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What Is the Price of College?

Total, Net, and Out-of-Pocket Prices in 2007–08

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Students and parents see

college attendance as a principal avenue to middle-class life, and, given the rising price of postsecondary education, they are apprehensive about their ability to afford it.¹ In a recent survey of college freshmen, about two-thirds (66 percent) reported having concerns about being able to finance their education.² Many U.S. policymakers and researchers share their concern, and are exploring ways to make college more affordable.³ Legislators have required colleges and universities to provide more extensive information about tuition and prices, and in the Higher Education Opportunity Act of 2008 mandated a host of price-related measures, including institutional net price calculators on college websites, the reporting of net price data to the U.S. Department of Education, and the creation and posting of “College Affordability and Transparency Lists” by the Department. These lists highlight institutions with the highest and lowest tuition and fees, net prices, and percent changes in them, within their sectors.⁴

This Statistics in Brief illustrates the kinds of questions that national data can answer

¹ A recent public opinion poll showed that increasing numbers of Americans view college as a necessity for success (Immerwahr et al. 2009). The College Board (2009) reports that the total price of attendance has increased more rapidly than the price of other goods and services over the past three decades. See also Lewin (2009), which reported on the College Board’s findings.

² The Higher Education Research Institute at the University of California, Los Angeles, has conducted a survey of freshmen each year since 1973 (Pryor et al. 2009). See also recent media attention to the issue (Marchand 2010).

³ Both governmental and nongovernmental study commissions have convened to address this. See, for example, The College Board (2008).

⁴ Public Law 110-315, Sec. 111. August 14, 2008. *Higher Education Opportunity Act of 2008*.

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STUDY QUESTIONS

1 What are the average prices paid by full-time undergraduate students and how do these prices vary by the type of institution attended?

2 How do the average total price of attendance and net prices vary by institution type?

3 How do the net prices paid by undergraduates vary by family income?

about the amounts U.S. undergraduates pay annually, on average, for postsecondary education, with and without financial aid. This brief draws upon the National Postsecondary Student Aid Study (NPSAS), a nationally representative survey of all postsecondary students enrolled in Title IV institutions.⁵

Included in this report are the average prices paid by undergraduates attending one of the four major types of institutions: public 2-year, public 4-year, private nonprofit 4-year, and for-profit institutions at all levels.⁶ Most of the figures in this Brief display data only for

full-time undergraduates⁷ who attended one institution. These students constituted about one-third (35 percent) of all undergraduates in 2007–08.⁸ Of all full-time undergraduates, 18 percent were enrolled in public 2-year institutions, 43 percent attended public 4-year institutions, 21 percent were at private nonprofit 4-year institutions, and 8 percent were enrolled in for-profit institutions, which is a different distribution than among all undergraduates (table 1).⁹ Focusing on full-time students who attended only one institution¹⁰ allows for comparisons in tuition, price of attendance, and financial aid across institution types, since stu-

dents at different institutions enroll full time at different rates. Those attending full time generally have higher overall expenses than do all students, regardless of attendance status (table 1). They also qualify for federal aid and other assistance not available to many part-time students, and hence larger proportions of full-time students receive financial aid when compared with all undergraduates (table 2).

All comparisons of estimates in this Brief were tested for statistical significance using the Student's *t*-statistic, and all differences cited are statistically significant at the $p < .05$ level.¹¹

⁵ "Title IV institutions" refers to institutions eligible to participate in federal financial aid programs under Title IV of the Higher Education Act.

⁶ For-profit institutions include less-than-2-year, 2-year, and 4-year institutions.

⁷ "Full-time" status is defined as having been enrolled full time in one postsecondary institution for 9 months or more during the academic year.

⁸ National Postsecondary Student Aid Study (NPSAS:08) Data Analysis System.

⁹ The remaining students (11 percent) were enrolled in other types of institutions or in more than one institution during the academic year.

¹⁰ Tuition, total price of attendance, and all net price estimates are available in NPSAS only for students attending one institution during the academic year.

¹¹ No adjustments for multiple comparisons were made. The standard errors for the estimates can be found at <http://nces.ed.gov/das/library/reports.asp>.

KEY FINDINGS

- There is a wide range of prices for postsecondary education. This Brief shows the *total price of attendance* (tuition and living expenses), the *net price after grants* (total price of attendance minus all grants), and the *out-of-pocket net price* (total price of attendance minus all financial aid)¹² for the four major types of postsecondary institutions.
- Full-time students enrolled at public 2-year institutions had the lowest average total price of attendance (\$12,600). Those at public 4-year institutions had an average total price of \$18,900, those at for-profit institutions had an average total price of \$28,600, and those at private nonprofit 4-year institutions had the highest average total price (\$35,500).
- After all financial aid is received (including grants, loans, and work-study), the average out-of-pocket net price ranged from \$9,100 at public 2-year institutions to \$10,300 at public 4-year institutions, \$16,000 at for-profit institutions, and \$16,600 at private nonprofit 4-year institutions.
- Along with income, a student's total price of attendance is also a factor in determining eligibility for financial aid. Students at a lower priced institution will have less eligibility for aid than if they had attended a higher priced institution. Those attending private institutions had the highest tuition but they also received the most financial aid. Undergraduates at private nonprofit 4-year institutions received the greatest amount of institutional grant aid while those at for-profit institutions had the largest proportion of borrowers.
- Low-income undergraduates enrolled full time at for-profit institutions had the highest average net price after grants as well as the highest average out-of-pocket net price when compared with low-income students enrolled at other institutions. The average net price after grants was \$21,300 for low-income students at for-profit institutions but ranged from \$7,800 to \$17,900 at other institutions. Similarly, the average out-of-pocket net price was \$11,700 among low-income students at for-profit institutions but the average for those enrolled elsewhere ranged from \$6,000 to \$9,800.

