



The Costs of Failure Factories in American Higher Education

By Mark Schneider

Erratum: What follows is a new version of the October 2008 *Education Outlook*. The figures, tables, and conclusions have been corrected and expanded to correct an error in the original database.

American higher education absorbs a larger share of GDP than that of other countries, but it has not produced a particularly high proportion of college graduates. College graduation rates are actually worse than the very low benchmark of high school graduation rates, but higher education institutions are not held accountable. The costs of this abysmal performance to students and taxpayers are high.

Few facts about the American education system are agreed upon, but almost everyone agrees that our nationwide high school graduation rates are abysmally low. According to the National Center for Education Statistics (NCES), among public high school students, the average freshman graduation rate in the 2003–2004 school year was 75 percent. Using slightly different measures, numerous scholars have found graduation rates hovering around 70 percent.¹ These data, coupled with low performance on international assessments like the Program for International Student Assessment, confirm that American high schools are, to say the least, not world-class.

In contrast, American higher education is held in high regard around the world. In one of the best known international comparisons, the Institute of

Mark Schneider (professormarkschneider@gmail.com) is vice president for new educational initiatives at the American Institutes for Research and a distinguished professor of political science at the State University of New York, Stony Brook. From 2005 to 2008, he served as commissioner of education statistics at the U.S. Department of Education.

Higher Education at Shanghai Jiao Tong University reports that in 2007, seventeen of the top twenty universities and more than half of the top one hundred universities in the world were in the United States.² America also leads the world in its investment in higher education. According to the Organisation for Economic Co-operation and Development (OECD), in 2003, the most recent year for which data are available, the United States spent 2.9 percent of its GDP on postsecondary institutions. This was far higher than the OECD average of 1.4 percent and, indeed, higher than any other country for which data were reported.³

Despite the dominance of American universities in the world “league tables” and our high level of expenditure, all is not well. A first indication is in the number of American adults who have completed some postsecondary education, compared to our international competitors.

In the United States, 39 percent of adults between the ages of twenty-five and thirty-nine have attained a postsecondary degree (as defined by the OECD), placing us eighth among OECD

countries and tenth when the four non-OECD “partner” economies are included.⁴ This level of American postsecondary attainment shows no sign of improving across generations. In 2003, for example, around 39 percent of Americans aged twenty-five to thirty-four had attained a postsecondary degree—but this was the same attainment rate as the cohorts of Americans aged thirty-five to forty-four and a decline from those aged forty-five to fifty-four. By contrast, in seventeen other countries, the postsecondary attainment rate among twenty-five- to thirty-four-year-olds was at least 5 percent higher than thirty-five- to forty-four-year-olds; in thirteen countries, the attainment rates of twenty-five- to thirty-four-year-olds was at least five percentage points higher than forty-five- to fifty-four-year-olds.

While we spend more than other countries, and while we have a disproportionate number of the world’s greatest universities, these international figures reveal a soft underbelly to the U.S. system of postsecondary education. The extent to which American higher education as a whole is failing to live up to its reputation as the world’s best is demonstrated further by looking at college graduation rates. In this analysis, we begin with a simple strategy: using high school graduation rates as a benchmark against which to compare college graduation rates. If there is virtually universal agreement that American high schools are failing, how do our colleges and universities measure up against such a low benchmark?

Clearly, there are differences between graduating from high school and graduating from college. States have mandatory attendance rules that affect most high school students. No Child Left Behind (NCLB) made increasing high school graduation rates a primary objective and required states and schools to monitor and improve them, or lose federal funding. In contrast, college attendance is voluntary, and there is no legal or consistent policy pressure on colleges and universities to improve graduation rates.

Despite these differences, college completion is important to individuals and to society. In an era of globalization, policymakers around the world are focused on the creation of a highly skilled workforce—and postsecondary education is seen as a key to economic success in an increasingly competitive world. Furthermore, the vast majority of American high school students express a desire to earn a college degree, and the payoff for completing college has been increasing.

