

THE ECONOMICS OF HIGHER EDUCATION

**A REPORT PREPARED BY THE DEPARTMENT OF THE TREASURY WITH THE
DEPARTMENT OF EDUCATION**

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“We can't allow higher education to be a luxury in this country. It's an economic imperative that every family in America has to be able to afford.”

– President Barack Obama, February 27, 2012

Executive Summary

Higher education is a critical mechanism for socioeconomic advancement among aspiring individuals and an important driver of economic mobility in our society. Moreover, a well-educated workforce is vital to our nation's future economic growth. American companies and businesses require a highly skilled workforce to meet the demands of today's increasingly competitive global economy. Higher education is provided through a complex public-private market, with many different individuals and institutions participating. While postsecondary education has become increasingly important, there have also been growing concerns about the cost and affordability of higher education. This report discusses the current state of higher education, with a brief high-level overview of the market and a more detailed discussion and analysis of the financial aid system. We also discuss the important changes the President has made to make higher education more accessible and affordable. Our key findings are:

- The economic returns to higher education remain high and provide a pathway for individual economic mobility;
- Public colleges educate the vast majority of the nation's students enrolled in institutions of higher education but private, for-profit schools are growing the most rapidly;
- Historically, society provided a significant subsidy to young people through the widespread availability of inexpensive public higher education. However, over the past several decades, there has been a substantial shift in the overall funding of higher education from state assistance, in the forms of grants and subsidies, to increased tuition borne by students;
- The Obama Administration has offset some of those increased costs with recent increases in educational support through increased Pell grants and the American Opportunity Tax Credit; and
- The combination of decreased state subsidies for higher education and increased federal spending on financial aid represents a shift in the responsibility for paying for college toward a greater onus on students, families, and the federal government.

Total College Enrollment Has Grown Since The Mid-1980s

- The total number of students enrolled at institutions of higher education increased from under 13 million in 1987 to over 21 million in 2010.¹
 - Almost 73 percent attend a public college, a broad category that ranges from local two-year community colleges to graduate research institutions.
 - Approximately 18 percent attend a private non-profit college, a sector that ranges from research universities to small liberal arts colleges and specialized religious institutions.
 - Approximately 9 percent attend a private for-profit (i.e., "proprietary") institution. Enrollment growth is fastest at for-profit schools, which have increased in size from 200,000 students in the late 1980s to nearly 2 million students today.

¹ Snyder & Dillow (2012).

College Educated Workers Have Higher Expected Earnings

- There is substantial evidence that education raises earnings. The median weekly earnings of a full-time, bachelor's degree holder in 2011 were 64 percent higher than those of a high school graduate (\$1,053 compared to \$638).²
 - The earnings differential grew steadily throughout the 1980s and 1990s. Recent evidence suggests that the earnings differential observed today is higher than it has ever been since 1915, which is also the earliest year for which there are estimates of the college wage gap.
 - Moreover, the earnings differential underestimates the economic benefits of higher education since college-educated workers are less likely to be unemployed and more likely to have jobs that provide additional non-wage compensation (e.g., paid vacation, employer-provided health insurance).
- Higher education is important for intergenerational mobility. Without a college degree, children born in the bottom income quintile have a 45 percent chance of remaining there as adults. With a degree, they have less than a 20 percent chance of staying in the bottom quintile of the income distribution and a roughly equal chance of ending up in any of the higher income quintiles.³

Posted Tuition Has Increased Significantly But Increases In Net Tuition Have Been Milder

- Posted tuition (which does not include living costs and does not account for financial aid) has risen sharply in the past two decades at both public and private non-profit colleges. However, in the past 15 years, increased financial aid has mitigated the degree to which increases in posted tuition have been passed through to students.⁴ Measured in 2012 dollars:
 - Average posted in-state tuition for four-year, public institutions more than doubled between 1991 and 2013, from \$3,350 to \$8,660. Average posted out-of-state tuition grew 45 percent, from \$11,000 in 2000 to \$16,000 in 2011.
 - Average posted tuition at four-year, private non-profit universities rose 57 percent between 1991 and 2013, from \$16,410 to \$29,060.
 - Average net tuition, which is posted tuition minus expected grants and tax benefits, has also increased but at a slower rate. Average net in-state tuition at public institutions increased by 58 percent between 1991 and 2013, from \$1,840 to \$2,910. Average net tuition at private non-profit institutions increased by 25 percent between 1991 and 2013, from \$11,060 to \$13,870.
 - Even though posted tuition increased noticeably, net tuition for in-state students at four-year, public schools is only slightly higher than it was in 2008, due to increases in grants and tax benefits.

² Bureau of Labor Statistics (2012).

³ Brookings analysis of the Panel Study of Income Dynamics (Isaacs, Sawhill, & Haskins, 2011).

⁴ *Trends in College Pricing 2011* (Baum & Ma, 2011). Data on average net tuition for for-profit colleges and out-of-state public universities are not available.

- State funding for public institutions of higher education has declined, both in per-student terms and as a share of total revenue. State funding declined from almost 60 percent of college and university revenue in the late 1980s to slightly below 40 percent today.
- Public colleges and universities have become increasingly reliant on student tuition as a source of funding.

Federal Financial Aid Helps Students Pay For The Increasing Costs Of School

- Federal financial aid represents the majority of all financial aid. In 2009-2010, an estimated \$173 billion was distributed to undergraduates, of which \$124 billion (72 percent) was from federal sources.⁵
- The two largest components of the federal financial aid system are Pell grants and Stafford loans.
 - Pell grants provide low-income undergraduate students with funds for higher education that do not have to be repaid. In 2010-2011, almost half of all undergraduates received a Pell grant, with an average grant of \$3,800 and a maximum award of \$5,550. In the aggregate, the Pell program awarded over \$35 billion in 2010-2011.⁶
 - Stafford loans are federal student loans. For a subsidized Stafford loan, the federal government pays interest for undergraduate students while the student is in school; for unsubsidized Stafford loans, the interest accrues while the student is enrolled. The Stafford loan program distributed approximately \$90 billion in Fiscal Year (FY) 2011, of which 46 percent was in the form of subsidized loans.⁷

President Obama's Education Policies

In response to recent trends, such as the rise in posted tuition, the Obama Administration has implemented several new policies to provide relief for students and their families. As part of the American Recovery and Reinvestment Act (ARRA), the maximum Pell grant increased from \$4,731 in 2008 to \$5,550 in 2010. ARRA also replaced the Hope Credit with the more generous American Opportunity Tax Credit (AOTC). Compared to the Hope Credit, the AOTC has a higher credit amount (up to \$2,500 compared to \$1,800), is available for four years instead of two years, and is available to a broader range of families due to its partial refundability and higher income limits. More recently, the reduced 3.4 percent interest rate on subsidized Stafford loans was extended for another year, rather than rising to 6.8 percent as scheduled under existing law. Finally, starting in 2009, student borrowers participating in the Direct Loan program could opt for the “income-based repayment” (IBR) plan, which caps monthly student loan payments at 15 percent of discretionary income and forgives any remaining balance after 25 years in the program. In 2010 legislation, IBR was made more generous starting in 2014, with a lower maximum on payments (10 percent instead of 15 percent) and forgiveness after 20 years (instead of 25 years). And in Fall 2011, the Administration announced its new “Pay as You Earn” program that would provide similar benefits to new borrowers starting in 2012.

⁵ Baum & Payea (2011).

⁶ Department of Education, *2010-2011 Federal Pell Grant Program End-of-Year Report*.

⁷ Other dates in this section are academic year.

I. Introduction

Higher education is a critical mechanism for individual socioeconomic advancement and an important driver of economic mobility. Moreover, a well-educated workforce is vital to our nation's future economic growth. American companies and businesses require a highly skilled workforce to meet the demands of today's increasingly competitive, global economy. Higher education is provided through a complex public-private market, with many different types of individuals and institutions participating. President Obama has supported higher education by increasing the Pell grant, establishing the American Opportunity Tax Credit, expanding income-based repayment for student loans, and freezing the interest rate on subsidized student loans.

College enrollment has grown rapidly since the mid-1980s, with almost 20 million undergraduates enrolled today.⁸ The vast majority of students (73 percent) attend public institutions, ranging from local community colleges to large research institutions. Eighteen percent of students attend private non-profit schools, a category which includes private universities, liberal arts colleges, and small religious institutions. Though for-profit schools have existed for decades, they have recently become a larger share of postsecondary education and have experienced rapid growth in enrollment. Today, nine percent of students are enrolled at for-profit schools.

Postsecondary education has become an increasingly important determinant of a worker's earnings. In 1980, a college graduate earned 50 percent more than a high school graduate; by 2008, college graduates earned nearly twice as much as those with only a high school diploma.⁹ However, there is an increasing concern about the cost and affordability of higher education. At four-year, public institutions, posted tuition is almost three times higher than it was in the early 1980s. At four-year, private non-profit schools, tuition today is almost 2.5 times higher compared to the early 1980s.¹⁰

The high growth rate in college tuition has coincided with two other shifts in higher education. First, increases in posted tuition have coincided with a significant decline in state government funding for public higher education. For example, in 1987, four-year, public institutions derived 60 percent of their total revenue from state government support and 20 percent from student tuition payments. By 2009, the composition had shifted substantially—state government funding constituted only 40 percent of revenue while tuition payments constituted another 40 percent. Put another way, tuition, as a share of college revenue, doubled while state government support fell by approximately 33 percent.

Second, beginning in the 1990s, increased availability of financial aid has helped offset increases in posted tuition, resulting in fewer students paying the full posted price. While average posted tuition (excluding room and board) at in-state, four-year, public schools increased from \$3,350 to \$8,660 between 1991 and 2013, "net tuition," which is posted tuition minus average grants and tax benefits for those who received aid, increased from just \$1,840 to \$2,910.

⁸ Snyder & Dillow (2012).

⁹ Acemoglu & Autor (2010).

¹⁰ Unless otherwise noted, dollar values in this report are all adjusted for inflation.

More recently, the Obama Administration increased the availability of grants and tax-based educational benefits. The means-tested Pell grant provided an average of \$3,800 and up to \$5,550 per student to 9.3 million undergraduates in the 2010-2011 school year. In addition to Pell grants, the federal government also provides tax-based financial aid for higher education, such as the American Opportunity Tax Credit (AOTC), which lowers the annual out-of-pocket cost of school by refunding a portion of educational expenses in the form of a lower tax liability. State and local governments and the schools themselves also provide a variety of grants and scholarships to students. These increases in Pell grants and the newly-introduced American Opportunity Tax Credit have helped to hold average net tuition essentially constant over the past four years. The decline in state government support and increasing generosity of financial aid are both aspects of a broader paradigm shift from broad, publicly-subsidized higher education to greater reliance on tuition payments from students and their families.

Grants and tax-based aid are only two pieces of the federal financial aid system. Federal student loans, such as Stafford loans, provide broad access to credit to pay for higher education. Unlike grants and tax credits, loans allow individuals to spend future income to pay for today's expenses. Increased reliance on loans shifts the burden of paying for college from those immediately paying for tuition and other expenses (primarily the parents and grandparents of current students) to the ongoing payers of student loans—typically the students themselves.

Under President Obama, the federal government has taken on a dual role in addressing this change. It has increased its direct assistance in the form of higher Pell grants and increased tax benefits to help offset declines from state governments. The federal government has also increased the accessibility and affordability of loans to allow students to finance their own education. These different forms of financial aid reflect the dual roles of the federal financial aid system to provide a subsidy for lower-income students and to help students of all income levels finance college education.

The first section of this report provides a broad overview of the basic characteristics of the market for higher education. The report then discusses the impact of higher education on individual earnings and economic mobility. The next section focuses on cost and access to higher education, including the difference between posted and net tuition. The final section considers the financial aid system and other federal policies related to higher education.

II. The Higher Education Landscape

U.S. postsecondary education represents a significant aggregate investment. In 2009, postsecondary institutions received approximately \$497 billion in total revenues (3.6 percent of GDP), including \$144 billion in federal grants and loans.¹¹ They employed 3.7 million workers, 2.4 percent of the 154 million individuals in the labor force.¹² A majority of Americans over the age of 25—115 million adults, or 57 percent of the over-25 population—have completed at least some college. This includes 80 million adults who have earned an associate’s degree or higher.¹³

Historical Context

The role of state governments in establishing and maintaining public colleges and universities dates back to our nation’s founding and accelerated significantly around the time of the Civil War. The Morrill Land-Grant Acts of 1862 and 1890 distributed federal land to states to help them establish new or fund existing colleges. What is currently Iowa State University is the first institution that resulted from these pieces of legislation. The original 1944 G.I. Bill included a generous tuition subsidy and monthly living allowance for World War II veterans pursuing higher education or vocational training, allowing an estimated 2.2 million men to attend college.¹⁴ In response to the launching of Sputnik, the National Defense Education Act of 1958 specifically aimed to make the United States more competitive in science and technology by creating the first federal student loan program and comprehensive education reform at the primary and secondary levels.

Today, colleges and universities can be divided into three broad categories: public, private non-profit, and private for-profit (or “proprietary”) schools. Public institutions, which range from two-year community colleges to large graduate research institutions, are non-profit institutions that typically receive a portion of their funding directly from state and local governments. Private non-profit institutions include some of the nation’s more selective institutions, such as the Ivy League schools, as well as many more small liberal arts colleges and religious institutions. Unlike non-profit schools, private for-profit schools do not have tax-preferred “non-profit” status, allowing them to distribute profits to investors. For example, the largest for-profit school is the University of Phoenix, owned and operated by the publicly traded Apollo Group.

Enrollment Trends

Enrollments at public, private non-profit, and private for-profit institutions have grown since the mid-1980s, as shown in Figure 1. The total number of students enrolled at institutions of higher learning increased from under 13 million in 1987 to over 21 million in 2010. Public institutions, ranging from graduate research institutions to small two-year community colleges, continue to enroll the majority of all college students.

¹¹ Snyder & Dillow (2012) and Baum & Payea (2011).

