



# What Colleges Contribute

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NCES 2003-157

## Institutional Aid to Full-Time Undergraduates Attending 4-Year Colleges and Universities

## Postsecondary Education Descriptive Analysis Reports

### Executive Summary

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April 2003

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April 2003

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**Suggested Citation**

U.S. Department of Education, National Center for Education Statistics. *What Colleges Contribute: Institutional Aid to Full-Time Undergraduates Attending 4-Year Colleges and Universities*, NCES 2003-157, by Laura Horn and Katharin Peter. Project Officer: C. Dennis Carroll. Washington, DC: 2003.

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# Executive Summary

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## Introduction

Many colleges and universities, both public and private, provide grant aid to undergraduates to help them pay for all or part of the tuition and fees charged by the institution. This practice, often referred to as “tuition discounting,” has grown rapidly in recent years (Redd 2000; Cunningham et al. 2001; Hubbell and Lapovsky 2002). Depending on the type and selectivity of the institution, institutional aid is awarded for different reasons. Some institutions aim to promote access to low-income and otherwise disadvantaged students, others use institutional aid to increase the enrollment of meritorious students, and still others use it to increase tuition revenues (Allan 1999; Redd 2000). Many institutions are trying to accomplish more than one of these goals simultaneously (Redd 2000). Through the packaging of need-based and merit-based aid, different institutions use different strategies. For example, a need-within-merit strategy uses merit criteria, but prioritizes the recipients on the basis of need, whereas a merit-within-need strategy awards aid on the basis of need, but prioritizes the recipients on the basis of merit.

This study provides information about recent trends in institutional aid receipt and then examines the relationship between such aid and the likelihood of recipients staying enrolled in the awarding institution relative to comparable unaided students. The trend analysis is based on data gathered from three administrations of the National Postsecondary Student Aid Study, conducted in 1992–93, 1995–96, and 1999–2000

(NPSAS:93, NPSAS:96, and NPSAS:2000), and the retention analysis is based on data from the first and second follow-ups to the 1995–96 Beginning Postsecondary Students Longitudinal Study (BPS:96/01). BPS followed a cohort of students who first enrolled in college in 1995–96 and were last surveyed in 2001, about 6 years after their initial enrollment. Only full-time students attending 4-year public and private not-for-profit institutions were included in these analyses.

## Trends in Institutional Aid: 1992–93 to 1999–2000

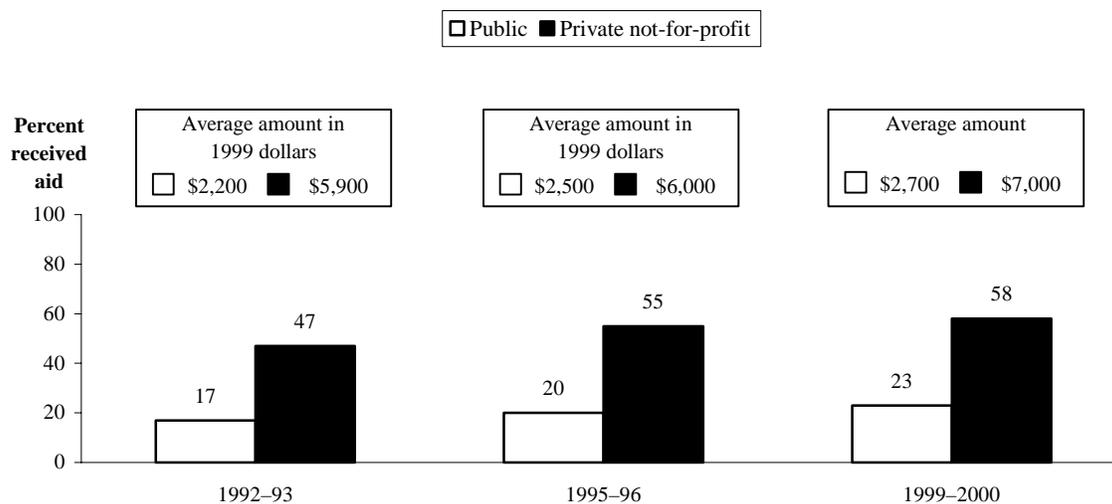
Consistent with earlier studies reporting large increases in spending on institutional aid by 4-year colleges and universities (e.g., Cunningham et al. 2001), this study found that the percentage of full-time undergraduates in 4-year colleges and universities who received institutional aid increased over the last decade, both in the public and private not-for-profit sectors (figure A).<sup>1</sup> In 1992–93, 17 percent of undergraduates in public institutions received institutional aid, averaging about \$2,200 (after adjusting for inflation to 1999 dollars). By 1999–2000, 23 percent received such aid, averaging about \$2,700. In private not-for-profit institutions, 47 percent received institutional aid, averaging about \$5,900 in 1992–93, while 58 percent did so in 1999–2000, averaging about \$7,000.