It is well known that the wage differential between high school graduates and dropouts has increased since

the early 1970s—the real wages of dropouts have declined while those of higher-skilled workers have risen sharply.⁵ But there is also a substantial payoff for college graduation—in fact, the payoff for completing postsecondary education is even greater than for completing high school.⁶

Thus, while we should keep in mind the differences between completing high school and completing postsecondary schooling, there are strong incentives for students and society at large to have high completion rates at both levels.

While American high schools graduate about three-fourths of their students in four years, American colleges graduate only about half of their students in six.

Some Preliminaries: Measuring Graduation Rates

Some background information is needed before we proceed to any comparisons of graduation rates. First, the comparisons reported here are based on information collected by NCES and are structured by the way in which NCES reports data. All postsecondary institutions that receive Title IV funding from the federal government report their graduation data. In 2006, the most recent year for which we have postsecondary completion data, there were 2,012 Title IV institutions that enrolled undergraduates with the intention of granting bachelor’s degrees—of these, 1,796 reported overall graduation rates. While postsecondary graduation rates are computed for individual institutions, high school graduation rates are reported at the district level, and variation across multiple high schools in a district is not reflected in the single measure. This is not as severe a problem as it may seem because 76 percent of school districts have only one high school and around 90 percent have only two.

Second, it should be made clear what we are measuring when we discuss graduation rates. For high school graduation rates, NCES calculates and reports several different measures. This analysis uses the Averaged Freshman Graduation Rate (AFGR) statistic.⁷ For postsecondary completions, NCES defines a bachelor’s

degree graduation rate as the ratio of students who completed a degree in 1.5 times the “normal” four-year period compared to the number of starting full-time students in a given year.⁸ The 2006 graduation rate, therefore, is the number of students who earned a degree from an institution divided by the cohort of full-time students who began at that institution in fall 2000.

Finally, the AFGR is based only on public schools (including charter schools); private schools, which tend to have somewhat higher graduation rates, are not included in the calculation. The data available for postsecondary institutions can be compared across public institutions, private nonprofit institutions, and private for-profit institutions (like the University of Phoenix). Of the Title IV institutions in this study, about 29 percent were public, about 8 percent were private for-profit, and the remaining were private nonprofit institutions.

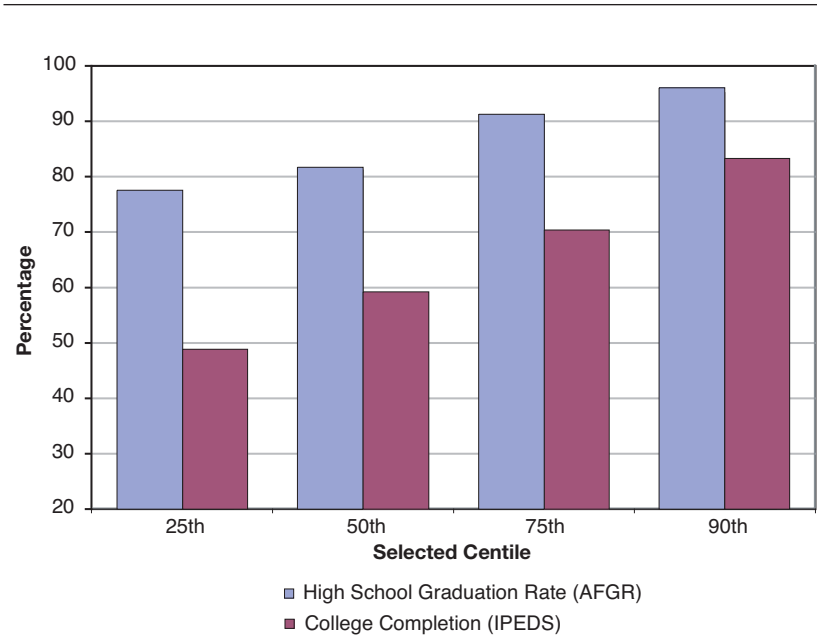
There are differences among postsecondary institutions in these different sectors. One of the most notable is the difference in size: average enrollment of American postsecondary institutions in 2000 was just over 4,000 students, with public institutions being far larger on average (around 8,600) than private nonprofits (averaging 2,055) or private for-profits (averaging 1,170). The entering cohort, not surprisingly, varies widely across institutions. The 2000 entering cohort in private for-profit institutions was on average smaller (260 students) than the entering cohort in private nonprofit institutions (384 students) or public institutions (over 1,500 students).

