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ABSTRACT

This study uses data from the National Postsecondary Student Aid survey to analyze the use of need-based versus non-need financial aid awarded by colleges and universities in 1989 and 1995. Descriptive and trend analyses were used to examine differences in the use of these types of aid among varying institutional types, and to examine how financial aid awards have changed for students from different income backgrounds. Key findings include: (1) while the number of need-based awards grew faster than non-need grants at all four-year institutions, the amount of the average non-need grant grew faster; (2) the growth in the number of need awards was greatest in public institutions and among high income students; (3) high income students increased their proportion of both total need and non-need grant dollars awarded between 1989 and 1995; and (4) important differences in the use of need and non-need awards were discovered among institutions from different Carnegie classifications. (Contains 16 references.) (Author)

Trends in the Use of Need-based and Non-need Financial Aid in American Colleges and Universities

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Trends in the Use of Need-based and Non-need Financial Aid in American Colleges and Universities

Abstract

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Trends in the Use of Need-based and Non-need Financial Aid in American Colleges and Universities

Introduction

Financial assistance for individuals to attend college has existed in this country almost as long as higher education itself. Wick (1997), McPherson and Schapiro (1998), and Holtschneider (1997) describe how scholarships were established in a number of colleges during the colonial era and in the early part of the 19th century. The earliest scholarships were often awarded based on the academic merit of individual students, with some consideration given to financial need (Hauptman, 1990).

This practice was carried on into the 20th century largely by the private elite colleges and universities, most of whom were located in the northeastern region of the United States. Recognizing the inequities of this system, and with no common method for determining financial need, 95 of these private institutions banded together in 1954 to establish the College Scholarship Service (CSS) as part of the College Entrance Examination Board. The CSS developed a formula for institutions to share to help determine financial need. Armed with this, and the recognition of the inequities of merit-based aid, most private institutions shifted their awarding of scholarships to a system based on financial need.

Public institutions historically relied on general state appropriations to hold down tuition prices, thus ensuring an affordable college education for all. Beginning in the 1980s, however, public tuition prices began to rise at rates far in excess of both inflation and growth in family incomes in the United States. While public tuition prices at both 4-year institutions and community colleges fell in real terms in the late 1970s, they rose at an annual rate of 4.3% and 3.2% respectively in real dollars in the 1980s, a period when median family incomes grew at a rate of only 1% per year (Heller, 1997). The situation worsened in the first half of the 1990s, when real tuition rates at public institutions grew over 6% annually, and family incomes grew less than 0.5% per year (Heller, 1997). In response to these changes, many of these institutions increased their spending on financial aid awarded from their own funds. Table 1 shows the increase in expenditures

in three categories at public and private colleges and universities in the U.S. Between fiscal years 1989 and 1995, total expenditures per student increased less than 40% at both categories of institution. Spending on scholarships from all sources increased 67% at public institutions and 76% at private institutions, while spending on financial aid from institutional sources increased 114% and 104%, respectively.[1]

Table 1: Change in Spending per Student (Current Dollars), FY 1989 to FY 1995

Institutional Control	Total Expenditures per Student	Total Scholarship Expenditures per Student	Institutional Scholarship Expenditures per Student
Public	34.4%	67.2%	114.1%
Private (non-profit)	38.7%	76.4%	103.7%
Total	35.7%	71.1%	104.2%

Source: Authors' calculations from National Center for Education Statistics (various years-a and various years-b)

In recent years, however, there has been evidence that at least some institutions have begun to move away from financial need as the sole (or key) criterion for awarding aid. A decade ago Baum and Schwartz (1988) examined the use of merit aid in the students sampled in the High School and Beyond Survey of 1980. They found that while the majority of financial aid was still being awarded based on financial need, "at the margin, however, the system allocates aid to meritorious students." (p. 132) Ehrenberg and Murphy (1993) examined the provision of financial aid by elite colleges and universities in light of the Justice Department's investigation and subsequent lawsuit against the Overlap Group of colleges that met annually to compare financial aid awards for admitted students (*United States of America v. Brown University, et al.*, U.S. District Court for the Eastern District of Pennsylvania, September 2, 1992). The authors concluded that "financial aid policies based solely on need at selective private colleges and universities in the United States are likely to be nearing their end." (p. 72)

There has been little recent empirical research on the rise of non-need aid nationally. Wick (1997) reviewed research conducted since the 1970s that examined the distribution of institutional aid between need-based and non-need components, but only one of these studies used nationally-representative samples of institutions and students (and very limited information was provided from that study). McPherson and Schapiro (1994 and 1998) examined this trend, but their work examined the phenomenon at earlier time periods and with limited subsets of institutional types. Anecdotal stories about individual institutions (i.e., "Cornell Drifts Closer to Awarding Merit Scholarships", 1996; Gose, 1996; Shea, 1996) indicate that more institutions may be using merit aid as a way of attracting certain types of students, or at the least, the practice is attracting more widespread media attention.