Over the same period, there was a notable increase in the percentage of undergraduates in the

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<sup>1</sup>Institutional aid includes both need-based and merit-based aid.

**Figure A. Percentage of full-time undergraduates enrolled in 4-year institutions who received institutional aid and among recipients, the average amount received in constant 1999 dollars, by institution control: 1992–93, 1995–96, and 1999–2000**



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1992–93, 1995–96, and 1999–2000 National Postsecondary Student Aid Study (NPSAS:93/96/2000).

highest income quartile who received institutional aid, especially between 1995–96 and 1999–2000 (figure B). In private not-for-profit institutions, the percentage of undergraduates in the highest income quartile who received institutional aid increased from 41 to 51 percent between 1995–96 and 1999–2000. In public institutions the percentage of high-income students receiving such aid increased from 13 to 18 percent. In contrast, in both the public and private sectors, no corresponding increase was observed during that time for those in the lowest income quartiles; and in private institutions, no increase was observed for middle-income students.

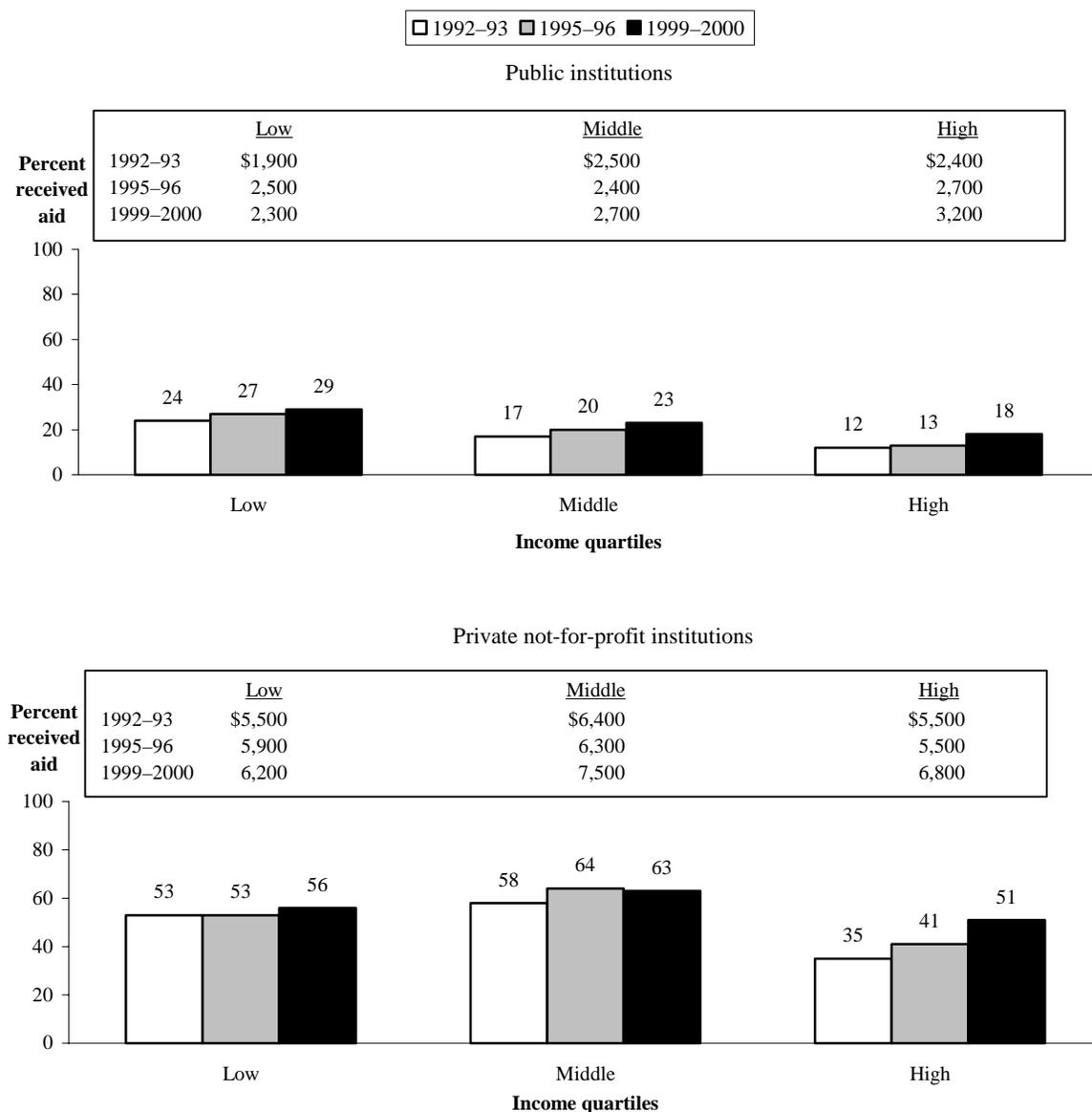
Much of the increase in institutional grant aid awarded between 1995–96 and 1999–2000 was in the form of aid based entirely on merit.<sup>2</sup> The