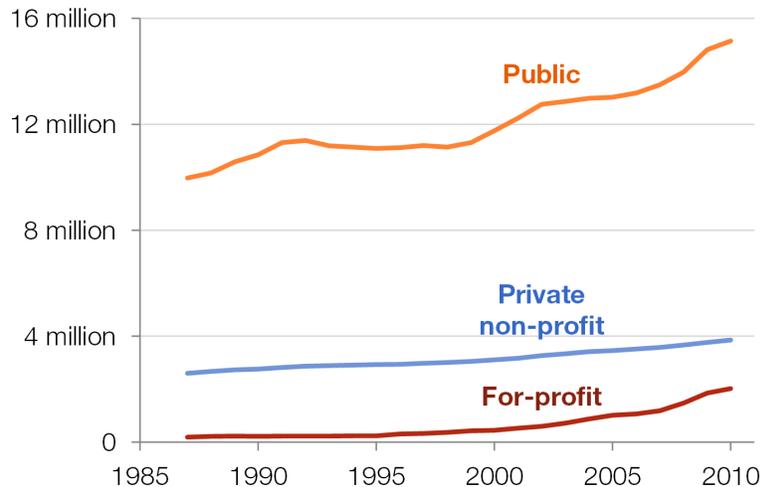
¹² Table 257, Snyder & Dillow (2012).

¹³ U.S. Census Bureau, *Educational Attainment in the United States: 2011*.

¹⁴ Bound & Turner (2002).

Growth in college enrollment is driven by increases in both the total number of college-aged individuals and the propensity of high school graduates to attend college. In 1990, the population of 18 to 24 year olds was approximately 27 million; by 2010 the size of this demographic group was almost 31 million.¹⁵ The Department of Education (ED) estimates that of the 2.9 million people who finished high school in 2010, 68.1 percent (approximately 2.2 million) enrolled in college that same year.¹⁶ One decade earlier, in 2001, only 61.8 percent of recent graduates enrolled in college right out of high school (1.6 million of 2.5 million).

Figure 1: Total Enrollment Over Time



Notes: From Table 198 in the *Digest of Education Statistics (DES) 2011* (Snyder & Dillow, 2012). Figure includes both undergraduate and graduate students; graduate students constitute between 10 and 15 percent of total enrollment.

Panel A of Table 1 breaks out total enrollment for 2009 by type of postsecondary institution. Today, the vast majority of students (73 percent, or 14.8 million out of 20.4 million) attend a public school. Private non-profit institutions account for 18 percent of students (3.8 million), and 9 percent attend a private, for-profit institution (1.9 million).

The growth rates within each sector have been quite different:

- Public school enrollment has grown 50 percent, from approximately 10 million in the late 1980s to almost 15 million in 2010.
- Private non-profit school enrollment has grown 33 percent, from 3 million to 4 million over that same time period.
- For-profit school enrollment has increased at a more rapid rate, from only 200,000 students in the late 1980s to nearly 2 million in 2010.

¹⁵ Census Bureau (1990, 2010a). While the number of 18 to 24 year olds increased in the past two decades, young adults make up a slightly smaller fraction of the total population today (9.9 percent) than in 1990 (10.8 percent).

¹⁶ Table 208, *DES 2010* (Snyder & Dillow, 2011). High school completion, as measured by the ratio of high school graduates to the population that is 17 years old, increased between 1990 and 2010 (from 73 percent to 77 percent) (Table 110, *DES 2010*).

Table 1: Enrollment Breakdown by Institution Type, 2009*A: All Students*

Institution Type	Program Length	Enrollment		As a % of Total Enrollment	
		Full-Time	Part-Time	Full-Time	Part-Time
Public	2-year	2,880,631	4,220,814	14.1%	20.7%
	4-year	5,649,713	2,059,484	27.7%	10.1%
Private non-profit	2-year	23,483	11,284	0.1%	0.1%
	4-year	2,783,162	947,154	13.6%	4.6%
Private for-profit	2-year	344,609	40,585	1.7%	0.2%
	4-year	1,041,184	425,608	5.1%	2.1%

Total number of undergraduates = 20,427,711

B: "New" Undergraduates (i.e., Freshmen Students), High School Class of 2009

Institution Type	Program Length	Enrollment		As a % of New Undergraduates	
		Full-Time	Part-Time	Full-Time	Part-Time
Public	2-year	1,147,281	950,814	22.7%	18.8%
	4-year	1,739,950	220,395	34.4%	4.4%
Private non-profit	2-year	7,533	1,550	0.1%	0.0%
	4-year	811,000	51,346	16.0%	1.0%
Private for-profit	2-year	49,346	2,844	1.0%	0.1%
	4-year	62,956	12,472	1.2%	0.2%

Total number of "New" undergraduates = 5,057,487

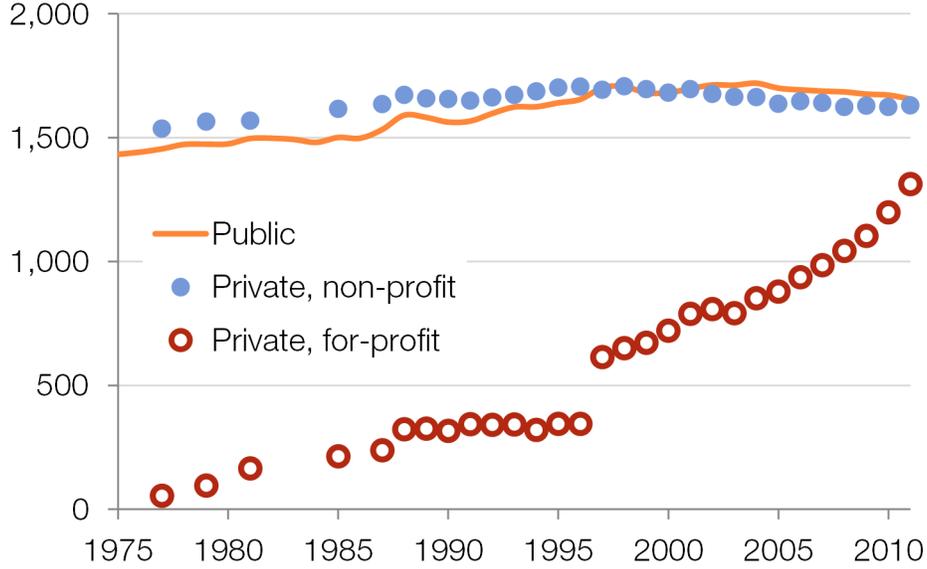
Notes: From Table 201 of the *DES 2010*. Panel B is derived by summing individual enrollment figures for "Under 18" and "18 and 19" year olds.

Among college students age 19 and under (who are likely to be first-time college students), 50.4 percent (34.4 percent public and 16.0 percent private non-profit) are full-time students at a four-year, non-profit school (see Panel B of Table 1). A sizeable fraction of these traditional-age college students (25 percent) attend college part-time, mostly at two-year public schools (e.g., community colleges). For-profit institutions enroll a very small fraction of these young students, which suggests that much of the recent growth in for-profit enrollment has come from attracting older students, such as adult learners or transfer students.

Composition of Schools

While the number of people going to college has increased, the number of traditional colleges has been relatively constant (see Figure 2). In the past two decades, the total number of non-profit degree-granting institutions has remained steady at about 3,300, almost equally divided into public and private schools. Therefore, increased enrollment at non-profit institutions came almost exclusively from increased enrollment per school. By contrast, the number of for-profit institutions has almost doubled since the mid-1990s. In 1997, there were about 600 proprietary schools in the United States, but by 2010 there were nearly 1,200.

Figure 2: Number of Degree-Granting Institutions



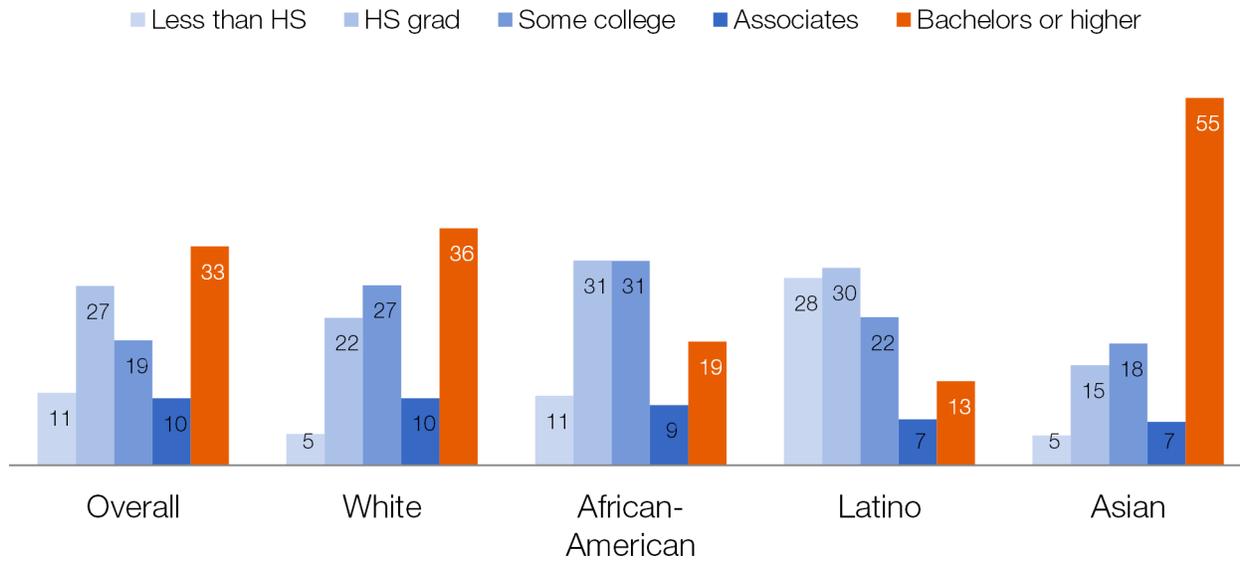
Notes: From Table 279 of *DES 2011*. The discontinuity in the number of for-profits between 1996 and 1997 is due to a definitional change in the data.

Education in the Population

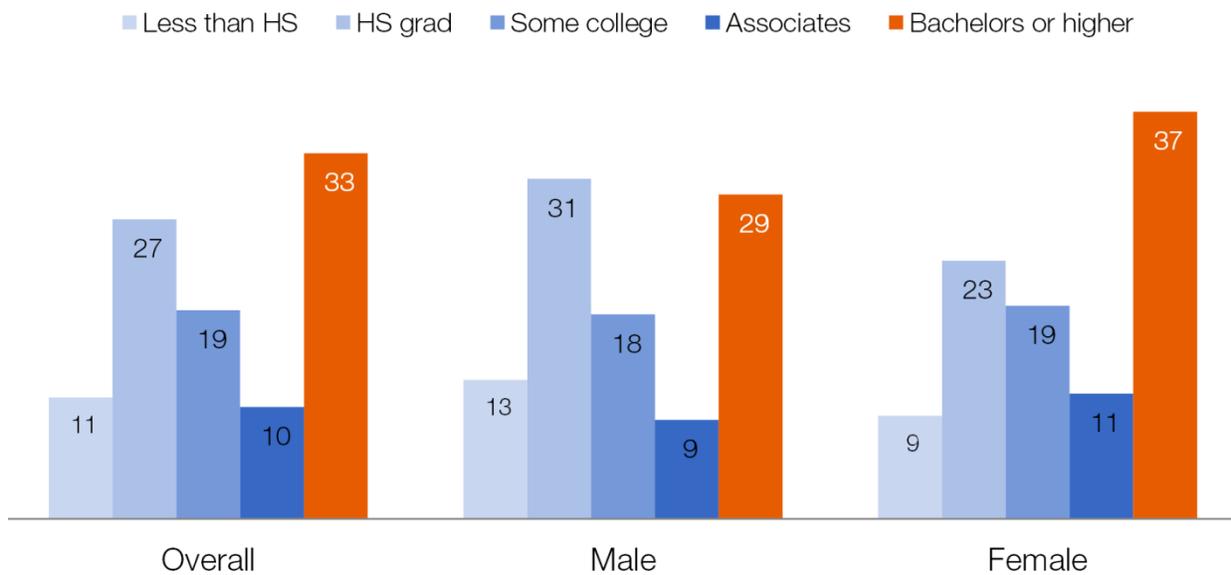
In 2011, an estimated 40 percent of the population 25 years and older had a two-year or four-year college degree. Among young adults age 25 to 34, the fraction of college graduates is slightly higher (43 percent). The fraction of college graduates differs across racial groups and between men and women (see Figure 3). African-Americans and Latinos complete college (associate's degree or higher) at much lower rates (28 percent and 20 percent, respectively) than whites (46 percent) and Asians (62 percent). Today, young women are more likely to be college-educated than young men. Among 25 to 34 year olds, 27 percent of men attended college but have less than a four-year degree, as compared to 31 percent of women. The gender differential is even larger among college graduates; 29 percent of men aged 25-34 have at least a bachelor's degree, compared to 37 percent of women in this age range.

Figure 3: Educational Attainment, 25-34 Year Olds

Percent By Race/Ethnicity



Percent By Gender



Notes: Based on *Educational Attainment in the United States: 2011* (U.S. Census Bureau). “Some college” consists of individuals who attended some college but did not receive a degree.

The High School Movement

Today, nearly 80 percent of adults 18 to 24 years old in the United States are high school graduates. However, the nearly universal high school system we have today did not exist a century ago. It was in the early 20th century that the “high school movement” (1910-1940) made secondary education widely available.¹⁷

High schools in the 19th century were considered “elitist,” only serving those whose families were wealthy enough to send their children to college, so taxpayers did not support public funding. However, during the early 20th century, local communities began to support widespread secondary education, changing high schools from a system that prepared “for college” into one that taught “for life.” The proponents of secondary education argued that, not only is education vital to civil society, but high school graduates also earned almost twice as much as those without diplomas. One rationale for public funding of high schools was that private markets inefficiently transfer resources between generations. Under a public funding system, older, taxpaying citizens in the prime years of their working lives would fund education for cash-constrained young adults and, in turn, receive additional support when they entered retirement or became unable to work. As education was publicly funded for them, these young adults would then, in turn, pay for the education of the next generation. As a result of the high school movement, high school completion rates increased tremendously, from 9 percent of American youth in 1910 to almost 40 percent by 1935.¹⁸

Evidence of this intergenerational compact was apparent in the early 1900s; states with a higher fraction of older voters, as well as those that were more homogeneous in terms of ethnicity, religion, and income, spent a larger fraction of income on public education.¹⁹ However, intergenerational support for public education seems to have weakened in recent decades. Polling and case studies suggest that older voters are less likely to support tax increases or bond measures for public education (though no less likely to support tax increases for other objectives), and states with older populations now have lower per-pupil school expenditures.²⁰ Deterioration of intergenerational support for education may lead to declining levels of education for young people, a less productive workforce, and diminished living standards for future generations.