This study uses data from the National Postsecondary Student Aid Study (NPSAS), conducted for the National Center for Education Statistics (NCES), to answer the following research questions:

- How did the awarding of need-based versus non-need grants change between 1989 and 1995?
- How have these changes affected the awarding of grants to students from different income groups?
- How has the use of these types of grants changed for different types of institutions?

The NPSAS surveys are a nationally representative sample of institutions and students enrolled in colleges and universities, and thus, present a rich resource for examining national trends in the awarding of need and non-need financial aid.

The next section describes the methodology used to answer these questions, including a description of the data found in the NPSAS surveys. The third section provides an analysis of the trends in the awarding of institutional financial aid at different types of institutions and to students from different income categories. The final section provides a discussion of the findings of this study and some concluding thoughts.

Methodology

Data Sources

The NPSAS surveys were conducted for NCES during four academic years (1986-87, 1989-90, 1992-93, and 1995-96). The 1989-90 and 1995-96 survey data were analyzed for this study to track the changes over time in the use of need versus non-need financial aid.[2] The purpose of NPSAS is to provide information on how students across the U.S. pay for college, including data about financial aid awards. In each of the NPSAS years, data were collected for a stratified national sample of undergraduate and graduate students from over 800 institutions. There were approximately 47,000 and 41,000 undergraduate respondents for the two collection years, respectively, used in this study. To be eligible for inclusion in the NPSAS study, students needed to be enrolled in courses or programs leading to college credit, an award, or a degree.

In each of the NPSAS years, student financial aid and other information was collected from institutional records, as well as from surveys of students and their families. The over 800 colleges and universities were from nearly every institutional type: public, private non-profit, and proprietary; less-than-two-year, two-year, and four-year; and nearly every Carnegie classification. For more information about NPSAS see the methodology reports produced for each survey year (National Center for Education Statistics, 1992; National Center for Education Statistics, 1997).

In certain instances, relevant institutional information not contained in the NPSAS datasets (e.g., Carnegie classifications in 1989 NPSAS) were obtained from the Integrated Postsecondary Education Data System (IPEDS) surveys, also maintained by NCES.

Measures

The NPSAS datasets contain numerous variables measuring need and non-need financial aid awards from a variety of sources (state government, federal government, private, and institutional). This study focuses on the variables contained in each dataset which measure need and non-need grants awarded from institutional funds. In each dataset, grants which are based solely on the determination of merit or other circumstances not related to financial need are categorized as institutional non-need grants. Such awards include grants and scholarships for academic, artistic, athletic, and other forms of merit. Institutional need-based grants are awards which are based on financial need, but which may include a non-need component.

The datasets also include important data about the institution at which a student is enrolled (e.g., tuition costs and institutional type) as well as information about students' financial status (e.g., dependency status and family income). These measures will be used to determine if the trends in the awarding of need versus non-need grants vary by institutional type and family income.

Analytical Methods

The sample of students used in the present study included students from public and private four-year institutions. Students from proprietary schools were excluded since the use of financial aid at these institutions is less prevalent and generally motivated by factors other than those found at more traditional institutions of higher education. A further limitation placed on the sample was that only students from the research, doctoral, comprehensive, and liberal arts Carnegie classifications were included, excluding students from specialty institutions such as: theological seminaries; schools of art, music, and design; and schools with programs exclusively in the health professions or technology and engineering.

Only full-time dependent students were included in the samples, since the data are most reliable for these students in the 1989 dataset. In addition, these students represent the students of interest for this study. For consistency, the same limits were placed on the 1995 dataset.

The final limitation placed upon the sample was to exclude students who received an athletic scholarship, a form of non-need grant. Athletic scholarships differ from most other non-need awards in that they tend to be larger and can drastically affect the other forms of financial aid received by a student. The use of athletic scholarships generally is limited to institutions who are members of Divisions I and II of the National Collegiate Athletic Association and is regulated by athletic conferences. Their inclusion in the analysis could mask changes in other forms of non-need aid. Consequently, it is desirable to eliminate these scholarships from an analysis of non-need awards.

Analysis

Trends Across All 4-Year Institutions

This section addresses the changes in the awarding of institutional need and non-need grants at four-year institutions from 1989 to 1995. In general, the number of awards and the average size of awards increased over these years. Increases varied substantially by award type, students' family income level, and institutional type.

For the purposes of this study, students were divided into low, middle, and high income categories. Low income students were from families whose income was in the lowest quartile of family incomes, middle income students were from the two middle quartiles, and high income students were from the top quartile.[3]

According to the NPSAS data, the total number of full-time dependent students attending four-year institutions in the U.S. decreased 3% between 1989 and 1995, from 4,003,992 to 3,892,092.

