the 2011 article, “Running in place: Low-income students and the dynamics of higher education stratification,” by Michael Bastedo and Ozan Jaquette, published in *Educational Evaluation and Policy Analysis*. To develop the data table, Bastedo and Jaquette constructed an analytic dataset using four federal longitudinal surveys: National Longitudinal Study of 1972 (NLS); High School and Beyond Study of 1980 (HS&B); National Education Longitudinal Study of 1988 (NELS), and Education Longitudinal Study of 2002 (ELS). In their analyses of the four surveys, the authors examined only students who were seniors in the specified year and who had graduated within 1.5 years of their scheduled high school graduation year. For more detailed explanation of dataset construction and analytic methodology, see Bastedo and Jaquette (2011). Appendix Figure A-4 shows Table 6 from the article’s online appendix, which presents the SES representation in each category of institutional destinations (row percentages). We used these data to construct Indicator 2d. Appendix Figure A-5 shows Table 3 from the body of the article and presents the distribution of students in each SES quartile across different categories of institutions (column percentages).
- **Indicator 2e:** The values reported in Indicator 2e represent the average of the percentage of undergraduates within an institution who receive Federal Grants by institutional selectivity and sector. The Integrated Postsecondary Education Data System (IPEDS) and Barron’s *Profiles of American Colleges* (2016) are the primary data sources for this Indicator. This Indicator is constructed by merging the Institutional Characteristics (IC) and Student Financial Aid (SFA) IPEDS survey components on Federal Grant (Pell and other Federal Grants) receipt with the information from the Barron’s 2016 publication. The IPEDS variable used was the “FGRNT_P,” which NCES defines as: “Percentage of full-time, first-time degree/certificate-seeking undergraduate students who were awarded federal grants.” This Indicator tracks the percentage of undergraduate students who receive any Federal Grant by institution each academic year from 1999-2000 to the most current year of available data. As in Figures 5a and 5b in *Setting the Stage*, institutional selectivity is measured using Barron’s Admissions Competitive Index (2016) and institutional sector as reported in IPEDS.

Appendix Figure A-4: SES representation in each institutional destination (row percentages) by cohort

Appendix Table 6. SES representation of each institutional destination (row percentages), by cohort

SES Quartile	1972				1982			
	SES Q1	SES Q2	SES Q3	SES Q4	SES Q1	SES Q2	SES Q3	SES Q4
No PSE	38.1%	28.1%	22.0%	11.9%	39.6%	30.6% **	20.0% *	9.7% ***
2yr/ LT 2yr (pub)	20.7%	23.5%	26.8%	29.1%	19.0%	26.7% **	29.2% *	25.0% ***
2yr/ LT 2yr (priv)	23.2%	22.7%	31.8%	22.3%	26.8%	30.5% ***	28.3%	14.4% ***
Non Competitive	19.9%	20.8%	23.9%	35.5%	18.4%	22.0%	28.8% **	30.8% **
Competitive	13.1%	17.7%	25.6%	43.6%	9.4% ***	20.8% **	29.0% *	40.8%
Very Competitive	10.8%	14.4%	18.9%	55.9%	9.8%	13.8%	21.6%	54.8%
Highly Competitive	8.9%	10.8%	20.8%	59.6%	4.0% **	9.7%	25.1%	61.2%
Most Competitive	5.2%	7.4%	9.9%	77.5%	3.8%	11.4%	17.8% **	67.0% **

SES Quartile	1992				2004			
	SES Q1	SES Q2	SES Q3	SES Q4	SES Q1	SES Q2	SES Q3	SES Q4
No PSE	41.8%	27.9% **	21.1%	9.1%	42.0%	31.2% **	19.1%	7.7%
2yr/ LT 2yr (pub)	24.6% ***	30.4% ***	28.7%	16.3% ***	25.2%	28.7%	28.2%	17.9%
2yr/ LT 2yr (priv)	29.8%	28.9%	22.5% *	18.8%	30.7%	32.8%	27.6%	9.0% ***
Non Competitive	15.4% *	22.7%	34.3% **	27.5%	19.6% **	25.4%	29.1% ***	25.9%
Competitive	12.7% ***	21.4%	28.6%	37.3% **	13.0%	19.1%	30.2%	37.8%
Very Competitive	10.2%	13.4%	27.2% ***	49.2% **	7.3% **	15.0%	26.8%	50.9%
Highly Competitive	6.4%	10.6%	20.5%	62.6%	5.0%	9.3%	19.5%	66.2%
Most Competitive	5.0%	2.9% ***	23.9% *	68.3%	4.1%	8.1% ***	18.7% *	69.0%

NOTE: Difference in proportion for SES quartile=i and cohort=t compared to proportion for SES quartile=i and cohort=t-1, significant at the 1% (***), 5%(**), or 10% (*) level, two tailed test.