¹⁷ Goldin & Katz (1999).

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Poterba (1997).

III. Why Education?

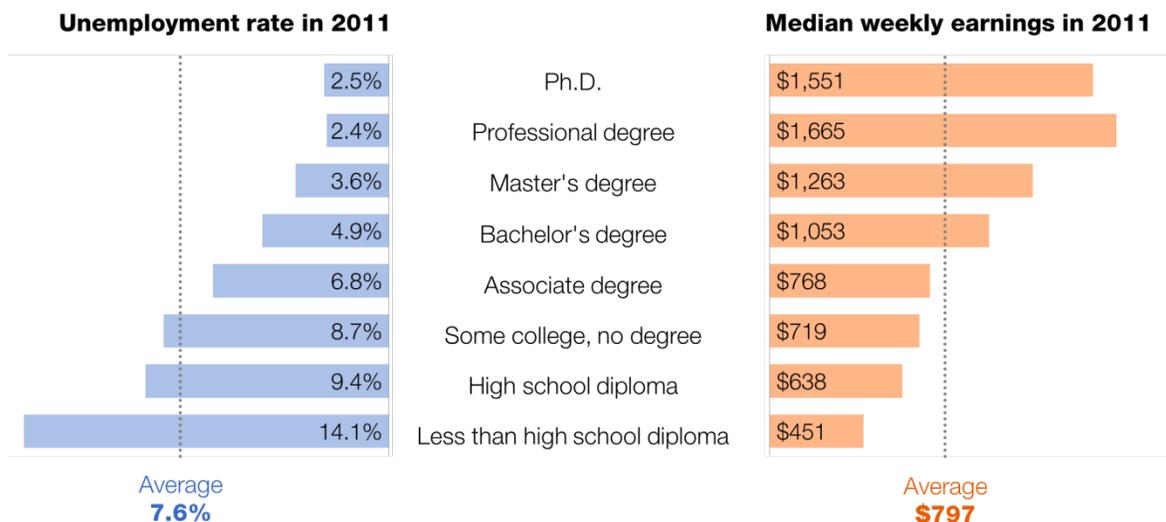
“The moral case for doing a better job of giving Americans the opportunity to succeed is very compelling. The economic case is just as strong. If more Americans are educated, more will be employed, their collective earnings will be greater, and the overall productivity of the American workforce will be higher.”

–Treasury Secretary Timothy Geithner, March 15, 2012

Skill premium

There is substantial evidence that education raises earnings. Individuals with a bachelor’s degree earn more and are less likely to be unemployed than those with only a high school diploma (see Figure 4). In 2011, the median weekly earnings for bachelor’s degree holders were 65 percent higher than earnings of high school graduates (\$1,053 compared to \$638). Those with a high school diploma were nearly twice as likely to be unemployed as those with a college or advanced degree. In aggregate, the additional earnings from two or four years of college (relative to only high school) were \$2.4 trillion, or 16 percent of the \$15 trillion in total GDP.²¹

Figure 4: Education Pays



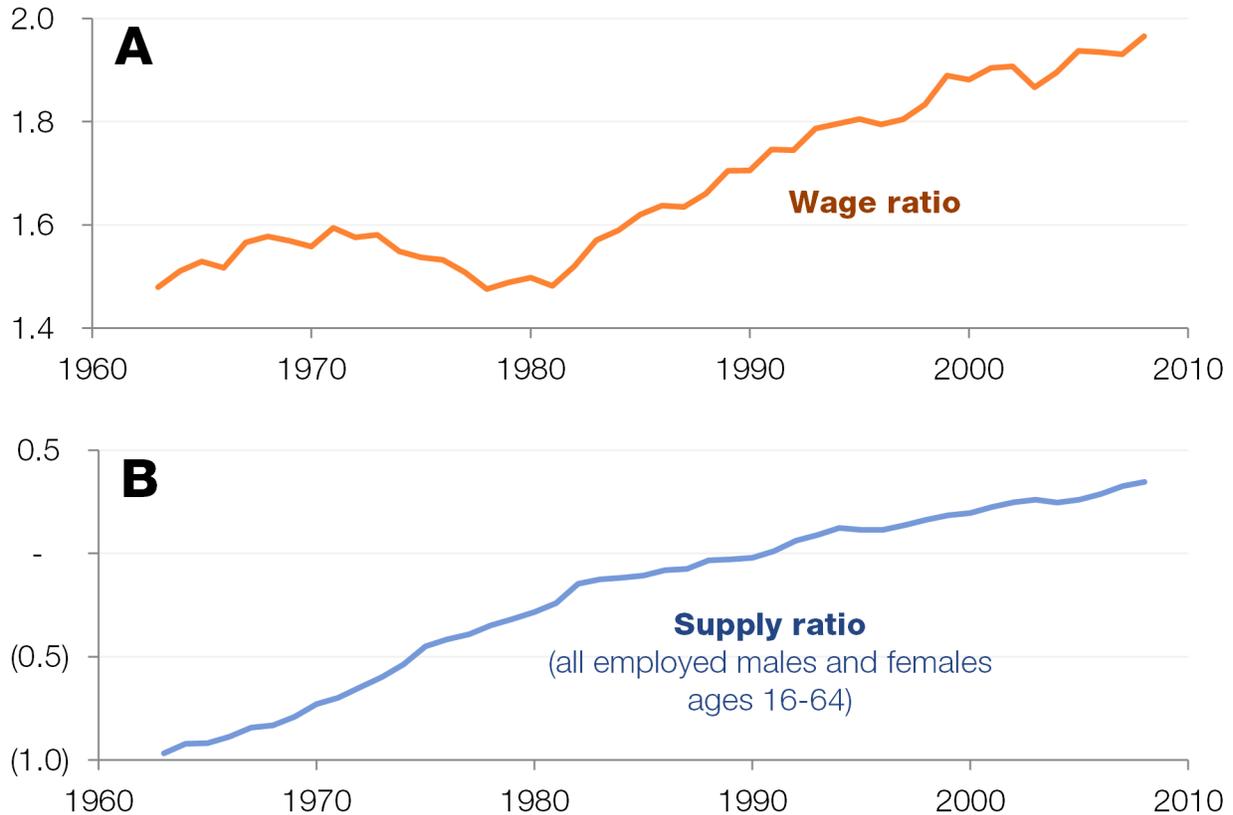
Source: Bureau of Labor Statistics (2012). Data are for individuals age 25 and over. Earnings are for full-time wage and salary workers.

The skill premium—usually quantified as the difference in wages between college and high school graduates—increased rapidly during the 1980s. In 1980, college graduates earned 50 percent more than those with a high school diploma, controlling for other factors that affect

²¹ This assumes an 8 percent return for each year of education, consistent with most literature (see Card (1999) for a summary), and that individuals work 52 weeks in a year. In Q1 2012, BLS estimated that approximately 26 million individuals age 25 and older have some college or an associate’s degree; another 35 million have at least a four-year degree. Median weekly earnings in Q1 2012 for those with some college attainment was \$754; median weekly earnings for those with at least a four-year degree was \$1,158.

wages, such as experience. By 2004, this gap had risen to 90 percent and does not appear to have narrowed since.²² The increasing relative earnings of college graduates is a combination of increasing earnings for college graduates and decreasing earnings for those with only a high school diploma. Earnings differentials also understate the true difference in compensation since high school graduates tend to have jobs that provide less generous benefits (e.g., health insurance, paid sick leave, pension benefits, or paid vacation). A bachelor's degree also opens the door to further study and potentially higher earnings later in life.

Figure 5: Relative Wages and Quantity of Skilled Workers



Source: Autor (2010), using March Current Population Survey, 1963-2008. Both panels are in logarithms and adjust for changes in the composition of the labor force over time. The relative supply index is a composite measure of hours worked that adjusts for changes in productivity over time.

As depicted in Figure 5A above, the skill premium increased and then decreased before the 1980s, but has increased steadily since then. Recent evidence suggests that the earnings differential observed today is higher than it has ever been since 1915, which is also the earliest year for which there are estimates of the college wage gap.²³ Empirical evidence suggests that one important driver of the rising skill premium is the continually increasing demand for skilled

²² Acemoglu & Autor (2010).

²³ Goldin & Katz (2008).

workers and a deceleration in the supply of college graduates.²⁴ Since at least the early 20th Century, technology has allowed advanced economies to substitute physical capital for manual labor in the production of goods and services. Machinery, computers, and other technical infrastructure have required skilled workers to design and operate; this so-called “skill-biased technological change” increased the relative demand for skilled workers.²⁵ While demand for skilled labor has continually increased, the supply of college-educated workers has not kept pace. The 1960s and 1970s were associated with an increase in college attendance, leading to a rapid influx of skilled workers into the labor force in the 1970s, and thus decreasing the skill premium in that period. However, the relative supply of college-educated workers has slowed since the 1980s, which further magnified the increases in the skill premium (see panel B in Figure 5).²⁶

While the financial benefits of earning a college degree are well-established, higher education may also bring non-financial benefits to graduates as well as benefits to the economy at large. College graduates report being in better health, have lower mortality rates and higher civic engagement, and are less likely to draw on the social safety net.²⁷ Research universities also devote significant resources to knowledge creation and innovation, which benefits not just the university and its students, but also the general public.

While the benefit of higher education to students is substantial and well-documented, it is more difficult to measure spillovers of higher education to the economy at large. Cross-country comparisons have found that countries with higher educational attainment have higher GDP growth rates. The limitation of such studies is that it is difficult to know how much of the education-growth link reflects where countries are on the development path.

Economic Mobility

Education enhances intergenerational mobility, the ability of children to move up and down the economic ladder independent of their parents’ economic status. The opportunities for economic mobility are starkly different between college and high school graduates. Without a college degree, children born in the lowest income quintile have a 45 percent chance of remaining in the bottom quintile as adults and a nearly 70 percent chance of ending up in the bottom two quintiles (see Figure 6). With a college degree, children born in the bottom quintile have less than a 20 percent chance of staying in the bottom quintile of the income distribution and about an equal chance of ending up in any of the higher income quintiles.

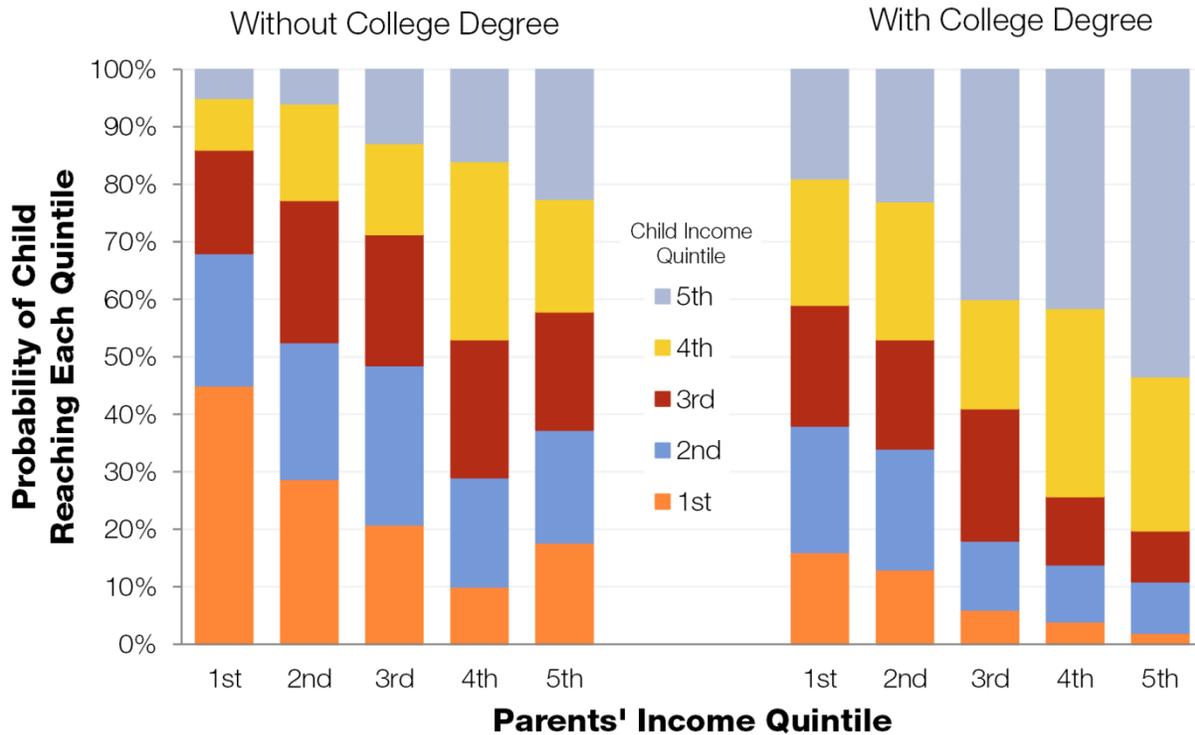
²⁴ Other potential drivers of increasing income inequality include decreasing rates of unionization (Card, 2001) and declines in the real minimum wage (Lee, 1999). In addition to these sources, a large portion of the growth in the college wage premium in the past two decades reflects strong earnings growth among those with advanced (i.e., post-college) degrees (Autor, Katz, & Kearney, 2008; James, 2012).

²⁵ Katz & Murphy (1992), Berman, Bound, & Griliches (1994).

²⁶ Goldin & Katz (2008); Acemoglu & Autor (2010); Card & Lemieux (2001).

²⁷ Summarized in Baum, Ma, and Payea (2010).

