



# Tuition Discounting

Not Just a Private College Practice

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# Introduction

The practice of tuition discounting or price discrimination—charging different students different prices for the same educational opportunities—is a long-standing feature of private higher education institutions. Trends in the magnitude of this practice have been documented by Lucie Lapovsky and Loren Loomis Hubbell in a series of annual articles in *Business Officer*, published by the National Association of College and University Business Officers (NACUBO). While it is well-known that public colleges and universities charge higher prices to out-of-state students than to state residents, detailed information on discounting for individual students in the public sector has not been available. Institutional grant aid has become more common at public colleges and universities in recent years, with the percentage of full-time undergraduates in public four-year colleges and universities receiving institutional grant aid increasing from 16 percent in 1992-93 to 23 percent in 1999-2000 and to 28 percent in 2003-04. Fourteen percent of full-time public two-year college students received institutional grants in 2003-04, up from 10 percent in 1992-93, but down slightly from 16 percent in 1999-00.<sup>1</sup> In this paper we report on tuition discounting for undergraduate students at public four-year and two-year institutions, using data from the College Board's *Annual Survey of Colleges*.

## What Is Tuition Discounting?

References to “tuition discounting” frequently imply questionable motives on the part of colleges and universities that are viewed as manipulating prices in the interests of institutional priorities not necessarily consistent with the well-being of students. In fact, discounts to published tuition and fee rates are most often provided to students whose financial resources are inadequate to allow them to enroll without some form of assistance. Both need-based institutional grant aid and discounts granted in an effort to increase the probability that particular students will choose to enroll constitute tuition discounting. Consistent with NACUBO's practice, we define the discount rate as:

$$\begin{aligned} \text{Tuition Discount Rate} &= \frac{\text{Total institutional grant aid}}{\text{Total gross tuition and required fee revenue}} \\ &\text{or} \\ \text{Tuition Discount Rate} &= \frac{\text{Average institutional aid per student}}{\text{Published tuition and required fee rate}} \end{aligned}$$

It is important to note that the discount rate is calculated relative to only tuition and fee prices. Since grant aid may be awarded to cover room, board, and other living costs in addition to tuition and fees, the discount rate at institutions where tuition and fees constitute a smaller proportion of the total cost of attendance may be biased upward by this definition. However, since room and board costs contribute to institutional revenues only for on-campus students, it is not feasible to use a different base—particularly for two-year public institutions, where virtually all students are commuters.

There are several revenue sources for institutional financial aid. These include restricted and unrestricted gifts from the annual fund, revenue from restricted and unrestricted endowments, special state allocations to the institution for student aid, and the college's general revenues, which are primarily composed of tuition revenue. The discount rate that we will discuss here is for all undergraduate students from all the sources of revenue mentioned above. Other studies of the discount rate at private institutions have discussed the rate for full-time freshmen; our database does not allow us to report that information.

To date, most of the discussion and analysis of tuition discounting has focused on the private nonprofit institutions in this country. Using the College Board database, we are now able to look at the discount rate at public institutions as well. We have data on more than 1,300 institutions for the academic year 1994-95 and for 2000-01 through 2003-04, and for 859 institutions for 2004-05. In this paper we address the following questions:

- What is the discount rate at public four-year and two-year institutions and how has it changed over time?
- How does the discount rate at public institutions compare with the discount rate at private institutions?
- How much of the institutional aid in each sector is non-need-based?
- For public four-year institutions, how does the discount rate differ by size of institution, by the proportion of students who are from out of state, and by whether or not the institution is the state's flagship campus?

<sup>1</sup> L. Berkner, C. Wei, S. He, S. Lew, M. Cominole, and P. Siegel. *Undergraduate Financial Aid Estimates for 2003-04 by Type of Institution* (Washington, D.C.: National Center for Education Statistics, 2005-163). Tables 6, 14; L. Horn, C. Wei, and A. Berker, *What Students Pay for College: Changes in Net Price of College Attendance Between 1992-93 and 1999-00* (Washington, D.C.: National Center for Education Statistics, 2002-174), Table 30-B.

# The Discount Rate Over Time

We examine the discount rate over the time period from 2000-01 through 2004-05 and compare it to the discount rate in 1994-95. We then explore the above questions in more depth using the 2003-04 database. Table 1 below shows the discount rate in each of the sectors over time. Because the set of institutions for which data are available is not identical from year to year, these figures do not provide a precise time series and trends over time should be interpreted with caution.