¹² The "net price after grants" subtracts any form of gift aid, or aid that does not need to be repaid, from the total price of attendance. This can be need- or merit-based grant or scholarship aid. NPSAS does not have measures for net price that distinguish between need- and merit-based aid. The "out-of-pocket net price" subtracts all financial aid from the total price of attendance. All financial aid includes grants, student loans, Parent PLUS loans, work-study, employer aid, job training benefits, veterans benefits, and any other financial aid received.

TABLE 1.

UNDERGRADUATE ENROLLMENT, TUITION, AND TOTAL PRICE for all undergraduates and full-time undergraduates, by type of institution attended: 2007–08

	All undergraduates			Full-time		
	Percentage distribution	Average tuition ¹	Average total price ¹	Percentage distribution	Average tuition ¹	Average total price ¹
Total	100.0	\$5,800	\$14,000	100.0	\$10,300	\$22,400
Type of institution						
Public 2-year	40.0	1,200	7,000	17.8	2,400	12,600
Public 4-year	29.2	5,500	15,200	42.7	7,100	18,900
Private nonprofit 4-year	13.0	17,800	28,200	20.6	23,400	35,500
For-profit	9.0	10,200	20,600	8.5	11,900	28,600
Other, or more than one institution	8.8	4,800	12,300	10.5	7,000	18,000

¹ Average tuition and average total price estimates are shown for those attending one institution only.

NOTE: "All undergraduates" include both full- and part-time students. "Full-time" is defined as having been enrolled in a postsecondary institution for 9 months or more full time. "Tuition" includes all tuition and fees. The "total price" includes tuition and fees, books and supplies, housing, meals, transportation, and other miscellaneous, or personal, expenses. "For-profit" includes less-than-2-year, 2-year, and 4-year institutions. "Other, or more than one institution" includes those attending private nonprofit less-than-4-year, public less-than-2-year, and multiple institutions. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/das/library/reports.asp>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

TABLE 2.

FINANCIAL AID for all undergraduates and full-time undergraduates, by type of institution attended: 2007–08

	Any grants		Any loans		Any work-study		Any aid	
	Percent received	Average amount	Percent received	Average amount	Percent received	Average amount	Percent received	Average amount
All undergraduates	51.7	\$4,900	38.5	\$7,100	7.4	\$2,400	65.6	\$9,100
Type of institution								
Public 2-year	39.6	2,200	13.2	4,100	3.3	3,000	47.6	3,400
Public 4-year	52.9	5,200	46.2	6,600	7.7	2,500	71.3	9,400
Private nonprofit 4-year	73.6	10,200	58.9	9,100	23.2	2,100	84.7	17,400
For-profit	70.4	3,200	91.6	8,100	2.0	3,500	96.3	10,800
Full-time	65.3	7,200	53.1	8,000	13.7	2,300	80.1	12,900
Type of institution								
Public 2-year	55.7	3,700	22.5	4,900	6.9	2,600	65.7	5,400
Public 4-year	60.4	6,100	52.7	7,100	10.5	2,400	78.3	11,000
Private nonprofit 4-year	81.2	12,300	65.0	9,800	31.5	2,100	89.4	21,100
For-profit	71.9	4,000	91.6	9,600	2.0	3,600	96.7	13,100

NOTE: "Any grants" include scholarships and tuition waivers. "Any loans" include federal, state, institutional, or private student loans, excluding Parent PLUS loans. "Any aid" includes grants, loans, job training, veterans benefits, employer aid, and Parent PLUS loans. The total for "All undergraduates" includes students attending full time, part time, or more than one institution. "Full-time" is defined as having been enrolled in one postsecondary institution for 9 months or more full time. "For-profit" includes less-than-2-year, 2-year, and 4-year institutions. Average aid amounts are calculated only for students receiving a particular type of aid. Those not receiving a specific type of aid (i.e., zero values) are not included in the average for that aid. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/das/library/reports.asp>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

1

What are the average prices paid by full-time undergraduate students and how do these prices vary by the type of institution attended?

This Brief discusses three different measures of the price of an undergraduate education: the total price of attendance, the net price after grants, and the out-of-pocket net price.

Total Price of Attendance

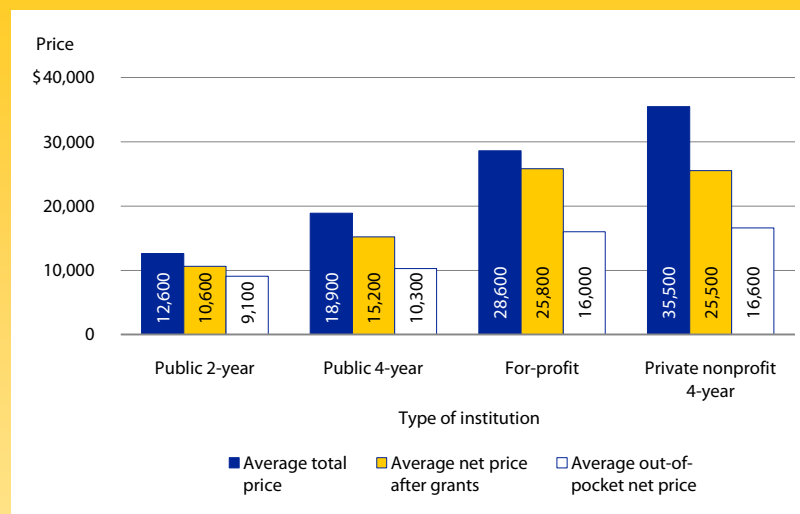
The total price of an undergraduate education includes tuition¹³ and all other nontuition and living expenses such as books, supplies, and housing.¹⁴ The total price varied widely by the type of institution attended in 2007–08, ranging from an average of \$12,600 among undergraduates enrolled full time at public 2-year institutions, to \$18,900 at public 4-year institutions, \$28,600 at for-profit institutions, and \$35,500 at private nonprofit 4-year institutions (figure 1).