<sup>2</sup>In addition to academic scholarships, merit aid includes athletic and other merit scholarships. Merit aid is included in the total aid awards previously discussed and shown in figure B.

percentage of full-time undergraduates who received merit aid increased from 7 to 10 percent in public institutions and from 21 to 29 percent in private not-for-profit institutions (figure C). In contrast, between 1992–93 and 1995–96, no differences in the percentages of undergraduates receiving merit aid were observed in either public institutions or private not-for-profit institutions.

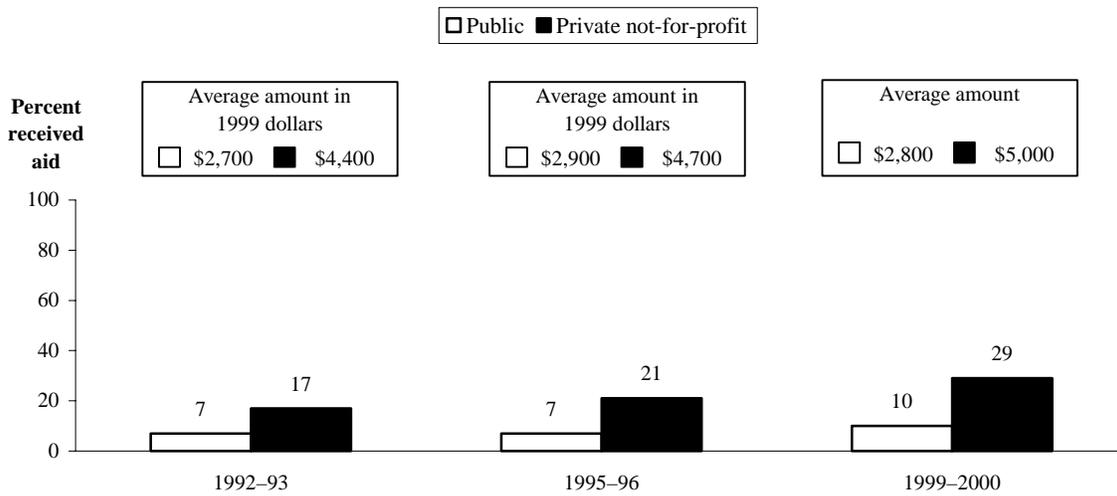
A relationship between the likelihood of receiving institutional merit aid and family income could not be detected in public institutions. That is, in all three NPSAS survey years, no differences were observed in the percentages of full-time undergraduates who received institutional merit aid among low-, middle-, or high-income students. In private not-for-profit institutions, on the other hand, differences by income were evident (figure D). In both 1992–93 and 1995–96, undergraduates in the middle-income quartiles were more likely than students in either the highest or lowest income

**Figure B. Percentage of full-time undergraduates enrolled in 4-year institutions who received institutional aid and among recipients, the average amount received in constant 1999 dollars, by income quartile: 1992–93, 1995–96, and 1999–2000**



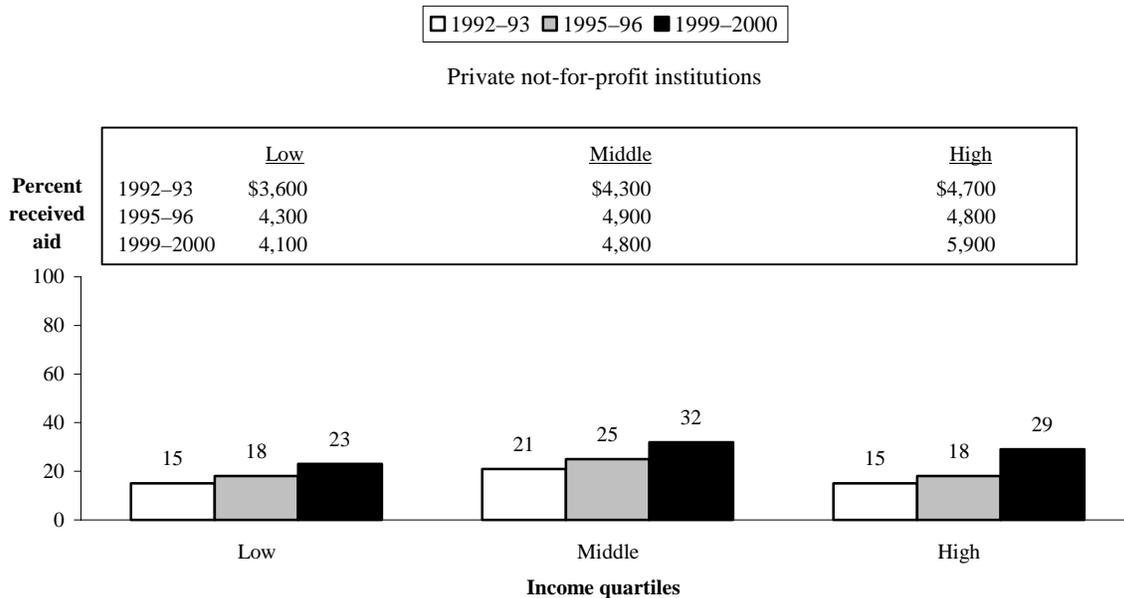
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1992–93, 1995–96, and 1999–2000 National Postsecondary Student Aid Study (NPSAS:93/96/2000).