As Table 1 indicates, the average discount rate in the public sector is significantly lower than in the private sector, but institutional aid is more common than the relative inattention in the literature and in policy conversations to this practice at state institutions might suggest.<sup>2</sup>

The discount rates reported in Table 1 are arithmetic averages of the discount rates at all of the institutions

in our sample. This average focuses on the practices of individual institutions. A focus on students as the unit of analysis would require enrollment-weighted averages. Weighting the averages by enrollment levels has little impact on the figures for four-year private colleges and universities, but it slightly increases the rate at public four-year institutions. The weighted average discount rate for public two-year colleges is significantly lower than the unweighted average.<sup>3</sup> This difference indicates that the large public two-year institutions are providing less institutional grant aid per student than the smaller colleges.<sup>4</sup>

The most recent data in Table 1 reveal that the (unweighted) average discount rate is 12.5 percent for public two-year colleges and 14.7 percent for public four-year institutions. In other words, these colleges and universities are spending a significant portion of their revenues creating different net prices for different students. The average discount rate for private nonprofit four-year colleges and universities is 33.5 percent. This discount rate matches the 34 percent average rate for all undergraduates emerging from NACUBO's survey of estimated 2004-05 data.

Over the decade beginning in 1994-95, the discount rate increased by about 6 percentage points in two-year public institutions,<sup>5</sup> 3 percentage points in four-year public colleges and universities, and 10 percentage points in private four-year institutions. Whereas the private four-year average discount rate has increased at a fairly steady rate of about 1 percentage point per year over the entire decade, the discount rate in the public sector peaked in 2002-03. The growth in the public two-year sector discount rate occurred between 1994-95 and 2000-01. The discount rate in public four-year institutions did grow over that period, but it leapt up in 2001-02 and has remained at that higher level since.<sup>6</sup>

**Table 1**

Discount Rates by Sector, 1994-95 and 2000-01 through 2004-05 (All Undergraduate Students)			
	<i>Public 2-Year</i>	<i>Public 4-Year</i>	<i>Private 4-Year</i>
<b>1994-95</b>	6.8% (n=435)	11.7% (n=305)	23.8% (n=773)
<b>2000-01</b>	13.5% (n=282)	12.9% (n=345)	29.6% (n=682)
<b>2001-02</b>	13.3% (n=315)	15.4% (n=371)	30.2% (n=764)
<b>2002-03</b>	13.7% (n=299)	15.4% (n=350)	31.2% (n=683)
<b>2003-04</b>	12.5% (n=278)	15.3% (n=374)	32.4% (n=720)
<b>2004-05</b>	Sample too small to report	14.7% (n=204)	33.5% (n=577)

<sup>2</sup> Because tuition and fees comprise a significantly higher proportion of the total cost of attendance at private four-year institutions than at public four-year institutions and a significantly lower proportion of the total cost of attendance at two-year public colleges than at four-year institutions, the relationship among the discount rates in the three sectors would be quite different if the discount were calculated relative to tuition, fees, room, and board (for commuter students in the public two-year sector) instead of just tuition and fees. In 2003-04, the alternative discount rates would be: public two-year: 3.2 percent, public four-year: 6.7 percent, and private four-year: 24.4 percent. In other words, the differences across sectors would appear larger.

<sup>3</sup> Average discount rates weighted by FTE enrollments are as follows:

	<i>Public 2-Year</i>	<i>Public 4-Year</i>	<i>Private 4-Year</i>
<b>1994-95</b>	4.6%	13.1%	25.3%
<b>2000-01</b>	7.2%	13.3%	30.0%
<b>2001-02</b>	8.4%	15.8%	29.4%
<b>2002-03</b>	9.5%	15.8%	31.4%
<b>2003-04</b>	7.4%	15.4%	32.0%
<b>2004-05</b>	NA	15.7%	32.8%

<sup>4</sup> About a quarter of public two-year colleges enroll fewer than 2,000 students. At the other end of the spectrum, about 20 percent enroll 5,000 to 9,999 students and 18 percent enroll 10,000 students or more (K. Phillippe, ed., *National Profile of Community Colleges: Trends and Statistics*, Washington, D.C.: Community College Press, 2005-17).

<sup>5</sup> The latest reliable data available for public two-year colleges are for 2003-04, while the figures for four-year institutions are based on 2004-05 data.

<sup>6</sup> The increases in enrollment-weighted average discount rates have been smaller, but the patterns are similar.