¹³ In this report, the term “tuition” includes both tuition and fees. Sometimes institutions treat tuition and fees as a single charge, and sometimes as separate charges. Tuition is defined as the price of instruction and fees as the price of other services provided by the school. The tuition amounts shown here include those charged to all undergraduates: both in-state and out-of-state students enrolled in public 4-year institutions, and both in-district and out-of-district students enrolled in public 2-year institutions.

¹⁴ “Housing” can be on campus, off campus, or with parents or relatives. In the case of dependent students, this includes housing for themselves only; for independent students, it can include housing for themselves as well as their spouse and/or any dependents.

FIGURE 1.

THE PRICE OF AN UNDERGRADUATE EDUCATION for full-time undergraduates, by type of institution attended: 2007–08



NOTE: The “total price” includes tuition, books and supplies, housing, meals, transportation, and other miscellaneous, or personal, expenses. The “net price” is the price that must be paid after receiving grants. The “out-of-pocket net price” subtracts from the total price all forms of financial aid, including grants, student loans, Parent PLUS loans, work-study, employer aid, job training benefits, veterans benefits, and any other financial aid received. Both the net price after grants and the out-of-pocket net price are calculated for all full-time students, regardless of whether or not they received any financial aid. “Full-time” is defined as having been enrolled in one postsecondary institution for 9 months or more full time. “For-profit” includes less-than-2-year, 2-year, and 4-year institutions. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/das/library/reports.asp>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

Of the total price of attendance, the portion that can be attributed to tuition varies widely by institution type. For some institutions (private nonprofit 4-year institutions, in particular), the tuition is a large component of the total price. In 2007–08, average tuition was \$2,400 at public 2-year institutions, \$7,100 at public 4-year institutions, \$11,900 at for-profit institutions, and \$23,400 at private nonprofit 4-year institutions (figure 2).

Nontuition expenses, which include books and supplies, housing and meals, transportation, and personal (or miscellaneous) expenses, also can vary by institution type. College or university financial aid officers usually develop an estimate of the total price,

known in financial aid parlance as the “student budget.” Student budgets vary according to students’ attendance and dependency status, family responsibilities, and residence (e.g., living at home with parents, in an on-campus dormitory, or in off-campus housing) (Wei 2010, table 2.1-A).

In 2007–08, students enrolled full time in for-profit institutions had the highest average nontuition expenses (\$16,700), when compared with those at other types of institutions (where average nontuition expenses ranged from \$10,200 to \$12,100). Many students at for-profit institutions are financially independent and are supporting their own families (Wei 2010, table 5.1-A). This raises their

nontuition expenses as compared with students who have no family responsibilities, because costs such as housing, food, and other necessities that are associated with supporting one or more dependents are included in a student’s budget.

Students attending public 2-year institutions—mostly community colleges—had the lowest nontuition expenses. A larger proportion lived at home with their parents, which reduces costs for room and board, as compared with students at for-profit institutions (many of whom are supporting themselves or their own families) and those at 4-year institutions (where a larger proportion lived on campus or in off-campus housing) (Wei 2010, table 5.1-C).

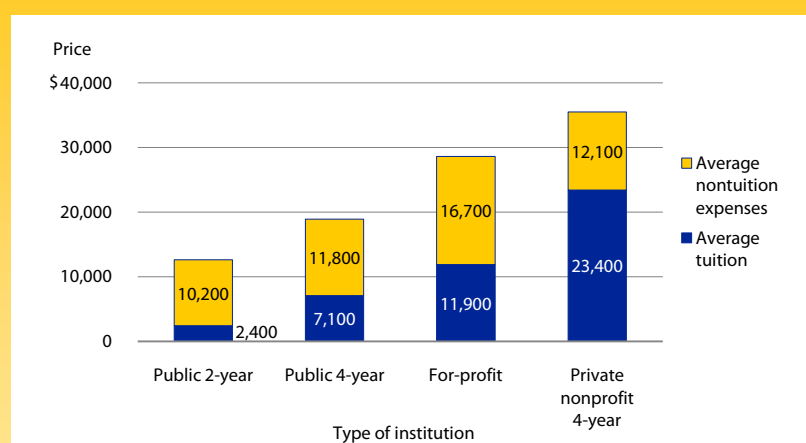
In-state vs. out-of-state tuition

At most public 4-year institutions, tuition charges are generally higher for out-of-state students than for in-state residents, reflecting the state subsidies public institutions receive. In 2007–08, the average in-state tuition was \$6,200 and the average out-of-state tuition was \$15,100 for full-time undergraduates enrolled in public 4-year institutions.*

* NPSAS:08 Data Analysis System (data not shown).

FIGURE 2.

**TUITION AND NONTUITION EXPENSES
for full-time undergraduates,
by type of institution attended: 2007–08**



NOTE: “Full-time” is defined as having been enrolled in one postsecondary institution for 9 months or more full time. “Tuition” includes all tuition and fees. “Nontuition expenses” include books, supplies, housing, meals, transportation, and miscellaneous or personal expenses. “For-profit” includes less-than-2-year, 2-year, and 4-year institutions. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/das/library/reports.asp>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

Net Price After Grants

Policymakers and researchers generally subtract grants from the total price when discussing the net price of attending a postsecondary institution.

For example, Congress recently required institutions to make public both the total price and the average net price of attendance, calculated as the total price of attendance minus all grants received (see the 2008 Higher Education Opportunity Act). In this Brief, two measures of net price are discussed: the “net price after grants” and the “out-of-pocket net price,” which is the price after all financial aid (including loans, which must be repaid) is taken into account.¹⁵

Grant aid helped to lower the average total price among full-time undergraduates at public 2-year institutions from \$12,600 to an average net price after grants of \$10,600 (figure 1). For

those at public 4-year institutions, grant aid to full-time undergraduates lowered the average total price of \$18,900 to an average net price after grants of \$15,200.