In contrast, the number of students receiving any type of institutional grant (shown in panel 1 of Table 2) increased 63%, from 669,808 to 1,089,770, indicating that the proportion of all students who received an institutional grant increased during this period. Table 2 also presents the number of grants, and the average size of each, for all students and for students from each of three income groups who received: 1) any type of institutional grant; 2) a need grant; or 3) a non-need grant.[4] The size of the average grant received increased 70%, from $2,551 to $4,345, with the largest increase going to students from middle income families.[5]

Table 2: Institutional Grant Awards at All 4-Year Institutions

	# of Grants			Mean Grant Amount		
	1989	1995	Change	1989	1995	Change
Students Receiving Any Grant						
Low Income	195,051	288,583	48%	$2,504	$4,191	67%
Middle Income	383,406	606,374	58%	2,554	4,494	76%
High Income	91,351	194,813	113%	2,637	4,108	56%
All Income Groups	669,808	1,089,770	63%	2,551	4,345	70%
Students Receiving Need Grants						
Low Income	141,017	254,269	80%	$2,682	$3,930	47%
Middle Income	231,927	516,378	123%	2,891	4,125	43%
High Income	42,555	152,441	258%	3,027	3,657	21%
All Income Groups	415,499	923,088	122%	2,834	3,994	41%
Students Receiving Non-need Grants						
Low Income	69,209	58,494	(16%)	$1,593	$3,652	129%
Middle Income	179,580	164,635	(8%)	1,719	3,692	115%
High Income	51,646	64,879	26%	2,171	3,847	77%
All Income Groups	300,436	272,856	(9%)	1,768	3,840	117%

The increase in the number of students receiving awards is attributable to a substantial increase in the number of need-based grants awarded, shown in panel 2. The total number of students receiving these grants increased 122% from 1989 to 1995. While the number of grants increased for all income groups, the increase in the number of high income students receiving these grants (258%) was more than double that of middle income students (123%), and more than triple that of low income students (80%).

The number of students receiving non-need grants decreased 9% overall. Awards to high income recipients increased 26% while the number of recipients decreased for middle and low income students (8% and 16%, respectively).

The amount of the average need and non-need award increased within each income category from 1989 to 1995, and the mean non-need grant increased at a greater rate than the mean need-based grant for each income group. As a result, while the mean non-need grant ($1,768) across all income categories was only 62% the amount of the average need-based award ($2,834) in 1989, by 1995 the two awards had achieved near parity ($3,840 non-need and $3,994 need-based). Within income categories, the largest increases in the average amount of need and non-need grants occurred for low income students (47% and 129%, respectively) followed by middle income students (43% and 115%, respectively) and then high income students (21% and 77%, respectively). While high income students saw the largest increases in the *number* of institutional grants they received, low income students saw the largest increases in the *amount* of their mean need and non-need awards.

Increases in the numbers of award recipients and the average amount of the awards resulted in increased overall spending by institutions on these types of awards. Overall, spending at four-year institutions on need-based grants to dependent students increased 213% from approximately $1.18 billion in 1989 to $3.69 billion in 1995. Non-need grant spending increased 97% from $0.53 billion in 1989 to $1.05 billion in 1995.

The increases in spending were not evenly spread across income levels. In 1995, 333% more money was spent on need-based grants for high income students than in 1989, as compared to

increases of 218% and 164% for middle and low income students, respectively. Similarly, the total amount of money spent on non-need grants increased at a higher rate for high income students (123%) and lower rates for middle income (97%) and low income (94%) students.

Figure 1 illustrates how the differences in the rates of increase for the totals spent on each type of award changed the distribution of the dollars granted to the different income groups. The first column of each panel shows the distribution of all students who received any institutional grant award. The second column shows the distribution of total need grant dollars, and the third column shows the distribution of non-need grant spending. Presented are the representation of students from each income group among all institutional grant recipients, along with each income group's share of the total grant dollars of each type awarded. High income students, who represented 14% of all grant recipients in 1989, received 21% of the non-need grant dollars awarded. Low income students saw a drop in their representation among all grant recipients from 1989 to 1995, as well as a decrease in their share of the total dollars received for both need and non-grants.