**Figure C. Percentage of full-time undergraduates enrolled in 4-year institutions who received merit-based institutional aid and among recipients, the average amount received in constant 1999 dollars, by institution control: 1992–93, 1995–96, and 1999–2000**



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1992–93, 1995–96, and 1999–2000 National Postsecondary Student Aid Study (NPSAS:93/96/2000).

**Figure D. Percentage of full-time undergraduates enrolled in private not-for-profit 4-year institutions who received merit-based institutional aid and among recipients, the average amount received in constant 1999 dollars, by income quartile: 1992–93, 1995–96, and 1999–2000**



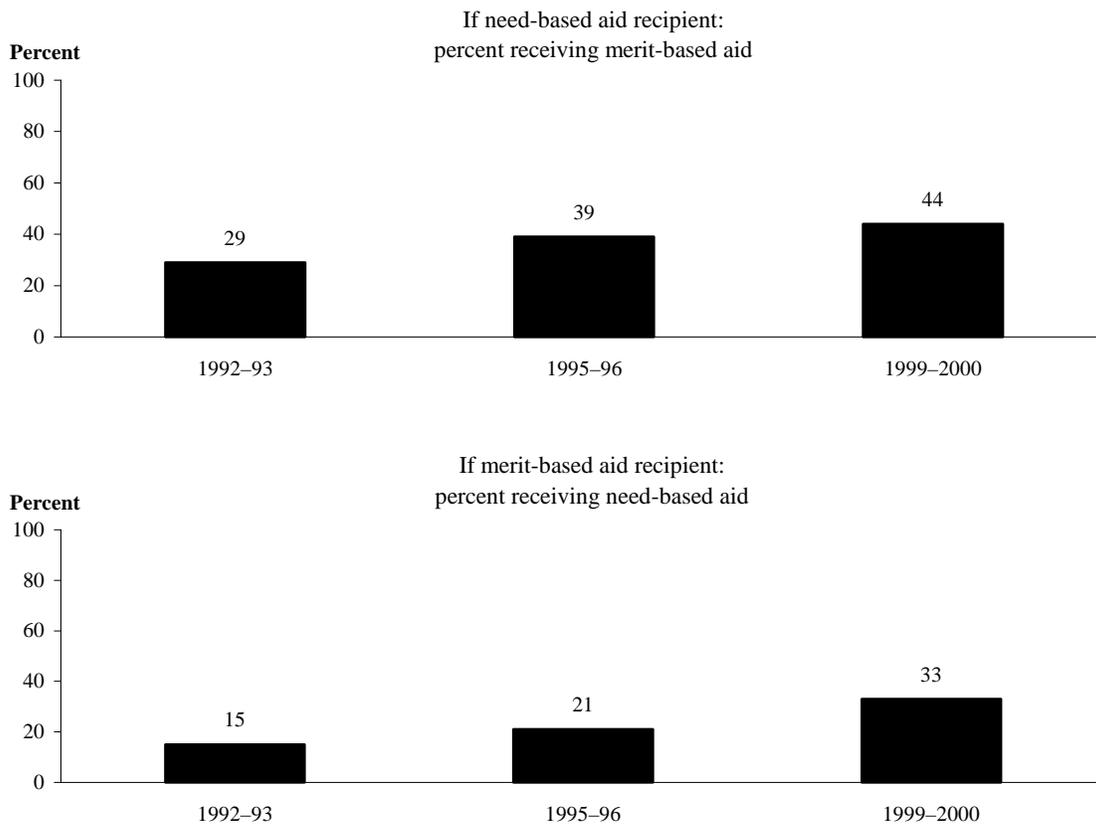
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1992–93, 1995–96, and 1999–2000 National Postsecondary Student Aid Study (NPSAS:93/96/2000).

quartiles to receive merit aid. By 1999–2000, however, no difference could be detected between the percentages of middle- and high-income students receiving merit aid (roughly 30 percent in each group did so), and students in both these income groups were more likely than low-income students (23 percent) to receive such aid. In other words, in private not-for-profit institutions, in the early to mid-1990s, middle-income students appeared to be favored over both high-income and low-income students in terms of receiving institutional merit aid. Institutions might award institutional aid in such a manner because low-income students are more eligible for need-based

aid and high-income students have more discretionary income. However, by 1999–2000, no difference could be detected between those in the middle- and high-income quartiles, and students in both income groups were more likely to receive merit aid than their low-income peers.