Figure 6: Intergenerational Mobility

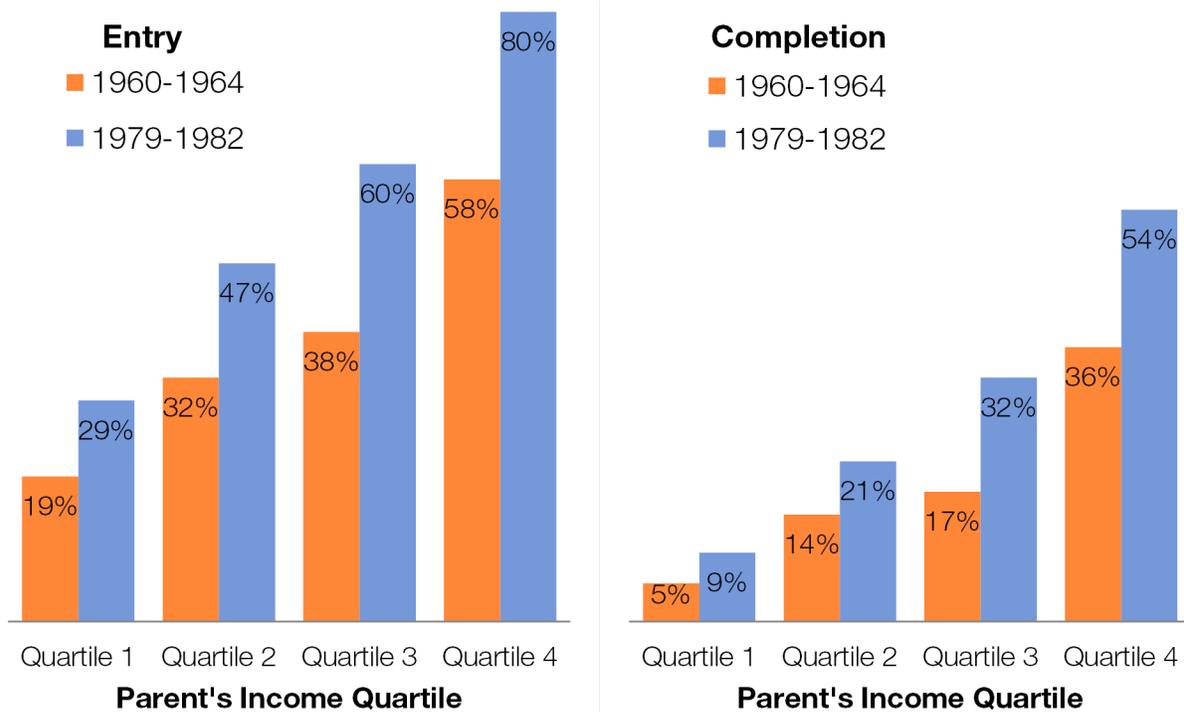


Source: Brookings analysis of the Panel Study of Income Dynamics (Isaacs, Sawhill, & Haskins, 2011).

For those at the lower end of the income distribution, increased levels of education do not make them as likely to end up in the top part of the distribution as someone who was born into the upper end of the distribution. Among children born into the bottom quintile (leftmost column in each panel), those without a college degree have about a 14 percent chance of being in the top two quintiles as adults (signified by the top two sections of each bar) while those with a college degree have about a 41 percent chance. Those born in the top quintile (rightmost column in each panel) who do not have a degree have approximately a 43 percent chance of earning in the top two quintiles as adults, but those who obtain a degree have a greater than 80 percent chance of remaining at the top of the distribution. This indicates that education among those born in the top quintile plays a strong role in maintaining higher levels of income across generations. Children born in the top quintile who do not obtain a college degree are almost equally likely to end up in any of the five income quintiles. Put differently, equalizing educational attainment would not fully equalize incomes later in life but would help to make them more equal.

Further, an individual's level of educational attainment is highly correlated with parental income. While students across the entire income distribution are now more likely to go to college now than a generation ago, these gains are significantly larger for children from high-income families.

Figure 7: Trends in College Entry and Completion, By Birth Cohort



Source: Figure 2 and 3 from Bailey and Dynarski (2011) using the National Longitudinal Survey of Youth, 1979 and 1997. Figure depicts entry and completion probabilities for two birth cohorts, who are first surveyed as young adults in 1979 and 1997, respectively.

For children born in the early 1960s, about 20 percent of those born in the lowest income quartile attended college, compared to nearly 60 percent of those born at the top (see Figure 7). A generation later, the probability of attending college increased by 22 percentage points for the top income quartile, but only half that (10 percentage points) for those at the bottom. Gains in completion are even more uneven. Among top quartile children, 54 percent graduated college compared to only 36 percent in the previous generation. Over the same period, low-income children were only 4 percentage points more likely to graduate. Continuation of these trends may augur reduced earnings mobility.

IV. Access to Higher Education

“The need to dramatically elevate college attainment is an urgent one – for our students, our families, our communities, and ultimately our nation’s future. Every capable, hard-working and responsible student should be able to access and afford higher education – and we all have a role to play to keep college part of the American Dream.”

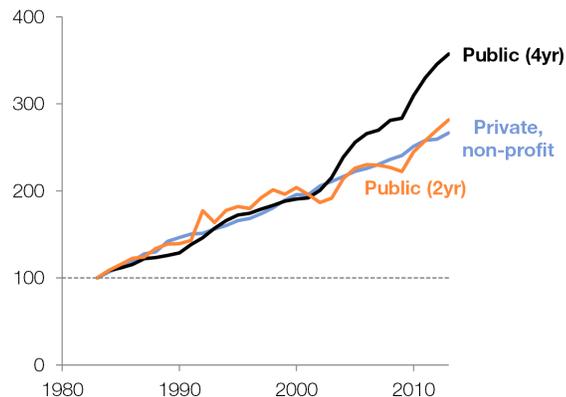
– Education Secretary Arne Duncan

This section focuses on the financial cost of higher education. Costs are just one dimension of college access, and college is only one part of the educational sequence. For example, some economists have argued that investments in early childhood education may have extremely high payoffs.²⁸ Given the immediate focus of this report, we consider the economic determinants of access. However, the many dimensions of college preparedness and educational quality are part of the larger conversation on educational attainment.²⁹

Tuition and Net Costs

Posted tuition doubled between 1980 and 2000 (see Figure 8). While tuition at all schools increased at similar rates before 2000, since then tuition at four-year public colleges, two-year public colleges, and four-year private non-profit schools has diverged. Tuition growth at four-year, public institutions has been almost twice as high as the pre-2000 period, while tuition at private non-profit colleges has continued to grow at about the same rate. Tuition at community colleges (i.e., two-year, public institutions) grew at a rate similar to that at private non-profit schools, though the relatively higher costs of this latter type of schools means they had a greater increase in dollar terms.

Figure 8: Posted Tuition and Fees (1983 = 100)



Notes: From Figure 5 of *Trends in College Pricing 2012* (Baum & Ma, 2012). Tuition figures have been adjusted for inflation.

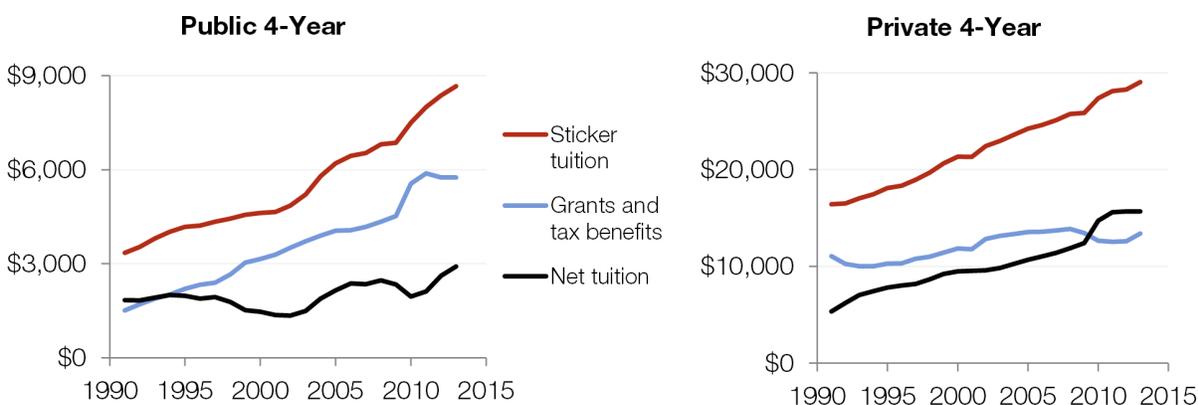
²⁸ Carneiro and Heckman (2003) argue that gaps in college attendance can be explained by differences in early childhood. This suggests that policy interventions early in life might have higher returns than those later in a child’s lifetime. Sawhill, Winship, and Grannis (2012) discuss policies at different stages of life that can have high payoffs.

²⁹ For example, enrollment does not always translate into graduation. For students who started college in the 2003-2004 academic year, only about 40 percent obtained an associate’s degree or higher within six years (National Center for Education Statistics, Beginning Postsecondary Students Longitudinal Study 2004/09 (U.S. Department of Education)).

While posted tuition has risen across the higher education sector, so has the amount of financial aid distributed by educational institutions and the federal government. Net tuition—posted tuition minus grants and tax benefits, like the American Opportunity Tax Credit—is a measure of college costs that accounts for both the increased generosity of aid at all levels (federal, state, and institutional) and higher posted fees.^{30,31}

The College Board reports that while posted tuition has increased steadily since 1997, increases in net tuition have been more moderate (see Figure 9). Posted tuition (excluding room and board) at a four-year, public school steadily increased from approximately \$3,350 in 1991 to \$8,660 in the 2012-2013 school year. Net tuition grew from \$1,840 to \$2,910 over that entire period. Net tuition in 2012-2013 is slightly higher than it was in 2008 (\$2,470), though the net tuition in a given state or institution may have changed by more or less. Average posted tuition at four-year, private non-profit schools increased 57 percent since the early 1990s, from \$16,410 to \$29,060, but the net tuition increased from \$11,060 in 1991 to its peak of \$13,870 in the 2007-2008 school year and has dropped slightly since then. Net tuition at community colleges has declined by \$1,440 from 1991 to 2013.³²

Figure 9: Changes in Posted Tuition Compared to Net Tuition



Notes: Drawn from Table 7 and 8 of *Trends in College Pricing 2012*. “Net Tuition” is posted tuition minus grants and tax benefits. Prices are in constant 2012 dollars. Figures do not include room and board.

³⁰ Net tuition also nets out private and employer scholarships. These data are not directly collected by the Department of Education; the College Board estimates these values based on survey data from scholarship providers.

³¹ One key question in education finance is the extent to which financial aid is captured by the schools themselves, either through higher tuition or lower institutional aid. Recent empirical evidence suggests that schools capture approximately 16 percent of Pell grant aid, though there is significant heterogeneity across school types (Turner, 2011).

³² By convention, loans do not factor into net price since, from the perspective of students and their families, they do not necessarily lower the total cost paid by the student. Also, these calculations do not include room and board since living costs are incurred regardless of whether an individual is a student. However, room and board is a real expense faced by students and can often be higher in college than if the student lived with his or her family. Between 1997 and 2012, room and board increased at similar rates between four-year public and private non-profit colleges, but as a percentage of the total cost of attendance, this increase has been much greater at public schools. At both four-year, public and private schools, room and board increased by approximately \$3,640 (\$165 per year).

The combination of increasing tuition and increasing aid exacerbates the difference in actual amount paid between those who receive grants and those who do not. For students who do not receive any grants, the tuition increase from \$16,000 to \$29,000 at a four-year, private non-profit school is a true \$13,000 increase in the cost of attendance that must be met with higher personal or family spending (including using savings), more loans, or other forms of aid, such as work-study or private scholarships.

Trends in “tuition discounting” are similar between public and private non-profit schools. Among public schools, the fraction of students receiving aid increased slightly between 2004 and 2008, while the size of recipients’ annual grant packages increased by \$500 on average (see Table 2). Grant aid also increased at private non-profit schools, by \$1,500, but the fraction of students receiving aid remained nearly constant.

Table 2: Changes in Grant Aid To First-Time, Full-Time Undergraduates

	% of Students Receiving Grants		Average Grant Among Receivers (2011 USD)	
	2003-04	2007-08	2003-04	2007-08
Public	56.3	58.0	5,037	5,579
Private non-profit	81.2	80.6	11,110	12,610
Private for-profit	72.6	72.3	5,097	4,169

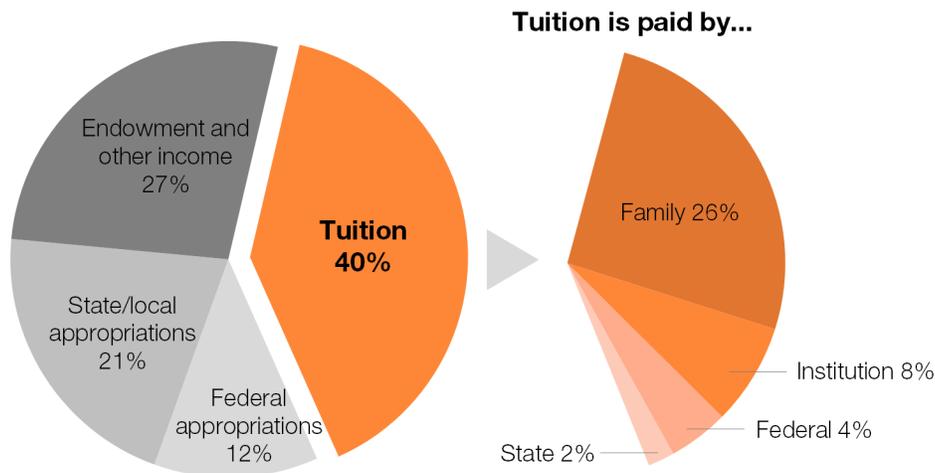
Notes: Based on the *DES 2010*. Percentage of undergraduates receiving grants is from Table 354; average amount of grants received is from Table 355. Includes grants from federal, state, institutional, and private sources.