SOURCE: Analyses of data from U.S. Department of Education, NCES, High School Longitudinal Studies (NLS, HS&B, NELS, ELS). Published as online Appendix Table 6 in Bastedo, M. N., & Jaquette, O. (2011). Running in Place: Low-income Students and the Dynamics of Higher Education Stratification. *Educational Evaluation and Policy Analysis*, 33(3), 318-339. Retrieved from <http://www-personal.umich.edu/~bastedo/papers/EEPA-Appendix.pdf>. Reprinted by permission from Sage Publishing Copyright Clearance Center.

Appendix Figure A-5: Distribution of students in each SES quartile across institutional destinations by cohort (column percentages)

TABLE 3

Institutional Destination by Cohort (Column Percentages), by SES Quartile, “Weighted SES” Sample

	SES Quartile 1				SES Quartile 2			
	1972 (%)	1982 (%)	1992 (%)	2004 (%)	1972 (%)	1982 (%)	1992 (%)	2004 (%)
No PSE	63.2	57.6***	48.2***	37.6***	52.3	41.9***	31.8***	25.8***
2yr/LT 2yr (pub)	14.2	19.9***	25.8***	31.5***	18.1	26.2***	31.5***	33.1
2yr/LT 2yr (priv)	4.7	6.2**	3.8***	3.9	5.2	6.7**	3.7***	3.8
Noncompetitive	6.9	6.8	6.9	11.2***	8.1	7.7	10.1***	13.5***
Competitive	6.5	5.5	9.0***	11.1**	9.8	11.3*	15.0***	15.2
Very competitive	3.1	3.1	4.3**	3.3*	4.6	4.1	5.6**	6.3
Highly competitive	0.9	0.5	1.1**	1.0	1.3	1.2	1.9*	1.7
Most competitive	0.4	0.3	0.8**	0.5	0.6	0.9	0.4*	0.8

	SES Quartile 3				SES Quartile 4			
	1972 (%)	1982 (%)	1992 (%)	2004 (%)	1972 (%)	1982 (%)	1992 (%)	2004 (%)
No PSE	40.3	27.6***	21.8***	14.7***	18.6	12.9***	9.5***	5.7***
2yr/LT 2yr (pub)	20.3	28.9***	26.9	30.3**	18.8	23.7***	15.3***	18.5***
2yr/LT 2yr (priv)	7.2	6.2	2.6***	3.0	4.3	3.0**	2.2*	0.9***
Competitive	9.2	10.2	13.8***	14.4	11.7	10.4	11.1	12.3
Very competitive	14.0	15.9*	18.1*	22.3***	20.4	21.5	23.7*	26.8**
Very competitive	6.0	6.6	10.3***	10.4	15.1	15.9	18.8***	18.9
Highly competitive	2.4	3.2	3.3	3.3	5.9	7.4**	10.0***	10.6
Most competitive	0.8	1.4**	3.3***	1.7***	5.2	5.2	9.5***	6.2***

NOTE: SES = socioeconomic status. Difference in proportions for current and previous year is significant at the 1% (***), 5% (**), or 10% (*) level, two-tailed test.

SOURCE: Analyses of data from U.S. Department of Education, NCES, High School Longitudinal Studies (NLS, HS&B, NELs, ELS). Published as Table 3 in Bastedo, M. N., & Jaquette, O. (2011). Running in Place: Low-income Students and the Dynamics of Higher Education Stratification. *Educational Evaluation and Policy Analysis*, 33(3), 318-339.