**Table 2**

Distribution of Discount Rates among Institutions, by Sector, 2003-04

	Mean	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Public 2-Year	13%	0%	3%	7%	13%	32%
Public 4-Year	15%	4%	7%	13%	20%	30%
Private 4-Year	32%	14%	24%	33%	40%	48%

As Table 2 reveals, the average discount rates for the three sectors conceal considerable variation across institutions. In both the public and private four-year sectors, the mean and median discount rates are similar, indicating a relatively symmetrical distribution. However, the median discount rate among public two-year colleges is 7 percent, compared to a mean of 13 percent. This difference indicates that a small number of community colleges have very high discount rates, as confirmed by the fact that while 75 percent of these schools have discount rates of 13 percent or below, 10 percent of these schools discount by at least 32 percent of gross tuition and fees.

In all sectors, there is a wide range of discounting patterns. Among four-year public colleges, 25 percent have discount rates of 7 percent or lower while at the other end of the spectrum, 25 percent have rates of 20 percent or higher. In the two-year public sector, 25 percent of schools have discount rates of 3 percent or lower and 25 percent have discount rates of 13 percent or higher; and in the private sector, the range of the middle 50 percent of colleges and universities is 24 percent to 40 percent.

## Need-Based Versus Non-Need-Based Institutional Grant Aid

Historically, the awarding of institutional aid has been based primarily on the financial need of the student. This need-based aid provides grant money to students who lack the resources to pay the listed price in order to enable them to attend the institution. Non-need-based aid, based on criteria such as athletic abilities, also has a long history. However, in recent years the strategic use of non-need-based institutional aid to attract certain types of students to an institution has become increasingly

common. Financial aid “leveraging” may be used to alter the profile of students attending the institution—usually to improve the perceived academic profile of the institution, to increase net revenues, or simply to fill empty seats. This non-need-based aid may be awarded to students who do in fact have financial need, but it is often given to students who have the ability to pay but are unwilling to pay the full published price to attend the specific institution in question.

Need-based financial aid is generally recognized as a desirable practice. The controversy about tuition discounting centers primarily on the strategic use of institutional grant aid for the purpose of competition with other institutions. Evidence from the National Postsecondary Student Aid Study (NPSAS) indicates that particularly in the lower-priced private colleges and universities, a disproportionate amount of institutional aid is being distributed to middle- and upper-income students, suggesting an increase in non-need-based aid.<sup>7</sup> Differences in the distribution of institutional aid nationally are, however, only partially a function of institutional policies. In both the public and private sectors, more expensive institutions tend to enroll higher-income students and to have larger endowments. More affluent students are eligible for need-based aid at more expensive institutions, and the institutions in which they enroll are more likely to be able to meet the need of their students.

Another factor complicating the analysis of need-based versus non-need-based aid is that it is difficult to draw a clear line between the two. Many schools award scholarships based on academic criteria to students who have financial need and think of them as merit-based. Many schools ration their scarce need-based aid funds through preferential packaging, awarding more generous grant aid to the students they are most eager to enroll or who are deemed most sensitive to changes in grant aid. In other words, there is a merit-based component to much of the need-based aid offered by institutions.

Non-need-based aid is defined in some surveys as any aid that is distributed without regard to financial circumstances. In contrast, the *Annual Survey of Colleges*, on which this study is based, follows the practice of the Common Data Set, defining any aid that meets the need of students as need-based aid, regardless of the basis on which it was awarded.<sup>8</sup> This is an important distinction, since much of the aid commonly viewed as non-need-based falls into our need-based category, as it supports the documented financial need of the recipients.

Although data on the breakdown of aid into need-based and non-need-based are not available for the 1994-95 aca-

<sup>7</sup> See College Board, *Trends in Student Aid 2004* (New York: The College Board, 2004), Figure 11; College Board, *Trends in Student Aid 2005* (New York: The College Board, 2005), Figure 12a.

<sup>8</sup> We are unable to verify the accuracy of the breakdown of institutional aid between need-based and non-need-based aid provided by individual institutions.

demographic year, we are able to compare the distribution of this aid across institutional types for the 2000-01 through 2004-05 academic years.

**Table 3**

Percentage of Institutional Aid That Is Need-Based (Unweighted Averages)

	2000-01	2001-02	2002-03	2003-04	2004-05
<i>Public 2-Year</i>	57.5%	59.0%	63.0%	65.8%	NA
<i>Public Flagship</i>	40.3%	41.7%	41.9%	43.9%	41.7%
<i>Other Public 4-Year</i>	35.9%	38.0%	39.3%	37.6%	40.2%
<i>Private 4-Year</i>	62.6%	60.4%	64.9%	65.1%	68.2%

Several important observations emerge from Table 3. Public four-year institutions distribute less than half of their institutional aid to meet need, and even community colleges have a significant amount of non-need-based institutional grant aid.

Contrary to common wisdom, the proportion of aid that goes toward meeting financial need has actually increased in all sectors since 2000-01.