State Budgets and Higher Education

Public institutions have seen the largest increases in posted tuition, as the funding model has shifted from state-subsidized higher education to more self-financed higher education supplemented by financial aid. This shift fundamentally changes the distribution of benefits and the mechanism by which students access higher education.

Tuition is the largest source of revenue for colleges, comprising 40 percent of total revenue (see Figure 10). Colleges receive an additional 12 percent of revenue in other non-tuition funds from the federal government, generally in the form of research grants, along with 21 percent from state and local governments. Students and their families provide approximately 26 percent of total revenues (in the form of tuition payments), up from 24 percent in 1999. Note that because students and families are increasingly relying on loans that must be paid off with interest over time to finance tuition today, these statistics can underestimate the increased cost borne by students and their families.

Figure 10: Sources of Institutional Revenue, 2006-2007 Academic Year



Notes: Derived using data from the Integrated Postsecondary Education Data System (IPEDS) and the Delta Cost Project. Figure includes public, private non-profit, and private for-profit schools at all levels.

Figure 10 averages public and private institutions together, but public and private schools depend on different types of funding.³³ Historically, private schools have depended heavily on tuition and endowments while public institutions are primarily funded by state and local funds as well as tuition. However, state funding for public higher education has declined steadily as a share of the revenue of these institutions since the 1980s.

The level of state funding per student at four-year, public colleges has also declined. In 1986, four-year, public institutions received approximately \$10,726 in state support per full-time equivalent student. By 2009, state funding had declined to \$8,655 per student.³⁴ Figure 11 shows that state and local funds to four-year, public schools have declined from almost 60 percent of revenue in the late 1980s to slightly below 40 percent in recent years.³⁵ Public institutions have become more reliant on tuition as a revenue source; recently, over 40 percent of public institutions' revenue has come from tuition, including federal financial aid, up from just 20 percent in 1987. This represents a sharp increase in tuition funding, which has doubled as a share of revenue for four-year, public institutions over the past 25 years. In the aggregate, the increase in tuition funding is almost identical in size to the decrease in the share of revenue which came from state and local governments through direct payments, which has fallen by roughly 33 percent. Recently, tuition revenue surpassed state and local government support as

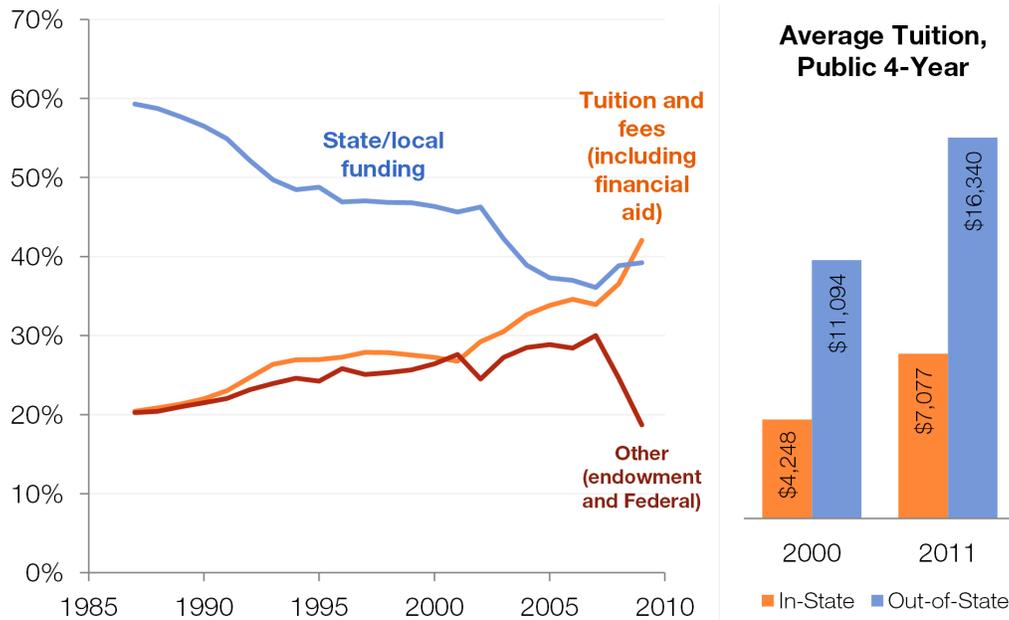
³³ Public schools receive approximately \$0.21 per dollar of total revenue from the federal government, most of which is from appropriations. Private non-profit schools receive about half as much from the federal government (\$0.11 per dollar), again from appropriations. For-profit schools receive \$0.20 per dollar from the U.S. government, \$0.16 of which is from grants.

³⁴ Treasury calculations based on data from the Delta Cost Project.

³⁵ States face tradeoffs between higher education and other budget priorities, since (with the exception of Vermont) they must balance their budget each fiscal year (or every two years, in the case of biennial budgets). As funding declines for other state projects, these tradeoffs become even more stark.

the largest source of funding for four-year, public institutions for the first time.³⁶ The combination of decreased state subsidies for higher education and increased federal spending on financial aid discussed in the next section represents a shift in the responsibility for paying for college toward a greater onus on students, families, and the federal government.

Figure 11: Share of Revenue at Public Four-Year Institutions



Notes: Based on data from IPEDS and the Delta Cost Project. Total revenue decreased in recent years in part due to falling endowments. As a result, even though government support became less generous during this period, it increased slightly as a proportion of total revenues. The right panel is measured in 2011 dollars.

The average posted tuition across four-year, public schools was approximately \$7,000 in 2011, up 67 percent since 2000. Tuition for out-of-state students is up 47 percent over the same period; average tuition for non-residents is approximately \$16,000. Out-of-state students face higher costs and are more likely to pay full tuition since they are not eligible for state-based aid.³⁷

Capacity Issues and the Rise of For-Profits

Today, the nation’s community colleges enroll nearly 7 million undergraduates, or nearly 4 million full-time equivalent (FTE) students (about 35 percent of all students in higher education). This is up from 3 million FTE students in 2000.³⁸ For comparison, FTE enrollment at four-year, public schools today is 6 million. Enrollment at community colleges appears to grow more slowly when the labor market is strong, growing slightly faster in the early 2000s and post-2007, but remaining relatively flat in between.

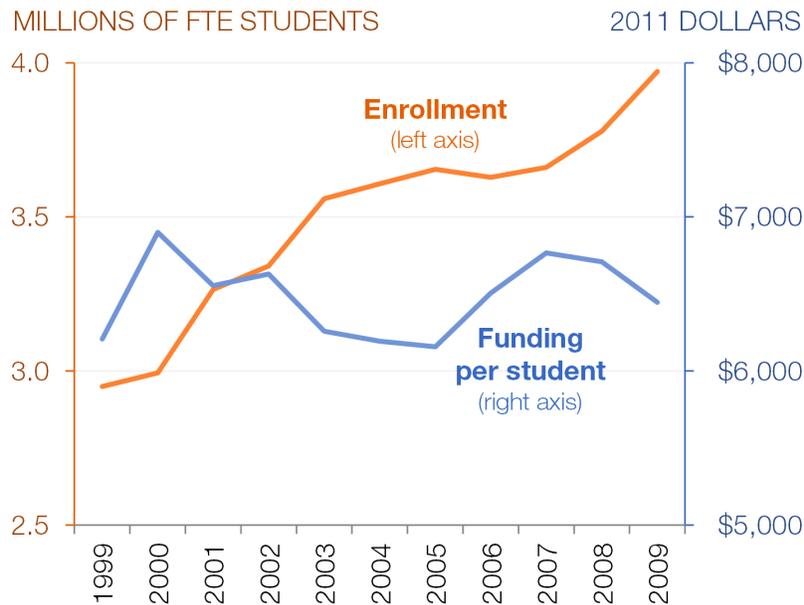
³⁶ Data from the Delta Cost Project.

³⁷ Out-of-state students are still eligible for federal financial aid while international students are usually ineligible for both state and federal financial aid.

³⁸ Tables 198 and 208, DES 2010 (Snyder & Dillow, 2011).

Community colleges are highly dependent on state funding since, unlike four-year, public schools, they do not have diversified revenue sources such as hospitals, endowments, or research grants. While enrollments have been increasing, state support per student has remained relatively flat (see Figure 12). In 2009, community colleges received approximately \$6,450 per FTE student, only slightly higher than the \$6,210 in 1999.³⁹ Funding per student was highest in 2000, before the brief 2001 recession, and bottomed out in 2005. It had just begun to recover when the 2007 recession began.

Figure 12: Community College Enrollment and State Funding



Notes: Based on data from IPEDS and the Delta Cost Project.

For-profit schools provide another avenue to access higher education. Community colleges are more likely to serve low-income and first-generation student populations than four-year schools, and these students now constitute the bulk of the student population at for-profit schools. Eighty percent of students at for-profit schools are the first in their family to attend college while 51 percent come from low-income families (i.e., below 150 percent of the poverty level).⁴⁰

Tuition charges can differ significantly between public and for-profit schools. In 2009, average tuition at four-year, public schools was \$6,070, compared to \$15,021 at four-year for-profits and \$20,845 at private non-profit schools.⁴¹ The combination of high tuition charges and an economically disadvantaged student body largely explain why for-profit schools receive a

³⁹ Like state funding per FTE, educational expenditure per FTE student at community colleges has also slightly increased, from \$10,204 in 1999 to \$10,242 in 2009 (Desrochers & Wellman, 2011). Benefits have become an increasing share of total employee compensation costs, and community colleges have increased the number of part-time faculty, possibly in an attempt to control rising staffing costs.

⁴⁰ Department of Education (2010). The majority (over 70 percent) of low-income students still attend a public two-year or four-year school.

⁴¹ Figure calculated using data from the Integrated Postsecondary Education Data System.

disproportionately large share of need-based federal financial aid compared to their enrollment. The disproportionate usage of need-based aid to attend for-profit institutions raises policy concerns about educational quality in this sector (e.g., completion, transferability of credits, accreditation for licensure). Labor market outcomes of graduates from for-profit schools are mixed.⁴² Educational quality and earnings potential are of particular concern for students at for-profit schools, who are more likely to take on student loans and carry, on average, larger loan balances than their counterparts at public institutions. For these students, low education quality and limited earning potential, combined with high student loan indebtedness, can translate into financial hardship in the years immediately following completion of a degree. Low degree completion rates at for-profit schools constitute an additional concern.⁴³

⁴² Deming, Goldin, & Katz (2012). Compared to observationally similar students at non-profit schools, for-profit students earned about \$2,000 less. Much of this earnings gap is because they are more likely to be unemployed and more likely to experience substantial unemployment (defined as unemployment greater than three months). Once employment status is included, there is no longer a statistically significant earnings differential.

⁴³ For more on the rate and level of borrowing at for-profit institutions compared to other types of institutions, see "Borrowing at the Maximum: Undergraduate Stafford Loan Borrowers in 2007-08," U.S. Department of Education, NCES 2012-161, October 2011, available at <http://nces.ed.gov/pubs2012/2012161.pdf>. Baum and Steele (2010) also look at cumulative student loan debt by institution.

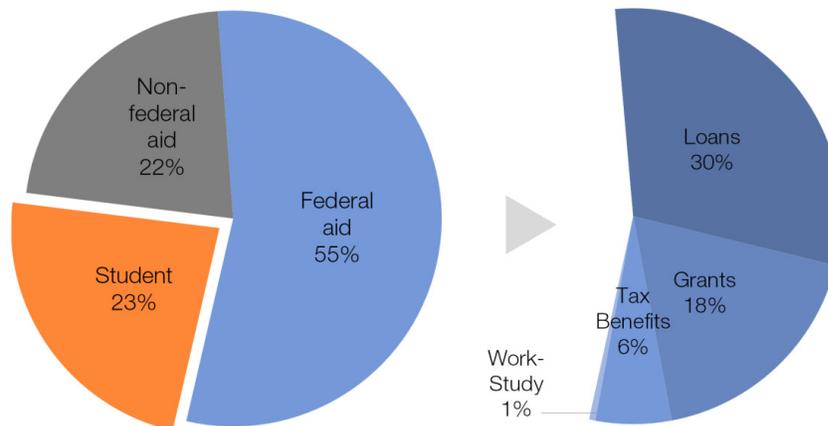
V. Financial Aid and Higher Education Policy

The federal financial aid system is intended to provide broad access to credit for higher education expenses and a subsidy for students from lower-income families. President Obama has worked to expand federal financial aid and affordability of higher education. The Administration has increased the size of Pell grants and created the American Opportunity Tax Credit, both of which lower the expected annual out-of-pocket costs of college. The Administration has also aided student borrowers by freezing the interest rates on subsidized loans and expanding income-based repayment.

