NATIONAL CENTER FOR EDUCATION STATISTICS

Statistical Analysis Report **November 1994**

Postsecondary Education Descriptive Analysis Reports

Characteristics of Students who Borrow to Finance Their Postsecondary Education

Susan B. Choy
MPR Associates, Inc.

Carlyle Maw
Project Officer
National Center for Education Statistics

U.S. Department of Education
Office of Educational Research and Improvement **NCES 95-310**

Highlights

This report uses data from the 1989–90 National Postsecondary Student Aid Study (NPSAS:90) to examine the use of loans to finance postsecondary education. For undergraduates and graduate and first-professional students separately, it looks at variation in borrowing by student and institutional characteristics, compares the characteristics of borrowers and nonborrowers, and examines borrowing in relation to need and other financial aid. Some of the highlights are as follows:

Undergraduates

- Of the 16.3 million undergraduates enrolled in the 1989–90 academic year, 19 percent borrowed an average of $2,800 through student loan programs. Thirty percent of those who were enrolled full time for the full academic year borrowed (also an average of $2,800).

- The percentage who borrowed through student loan programs varied considerably by type of institution. Among undergraduates enrolled full time for the full year, it ranged from a low of 13 percent at public less-than-4-year institutions to a high of 69 percent at private, for-profit institutions.

- By the time they graduated, 50 percent of undergraduates at public 4-year institutions had borrowed an average of about $6,700 (including amounts borrowed from family, friends, and other sources as well as through financial aid loan programs). Fifty-four percent of those at private, not-for-profit 4-year institutions had borrowed an average of about $10,600.

- Undergraduates who borrowed $2,000 or more through student loan programs were concentrated in the most costly institutions. Private, for-profit institutions had only 9 percent of the enrollment but 31 percent of the $2,000-or-more borrowers; and private, not-for-profit 4-year institutions had 14 percent of the enrollment but 28 percent of the $2,000-or-more borrowers.

- Participation in student loan programs occurred at all income levels: 11 percent of full-time, full-year undergraduates who borrowed $2,000 or more in 1989–90 came from families with incomes of $50,000 or more.

- For undergraduates participating in student loan programs, loans averaged 59 percent of their total aid (that is, all grants, loans, and work study), but the average ranged from 46 percent at private, not-for-profit 4-year institutions to 68 percent at private, for-profit institutions.

Graduate and First-Professional Students

- Of the 2.3 million graduate and first-professional students enrolled in 1989–90, 17 percent borrowed an average of $8,600 through student loan programs. Considering only those who attended full time, full year, 40 percent borrowed.

- Students enrolled in first-professional programs were the most likely to participate in student loan programs: 60 percent borrowed, compared with 12 percent of those enrolled in master's degree programs, 12 percent of those enrolled in doctoral degree programs, and 8 percent of those enrolled in other graduate programs.

- For those who borrowed through student loan programs, loans averaged 79 percent of total financial aid at the master's level, 59 percent at the doctoral level, 86 percent at the first-professional level, and 83 percent in other graduate programs.

Acknowledgments

The authors wish to thank all those who contributed to this report. Among MPR Associates staff, special mention goes to Lutz Berkner and Laura Horn for their overall guidance and thoughtful comments throughout the study. Elliot Wilen generated the tables using the Data Analysis System. Andrea Livingston and Randy Kim edited the report; Leslie Retallick prepared the graphics; and Jennifer Jones and Lynn Sally formatted the tables and text.

We would also like to acknowledge the helpful comments of the following reviewers: Dennis Carroll, Robert Burton, and Nabeel Alsalam at NCES; Jerry Davis, of the Pennsylvania Higher Education Assistance Agency; and Jay Noell, of the Congressional Budget Office.

Foreword

This report examines the use of loans to finance postsecondary education and profiles students who borrowed, comparing them with those who did not. Both annual borrowing (for 1989–90) and cumulative borrowing for undergraduate education are considered. Beginning with undergraduates, this report examines how much borrowing occurs among undergraduates with different demographic and economic characteristics and at different types of institutions. It then compares undergraduate borrowers and nonborrowers according to the types of institutions and programs in which they enroll and according to their demographic, socioeconomic, and enrollment characteristics. Undergraduate borrowers and nonborrowers are also compared in terms of their financial need and their use of other financial aid programs. Borrowing by graduate and first-professional students is examined along the same dimensions.

The report relies on data from the 1989–90 National Postsecondary Student Aid Study (NPSAS:90). This survey was designed to answer fundamental questions about financial aid and details undergraduates' education expenses, sources, and types of financial aid.

The estimates in this report were produced using the National Center for Education Statistics (NCES) Data Analysis System (DAS), a software application that allows users to specify and generate tables from NPSAS tables. Each estimate produced in a table is accompanied by the standard error and weighted sample size on which the estimate was based. The DAS is available to anyone interested in further exploring the NPSAS. (See appendix B for a more detailed discussion and directions for obtaining a copy.)

We hope that readers of this report will find it informative and useful. We welcome recommendations for improving the format, content, or analysis in order to make subsequent reports even more informative and accessible.

Paul D. Planchon
Acting Associate Commissioner
Postsecondary Education Statistics Division

C. Dennis Carroll
Chief, Longitudinal Studies Branch
Postsecondary Education Statistics Division

Table of Contents

List of Tables

Table **Page**

Table **Page**

Table **Page**

List of Figures

Figure **Page**

Chapter 1

Introduction

Background

Historically, the U.S. system of postsecondary education has placed primary responsibility for paying for postsecondary education with the student and, in the case of younger students, with the family as well. In 1990, students and their families paid about one-half of the cost of postsecondary education.[1] The rest was paid by federal, state, and local governments; the institutions attended; philanthropic organizations; and sometimes students' employers. Borrowing has emerged as an important way for students from all backgrounds and in all types of institutions to assemble the funds needed to pay their share. In 1989–90, 19 percent of all undergraduates and 17 percent of all graduate and first-professional students participated in student loan programs.[2]

During the past two decades, the number of students who have borrowed and the amount borrowed have grown dramatically. In 1970–71, the federal Guaranteed Student Loan (GSL) provided 1 million students a total of $1 billion in loans. Ten years later, in 1980–81, 2.9 million students assumed $6 billion in GSL loans.[3] In 1990–91, the Stafford Loan program (successor to the GSL program) provided 3.7 million students with $10 billion in loans.[4] In 1990–91, loans made up 65 percent of federal grant, loan, and work-study aid, compared with 39 percent 20 years earlier.[5]

Student loan programs have enabled many students to attend postsecondary institutions, and many believe that the fact that students are the primary beneficiaries of their education makes it appropriate for them to bear the major cost burden. However, the growing reliance on borrowing has led other policymakers and educators to worry about how this might affect students' access to postsecondary education, their educational progress, and their occupational goals, as well as their ability to repay. With the cost of attending postsecondary education increasing, they are concerned that access to postsecondary education (especially to higher cost institutions) is becoming increasingly limited for students who are unable or unwilling to borrow enough to make up the difference between the cost and their resources. It has often been argued

---

[1]National Commission on Responsibilities for Financing Postsecondary Education, *Making College Affordable Again* (Washington, D.C., 1993), 23.

[2]U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

[3]The College Board, Washington Office, *Trends in Student Aid: 1963 to 1983* (New York: The College Board, 1983).

[4]The College Board, Washington Office, *Trends in Student Aid: 1983 to 1993* (New York: The College Board, 1993), 4, 8.

[5]Laura Greene Knapp, *Borrowing for College in 1989–90* (Washington, D.C.: The College Board, 1992), 1.

that students from low-income families, minorities, and women are more reluctant to borrow than are white males, although the evidence has been ambiguous.[6]

An additional concern among policymakers and educators is that the prospect of large debt burdens may divert students from fields that are key to the national interest, such as teaching, into higher paying occupations. Loans make students think ahead to repayment; thus, they may feel obliged to choose courses, majors, and degrees that are likely to lead to high-paying jobs.[7]

One institutional study suggested that GSL influenced students' decisions about where to attend college, whether or not to be a full-time student, the types of jobs they were interested in, and when and where to attend graduate school.[8] National studies are needed, however.

Before the National Postsecondary Student Aid Study (NPSAS) was conducted, attempts to understand the impact of borrowing were hindered by the lack of comprehensive national financial aid data at the individual student level and information on the finances of students who do not receive financial aid. By making it possible to compare borrowers and nonborrowers, NPSAS allows us to examine a number of issues related to the impact of borrowing.

Purpose of This Report

This report examines the use of loans to finance postsecondary education and profiles students who borrowed, comparing them with those who did not. Both annual borrowing (for 1989–90) and cumulative borrowing for undergraduate education are considered. Beginning with undergraduates, this report examines how much borrowing occurs among undergraduates with different demographic and economic characteristics and at different types of institutions. It then compares undergraduate borrowers and nonborrowers according to the types of institutions and programs in which they enroll and according to their demographic, socioeconomic, and enrollment characteristics. Undergraduate borrowers and nonborrowers are also compared in terms of their financial need and their use of other financial aid programs. Borrowing by graduate and first-professional students is examined along the same dimensions, but in a more abbreviated form, because they make up a relatively small proportion of the postsecondary population (about 12 percent).

---

[6]Janet S. Hansen, *Student Loans: Are They Overburdening a Generation?* (New York: The College Board, February 1987), 25.

[7]Theodore J. Marchese, "Fulfilling the Institution's Responsibilities to Student Borrowers," in *Proceedings: College Scholarship Service Colloquium on Student Loan Counseling and Debt Management* (New York: College Entrance Examination Board, 1986), 14.

[8]Alice E. Presson, "Guaranteed Student Loan Indebtedness: Its Influence on Undergraduate Student Decision-Making at Virginia Commonwealth University," in *Proceedings for the Sixth Annual Conference of the NASSGP/NCHELP Research Network* (Washington, D.C., June 1989).

Data and Methods

The data presented in this report come from the 1989–90 National Postsecondary Student Aid Study (NPSAS:90). This survey provides detailed information about students' education expenses, sources of funds, and types of financial aid, along with information on their demographic, socioeconomic, and enrollment characteristics. The institutions that the students attended reported the types and amounts of loans made to students through federal, state, and institutional loan programs in 1989-90. The students themselves provided information on the cumulative amounts borrowed through their responses to the question, "Up through June 30, 1990, how much have you borrowed for undergraduate education?" Students were instructed to include not only amounts borrowed at any time through loan programs for undergraduate education, but also loans from friends, relatives, banks, and so on.

Classification of Student Enrollment

For various parts of this analysis, students were categorized in the following different ways:

Level. For some tables, undergraduates were categorized by their level: 1st through 4th/5th year. This level indicates the student's status as reported by the institution. It is based on the student's accumulation of credits and does not indicate how many years a student has been enrolled. A student with 3rd-year status, for example, may have taken more than 3 years to reach that level. Fifth-year undergraduates are those who were enrolled in 5-year baccalaureate programs, such as architecture, not students who took 5 years to complete a 4-year program. Graduate students were categorized according to their degree program: master's, doctoral, first professional, and other. First-professional programs include chiropractic, dentistry, medicine, optometry, osteopathic medicine, pharmacy, podiatry, veterinary medicine, law, and theology. "Other graduate programs" do not necessarily lead to a degree, and include programs such as professional teacher education programs.

Enrollment status. Students were categorized as "full-time, full-year" or "part-time and/or part-year." "Full-time" status was defined by the institution using its own criteria. Twenty-nine percent of all undergraduates were enrolled full time for the entire 1989–90 academic year. The rest of the undergraduates were enrolled full time for only part of the academic year (10 percent), part time for the whole academic year (28 percent), or part time for part of the year (33 percent).[9] Within each of these less-than-full-year subgroups, a wide range of enrollment patterns was possible. Throughout this report all these students are grouped together and referred to as "part-time and/or part-year" or "part-time/year."

Among graduate and first-professional students, 24 percent were enrolled full time, full year. Another 5 percent were enrolled full time for part of the year, 38 percent part time for the whole year, and 34 percent part time for part of the year.

---

[9]U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Amount borrowed. Students were characterized by how much they borrowed in 1989–90 and cumulatively. Because borrowers made up only about one-fifth of the student population, there were not enough borrowers to examine different levels of borrowing in any detail. To separate out students who borrowed relatively small amounts and those who borrowed closer to the full amounts permitted by student loan programs, borrowing categories of "less than $2,000," and "$2,000 or more" were chosen. The "less than $2,000" category represents approximately the bottom third: 30 percent of all undergraduates who borrowed were in this category. The distribution of undergraduates by the amount borrowed in 1989–90 clustered around the maximum permitted for 1st- and 2nd-year undergraduates by the Stafford loan program, the major federal loan program: 38 percent of all undergraduate borrowers borrowed between $2,000 and $2,999. Almost all graduate student borrowers (94 percent) borrowed $2,000 or more.

For cumulative borrowing for undergraduate education, the categories were "less than $5,000" and "$5,000 or more." The $5,000-or-more borrowers borrowed, for 2 years or more, approximately the average annual amount ($2,800). Cumulative borrowing was analyzed only for undergraduate borrowing and only for 4th- and 5th-year undergraduates and graduate and first-professional students. It was impossible to determine which students enrolled in less-than-4-year institutions or graduate programs were in the last year of their programs. Among the 4th- and 5th-year undergraduates and also among graduate and first-professional students who borrowed for their undergraduate education, about 4 out of 10 borrowed less than $5,000, and about 6 out of 10 borrowed $5,000 or more.

Statistical Methods

The data in this report are presented in a tabular format in which the percentages reported are row percentages. Any differences discussed in the text were statistically significant, evaluated using a two-tailed *t*-test adjusted for multiple-paired comparisons. (See appendix B for details on the statistical methodology.) Not all statistically significant differences were reported, however. Regression techniques were used to detect how well some classification (independent) variables could predict the probability of students borrowing in 1989–90.

Chapter 2

The Use of Loans to Finance Undergraduate Education

Federally sponsored student loans are available to financially needy students who are enrolled at least half time in postsecondary education.[10] To determine whether or not a student has financial need, a financial aid officer compares the student's expected family contribution (which depends on the family's financial resources and circumstances) with an institutionally determined cost of attending that takes into account tuition and fees, food and housing, books and supplies, and other education-related expenses. If the cost of attending is greater than the expected family contribution, the student is eligible for financial aid. Generally, students are offered first any available grants for which they are eligible; then, if they still have financial need, they are offered work study, loans, or both to make up the difference.

Students sometimes decide to borrow less than the amount specified for loans in their financial aid package or not to borrow at all. These are personal decisions, based on factors such as the standard of living they want to maintain, their level of comfort with debt, other financial obligations they may have or expect to incur, alternative sources of funds available to them, and how much they expect to earn after graduation. Financially needy students who do not want to borrow may cut back on their expenses or try to increase their financial resources by working, working more, or asking others such as parents, relatives, or friends for assistance. Alternatively, they may adjust their educational plans to reduce the cost of attending by, for example, reducing their course load, transferring to a less expensive institution, or, more drastically, withdrawing from school temporarily or permanently.

This chapter first briefly summarizes some important features of the major loan programs available to undergraduates. Next, it provides an overview of the use of these programs in 1989–90, examining the percentage of undergraduates who borrowed and the average amount they borrowed. Of particular interest is how undergraduate borrowing varied at different types of institutions and among students from different backgrounds and at different stages in their academic careers. Finally, this chapter examines cumulative debt for 4th- and 5th-year undergraduates, including borrowing from family, friends, and other sources as well as through student loan programs.

It should be noted that this analysis of borrowing by undergraduates does not provide a complete description of borrowing for undergraduate education, because parents sometimes borrow to help pay for their children's education. However, this is relatively rare. In 1989–90, the proportions of undergraduates with parents who reported obtaining a signature loan, using a line of credit, taking out a PLUS loan (a federally sponsored loan program for parents), borrowing from friends or relatives, or refinancing real estate were about 1 percent in each case. About 2

[10]These students must meet certain other conditions as well: they must be U.S. citizens or eligible noncitizens (such as permanent residents and refugees), enrolled in an eligible program, academically qualified, and making satisfactory academic progress.

percent of undergraduates had parents who took out a second mortgage.[11] This analysis of student borrowing, then, covers almost all of the borrowing for postsecondary education.

Loan Programs Available to Undergraduates

Although many institutions and some states have their own loan programs, most student borrowing takes place through federally sponsored loan programs. In 1989–90, 18 percent of undergraduates borrowed through federally sponsored programs, 1 percent through state programs, and 1 percent through institutional programs.[12]

The major federal loan programs available to undergraduates in 1989–90 were Guaranteed Student Loans authorized under Title IV of the Higher Education Act of 1965, as amended (now known as the Family Education Loan Program). These loan programs, which make long-term loans available to financially needy students enrolled in postsecondary institutions, include Stafford Loans, Supplemental Loans for Students (SLS), and Parent Loans for Undergraduate Students (PLUS). Stafford Loans are available to undergraduate, graduate, and professional students; SLS loans to graduate and professional students and financially independent undergraduates; and PLUS loans to parents of dependent students. The Perkins Loan Program (which originated in 1958 as the National Defense Student Loan Program) provides low-interest, long-term loans to financially needy undergraduate and graduate students. When awarding Perkins loans, institutions must give priority to students with exceptional financial need.

With the exception of the Perkins loan program, which the federal government financed, these loan programs all relied on private capital in 1989–90, with the federal government subsidizing interest payments and guaranteeing repayment of defaulted loans.[13] In 1989–90, the Stafford Loan program, at $9.5 billion, was by far the largest. Much smaller amounts were loaned to students through SLS ($1.8 billion) and Perkins ($903 million) and to parents through PLUS ($808 million).[14] The federal government sets limits on the amount that a student may borrow in any one year and on the cumulative amount that can be borrowed. In 1989–90, the limits were as follows:

[11]National Center for Education Statistics, NPSAS:90, Data Analysis System.

[12]U.S. Department of Education, National Center for Education Statistics, *Financing Undergraduate Education: 1990* (Washington, D.C.: U.S. Department of Education, 1993), 55, 78, and 88.

[13]The federal government has since begun to provide some capital through the Federal Direct Loan program.

[14]The College Board, Washington Office, *Trends in Student Aid: 1983 to 1993*, 4.