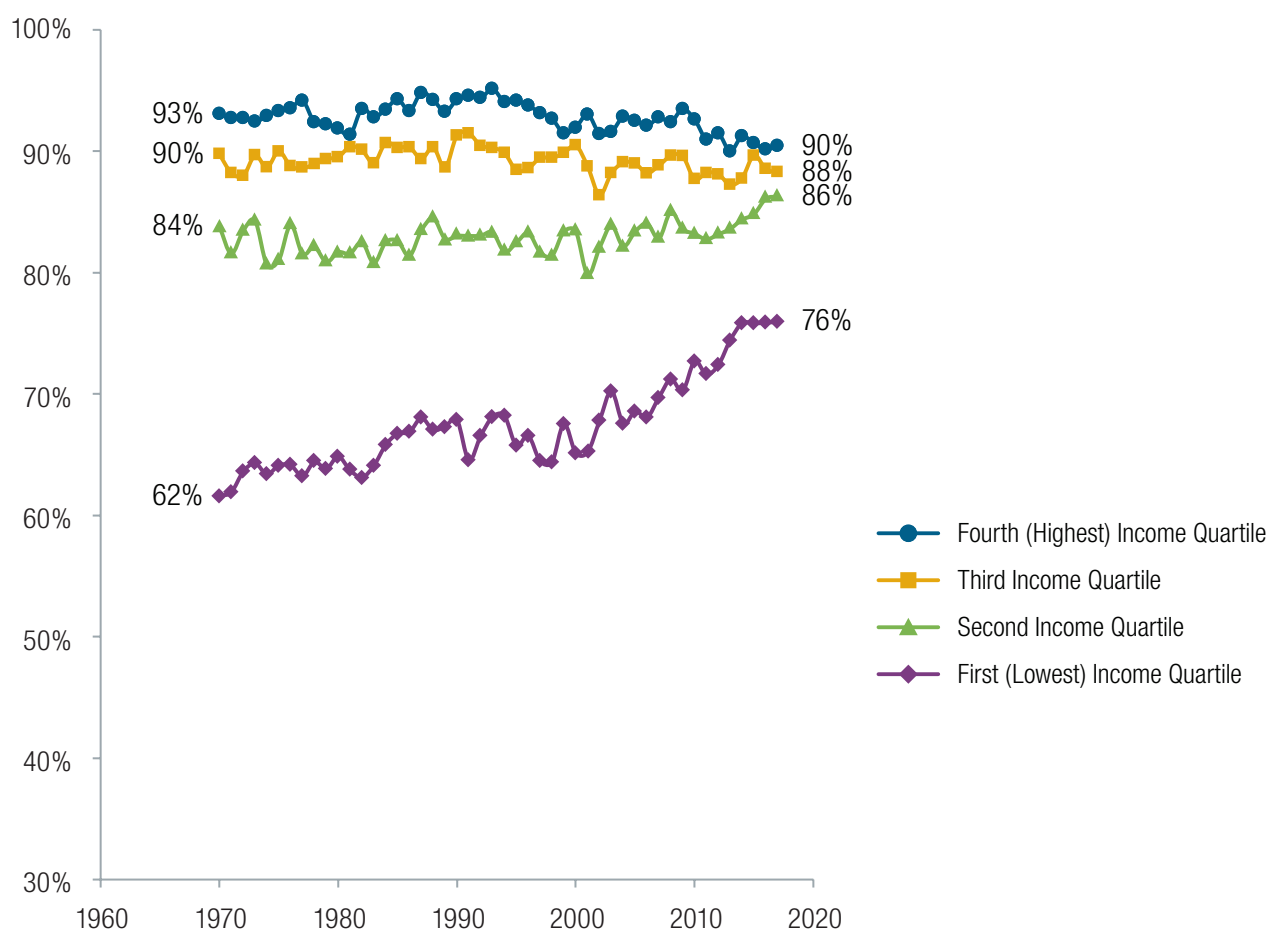
Equity Indicator 5: How Do Educational Attainment Rates and Early Outcomes Vary by Family Characteristics?