For those at private institutions (both for-profit and nonprofit), the average net price after grants was about \$25,700. For those attending for-profit institutions, the difference between the average total price and the net price after grants was about \$2,800. At private nonprofit 4-year institutions, however, that difference was \$10,000.

Out-of-Pocket Net Price

The “out-of-pocket net price,” defined as the total price less all financial aid received, takes into account all forms of financial aid, including grants, loans, work-study, and other aid (as well as Parent PLUS loans).¹⁶ The out-of-pocket

net price represents the amount that must be paid immediately by the student or family to enroll in a postsecondary institution for that academic year. Because the out-of-pocket net price subtracts loans from the total price, it measures the net price only in the short term. Loans offset immediate costs to students and their families, but they must be repaid over time.

Full-time undergraduates enrolled at public 2-year institutions had the lowest average out-of-pocket net price (\$9,100), reflecting the already lower total price at these institutions (figure 1). Those at public 4-year institutions had a slightly higher average out-of-pocket net price (\$10,300). Students at private institutions had the highest average out-of-pocket net prices (\$16,000 at for-profit institutions and \$16,600 at private nonprofit 4-year institutions).

¹⁵ Both net price and out-of-pocket net price averages are calculated for all students, regardless of whether they received any financial aid. This method of calculating net price averages for all students differs from that used to calculate average aid amounts in this report (see table 2). Average aid amounts are calculated only for students receiving a particular type of aid. Those not receiving a specific type of aid (i.e., zero values) are not included in the average for that aid. The average grant, therefore, will be greater than the difference between the total price and the net price after grants.

¹⁶ Since 1998, the federal government has also provided postsecondary students and their families with various federal tax benefits. These are not included in the definition of financial aid and are not used in the calculation of net price in this study.

2 How do the average total price of attendance and net prices vary by institution type?

Prices vary by institution type for several reasons. Institutions charge different levels of tuition (based on whether they are public or private and the amount of state and local subsidies received); the demographic characteristics of students (and thus their nontuition expenses and eligibility for federal and state grant aid) vary by type of institution; and institutional policies for awarding institutional aid differ. This section discusses the major differences in prices by institution type.

As noted previously, the amount of tuition charged by institutions is a primary factor in the total price of attendance, but students also incur different nontuition expenses depending on their family responsibilities and living arrangements.

Average net prices are further affected by differences in the proportion of aid recipients at each type of institution. For example, the number of students eligible for federal Pell Grants or state-

funded grant aid at a particular school will affect the average net price after grants, as will a school's policies for awarding grants from institutional funds. The out-of-pocket net price further depends on the level of borrowing among students and their parents and other types of aid received, such as work-study.

Public 2-Year Institutions

Full-time students attending public 2-year institutions had the lowest average total price (\$12,600), net price after grants (\$10,600), and out-of-pocket net price (\$9,100) compared with full-time undergraduates attending other types of institutions (figure 1).

Because students at public 2-year institutions had a lower average total price initially, their average net prices also were lower—even though they had the smallest proportions of grant recipients (56 percent) and students who borrowed (23 percent took out a student loan) (table 2).

Public 4-Year Institutions

Tuition at public 4-year institutions was higher than at public 2-year institutions, but not as high as at the private institutions (figure 2). Students at these institutions also have slightly higher nontuition expenses than those at public 2-year institutions, with a larger proportion living on campus or away from home (see Wei 2010, table 5.1-C).

Among those enrolled full time at public 4-year institutions, 60 percent received grant aid, about one-half (53 percent) took out student loans, and 10 percent received work-study support (table 2). Grant aid helped to lower the net price after grants to an average of \$15,200, and the addition of loans, work-study, and other aid resulted in an average out-of-pocket net price of \$10,300 (figure 1). This compares to an average out-of-pocket net price of \$9,100 at public 2-year institutions—a difference of \$1,200 in the average out-of-pocket net price, even though the difference in the average total price was \$6,300.

For-Profit Institutions

For-profit institutions are privately owned and operated and the profits they generate benefit individual owners and shareholders. The programs can range from less than 1 year to 4-year bachelor's and graduate degrees. Most undergraduates enrolled in less-than-4-year for-profit institutions are pursuing certificates or associate's degrees in occupational training programs (73 percent) (Staklis 2010, table 2.1). Compared with undergraduates

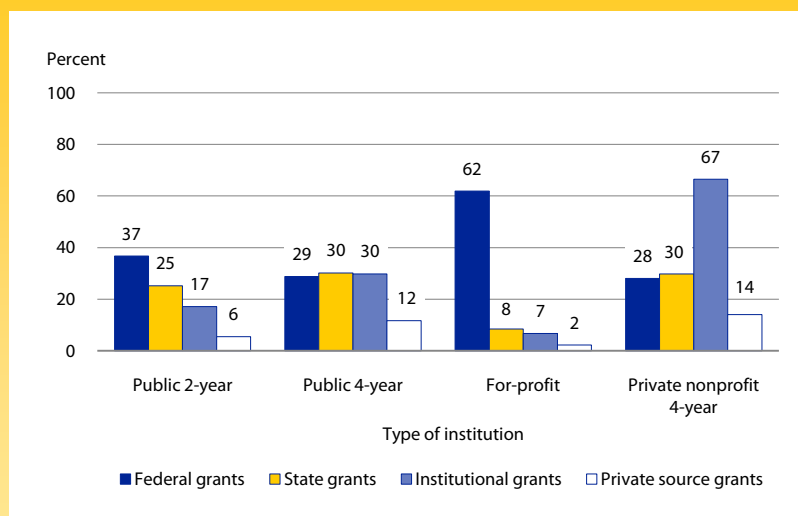
enrolled at other types of institutions, those at for-profit institutions tend to be older, financially independent, and have family responsibilities. This increases their nontuition expenses and hence, their total price of attendance. More undergraduates at for-profit institutions received federal grants (62 percent) than did students in any other type of institution in our analysis (figure 3). However, a smaller percentage of for-profit students received state, institutional, or private grants than stu-

dents in other sectors. On average, these students had a net price after grants of \$25,800—not measurably different than that of private nonprofit 4-year institutions, and higher than that of public institutions (figure 1).