Sources of Financial Aid: Grants, Work-Study, Loans, and Tax Benefits

The federal government provides the majority of financial aid received by undergraduates in the United States (see Figure 13). In 2009-2010, an estimated \$173 billion in financial aid was distributed to undergraduates, representing 77 percent of aggregate spending on undergraduate education. The federal government provided \$124 billion in student aid through grants, loans, and work-study, representing 55 percent of aggregate spending on undergraduate education and 72 percent of all spending on student financial aid.⁴⁴ The remaining \$49 billion in financial aid was provided by state and local governments, the schools themselves, and private lenders or donors. The total cost of college (i.e., tuition plus room and board) in that year was an estimated \$227 billion.⁴⁵

Figure 13: Aggregate Spending On Undergraduate Education (2009-2010)



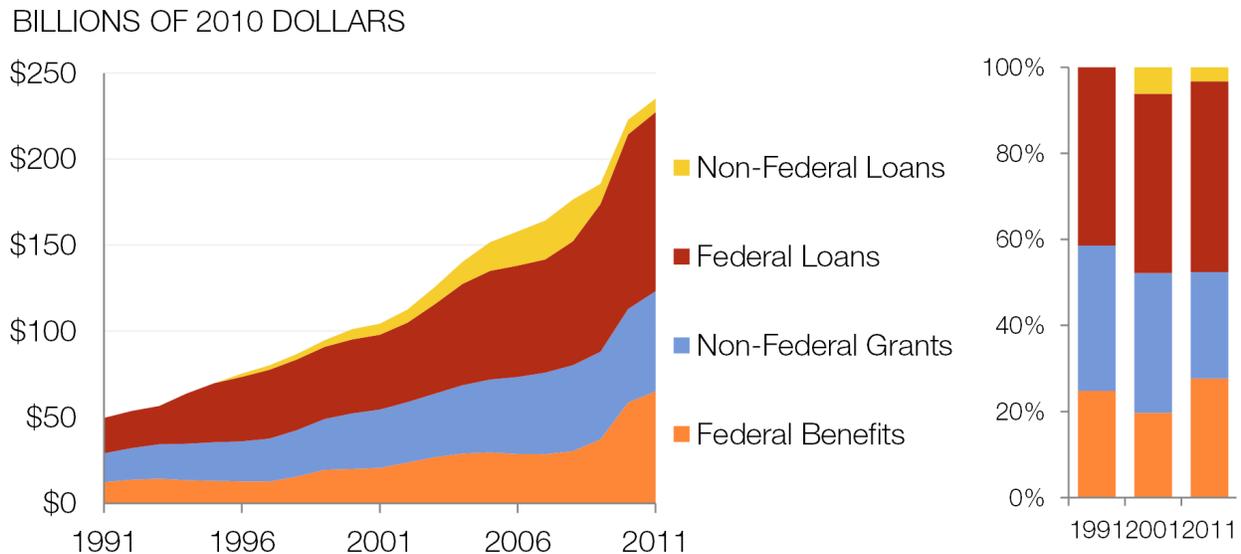
Notes: From Table 1A of *Trends in Student Aid 2012* (Baum & Payea, 2012). Average tuition plus room and board for full-time students in 2009-2010 was \$17,464. There were 13 million (full-time equivalent) undergraduates in 2009-2010, so estimated aggregate spending for undergraduate education was \$227 billion.

⁴⁴ In the previous section, we excluded loans and work-study from the “net tuition” calculation, but we include them in the financial aid definition here. Loans and work-study expand the ways students can pay for college, and hence are important components of the overall financial aid system, but do not actually change the price they pay.

⁴⁵ Average tuition plus room and board for full-time students in 2009-2010 was \$17,464. There were 13 million (full-time equivalent) undergraduates in 2009-2010.

Loans are the largest share of federal aid, followed by grants; work-study aid is a very small percentage (plotted in Figure 14). Total financial aid has increased over time, but this increase has occurred at a time when state support for higher education has declined significantly. The growing importance of student loans, in combination with declines in-state funding, are aspects of a broader shift away from broad public support to an increasing reliance on private resources to fund higher education. The different types of aid have varied restrictions and eligibility criteria but are jointly constrained by the fact that a student’s total aid package cannot exceed his or her cost of attendance.⁴⁶

Figure 14: Sources of Financial Aid



Notes: From Figure 1 of *Trends in Student Aid 2012* (Baum & Payea, 2012). Rightmost graph shows financial aid shares as a percentage of that year’s total aid. “Federal benefits” includes federal grants, work-study, and tax benefits. State and institutional grants are combined under “non-federal grants.” Includes financial aid to both undergraduates and graduate students.

Most federal student aid is now originated and distributed directly by the federal government to students. Two of the largest federal financial aid programs (Pell grants and subsidized Stafford loans) are need-based: a student’s awards are determined by his expected family contribution (EFC) and cost of attendance (COA). The EFC is calculated based on the Free Application for Federal Student Aid (FAFSA) (see box on page 27). Administration policies have supported several of the recent increases in financial aid, which we discuss in more detail later in this report.

⁴⁶ Cost of attendance includes tuition and room and board, in addition to allowances for books, supplies, transportation, and miscellaneous personal expenses. Tuition and room and board are, by far, the largest components of the total cost of attendance.

FAFSA

Students apply for federal financial aid by filling out the Free Application for Federal Student Aid (FAFSA), a series of questions on student and family dependency, income, and assets. Students submit the FAFSA in the winter or spring *before* the academic year begins. For example, a student starting college in the fall of 2012 would submit a FAFSA between January and March 2012 based on 2011 income, though the 2011 tax forms that would be needed to populate a FAFSA application are not due until April 2012. State and institutional financial aid also use the FAFSA for determining eligibility but frequently allocate aid on a first-come, first-serve basis. From the family financial information on the FAFSA, the Department of Education (ED) calculates the student's expected family contribution (EFC), which is then used by the school's financial aid office to construct the student's personal financial aid package. Details about the EFC calculation itself are included in Appendix 1.

Simplifying the FAFSA was one of President Obama's first higher education goals. Filling out the FAFSA is typically much simpler than it used to be. The Administration streamlined the online FAFSA through "skip logic," which automatically skips questions that are not relevant to the current respondent. Starting in 2010, students could directly import their IRS tax data into the online FAFSA through the FAFSA-IRS link. Pre-populating data fields should minimize the number of errors and the amount of time it takes to complete the form. Over 90 percent of students now fill out their FAFSA via the "FAFSA on the Web." FAFSA filing time has also decreased. In 2008, it took an hour to finish a FAFSA; in 2012-2013, it is down to 24 minutes.⁴⁸ As a result of statutory and regulatory requirements, institutions are required to verify certain applicant-reported information on the FAFSA, including income information. This has traditionally been done by having students and families submit copies of tax returns to institutional financial aid officers who cross check data for randomly selected applicants. The FAFSA-IRS link alleviates this burden since data imported directly from IRS are already verified. In addition, the Department of Education's FAFSA Completion Pilot experiments with providing districts and schools with student level FAFSA completion data, so they can target services toward students who have yet to finish the form.

Federal funds are given directly to colleges through three "campus-based" programs, which allocate aid to individual students, and provide their own funds in addition to federal dollars.⁴⁷

Grants

Grants are funds for college that do not have to be repaid after graduation. The largest federal grant program is the means-tested Pell grant. Pell awards are determined by a student's EFC and cost of attendance.

⁴⁷ The three campus-based programs are Federal Supplemental Educational Opportunity Grants (FSEOGs), work-study, and Perkins loans. The other financial aid programs (i.e., Pell grants, Stafford loans, etc.) allocate funds directly to students, not to schools.

⁴⁸ Department of Education, Office of Federal Student Aid.

As a result of the American Recovery and Reinvestment Act of 2009 (ARRA), the maximum Pell grant increased from \$4,731 in 2008 to \$5,550 in 2010.⁴⁹ In the 2010-2011 school year, the Pell program awarded an estimated \$35.6 billion to 9.3 million students. Almost half of the 20 million undergraduate students received a Pell grant. This represents a significant increase in program participation and support from 2008-2009, when the Pell program awarded \$18.3 billion in Pell grants to approximately 6.1 million students. The average Pell grant in 2010-2011 was approximately \$3,800, with a maximum award of \$5,550.

Work-Study

Federal work-study (FWS) pays students for part-time work while they are enrolled in school. Work-study is one of the campus-based programs, so the federal government provides funds to participating institutions, whose financial aid offices determine each student's job, hours, and wages. These institutions also provide their own funds to match federal dollars. In FY 2011, the federal work-study program provided \$978.5 million in aid, which was leveraged by schools to award over \$1.1 billion.

Loans

Unlike grants, loans are liabilities accumulated by students to fund their own education. While grants can be thought of as an intergenerational transfer in the sense that current taxpayers or private foundations and charities are subsidizing the current student's education, loans can be thought of as a generation financing its own education through pledged future earnings. Loans have to be paid back after graduation, with federal loan repayments starting six to nine months after graduation. Federal student loans can be discharged, cancelled, or forgiven in certain cases (e.g., teaching in a low-income school, total or permanent disability, or working specific public service jobs) but generally not through bankruptcy. Federal student loans are usually repaid over a ten-year period, but alternative repayment plans and default protections (i.e., forbearance and deferment) are also available. The Administration has also significantly expanded income-based repayment (IBR), which links student loan payments to income, as we later discuss in more detail.

1. Stafford

Stafford loans make up the majority of federal student loans. Currently, they are made by the U.S. government directly to students. Annual loan limits vary depending on how long a student has been enrolled. A first-year dependent student can borrow up to \$5,500 with no more than \$3,500 subsidized, while a dependent student in the third year of college can borrow up to \$7,500, of which up to \$5,500 can be subsidized (subsequently discussed). Stafford loans have an automatic one percent loan fee and a six-month grace period after graduation. Dependent undergraduates can borrow up to a total of \$31,000 in Stafford loans, of which \$23,000 may be subsidized.⁵⁰

⁴⁹ For the next five years (through 2017-2018), the maximum Pell grant will increase automatically with inflation as a result of legislation passed in 2010.

⁵⁰ Independent undergraduate students can borrow an additional \$4,000 in unsubsidized Stafford loans in each of the first and second years and an additional \$5,000 each year after that. The aggregate Stafford maximum for independent students is \$57,500.

Stafford loans may either be subsidized and unsubsidized. Subsidized loans are means-tested, and the federal government pays the interest while the student is in school. The interest rate on subsidized Stafford loans is currently fixed at 3.4 percent, but is scheduled to increase to 6.8 percent in academic year 2013-2014. For unsubsidized Stafford loans, the interest rate is fixed at 6.8 percent, and the student is responsible for any interest that accrues during enrollment (though the student does not have to pay interest while enrolled). Both subsidized and unsubsidized Stafford loans are available to students regardless of credit history. The Stafford loan program distributed approximately \$90 billion in FY 2011; subsidized Stafford loans accounted for an estimated \$41.8 billion (46 percent) while the remaining \$48.1 billion (54 percent) were unsubsidized loans.

2. *PLUS*

Parent PLUS loans are taken out by the parents of dependent students, who must submit an application separate from the FAFSA and a credit check. Graduate students are eligible for Grad PLUS loans. These loans are usually used when a student has reached the maximum for Stafford loans, especially for graduate education. PLUS loans begin accruing interest at a fixed rate of 7.9 percent as soon as the first loan disbursement occurs.

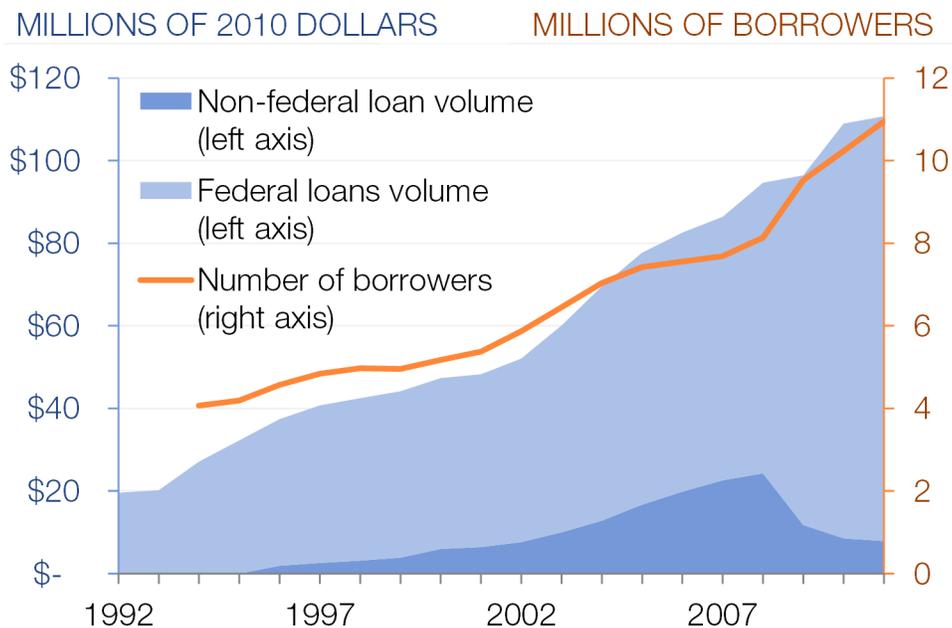
3. *Perkins*

Perkins loans are campus-based loans with a fixed interest rate of 5 percent (compared to 6.8 percent for unsubsidized Stafford loans) and no loan fee. Undergraduates can borrow up to \$5,500 a year, up to a lifetime total of \$27,500. Graduate students can receive up to \$8,000 per year, with a cumulative cap of \$60,000. While Perkins loans have more generous terms than Stafford loans, schools have access to a limited revolving pool of funds to make Perkins loans, and the federal government no longer provides additional funds for these pools. As a result, the Perkins program is significantly smaller than the Stafford program; approximately \$971 million in loans were given through the Perkins program in 2011.

Student Loans In Aggregate

In the second quarter of 2012, U.S. households owed an estimated \$914 billion in federal student loans, making it the second largest component of household debt.⁵¹ While larger than credit card debt (\$672 billion) and auto loans (\$750 billion), federal education debt is relatively small, only about one-ninth, compared to the size of mortgage debt (\$8.1 trillion). The growth in aggregate student debt is driven by increases in the total number of individuals enrolled in college as well as increases in the percentage of students who borrow and the amount they take out. As we have discussed elsewhere in this report, financing college education is an investment: college graduates earn more and have a lower unemployment rate than those with only a high school diploma. In the United States, the average increase in lifetime earnings for an additional year of education is 7 to 10 percent.⁵² The college wage premium is currently at its highest point since at least the mid-1960s. As with all borrowing and investment decisions, however, students and their families should carefully consider and understand the financial commitment they are making. Federal loan programs have per-year and lifetime borrowing limits, deferral options, and income-based repayment contingencies that distinguish these loans from other types of lending.

Figure 15: Loan Volumes, By Source



Notes: From Figure 1 of *Trends in Student Aid 2012*. Over 80 percent of “non-federal” loans are private loans; the remaining are state or institutional loans. Direct loans started in the 1994-1995 school year. Estimates of non-federal loans begin in 1996.

⁵¹ Federal Reserve Bank of New York, *Quarterly Report on Household Debt and Credit*, August 2012.

⁵² Card (1999) discusses estimates of the returns to education.

Student Loans In Aggregate, Continued

Figure 15 shows that total loan originations increased between 1992 and 2011, growing at approximately 8 percent per year. The average growth rate of enrollment was about 1.5 percent per year between 1992 and 2006 but increased to 4.7 percent per year during the recession. The volume of federal loans grew during the financial crisis, even as the private securitization market collapsed, in part due to the increase in enrollment.