If the breakdowns of need-based and non-need-based aid are weighted by enrollments, the increase in need-based aid at public four-year institutions is even clearer, with the proportion increasing from 36.9 percent in 2000-01 to 45.3 percent at non-flagship publics in 2004-05.<sup>9</sup> This difference indicates that the larger public institutions are moving away from non-need-based aid. In addition, the flagship universities base more of their aid on need than other four-year publics and the percentages allocated beyond need have declined in recent years. This may result from changes in policy, but it is also true that as tuition has skyrocketed over these years, family income has grown slowly, significantly increasing student financial need and making it more likely that grants awarded on the basis of other criteria will serve to support need.

Our findings are not necessarily incompatible with reports elsewhere that the proportion of institutional aid

that is merit-based is increasing. Heller (2006), for example, uses data from the 1995-96 and 2003-04 National Postsecondary Student Aid Studies (NPSAS) to support this trend.<sup>10</sup> On one hand, if we were able to look at data over a longer time period, we would likely find that the recent decline in the proportion of non-need-based aid follows a period of significant increases. On the other hand, an increase in non-need-based aid since 1995-96 does not necessarily imply that the increase has continued over the entire time period. Moreover, NPSAS defines any aid awarded without consideration of financial need as merit-based. Institutions may well be continuing to define increasing portions of their grants as merit awards, but awarding more of those dollars to students who do in fact, have financial need.

The average non-flagship public four-year institution consistently offers 40 percent or less of its institutional aid to meet financial need. This result is quite surprising and means that public four-year institutions are using the significant majority of their aid to “shape” their classes. A portion of the non-need-based aid in both two-year and four-year public institutions results from tuition waivers that may be mandated by the state, but colleges and universities are also using funds to enroll more athletes and more students with high grades and tests scores, rather than to increase access for students with the most limited financial resources.

Athletic aid plays a particularly large role in public four-year institutions and, as indicated in Table 4, explains a much larger part of the non-need-based aid than the need-based aid at all colleges and universities. The difference in the role of athletic scholarships in need-based and non-need-based institutional aid is striking, particularly since our definition counts all dollars going to support need as need-based aid, regardless of the reason for the award.

Athletic scholarships account for 16 percent of the institutional financial aid at the public flagship institutions in our sample and 18 percent at the other public four-year institutions. At public four-year institutions, 3 percentage points of the institutional discount rate are attributable to athletic scholarships. The majority of these awards are not helping to support documented need. These awards account for 25 percent of the non-need-based aid at flagship institutions and 24 percent of the

<sup>9</sup>

Percentage of Institutional Aid That Is Need-Based (Enrollment-Weighted Averages)

	2000-01	2001-02	2002-03	2003-04	2004-05
<i>Public 2-year</i>	45.9%	53.9%	61.4%	59.2%	NA
<i>Public Flagship</i>	42.8%	43.2%	45.3%	46.7%	50.5%
<i>Other Public 4-year</i>	36.9%	38.0%	41.8%	42.8%	45.3%
<i>Private 4-year</i>	69.8%	68.3%	70.4%	69.9%	71.3%

<sup>10</sup> Donald Heller, “Merit Aid and College Access.” Wisconsin Center for the Advancement of Postsecondary Education, 2006.

non-need-based aid at the other four-year colleges and universities. Athletic scholarships play a much smaller role at public two-year institutions and private institutions. At the public two-year institutions in our sample, they account for 10 percent of the institutional aid while at the private institutions, they account for 7 percent of the institutional aid.

Tuition waivers are a form of aid usually provided for specific categories of students. For example, public institutions may be mandated by the states to grant waivers to students who are studying to be science and math teachers or pursuing other courses of study. Waivers may also be mandated for certain categories of students such as veterans or senior citizens. Many institutions grant tuition waivers for employees and their children. Tuition waivers account for 30 percent of the institutional aid at the public two-year institutions in our sample, 16 percent at the public flagships, 18 percent at non-flagship public four-year institutions, and 5 percent at the private institutions. Although need is not usually a requirement for granting tuition waivers, tuition waivers account for 35 percent of the need-based aid at the two year public institutions. At the other types of institutions, waivers account for less than 15 percent of need-based aid and constitute more of the non-need-based aid.

Taken together, athletic scholarships and tuition waivers account for about a third of the institutional aid awarded by public four-year institutions and about 40 percent of the institutional aid awarded by two-year public institutions, but only 12 percent of the institutional aid awarded by private institutions.