Student loans were critical to reducing the average out-of-pocket net price for all undergraduates, but particularly for those at for-profit institutions. For-profit institutions had the largest proportion of full-time undergraduates

FIGURE 3.

**SOURCES OF GRANT AID
for full-time undergraduates,
by type of institution attended: 2007–08**



NOTE: "Grants" include scholarships and tuition waivers. "Full-time" is defined as having been enrolled in one postsecondary institution for 9 months or more full time. "For-profit" includes less-than-2-year, 2-year, and 4-year institutions. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/das/library/reports.asp>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

with at least one loan in their financial aid package: 9 out of 10 (91 percent) received an aid package containing a loan (figure 4), compared with 65 percent of those at private nonprofit 4-year institutions, 53 percent at public 4-year institutions, and 23 percent at public 2-year institutions. The high level of student borrowing at for-profit institutions contributed to an average out-of-pocket net price of \$16,000 (figure 1).

Private Nonprofit 4-Year Institutions

Even though they had the highest average total price (\$35,500) of the four major sectors, financial aid recipients at private nonprofit 4-year institutions al-

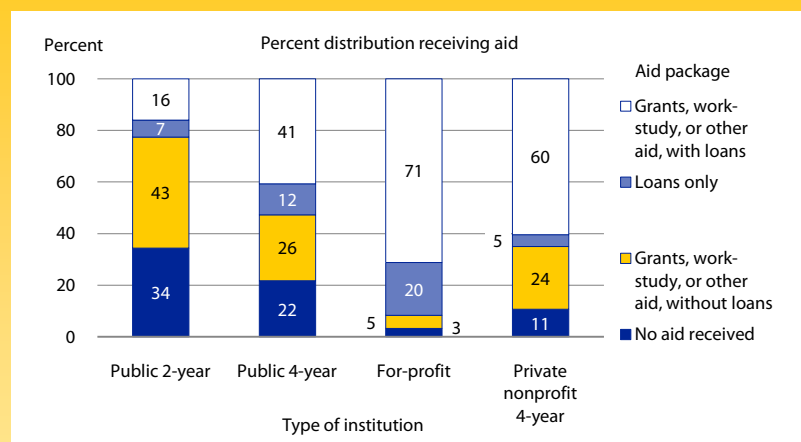
so received the largest average amount of total aid (\$21,100), when compared with those at for-profit institutions (\$13,100), public 4-year institutions (\$11,000), and public 2-year institutions (\$5,400) (table 2).

In fact, aid received by undergraduates at private nonprofit 4-year institutions resulted in an average net price of \$25,500 and an average out-of-pocket net price of \$16,600, both of which were not measurably different from undergraduates at schools with the next highest total price: for-profit institutions (\$25,800 and \$16,000, respectively) (figure 1).

The receipt of institutional grants, in particular, was critical in lowering the price for those attending private nonprofit 4-year colleges and universities. About two-thirds (67 percent) of students in private nonprofit 4-year schools received institutional grants or tuition waivers, a larger proportion than at any other type of institution (30 percent at public 4-year institutions, 17 percent at public 2-year institutions, and 7 percent at for-profit institutions) (figure 3). The average institutional grant received by those attending private nonprofit 4-year institutions was \$10,400,¹⁷ which helped reduce the average total price to an average net price after grants of \$25,500 (figure 1).

FIGURE 4.

TYPE OF AID PACKAGE
for full-time undergraduates, by aid package received and type of institution attended: 2007–08



NOTE: "Grants" include scholarships and tuition waivers. "Loans" include federal, state, institutional, or private student loans, excluding Parent PLUS loans. "Other" aid includes job training, veterans benefits, employer aid, and Parent PLUS loans. "Full-time" is defined as having been enrolled in one postsecondary institution for 9 months or more full time. "For-profit" includes less-than-2-year, 2-year, and 4-year institutions. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Detail may not sum to totals because of rounding. Standard error tables are available at <http://nces.ed.gov/das/library/reports.asp>. SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

Work-study was also an important source of aid to those at private nonprofit 4-year institutions. Nearly one-third (31 percent) of all full-time undergraduates at private nonprofit 4-year institutions received work-study aid, the highest percentage among all full-time undergraduates (between 2 and 10 percent of undergraduates at other types of institutions received work-study aid) (table 2). With the aid of student loans, work-study, and other types of support, full-time undergraduates at private nonprofit 4-year institutions had an average out-of-pocket net price of \$16,600—not measurably different from those attending for-profit institutions (\$16,000) (figure 1).

¹⁷ NPSAS:08 Data Analysis System (data not shown).

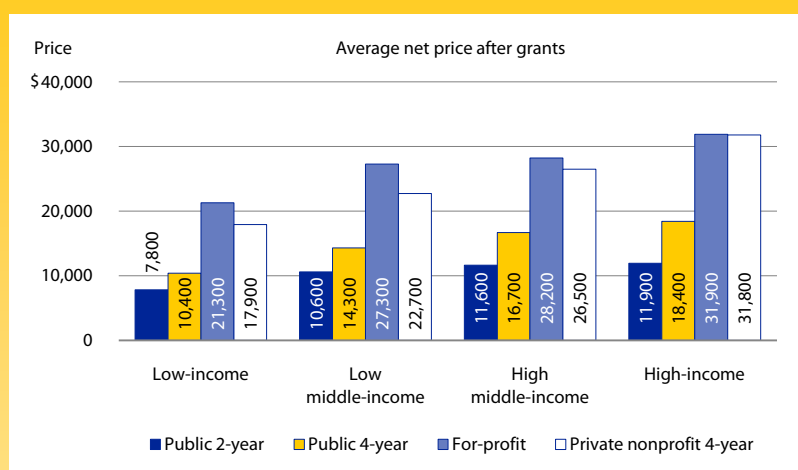
3 How do the net prices paid by undergraduates vary by family income?