Comparing High School and Postsecondary Graduation Rates

With these background facts established, we can turn to the questions at hand: what are the graduation rates at our postsecondary institutions, and how do they compare to high school rates?

The answer is that the low high school graduation rates that have long been decried as a failure of America’s education system are mirrored in even lower college graduation rates. Figure 1 presents the median graduation

FIGURE 1
HIGH SCHOOL GRADUATION RATES COMPARED
TO COLLEGE GRADUATION RATES



SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, “State Nonfiscal Survey of Public Elementary/Secondary Education,” 2002–2003; and U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, 2005–2006, available at <http://nces.ed.gov/IPEDS>.

rate for high schools and colleges and universities, along with some additional information about the distribution of graduation rates reflected in performance at the twenty-fifth, seventy-fifth, and ninetieth percentiles.

At each point in the distribution, postsecondary institutions perform worse than high schools. While American high schools graduate about three-fourths of their students in four years, American colleges graduate only about half of their students in six. There are also significant differences by type of institution. Private for-profit institutions have the lowest median graduate rate (38 percent), which is almost twenty points lower than their private nonprofit counterparts and seven points lower than public institutions.

An important dimension of the debate about high school graduation rates focuses on differences by race and ethnicity. If white high school students are graduating at a mediocre rate, the graduation rates of blacks and Hispanics are even worse. These differences have sparked many studies and even more calls for high school reform. Yet there are also large gaps in postsecondary completion rates when comparing whites to blacks and Hispanics.

TABLE 1
**MEDIAN AFGR AND MEDIAN COLLEGE
 COMPLETION RATES BY RACE AND ETHNICITY**

	White	Black	Hispanic	Asian
AFGR	84	68	69	93
College Graduation Rate	54	38	44	50

As table 1 shows, the median postsecondary graduation rate for white students is just over 50 percent, while the median institutional completion rate for blacks is less than 40 percent and less than 45 percent for Hispanics.⁹ Of interest is the difference in high school and postsecondary completion rates for Asians. The median AFGR for Asians is over 90 percent, exceeding every other racial and ethnic group by a substantial margin. Yet among postsecondary institutions, the median completion rate for Asians is only 50 percent.

Figure 2 presents more information on the distribution of postsecondary and high school graduation rates by race and ethnicity. At every point in the distribution, postsecondary institutions do far worse at graduating minority students than high schools. In some cases, the

numbers are quite large. For example, among the lowest performing school districts (those at the twenty-fifth percentile), the high school graduation rate for black students is 55 percent, but for the lowest performing postsecondary institutions, it is only 20 percent. At the other end of the distribution, among the best performing school districts (those at the ninetieth percentile), the black high school graduation rate is over 90 percent; for postsecondary institutions, it is less than 80 percent. The numbers for Hispanic students are only somewhat better: at the twenty-fifth percentile, 56 percent for high school graduation, compared to 25 percent for postsecondary graduation. At the top of the distribution, school districts post a 93 percent high school graduation rate versus an 85 percent postsecondary graduation rate.