Overall, private institutions allocate significantly higher proportions of their institutional grant aid to meet

need than public four-year institutions. This is at least partially because of the higher levels of need generated by their higher costs of attendance. As is the case with the four-year publics, the trend is in the direction of aid that supports financial need.

The decline in the proportion of institutional aid that is non-need-based is particularly dramatic at two-year public colleges. The average percentage of institutional aid that is need-based increased from 58 percent in 2000-01 to 66 percent in 2003-04. Nonetheless, given the role of community colleges as open access institutions educating large numbers of students from academically and economically disadvantaged backgrounds, the fact that 34 to 40 percent of the grants these colleges award to their students are for purposes other than meeting need raises significant public policy questions. These questions are important regardless of whether state or institutional policies are responsible.

As is the case with overall discount rates, average breakdowns of institutional aid between need-based and non-need-based awards differ considerably across institutions within sectors. The distribution of the proportion of aid that is need-based is reported in Table 5. The variation is again greatest within the public two-year sector, where on average 66 percent of the aid is need-based, but the median institution grants 88 percent of its institutional aid to meet financial need. Consistent with the access mission of this sector, this is significantly higher than the medians of 67 percent for private four-year colleges and 34 percent for public four-year colleges. There is also a considerable range of patterns among four-year colleges and universities, where 25 percent of institutions grant no more than 6 percent of their dollars based on need, while 25 percent of these institutions award 61 percent or more of their aid to meet need. At private colleges, over half of the aid meets need at virtually all institutions and 25 per-

**Table 4**

Athletic Aid and Tuition Waivers, 2003-04

	Public 2-year	Public flagship	Other public 4-year	Private 4-year
<i>Athletic Grants as a Percentage of:</i>				
Need-based aid	7%	6%	9%	3%
Non-need-based aid	15%	25%	24%	15%
All institutional aid	10%	16%	18%	7%
<i>Tuition Waivers as a Percentage of</i>				
Need-based aid	35%	12%	14%	3%
Non-need-based aid	22%	19%	21%	11%
All institutional aid	30%	16%	18%	5%
<i>Athletic Grants Plus Tuition Waivers as a Percentage of</i>				
Need-based aid	42%	18%	23%	6%
Non-need-based aid	37%	44%	45%	26%
All institutional aid	40%	32%	36%	12%

**Table 5**

Distribution of Proportion of Institutional Aid That Is Need-Based by Sector, 2003-04

Percent Need- Based	Mean	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Public 2-Year	66%	0%	30%	88%	100%	100%
Public 4-Year	38%	0%	6%	34%	61%	83%
Private 4-Year	65%	52%	60%	67%	76%	86%

cent of these colleges award more than three-quarters of their aid to support need.

Because of the large difference in overall discount rates across sectors, a simple comparison of the percentages of total aid that are based on need does not necessarily

**Table 6**

Need-Based and Non-Need-Based Discount Rates, 2000-01 through 2004-05 (Unweighted Averages)

	<i>Need-Based Discount Rate</i>				
	<i>2000-01</i>	<i>2001-02</i>	<i>2002-03</i>	<i>2003-04</i>	<i>2004-05</i>
<i>Public 2-Year</i>	7.7%	7.8%	8.6%	8.3%	NA
<i>Public Flagship</i>	7.3%	8.5%	8.4%	8.3%	7.0%
<i>Other Public 4-Year</i>	4.6%	5.9%	6.1%	5.7%	5.9%
<i>Private 4-Year</i>	18.5%	18.3%	20.3%	21.1%	22.8%

  

	<i>Non-Need-Based Discount Rate</i>				
	<i>2000-01</i>	<i>2001-02</i>	<i>2002-03</i>	<i>2003-04</i>	<i>2004-05</i>
<i>Public 2-Year</i>	5.7%	5.5%	5.1%	4.3%	NA
<i>Public Flagship</i>	10.8%	11.9%	11.6%	10.7%	9.8%
<i>Other Public 4-Year</i>	8.3%	9.6%	9.4%	9.5%	8.8%
<i>Private 4-Year</i>	11.1%	12.0%	11.0%	11.3%	10.7%

reveal which schools are providing the highest levels of either need-based or non-need-based aid. Table 6 breaks each sector's discount rate into its two components. The need-based discount rate is higher for all categories of institutions in 2003-04 than it was in 2000-01, but is continuing to increase only in private four-year institutions. As indicated by the sharp decline in the proportion of institutional aid that is non-need-based, the non-need-based discount rate declined steadily at public two-year colleges between 2000-01 and 2003-04. It shows no clear trend in the other sectors.