As shown in figure E, need-based and merit-based institutional aid awards are often packaged together. In private not-for-profit institutions, where merit aid is most likely to be awarded, among full-time undergraduates, 44 percent of those who received need-based aid in 1999–2000 also received merit-based aid; among students who

**Figure E. Among full-time undergraduates in private not-for-profit 4-year institutions who received institutional aid, the percentage of need-based aid recipients who also received merit-based aid and the percentage of merit-based aid recipients who also received need-based aid: 1992–93, 1995–96, and 1999–2000**



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1992–93, 1995–96, and 1999–2000 National Postsecondary Student Aid Study (NPSAS:93/96/2000).

received merit-based aid, about one-third also received need-based aid. Taking into account the various need-within-merit and merit-within-need award strategies that institutions might use to increase institutional aid across income levels, if the trend in increased aid was aimed at all students, the notable increase in merit aid awards to high-income students in private not-for-profit institutions that occurred between 1995–96 and 1999–2000 would have been accompanied by a corresponding increase in total aid to low-income and most middle-income students, who are eligible for need-based aid. However, as is shown in figure B, this does not appear to be the case. Looking at total institutional aid, which includes both need and merit aid, no increase was observed in the percentage of either low- or middle-income students receiving aid between 1995–96 and 1999–2000, while awards to high-income students increased from 41 to 51 percent.

### **Academic Merit, Financial Need, and Institutional Grant Aid Among First-Year Students**

Among undergraduates who enrolled in a 4-year college or university for the first time in 1995–96, about 38 percent of full-time students received institutional grant aid, including about one-quarter (24 percent) in public institutions and nearly two-thirds (62 percent) in private not-for-profit institutions.

Institutional aid can be awarded on the basis of financial need, academic merit, or both need and merit. In addition, depending on the selectivity of the institution, institutional aid packages and amounts may vary. Therefore, in this analysis, students' high school academic merit,<sup>3</sup> their

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<sup>3</sup>Levels of academic merit were based on an index incorporating three academic measures: college entrance exam scores, degree of high school curriculum difficulty, and high school grade-point average (GPA).

financial need,<sup>4</sup> and the selectivity of institutions<sup>5</sup> were taken into account when examining patterns of receipt of institutional grant aid.

Many of the differences observed in institutional grant aid awards were related to the selectivity of the institution. For example, in both public and private not-for-profit institutions, the likelihood of awarding institutional aid in very selective institutions did not vary significantly with students' academic merit, whereas in less selective institutions, it did. In less selective institutions, as students' high school academic merit increased, so did their likelihood of receiving institutional grant aid.

Differences by institution selectivity were also evident when examining the relationship between institutional aid awards and students' financial need, especially in the private sector. In very selective private not-for-profit institutions, as students' financial need rose, so did their likelihood of receiving institutional grant aid, from 21 percent of those with low financial need, to 59 percent with moderate need, to 66 percent with high need. In less selective institutions, on the other hand, while there was an association between institutional aid awards and financial need, fully one-half (51 percent) of students with low financial need received institutional grant aid, as did 71 percent of both those with moderate and high need.

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<sup>4</sup>Levels of financial need were based on the student budget reported by the institution (which includes the cost of tuition, books, and transportation, plus living expenses) after subtracting the expected family contribution (EFC) and government grant aid (both federal and state). This is the amount that institutions typically take into account before committing their own funds. This definition differs from the federal need definition, which is student budget minus EFC.

<sup>5</sup>Institution selectivity was based on the SAT or equivalent ACT scores of entering students. Institutions where at least 75 percent of entering students scored above 1000 on the SAT were considered "very selective." All others were identified as "less selective." (See appendix A for detailed descriptions of variables.)

In both less selective and very selective public institutions, students' likelihood of receiving institutional grant aid was clearly associated with their financial need. Students with no financial need were less likely to receive institutional grant aid than their counterparts with high need. However, students with no financial need were more likely to receive institutional grant aid in less selective institutions than in very selective institutions, whereas those with high need were more likely to receive aid in very selective institutions.