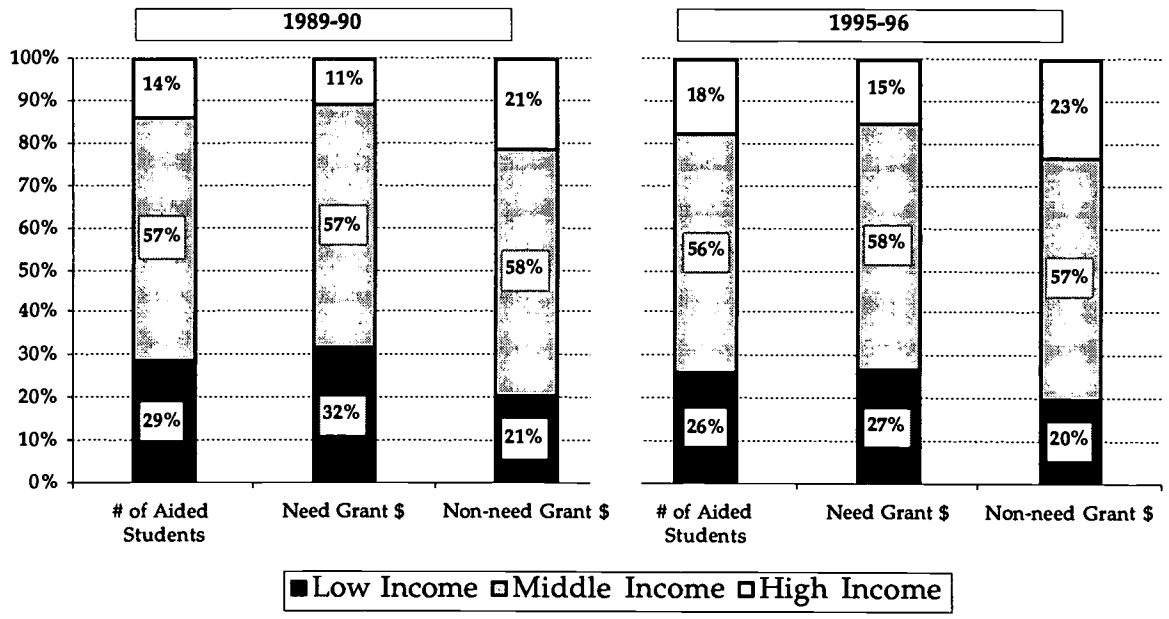

Figure 1: Distribution of Grant Spending – All Institutions

Trends in Different Types of Institutions

The trends described in the previous section vary when you examine particular types of institutions. Table 3 shows the number of need and non-need awards, and the average size of each, for each of the three income groups in public institutions.[6] While the number of need grants increased by more than 200% for each income group, the number of non-need awards decreased for each. Average grant amounts increased for every group, though the size of the need awards increased at a faster rate than did the non-need grants. The largest growth in the average grant amount (both need and non-need) was among the lower income groups, though the largest average grants (need and non-need) went to students in the highest income group.

Table 3: Institutional Grant Awards at Public Institutions

	# of Grants			Mean Grant Amount		
	1989	1995	Change	1989	1995	Change
Need Grants						
Low Income	42,537	127,889	201%	$953	$2,148	125%
Middle Income	53,482	192,896	261%	880	1,983	125%
High Income	–	45,621	–	–	2,182	–
All Income Groups	99,701	366,406	268%	923	2,065	124%
Non-need Grants						
Low Income	29,059	19,966	(31%)	$1,122	$2,250	101%
Middle Income	78,544	44,316	(44%)	1,238	2,026	64%
High Income	16,168	16,032	(1%)	1,637	2,315	41%
All Income Groups	123,771	80,314	(35%)	1,263	2,139	69%

– Sample size is too small for a reliable estimate.

The period from 1989 to 1995 saw more of an emphasis on the use of non-need grants in private institutions (Table 4), as compared to the pattern in public institutions. Although the number of need grants awarded by private institutions grew for all income groups, the growth was not as rapid as at the public institutions. The number of non-need grants awarded grew for both the middle and high income groups (the number awarded to low income students declined 11%), while public institutions saw a decrease in the number of non-need grants for students from all income groups. The growth rate in the number of awards at private institutions, both need and non-need, increased as you go up the income brackets, with high income students seeing the fastest growth in the number of awards of both types.

Table 4: Institutional Grant Awards at Private Institutions

	# of Grants			Mean Grant Amount		
	1989	1995	Change	1989	1995	Change
Need Grants						
Low Income	98,480	126,380	28%	$3,429	$5,733	67%
Middle Income	178,445	323,482	81%	3,494	5,403	55%
High Income	38,873	106,820	175%	3,201	4,288	34%
All Income Groups	315,798	556,682	76%	3,437	5,264	53%
Non-need Grants						
Low Income	40,151	35,944	(11%)	$1,934	$4,599	138%
Middle Income	101,036	112,969	12%	2,093	4,470	114%
High Income	35,479	43,629	23%	2,414	4,713	95%
All Income Groups	176,665	192,542	9%	2,122	4,549	114%

For each income group, the amount of the average non-need grant grew faster than did the average need grant amount. While the size of the average need grant grew faster in public institutions, the size of the average non-need grant grew faster in private institutions. While high

income students were awarded the smallest need-based grants on average, they received the largest non-need awards.