It is notable that while the need-based discount rate is much higher at private colleges than at public flag-

ships, the non-need-based discount rate is similar in the two sectors. The need-based discount rate is consistently higher in public two-year institutions than it is in public four-year institutions, while the reverse is true of the non-need-based discount rate.

Taken together, the findings of Tables 3 to 6 indicate that a significant portion of institutional aid dollars subsidizes students who do not have measured financial need or provides some students with more aid than is necessary to meet their needs. This practice is most prevalent in the public four-year sector. However, whatever trend away from need-based aid may have occurred in the 1990s, using our definition of need-based aid, the trend has not continued in the past few years.

## Financing at Public Four-Year Institutions

For 263 public four-year institutions, we have data for both 2000-01 and 2003-04, allowing a reliable longitudinal analysis. Nationally, at public four-year institutions, in-state tuition and fees increased 32 percent over this period from \$3,508 to \$4,645, while average out-of-state tuition and fees rose 28 percent.<sup>11</sup>

Using the *Annual Survey of Colleges*, we have examined the way students are financing their education at public four-year colleges and universities. As shown in Table 7, institutional grant aid at the institutions in our sample increased by 37 percent between 2000-01 and 2003-04, from \$622 per student to \$850 per student. Federal and state grant aid each increased by 34 percent, with federal grant aid per student increasing from \$758 to \$1,015 and state grant aid increasing from \$481 per student to \$645 per student.<sup>12</sup> In other words, although the percentage increase in grant aid exceeded the percentage increase in tuition and fees, on average increased grant aid covered only about 57 percent of the \$1,137 increase in

**Table 7**

Changes in Tuition and Fee Rates and Grant Aid at Public Four-Year Institutions, 2000-01 to 2003-04

	<i>In-State Tuition and Fees</i>	<i>Out-of-State Tuition and Fees</i>	<i>Institutional Aid/FTE</i>	<i>Federal Grant/FTE</i>	<i>State Aid/FTE</i>	<i>Total Grant/FTE</i>
<i>2000-01</i>	\$3,508	\$9,018	\$622	\$758	\$481	\$1,861
<i>2003-04</i>	\$4,645	\$11,524	\$850	\$1,015	\$645	\$2,510
<i>Dollar Increase</i>	\$1,137	\$2,506	\$228	\$257	\$164	\$649
<i>Percentage Increase</i>	32%	28%	37%	34%	34%	35%

Note: Tuition and fee numbers are based on national data as reported in *Trends in College Pricing 2005*. Aid numbers are based on the sample of institutions in this study.

<sup>11</sup> College Board, *Trends in College Pricing 2005* (New York: The College Board, 2005).

<sup>12</sup> The maximum Pell Grant increased from \$3,300 in 2000-01 to \$4,050 in 2003-04. It remains \$4,050 for 2006-07.

**Table 8**

Changes in Loans, Work-Study, and Institutional Grant Aid at Public Four-Year Institutions, 2000-01 to 2003-04

	<i>Loan/ FTE</i>	<i>Work- Study/ FTE</i>	<i>Total Self- Help/ FTE</i>	<i>Need-Based Institutional Grant/FTE</i>	<i>Non-Need- Based Institutional Grant/FTE</i>
<b>2000-01</b>	\$2,467	\$224	\$2,691	\$213	\$409
<b>2003-04</b>	\$3,058	\$239	\$3,297	\$316	\$534
<b>Dollar Increase</b>	\$591	\$15	\$606	\$103	\$125
<b>Percent Increase</b>	24%	7%	23%	33%	23%

tuition and fees for in-state students and 26 percent of the \$2,506 increase for out-of-state students.

As Table 8 indicates, as a result of this growing gap and of simultaneous increases in room and board prices loans at public four-year institutions increased 24 percent, from \$2,467 per student to \$3,058 during this three-year period. During this same period, work-study dollars per student increased only 7 percent, from \$224 to \$239, and total self-help per student increased 23 percent, from \$2,691 in 2000-01 to \$3,297 in 2003-04.

Our estimates of the overall discount rate and its breakdown into need-based and non-need based grants indicate that the in-state tuition increase of \$1,137 and the out-of-state tuition increase of \$2,506 at public four-year institutions between 2000-01 and 2003-04 were met with an average increase of about \$103 in need-based institutional grant aid per student and about \$125 in non-need-based institutional grant aid per student. Clearly, students were forced to find funds to cover most of the higher tuition rates on their own.

## Tuition Discounting at Public Four-Year Institutions, 2003-04

In order to understand institutional discounting at public four-year institutions, we have looked at the discount rate and the percentage of aid that is need-based for subgroups of institutions. We examine differences in discount rates by flagship status, size of institution, and percentage of students from out of state. We have done this further analysis on the 2003-04 data, since the number of schools with data for 2004-05 is much lower. For this analysis, we treat the flagship institutions as a separate group since they are different in many ways from the rest of the institutions.