Program	*Annual Limit*	*Cumulative Limit*
Stafford	$2,625 first 2 years	$17,250 for undergraduate study
	$4,000 3rd-year status or higher	
	$7,500 graduate/professional	$54,750 graduate/professional (including undergraduate)
Perkins	financial need minus other resources	$4,500 first 2 years
		$9,000 3rd-year status or higher
		$18,000 graduate/professional (including undergraduate)
SLS	$4,000 graduate/professional or independent undergraduate	$20,000 in addition to Stafford and PLUS
PLUS	$4,000 per dependent student (available to parents only)	$20,000 per dependent student

Borrowing by Undergraduates in 1989–90

The total cost of attending a postsecondary institution (tuition, fees, and living expenses) varied greatly from one type of institution to another. In 1989–90, the average student-reported annual cost of attending for a full-time, full-year undergraduate ranged from about $7,500 to $10,000 at different types of public institutions and from about $10,000 to $21,000 at different types of private, not-for-profit institutions. The cost of attending averaged about $14,000 at private, for-profit institutions.[15] To help cover the cost of their postsecondary education, 19 percent of the nation's 16.3 million undergraduates took out loans in 1989–90, borrowing an average of about $2,800 (table 2.1). Putting this into context relative to other financial aid, 36 percent of undergraduates received grants (at an average of $2,257), and 5 percent received work-study aid (averaging $1,248).[16]

[15]National Center for Education Statistics, *Financing Undergraduate Education: 1990,* 38.

[16]National Center for Education Statistics, *Financing Undergraduate Education: 1990,* 30.

Table 2.1—Percentage of undergraduates with various types of loans and average amount borrowed, by dependency status and level: 1989–90

	Total		Stafford		SLS		Perkins		PLUS	
	Percent	Average Amount	Percent	Average Amount	Percent	Average Amount	Percent	Average amount	Percent	Average amount
					All undergraduates					
Total	18.8%	$2,799	15.8%	$2,317	2.1%	$2,447	4.3%	$1,224	1.3%	$3,272
Dependency status										
Dependent	19.6	2,500	15.8	2,214	0.3	2,482	5.6	1,186	2.6	3,282
Independent	18.1	3,096	15.9	2,413	3.7	2,444	3.0	1,282	0.1	2,949
					1st- and 2nd-year					
Total	17.3	2,703	14.6	2,167	2.3	2,404	3.6	1,207	1.3	3,221
Dependency status										
Dependent	18.0	2,365	14.5	2,050	0.4	2,458	5.3	1,164	2.6	3,227
Independent	16.7	3,203	14.8	2,267	4.1	2,399	2.2	1,285	0.1	2,971
					3rd-, 4th-, and 5th-year					
Total	23.1	3,010	19.2	2,654	1.3	2,676	6.2	1,252	1.4	3,414
Dependency status										
Dependent	23.7	2,774	19.3	2,542	0.2	—	6.6	1,232	2.5	3,436
Independent	22.6	3,268	19.1	2,773	2.5	2,681	5.9	1,277	0.1	—

—Too few cases for a reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

There was considerable variation across student and institutional characteristics in the percentage who borrowed, but not much in the average amount borrowed. This is not surprising, because the amounts that students borrow are constrained by the limits imposed by loan program regulations. Within these limits, one would expect borrowing to be most common and in the greatest amounts at institutions where the cost of attending is high and among undergraduates who come from families with limited financial resources or who have little time to work (for example, full-time students). The data presented in the tables in this chapter are consistent with these expectations.

Borrowing Through the Different Loan Programs

The average amount borrowed under the Stafford Loan program by the 15 percent of the 1st- and 2nd-year undergraduates who participated in this program in 1989–90 was $2,167 (the maximum allowed was $2,625) (table 2.1). In their later undergraduate years, when the maximum was $4,000, students borrowed about $500 more, on average ($2,654). At both levels, financially

independent students borrowed more, on average, than did dependent students. As a group, dependent students tend to be less financially needy than independent students, because their parents' resources as well as their own are considered when their need for financial aid is calculated. (The relationship between financial need and borrowing is covered in some detail in chapter 4.)

In 1989–90, about one-half of undergraduates with Stafford loans borrowed the maximum allowed (table 2.2). The other 8 percent with Stafford loans either did not want to borrow the maximum or were not eligible to do so because their financial need was not great enough to make them eligible for the maximum.

The percentage who borrowed the maximum varied with cost of attending and institution type (which are, of course, related) and with student income and attendance status. Among full-time, full-year undergraduates, the percentage with the maximum Stafford loan was particularly high for those with costs greater than $15,000 (24 percent), those attending private, for-profit or not-for-profit institutions (46 percent and 22 percent, respectively), and those who were independent students with incomes of less than $30,000 (approximately 23 percent). Among undergraduates who attended part time and/or part year, 32 percent of those in private, for-profit institutions (but less than 10 percent in other types of institutions), received the maximum Stafford loan.

Borrowing through other programs was not as extensive: 2 percent took out SLS loans, and 4 percent took out Perkins loans (table 2.1). In addition, 1 percent had parents who took out PLUS loans. The rest of this discussion about 1989–90 borrowing refers to all student loan programs together, but it should be kept in mind that most who borrow take out Stafford loans.

Variation in Borrowing by Student Characteristics

The student characteristics most closely related to borrowing were enrollment status, dependency status, and income. Full-time, full-year undergraduates were much more likely than those who attended part time and/or part year to borrow (30 percent compared with 12 percent), although the average amount borrowed was about the same for both groups ($2,800) (table 2.3).

Table 2.2—Percentage distribution of undergraduates by Stafford loan status, by selected student and institutional characteristics: 1989–90

	No Stafford loan	Stafford loan, less than maximum	Maximum Stafford loan
		All undergraduates	
Total	84.2	7.7	8.1
Total cost 1989–90			
Less than $2,000	98.2	1.5	0.3
$2,000–$4,999	93.2	4.6	2.2
$5,000–$9,999	85.9	8.3	5.8
$10,000–$14,999	80.1	9.2	10.7
$15,000 or more	78.7	7.9	13.4
Type and control of institution			
Public			
Less-than-4-year	96.0	2.4	1.6
4-year	83.9	10.1	6.0
Private, not-for-profit			
Less-than-4-year	81.1	8.9	10.0
4-year	72.4	12.0	15.6
Private, for-profit	45.5	18.6	35.9
Family income			
Dependent student			
Less than $30,000	76.2	13.5	10.3
$30,000–$49,999	83.7	9.4	6.9
$50,000 or more	93.6	3.5	2.9
Independent student			
Less than $10,000	73.4	11.1	15.5
$10,000–$29,999	86.7	5.5	7.8
$30,000 or more	95.0	2.2	2.9
		Full-time, full-year	
Total	75.5	12.1	12.4
Total cost 1989–90			
Less than $2,000	94.6	4.1	1.4
$2,000–$4,999	88.8	7.6	3.5
$5,000–$9,999	78.3	12.8	9.0
$10,000–$14,999	67.3	15.2	17.5
$15,000 or more	63.7	12.4	23.9
Type and control of institution			
Public			
Less-than-4-year	89.8	6.3	4.0
4-year	80.2	12.0	7.2
Private, not-for-profit			
Less-than-4-year	68.7	12.5	18.9
4-year	62.0	15.6	22.4
Private, for-profit	35.0	19.1	45.9

Table 2.2—Percentage distribution of undergraduates by Stafford loan status, by selected student and institutional characteristics: 1989–90—Continued

	No Stafford loan	Stafford loan, less than maximum	Maximum Stafford loan
		Full-time, full-year—Continued	
Family income			
Dependent student			
Less than $30,000	65.6	19.2	15.2
$30,000–$49,999	78.7	11.6	9.8
$50,000 or more	91.1	4.8	4.1
Independent student			
Less than $10,000	61.0	16.1	22.9
$10,000–$29,999	63.6	12.6	23.8
$30,000 or more	75.9	8.7	15.4
		Part-time and/or part-year	
Total	90.2	5.1	4.7
Total cost 1989–90			
Less than $2,000	98.6	1.2	0.2
$2,000–$4,999	94.6	3.7	1.7
$5,000–$9,999	89.4	6.2	4.4
$10,000–$14,999	86.7	6.1	7.3
$15,000 or more	86.1	5.6	8.3
Type and control of institution			
Public			
Less-than-4-year	97.3	1.6	1.1
4-year	88.1	7.6	4.3
Private, not-for-profit			
Less-than-4-year	85.1	8.7	6.2
4-year	82.5	8.3	9.2
Private, for-profit	47.6	20.3	32.1
Family income			
Dependent student			
Less than $30,000	84.5	9.9	5.6
$30,000–$49,999	89.5	6.7	3.8
$50,000 or more	96.7	1.9	1.4
Independent student			
Less than $10,000	81.5	8.2	10.2
$10,000–$29,000	91.6	3.9	4.6
$30,000 or more	96.7	1.5	1.7

NOTE: Percentages may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Table 2.3—Percentage of undergraduates who participated in student loan programs in 1989–90 and average amount borrowed, by attendance status and selected student and institutional characteristics

	All		Full-time, full-year		Part-time and/or part-year	
	Percent	Average amount	Percent	Average amount	Percent	Average amount
Total	18.8	$2,799	29.9	$2,791	11.5	$2,816
Gender						
Male	17.2	2,862	28.4	2,826	10.3	2,904
Female	18.9	2,742	31.3	2,760	12.2	2,764
Race–ethnicity						
American Indian	15.3	3,189	20.5	3,349	8.9	3,425
Asian/Pacific Islander	14.1	2,968	24.3	2,853	7.1	3,077
Black, non-Hispanic	29.0	2,698	41.1	2,587	19.1	2,786
Hispanic	19.0	2,818	33.0	2,766	11.6	2,894
White, non-Hispanic	17.7	2,807	29.0	2,814	10.8	2,799
Age as of 12/31/89						
Less than 24 years	20.5	2,586	27.4	2,641	13.5	2,525
24–29 years	20.3	3,204	47.2	3,293	13.4	3,259
30 years or older	11.3	3,158	39.1	3,303	7.2	3,083
Dependency Status						
Dependent	19.6	2,500	26.1	2,599	12.1	2,347
Independent	18.1	3,096	42.3	3,184	11.2	3,100
Family income						
Dependent student						
Less than $30,000	29.0	2,401	43.0	2,478	18.5	2,253
$30,000–$49,999	19.9	2,519	26.0	2,634	12.5	2,381
$50,000 or more	8.8	2,827	11.9	2,904	4.8	2,667
Independent student						
Less than $10,000	29.8	2,991	44.6	3,030	20.7	3,043
$10,000–$29,999	15.4	3,189	41.8	3,418	9.9	3,071
$30,000 or more	6.3	3,398	31.9	3,303	4.1	3,486
Parent's education (maximum of mother and father)						
High school or less	19.1	2,708	37.4	2,719	13.0	2,700
Postsecondary, but less Bachelor's or higher	14.9	2,950	22.5	2,885	10.0	3,065
Degree program						
Associate's degree	10.3	2,620	20.7	2,512	6.8	2,818
Bachelor's degree	25.3	2,714	32.0	2,798	17.3	2,598
Undergraduate certificate	29.2	2,925	36.7	2,867	20.9	2,888
Other undergraduate	10.0	3,220	25.1	3,099	5.8	3,393

Table 2.3—Percentage of undergraduates who participated in student loan programs in 1989–90 and average amount borrowed, by attendance status and selected student and institutional characteristics—Continued

	All		Full-time, full-year		Part-time and/or part-year	
	Percent	Average amount	Percent	Average amount	Percent	Average amount
Grade point average (cumulative)						
Less than 2.0	15.3	2,402	26.8	2,483	9.4	2,348
2.0–2.9	20.3	2,718	29.2	2,708	12.7	2,941
3.0 or higher	18.8	2,899	30.9	2,910	11.1	2,941
Aspiration, degree planned						
Less than a bachelor's degree	15.6	2,804	35.2	2,730	12.7	2,839
Bachelor's degree	13.5	2,578	27.2	2,619	8.5	2,538
Master's degree	18.8	2,828	31.0	2,798	12.1	2,880
Ph.D./professional degree	22.5	3,172	31.2	3,023	16.5	3,384
Type and control of institution						
Public						
Less-than-4-year	5.2	2,709	13.4	2,265	3.6	3,132
4-year	20.4	2,433	25.6	2,473	14.4	2,424
Private, not-for-profit						
Less-than-4-year	21.2	2,944	36.1	2,775	16.9	2,671
4-year	32.9	3,087	44.6	3,158	21.1	2,996
Private, for-profit	58.0	3,046	68.9	3,311	56.0	2,945
Total cost 1989–90						
Less than $2,000	2.2	1,467	6.6	—	1.7	1,200
$2,000–$4,999	9.0	1,976	16.2	1,876	6.6	2,039
$5,000–$9,999	17.0	2,453	27.3	2,403	12.3	2,504
$10,000–$14,999	23.2	3,067	37.5	2,977	15.7	3,196
$15,000 or more	25.0	3,520	42.9	3,487	16.3	3,575

—Too few cases for a reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Independent students tend to be more financially needy than dependent students because only their own and their spouses' resources are included in the calculation of need, whereas parental income is counted for dependent students. In addition, as indicated above in the discussion of loan programs, independent students have access to more loan programs. Among full-time, full-year undergraduates, independent students were more likely than dependent students to borrow (42 percent compared with 26 percent), and to borrow more, on average ($3,184 compared with $2,599). Among undergraduates not enrolled full time, full year, on the other hand, similar percentages of independent and dependent students borrowed (11 percent and 12 percent, respectively). However, independent students still borrowed more, on average ($3,100 compared with $2,347).

For both dependent and independent undergraduates, the percentage who borrowed decreased as income increased. Among dependent students, however, the average amount borrowed was greatest for students in the highest income group. In contrast, the average amount borrowed by independent undergraduates was about the same in all income groups.[17]

Borrowing was also related to age, but with differences depending on attendance status. Among undergraduates who were enrolled full time, full year, the least likely to borrow were students under 24 years old. These students are the most likely to be financially dependent and have their parents' financial resources to draw upon. In contrast, among undergraduates enrolled part time and/or part year, students 30 years or older were the least likely to borrow. Many of these students may have been working at full-time jobs in addition to studying and therefore had less need to borrow.

Borrowing also varied with other student characteristics such as race–ethnicity and degree program, although financial aid is not given out on these grounds. The differences reflect in part differences in the types of institutions attended (and therefore cost) and in income, but they could reflect differences in willingness to borrow as well. Chapter 5 examines variation in student borrowing controlling for the interaction among some of the major factors that affect borrowing.

Variation in Borrowing by Institutional Characteristics

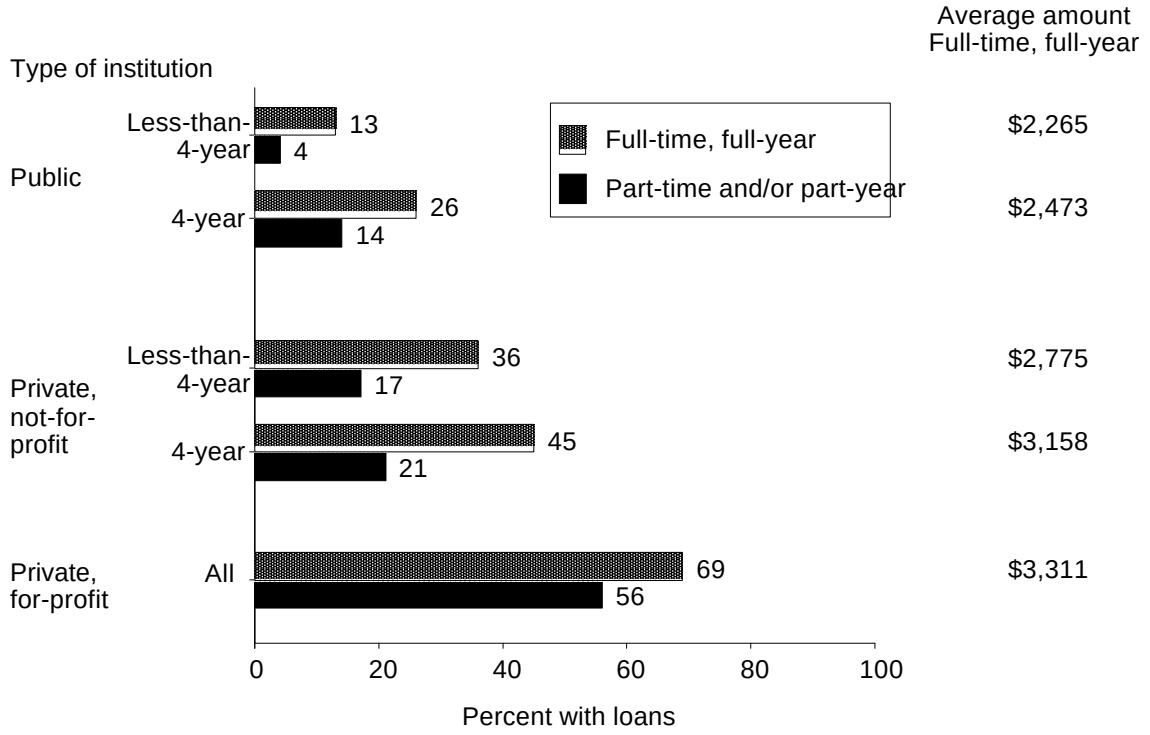
Undergraduate borrowing in 1989–90 was closely related to the cost of attending (table 2.3). When total costs were less than $2,000, most undergraduates were able to avoid borrowing—only 2 percent borrowed. At the other end of the spectrum, when total costs were $15,000 or more, 25 percent of all undergraduates borrowed (and 43 percent of full-time, full-year undergraduates did so). The average amount borrowed by undergraduates increased with cost, starting at $1,467 for those in institutions with costs of less than $2,000 and increasing to $3,520 when total costs were $15,000 or more.