The financial crisis also affected how families pay for college. Declines in financial and housing wealth limited the ability of parents to draw on their savings or other forms of borrowing, such as home equity, and unemployment lowered family incomes. Some families, who could have paid for higher education out of income or savings prior to the recession, now rely on student loans instead. Together, these cyclical and policy changes caused federal student loans to grow as a substitute for other lending, even as overall student loan originations continued to grow.

Tax-Based Incentives

Tax-based incentives for higher education have become an increasingly important component of the overall financial aid landscape. An estimated \$14.8 billion in tax-based financial aid was given in the 2010-2011 academic year, almost double the amount from just five years ago.⁵³ Unlike grants and loans, education credits and deductions are received after taxes are filed, not when schooling expenses are due. For brevity, we focus on the largest educational tax benefits, the Hope tax credit and the American Opportunity Tax Credit (AOTC). Other forms of tax-based education incentives include tax-favored educational savings accounts (ESAs), Section 529 plans, and the tuition and fees deduction, but are less progressive than the AOTC.⁵⁴

Introduced in 1997, the Hope tax credit is a nonrefundable credit that provides up to \$1,800 per year for families that spend at least \$2,400 on college-related expenses. The Hope credit is limited to only the first two years of college and students must be enrolled at least half-time. The adjusted gross income (AGI) limit for Hope is \$60,000 (\$100,000 for couples filing jointly).

As part of the Recovery Act, the Hope credit was replaced with the more generous AOTC. The AOTC returns more money (up to \$2,500 for the first \$4,000 of educational expenses), has higher income limits (\$80,000 for individuals, \$180,000 for couples), is available for four years of college, and is partially refundable (up to \$1,000). The higher income eligibility thresholds make the AOTC available to low- and middle-income families who would not otherwise benefit from a tax credit. The AOTC's refundability is particularly valuable because it often allows lower-income students to receive a benefit they might not get under the Hope credit, which is not refundable.

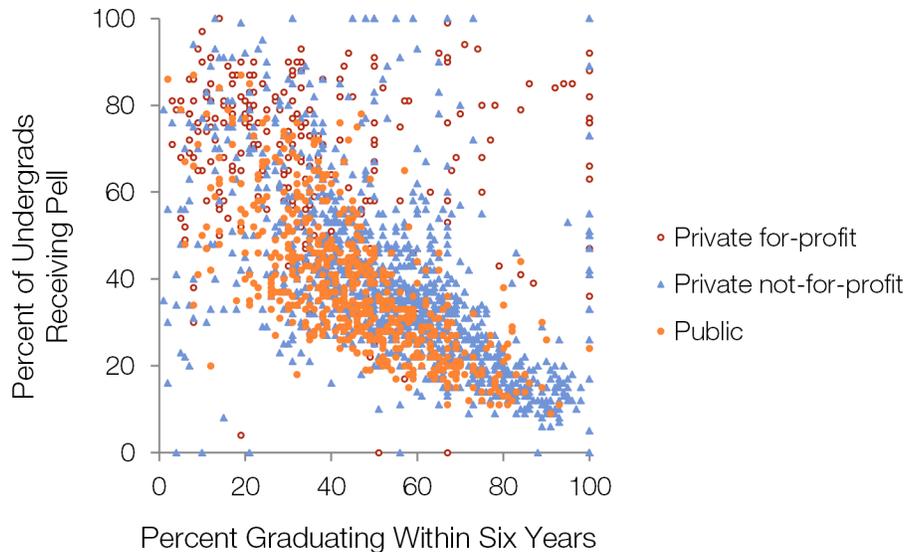
⁵³ Baum & Payea (2012).

⁵⁴ Section 529 plans are covered in detail in Treasury's 2009 report, "An Analysis of Section 529 College Savings and Prepaid Tuition Plans."

Graduation Rates and Pell Reciprocity

Figure 16 shows that among public and private non-profit schools, those that tend to have high graduation rates have fewer Pell grant recipients. Indeed, the most selective schools have few low-income students: at the most selective universities in the United States, 74 percent of students come from the top income quartile; only 3 percent come from the bottom quartile.⁵⁵

Figure 16: Pell Reciprocity Versus Graduation Rates At Four-Year Schools, 2009-2010



Notes: From IPEDS. Percentage of students receiving Pell grants only includes first-time, full-time undergraduates.

A number of explanations for this correlation are possible. Lower-income students might not be admitted to the most expensive and selective schools, or they may not accept (or apply for) admission for financial or other reasons. Regardless of the driving cause, these data are primarily useful because they indicate that lower-income students tend to attend schools with lower graduation rates. While graduation rates are not the only measure of school quality, they measure how many students complete their course of study, which is in turn associated with higher earnings post-graduation. This reinforces the notion that lower-income students have less access than higher-income students to receiving and completing a high-quality education.

⁵⁵ Carnevale & Rose (2004).

The AOTC was recently extended through 2012 and the President's 2013 Budget proposed that the AOTC permanently replace the Hope Credit, which is scheduled to return after the expiration of the AOTC.

In the 2011 tax year, approximately 9 million tax returns claimed the AOTC, with an average claim of \$1,900. The total amount claimed was \$18.2 billion.⁵⁶ This benefit was claimed by low- and middle-income households alike, with low-income households benefiting in particular from the partial refundability of the credit. In 2009, about one-quarter of the benefit went to households with annual incomes under \$30,000, and about half the benefit went to households with income between \$30,000 and \$100,000. The refundable portion of the AOTC almost exclusively benefited households at the lower end of the income distribution, with approximately 89 percent of the benefit going to households with under \$50,000 in income.⁵⁷

Focus on: President Obama's Higher Education Policies

Pell Grant Expansion

As part of the American Recovery and Reinvestment Act (ARRA), the maximum Pell grant increased from \$4,731 in 2008 to \$5,550 in 2010. In the 2010-2011 school year, the Pell program awarded an estimated \$35.6 billion to 9.3 million students, nearly half of all undergraduates. This is a significant increase in program participation and support from 2007-2008, when the Pell program awarded \$14.7 billion in Pell grants to approximately 5.5 million students.

AOTC Extension

ARRA also replaced the Hope Credit with the more generous AOTC. The AOTC returns more money each year, is available for four years instead of just two years, and is available to a broader range of families due to its partial refundability and higher income limits. The AOTC was recently extended through 2012, and the President's 2013 Budget proposes that the AOTC permanently replace the Hope Credit, which is scheduled to return after the expiration of the AOTC.

Subsidized Stafford Loan Rate Freeze

The 3.4 percent interest rate on subsidized Stafford loans was extended for another year as part of the Moving Ahead for Progress in the 21st Century Act of 2012 that President Obama advocated and signed. Under previous law, the rate would have risen to 6.8 percent.

⁵⁶ U.S. Department of Treasury, Office of Tax Analysis.

⁵⁷ U.S. Department of Treasury, Office of Tax Analysis.

Income-Based Repayment

Starting in 2009, student borrowers could opt for the “income-based repayment” (IBR) plan. IBR allows student loan payments to adjust to the borrower’s economic circumstances. Under current law, IBR caps monthly student loan payments at 15 percent of discretionary income, with any remaining balance forgiven after 25 years in the program. As part of the 2010 Health Care and Education Reconciliation Act (HCERA), IBR will become more generous for new borrowers starting in 2014, with a lower maximum on payments (10 percent instead of 15 percent) and forgiveness after 20 years (instead of 25 years). In Fall 2011, the Administration announced its new “Pay as You Earn” program that offers similar more generous benefits starting in late 2012.

FAFSA Modifications

Under President Obama, ED and the IRS have made significant progress in simplifying the FAFSA. Over 90 percent of students now fill out their FAFSA via the “FAFSA on the Web”; the online FAFSA features improved “skip logic,” which automatically skips questions that are not relevant to the current respondent.

The Department, working with the IRS, has also eased the application form by allowing applicants to import their tax data directly into the FAFSA. Pre-populating data fields minimizes the number of errors and the amount of time it takes to complete the form.

In addition, the Department of Education’s FAFSA Completion Pilot experiments with providing districts and schools with student level FAFSA completion data, so they can target services toward students that have yet to finish the form. Such changes have helped in decreasing the average time spent filing the online FAFSA from about an hour in 2008 to approximately 24 minutes today.

Increased Transparency and Information

The Department of Education has also undertaken several efforts to provide better information and increase transparency around higher education costs and financial aid. In July 2012, the Department launched StudentAid.gov, a site that consolidated several Department websites and provides an entry point for students and their families to access federal student aid information, apply for federal aid, repay student loans, and navigate the college decision-making process. This release was coupled with a new interactive loan counseling tool and a student debt collection assistant, developed in partnership with the Consumer Financial Protection Bureau (CFPB), designed to help borrowers who have fallen behind on their federal or private student loan payments. In July 2012, ED and CFPB unveiled a model financial aid award letter—also known as the Shopping Sheet—to give students and families a standardized form to help students better understand the amount of grants and scholarships they would receive from a given institution, and the amount of loans an institution recommends a student take out to cover out-of-pocket costs (see Figure 17). While the Shopping Sheet is not mandatory, this standard format should be considered a best practice in helping students to compare costs across different colleges.

Figure 17: Sample Shopping Sheet



University of the United States (UUS)

Student Name, Identifier

MM / DD / YYYY

Costs in the 2013-14 year

Estimated Cost of Attendance		\$ X,XXX / yr
Tuition and fees	\$ X,XXX	
Housing and meals	X,XXX	
Books and supplies	X,XXX	
Transportation	X,XXX	
Other educational costs	X,XXX	

Grants and scholarships to pay for college

Total Grants and Scholarships (*Gift* Aid; no repayment needed)		\$ X,XXX / yr
Grants from your school	\$ X,XXX	
Federal Pell Grant	X,XXX	
Grants from your state	X,XXX	
Other scholarships you can use	X,XXX	

What will you pay for college

Net Costs		\$ X,XXX / yr
<small>(Cost of attendance minus total grants and scholarships)</small>		

Options to pay net costs

Work options

Work-Study (Federal, state, or institutional)	\$ X,XXX
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Loan options*

Federal Perkins Loans	\$ X,XXX
Federal Direct Subsidized Loan	X,XXX
Federal Direct Unsubsidized Loan	X,XXX

*Recommended amounts shown here. You may be eligible for a different amount. Contact your financial aid office.

Other options

Family Contribution		\$ X,XXX / yr
<small>(As calculated by the institution using information reported on the FAFSA or to your institution.)</small>		
<ul style="list-style-type: none"> • Payment plan offered by the institution • Parent PLUS Loan 	<ul style="list-style-type: none"> • Military and/or National Service benefits • Non-Federal private education loan 	

Customized information from UUS

Graduation Rate

Percentage of full-time students who graduate within 6 years

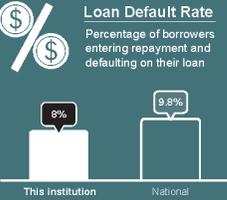


71%

LOW	MEDIUM	HIGH
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Loan Default Rate

Percentage of borrowers entering repayment and defaulting on their loan



8% (This institution) vs 8.8% (National)

Median Borrowing

Students at UUS typically borrow \$X,XXX in Federal loans for their undergraduate study. The Federal loan payment over 10 years for this amount is approximately \$X,XXX per month. Your borrowing may be different.



Repaying your loans

To learn about loan repayment choices and work out your Federal Loan monthly payment, go to: <http://studentaid.ed.gov/repay-loans/understand/plans>

For more information and next steps:

University of the United States (UUS)
Financial Aid Office
 123 Main Street
 Anytown, ST 12345
 Telephone: (123) 456-7890
 E-mail: financialaid@uus.edu

College Scorecard

In June of 2012, the Administration announced the College Scorecard to facilitate comparisons of degree-granting institutions along key measures of affordability and value. The Scorecard will display information about an institution's net price, graduation rates, student loan default rates, student loan debt, and potential earnings compared with a predefined group of institutions. The final version of the Scorecard will be added to the Department's College Affordability and Transparency Center website.

Expansion of Perkins and Other Campus-Based Aid

The formula that allocates federal appropriations for campus-based programs to individual schools explicitly provides more funds to institutions that had larger allocations in the past (see Appendix 2 for details). The Administration has proposed modifying this formula to direct funds toward institutions that succeed in serving low-income students well, keeping costs down, and providing good value. As part of these changes, Perkins loans would be expanded from the current \$1 billion to \$8.5 billion.

Perkins loans, from origination and disbursement to repayment and collection, are currently handled by the institution. The Administration proposes creating a Perkins Direct loan, where the loans would be handled by the Department of Education, but loan allocation left to the schools. This would expand the number of schools that can participate in the Perkins program since they would no longer bear the overhead cost of administering Perkins loans and there would be more available loan volume.

In addition, the Administration proposed a \$150 million increase for the Federal Work-Study program. This increase would help to double the number of work-study jobs available over the next five years.

The Administration's FY 2013 Budget also includes \$1 billion for Race to the Top: College Affordability and Completion. This program would provide competitive grants to states in order to improve their colleges' affordability, quality, and efficiency.

VI. Conclusion

Historically, society has provided significant support to younger people through the widespread availability of affordable public education. Over the past several decades, the extent of this support has changed in a fundamental way. States and local governments have significantly reduced aid to public institutions, which serve the vast majority of students. The federal government has recently increased direct assistance through Pell grants and tax credits. However, this assistance phases out quickly as incomes rise. As a result, many more students and families pay for more of their own education. Many are doing so by increasing their use of student loans.

The federal government is the largest provider of financial aid for college students and distributes aid through four different mechanisms: grants, loans, federal work-study, and tax-based aid. The two largest are the Stafford loan program, which provides low-interest loans to students, and the means-tested Pell grant program. The past two decades also saw the emergence of tax-based educational incentives, including the recently-introduced AOTC. Total financial aid has increased since the 1990s while state funding for public institutions of higher education has fallen greatly as a share of college and university revenue in the late 1980s to below 40 percent today, and state funding per student has declined sharply.