This section discusses both the net price after grants and the out-of-pocket net price by family income level among full-time dependent students only.¹⁸ Figure 5 shows the average net price after grants by both family income and type of institution attended. Among low-income and low middle-income dependent students, those with the highest average net price after grants were enrolled at for-profit institutions. In contrast, among high middle-income and high-income students, the average net price after grants for those at for-profit institutions was not measurably different from those at private nonprofit 4-year institutions.

¹⁸ Full-time dependent students constituted 76 percent of all full-time undergraduates attending one institution in 2007–08 (NPSAS:08 Data Analysis System). Independent students are not analyzed by income level in this Brief. Parental income for independent students is not available from NPSAS.

FIGURE 5.

NET PRICE AFTER GRANTS BY INCOME for full-time dependent undergraduates, by family income category and type of institution attended: 2007–08

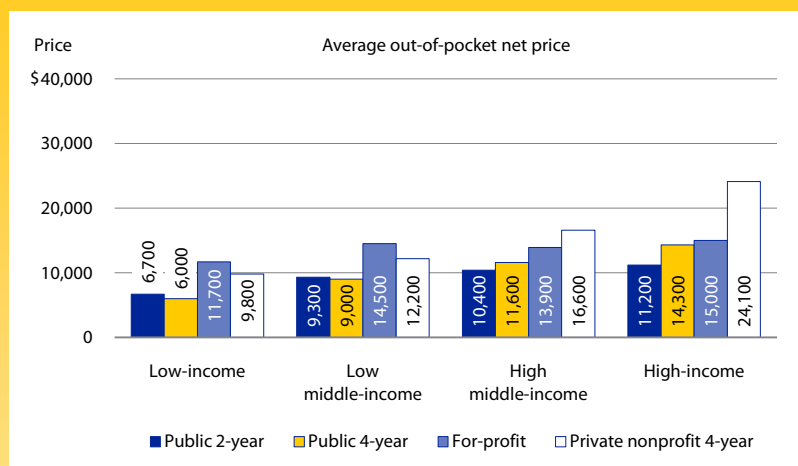


NOTE: The “net price after grants” is the price of attending a postsecondary institution after all grants have been received. This amount is calculated by subtracting total grant aid from the total price of attendance. The total price of attendance includes tuition, books and supplies, housing, meals, transportation, and other miscellaneous, or personal, expenses. Grant aid includes grants, scholarships, tuition waivers, and other gift aid that does not need to be repaid. The net price after grants is calculated for all students, regardless of whether or not they received any grant aid. Family income categories were based upon parents’ annual income in 2006. Dollar cutoffs are based on the distribution among all dependent undergraduates: “Low-income” was the lowest 25th percentile (less than \$36,100); “Low middle-income” was the 26th to 50th percentile (\$36,100–\$66,600); “High middle-income” was the 51st to 75th percentile (\$66,600–\$104,600); and “High-income” was the highest 25th percentile (\$104,600 or more). “Full-time” is defined as having been enrolled in one postsecondary institution for 9 months or more full time. “For-profit” includes less-than-2-year, 2-year, and 4-year institutions. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/das/library/reports.asp>. SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

The average out-of-pocket net price, on the other hand, shows a slightly different pattern (figure 6). After borrowing, low-income and low middle-income undergraduates enrolled at for-profit institutions continued to have the highest average out-of-pocket net price, when compared with those at other institutions. However, among those with incomes above the median (i.e., high middle-income and high-income students), the average out-of-pocket net price was highest for those enrolled at private nonprofit 4-year institutions.

FIGURE 6.

OUT-OF-POCKET NET PRICE BY INCOME
for full-time dependent undergraduates, by family income category and type of institution attended: 2007–08



NOTE: The “out-of-pocket net price” is the price of attending a postsecondary institution after all aid has been received. This amount is calculated by subtracting total financial aid from the total price of attendance. The total price of attendance includes tuition, books and supplies, housing, meals, transportation, and other miscellaneous, or personal, expenses. Financial aid includes grants, student loans, Parent PLUS loans, work-study, employer aid, job training benefits, veterans benefits, and any other type of aid. The out-of-pocket net price is calculated for all students, regardless of whether they received any aid. Family income categories were based upon parents’ annual income in 2006. Dollar cutoffs are based on the distribution among all dependent undergraduates: “Low-income” was the lowest 25th percentile (less than \$36,100); “Low middle-income” was the 26th to 50th percentile (\$36,100–\$66,600); “High middle-income” was the 51st to 75th percentile (\$66,600–\$104,600); and “High-income” was the highest 25th percentile (\$104,600 or more). “Full-time” is defined as having been enrolled in one postsecondary institution for 9 months or more full time. “For-profit” includes less-than-2-year, 2-year, and 4-year institutions. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/das/library/reports.asp>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

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<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011175>

More detailed information on the price of undergraduate education and undergraduate financing can be found in Web Tables produced by the National Center for Education Statistics (NCES) using the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) data. These Web Tables are a comprehensive source of information on financial aid awarded to undergraduate students during the 2007–08 academic year. Included are estimates of tuition, price of attendance, and financial aid. Additional information on the demographic characteristics of 2007–08 undergraduates can be found in a second set of Web Tables.