The percentage of undergraduates who borrowed varied by institution type, because of variation in both the cost of attending and the characteristics of those who attended. Undergraduates in private, for-profit institutions were the most likely to borrow, especially if they attended full time, full year, in which case 69 percent borrowed (figure 2.1). This high rate of borrowing was related to the fact that students at private, for-profit institutions were especially likely to come from low-income families and that the cost of attending was relatively high (about $11,000 per year, on average).[18] Relatively few (4 percent) of the

[17]Although the average amount borrowed appears to be greatest for the highest income group for independent as well as dependent undergraduates, the differences in the average amounts borrowed by income group were not significant statistically for independent students.

[18]U.S. Department of Education, National Center for Education Statistics, *Profile of Undergraduates* (Washington, D.C.: U.S. Department of Education, 1993), 45; and National Center for Education Statistics, *Financing Undergraduate Education: 1990*, 35. Note that this average cost is for all undergraduates, not just full-time, full-year students.

Figure 2.1—Percentage of undergraduates with loans, by type of institution and attendance status, and average amount borrowed by full-time, full-year undergraduates, by institution type: 1989–90



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

students in public less-than-4-year institutions borrowed, although the percentage borrowing was much greater among full-time, full-year undergraduates than among undergraduates not enrolled full time, full year (13 percent compared with 4 percent).

Variation in Borrowing by Student Level

Among both 1st- and 2nd-year undergraduates, 17 percent borrowed to finance their education in 1989–90 (table 2.4). The percentage who borrowed was higher for 3rd- and 4th/5th-year students (23 percent in each case). The lower rate of borrowing in the lower division years is partially due to the fact that many of these students attend public less-than-4-year institutions, where costs are lower and attendance is often part time.

Considering only students in bachelor's degree programs, slightly fewer borrowed in their 1st year (23 percent) than in their 2nd year (27 percent). In the 3rd and 4th/5th years, 26 percent borrowed. The average amounts borrowed were greater in the 3rd and 4th/5th years than in the 1st or 2nd years, reflecting the higher loan limits permitted by the Stafford loan program.

Table 2.4—Percentage of undergraduates who participated in student loan programs in 1989–90 and average amount borrowed, by level and selected student and institutional characteristics

	1st-year		2nd-year		3rd-year		4th/5th-year	
	Percent with loans	Average loan amount	Percent with loans	Average loan amount	Percent with loans	Average loan amount	Percent with loans	Average loan amount
Total	17.4	$2,771	17.1	$2,552	23.2	$2,933	23.1	$3,072
Gender								
Male	14.2	2,812	16.9	2,724	22.8	2,942	23.0	3,057
Female	17.7	2,702	17.1	2,434	23.4	2,941	23.1	3,088
Race–ethnicity								
American Indian	14.7	3,031	12.7	—	13.2	—	25.4	—
Asian/Pacific Islander	11.7	2,924	12.7	2,584	23.0	3,390	16.6	3,027
Black, non-Hispanic	30.2	2,773	22.5	2,137	32.2	3,251	31.5	2,596
Hispanic	17.9	3,034	16.3	2,435	22.4	2,571	28.1	2,665
White, non-Hispanic	15.5	2,718	16.8	2,634	22.5	2,895	22.4	3,163
Age as of 12/31/89								
Less than 24 years	18.0	2,501	20.4	2,402	25.5	2,795	25.0	2,861
24–29 years	18.6	3,281	17.0	3,014	24.0	3,274	26.7	3,186
30 years or older	10.4	3,086	9.9	2,766	14.7	3,345	14.9	3,737
Dependency status								
Dependent	17.0	2,364	20.2	2,365	24.2	2,710	23.1	2,845
Independent	17.8	3,099	14.2	2,802	21.8	3,277	23.1	3,263
Family income								
Dependent student								
Less than $30,000	23.9	2,312	31.0	2,238	39.7	2,635	39.0	2,674
$30,000–$49,999	17.3	2,347	21.5	2,475	23.3	2,536	22.6	3,075
$50,000 or more	7.1	2,653	8.1	2,621	12.6	3,154	10.6	2,997
Independent student								
Less than $10,000	29.3	2,948	24.7	2,796	34.6	3,264	35.3	3,125
$10,000–$29,999	15.8	3,223	10.9	2,811	19.1	3,246	20.0	3,421
$30,000 or more	5.4	3,602	6.5	2,802	7.5	3,471	8.4	3,623
Parent's education (maximum of mother and father)								
High school or less	17.2	2,696	16.1	2,477	26.0	2,725	27.4	2,977
Postsecondary, but less Bachelor's or higher	11.5	2,749	15.3	2,904	20.6	3,101	17.7	3,145
Degree program								
Associate's degree	9.4	2,550	11.8	2,664	13.1	1,986	8.3	—
Bachelor's degree	23.1	2,398	27.4	2,490	25.7	2,902	25.6	3,019
Undergraduate	33.2	3,009	16.1	2,412	22.5	2,649	22.8	2,708
Other undergraduate	10.1	3,133	7.8	2,819	12.4	3,812	11.4	3,689
Grade point average (cumulative)								
Less than 2.0	14.4	2,293	16.3	2,353	19.3	2,831	18.0	3,124
2.0–2.9	16.8	2,660	18.6	2,414	25.5	2,922	25.5	2,965
3.0 or higher	17.6	2,832	16.4	2,741	23.2	2,988	22.3	3,149

Table 2.4—Percentage of undergraduates who participated in student loan programs in 1989–90 and average amount borrowed, by level and selected student and institutional characteristics—Continued

	1st-year		2nd-year		3rd-year		4th/5th-year	
	Percent with loans	Average loan amount	Percent with loans	Average loan amount	Percent with loans	Average loan amount	Percent with loans	Average loan amount
Aspiration, degree planned								
Less than a bachelor's	16.8	2,883	11.8	2,409	13.3	—	4.7	—
Bachelor's degree	12.8	2,569	12.6	2,431	17.2	2,677	16.2	2,840
Master's degree	14.4	2,800	18.2	2,563	23.6	2,963	23.8	2,998
Ph.D./professional degree	17.9	2,758	21.9	3,232	27.1	3,230	25.5	3,456
Type and control of institution								
Public								
Less-than-4-year	4.5	2,547	6.9	2,656	3.5	—	3.1	—
4-year	17.5	2,107	21.6	2,190	21.1	2,499	21.8	2,811
Private, not-for-profit								
Less-than-4-year	20.3	3,083	26.5	2,664	11.4	—	6.3	—
4-year	29.7	2,746	36.6	2,842	34.6	3,423	32.2	3,421
Private, for-profit	59.0	3,066	49.3	2,763	77.0	3,379	48.9	—
Total cost 1989–90								
Less than $2,000	1.9	1,385	2.3	—	8.5	—	2.8	—
$2,000–$4,999	8.1	1,907	9.3	2,243	11.2	1,920	12.0	1,846
$5,000–$9,999	15.7	2,492	15.7	2,237	19.9	2,376	21.4	2,686
$10,000–$14,999	22.1	3,072	20.6	2,736	27.6	3,201	25.7	3,307
$15,000 or more	24.5	3,434	21.2	3,302	29.9	3,659	27.7	3,771

—Too few cases for reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Tables 2.5 and 2.6 are similar to table 2.4, but show full-time, full-year and part-time/year undergraduates separately. In their 4th/5th year, 29 percent of full-time, full-year undergraduates at 4-year public institutions borrowed an average of $2,986 (figure 2.2). At private, not-for-profit institutions, 45 percent borrowed an average of $3,607.

Table 2.5—Percentage of full-time, full-year undergraduates who participated in student loan programs in 1989–90 and average amount borrowed, by level and selected student and institutional characteristics

	1st-year		2nd-year		3rd-year		4th/5th-year	
	Percent with loans	Average loan amount	Percent with loans	Average loan amount	Percent with loans	Average loan amount	Percent with loans	Average loan amount
Total	27.9	$2,637	28.9	$2,541	32.2	$2,910	33.4	$3,259
Gender								
Male	25.7	2,705	27.3	2,576	31.6	2,850	32.2	3,280
Female	29.6	2,579	30.5	2,515	32.9	2,967	34.5	3,243
Race–ethnicity								
American Indian	19.5	—	—	—	—	—	—	—
Asian/Pacific Islander	22.6	3,029	21.2	2,291	31.3	2,859	24.4	3,135
Black, non-Hispanic	40.0	2,616	38.8	2,349	44.9	2,697	44.8	2,693
Hispanic	29.1	2,746	32.6	2,401	36.9	2,684	40.2	3,377
White, non-Hispanic	26.7	2,614	28.3	2,583	31.3	2,944	32.8	3,306
Age as of 12/31/89								
Less than 24 years	25.2	2,476	27.3	2,457	30.0	2,783	30.0	3,082
24–29 years	52.1	3,142	43.9	2,941	44.4	3,451	46.0	3,565
30 years or older	38.4	3,240	33.0	2,833	52.0	3,472	41.2	3,849
Dependency status								
Dependent	24.2	2,402	26.6	2,431	28.4	2,774	27.8	3,096
Independent	41.9	3,154	37.0	2,825	46.5	3,222	45.0	3,468
Family income								
Dependent student								
Less than $30,000	37.1	2,339	45.0	2,258	51.0	2,685	48.8	2,916
$30,000–$49,999	24.0	2,383	28.1	2,597	27.7	2,650	26.3	3,297
$50,000 or more	11.3	2,652	9.9	2,693	14.1	3,173	13.9	3,240
Independent student								
Less than $10,000	42.9	3,006	42.5	2,683	47.7	3,228	46.2	3,185
$10,000–$29,999	44.7	3,246	29.5	3,163	45.5	3,224	47.4	4,027
$30,000 or more	26.1	3,694	34.1	2,778	39.9	3,111	32.7	3,569
Parent's education (maximum of mother and father)								
High school or less	35.1	2,579	34.0	2,543	42.8	2,791	43.0	3,157
Postsecondary, but less Bachelor's or higher	19.3	2,702	22.4	2,573	25.5	2,997	25.0	3,329
Degree program								
Associate's degree	19.3	2,470	22.9	2,595	—	—	—	—
Bachelor's degree	29.8	2,521	32.1	2,533	32.6	2,908	34.0	3,219
Undergraduate certificate	43.3	2,991	27.5	2,309	29.7	2,855	28.7	2,989
Other undergraduate	22.9	2,810	23.6	2,800	31.8	3,180	29.2	4,222

Table 2.5—Percentage of full-time, full-year undergraduates who participated in student loan programs in 1989–90 and average amount borrowed, by level and selected student and institutional characteristics—Continued

	1st-year		2nd-year		3rd-year		4th/5th-year	
	Percent with loans	Average loan amount	Percent with loans	Average loan amount	Percent with loans	Average loan amount	Percent with loans	Average loan amount
Grade point average (cumulative)								
Less than 2.0	25.1	2,309	27.7	2,498	32.9	2,872	30.1	3,246
2.0–2.9	25.2	2,454	29.5	2,427	32.0	2,927	32.7	3,163
3.0 or higher	30.7	2,751	27.9	2,679	31.5	2,931	33.9	3,308
Aspiration, degree planned								
Less than a bachelor's	37.8	2,810	29.5	2,495	—	—	—	—
Bachelor's degree	26.4	2,586	27.3	2,521	29.1	2,649	28.7	2,943
Master's degree	26.6	2,556	31.0	2,470	33.3	2,910	35.1	3,294
Ph.D./professional	27.2	2,599	28.9	2,832	33.8	3,201	35.4	3,366
Type and control of institution								
Public								
Less-than-4-year	12.3	2,165	16.0	2,240	—	—	—	—
4-year	22.5	2,111	25.4	2,245	26.2	2,462	28.9	2,986
Private, not-for-profit								
Less-than-4-year	36.3	2,818	40.5	2,739	15.1	—	—	—
4-year	43.2	2,831	44.8	2,864	46.3	3,476	44.6	3,607
Private, for-profit	70.4	3,320	60.0	3,197	—	—	—	—
Total cost 1989–90								
Less than $2,000	4.4	—	6.8	—	—	—	—	—
$2,000–$4,999	15.0	1,817	17.1	1,834	18.3	1,949	18.6	2,165
$5,000–$9,999	26.8	2,292	27.9	2,299	26.5	2,389	28.1	2,795
$10,000–$14,999	38.3	2,844	34.4	2,755	40.2	3,066	37.0	3,324
$15,000 or more	45.2	3,350	39.0	3,098	43.0	3,654	43.6	3,878

—Too few cases for a reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Table 2.6—Percentage of part-time and/or part-year undergraduates who participated in student loan programs in 1989–90 and average amount borrowed, by level and selected student and institutional characteristics

	1st-year		2nd-year		3rd-year		4th/5th-year	
	Percent with loans	Average loan amount	Percent with loans	Average loan amount	Percent with loans	Average loan amount	Percent with loans	Average loan amount
Total	10.7	$2,830	10.0	$2,654	14.8	$2,975	15.1	$2,860
Gender								
Male	8.6	2,861	10.2	2,978	14.2	3,111	14.7	2,774
Female	12.0	2,813	9.8	2,434	15.3	2,871	15.5	2,931
Race–ethnicity								
American Indian	9.9	—	—	—	—	—	—	—
Asian/Pacific Islander	5.6	2,561	6.8	2,930	14.3	—	8.8	2,927
Black, non-Hispanic	20.2	2,841	13.4	2,052	20.7	4,140	23.7	2,543
Hispanic	11.1	3,196	8.6	2,620	13.6	2,326	20.7	2,426
White, non-Hispanic	9.5	2,776	9.9	2,735	14.5	2,797	14.4	2,937
Age as of 12/31/89								
Less than 24 years	12.2	2,519	12.5	2,392	18.7	2,848	17.7	2,426
24–29 years	12.4	3,496	11.6	3,205	15.8	3,080	17.5	2,905
30 years or older	6.8	2,970	5.9	2,727	8.1	3,303	10.1	3,697
Dependency status								
Dependent	10.4	2,318	12.0	2,294	17.5	2,563	15.7	2,301
Independent	10.9	3,110	8.9	2,907	13.0	3,349	14.8	3,134
Family income								
Dependent student								
Less than $30,000	14.9	2,237	19.8	2,232	30.4	2,505	29.0	2,109
$30,000–$49,999	11.1	2,374	12.1	2,356	16.4	2,190	16.4	2,657
$50,000 or more	3.4	2,633	4.7	2,409	9.1	3,261	6.1	2,323
Independent student								
Less than $10,000	20.0	2,949	16.9	3,113	24.1	3,297	26.9	3,105
$10,000–$29,999	10.0	3,157	7.3	2,685	12.5	3,311	12.7	3,061
$30,000 or more	3.6	3,774	4.2	2,778	4.2	3,776	5.3	3,541
Parent's education (maximum of mother and father)								
High school or less	12.7	2,789	9.6	2,399	15.5	2,608	19.6	2,760
Postsecondary, but less Bachelor's or higher	7.6	2,841	10.4	3,432	15.9	3,273	12.1	2,827
Degree program								
Associate's degree	6.2	2,716	7.8	2,852	12.3	—	5.5	—
Bachelor's degree	15.7	2,250	19.3	2,472	17.3	2,847	17.3	2,743
Undergraduate certificate	24.0	2,981	11.0	2,395	14.5	2,598	18.8	2,491
Other undergraduate	5.9	3,276	4.3	3,085	7.7	4,533	6.8	3,342
Grade point average (cumulative)								
Less than 2.0	8.7	2,245	10.3	2,342	10.9	2,726	13.0	2,910
2.0–2.9	10.5	2,848	10.6	2,407	16.7	3,004	18.0	2,755
3.0 or higher	10.1	2,891	9.8	2,964	15.3	3,044	13.9	2,968

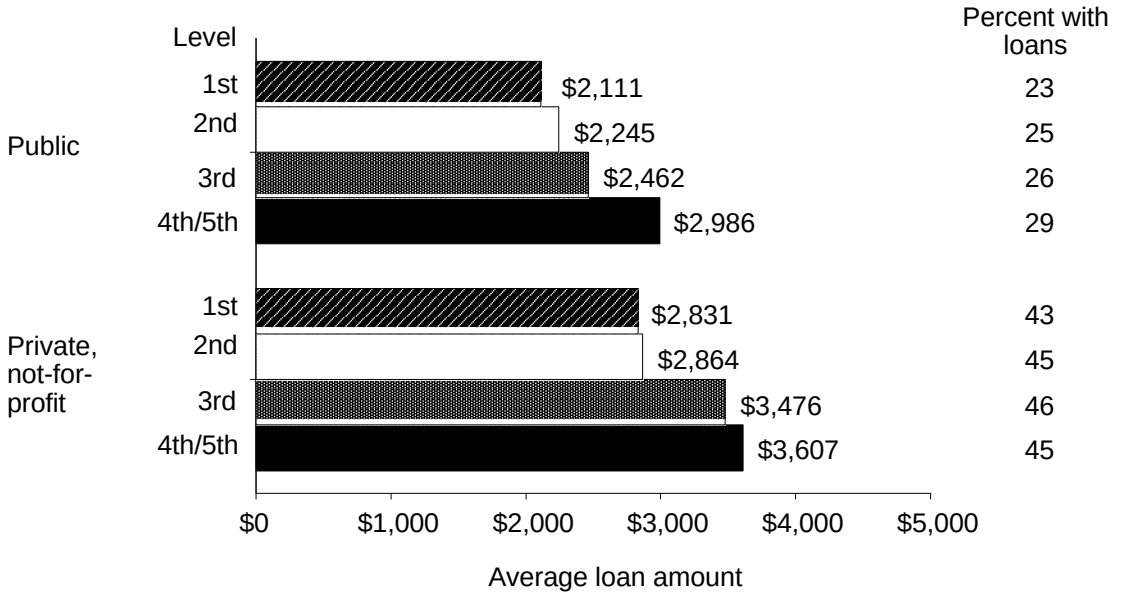
Table 2.6—Percentage of part-time and/or part-year undergraduates who participated in student loan programs in 1989–90 and average amount borrowed, by level and selected student and institutional characteristics—Continued

	1st-year		2nd-year		3rd-year		4th/5th-year	
	Percent with loans	Average loan amount	Percent with loans	Average loan amount	Percent with loans	Average loan amount	Percent with loans	Average loan amount
Aspiration, degree planned								
Less than a bachelor's	14.1	2,916	7.8	2,332	8.2	—	1.9	—
Bachelor's degree	8.4	2,562	7.2	2,322	11.3	2,694	10.0	2,710
Master's degree	9.1	3,160	11.2	2,710	15.6	3,053	16.9	2,591
Ph.D./professional degree	12.8	2,950	16.6	3,777	22.1	3,301	18.9	3,557
Type and control of institution								
Public								
Less-than-4-year	3.0	2,945	5.1	3,025	3.8	—	2.4	—
4-year	12.5	2,184	15.1	2,150	14.9	2,609	15.3	2,615
Private, not-for-profit								
Less-than-4-year	16.0	2,769	21.2	2,427	11.9	—	—	—
4-year	16.9	2,669	25.5	2,885	22.7	3,208	21.1	3,186
Private, for-profit	57.3	2,981	45.4	2,555	—	—	—	—
Total cost 1989–90								
Less than $2,000	1.5	—	1.5	—	5.5	—	1.9	—
$2,000–$4,999	5.9	1,941	6.5	2,646	8.4	1,899	10.0	1,634
$5,000–$9,999	12.1	2,641	9.2	2,133	14.4	2,373	17.1	2,551
$10,000–$14,999	16.1	3,307	13.4	2,716	17.5	3,428	17.2	3,323
$15,000 or more	16.8	3,556	13.4	3,573	19.9	3,717	16.9	3,510

—Too few cases for a reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Figure 2.2—Percentage of undergraduates with loans and average amount borrowed by full-time, full-year undergraduates with loans in 4-year institutions, by institution control and student level: 1989–90



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Cumulative Debt

Students were asked to report the cumulative amount they had borrowed to finance their undergraduate education, including amounts borrowed from parents, relatives, and other sources as well as through formal loan programs. As would be expected, the percentage of undergraduates who had borrowed to finance their education increased at each level: 31 percent of 1st-year/freshmen in 1989–90 had borrowed, as had 36 percent of 2nd-year/sophomore students, 45 percent of 3rd-year/junior students, and 50 percent of 4th/5th-year/senior students (table 2.7).