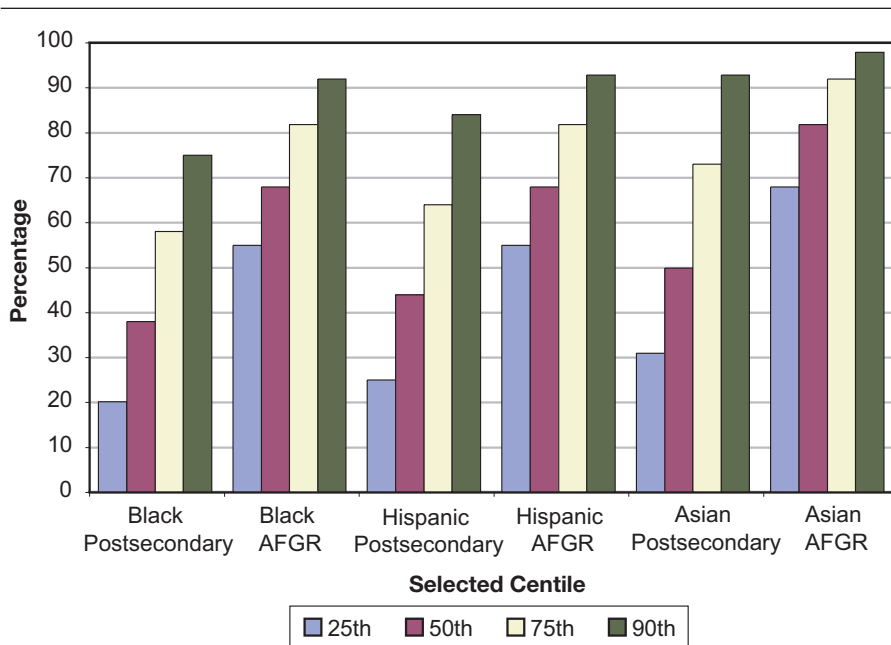
How Many Schools Have Low Graduation Rates?

There are also significant differences in college graduation rates for different racial and ethnic groups by type of institution. Figure 3 shows that black graduation rates are the lowest for each type of postsecondary institution. At private for-profit institutions, the median black graduation rate is less than 25 percent. While higher at both

public and private nonprofit institutions, the black graduation rate still hovers only around 40 percent. Hispanic, Asian, and white graduation rates at for-profit institutions are higher than the graduation rate of black students but still lower than at either public or private nonprofit institutions.

Even more disturbing is the number of institutions that graduated *not one student* within six years. As table 2 shows, there were twenty-seven postsecondary institutions that had a zero graduation rate.¹⁰ But even more striking are the figures for minority students. There were over 140 schools in which no black student completed in six years and well over 150 schools in which no Hispanic or Asian student graduated in six years. There were 95 schools with an overall

FIGURE 2
**HIGH SCHOOL VERSUS POSTSECONDARY GRADUATION RATES
 AT SELECTED PERCENTILES, BY RACE AND ETHNICITY**



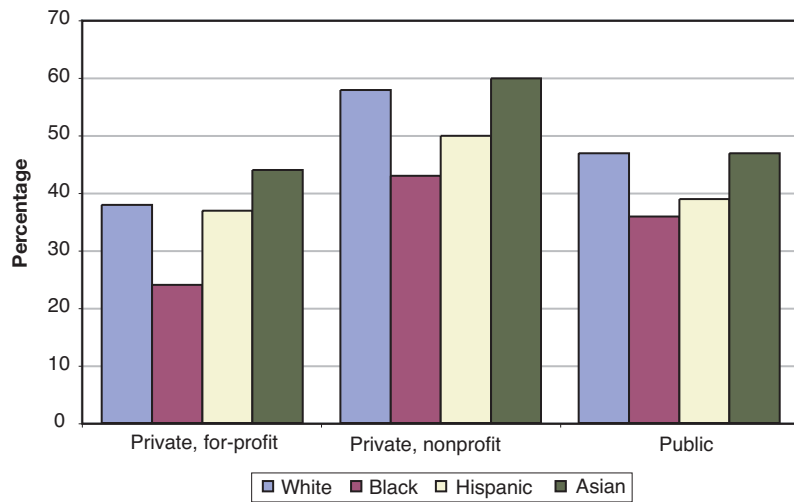
SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, 2005–2006, available at <http://nces.ed.gov/IPEDS>.