The movement from broadly available public higher education toward a more privately financed system is a facet of a changing intergenerational compact. Previous generations of students attended colleges supported by state funds, which were funded by broad-based taxes on older generations. Now, students and their families increasingly pay their own way, given the increasingly common view that education is a private investment, rather than a public good. While this shift is occurring, the United States' postsecondary attainment rate has largely stagnated, falling behind other countries that continue to improve. The United States has among the highest percentage of 55-64 year olds with a college degree across the 34 OECD countries (40 percent). However, among younger adults (25-34 year olds), the United States is ranked 16th in postsecondary education with an attainment rate of 43 percent.⁵⁸

Individuals may not be able to finance this high-return investment in higher education on their own, and the economy-wide benefits of higher education suggest that a purely private financing market will lead to under-investment in education.⁵⁹ Thus, there is important scope for the role of government in higher education. As budgets at all levels of government are likely to remain under pressure, policy makers will continue to face tradeoffs between education and other public priorities, and it is crucial that we all remain well-informed about the impact of higher education for individuals and society at large.

⁵⁸ OECD (2011).

⁵⁹ Rosen (2002).

References

- Acemoglu, Daron & Joshua Angrist (2000). How Large are Human-Capital Externalities? Evidence from Compulsory Schooling Laws. *NBER Macroeconomics Annual*, Vol. 15: 9-59.
- Acemoglu, Daron & David Autor (2010). Skills, Tasks and Technologies: Implications for Employment and Earnings. In Ashenfelter & Card (eds.), *Handbook of Labor Economics Volume 4*, Amsterdam: Elsevier.
- American Institutes for Research, Delta Cost Project. <http://www.deltacostproject.org/index.asp>
- Autor, David (2010). The Polarization of Job Opportunities in the U.S. Labor Market. Center for American Progress and the Hamilton Project.
- Autor, David H., Lawrence F. Katz, & Melissa S. Kearney (2008). Trends in U.S. Wage Inequality: Revising the Revisionists. *Review of Economics and Statistics*, 90(2): 300-323.
- Bailey, Martha J. & Susan M. Dynarski (2011). Gains and Gaps: Changing Inequality in U.S. College Entry and Completion. NBER WP #17633. December.
- Baum, Sandy & Jennifer Ma (2012). *Trends in College Pricing 2012*. The College Board.
- Baum, Sandy, Jennifer Ma, & Kathleen Payea (2010). *Education Pays 2010*. The College Board.
- Baum, Sandy & Kathleen Payea (2012). *Trends in Student Aid 2012*. The College Board.
- Baum, Sandy & Patricia Steele (2010). Who Borrows Most? Bachelor's Degree Recipients with High Levels of Student Debt. <http://advocacy.collegeboard.org/sites/default/files/Trends-Who-Borrows-Most-Brief.pdf>
- Berman, Eli, John Bound, & Zvi Griliches (1994). Changes in the Demand for Skilled Labor Within U.S. Manufacturing: Evidence from the Annual Survey of Manufactures. *Quarterly Journal of Economics*, 109(2): 367-397.
- Bound, John & Sarah Turner (2002). Going to War and Going to College: Did World War II and the G.I. Bill Increase Educational Attainment for Returning Veterans? *Journal of Labor Economics*, 20(4): 784-815.
- Card, David (1999). The Causal Effect of Education on Earnings. In Ashenfelter & Card (eds.), *Handbook of Labor Economics Volume 3*.
- Card, David & Thomas Lemieux (2001). Can Falling Supply Explain the Rising Return to College for Younger Men? A Cohort-Based Analysis. *Quarterly Journal of Economics*, 116(2): 705-746.
- Carneiro, Pedro & James Heckman (2003). Human Capital Policy. NBER WP #9495. February.
- Carnevale, Andrew P. & Stephen J. Rose (2004). Socioeconomic Status, Race/Ethnicity, and Selective College Admissions. In Richard D. Kahlenberg (ed.), *America's Untapped Resource: Low-Income Students in Higher Education*. New York: Century Foundation Press.
- Ciccone, Antonio & Giovanni Peri (2006). Identifying Human-Capital Externalities: Theory with Applications. *Review of Economic Studies*, 73(2): 381-412.
- Congressional Budget Office (2009). H.R. 3221 Student Aid and Fiscal Responsibility Act of 2009. <http://www.cbo.gov/ftpdocs/104xx/doc10479/hr3221.pdf>
- Deming, David J., Claudia Goldin, & Lawrence F. Katz (2012). The For-Profit Postsecondary School Sector: Nimble Critters or Agile Predators? *Journal of Economic Perspectives*, 26(1): 139-164.
- Desrochers, Donna M. & Jane V. Wellman (2011). *Trends in College Spending 1999-2009*. http://www.deltacostproject.org/resources/pdf/Trends2011_Final_090711.pdf

- Federal Reserve Bank of New York. Quarterly Report on Household Debt and Credit, February 2012.
- Goldin, Claudia & Lawrence F. Katz (1999). Human Capital and Social Capital: The Rise of Secondary Schooling in America, 1910-1940. *Journal of Interdisciplinary History* 29(4): 683-723.
- Goldin, Claudia & Lawrence Katz (2008). *The Race between Education and Technology*. Cambridge: Harvard University Press.
- Isaacs, Julia B., Isabel V. Sawhill, & Ron Haskins (2011). *Getting Ahead or Losing Ground: Economic Mobility in America*. Brookings Institution.
- James, Jonathan (2012). The College Wage Premium. Federal Reserve Bank of Cleveland. <http://www.clevelandfed.org/research/commentary/2012/2012-10.cfm>
- Jorgenson, Dale W., Mun S. Ho, & Kevin J. Stiroh (2005). *Productivity: Information Technology and the American Growth Resurgence (Volume 3)*. Cambridge: MIT Press.
- Katz, Lawrence F. & Kevin M. Murphy (1992). Changes in Relative Wages, 1963-1987: Supply and Demand Factors. *Quarterly Journal of Economics*, 107(1): 35-78.
- Lee, David (1999). Wage Inequality in the U.S. During the 1980s: Rising Dispersion or Falling Minimum Wage. *Quarterly Journal of Economics*, 114(4): 941-1024.
- Moretti, Enrico (2004). Estimating the Social Returns to Higher Education: Evidence from Longitudinal and Repeated Cross-Sectional Data. *Journal of Econometrics*, 121(1): 175-212.
- OECD (2011). *Education at a Glance 2011: OECD Indicators*, OECD Publishing. <http://dx.doi.org/10.1787/eag-2011-en>.
- Poterba, James M. (1997). Demographic structure and the political economy of public education. *Journal of Policy Analysis and Management* 16(1): 48-66.
- Rosen, Harvey S. (2002). *Public Finance, Sixth Edition*. Boston: McGraw-Hill/Irwin.
- Sawhill, Isabel V., Scott Winship, & Kerry Searle Grannis (2012). *Pathways to the Middle Class: Balancing Personal and Public Responsibilities*. Brookings Institution.
- Smole, David P. (2005). The Campus-Based Financial Aid Programs: A Review and Analysis of the Allocation of Funds to Institutions and the Distribution of Aid to Students. Congressional Research Service.
- Snyder, Thomas D. & Sally A. Dillow (2011). Digest of Education Statistics 2010 (NCES 2011-015). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Snyder, Thomas D. & Sally A. Dillow (2012). Digest of Education Statistics 2011 (NCES 2012-001). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Turner, Lesley J. (2011). The Incidence of Student Financial Aid: Evidence from the Pell Grant Program. Columbia University mimeo.
- U.S. Census Bureau (1990, 2010a). Intercensal Estimates of the United States Resident Population by Age and Sex.
- U.S. Census Bureau (2010b). PINC-04. Educational Attainment—People 18 Years Old and Over, by Total Money Earnings in 2009, Work Experience in 2009 Age, Race, Hispanic Origin, and Sex. http://www.census.gov/hhes/www/cpstables/032010/perinc/new04_010.htm
- U.S. Census Bureau. Educational Attainment in the United States: 2011 – Detailed Tables. <http://www.census.gov/hhes/socdemo/education/data/cps/2011/tables.html>

- U.S. Department of Education (2010). Profile of Undergraduate Students: Trends From Selected Years, 1995-96 to 2007-08. <http://nces.ed.gov/pubs2010/2010220.pdf>
- U.S. Department of Education, National Center for Education Statistics, Beginning Postsecondary Students Longitudinal Survey, 2004-2009 (BPS: 04/09).
- U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS).
- U.S. Department of Education (various years), National Center for Education Statistics, National Postsecondary Student Aid Survey (NPSAS).
- U.S. Department of Labor, Bureau of Labor Statistics (2012). Education Pays. http://www.bls.gov/emp/ep_chart_001.htm
- U.S. Department of Treasury, Office of Tax Analysis. The American Opportunity Tax Credit: Making College More Affordable for Students and Their Families. Available at <http://www.treasury.gov/press-center/press-releases/Documents/012011Tax%20Facts%20for%20American%20Opportunity%20Tax%20Credit%20January%202011%20final.pdf>.

VII. Appendices

Appendix 1 Expected Family Contribution

The Expected Family Contribution (EFC) is the Department of Education's (ED) estimate of what the student's family is expected to pay for a year of college. The EFC formula feeds into financial aid allocation because "unmet financial need" is the school's cost of attendance minus EFC, and it is the unmet need that determines which and how much financial aid a student receives. The federal EFC, as calculated using the Federal Methodology, does not vary by school, but schools can have their own formulas for allocating institution-level financial aid.

There are three main components to the EFC formula:

1. Student dependency status, which differs from IRS dependency. By default, ED assumes that undergraduates are dependent unless they are 24 or older, served in the military, are married or have children, or are a ward of the court. This means that most students must get their parent's financial information for the FAFSA (and that the parents are assumed to contribute to college) regardless of student's actual financial independence. For dependent students, there is a separate EFC for the parents and the student, which are combined for the final EFC.
2. Income, net of particular allowances allowed under the EFC formula. The EFC "available income" nets out taxes (federal income tax paid, a fixed percent based on state of residence, and a fixed percent for Social Security) and includes an income protection allowance that varies with family size and the number of college students.
3. Assets, unless the family qualifies for the "simplified" EFC. The primary residence does not count as an asset in the EFC calculation, and parents receive asset protection based on their age.

The simplified EFC does not use asset information, though asset information must be submitted on the FAFSA regardless. To qualify for the simplified formula, family AGI must be below \$50,000 and they have to either:

- Receive a means-tested federal benefit program (SSI, SNAP, school lunch, TANF);
- Be eligible to file a 1040A, 1040EZ or not file at all; or
- Have a dislocated worker.

In addition, families with AGI below \$31,000 automatically have a zero EFC.

Parent EFC is a stepwise function of "available adjusted income" (AAI), which is income plus 12 percent of assets. EFC increases with AAI at a marginal rate between 22 percent and 47 percent. The maximum rate is for those with AAI over \$29,000, though the multiple income allowances means AAI does not cleanly map onto AGI.

A (dependent) student's AAI is 50 percent of income plus 20 percent of his or her assets, but because there is no stepwise function, AAI increases student EFC one-for-one. This means that a student's income and assets increase EFC more than parent's income or assets do.

Appendix 2 Distribution of Campus-Based Aid to Schools

Unlike Pell grants and Stafford loans that allocate funds to individual students, the three campus-based programs (work-study, Perkins loans, and FSEOGs) distribute federal funds to individual institutions, who in turn allocate awards to students. Campus-based funds must be matched by the school, usually 3-to-1. To provide additional flexibility, schools can move their allocated funds across the three programs; up to 25 percent of work-study funds can be moved to FSEOG or Perkins, and up to 25 percent of FSEOG can be moved to federal work-study.

Each of the three programs has slightly different allocation procedures, but they all share the same basic two-step framework.⁶⁰ The first stage of allocation is the “base guarantee,” which is an institution-specific amount based on its historical allocation. For schools that participated in the program in the past, the base guarantee is its FY1999 allocation, plus its proportional increase for FY1999. For schools that are recent participants and do not have a historical base guarantee, they get \$5,000 or 90 percent of per-student allocation at similar schools, whichever is bigger.⁶¹

The second stage is the “fair share” calculation, which is the school’s share of total financial need times the total appropriation.

$$fair_i = \frac{need_i \sum need}{\sum need} \times approp$$

“Institutional need” is, in effect, a composite of individual student need. Since student need is cost of attendance (COA) minus EFC, the school’s posted price affects how much “need” they have in the national aggregate, and hence their “fair share” of campus-based funds. The definition of institutional need is what varies across the three campus-based programs.

Schools whose “fair share” is bigger than the “base guarantee” have a “shortfall” and receive additional funds in proportion to their share of total calculated shortfall. The overall formula is:

$$alloc_i = base_i + \frac{fair_i - base_i}{\sum (fair - base)} \times [approp - \sum base]$$

While the formula allows schools to be adjusted in either direction, appropriations are almost always wholly consumed by base guarantees, leaving very little room for institutions to actually gain (or lose) allocation relative to other schools. Schools that do not use all of their campus-based appropriation are required to return them to the Department of Education, and are penalized in the following year’s formula.

The allocation formulas for campus-based programs have been criticized for disproportionately favoring schools who have been long-time participants in the program. It allows these schools to offer larger aid packages, or aid to more students, due to large base guarantees. The Administration has proposed changing the formula to favor schools that keep tuition low, provide good value, and serve low-income students, though details are still being developed.

⁶⁰ Smole (2005).

⁶¹ In the original 1970s formulation, the “conditional guarantee,” was included to prevent schools from suffering sharp drops in funding, with the intention that it would be phased out so that eventually all funds were allocated via the fair share formula. Congress, in its 1980 reauthorization of the Higher Education Act, renamed it to the “base guarantee” and removed the phase-out.

Allocation of Perkins Loans

Perkins loans have an additional detail compared to the other two campus-based programs. The federal funds for Perkins loans are divided up according to its allocation formula, but each school maintains a revolving fund of such “federal capital contributions.” A school originates Perkins loans from its revolving fund, and any interest collected is put back into the school’s revolving account to be used in future loans.

As of FY2005, there have been no federal capital contributions for the Perkins program; all Perkins loans made by schools since the 2005-2006 school year were from pre-existing revolving funds. By statute, the federal government will recover its share of Perkins funds at program termination, currently slated to be 2015.