Of the 4th- and 5th-year/senior students who had borrowed, the average cumulative amount borrowed was $7,675. Given the difference in the cost of attending, it is not surprising that the average amount borrowed by undergraduates at 4-year institutions was considerably greater at private, not-for-profit than at public institutions ($10,561 compared with $6,742) (figure 2.3).

Table 2.7—Percentage of undergraduates who had borrowed from any source for their undergraduate education and average cumulative amount borrowed, by level and selected student and institutional characteristics: 1989–90

	1st-year		2nd-year		3rd-year		4th/5th-year	
	Percent	Average amount	Percent	Average amount	Percent	Average amount	Percent	Average amount
Total	30.8	$3,488	35.6	$4,570	44.9	$6,186	49.6	$7,675
Gender								
Male	30.6	3,759	35.2	5,062	44.8	6,631	51.9	7,984
Female	31.2	3,272	36.2	4,220	45.2	5,800	47.7	7,404
Race–ethnicity								
American Indian	34.8	2,186	36.6	—	—	—	55.9	—
Asian/Pacific	28.4	4,019	35.4	5,453	38.2	7,486	39.1	7,355
Black, non-Hispanic	37.5	3,587	45.4	3,457	54.4	6,581	62.4	6,508
Hispanic	36.8	2,908	35.3	4,147	48.1	4,694	55.2	5,674
White, non-Hispanic	29.3	3,539	34.7	4,714	44.3	6,218	48.9	7,947
Age as of 12/31/89								
Less than 24 years	32.7	3,098	36.8	4,890	45.3	6,475	49.5	8,256
24–29 years	38.4	4,263	44.1	4,449	54.2	5,783	60.4	7,335
30 years or older	22.9	3,898	27.8	3,794	37.2	5,439	39.8	6,527
Dependency status								
Dependent	31.3	3,085	36.0	5,052	44.0	6,667	47.3	8,377
Independent	30.4	3,855	35.3	4,106	46.2	5,556	51.5	7,138
Family income								
Dependent student								
Less than $30,000	37.9	2,738	48.5	4,203	60.2	6,355	64.9	7,499
$30,000–$49,999	31.6	2,936	41.2	5,588	45.7	6,684	52.5	8,247
$50,000 or more	22.9	3,973	21.1	5,863	31.8	7,038	31.9	9,714
Independent student								
Less than $10,000	38.4	3,610	48.5	4,356	55.5	6,158	64.1	8,083
$10,000–$29,999	30.9	3,717	32.8	3,685	47.2	5,230	49.4	6,661
$30,000 or more	21.0	4,677	24.7	4,506	32.5	4,960	36.8	5,759
Parent's education (maximum of mother and father)								
High school or less	34.7	3,385	38.8	4,244	51.3	5,518	58.8	7,163
Postsecondary, but Bachelor's or higher	30.8	3,692	35.5	5,087	43.3	6,664	44.4	8,488
Degree program								
Associate's degree	28.3	3,150	33.4	3,811	43.8	4,573	37.2	—
Bachelor's degree	35.3	3,473	41.9	5,183	46.5	6,220	51.6	7,827
Undergraduate	38.0	4,039	32.0	4,194	43.0	5,613	50.3	7,365
Other undergraduate	25.5	3,489	29.9	5,099	38.1	6,763	40.3	7,244
Grade point average (cumulative)								
Less than 2.0	28.6	2,756	38.2	4,166	44.7	6,092	46.1	7,134
2.0–2.9	34.3	3,180	37.1	4,638	44.9	6,477	53.8	7,879
3.0 or higher	28.5	3,950	33.2	4,594	44.2	5,777	46.8	7,600

Table 2.7—Percentage of undergraduates who had borrowed from any source for their undergraduate education and average cumulative amount borrowed, by level and selected student and institutional characteristics: 1989–90—Continued

	1st-year		2nd-year		3rd-year		4th/5th-year	
	Percent	Average amount	Percent	Average amount	Percent	Average amount	Percent	Average amount
Aspiration, degree planned								
Less than a Bachelor								
Bachelor's degree	28.2	3,106	26.5	4,015	26.0	3,475	16.9	—
Bachelor's degree	29.7	3,255	32.5	3,997	41.8	5,433	44.2	6,624
Master's degree	35.7	3,630	41.6	4,451	47.9	5,973	52.1	7,722
Ph.D./professional	40.8	4,720	44.1	6,289	51.7	7,525	56.9	8,488
Type and control of institution								
Public								
Less-than-4-year	23.8	2,989	29.1	3,749	34.3	5,990	30.6	4,828
4-year	32.5	2,912	39.7	4,164	43.9	5,166	50.1	6,742
Private, not-for-								
Less-than-4-year	38.6	4,411	48.6	6,136	27.8	—	23.8	—
4-year	38.6	4,628	45.5	6,761	51.5	8,258	54.2	10,561
Private, for-profit	61.6	4,471	67.7	6,563	85.7	8,351	—	—
Total cost 1989–90								
Less than $2,000	15.8	1,989	20.1	5,067	34.8	—	33.9	5,472
$2,000–$4,999	26.6	2,652	30.2	3,237	35.5	4,267	45.3	5,801
$5,000–$9,999	34.5	3,088	37.7	3,877	45.1	5,590	53.4	6,917
$10,000–$14,999	37.0	4,207	41.3	4,702	52.2	6,383	52.8	8,031
$15,000 or more	40.6	5,096	41.8	6,700	48.7	8,215	50.2	9,831

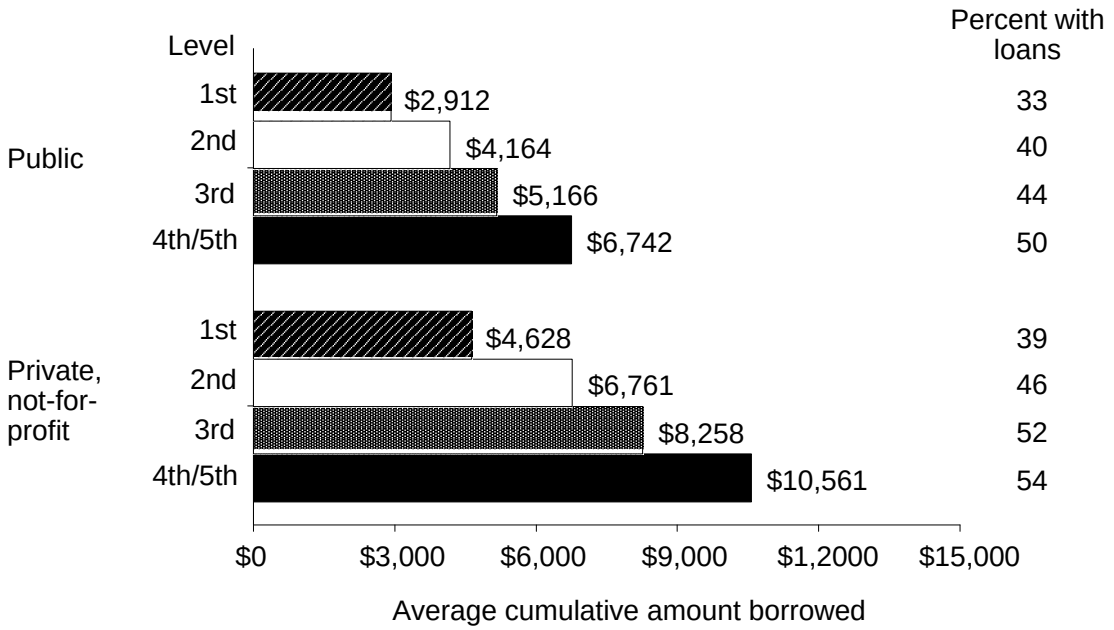
—Too few cases for a reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Although dependent 4th/5th-year undergraduates from lower income families (less than $30,000) were more likely than those from higher income families ($50,000 or more) to have accumulated some loan debt (65 percent compared with 32 percent), the students from higher income families had accumulated a larger amount of debt, on average ($9,714 compared with $7,499). A likely explanation is that undergraduates from high-income families were more likely than other students to attend private, not-for-profit institutions. These tend to be more costly than public institutions.[19] Among financially independent 4th/5th-year students, both the percentage who had accumulated debt and the average amount accumulated were greater for lower income students than for higher income students: 64 percent of those with incomes less than $10,000 borrowed an average of $8,083, while 37 percent with incomes of $30,000 or more borrowed an average of $5,759.

[19]National Center for Education Statistics, *Financing Undergraduate Education: 1990,* 23–24.

Figure 2.3—Percentage of undergraduates who had ever borrowed and average cumulative amount borrowed, by type of institution and student level: 1989–90



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

High educational aspirations and the prospect of additional potentially costly postsecondary education do not appear to reduce the amount students borrow for undergraduate education. To the contrary, 4th/5th-year undergraduates who aspired to a master's or to a doctoral or professional degree were more likely to have accumulated debt than those who aspired to no more than a bachelor's degree (52 percent and 57 percent compared with 44 percent). In addition, they had accumulated more debt, on average ($7,722 and $8,488 compared with $6,624).

Borrowing Outside Student Loan Programs

Because the data on cumulative debt includes borrowing outside formal student loan programs, a comparison of undergraduate borrowing through the loan programs and cumulative debt for 1st-year undergraduates provides some insight into borrowing from family, friends, and other sources. Table 2.4 (based on institutional records) shows that 17 percent of all 1st-year students borrowed in 1989–90. Table 2.7 (based on student reports) shows a much larger proportion of 1st-year students (31 percent) borrowing. This suggests that a considerable number of undergraduates could be borrowing outside

the student loan programs. Another possible explanation for this difference is that the data on cumulative borrowing cover more than 1 year for some 1st-year students. This could happen, for example, if they started their undergraduate education several years earlier, dropped out for awhile, and then re-enrolled, or if they accumulated course credits slowly and were classified as 1st-year students for several years. However, an examination of the data on borrowing for first-time freshmen only show them to be similar to all 1st-year students. Twenty percent borrowed in 1989–90 through student loan programs, and 31 percent reported that they had borrowed from some source.[20] This suggests that borrowing outside the student loan programs may account for most of the difference between 1989–90 borrowing and cumulative borrowing, at least for 1st-year students.

There appears to have been more borrowing outside student loan programs among undergraduates who attended public institutions than among those who attended private institutions. While only 5 percent of 1st-year students enrolled in public less-than-4-year institutions borrowed through a student loan program in 1989–90 (table 2.4), 24 percent reported that they had borrowed for their undergraduate education (table 2.7). The pattern was similar in public 4-year institutions, where the corresponding percentages were 18 percent and 33 percent. At private, not-for-profit 4-year institutions, on the other hand, 30 percent borrowed through loan programs, and 39 percent reported some borrowing. In the private, for-profit institutions, almost all borrowing by first-year students appeared to be through student loan programs (59 percent borrowed through student loan programs in 1989–90, and 62 percent reported some borrowing).

[20]National Center for Education Statistics, NPSAS:90, Data Analysis System.

Chapter 3

Profile of Undergraduate Borrowers

The previous chapter provided an overview of borrowing, examining the borrowing patterns of undergraduates by selected student and institutional characteristics. This chapter takes a different perspective, profiling borrowers and comparing them with nonborrowers. It describes how undergraduate borrowers and nonborrowers are distributed among types of institutions and programs and examines their demographic, socioeconomic, and enrollment characteristics.

Categories of Borrowers

In this chapter, both annual and cumulative borrowing are examined. For the analysis of annual borrowing, borrowers were divided into two categories to allow separate examination of undergraduates who borrowed large and small amounts. Two categories of borrowers were used for this analysis: those who borrowed less than $2,000 in 1989–90
(5 percent of all undergraduates) and those who borrowed $2,000 or more (13 percent of all undergraduates).[21]

Cumulative borrowing is most meaningful when student level and degree program are taken into account. A 2nd-year student who has borrowed a total of $4,000, for example, and has two more years before finishing is in a much different financial situation than a 4th-year student about to graduate who has borrowed $4,000. The analysis of cumulative borrowing, therefore, focuses on 4th- and 5th-year undergraduates at 4-year institutions in order to provide a picture of the total amount that students borrowed to finance a bachelor's degree. Examining cumulative borrowing for students at 2- to 3-year institutions was considered, but it is impossible to tell which students are in the last year of their program. In addition, as table 2.3 showed, relatively few students at less-than-4-year institutions borrowed (5 percent in 1989–90 in public institutions), which means that many cells would have too few cases for a reliable estimate.

As described in chapter 1, less than $5,000 and $5,000 or more were selected as the two categories to study cumulative borrowing. About one-half (49 percent) of all 4th- and 5th-year undergraduates at 4-year institutions did not borrow at all during their undergraduate years; 21 percent borrowed less than $5,000; and 31 percent borrowed $5,000 or more.[22] It should be kept in mind that cumulative borrowing includes borrowing from friends and relatives as well as through government and institutional loan programs.

[21]National Center for Education Statistics, NPSAS:90, Data Analysis System.

[22]National Center for Education Statistics, NPSAS:90, Data Analysis System.

Distribution Across Types of Institutions and Programs

Undergraduates who borrowed $2,000 or more in 1989–90 were concentrated in the most costly institutions. Private, for-profit institutions had 9 percent of the enrollment but 31 percent of the $2,000-or-more borrowers, and private, not-for-profit 4-year institutions had 14 percent of the enrollment but 28 percent of the $2,000-or-more borrowers (table 3.1). In contrast, public less-than-4-year institutions enrolled 43 percent of all undergraduates, but had 10 percent of the $2,000-or-more borrowers. With respect to cumulative borrowing, 4th- and 5th-year undergraduates who borrowed $5,000 or more were more likely than those who borrowed less or not at all to be enrolled in private, not-for-profit 4-year institutions (33 percent compared with 18 percent and 24 percent) (table 3.2).

Table 3.1—Percentage distribution of undergraduates by institution type and control, by attendance status and amount borrowed through student loan programs: 1989–90

	Less-than-		Less-than-		Private,
			All undergraduates		
Total	43.3	32.3	1.6	14.1	8.6
Amount borrowed in 1989–90					
No borrowing	50.6	31.7	1.6	11.7	4.4
Less than $2,000	16.5	48.2	1.8	18.4	15.1
$2,000 or more	9.9	29.5	1.9	27.5	31.2
			Full-time, full-year		
Total	19.6	50.8	1.4	23.5	4.7
Amount borrowed in 1989–90					
No borrowing	24.2	53.9	1.3	18.6	2.1
Less than $2,000	12.3	59.2	1.1	23.0	4.4
$2,000 or more	7.4	37.4	1.9	40.0	13.3
			Part-time and/or part-year		
Total	57.8	25.2	1.3	9.2	6.4
Amount borrowed in 1989–90					
No borrowing	63.0	24.4	1.3	8.2	3.2
Less than $2,000	21.8	41.6	2.6	14.0	20.0
$2,000 or more	16.1	27.1	1.7	18.4	36.8

NOTE: Percentages may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Table 3.2—Percentage distribution of 4th- and 5th-year undergraduates at 4-year institutions by institution control, by cumulative amount borrowed from any source for undergraduate education: 1989–90

	Public 4-year	Private, not-for-profit 4-year	Private, for-profit 4-year
Total	72.8	26.7	0.5
Amount borrowed in 1989–90			
No borrowing	75.6	24.3	0.1
Less than $5,000	81.8	18.2	0.0
$5,000 or more	65.2	33.4	1.4

NOTE: Percentages may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

The distribution of borrowers among the different degree programs reflects differences in the costs associated with the types of institutions that offer those programs (table 3.3). Undergraduates who borrowed in 1989–90 were more likely than those who did not borrow to be enrolled in bachelor's degree programs. Among part-time/year undergraduates, those who were enrolled in certificate programs accounted for 15 percent of the enrollment and 30 percent of the more-than-$2,000 borrowers.

Student and Family Characteristics

Income

One-quarter of all undergraduates who borrowed $2,000 or more in 1989–90 were dependent students from families with incomes of less than $30,000 annually, and 30 percent were independent students with incomes of less than $10,000 (table 3.4). Although the likelihood of borrowing decreased as income increased (see chapter 2), borrowing occurred even at high-income levels: 7 percent of all undergraduates and 11 percent of full-time, full-year undergraduates who borrowed $2,000 or more were dependent undergraduates from families with incomes of $50,000 or more. Among undergraduates not enrolled full time, full year, the more-than-$2,000 borrowers were primarily independent students with incomes of less than $30,000 (61 percent).