Figure 2 shows the distribution of institutional grant spending among the three income groups at public institutions in 1989 and 1995. Not surprisingly, low income students received a disproportionate share of all need-based grant dollars awarded in both years, though their share of the total fell from 44% in 1989 to 36% in 1995. The non-need dollars, however, flowed disproportionately to high income students in both years. Both high income and low income students increased their share of non-need dollars in 1995 at the expense of middle income students (who saw their share of non-need dollars decrease from 62% to 52%).

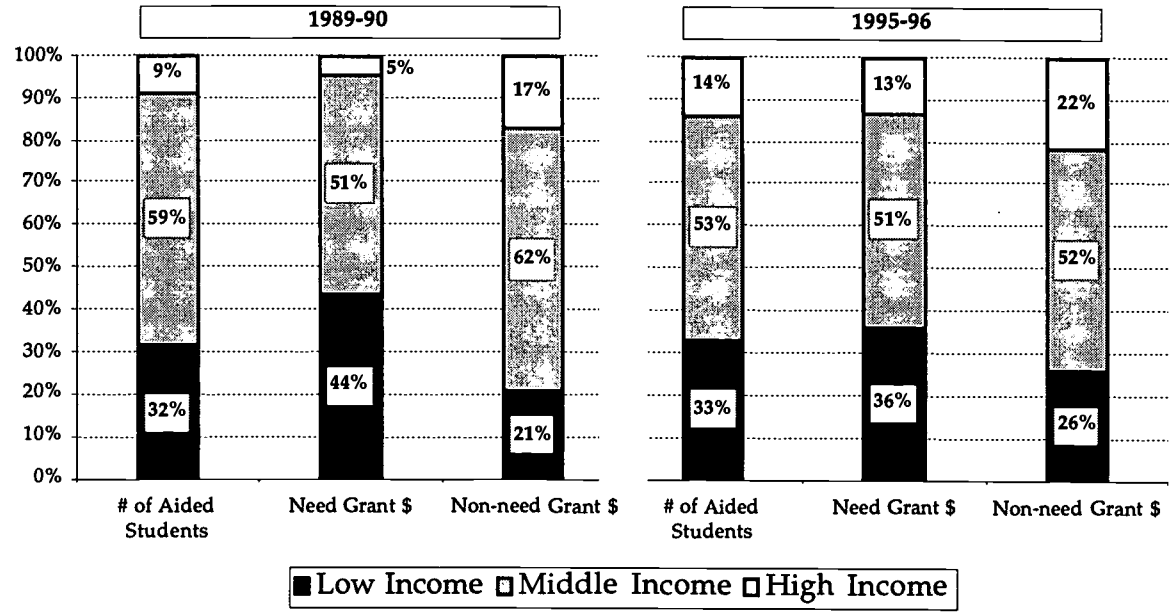

Figure 2: Distribution of Grant Spending – Public Institutions

The pattern in private institutions (shown in Figure 3) is similar, with low income students receiving a disproportionate share of the need grant dollars, and upper income students receiving a disproportionate share of non-need grant dollars.