graduation rate of less than 15 percent, well over 200 schools that graduated fewer than 15 percent of their black or Hispanic students, and over 180 schools with less than that rate for Asian students. Moving up to a still low cutoff of 33 percent, almost 350 schools had overall graduation rates of less than one-third; over 600 institutions graduated less than one-third of their black students; 546 graduated less than one-third of their Hispanic students, and just short of 400 graduated less than one-third of their Asian students.¹¹

Clearly, far too many institutions are failing to graduate many (and in some cases, any) of their students. This analysis so far has been based on institutions. As noted earlier, there is wide variation in the size of American colleges and universities. Moreover, size varies systematically with type of institution: private for-profit institutions are smaller than private nonprofit ones, and these are smaller on average than public universities. Perhaps given such differences, low graduation rates do not affect large numbers of students. In the next section of this *Outlook*, we look at the percentages of students in institutions in which fewer than one-third of their peers earn a bachelor's degree within six years.¹²

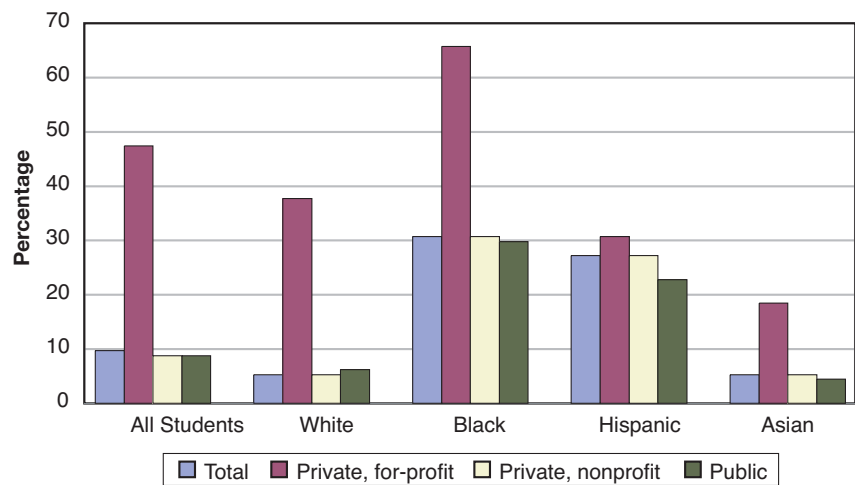
Figure 4 shows that 11 percent of all students are enrolled in

FIGURE 3
MEDIAN COLLEGE GRADUATION RATE BY RACE AND TYPE OF INSTITUTION



SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, 2005–2006, available at <http://nces.ed.gov/IPEDS>.

FIGURE 4
PERCENTAGE OF STUDENTS ENROLLED IN INSTITUTIONS WITH LESS THAN ONE-THIRD OF STUDENTS COMPLETING, BY RACE AND TYPE OF INSTITUTION



SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, 2005–2006, available at <http://nces.ed.gov/IPEDS>.

TABLE 2
NUMBER OF POSTSECONDARY INSTITUTIONS WITH LOW GRADUATION RATES

	All Students	Black	Hispanic	Asian
Zero graduation rate	27	141	168	157
Less than 15% graduation rate	95	242	223	184
Less than 33% graduation rate	346	649	546	367

TABLE 3
PAYMENTS TO FAILURE FACTORIES

	Zero graduation rate	≤ 15 percent graduation rate	≤ 33 percent graduation rate
<i>Losses to Students from Tuition and Fees</i>			
Payment to school in tuition and fees	\$3,741,633	\$158,540,655	\$882,097,348
Less 25 percent graduation from other schools	\$935,408	\$39,635,164	\$220,524,337
Adjustment for actual graduation rate	\$0	\$11,414,927	\$188,768,832
Estimated loss from tuition and fees	\$2,806,225	\$107,490,564	\$472,804,178
<i>Losses to Government through Student Grants</i>			
Federal student grants	\$550,076	\$26,196,687	\$172,493,456
State student grants	\$260,739	\$9,099,670	\$97,248,144
Less 25 percent graduation from other schools	\$202,704	\$8,824,089	\$67,435,400
Adjustment for actual graduation rate	\$0	\$2,506,041	\$56,645,736
Estimated loss from grants	\$608,112	\$23,966,226	\$145,660,464