Looking at cumulative borrowing, 4th- and 5th-year undergraduates at public and private, not-for-profit 4-year institutions who had borrowed for their undergraduate education were spread across all income groups (table 3.5). Those who borrowed the most ($5,000 or more) were most likely to be independent undergraduates with annual incomes of less than $10,000 (28 percent were in this group) (figure 3.1).

Table 3.3—Percentage distribution of undergraduates by degree program, by attendance status and amount borrowed through student loan programs: 1989–90

	Undergraduate certificate	Associate's degree	Bachelor's degree	Other undergraduate
		All undergraduates		
Total	14.9	28.0	38.2	18.8
Amount borrowed in 1989–90				
No borrowing	13.0	31.0	35.2	20.8
Less than $2,000	16.4	20.1	56.4	7.1
$2,000 or more	26.1	13.3	49.4	11.3
		Full-time, full-year		
Total	9.8	17.9	64.3	8.0
Amount borrowed in 1989–90				
No borrowing	8.9	20.2	62.3	8.6
Less than $2,000	10.2	14.1	69.6	6.1
$2,000 or more	12.8	11.7	68.5	7.0
		Part-time and/or part-year		
Total	14.5	34.5	27.1	23.9
Amount borrowed in 1989–90				
No borrowing	12.9	36.4	25.3	25.4
Less than $2,000	19.1	26.3	47.2	7.4
$2,000 or more	30.0	17.7	37.9	14.4

NOTE: Percentages may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Table 3.4—Percentage distribution of undergraduates by income and dependency status, by amount borrowed through student loan programs: 1989–90

	Dependent			Independent		
	Less than $30,000	$30,000–49,999	$50,000 or more	Less than $10,000	$10,000–29,999	$30,000 or more
			All undergraduates			
Total	17.9	13.9	16.0	17.7	21.9	12.5
Amount borrowed in 1989–90						
No borrowing	15.7	13.7	18.0	15.3	22.8	14.4
Less than $2,000	34.2	17.5	7.7	23.8	13.5	3.4
$2,000 or more	24.9	13.5	7.4	29.9	19.8	4.5
			Full-time, full-year			
Total	24.0	24.4	28.4	12.8	8.0	2.5
Amount borrowed in 1989–90						
No borrowing	19.5	25.7	35.7	10.1	6.6	2.4
Less than $2,000	42.3	23.4	11.1	14.6	6.4	2.2
$2,000 or more	31.5	20.4	11.4	20.8	13.1	2.8
			Part-time and/or part-year			
Total	13.2	10.5	12.1	17.5	28.6	18.2
Amount borrowed in 1989–90						
No borrowing	12.1	10.4	13.0	15.7	29.1	19.7
Less than $2,000	27.6	14.5	5.9	27.0	19.6	5.4
$2,000 or more	18.1	9.9	4.6	33.6	27.0	6.9

NOTE: Percentages may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

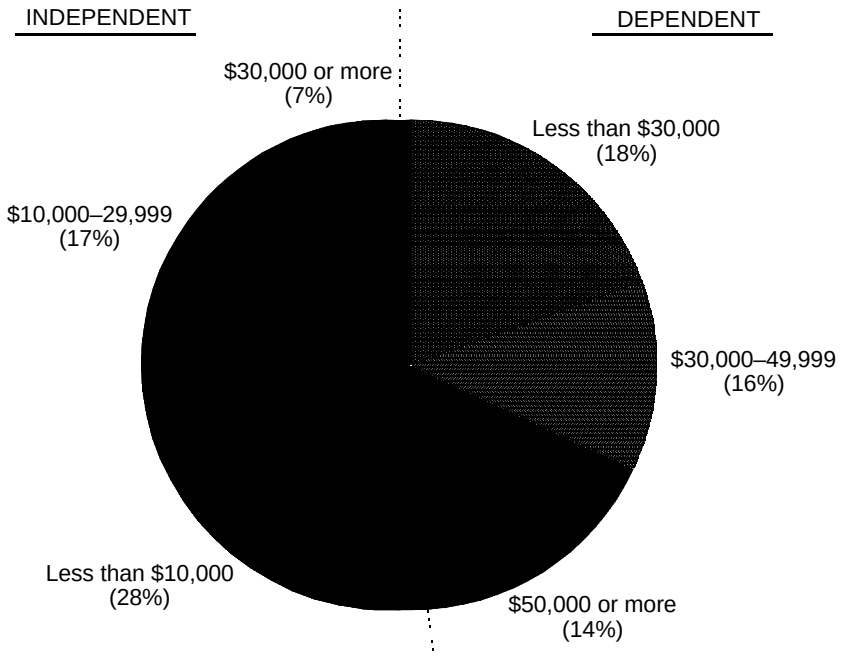
Table 3.5—Percentage distribution of 4th- and 5th-year undergraduates at 4-year institutions by income and dependency status, by cumulative amount borrowed from any source for undergraduate education: 1989–90

	Dependent			Independent		
	Less than $30,000	$30,000–49,999	$50,000 or more	Less than $10,000	$10,000–29,999	$30,000 or more
Total	15.5	13.7	19.4	21.4	18.2	11.8
Amount borrowed in 1989–90						
No borrowing	9.6	14.0	28.8	14.7	17.0	15.8
Less than $5,000	16.2	13.6	12.1	22.1	22.9	13.0
$5,000 or more	18.4	15.5	13.6	27.7	17.6	7.1

NOTE: Percentages may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Figure 3.1—Percentage distribution of 4th- and 5th-year undergraduates who borrowed $5,000 or more cumulatively by income and dependency status: 1989–90



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Gender, Age, and Race–Ethnicity

By law, students' gender, age, and race–ethnicity are not considered when need-based federal financial aid is awarded. Therefore, the observed variation in borrowing in terms of these characteristics reflects systematic differences in characteristics that are directly related to the awarding of financial aid (such as income, dependency status, attendance status, and cost of attending) and differences in students' willingness to borrow and parents' and relatives' willingness to pay.

Among full-time, full-year undergraduates, the $2,000-or-more borrowers tended to be older than nonborrowers. Of those who borrowed $2,000 or more, 23 percent were 24 years or older, compared with 11 percent of nonborrowers, respectively (table 3.6). Among undergraduates who did not attend full time, full year, the reverse was true: those who borrowed $2,000 or more were more likely than nonborrowers to be less than 24 years old. With respect to cumulative borrowing among 4th- and 5th-year undergraduates at public and private, not-for-profit 4-year institutions, a larger percentage of nonborrowers (24 percent) than $5,000-or-more borrowers (15 percent) were of age 30 years or more (table 3.7)

Table 3.6—Percentage distribution of undergraduates by gender and age, by attendance status and amount borrowed through student loan programs: 1989–90

	Gender		Age		
	Male	Female	Less than 24 years	24–29 years	30 years or more
			All undergraduates		
Total	44.6	55.4	61.6	12.8	25.6
Amount borrowed in 1989–90					
No borrowing	45.1	54.9	59.8	12.4	27.7
Less than $2,000	41.3	58.7	76.7	11.0	12.3
$2,000 or more	42.6	57.4	66.7	15.8	17.6
			Full-time, full-year		
Total	46.9	53.1	86.5	5.8	7.6
Amount borrowed in 1989–90					
No borrowing	47.9	52.1	89.0	4.3	6.6
Less than $2,000	44.8	55.3	88.5	5.9	5.6
$2,000 or more	44.3	55.7	77.5	10.8	11.8
			Part-time and/or part-year		
Total	43.3	56.7	50.1	15.7	34.2
Amount borrowed in 1989–90					
No borrowing	43.9	56.1	48.9	15.3	35.8
Less than $2,000	38.1	61.9	67.7	14.3	18.0
$2,000 or more	39.9	60.1	56.0	20.7	23.3

NOTE: Percentages may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Table 3.7—Percentage distribution of 4th- and 5th-year undergraduates at 4-year public and private, not-for-profit institutions by age and gender, by cumulative amount borrowed from any source for undergraduate education: 1989–90

	Gender		Age		
	Male	Female	Less than 24 years	24–29 years	30 years or more
Total	47.2	52.8	64.2	15.4	20.4
Amount borrowed					
No borrowing	44.6	55.4	64.6	11.2	24.2
Less than $5,000	47.4	52.6	59.8	18.9	21.2
$5,000 or more	49.6	50.4	66.6	18.0	15.4

NOTE: Percentages may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Borrowers were more likely than nonborrowers to be black. (Here and throughout this

report, “black” and “white” mean black, non-Hispanic and white, non-Hispanic.) Approximately 15 percent of borrowers were black compared with 9 percent of nonborrowers (table 3.8). Looking at cumulative borrowing, 4th- and 5th-year undergraduates at public and private, not-for-profit 4-year institutions who had borrowed $5,000 or more for their undergraduate education were less likely than nonborrowers to be Asian and were more likely to be black (table 3.9).

Parent Education

Because income and education tend to be closely related, it is not surprising that borrowers tended to come from less well-educated families than did nonborrowers. Specifically, borrowers were less likely than nonborrowers to have a parent with a bachelor's degree or higher (table 3.10). This pattern was particularly evident for full-time, full-year undergraduates, but applied to part-time/year undergraduates as well.

Considering cumulative borrowing, among 4th- and 5th-year undergraduates, 40 percent of the undergraduates who had borrowed for their undergraduate education came from families with a parent who had a bachelor's degree or higher (table 3.11). In contrast, 54 percent of those who had never borrowed had a parent in this category.

Table 3.8—Percentage distribution of undergraduates by race–ethnicity, by attendance status and amount borrowed through student loan programs: 1989–90

	American Indian	Asian/Pacific Islander	Black, non-Hispanic	Hispanic	White, non-Hispanic
			All undergraduates		
Total	0.8	4.7	10.2	8.4	75.9
Amount borrowed in 1989–90					
No borrowing	0.8	5.0	8.9	8.4	76.9
Less than $2,000	0.6	3.9	15.4	7.6	72.6
$2,000 or more	0.7	3.4	15.9	8.9	71.1
			Full-time, full-year		
Total	0.6	4.7	7.7	5.1	81.9
Amount borrowed in 1989–90					
No borrowing	0.7	5.1	6.4	4.9	82.9
Less than $2,000	0.3	4.8	11.5	6.2	77.2
$2,000 or more	0.4	3.5	10.2	5.4	80.5
			Part-time and/or part-year		
Total	0.8	4.7	9.7	8.1	76.6
Amount borrowed in 1989–90					
No borrowing	0.8	4.9	8.9	8.1	77.2
Less than $2,000	0.3	3.5	15.8	6.0	74.4
$2,000 or more	0.8	2.6	16.5	9.3	70.8

NOTE: Percentages may not sum to 100 percent due to rounding.

Table 3.9—Percentage distribution of 4th- and 5th-year undergraduates at 4-year public and private, not-for-profit institutions by race–ethnicity, by cumulative amount borrowed from any source for undergraduate education: 1989–90

	American Indian	Asian/Pacific Islander	Black, non-Hispanic	Hispanic	White, non-Hispanic
Total	0.6	5.1	7.4	5.8	81.1
Amount borrowed					
No borrowing	0.4	6.0	4.8	4.0	84.8
Less than $5,000	0.7	5.1	8.1	6.6	79.5
$5,000 or more	0.6	3.8	8.1	4.2	83.4

NOTE: Percentages may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Table 3.10—Percentage distribution of undergraduates by parents' education, by attendance status and amount borrowed through student loan programs: 1989–90

	High school or less	Postsecondary, but less than bachelor's degree	Bachelor's degree or higher
		All undergraduates	
Total	41.5	22.6	36.0
Amount borrowed in 1989–90			
No borrowing	40.7	22.3	37.1
Less than $2,000	45.4	25.3	29.4
$2,000 or more	45.2	23.5	31.2
		Full-time, full-year	
Total	33.1	22.4	44.5
Amount borrowed in 1989–90			
No borrowing	29.6	21.2	49.2
Less than $2,000	40.1	27.0	32.8
$2,000 or more	41.8	24.4	33.8
		Part-time and/or part-year	
Total	45.4	22.8	31.8
Amount borrowed in 1989–90			
No borrowing	44.8	22.7	32.5
Less than $2,000	51.3	23.4	25.3
$2,000 or more	49.4	22.7	27.9

NOTE: Percentages may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Table 3.11—Percentage distribution of 4th- and 5th-year undergraduates at 4-year public and private, not-for-profit institutions by parents' education, by cumulative amount borrowed from any source for undergraduate education: 1989–90

	High school or less	Postsecondary, but less than bachelor's degree	Bachelor's degree or higher
Total	34.2	19.4	46.3
Amount borrowed			
No borrowing	28.6	17.9	53.5
Less than $5,000	39.7	20.0	40.4
$5,000 or more	38.7	21.5	39.9

NOTE: Percentages may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Choice of Institution

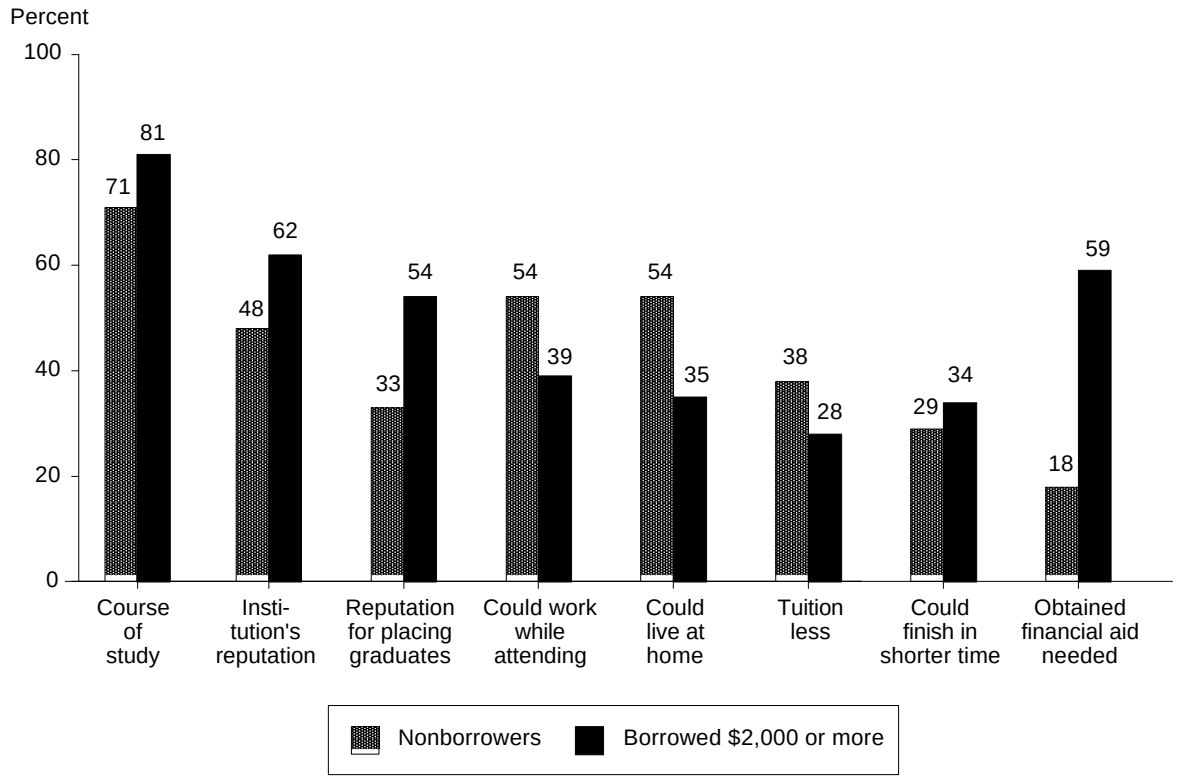
The fact that the institution offered the course of study the student wanted appeared to be the most important consideration in the choice of an institution, with 73 percent of all undergraduates reporting that it was “very important” (table 3.12). This consideration was even more important to borrowers than to nonborrowers, which may suggest that students are willing to borrow to get the program they really want (figure 3.2).

Table 3.12—Percentage of undergraduates who reported that various reasons were very important considerations in selecting the institution they chose to attend, by attendance status and amount borrowed through student loan programs: 1989–90

	Offered course of study wanted	Could work while attending	Could live at home	Institution had a good reputation	Tuition less than at others	Good reputation for placing graduates	Could finish in shorter time	Obtained financial aid needed
				All undergraduates				
Total	72.6	51.3	50.5	50.4	36.8	36.1	29.2	24.4
Amount borrowed in 1989–90								
No borrowing	71.2	53.6	53.8	48.3	37.8	33.0	28.6	17.5
Less than $2,000	77.3	42.2	34.7	56.9	38.4	46.7	28.6	57.3
$2,000 or more	80.5	39.3	34.6	62.4	28.4	53.5	33.7	58.7
				Full-time, full-year				
Total	73.3	31.1	30.3	57.7	34.9	46.2	22.3	32.6
Amount borrowed in 1989–90								
No borrowing	70.9	30.3	32.6	55.1	36.7	42.7	21.1	21.5
Less than $2,000	76.5	35.2	25.0	58.0	40.2	48.1	23.1	57.0
$2,000 or more	80.1	32.1	25.1	65.9	26.7	57.0	26.0	59.0
				Part-time and/or part-year				
Total	72.1	60.6	59.6	47.0	37.8	31.0	31.8	20.5
Amount borrowed in 1989–90								
No borrowing	71.1	62.2	61.4	45.6	38.5	28.8	30.7	15.6
Less than $2,000	78.4	49.2	44.3	55.5	36.7	45.0	34.6	57.4
$2,000 or more	81.1	47.5	45.7	58.0	30.5	49.3	42.3	58.3

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Figure 3.2—Percentage of undergraduates who reported that various reasons were very important considerations in selecting the institution they chose to attend, by amount borrowed: 1989–90



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Educational Aspirations

Borrowing as an undergraduate did not appear to diminish undergraduates' aspirations for graduate education. Undergraduates who borrowed in 1989–90 were somewhat more likely than nonborrowers to aspire to a master's or doctoral/professional degree (table 3.13). The same pattern held for cumulative borrowing among 4th- and 5th-year undergraduates at public and private, not-for-profit 4-year institutions: those who had borrowed $5,000 or more for their undergraduate education were more likely than nonborrowers to aspire to a doctoral or professional degree, and were less likely to aspire only to a bachelor's degree (table 3.14).