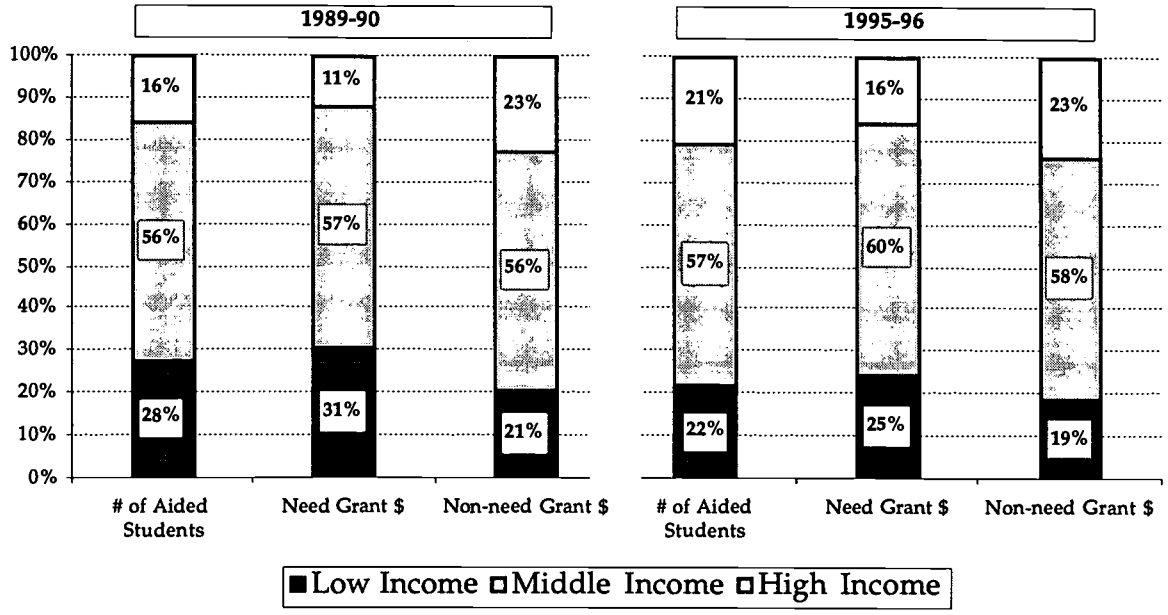

Figure 3: Distribution of Grant Spending – Private Institutions

Table 5 shows the number of grants and average size by Carnegie classification.[7] The number of need awards increased in every institutional type, and the largest growth was among public comprehensive (280%) and research universities (249%). Public research institutions also saw the largest growth in the size of the average need-based award.

In contrast to the increase in the number of need-based awards, the number of non-need grants awarded decreased in four of the eight types of institutions, and for those classifications with an increase in the number of non-need awards, that increase was less than the growth in the number of need-based awards. The size of the average non-need award increased in every category, with the largest increases among the liberal arts and comprehensive institutions.

Table 5: Institutional Grant Awards by Carnegie Classification

Carnegie Classification and Control	# of Grants			Mean Grant Amount		
	1989	1995	Change	1989	1995	Change
Need Grants						
Research Public	56,774	198,215	249%	$983	$2,393	143%
Research Private	47,689	86,458	81%	6,189	8,516	38%
Doctoral Public	–	52,399	–	–	2,456	–
Doctoral Private	36,525	44,679	22%	4,712	5,512	17%
Comprehensive Public	26,795	101,730	280%	903	1,373	52%
Comprehensive Private	81,792	145,639	78%	2,291	4,316	88%
Liberal Arts I	77,664	127,289	64%	4,059	6,667	64%
Liberal Arts II	80,173	166,679	109%	1,505	2,907	93%
Non-need Grants						
Research Public	58,814	32,994	(44%)	$1,411	$ 2,263	60%
Research Private	17,657	22,728	29%	4,572	6,658	46%
Doctoral Public	13,187	15,482	17%	1,051	1,988	89%
Doctoral Private	18,263	12,970	(29%)	2,380	3,973	67%
Comprehensive Public	46,133	22,335	(52%)	1,180	2,435	106%
Comprehensive Private	53,301	52,171	(2%)	1,954	3,969	103%
Liberal Arts I	27,779	42,357	52%	2,385	5,150	116%
Liberal Arts II	65,476	71,819	10%	1,304	3,618	177%

– Sample size is too small for a reliable estimate.

Figure 4 shows the total dollars spent on need and non-need awards in each year. The institutions included in these Carnegie classifications spent a total of $1.71 billion on institutional grants in 1989 and $4.73 billion in 1995, an increase of 177%. Need grants increased from $1.18 billion to $3.69 billion (213%), while non-need grant spending increased from $0.53 billion to $1.05 billion (97%). The largest percentage increase in overall spending was in public doctoral institutions, whose spending increased 653%. The smallest increase was in private doctoral

institutions, where spending increased 38%. Total grant spending in every other type of institution more than doubled during this period.