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, 2005–2006, available at <http://nces.ed.gov/IPEDS>.

colleges or universities that graduate less than one-third of their students. The percentage varies considerably by institutional type: around one-half of all students enrolled in private for-profit institutions were in schools with less than the one-third cut point. The proportions fall to around 10 percent in both private nonprofit institutions and public universities.¹³

Figure 4 breaks down these patterns by race and ethnicity. Over 30 percent of black students are enrolled in institutions that graduated fewer than one-third of the 2000 black freshman cohort—a percentage that increases to over 60 percent in private for-profit colleges. The percentage falls steeply in private nonprofit and public schools (around 30 percent). Compared to black students, a smaller proportion of Hispanic students are enrolled in low graduation schools—but still around one-third of them are exposed. With the exception of a high exposure rate in for-profit institutions, small proportions of Asian students are enrolled in low graduation rate schools.

How Much Do These “Failure Factories” Cost?

With some simple assumptions, we can begin to calculate how much institutions with such low graduation rates cost the students in tuition and fees and the federal government in student grants.

Using federal data, we can identify the number of students in the incoming classes of postsecondary institutions

categorized at the three levels of graduation rates used above: zero, less than or equal to 15 percent, and less than or equal to 33 percent.

The tuition and fees reported in table 3 are the institutional averages multiplied by the number of students in each category of school classified by graduation rate. The state and federal grant totals are calculated by the number of students in each school that receive government grants multiplied by the average size of the grants and then multiplied by the number of schools in each category defined by graduation rate.¹⁴

Two adjustments to these estimates have to be made. If these students follow national trends, about 25 percent will transfer and graduate from another institution, so the total first-year payments are reduced by this percentage. In addition, some students do graduate from schools with nonzero graduation rates. For students in the 15 percent and below category, the average is 7 percent, and in the 33 percent and below category, the average is 21 percent. We therefore “credit” the schools for that percentage of payments.

Even after these adjustments, the results show substantial losses to students and society.¹⁵ Looking first at tuition and fees paid by students who may never graduate, these range from losses of close to \$3 million in zero graduation rate schools to over \$470 million in the institutions that graduate less than one-third of their students. The losses to government are also high, totaling around \$145 million in institutions with completion rates of less than one-third.

Conclusions

The international reputation of many “marquee” universities and the high U.S. expenditures on postsecondary education mask a simple fact: American postsecondary graduation rates are low, and the costs of these failure factories to students and the federal government are high.

Using the low high school graduation rates as a benchmark, American colleges and universities are doing even worse overall. But if high school graduation rates are not the appropriate standard, we have other evidence of a problem: the American postsecondary system, while absorbing a larger share of GDP than that of other countries, has not produced a particularly high proportion of the population with a college degree, and, in contrast to many international competitors, the nation has not expanded the proportion of young adults with a degree compared to older adults.

If the failure of American high schools to graduate no more than three-quarters of their students is enough to warrant national attention in NCLB, is not the failure of America’s postsecondary schools to graduate only half of their students worth equal attention?

This analysis does not address whether these postsecondary graduation rates are *too* low given the quality of students who complete high school and enroll in college.¹⁶ In other words, given America’s open postsecondary system, in which many institutions are effectively open admissions schools, perhaps a high failure rate is to be expected. Colleges let many students begin who do not have the skills and talent needed to graduate with the expectation that even if many fail, an open access system gives students opportunities to grow and succeed. In addition, there is some evidence that college attendance, even absent a degree, can lead to higher wages.¹⁷ For some students, the risks of attending a college at which they have a low probability of success may be worthwhile.

But it is not clear how many students enter college with information about such high failure rates. It is clearly not in a school’s interest to advertise them. In

addition, the majority of American high school students report that they want a college degree, and failing to graduate from college is inconsistent with that desire.