Table 3.13—Percentage distribution of undergraduates by highest degree expected ever to complete, by institution type and amount borrowed through student loan programs: 1989–90

	Less than a bachelor's degree	Bachelor's degree	Master's degree	Ph.D./ professional degree
		All undergraduates		
Total	15.1	32.7	38.6	13.7
Amount borrowed in 1989–90				
No borrowing	15.4	34.1	37.8	12.8
Less than $2,000	11.5	28.1	43.7	16.7
$2,000 or more	14.8	24.9	41.8	18.5
		Less-than-2-year		
Total	59.2	24.4	12.7	3.7
Amount borrowed in 1989–90				
No borrowing	59.5	24.0	12.5	4.0
Less than $2,000	65.9	20.8	11.5	1.8
$2,000 or more	57.5	25.6	13.2	3.6
		2- to 3-year		
Total	23.3	39.2	29.8	7.7
Amount borrowed in 1989–90				
No borrowing	23.1	39.7	29.7	7.5
Less than $2,000	25.0	35.2	30.0	9.8
$2,000 or more	26.9	32.7	30.5	9.8
		4-year		
Total	2.5	27.0	49.9	20.6
Amount borrowed in 1989–90				
No borrowing	2.5	28.1	49.6	19.8
Less than $2,000	3.3	26.5	50.3	20.0
$2,000 or more	2.2	22.5	51.2	24.2

NOTE: Percentages may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Borrowing did not appear to discourage undergraduates from immediately continuing their education beyond a bachelor's degree either. Among 4th/5th-year undergraduates in 4-year institutions, students who had borrowed $5,000 or more for their undergraduate education were slightly more likely than nonborrowers to plan to enter a graduate or professional program the next year (43 percent compared with 39 percent) (table 3.15).

Table 3.14—Percentage distribution of 4th- and 5th-year undergraduates at 4-year public and private, not-for-profit institutions by highest degree expected ever to complete, by cumulative amount borrowed from any source for undergraduate education: 1989–90

	Less than a bachelor's degree	Bachelor's degree	Master's degree	Ph.D./ professional degree
Total	0.8	19.5	54.9	24.8
Amount borrowed				
No borrowing	1.2	22.3	54.1	22.5
Less than $5,000	0.3	21.3	55.4	23.0
$5,000 or more	0.6	14.3	55.8	29.3

NOTE: Percentages may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Table 3.15—Percentage of 4th- and 5th-year undergraduates in 4-year public and private, not-for-profit institutions who planned to enroll in an undergraduate or graduate/professional program the next year, by cumulative amount borrowed from any source for undergraduate education: 1989–90

	Undergraduate program	Graduate/professional program
Total	9.6	40.3
Amount borrowed		
No borrowing	10.4	38.6
Less than $5,000	10.2	40.1
$5,000 or more	8.1	42.9

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Occupational Plans

Importance of Factors in Career Choice

When asked about the importance of various factors in determining the kind of work they planned to do for most of their life, 91 percent of first-time freshmen reported that having interesting and important work was very important (table 3.16). Also very important to about three-quarters of the first-time freshmen were job security and permanence (78 percent); meeting and working with friendly people (73 percent); and freedom to make their own decisions (72 percent). A good income to start was a little less important (ranked “very important” to 66 percent).

Table 3.16—Percentage of first-time freshmen who reported that various factors were very important in determining the kind of work they planned to do for most of their life, by amount borrowed through student loan programs: 1989–90

	Important and interesting work	Job security and permanence	Friendly people	Freedom to make own decisions	Good income to start or soon	Previous work experience in area
Total	91.3	78.2	73.0	71.5	66.3	37.1
Amount borrowed in 1989–90						
No borrowing	90.9	77.4	72.5	71.7	66.0	36.5
Less than $2,000	92.5	79.2	75.6	71.5	65.0	41.5
$2,000 or more	93.2	83.0	75.0	70.2	68.2	38.7

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

First-time freshmen who borrowed $2,000 or more in 1989–90 were more likely than nonborrowers to report that job security and permanence, which is likely to be related to their ability to repay their loans, was very important (83 percent compared with 77 percent). However, borrowers and nonborrowers were about equally likely to consider as "very important" another factor that one might expect to be related to their ability to repay their loans—a good income to start. The two groups were also about equally likely to consider as "very important" some of the factors unrelated to finances, such as previous work experience in the area, freedom to make their own decisions, meeting and working with friendly people, and work that seemed important and interesting.

Importance of Various Goals

When asked to rate the importance of various goals, 84 percent of first-time freshmen said that it was very important to be able to find steady work, and 53 percent said that being well off financially was very important (table 3.17). First-time freshmen who borrowed $2,000 or more were somewhat more likely than nonborrowers to report that finding steady work was a "very important" goal (88 percent compared with 83 percent). They were about equally likely to report that being well off financially was very important (57 percent and 53 percent, respectively).

Table 3.17—Percentage of first-time freshmen who reported that being able to find work and being very well off financially were very important goals, by amount borrowed through student loan programs: 1989–90

	Being able to find steady work	Being very well off financially
Total	83.9	53.4
Amount borrowed in 1989–90		
No borrowing	83.2	53.1
Less than $2,000	83.2	50.3
$2,000 or more	88.4	57.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Chapter 4

Borrowing in Relation to Need and Other Financial Aid

Borrowing is only one way that undergraduates finance their postsecondary education. This chapter examines borrowing in relation to financial need and other financial aid. It also looks at what actions undergraduates take when they are short of funds and what reasons are given for not borrowing.

Borrowing to Meet Financial Need

An undergraduate's financial need is the difference between the cost of attending and the student's expected family contribution (which depends on income and other family circumstances such as the number of other family members enrolled in postsecondary education). Institutions try to meet the student's full financial need by awarding grants, loans, and work-study opportunities, but are subject to limits imposed by the financial aid programs and to the availability of aid funds. In 1989–90, full-time, full-year undergraduates with financial need had an average need of $7,685; undergraduates not attending full time, full year needed about $900 less, on average ($6,785) (table 4.1).

The average amount borrowed and financial need were related. Nonborrowers with financial need had an average need of $6,474; those who borrowed less than $2,000 had a slightly greater need, on average ($6,990); those who borrowed $2,000 or more had the greatest financial need (an average of $9,828).

The amount of need reflects both the cost of attending and the financial resources of students and their families. This at least partially explains why students in less-than-4-year and 4-year public institutions had similar average financial need (about $6,300). Although the cost of attending tends to be greater in 4-year institutions (suggesting greater need), students who attend 4-year institutions also tend to come from higher income families (contributing to less need).[23]

The concept of “cost of attending” is relatively straightforward for financially dependent full-time undergraduates: it is the sum of expenses for tuition and fees, room and board, books, and other education-related expenses. However, it is less straightforward when financially independent undergraduates report this information themselves, because students' living expenses reflect their number of dependents and, for students who work as well as go to school, the lifestyles their jobs support. It is also less clear what should be counted as an educational expense when a student is primarily a worker who happens to be going to school part time. Therefore, the rest of this discussion of costs is limited to full-time, full-year financially dependent students.

[23]National Center for Education Statistics, *Financing Undergraduate Education: 1990*, 17.

Table 4.1—Average financial need* for undergraduates with financial need, by institution type and control, attendance status, and amount borrowed through student loan programs: 1989–90

		Public		Private, not-for-profit		
		Less-than-		Less-than-		Private,
			All undergraduates			
Total	$7,085	$6,314	$6,257	$7,588	$9,809	$9,141
Amount borrowed in 1989–90						
No borrowing	6,474	6,040	5,959	7,040	9,249	7,819
Less than $2,000	6,990	8,011	5,596	4,983	9,027	8,346
$2,000 or more	9,828	10,705	7,959	10,844	10,925	10,376
			Full-time, full-year			
Total	7,685	6,445	6,069	8,820	10,401	11,790
Amount borrowed in 1989–90						
No borrowing	6,827	5,897	5,708	7,897	10,236	10,615
Less than $2,000	6,624	6,156	5,344	6,030	9,257	10,511
$2,000 or more	9,807	10,368	7,509	11,026	10,818	12,393
			Part-time and/or part-year			
Total	6,785	6,303	6 ,420	6,855	9,085	8,326
Amount borrowed in 1989–90						
No borrowing	6,333	6,072	6,137	6,486	8,454	7,110
Less than $2,000	7,271	8,929	5,902	4,411	8,642	7,825
$2,000 or more	9,835	10,879	8,652	10,764	11,223	9,419

*Total cost minus expected family contribution.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Looking at only full-time, full-year financially dependent undergraduates, the average financial need (for those with need) was $6,334 (table 4.2). There was greater need among those who borrowed $2,000 or more than among those who did not borrow at all at public 4-year institutions. Almost no financially dependent full-time, full-year undergraduates at less-than-4-year public institutions borrowed.

For undergraduates at public less-than-4-year institutions, need averaged $3,720 (an amount that could easily be covered within the limits of federal grant and loan programs). When the analysis was limited to dependent full-time, full-year undergraduates, there was a difference in the average need for students in public less-than-4-year institutions ($3,720) and 4-year institutions ($4,796) (table 4.2) that was not present when the independent students were included (table 4.1).

Table 4.2—Average financial need* for dependent full-time, full-year undergraduates with financial need, by institution type and control, attendance status, and amount borrowed through student loan programs: 1989–90

		Public		Private, not-for-profit		
		Less-than-		Less-than-		Private,
Total	$6,334	$3,720	$4,796	$5,663	$9,685	$8,114
Amount borrowed in 1989–90						
No borrowing	5,735	3,677	4,708	4,999	9,732	8,109
Less than $2,000	5,536	—	4,315	—	8,781	6,932
$2,000 or more	8,097	—	5,506	7,102	9,854	8,240

—Too few cases for a reliable estimate.
*Total cost minus expected family contribution.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Another perspective on student financial need is the amount of unmet need—that is, total cost minus the expected family contribution and minus financial aid received. Students will have unmet need if their financial need is greater than the aid amounts allocated by the student financial aid programs, if the institution does not have enough funds available for distribution, or if the student chooses not to accept some aid (for example, the student decides not to borrow). Limiting consideration again to financially dependent full-time, full-year undergraduates, the average unmet need (for those with unmet need) was $4,828 in 1989–90 (table 4.3). For both categories of borrowers (less-than-$2,000 and $2,000-or-more), however, the average unmet need was lower than for nonborrowers ($3,452 and $3,562, respectively, compared with $5,335). Among dependent full-time, full-year undergraduate nonborrowers with unmet need at 4-year private, not-for-profit institutions, the average unmet need was $9,005 (figure 4.1). Undergraduates with unmet need who did not borrow or who borrowed less than the loan program limits (probably most of the nonborrowers and less-than-$2,000 borrowers) could presumably have borrowed or borrowed more to meet some of this need. They may have chosen not to do so or their financial need may not have been accurately assessed by the Congressional Methodology, or the students' budget estimates may not have been valid. Some of these undergraduates may have addressed their unmet financial need through working or working more.[24]

[24]See U.S. Department of Education, National Center for Education Statistics, *Undergraduates Who Work While Enrolled in Postsecondary Education: 1989–90* (Washington, D.C., forthcoming) for an analysis of undergraduate work patterns.

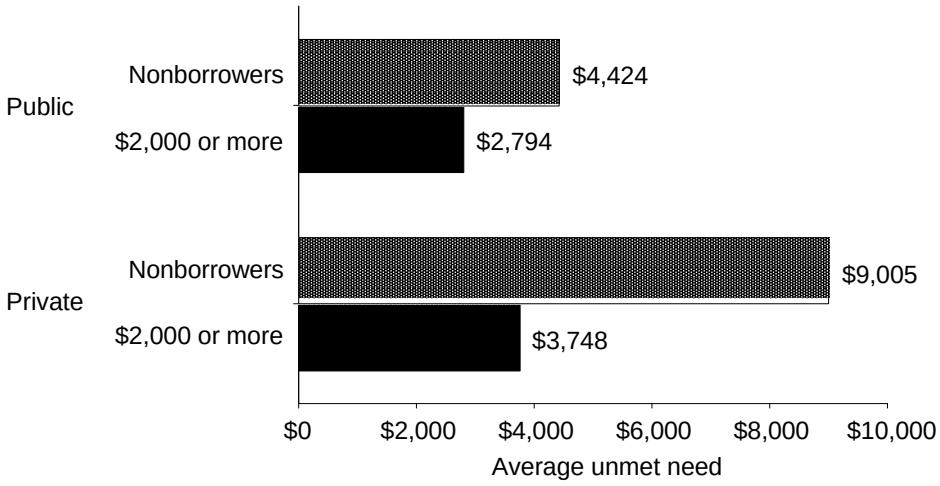
Table 4.3—Average unmet financial need* for dependent full-time, full-year undergraduates with unmet need, by institution type and control, attendance status, and amount borrowed through student loan programs: 1989–90

		Public		Private, not-for-profit		
		Less-than-		Less-than-		Private,
Total	$4,828	$3,483	$4,092	$4,814	$6,702	$5,765
Amount borrowed						
No borrowing	5,335	3,536	4,424	5,114	9,005	7,250
Less than $2,000	3,452	—	3,197	—	3,863	—
$2,000 or more	3,562	—	2,794	4,302	3,748	5,027

—Too few cases for a reliable estimate.
*Total cost minus expected family contribution minus financial aid.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Figure 4.1—Average unmet financial need* for dependent full-time, full-year undergraduates with unmet need in 4-year institutions: 1989–90



*Total cost minus expected family contribution minus financial aid.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Loans and Other Types of Financial Aid

For the majority of undergraduates in public institutions, loans were part of a larger financial aid package. Approximately three-quarters of the undergraduates in public institutions who borrowed also received grants (table 4.4). Nonborrowers were much less likely to receive grants, especially in public institutions (22 percent in less-than-4-year institutions and 24 percent in 4-year institutions).

The average grant was $1,313 in public less-than-4-year institutions, and $2,112 in public 4-year institutions. Undergraduates who borrowed received larger grants, on average, than did nonborrowers, reflecting their greater financial need; however, they did not receive more work-study aid, which is limited by the number of hours students can work as well as financial need.

In private, not-for-profit institutions, 81 percent of undergraduates in less-than-4-year institutions and 90 percent of those in 4-year institutions who borrowed also received grants, and roughly one-third of borrowers in 4-year institutions received work-study aid. The average grants awarded to undergraduates in private, not-for-profit less-than-4-year and 4-year institutions were $2,181 and $3,890, respectively. As in public 4-year institutions, undergraduates who borrowed in private, not-for-profit 4-year institutions received larger grants, on average, than did nonborrowers, but similar work-study awards. In private, for-profit institutions, approximately three-quarters of borrowers received grants, with an average grant of $2,013 for those who borrowed $2,000 or more.

Loans made up a substantial portion of total financial aid, averaging 59 percent for all undergraduates who borrowed in 1989–90, 47 percent for those borrowing less than $2,000, and 64 percent for those borrowing $2,000 or more (table 4.5). Among all undergraduates, loans were a smaller percentage of total aid, on average, for students in private, not-for-profit 4-year institutions than for their counterparts in public 4-year institutions (46 percent compared with 60 percent) (figure 4.2). Although the average amount borrowed was greater in private, not-for-profit 4-year institutions ($3,087 compared with $2,433) (table 2.3), the average grant was larger as well ($3,890 compared with $2,112) (table 4.4).