Web Tables—Student Financing of Undergraduate Education: 2007–08 (NCES 2010-162). <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2010162>

Web Tables—Profile of Undergraduate Students: 2007–08 (NCES 2010-205). <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2010205>

Readers may also be interested in the following NCES products related to the topic of this Statistics in Brief:

2007–08 National Postsecondary Student Aid Study (NPSAS:08): Student Financial Aid Estimates: First Look (NCES 2009-166).

<http://nces.ed.gov/pubs2009/2009166.pdf>

Undergraduate Financial Aid Estimates by Type of Institution in 2007–08 (NCES 2009-201).

<http://nces.ed.gov/pubs2009/2009201.pdf>

TECHNICAL NOTES

Survey Methodology

The estimates provided in this Statistics in Brief are based on data collected through the 2007–08 National Postsecondary Student Aid Study (NPSAS:08). NPSAS covers broad topics concerning student enrollment in postsecondary education and how students and their families finance their education. In 2008, students provided data through instruments administered over the Internet or by telephone. In addition to student responses, data were collected from the institutions that sampled students attended and other relevant databases, including U.S. Department of Education records on student loan and grant programs and student financial aid applications.

NPSAS:08 is the seventh administration of NPSAS, which has been conducted every 3 to 4 years since 1986–87. The NPSAS:08 target population includes students enrolled in Title IV postsecondary institutions in the United States and Puerto Rico at any time between July 1, 2007, and June 30, 2008.¹⁹ This population included about 21 million undergraduates and 3 million graduate students enrolled in over 6,000 institutions.

The institution sampling frame for NPSAS:08 was constructed from the 2004–05 and 2005–06 Institutional Characteristics, Fall Enrollment, and Completions files of the Integrated Postsecondary Education Data System

(IPEDS). The sampling design consisted of first selecting eligible institutions, then selecting students from these institutions. Institutions were selected with probabilities proportional to a composite measure of size based on expected 2007–08 enrollment. With approximately 1,700 institutions participating in the study, the weighted institution unit response rate was 90 percent. Eligible sampled students were defined as study respondents if at least 11 key data elements were available from any data source. Approximately 114,000 undergraduates and 14,000 graduate students were study respondents, and the weighted stu-

dent unit response rate for both levels was 96 percent. Estimates were weighted to adjust for the unequal probability of selection into the sample and for nonresponse.

In this Statistics in Brief, the analytical groups consisted of undergraduate students enrolled full time in one of the four major types of institutions in 2007–08. Out of the total NPSAS:08 undergraduate sample, approximately 21,000 were enrolled in public 4-year institutions, about 13,000 were enrolled in private nonprofit 4-year institutions, about 7,000 were attending public 2-year institutions, and approximately 6,000 were enrolled in for-profit institutions.

VARIABLES USED

All estimates presented in this Statistics in Brief were produced using the Data Analysis System (DAS), a web-based software application that allows users to generate tables for many of the postsecondary surveys conducted by NCES. See “Run Your Own Analysis With DataLab” below for more information on PowerStats, the next generation of the DAS. The variables used in this Brief are listed below. Visit the NCES DataLab website (<http://nces.ed.gov/datalab>) to view detailed information on how these variables were constructed and their sources. Under *Detailed Information About PowerStats Variables, NPSAS Undergraduates: 2008*, click by *subject* or by *variable name*. The program files that generated the statistics presented in this Brief can be found at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011175>.

Label	Name
Attendance status	ATTNSTAT
Family income for dependent students	PCTDEP
Federal grants	TFEDGRT
Institutional grants	INGRTAMT
Net price after grants	NETCST3
Non-tuition expenses	BUDNONAJ
Out-of-pocket net price	NETCST1
Private grants	PRIVAIID
State grants	STGTAMT
Total financial aid	TOTAID
Total grants	TOTGRT
Total price	BUDGETAJ
Total student loans	TOTLOAN
Tuition	TUITION2
Type of aid package	AIDTYPE
Type of institution	SECTOR4
Work-study	TOTWKST

¹⁹ The target population of students was limited to those enrolled in an academic program, at least one course for credit that could be applied toward an academic degree, or an occupational or vocational program requiring at least 3 months or 300 clock hours of instruction to receive a degree, certificate, or other formal award. The target population excluded students who were also enrolled in high school or a high school completion (e.g., GED preparation) program.

Key variables used in this Brief include tuition (TUTION2), total price of attendance (BUDGETAJ), and various measures of net price (NETCST1, NETCST3). These composite variables are derived from multiple sources of data including IPEDS, the Free Application for Federal Student Aid (FAFSA), the National Student Loan Data System (NSLDS), institution records, and the student interview.

Two broad categories of error occur in estimates generated from surveys: sampling and nonsampling errors. Sampling errors occur when observations are based on samples rather than on entire populations. The standard error of a sample statistic is a measure of the variation due to sampling and indicates the precision of the statistic. The complex sampling design used in NPSAS:08 must be taken into account when calculating variance estimates such as standard errors. NCES's online Data Analysis System (DAS), which generated the estimates in this report, uses the balanced repeated replication (BRR) method to adjust variance estimation for the complex sample design.

Nonsampling errors can be attributed to several sources: incomplete information about all respondents (e.g., some students or institutions refused to participate, or students participated but answered only certain items); differences among respondents in question interpretation; inability or unwillingness to give correct information; mistakes in recording or coding data; and other errors of collecting, processing, sampling, and imputing missing data.

For more information on NPSAS:08 methodology, see appendix B of *2007–08 National Postsecondary Student Aid*

Study (NPSAS:08): Student Financial Aid Estimates for 2007–08: First Look (<http://nces.ed.gov/pubs2009/2009166.pdf>).