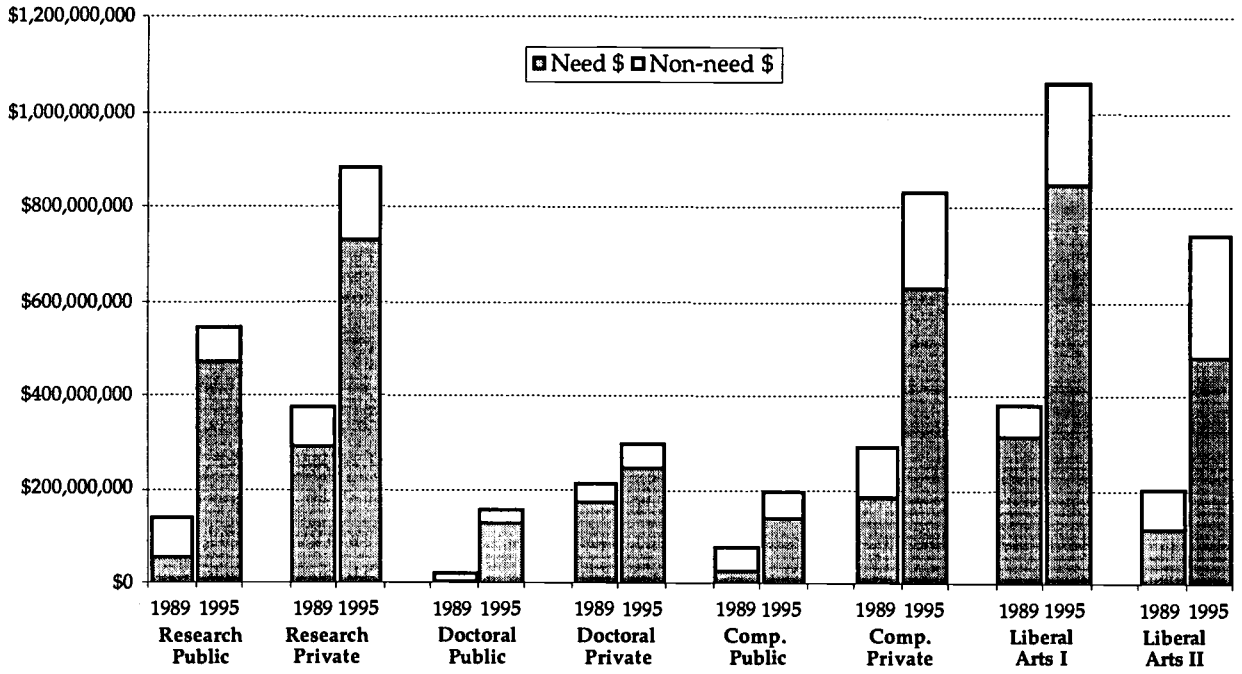

Figure 4: Total Dollars Spent on Need and Non-need Grants

Another pattern evident in Figure 4 is that in every classification, with the exception of liberal arts I institutions, the proportion of grant spending dedicated to non-need awards declined from 1989 to 1995. The largest decreases were in public colleges and universities, driven largely by the large increases both in the number and average amount of need-based awards in these institutions in 1995 (detailed in Table 5).

Another measure of how institutions use their institutional grant dollars is to compare the mean need and non-need grants. Figure 5 shows the mean non-need grant as a percentage of the average need-based grant award. Two patterns are evident: 1) public institutions tend to award larger non-need grants (on average) than do most types of private institutions; and 2) in most types

of institutions, the mean non-need grant grew relative to the average need grant between 1989 and 1995.