- **High School Graduation Rates:** Bachelor's degree attainment is possible only for those who graduate from high school. Using data from the CPS, Appendix Figure A-6 shows the high school graduation rates by family income quartile from 1970 to 2017. These data show that, despite the rise in high school graduation rates for those in the first (lowest) income quartile, especially over the past decade, high school graduation rates continue to vary by family income.
- **Equity Indicators 5a-5f:** We report multiple measures of bachelor's degree attainment and completion for Indicator 5, given concerns about the limitations of each of the data sets, but particularly the annual CPS. The CPS is the only available annual source of data on bachelor's degree completion, but the data have important limitations. As a result, caution is needed in interpreting results using these data. The CPS data are based on household surveys and are reported in aggregate. The data are cross-sectional and include only individuals who were considered "primary dependent family members of the household" at the time of the CPS survey. Recent years have seen differential changes across income groups in dependency patterns and length of time for bachelor's degree completion. For these reasons, the *Indicators* reports also present estimates of bachelor's degree completion using the NCES High School Longitudinal Studies and the Beginning Postsecondary Students (BPS). We also use IPEDS completions data to report associate's, bachelor's, master's, and doctoral degrees awarded by race/ethnicity.
- **Recalibration of Bachelor's Degree Attainment by Age 24:** In the first (2015) edition of the *Indicators* report, we included data on attainment rates by age 24 for the cohort (Indicator 5a) and for those who had entered college (Indicator 5b). The 2015 *Indicators* report used the HS&B longitudinal study of 1980 10th graders to calibrate the aggregate CPS data to arrive at an estimate of bachelor's degree attainment by age 24. These estimates were rightly criticized as overestimating degree attainment rates for the highest quartiles, given changes in dependency patterns that have occurred over time. Because of the strong positive relationships among family income, dependency status, and degree attainment, data published in the 2015 Report using CPS data overestimated bachelor's degree attainment rates for the top income quartile. Since then, Tom Mortenson, who has analyzed these data for over 20 years, has updated these estimates using calibrations from the more recent NCES longitudinal studies corresponding with the time frames to be estimated. In addition to continuing to use the HS&B (1980 10th graders) to calibrate estimates for the earlier periods, he also used estimates from the more recent high school longitudinal studies, NELS (1988 8th graders) and ELS (2002 10th graders), to improve the estimates for the corresponding periods. Using data from these additional longitudinal surveys resulted in little change from the 2015 CPS-based estimates of bachelor's degree attainment rates for the first (lowest), second, and third income quartiles but reduced the CPS-based estimates of bachelor's degree attainment for the fourth (highest) quartile considerably.

Caution is still needed in using these adjusted CPS estimates in the subsequent *Indicators* reports, given the many underlying assumptions. For the 2016 *Indicators* report, this calibration work was still in progress and we reported only on the distribution of bachelor's degrees between the quartiles in Indicator 5a. In 2016, we presented a preliminary revision of estimates of attainment by age 24 in the Appendix of the 2016 *Indicators* report (Appendix Table A-6). The 2017 and 2018 *Indicators* reports presented these revised estimates for Equity Indicator 5a using three-year moving averages