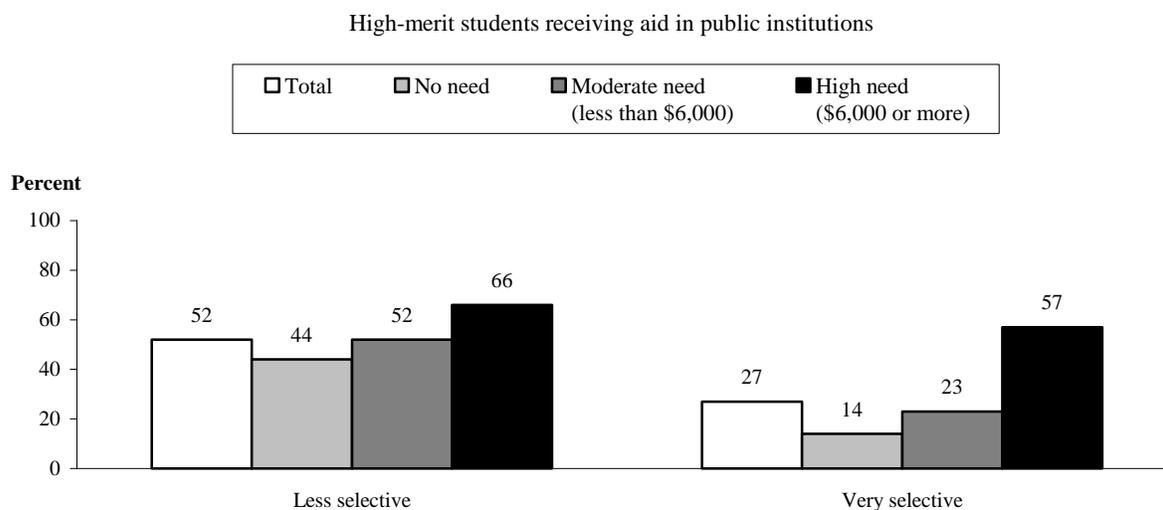
When looking at students' financial need in relation to their high school academic merit, positive associations between students' financial need and the likelihood of receiving institutional aid awards remained for those who had achieved no higher than moderate levels of high school academic merit. This was observed for all institution types, including less selective private

not-for-profit institutions: at such institutions, among those who had achieved moderate levels of academic merit, 69 percent with high need received institutional grant aid, compared with 47 percent with low need. However, as discussed below, for students who had achieved high levels of academic merit, whether or not they received institutional grant aid in less selective institutions did not vary significantly with their financial need.

### *Students With High Academic Merit*

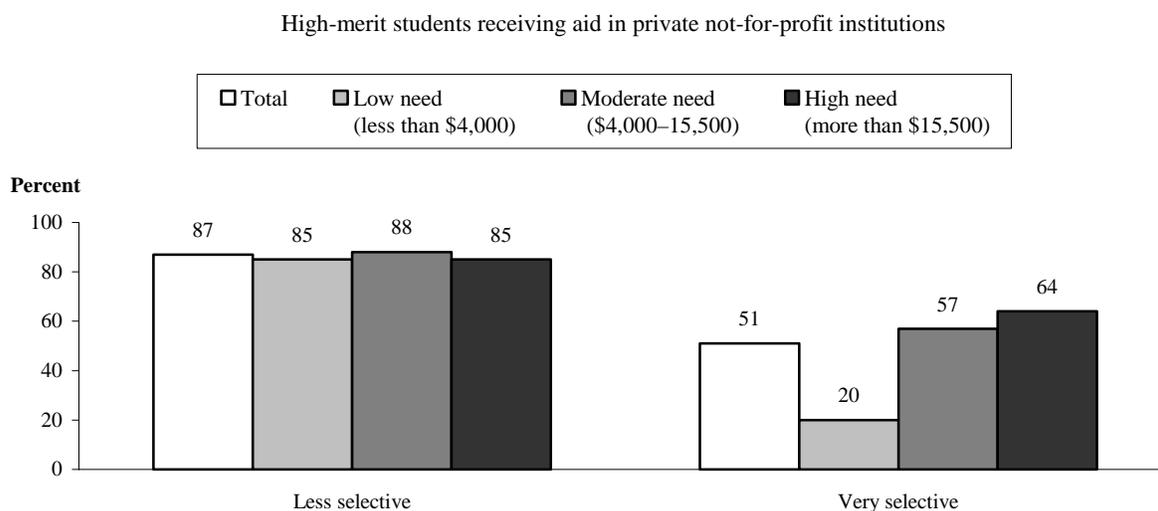
As shown in figures F and G, students enrolled in less selective institutions who had achieved high academic merit in high school were more likely to receive institutional grant aid than their high-merit counterparts in very selective institutions. This was observed for both public institutions (52 vs. 27 percent) (figure F) and private not-for-profit institutions (87 vs. 51 percent) (figure G). However, in less selective institutions, no

**Figure F. Among 1995–96 beginning full-time students enrolled in public 4-year institutions who had achieved high academic merit in high school, the percentage receiving institutional grant aid, by institution selectivity and financial need**



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/98 Beginning Postsecondary Students Longitudinal Study, "First Follow-up" (BPS:96/98).