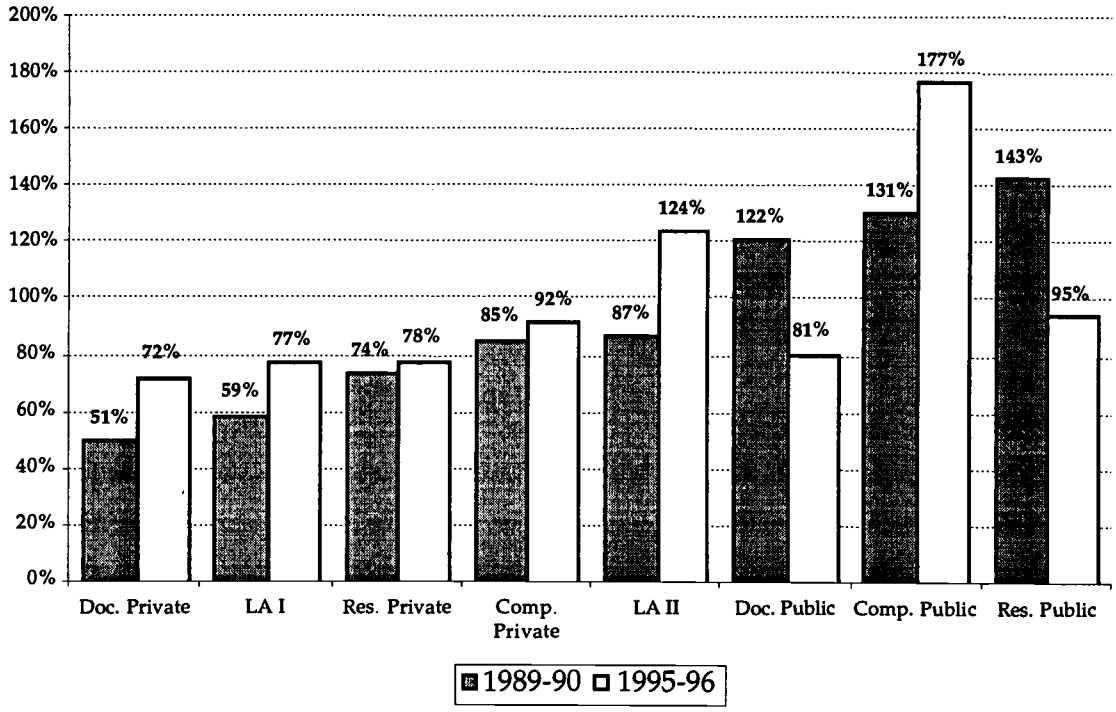

Figure 5: Average Non-need Grant as a Percentage of Average Need Grant

Discussion and Conclusions

The period from 1989 to 1995 saw important changes in the awarding of need and non-need grants by institutions, and these changes varied at different types of institutions and for students from different income categories. In all 4-year institutions the *number* of need-based grant awards grew faster than the number of non-need awards, while the average *amount* of the non-need awards grew faster. Institutions have more flexibility in deciding who will receive a non-need award, in contrast to need-based awards, for which most adhere to the federal need analysis methodology or a close approximation of such. This trend may indicate that institutions in 1995 were using their

non-need grants more strategically for enrollment management purposes, e.g., while they were awarding fewer non-need grants, they were awarding larger ones to try to influence the enrollment of desirable students. This pattern was particularly evident at private institutions, as shown in Table 4, where for every income group, the increase in the average non-need award was over twice the rate of need awards. In addition, these institutions increased the number of non-need grants they awarded to all income groups other than low income students.

Another interesting trend is that the growth in the number of need-based awards was largest among high income students, for whom the number of these awards grew at a rate three times that of low income students. This indicates that institutions were beginning to shift their need awards up the income ladder, awarding more grants proportionally to high income students in 1995 than 1989. The largest growth in the number of need awards was at public institutions, confirming the trend described in the introduction as these institutions began to award financial aid to students from their own funds to compensate for the large tuition increases in the early 1990s.

All types of institutions among the Carnegie classifications included in this study increased both their number of need grants, and the average size, between 1989 and 1995, though there were large differences in the rate of change. The amount of the average non-need grant grew fastest at the liberal arts and comprehensive institutions (both categories of which are overwhelmingly private) while the number of these awards grew slower than the number of need awards (or decreased). This indicates that these institutions may be more prominently using non-need grants for the enrollment management purposes described in the news accounts cited in the introduction.

In every Carnegie classification, with the exception of liberal arts I institutions, the percentage of total grant spending distributed to non-need awards decreased from 1989 to 1995. The largest decreases were among public institutions, driven by the aforementioned increases in both the number and mean amount of need grants. These changes may indicate a policy shift by these institutions to use their own resources to supplement other need-based financial aid, such as Pell Grants and state scholarship awards, to compensate students for the large tuition increases during

this period. Private institutions, which had slower rates of tuition growth in the 1990s, saw smaller changes in the distribution of grant spending between need and non-need.

Though overall spending shifted proportionally towards need-based grants, the mean non-need award grew relative to need awards in six of the eight Carnegie types. This trend again indicates that non-need grants may be being used more strategically to support the enrollment management goals of attracting particular types of students.

This study is only the first attempt to compare the use of need and non-need grants by colleges and universities in the United States. Further research by the authors will include an examination of the racial patterns in the awarding institutional aid, as well multivariate analyses of the NPSAS datasets to examine the relationship between different types of financial aid packages and type of institution attended.

Notes

[1] The IPEDS surveys do not collect data separately for undergraduate and graduate financial aid expenditures. However, there was little public or institutional policy change regarding the provision of financial aid for graduate education during this time period to account for such a large increase in spending (relative to overall expenditure increases). Thus, it seems fair to conclude that a major portion of the increase was due to increases in the provision of institutional financial aid for undergraduates.

[2] The 1986-87 survey did not have reliable measures for the awarding of need versus non-need aid. For clarity of presentation, "1989" will be used to represent the 1989-90 survey, and "1995" to represent the 1995-96 survey.

[3] Family incomes were from the year prior to the NPSAS survey. The income groups (in current dollars) were as follows:

	1988	1994
Low Income	Less than $21,832	Less than $25,047
Middle Income	$21,832 to $60,000	$25,047 to $72,462
High Income	Above $60,000	Above $72,462

[4] Students who received a need-based grant may also have received a non-need award, and vice-versa. The difference between the number of awards of any type, and the sum of the need and non-need grants, represents the overlap of students who received both a need and non-need grant. For the need and non-need panels, the mean amounts shown are for that type of grant only. For the panel of students receiving any grant, the means represent the sum of need and non-need grants.

[5] Between the 1989-90 and 1995-96 academic years, the Consumer Price Index increased 21.7% and the Higher Education Price Index increased 23.1% (National Center for Education Statistics, 1999, Table 38).

[6] Data on the number of grants and mean amount for grants of any type for Tables 3, 4, and 5 are available from the authors.

[7] There are very few public liberal arts institutions, so for this classification we combined public and private into one group, but created separate categories for liberal arts I and liberal arts II institutions. ANOVA tables showing measures of the differences in the mean awards among institutional types are available from the authors.

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