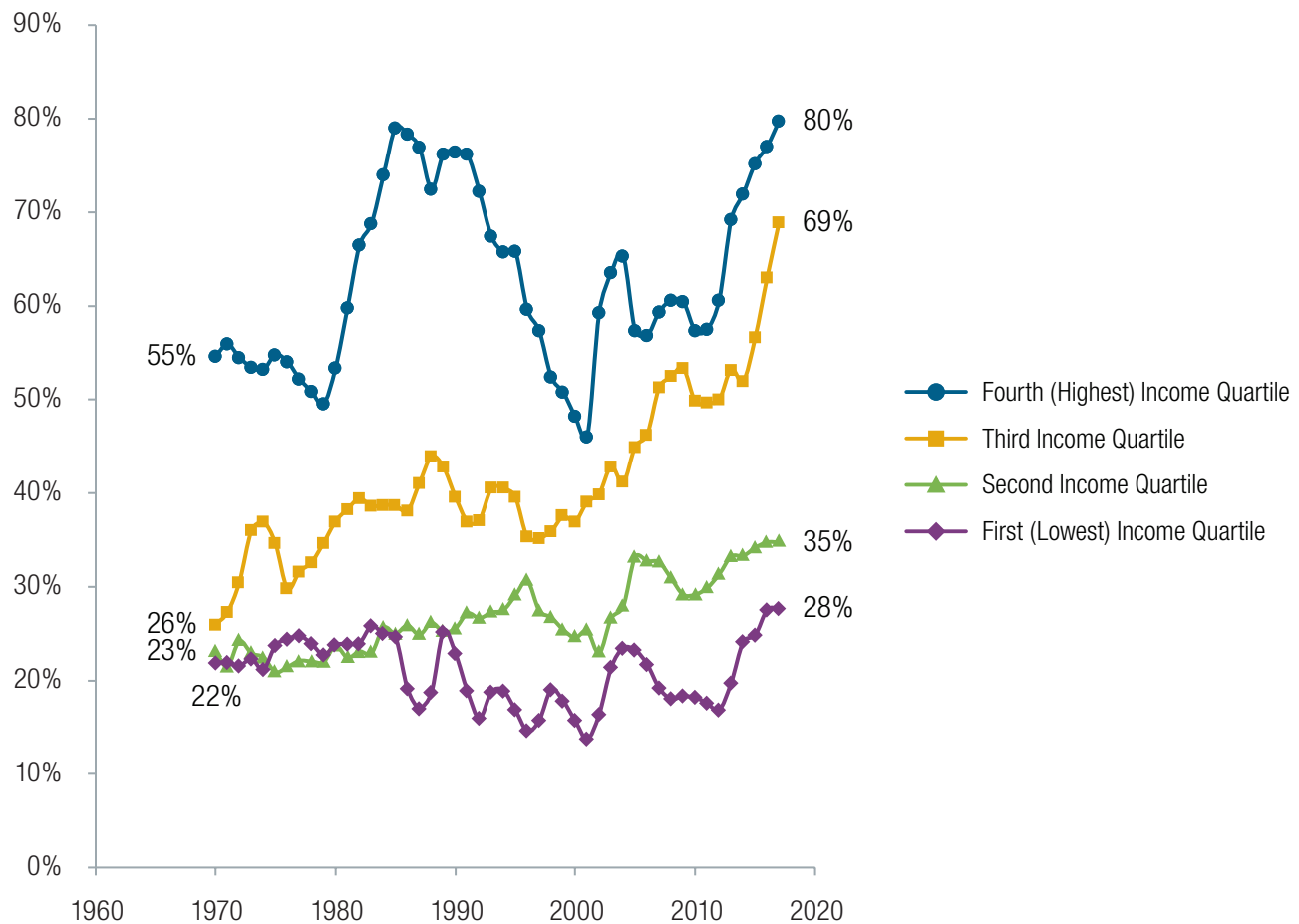
of bachelor's degree attainment by age 24 for 1970 to 2016 from the CPS data. For 2019, using the same methods, we updated the data to represent 1970 to 2017 and report it in Equity Indicator 5a(i). For 2019, we also include in Indicator 5a(ii) the 100 percent distribution of bachelor's degrees by age 24 by family income categories for dependent students. Appendix Figure A-7 shows these estimates using the same methods for attainment by age 24 among those who began college from 1970 to 2017.

Appendix Figure A-6: High school graduation rates by family income quartile for dependent 18- to 24-year olds: 1970 to 2017



SOURCE: U.S. Census Bureau, CPS data as reported by BLS. Compiled by Tom Mortenson.

Appendix Figure A-7: Estimates of bachelor's degree attainment by age 24 for dependent family members who entered college by family income quartile: 1970 to 2017