**Figure G. Among 1995–96 beginning full-time students enrolled in private not-for-profit 4-year institutions who had achieved high academic merit in high school, the percentage receiving institutional grant aid, by institution selectivity and financial need**



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/98 Beginning Postsecondary Students Longitudinal Study, “First Follow-up” (BPS:96/98).

association could be detected between the likelihood of high-merit students receiving institutional grant aid and their financial need.<sup>6</sup> In private not-for-profit less selective institutions, for example, roughly 9-in-10 high-merit students received institutional grant aid regardless of their financial need (figure G). In very selective institutions, on the other hand, high-merit students with high financial need were more likely to receive institutional aid than their counterparts with low (or no) need.

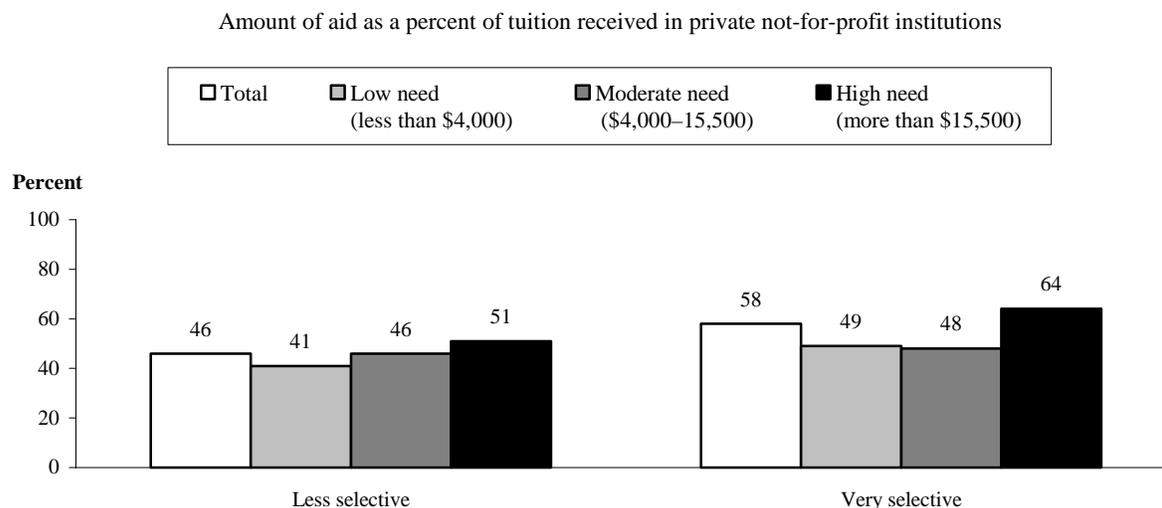
For high-merit students who received institutional grant aid, the average amount received as a percentage of tuition varied by institution selectivity in private not-for-profit institutions

(figure H): those in very selective institutions received about 58 percent of their tuition amounts, compared with 46 percent in less selective institutions. However, in the same sector, only in very selective institutions did the amount of institutional aid received vary by aid recipients’ financial need. Specifically, in very selective institutions, high-merit recipients with high financial need received enough institutional grant aid to pay for about two-thirds of their tuition, compared with about one-half of tuition for high-merit recipients with moderate or low need. In less selective private not-for-profit institutions, on the other hand, no difference in the average amounts received by high-merit recipients could be detected among students in terms of their financial need.<sup>7</sup>

<sup>6</sup>In public less selective institutions, the difference between the percentages of students with no need and high need who received institutional grant aid appeared to be different (44 vs. 66 percent), but because of large standard errors for high-merit students with high need, there was not enough statistical evidence to confirm the difference.

<sup>7</sup>The aid amounts for high-merit students with high need and low need appear to be different (51 vs. 41 percent of tuition), but there was not enough statistical evidence to confirm the difference.

**Figure H. Among 1995–96 beginning full-time students enrolled in private not-for-profit 4-year institutions who had achieved high academic merit in high school and had received institutional grant aid, the average amount received as a percent of tuition, by institution selectivity and financial need**



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/98 Beginning Postsecondary Students Longitudinal Study, "First Follow-up" (BPS:96/98).

Tuition in public institutions is typically much lower than it is in comparable private not-for-profit institutions. Due to large variations in the amounts received, in particular for students with no financial need, statistical differences in aid amounts could be detected only for high-merit aid recipients in less selective public institutions. Among such students, those with high need received enough aid to pay 96 percent of their tuition, compared with recipients with moderate need who received only enough aid to pay 64 percent of their tuition.