At minimum, the flow of information needs to be improved so that students and their families can choose colleges at which they will have a higher likelihood of success. If a school has a low overall graduation rate, a student should know this before applying. And if a college has a low graduation rate for a specific group of students based, for example, on race or ethnicity, then certainly a student from that group should have that information before enrolling.

We also need to consider seriously how to hold colleges and universities more accountable for their performance. While recognizing the differences between high school and college graduation, if the failure of American high schools to graduate no more than three-quarters of their students is enough to warrant national attention in NCLB, is not the failure of America’s postsecondary schools to graduate only half of their students worth equal attention?

In January 2008, Sallie Mae, the nation’s leading provider of student loans, announced that it would reduce loans to students at institutions with poor graduation rates in an attempt to limit exposure to risk. Since graduation is perhaps the most effective way of increasing one’s salary, which helps ensure repayment of loans, this strategy makes sense. Almost immediately following Sallie Mae’s announcement, several for-profit schools reported that their students would no longer be receiving loans.¹⁸

But that leaves a more general question: if a college has such a low graduation rate—and, in the extreme, graduates not one student after six years—should it continue to receive federal Title IV money?

Notes

1. For instance, see Jay P. Greene, “High School Graduation Rates in the United States,” Black Alliance for Educational Options, November 2001; Christopher B. Swanson and Duncan Chaplin, “Counting High School Graduates when Graduates Count: Measuring Graduation Rates Under the High Stakes of NCLB,” Urban Institute, 2003; Christopher B. Swanson, “Who Graduates? Who Doesn’t? A Statistical Portrait of Public High School Graduation, Class of 2001,” Urban Institute, 2004; and Jing Miao and Walt Haney, “High School Graduation Rates: Alternative Methods and Implications,” *Education Policy Analysis Archives* 12, no. 55 (2004).

2. Shanghai Jiao Tong University, Institute of Higher Education, "Academic Ranking of World Universities, 2007," updated August 15, 2007, available at www.arwu.org/ranking.htm (accessed October 15, 2008).

3. Organisation for Economic Co-operation and Development (OECD), *Education at a Glance, 2005*, available at www.oecd.org/document/11/0,3343,en_2649_39263238_35321099_1_1_1_1,00.html (accessed October 15, 2008).

4. OECD, *Education at a Glance, 2006*, available at <http://ocde.p4.siteinternet.com/publications/doifiles/962006061P1-A1.xls> (accessed October 15, 2008).

5. See David H. Autor, Lawrence F. Katz, and Melissa S. Kearney, "Trends in U.S. Wage Inequality: Re-Assessing the Revisionists" (working paper 11627, National Bureau of Economic Research, Cambridge, MA, 2005).

6. According to the U.S. Census Bureau, in 2006, the median earnings of a high school graduate were \$27,384, compared to \$20,506 for a person who attended high school but did not graduate. In contrast, the median earnings of a person with a bachelor's degree were over \$46,000. This has often led to the frequently cited finding that a college degree is worth \$1 million in lifetime earnings. (U.S. Census Bureau, Current Population Survey, 2007 Annual Social and Economic Supplement, available at http://pubdb3.census.gov/macro/032007/perinc/new03_001.htm [accessed October 15, 2008]; and Sandy Baum and Jennifer Ma, "Education Pays: The Benefits of Higher Education for Individuals and Society," College Board, 2007, available at www.collegeboard.com/prod_downloads/about/news_info/trends/ed_pays_2007.pdf [accessed October 15, 2008].)

7. The Averaged Freshman Graduation Rate provides an estimate of the percentage of public high school students who graduate with a regular diploma four years after starting ninth grade. The rate uses aggregate student enrollment data to estimate the size of an incoming freshman class and aggregate counts of the number of diplomas awarded four years later. The incoming freshman class size is estimated by summing the enrollment in eighth grade for one year, ninth grade for the next year, and tenth grade for the year after, and then dividing by three. The averaging is intended to account for higher grade retentions in the ninth grade. For more information, see <http://nces.ed.gov/pubs2006/dropout/06.asp>.