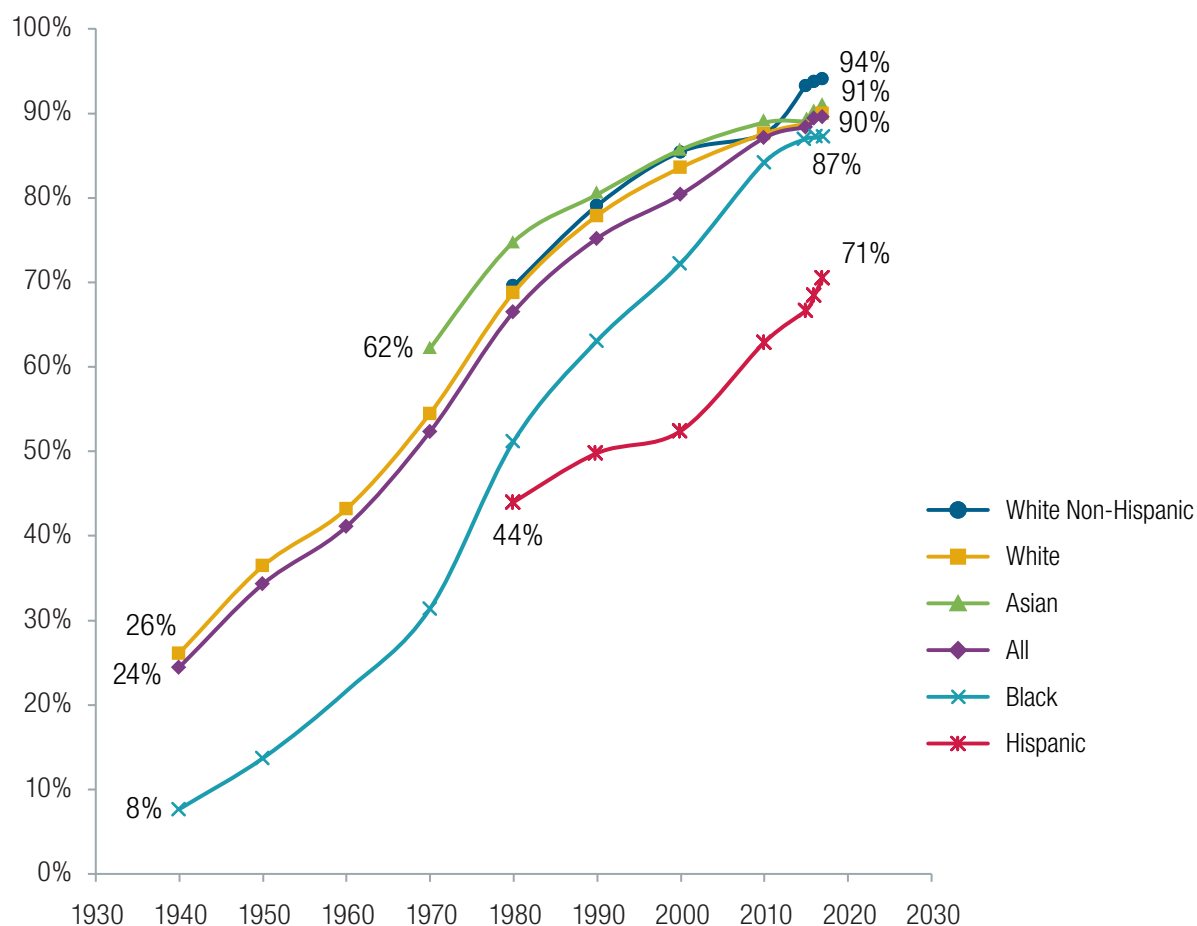


NOTE: Based on three-year moving average using constant factors derived from HS&B, NELS, and ELS combined with the CPS data. Note these estimates are higher than those reported in Equity Indicator 5a(i) in the body of this report because they are for those who have entered college and not for the entire age cohort.

SOURCE: U.S. Census Bureau, CPS data as reported by BLS. Compiled by Tom Mortenson.

- **Historical Data on Educational Attainment of the Population Age 25 and Older by Race/Ethnicity.** Equity *Indicators* 5f(i), 5f(ii), and 5f(iii) in the body of this 2019 Indicators report include data from 1940 to 2017 from the Decennial Census and the American Community Survey (ACS) on differences in educational attainment of the population 25 years of age and older by state. Appendix Figures A-8 and A-9 use these same data sources to present data by race/ethnicity on high school and bachelor's degree attainment from 1940 to 2017. As discussed in the body of this report, classifications used for race/ethnicity have changed over the 75-year period, and caution must be used in interpreting these data over time.