Table 4.4—Percentage of undergraduates with grants, tuition waivers, and work study, by institution type and control and amount borrowed through student loan programs: 1989–90

	Percent with grants	Average grant	Percent with tuition waivers	Average tuition waiver	Percent with work study	Average work study
			Public less-than-4-year			
Total	24.7	$1,313	1.5	$580	1.3	$991
Amount borrowed in 1989–90						
No borrowing	22.0	1,159	1.3	590	0.9	994
Less than $2,000	74.7	1,691	2.6	—	9.4	—
$2,000 or more	75.3	2,459	4.5	—	8.5	—
			Public 4-year			
Total	34.6	2,112	2.5	1,145	5.2	1,140
Amount borrowed in 1989–90						
No borrowing	24.2	1,977	2.2	1,235	2.8	1,206
Less than $2,000	76.7	2,288	4.4	948	18.0	1,079
$2,000 or more	74.5	2,276	2.7	872	11.7	1,099
			Private, not-for-profit less-than-4-year			
Total	46.2	2,181	1.4	2,176	5.5	711
Amount borrowed in 1989–90						
No borrowing	36.8	2,022	1.4	—	2.7	754
Less than $2,000	80.8	1,941	1.7	—	11.8	—
$2,000 or more	81.6	2,642	1.0	—	17.1	751
			Private, not-for-profit 4-year			
Total	57.6	3,890	4.1	2,758	13.5	1,016
Amount borrowed in 1989–90						
No borrowing	41.8	3,264	4.2	3,002	4.1	1,024
Less than $2,000	90.5	4,322	5.0	2,545	29.9	993
$2,000 or more	89.6	4,529	3.3	2,032	33.4	1,019
			Private, for-profit			
Total	63.3	1,986	0.5	1,499	0.8	1,244
Amount borrowed in 1989–90						
No borrowing	47.5	2,081	0.7	—	0.6	—
Less than $2,000	77.7	1,616	0.0	—	1.1	—
$2,000 or more	74.1	2,013	0.3	—	1.0	1,278

—Too few cases for a reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Table 4.5—Average percentage of loans to total aid for undergraduates with loans, by institution type and amount borrowed through student loan programs: 1989–90

	Public		Private, not-for-profit			
	Total	Less-than-4-year	4-year	Less-than-4-year	4-year	Private, for-profit
			All undergraduates			
Total	58.5	61.8	59.5	59.2	45.8	67.8
Amount borrowed in 1989–90						
Less than $2,000	46.9	54.7	47.5	48.6	31.4	55.2
$2,000 or more	63.5	66.7	67.8	63.2	49.9	70.3
			Dependent undergraduates			
Total	54.1	61.4	59.6	53.3	42.7	64.6
Amount borrowed in 1989–90						
Less than $2,000	45.6	58.2	47.6	45.5	29.0	62.7
$2,000 or more	58.8	67.1	70.2	57.5	46.7	65.0
			Independent undergraduates			
Total	62.9	61.9	59.3	64.7	54.5	68.7
Amount Borrowed in 1989–90						
Less than $2,000	48.6	52.0	47.7	53.7	38.8	51.2
$2,000 or more	67.4	66.6	65.0	67.6	58.4	71.9

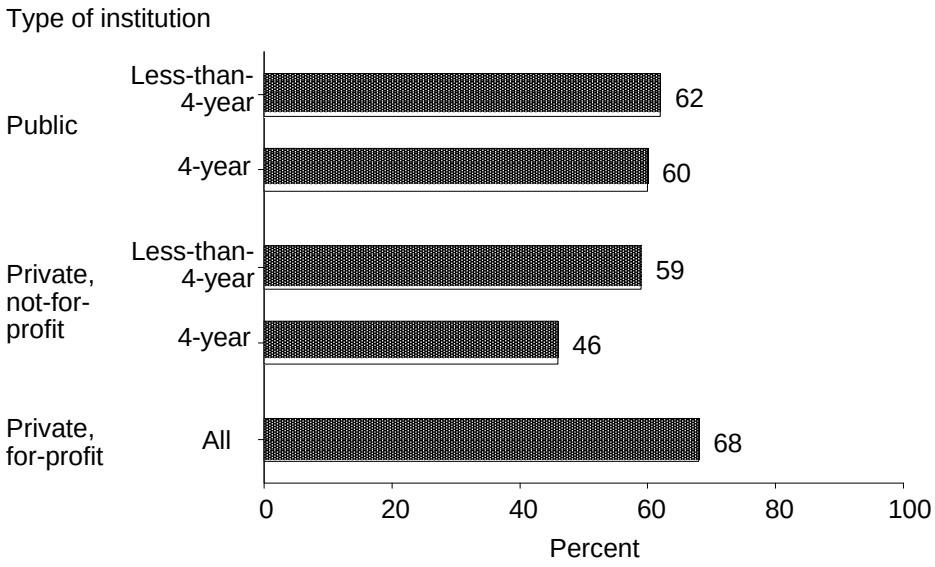
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Actions Taken When Short of Funds

When undergraduates find themselves short of funds to cover their educational costs, they have a number of options: they can take actions to reduce their expenses, search for additional funds, or do a combination of both. Overall, 31 percent of all undergraduates reported that their school expenses had at some time been greater than the money they had available.[25] Of these, 82 percent reported that they had responded by cutting down on expenses (table 4.6). The next most commonly reported response was that they had worked or taken an additional job (68 percent). About one-half (55 percent) had asked their parents for money, and about one-quarter said that they had reduced their course load (28 percent) or applied for a loan or taken out an additional loan (25 percent). Relatively fewer had taken the more drastic steps of reducing their expenses by withdrawing from school (16 percent), moving back home (15 percent), or transferring to a less expensive school (9 percent).

[25]National Center for Education Statistics, NPSAS:90, Data Analysis System.

Figure 4.2—Average percentage of loans to total aid for undergraduates with loans, by institution type: 1989–90



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Table 4.6—Percentages of undergraduate students who had taken different actions when their expenses were greater than the money they had available, by amount borrowed through student loan programs: 1989–90

	Cut down on expenses	Worked or took an additional job	Asked parents for money	Reduced course load	Applied for a loan	Withdrew from school	Moved back home	Transferred to a less expensive school
Total	82.3	67.8	55.2	28.1	24.5	16.3	14.8	9.0
Amount borrowed in 1989–90								
No borrowing	80.9	67.4	55.7	31.6	18.3	18.5	15.3	9.4
Less than $2,000	85.2	69.7	56.1	21.8	41.2	13.8	15.6	9.6
$2,000 or more	85.8	68.2	53.0	17.7	39.8	9.2	12.8	7.2

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Undergraduate borrowers were more likely than nonborrowers to have taken out a loan or an additional loan or to have cut down on expenses.[26] Undergraduate nonborrowers were more likely to have reduced their course load or withdrawn from school. In addition, they were more likely than those who had borrowed $2,000 or more to have moved back home or to have transferred to a less expensive school. Undergraduate borrowers and nonborrowers were about equally likely to have asked their parents for money or to have worked or taken an additional job because their expenses were greater than the money they had available.

Reasons for Not Borrowing

Eighty-five percent of the undergraduates who had never applied for financial aid said that an important reason for not applying was that they and their families were able to pay for their education. Avoiding debt was an important reason for not applying for aid for 28 percent of all undergraduates and for 34 percent of financially independent undergraduates (table 4.7).

However, only 7 percent of the undergraduates who had never applied for financial aid said that avoiding debt was the most important reason for not applying (table 4.8 and figure 4.3). Much more likely reasons were that they or their families could pay or that their income was too high (42 percent and 32 percent, respectively). Independent undergraduates were more likely than dependent undergraduates to report avoiding debt as the most important reason and were less likely to report too high an income.

[26]The 18 percent of nonborrowers who took out loans must have borrowed from family or friends or borrowed through one of the loan programs in another year. If they had borrowed through a federal, state, or institutional loan program in 1989–90, they would have been classified as borrowers for this analysis.

Table 4.7—Percentage of undergraduates who had never applied for financial aid who reported that being able to pay, having income too high to qualify, or not being willing to go into debt were important reasons they had not applied for financial aid, by selected student and institutional characteristics: 1989–90

	Able to pay	Income too high to qualify	Not willing to go into debt
Total	85.0	59.7	27.8
Gender			
Male	86.1	56.6	27.0
Female	84.1	62.5	28.5
Dependency status			
Dependent	88.4	65.6	21.8
Independent	81.8	53.9	33.6
Family income			
Dependent student			
Less than $30,000	79.6	39.8	25.2
$30,000–$49,999	86.3	61.6	23.5
$50,000 or more	93.4	79.1	19.2
Independent student			
Less than $10,000	76.3	43.4	29.3
$10,000–$29,999	79.6	50.9	35.3
$30,000 or more	88.3	65.1	34.1
Type and control of institution			
Public			
Less-than-4-year	82.9	52.5	28.9
4-year	89.4	71.8	27.1
Private, not-for-profit			
Less-than-4-year	85.5	60.3	29.2
4-year	88.1	73.6	22.2
Private, for-profit	75.4	56.3	25.5

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

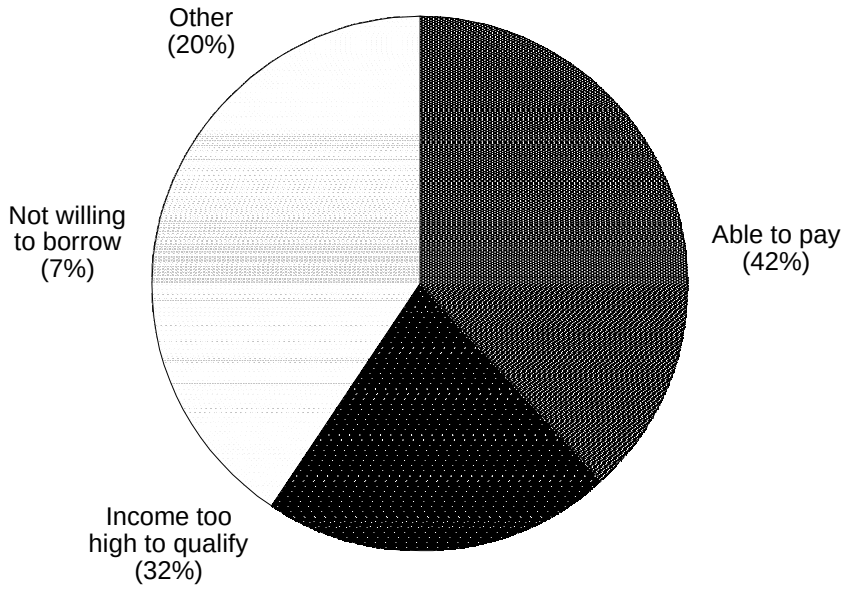
Table 4.8—Percentage distribution of undergraduates who had never applied for financial aid by the most important reason for not applying, by selected student and institutional characteristics: 1989–90

	Able to pay	Income too high to qualify	Not willing to go into debt	Other
Total	41.9	31.8	6.8	19.5
Gender				
Male	45.9	29.5	6.8	17.8
Female	38.6	33.9	7.0	20.5
Dependency status				
Dependent	43.7	37.4	4.2	14.7
Independent	40.1	26.0	9.5	24.5
Family income				
Dependent student				
Less than $30,000	40.6	20.5	6.9	32.1
$30,000–$49,999	41.3	39.4	6.1	13.3
$50,000 or more	46.1	42.8	2.2	8.9
Independent student				
Less than $10,000	38.4	23.4	10.7	27.5
$10,000–$29,999	36.8	23.0	12.1	28.1
$30,000 or more	45.3	31.4	5.4	18.0
Type and control of institution				
Public				
Less-than-4-year	42.1	26.6	7.5	23.9
4-year	41.9	38.6	6.0	13.5
Private, not-for-profit				
Less-than-4-year	45.6	32.6	8.9	12.9
4-year	40.0	42.0	5.1	12.9
Private, for-profit	42.5	37.3	7.1	13.1

NOTE: Percentages may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Figure 4.3—Percentage distribution of undergraduates who had never applied for financial aid by the most important reason for not applying: 1989–90



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Chapter 5

Borrowing for Graduate and First-Professional Education

In 1989–90, 2.3 million students were enrolled in graduate or first-professional programs. More than one-half of them (58 percent) were enrolled in master's degree programs. Another 11 percent were enrolled in doctoral degree programs, and 13 percent in first-professional degree programs in medicine, law, or theology. The remaining 18 percent were enrolled in other graduate programs that did not necessarily lead to a degree (such as teaching certificate programs).[27]

Students enrolled in master's, doctoral, and first-professional programs had quite different characteristics. Master's degree students were particularly likely to be studying education (27 percent) or business (24 percent), and relatively few were enrolled full time, full year (15 percent). Doctoral students were about evenly divided among arts and humanities, natural sciences, social sciences, engineering, and education (13 percent to 18 percent in each field), and were much more likely than master's degree students to be enrolled full time, full year (35 percent). Most first-professional students were studying law (45 percent) or medicine (45 percent), and they were the most likely to be enrolled full time, full year (73 percent). They also tended to be younger than graduate students: 25 percent were under 24 years old, compared with 11 percent of master's degree students and 8 percent of doctoral degree students.[28]

Average annual living and education-related expenses for postbaccalaureate students who attended full time, full year in 1989–90 were about $17,000, ranging from about $13,000 to about $22,000 depending on the type of institution.[29] Before examining how graduate and first-professional students used loans to help finance these costs, it is worth noting some important differences in the ways that undergraduate and postbaccalaureate education are financed. Because of these differences, graduate and first-professional education has to be analyzed in a different context. Hauptman points out three important differences.[30]

First, there is a societal expectation that parents should help pay for their children's undergraduate education, but less of an expectation that they pay for postbaccalaureate education. Financial aid regulations reflect this expectation: undergraduates under 24 years old are almost always considered financially dependent, which means that their parents' income and assets are taken into account when

---

[27]U.S. Department of Education, National Center for Education Statistics, *Student Financing of Graduate and First-Professional Education* (Washington, D.C.: 1993), 8. In addition to M.D. programs, medicine includes chiropractic, dentistry, optometry, osteopathic medicine, pharmacy, podiatry, and veterinary medicine.

[28]National Center for Education Statistics, NPSAS:90, Data Analysis System, and National Center for Education Statistics, *Student Financing of Graduate and First-Professional Education,* 10, 16.

[29]National Center for Education Statistics, *Student Financing of Graduate and First-Professional Education*, 23.

[30]Arthur M. Hauptman, *Students in Graduate and Professional Education: What We Know and Need to Know* (Washington, D.C.: Association of American Universities, 1986), 55–57.

their financial need is calculated. Postbaccalaureate students are almost all financially independent (96 percent in 1989–90). Most qualify simply by being at least 24 years old (only 12 percent were younger than 24 years).[31] The only postbaccalaureate students who would have been financially dependent in 1989–90 would have been those younger than 24 years whose parents claimed them as a tax exemption for the 1989 calendar year.

A second important difference in the financing of undergraduate and postbaccalaureate education, Hauptman points out, is the degree of uniformity across institutions in how need is calculated and aid awarded. For undergraduates, a uniform set of rules measure ability to pay and need, and institutions make an effort to guarantee access to financially needy students. Consequently, patterns of financial aid receipt are closely linked to income and costs. Although graduate and first-professional students must demonstrate financial need in order to participate in federal loan programs, Hauptman notes that institutions and academic departments exercise considerable discretion in awarding other financial aid to postbaccalaureate students and offer a substantial amount of aid based on merit rather than financial need.

Third, graduate and first-professional students have access to two types of aid not typically given to undergraduates: assistantships (money given to students in exchange for teaching or research responsibilities) and tuition waivers. These are particularly important for doctoral students. In 1989–90, 29 percent of doctoral students received assistantships and 18 percent received tuition waivers. Master's and first-professional students are awarded these types of aid too, but much less often. In 1989–90, 9 percent of master's students and 3 percent of first-professional students were awarded assistantships, and 8 percent of master's students and 4 percent of first-professional students were awarded tuition waivers.[32]

This chapter provides an overview of borrowing by graduate and first-professional students.[33] Following the pattern established in describing undergraduate borrowing (chapters 2–4), chapter 5 looks first at variation in borrowing by student and institutional characteristics, then profiles borrowers and nonborrowers, and, finally, examines borrowing as a component of other financial aid.

Borrowing by Graduate and First-Professional Students in 1989–90

Borrowing by Loan Program and Degree Program

Graduate and first-professional students have access to the same major federal loan programs available to undergraduates (Stafford, Perkins, and SLS), but they are permitted to borrow more both annually and cumulatively (see chapter 2). In addition, some students have access to funds through

[31]National Center for Education Statistics, *Student Financing of Graduate and First-Professional Education*, 15.

[32]National Center for Education Statistics, *Student Financing of Graduate and First-Professional Education*, 50.

[33]This analysis excludes a small number of students pursuing postbaccalaureate studies in proprietary institutions. These students represented 0.3 percent of all graduate and first-professional students.

federal loan programs set up specifically for students in health fields. Parents of the few financially dependent graduate and first-professional students can take out PLUS loans.

Overall, 17 percent of graduate and first-professional students borrowed in 1989–90, roughly the same percentage as undergraduates (19 percent) (tables 5.1 and 2.3). However, this overall percentage hides the fact that first-professional students were much more likely than undergraduates to borrow (60 percent compared with 19 percent), and that other postbaccalaureate students were less likely than undergraduates to borrow (8 percent to 12 percent compared with 19 percent) (table 5.1).

The average amount borrowed by graduate and first-professional students was greater than the amount borrowed by undergraduates ($8,553 compared with $2,799) (table 5.1 and table 2.3). This larger amount reflects the fact that graduate and first-professional students tend to have lower ability to pay because their parents' income is not included in the calculation, that they tend to have higher costs of attending, and that the federal loan programs allow them to borrow more. First-professional students borrowed the most, on average: $11,292 in 1989–90. Students in master's, doctoral, and other graduate programs borrowed between $5,911 and $7,360, on average.

As was the case for undergraduate borrowing, most graduate and first-professional borrowing takes place through federally sponsored programs: 16 percent of the 17 percent who had any loans had Stafford loans. Compared with other postbaccalaureate students, relatively large proportions of first-professional students took out SLS and Perkins loans (24 percent and 18 percent, respectively, compared with percentages that ranged from 1 percent to 3 percent).

Table 5.1—Percentage of graduate and first-professional students with various types of loans and average amount borrowed, by degree program: 1989–90

	Total		Stafford		SLS*		Perkins	
	Percent	Average Amount	Percent	Average Amount	Percent	Average Amount	Percent	Average amount
Total	17.4	$8,553	15.6	$6,025	4.9	$3,433	4.5	$2,080
Degree program								
Master's degree	11.9	6,250	10.6	5,344	2.1	3,218	2.5	2,069
Doctoral degree	11.8	5,911	8.8	5,276	2.6	2,580	1.9	2,001
First-professional	60.2	11,292	56.7	6,743	24.2	3,603	18.0	2,221
Other graduate program	8.0	7,360	7.0	5,795	1.4	3,381	3.0	1,537

*Supplemental Loans for Students.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Student and Institutional Characteristics

Borrowing was strongly related to attendance status, with borrowing much more common among full-time, full-year students (40 percent) than among those who did not attend full time, full year (8 percent) (table 5.2). Among the postbaccalaureate students who did not attend full time, full year, 43 percent of first-professional students borrowed in 1989–90, but relatively few others found borrowing necessary (7 percent of master's students, 6 percent of doctoral students, and 3 percent of those in other graduate programs) (figure 5.1).

Borrowing in 1989–90 also varied by field of study, reflecting differences in other types of aid provided. Full-time, full-year graduate students in the natural sciences and engineering were less likely than their counterparts in most other fields to borrow. Graduate students in science and engineering fields tend to have more access to other types of financial support.[34]

Among financially independent graduate and first-professional students, the percentage who borrowed decreased as income increased, from 37 percent of those with incomes of less than $5,000 to 5 percent of those with incomes of $50,000 or more. Graduate and first-professional students in the lowest income group borrowed the most: an average of $9,807. Those in other income categories borrowed between $7,500 and $8,000, on average.

Student characteristics associated with lower rates of borrowing in 1989–90 (although not necessarily smaller amounts when they did borrow) were being over 30 years old, being married, having a cumulative grade point average for graduate study of 3.0 or greater, and being Asian. These findings are not surprising. Older students are more likely to have savings, and married students have a spouse's earnings and savings to draw upon as well as their own. The relationship to academic performance may reflect the availability of other types of aid to the most promising students. Differences among racial–ethnic groups could be related to differences in incomes, types of institutions attended, fields and degree programs enrolled in, and willingness to borrow. The relative importance of these factors can be disentangled only through multivariate analysis (see chapter 6).