### **Institutional Grant Aid and Retention at Awarding Institution**

How did the award of institutional grant aid relate to students' likelihood of staying enrolled in the awarding institution? The analysis addressed this question at two different points in time, 1 year and 6 years after students first enrolled.

### ***One Year Later***

Some groups of students who received institutional grant aid in their first year were more likely than their unaided counterparts to re-enroll in their second year and less likely to transfer to another institution. But findings differed by sector and selectivity of institutions. In particular, differences in 1-year retention rates were observed for middle-merit students in less selective institutions, both public and private not-for-profit. Specifically, among middle-merit students, 87 percent of aided students in less selective public institutions returned in their second year, compared with 75 percent of unaided students; similarly, in less selective private not-for-profit institutions, 87 percent of aided students returned, compared with 70 percent of unaided students. A difference was also observed for high-merit students in very selective public institutions, where 97 percent of aided students returned, compared with 90 percent

of unaided students. Due in part to small sample sizes and uniformly high retention rates, 1-year retention rate differences could not be detected for any merit group in very selective private not-for-profit institutions.<sup>8</sup>

### ***Six Years Later***

Six years after their first enrollment, differences between aided and unaided students were only observed in public institutions. Students who had been awarded institutional grant aid in their first year were more likely than their unaided counterparts to have either attained a degree from or still be enrolled at the awarding institution.<sup>9</sup> In less selective public institutions, this trend was found across all merit groups, while in very selective public institutions, a difference in retention between aided and unaided students was detected only for high-merit students (88 percent of aided students maintained their enrollment vs. 78 percent of unaided students).

In private not-for-profit institutions, whether they were less selective or very selective institutions, no differences could be detected between the 6-year retention rates of students who received institutional grant aid in their first year and those who did not.

These results held in a subsequent multivariate analysis after taking into account students' academic merit and financial need, the selectivity of institutions, and a number of other variables

related to retention.<sup>10</sup> Full-time undergraduates who received institutional grant aid in public institutions were more likely than their unaided counterparts to earn a degree from or still be enrolled at the awarding institution 6 years after they had first enrolled. However, the same pattern was not observed for those enrolled in private not-for-profit institutions. While it appears as though receiving high amounts of institutional grant aid in private not-for-profit institutions (covering 75 percent or more of tuition) was associated with higher retention, there was not enough statistical evidence to confirm a difference once the multivariate analysis was applied.

### **Conclusions**

This study found that the percentage of full-time students receiving institutional grant aid increased measurably between the early and late 1990s. Increases in aid were especially apparent for students in the highest income quartile, and much of the increase was awarded in the form of merit aid.

The study also found that students who achieved high academic merit in high school were more likely to receive institutional grant aid if they attended less selective rather than very selective institutions (in both the public and private not-for-profit sectors). However, an association between high-merit students receiving such aid and their financial need was not readily apparent in less selective private not-for-profit institutions, whereas in very selective institutions (both public and private not-for-profit), the likelihood of high-merit

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<sup>8</sup>For example, 88 percent of high-merit aided students in very selective private not-for-profit institutions were still enrolled, as were 81 percent of comparable unaided students, a difference that is not statistically significant.

<sup>9</sup>Institutional grant aid receipt was only known for the first year of enrollment. The relationship discussed here is whether students received institutional aid in their first year and then persisted in the awarding institution for 6 years.

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<sup>10</sup>While the analysis controlled for observable student characteristics that might be related to persistence, it is possible that unobservable characteristics are related both to the receipt of institutional aid and persistence. For example, an institution might be more likely to give aid to students it perceives as more likely to succeed over students with comparable merit and need.

students receiving institutional grant aid increased with their financial need.

There was evidence that receiving institutional grant aid as freshmen was related to higher 1-year retention rates for certain groups of students, namely, those who had achieved moderate levels of academic merit and had enrolled in less selective institutions (both public and private not-for-profit), as well as those who had achieved high academic merit and enrolled in very selective public institutions. However, an association between institutional grant aid receipt in the first year and 6-year institutional retention (or degree attainment) was only evident among students in public institutions.

Taken together, the results are consistent with those of other studies reporting higher spending by 4-year colleges and universities on institutional aid

(e.g., Cunningham et al. 2001), especially by less selective private institutions (Redd 2000; and Hubbell and Lapovsky 2002). Also, as discussed in Duffy and Goldberg (1998), the findings revealed that in the late 1990s, the percentage of high-income students receiving institutional grant aid (in particular merit aid) increased, as did the average amount they received. This study could not address whether institutional grant aid awards had increased the enrollment of the types of students that institutions sought. However, the findings did indicate that in private not-for-profit institutions, where most institutional grant aid is awarded, no measurable association could be detected between students' receipt of institutional grant aid as freshmen and their graduating from the awarding institution (compared to unaided students), once other factors such as students' academic merit, students' financial need, and institutional selectivity were taken into consideration.