Item Response Rates

NCES Statistical Standard 4-4-1 states that “[a]ny survey stage of data collection with a unit or item response rate less than 85 percent must be evaluated for the potential magnitude of nonresponse bias before the data or any analysis using the data may be released” (U.S. Department of Education 2002). In the case of NPSAS:08, this means that nonresponse bias analysis could be required at any of three levels: (1) institutions, (2) study respondents, or (3) items. Because the institutional and study respondent response rates were 90 percent and 96 percent, respectively, nonresponse bias analysis was not required at those levels.

The student interview response rate, however, was 71 percent, and therefore nonresponse bias analysis was required for those variables based in whole or in part on student interviews. In this report, seven variables required nonresponse bias analysis: AIDTYPE (60 percent), NETCST1 (58 percent), NETCST3 (59 percent), PCTDEP (55 percent), TOTAID (60 percent), TOTGRT (61 percent), and TOTLOAN (67 percent). For each of these variables, nonresponse bias analyses were conducted to determine whether respondents and nonrespondents differed on the following characteristics: institution sector, region, and total enrollment; student type, gender, and age group; whether the student had Free Application for Federal Student Aid (FAFSA) data, was a federal aid recipient, was a Pell Grant recipient, or took out a Staf-

ford Loan; and the amount, if any, of a student's Pell Grant or Stafford Loan. Differences between respondents and nonrespondents on these variables were tested for statistical significance at the 5 percent level. All other variables used in this Brief had a pre-imputation response rate of 85 percent or higher.

Nonresponse bias analyses of the variables in this report with response rates less than 85 percent indicated that respondents differed from nonrespondents on 71 percent to 80 percent of the characteristics analyzed, indicating that there may be bias in these estimates. Any bias due to nonresponse, however, is based upon responses prior to stochastic imputation. The potential for bias in these estimates is tempered by two factors.

First, potential bias may have been reduced due to imputation. Because imputation procedures are designed specifically to identify donors with similar characteristics to those with missing data, the imputation is assumed to reduce bias. While item-level bias before imputation is measurable, such bias after imputation is not, so whether the imputation affected the bias cannot be directly evaluated. Therefore, the item estimates before and after imputation were compared to determine whether the imputation changed the biased estimate, thus suggesting a reduction in bias.

For continuous variables, the difference between the mean before imputation and the mean after imputation was estimated. For categorical variables, the estimated difference was computed for each of the categories as

the percentage of students in that category before imputation minus the percentage of students in that category after imputation. These estimated differences were tested for statistical significance at the 5 percent level. A significant difference in the item means after imputation implies a reduction in bias due to imputation. A nonsignificant difference suggests that imputation may not have reduced bias, that the sample size was too small to detect a significant difference, or that there was little bias to be reduced. Statistical tests of the differences between the means before and after imputation for these seven variables were significant, indicating that the nonresponse bias was reduced through imputation.

Second, for some composite variables, the components of the variables from which the composites are constructed often constitute a very small proportion of the total variable, attenuating the potential bias introduced by nonresponse. For example, most of the components of TOTAID (total amount of all financial aid received) were obtained from federal databases and institutional records and have very high response rates. Some components of TOTAID, however, are types of financial aid that are often disbursed directly to students and not through institutions (e.g., employer aid and private loans). Because the primary source of information about such types of aid is the student interview, these variables were missing for interview nonrespondents.

In the case of missing information from the student interview, values were stochastically imputed and the imputed values were used to construct the

composite variables. In the example cited above, both employer aid and private loans were received by relatively few students and were small components of the total. For example, 52 percent of all undergraduates received any grants (TOTGRT), a primary component of TOTAID, and the average among all undergraduates was \$2,500. In comparison, 8 percent received any employer aid, with an average among all undergraduates of \$200. Therefore, despite the low response rates of these components, any bias they contribute is likely to be minimal.

For more detailed information on nonresponse bias analysis and an overview of the survey methodology, see appendix B of the report *2007–08 National Postsecondary Student Aid Study (NPSAS:08): Student Financial Aid Estimates for 2007–08: First Look* (<http://nces.ed.gov/pubs2009/2009166.pdf>).

Statistical Procedures

Comparisons of means and proportions were tested using Student's *t* statistic. Differences between estimates were tested against the probability of a Type I error²⁰ or significance level. The statistical significance of each comparison was determined by calculating the Student's *t* value for the difference between each pair of means or proportions and comparing the *t* value with published tables of significance levels for two-tailed hypothesis testing. Student's *t* values were computed to test differences between independent estimates using the following formula:

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2}}$$

where E_1 and E_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors.

There are hazards in reporting statistical tests for each comparison. First, comparisons based on large *t* statistics may appear to merit special attention. This can be misleading since the magnitude of the *t* statistic is related not only to the observed differences in means or percentages but also to the number of respondents in the specific categories used for comparison. Hence, a small difference compared across a large number of respondents would produce a large (and thus possibly statistically significant) *t* statistic.

A second hazard in reporting statistical tests is the possibility that one can report a “false positive” or Type I error. Statistical tests are designed to limit the risk of this type of error using a value denoted by alpha. The alpha level of .05 was selected for findings in this report and ensures that a difference of a certain magnitude or larger would be produced when there was no actual difference between the quantities in the underlying population no more than 1 time out of 20.²¹ When analysts test hypotheses that show alpha values at the .05 level or smaller, they reject the null hypothesis that there is no difference between the two quantities. Failing to reject a null hypothesis, i.e., detect a difference, however, does not imply the values are the same or equivalent.

²⁰ A Type I error occurs when one concludes that a difference observed in a sample reflects a true difference in the population from which the sample was drawn, when no such difference is present.

²¹ No adjustments were made for multiple comparisons.

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National Study of Postsecondary Faculty, NSOPF: 2004 Faculty • by subject (810KB, PDF) • by variable name (880KB, PDF)	Graduate and Professional • by subject (757KB, PDF) • by variable name (631KB, PDF)
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