Comparing the 40 flagship campuses for which we have data with the 334 other public four-year institutions for which we have data in Table 9, we see several differences. The flagship campuses have more out-of-state students, higher in-state and out-of-state tuitions, much larger enrollments, higher discount rates, and a larger percentage of the institutional aid spent on need-based aid than the other public four-year institutions. The discount rate at the flagship campuses is 19.0 percent compared with 14.8 percent at the other public four-year institutions, while the percentage of institutional aid spent on need is 43.9 percent compared with 36.8 percent at the other public four-year institutions. The average enrollment of the flagship campuses is more than twice that of the other public four-year institutions. In-state tuition is 19 percent higher and out-of-state tuition is 32 percent higher than at the non-flagship public four-year institutions, while the percentage of out-of-state students is 80 percent higher.

### Size of Institution

Looking at the data by size of school and by flagship status in Table 10, we find that the average discount rate is

**Table 9**

Flagship and Other Public Four-Year Institutions, 2003-04

	<i>Percent Out-of- State</i>	<i>Discount Rate</i>	<i>Percent of Need- Based Aid</i>	<i>Average Enroll- ment</i>	<i>Average In-State Tuition &amp; Fees</i>	<i>Average Out-of-State Tuition &amp; Fees</i>
<b>Public Flagships</b>	22.2%	19.0%	43.9%	18,422	\$5,345	\$14,880
<b>Other 4-Year Publics</b>	12.3%	14.8%	36.8%	7,711	\$4,496	\$11,278

**Table 10**

Discount Rate by Size of Institution at Public Four-Year Institutions, 2003-04

	<i>Number of Institutions</i>	<i>Percentage Out-of-State FTEs</i>	<i>Discount Rate</i>	<i>Percentage of Aid That is Need-Based</i>
<b>Public Flagships (Average 18,422 FTEs)</b>	40	22.2%	19.0%	43.9%
<b>Average FTEs &lt; 5,000</b>	145	14.5%	16.4%	37.8%
<b>Average FTEs &gt;5,000 &lt;10,000</b>	101	11.9%	12.8%	33.8%
<b>Average FTEs &gt;10,000</b>	88	9.4%	14.6%	38.6%

**Table 11**

Discount Rate by Proportion of Out-of-State Students at Public Four-Year Institutions, 2003-04

<i>Institutions</i>	<i>Number of Institutions</i>	<i>Discount Rate</i>	<i>Percent of Aid That is Need-Based</i>	<i>In-State Tuition &amp; Fees</i>	<i>Out-of-State Tuition &amp; Fees</i>
<i>Flagships (Average 22.2% Out of State)</i>	40	19.0%	43.9%	\$5,345	\$14,880
<i>Percent Out of State &lt;10%</i>	183	12.4%	37.7%	\$4,517	\$11,460
<i>Percent Out of State 10% &lt; 20%</i>	84	16.1%	33.5%	\$4,364	\$10,737
<i>Percent Out of State 20% +</i>	67	20.0%	38.5%	\$4,602	\$11,459

highest at the flagship institutions, which are the largest, with an average enrollment of 18,422 students. However, there is not a consistent pattern of higher discount rates at larger institutions. The 14.6 percent average discount rate of colleges with enrollments of more than 10,000 students, excluding the flagship institutions, is significantly lower than the 19.0 percent average rate at the flagship institutions; the discount rate at colleges and universities with enrollments of less than 5,000 is 16.4 percent. The discount rate is lowest, 12.8 percent, at the schools with enrollments between 5,000 and 10,000 students. Other large institutions also differ from flagship universities in that they enroll smaller percentages of out-of-state students than smaller public colleges and universities.

## Out-of-State Enrollments

While the relatively high discount rate at flagship institutions does not reflect a correlation between total enrollments and discount rates, as shown in Table 11 public four-year institutions enrolling larger proportions of out-of-state students do tend to have higher discount rates.<sup>13</sup> The public flagships and the other institutions with out-of-state enrollment of more than 20 percent have the highest discount rates of 19.0 percent and 20.0 percent, respectively. The public four-year institutions with less than 10 percent of their FTEs from out-of-state have a discount rate of only 12.4 percent, while those with out-of-state enrollment between 10 and 20 percent have an average discount rate of 16.1 percent. The higher costs of attendance and limited availability of state grant aid for out-of-state students certainly contribute to the correlation between the proportion of out-of-state students and the discount rate.