8. This definition is part of the Student Right to Know Act of 1990 (Public Law 101-542). This official graduation rate, as noted, is based on first-time, full-time beginning students and does not track transfer students. Both are well-known limits on the measure.

9. These data are from the U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS). More information about IPEDS is available at <http://nces.ed.gov/IPEDS/about/>.

10. Some of these students take longer than six years to graduate, and some have transferred to other schools. According to student-based survey data, about 25 percent of these students will transfer and graduate from another institution. These are rough estimates from U.S. Department of Education, National Center for Education Statistics, "1996/2001 Beginning Postsecondary Students Longitudinal Study," available at <http://nces.ed.gov/surveys/bps>.

11. Note that this includes a small number of schools with very small populations of students (in some cases one or two). Nonetheless, the students enrolled did not graduate from those institutions.

12. This cut point was chosen for illustrative purposes. While it does not reflect any official policy goal, graduating one-third of students in six years seems a fairly low hurdle.

13. In contrast to this relatively poor performance in four-year institutions, two-year for-profit institutions have higher completion rates than public community colleges—over 50 percent in for-profit private schools compared to around 25 percent for public two-year schools. Two-year for-profit institutions tend to provide programs that require full-time and continuous enrollment—often occupational training. Thus, they select students who are relatively engaged in their education. Community colleges, however, provide programs designed to be delivered in bites to students enrolled part-time or intermittently. Moreover, at large public two-year institutions, 27 percent of students are enrolled on a full-time basis; at degree-granting, two-year for-profits, 72 percent are. The opposite is the case at the four-year level. Most traditional private nonprofit institutions and many public institutions demand full-time and continuous study and recruit and admit more engaged students. The for-profit sector in four-year postsecondary education has exploited a niche for convenient study, and many more of their students are likely to be part-time and intermittent. See U.S. Department of Education, National Center for Education Statistics, "Differential Characteristics of Two-Year Postsecondary Institutions," July 2007, available at <http://nces.ed.gov/pubs2007/2007164rev.pdf>.

14. These losses do not include any money that goes directly to the schools, most notably through state subsidies to public institutions.

15. These numbers do not account for institutional aid that acts as a discount to the tuition numbers reported in IPEDS. Further, the numbers in this table are based on in-state tuition rates. The bias introduced by using in-state tuition is likely to be low because most students are in-state and there is no in-state versus out-of-state differential for private institutions. IPEDS's inability to track true tuition costs rather than the "sticker price" is well known and inflates the losses to students reported here by some amount.

16. This analysis concentrates on graduation rates, which, one can argue, represent the most fundamental product of education institutions. There are many indicators that could be used to measure the success (or failure) of individual institutions other than graduation rates. See, for example, Carol A. Dwyer, Catherine M. Millett, and David G. Payne, "A Culture of Evidence: Postsecondary Assessment and Learning Outcomes," Educational Testing Service, June 2006, available at www.ets.org/Media/Resources_For/Policy_Makers/pdf/cultureofevidence.pdf (accessed October 23, 2008). Much of the current debate about increasing accountability among postsecondary institutions intensified following the report of Education Secretary Margaret Spellings. See Commission on the Future of Higher Education, "A Test of Leadership: Charting the Future of U.S.

Higher Education," September 2006, available through www.ed.gov/about/bdscomm/list/hiedfuture/reports.html (accessed October 16, 2008).

17. Thomas J. Kane and Cecilia Elena Rouse, "Labor-Market Returns to Two- and Four-Year College," *American Economic Review* 85, no. 3 (June 1995): 600-14; and David Marcotte, Thomas R. Bailey, Carey Borkoski, and Gregory S. Kienzl, "The Returns to Education at Community Colleges: Evidence from the National Education Longitudinal Survey," *Educational Evaluation and Policy Analysis* 27 (2005): 157-75.

18. Doug Lederman, "The Credit Crunch Takes a Toll," *Inside Higher Ed*, January 23, 2008, available at www.insidehighered.com/news/2008/01/23/credit/ (accessed October 16, 2008).