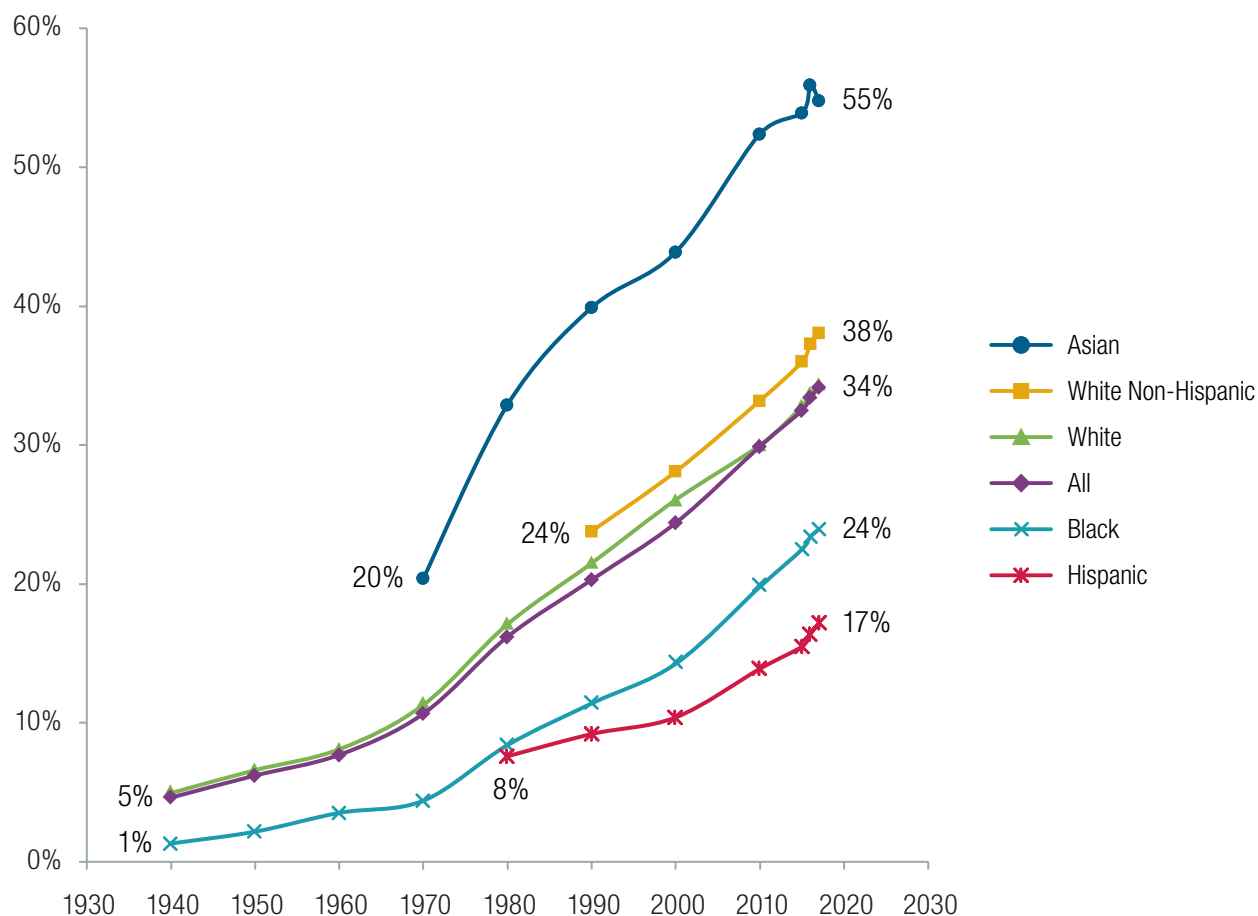
Appendix Figure A-8: Percentage of the population 25 years of age and older who has attained a high school diploma or equivalent by race/ethnicity: selected years 1940-2017



NOTE: Data classifications have changed over time, providing for separate Hispanic ethnicity identification in 1980 and also choice of more than one race after 2003. For detailed descriptions of changes and also more detail on race/ethnicity percentages, see Table A-2. Percent of People 25 Years and Over Who Have Completed High School or College, by Race, Hispanic Origin and Sex: Selected Years 1940 to 2016. Data from 1940 to 2010 are from the decennial census. Data from 2010 to 2017 are from the Current Population Survey and American Community Survey.

SOURCE: U.S. Census Population Division Census 2000 PHC-T-41. (2015). *A Half-Century of Learning: Historical Statistics on Educational Attainment in the United States, 1940 to 2000*, and <https://census.gov/data/tables/2017/demo/education-attainment/cps-detailed-tables.html>.

Appendix Figure A-9: Percentage of the population 25 years of age and older who has attained a bachelor's degree or higher by race/ethnicity: selected years 1940-2017



NOTE: Data classifications have changed over time, providing for separate Hispanic ethnicity identification in 1980 and also choice of more than one race after 2003. For detailed descriptions of changes and also more detail on race/ethnicity percentages, see Table A-2. Percent of People 25 Years and Over Who Have Completed High School or College, by Race, Hispanic Origin and Sex: Selected Years 1940 to 2016. Data from 1940 to 2010 are from the decennial census. Data from 2010 to 2017 are from the Current Population Survey and American Community Survey.

SOURCE: U.S. Census Population Division Census 2000 PHC-T-41. (2015). *A Half-Century of Learning: Historical Statistics on Educational Attainment in the United States, 1940 to 2000*, and <https://census.gov/data/tables/2017/demo/education-attainment/cps-detailed-tables.html>.

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