Unlike the overall discount rate, the percentage of institutional grant aid that is used for need-based awards, which is higher at the flagships than on other campuses, does not increase consistently with the percentage of students who are from out-of-state.

**Table 12**

Discount Rate by Average In-State Tuition and Fees, 2003-04

	<i>Number of Institutions</i>	<i>Discount Rate</i>	<i>Percentage of Aid That Is Need-Based</i>
<i>Public Flagship (Average In-State Tuition = \$5,345)</i>	40	19.0%	43.9%
<i>Average In-State Tuition &lt; \$3,000</i>	65	17.7%	42.8%
<i>Average In-State Tuition = \$3,000 &lt; \$5,000</i>	154	16.0%	33.4%
<i>Average In-State Tuition = \$5,000 +</i>	114	13.4%	37.7%

## Tuition and Fee Levels

The pattern of average discount rates by in-state tuition and fee levels at nonflagship institutions is not consistent with the higher discount rate at the relatively expensive flagship universities. Instead, as Table 12 reveals, the discount rate is higher at the colleges and universities with lower in-state tuitions. The NACUBO survey of private institutions also found the discount rate higher at the private colleges that have lower average tuitions. More surprising is that the nonflagship institutions with tuition and fee levels of \$3,000 or higher in 2003-04 devoted a significantly smaller proportion of their institutional aid to meeting need than did the less expensive institutions. Need-based proportions range from 42.8 percent for campuses with tuition under \$3,000 to 33.4 percent for those charging tuition between \$3,000 and \$5,000 to 37.7 percent for those with in-state tuition above \$5,000. The discount rate at the other public four-year institutions ranged from 17.7 percent for those with in-state tuition below \$3,000 to 13.4 percent for those with in-state tuition of \$5,000 or more. In contrast, the flagship institutions, with an average in-state tuition of \$5,345, have the highest

<sup>13</sup> The number of out-of-state students reported in the *Annual Survey of Colleges* data used here include only domestic students. Including international students, who are counted in the total enrollment figures, would yield a higher proportion of nonresidents.

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discount rate, 19 percent, and the highest percentage of their aid need-based, 43.9 percent.

## Conclusion

This analysis indicates that both two-year and four-year public institutions use their money to provide grants and scholarships of a nontrivial amount. The public sector provides both need-based and non-need-based aid and we find that only about 40 percent of the institutional grant aid in the public four-year sector fills documented financial need, while more than 60 percent of the institutional aid in the private sector and the public two-year sector is need-based. Over the past decade, the discount rate has increased significantly in all sectors but, in contrast to the private sector where the discount rate is still rising gradually, the discount rate in the public sector has leveled off since the turn of the century, despite unusually large increases in tuition and fees during these years.

Contrary to general perceptions, the proportion of institutional grant aid that is need-based has increased in all sectors since 2000-01. This trend may reflect a reversion to policies designed to increase access and diversity, rather than to enhance reputation and selectivity. On the other hand, it may simply be the result of rapidly rising tuition and fee levels that, combined with slow growth in family incomes, have generated increased financial need among students at all types of institutions. While we have no evidence to support this, increases in the proportion of state grants based on academic credentials may also have contributed to a reduced focus on non-need-based institutional aid in the public sector.

There is considerable variation in tuition discounting patterns within sectors, with two-year public colleges displaying a particularly wide range of practices. Among four-year public institutions, flagship universities and other institutions enrolling relatively large numbers of out-of-state students have the highest discount rates and devote more of their aid budgets to meeting financial need than other four-year publics. We are not able to determine how much of the grant aid is going to out-of-state students.

This analysis raises serious questions about the extent to which institutional aid funds are being used to enhance access to and choice in higher education. Not only are significant amounts of institutional aid in the public sector being distributed based on criteria other than need, but a high proportion of dollars are allocated to students whose financial circumstances would permit them to enroll without these subsidies.

The evidence presented here raises many public policy questions that need further consideration. These questions include:

1. Is access to public higher education enhanced or diminished by institutional aid policies?
2. What would the composition of the enrollment at public colleges look like if all of the grant aid were need-based?
3. How does aid differ by the academic characteristics of the students at public four-year institutions?
4. How much of the institutional aid at public institutions goes to out-of-state students?
5. How do institutional and state policies interact with the combination of tuition and fee levels and the distribution of students across categories of institutions to determine the amounts of grant aid received by students with different levels of financial resources?
6. Are tuition discounting policies at public colleges and universities consistent with their missions?

We hope that this study and these questions will motivate further research and dialogue on institutional financial aid at public institutions.

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