The rate of borrowing and the average amount borrowed were greatest at private, not-for-profit doctoral-granting institutions. Twenty-nine percent of all graduate and first-professional students at this type of institution borrowed, and they borrowed an average of $10,735. In contrast, 6 percent of all graduate students at public nondoctoral-granting institutions borrowed an average of $5,109.

[34]National Center for Education Statistics, *Student Financing of Graduate and First-Professional Education*, 56–62.

Table 5.2—Percentage of graduate and first-professional students who participated in student loan programs in 1989–90 and average amount borrowed, by attendance status and selected student and institutional characteristics

	All		Full-time, full-year		Part-time and/or part-year	
	Percent	Average amount	Percent	Average amount	Percent	Average amount
Total	17.4	$8,553	39.5	$9,697	7.8	$6,056
Gender						
Male	19.8	9,124	39.5	10,088	8.5	6,524
Female	15.3	8,053	39.5	9,214	7.1	5,788
Race–ethnicity						
American Indian	20.8	—	—	—	—	—
Asian/Pacific Islander	11.2	9,169	15.4	11,068	5.7	5,268
Black, non-Hispanic	20.1	8,072	47.8	9,132	10.4	5,736
Hispanic	21.0	8,231	40.6	9,482	9.6	5,405
White, non-Hispanic	17.6	8,565	43.1	9,661	7.6	6,153
Age as of 12/31/89						
Less than 24 years	27.7	8,753	40.1	9,327	11.6	5,552
24–29 years	23.4	9,189	43.6	10,176	10.0	6,484
30 years or older	10.7	7,536	32.1	8,954	6.0	5,880
Marital status						
Not Married	25.2	8,765	42.7	9,814	11.4	5,984
Married	9.9	8,204	31.8	9,578	5.1	6,220
Separated	24.3	7,529	73.8	—	9.7	—
Family income						
Dependent students	26.3	9,014	40.9	9,050	7.4	5,059
Independent students						
Less than $5,000	36.7	9,807	46.3	10,611	18.5	6,459
$5,000–$9,999	29.7	8,083	43.0	9,033	17.6	5,809
$10,000–$19,999	19.4	8,055	36.8	9,147	10.1	6,035
$20,000–$29,999	13.0	7,945	36.5	10,305	7.1	5,910
$30,000–$49,999	7.3	7,802	32.9	9,118	3.6	6,078
$50,000 or more	4.7	7,534	17.4	9,715	2.6	6,438
Degree program						
Master's degree	11.9	6,250	30.1	7,556	7.3	5,223
Doctoral degree	11.8	5,911	19.0	6,682	6.3	5,104
First-professional degree	60.2	11,292	61.8	11,517	42.5	8,687
Other graduate program	8.0	7,360	30.8	8,169	3.2	6,263
Control and type of institution						
Public nondoctoral	5.9	5,109	25.2	5,400	3.8	5,002
Public doctoral	16.1	6,966	35.6	7,768	6.7	4,863
Private, not-for-profit	11.1	5,781	30.5	7,244	7.6	5,066
Private, not-for-profit doctoral	28.5	10,735	47.2	12,021	13.6	7,667

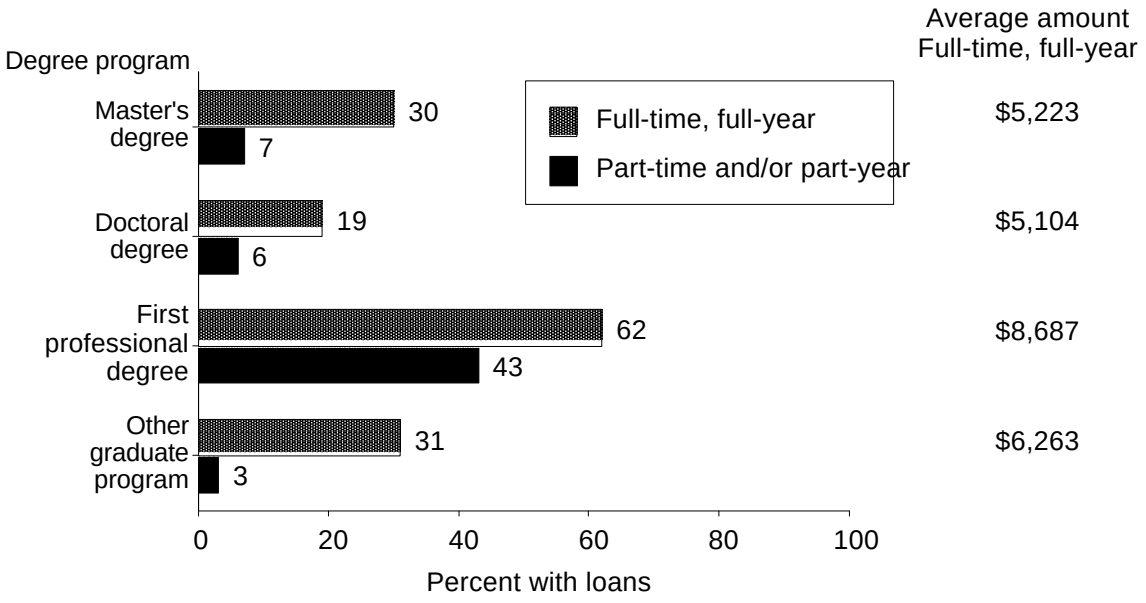
Table 5.2—Percentage of graduate and first-professional students who participated in student loan programs in 1989–90 and average amount borrowed, by attendance status and selected student and institutional characteristics—Continued

	All		Full-time, full-year		Part-time and/or part-year	
	Percent	Average amount	Percent	Average amount	Percent	Average amount
Total cost 1989–90						
Less than $2,000	1.3	—	—	—	1.3	—
$2,000–$4,999	5.2	4,893	22.0	5,835	3.8	4,285
$5,000–$9,999	10.2	5,719	30.1	6,394	5.6	4,599
$10,000–$14,999	16.7	7,293	40.8	8,099	7.4	5,716
$15,000 or more	22.0	10,257	43.7	11,276	10.6	7,332
Field of study						
Arts and humanities	16.2	5,921	29.5	5,853	8.5	4,962
Natural sciences	10.8	5,300	15.2	—	7.9	5,087
Social sciences	26.3	6,513	36.9	7,053	18.4	5,851
Engineering	7.3	6,431	14.2	7,393	3.8	—
Law	56.8	10,019	58.6	10,411	40.8	8,643
Business	11.2	7,616	33.1	9,615	6.0	5,775
Education	6.0	5,125	24.7	6,300	4.3	4,380
Medicine	44.5	11,721	62.0	12,124	16.4	8,088
Other	18.0	5,903	27.4	—	14.0	5,895
Cumulative GPA						
Less than 2.0	21.0	9,436	42.7	12,338	10.2	6,244
2.0–2.9	35.2	9,981	57.5	11,019	15.3	7,064
3.0+	12.1	6,811	30.4	7,912	6.5	5,360

—Too few cases for a reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Figure 5.1—Percentage of graduate and first-professional students with loans and average amount borrowed, by degree program and attendance status: 1989–90



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Previous Borrowing for Undergraduate Education

Forty-five percent of 1989–90 graduate and first-professional students had borrowed for their undergraduate education (including loans from parents, relatives, and friends, as well as loans obtained through financial aid programs) (table 5.3). This percentage is slightly smaller than the percentage of 1989–90 4th- and 5th-year undergraduates who had borrowed at some point for their undergraduate education (50 percent) (table 2.7). The average amounts borrowed were similar for the two groups (about $7,500).

First-professional students borrowed more, on average, in 1989–90 than students in other postbaccalaureate programs (table 5.2). They were also more likely to have borrowed as undergraduates (58 percent compared with 40 percent to 44 percent) (table 5.3). In addition, first-professional students who borrowed were more likely to have had larger average loans as undergraduates than were borrowers in other postbaccalaureate programs ($10,914 compared with $6,448 to $6,960).

Table 5.3—Percentage of graduate and first-professional students who had borrowed from any source for their undergraduate education and average cumulative amount borrowed for undergraduate education, by degree program and amount borrowed through student loan programs in 1989–90

	All		Full-time, full-year		Part-time and/or part-year	
	Percent	Average amount for undergrad. education	Percent	Average amount for undergrad. education	Percent	Average amount for undergrad. education
Total	44.5	$7,376	51.8	$9,016	42.6	$6,777
Degree program						
Master's degree	43.7	6,960	48.5	8,289	43.3	6,711
Doctoral degree	40.4	6,710	47.1	7,692	37.1	6,276
First-professional degree	57.6	10,914	59.6	10,732	54.0	11,051
Other graduate program	41.8	6,448	47.3	7,161	40.9	6,289
Amount borrowed in 1989–90						
No borrowing	39.0	6,800	34.9	8,492	40.2	6,504
Less than $2,000	82.4	8,186	76.2	8,892	84.5	8,972
$2,000 or more	84.5	9,422	85.6	9,460	84.7	9,047

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

The graduate and first-professional students who borrowed $2,000 or more in 1989–90 were much more likely than those who did not borrow that year to have borrowed for their undergraduate education (85 percent compared with 39 percent), and were more likely to have borrowed more, on average ($9,422 compared with $6,800). This suggests that those who find it necessary to borrow for their graduate or first-professional education may tend to have been financially needy as undergraduates as well.

Distribution of Graduate and First-Professional Borrowers Across Types of Institutions, Programs, and Income Groups

As with undergraduates, graduate and first-professional students who borrowed more than $2,000 in 1989–90 were concentrated in the more costly institutions. In 1989–90, private, not-for-profit institutions had 38 percent of the enrollment and 54 percent of the $2,000-or-more borrowers (table 5.4). Graduate and first-professional students were also concentrated in first-professional programs: these students accounted for 13 percent of the enrollment in postbaccalaureate programs, but 46 percent of the $2,000-or-more borrowers.

As with undergraduates, graduate and first-professional students who borrowed came from all income groups. However, among those who were financially independent, borrowers were more likely than nonborrowers to have incomes of less than $10,000 (table 5.5).

Table 5.4—Percentage distribution of graduate and first-professional students by institution type and control and degree program, by attendance status and amount borrowed through student loan programs: 1989–90

	Institution type		Degree program			
	Public 4-year	Private, not-for-profit 4-year	Master's	Doctoral	First-professional	Other
			All students			
Total	62.3	37.7	58.3	11.0	12.8	17.9
Amount borrowed in 1989–90						
No borrowing	65.5	34.5	62.1	11.8	6.2	20.0
Less than $2,000	68.7	31.3	56.3	20.7	12.7	10.3
$2,000 or more	45.8	54.2	38.8	6.6	46.4	8.2
			Full-time, full-year			
Total	56.0	44.0	39.2	15.8	34.8	10.2
Amount borrowed in 1989–90						
No borrowing	60.5	39.5	45.2	21.2	22.0	11.6
Less than $2,000	59.9	40.1	35.2	35.4	21.1	8.4
$2,000 or more	48.7	51.3	29.7	6.5	55.9	7.9
			Part-time and/or part-year			
Total	65.4	34.5	66.4	9.0	4.0	20.6
Amount borrowed in 1989–90						
No borrowing	66.9	33.1	66.8	9.1	2.5	21.7
Less than $2,000	70.3	29.7	72.4	8.8	7.4	11.4
$2,000 or more	45.4	54.6	61.2	7.1	23.4	8.3

NOTE: Percentages may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Table 5.5—Percentage distribution of graduate and first-professional students by income, by attendance status and amount borrowed through student loan programs: 1989–90

		Independent					
	Dependent	Less than $5,000	$5,000–$9,999	$10,000–$19,999	$20,000–$29,999	$30,000–$49,999	$50,000 or more
				All students			
Total	3.8	13.3	11.5	18.5	17.3	21.9	13.8
Amount borrowed in 1989–90							
No borrowing	3.4	10.2	9.8	18.0	18.2	24.5	15.9
Less than $2,000	3.3	27.3	20.3	22.4	12.7	9.1	5.1
$2,000 or more	5.9	28.3	19.6	20.5	12.9	9.2	3.7
				Full-time, full-year			
Total	7.3	26.7	19.4	21.3	10.6	9.8	4.9
Amount borrowed in 1989–90							
No borrowing	7.2	23.7	18.3	22.2	11.1	10.8	6.7
Less than $2,000	3.5	36.1	27.3	21.3	2.3	9.5	0.0
$2,000 or more	7.8	31.1	20.9	19.8	10.1	8.1	2.2
				Part-time and/or part-year			
Total	2.5	8.0	8.5	17.7	19.5	26.6	17.2
Amount borrowed in 1989–90							
No borrowing	2.5	7.1	7.6	17.2	19.6	27.8	18.2
Less than $2,000	3.2	15.7	19.5	27.3	15.6	11.0	7.7
$2,000 or more	2.3	19.6	19.4	22.4	18.2	12.4	5.6

NOTE: Percentages may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Choice of Degree Program and Institution

In master's, doctoral, and "other" graduate programs, the proportions of nonborrowers and $5,000-or-more borrowers were similar (table 5.6). First-professional students, who were the most likely to borrow in 1989–90 (table 5.2), were relatively more likely to have borrowed $5,000 or more as undergraduates: 16 percent of all graduate and first-professional students who had borrowed $5,000 or more were enrolled in first-professional programs, compared with 8 percent of nonborrowers.

Table 5.6—Percentage distribution of graduate and first-professional students by degree program, by amount borrowed from any source for undergraduate education: 1989–90

	Master's degree	Doctoral degree	First-professional degree	Other graduate program
Total	58.3	11.0	12.8	17.9
Amount borrowed				
No borrowing	61.3	10.9	7.9	19.8
Less than $5,000	60.8	9.7	10.2	19.3
$5,000 or more	58.6	8.9	15.8	16.7

NOTE: Percentages may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

The fact that the institution offered the course of study that students wanted appeared to be the most important consideration in graduate and first-professional students' choice of an institution, with 87 percent rating it "very important" (even more than undergraduates did at 73 percent) (tables 5.7 and 3.12). As was also the case with undergraduates, graduate and first-professional borrowers were more inclined than nonborrowers to choose an institution for other than financial reasons. Graduate and first-professional students who borrowed $2,000 or more in 1989–90 were more likely than nonborrowers to report that a very important reason for choosing their school was that the school offered the course of study they wanted, that the school had a good reputation, and that it had a good reputation for placing its graduates. Nonborrowers, on the other hand, were more likely than $2,000-or-more borrowers to report that being able to work while attending, live at home, and finish in a shorter time were very important considerations.

Among graduate and first-professional students who attended part time and/or part year, 65 percent reported that being able to work while attending was a very important consideration, and 60 percent reported that being able to live at home was very important. These factors, which were second only to the courses offered, were especially important to nonborrowers.

Whether or not graduate and first-professional students had borrowed as undergraduates did not appear to have a major effect on their choice of institution for postbaccalaureate education (table 5.8). However, graduate and first-professional students who had borrowed $5,000 or more for their undergraduate education were more likely than nonborrowers to report that receiving the financial aid needed was an important consideration (30 percent compared with 18 percent). Graduate and first-professional students who had not borrowed for their undergraduate education were more likely than those who had borrowed $5,000 or more to report that living at home was an important factor in their choice of institution for further education.

Table 5.7—Percentage of graduate and first-professional students who reported that various reasons were very important considerations in selecting the institution they chose to attend, by attendance status and amount borrowed through student loan programs: 1989–90

	Offered course of study wanted	Could work while attending	Could live at home	Institution had a good reputation	Tuition less than at others	Good reputation for placing graduates	Could finish in shorter time	Obtained financial aid needed
				All students				
Total	86.9	54.0	49.9	56.2	22.8	34.0	28.2	23.6
Amount borrowed in 1989–90								
No borrowing	86.3	58.7	54.8	54.5	22.1	31.3	29.3	19.7
Less than $2,000	89.6	38.2	27.5	60.8	32.5	43.5	25.4	47.7
$2,000 or more	89.9	27.9	22.6	65.9	26.1	48.9	21.8	45.1
				Full-time, full-year				
Total	87.4	23.2	20.8	64.4	25.6	48.4	22.1	38.6
Amount borrowed in 1989–90								
No borrowing	85.9	26.8	24.0	63.4	23.9	46.1	24.0	35.4
Less than $2,000	87.2	20.2	19.1	64.2	31.1	56.9	6.5	45.5
$2,000 or more	89.8	17.6	15.6	66.1	28.1	51.6	19.7	43.4
				Part-time and/or part-year				
Total	86.8	65.1	60.2	53.2	21.8	28.8	30.3	18.3
Amount borrowed in 1989–90								
No borrowing	86.5	66.2	62.0	52.3	21.6	27.7	30.5	15.8
Less than $2,000	90.2	54.1	35.8	64.1	36.5	38.7	31.3	53.7
$2,000 or more	90.3	49.8	37.3	65.0	23.0	42.8	27.7	49.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Borrowing in Relation to Need and to Other Financial Aid

Graduate and first-professional students with financial need had an average annual need (cost minus expected family contribution) of about $10,000 (table 5.9). The greatest average need ($18,557) belonged to those who borrowed $2,000 or more and attended private, not-for-profit doctoral institutions full time, full year. In 1989–90, the average financial need was greater for graduate and first-professional students with financial need than for undergraduates ($10,239 compared with $7,085) (table 5.9 and table 4.1). A number of factors related to cost and income contribute to this difference. For example, in 1989–90, about one-half of all undergraduates attended 2-year institutions, which tend to have lower tuition and fees than 4-year institutions. In addition, undergraduates were more likely than graduate and first-professional students to attend public institutions (76 percent compared with 62 percent) and to live with their parents (28 percent compared with 8 percent), both of which are associated with

lower costs. Finally, undergraduates were much more likely to be financially dependent (48 percent compared with 4 percent), and thus have their parents' income and financial resources included when assessing their financial need.[35]

Unmet financial need (total cost minus expected family contribution minus financial aid) averaged $8,205 for all graduate and first-professional students who had unmet financial need (table 5.10). The average was greater for nonborrowers ($8,369) than for those who borrowed $2,000 or more ($7,311).

Table 5.8—Percentage of graduate and first-professional students who reported that various reasons were very important considerations in selecting the institution they chose to attend, by attendance status and cumulative amount borrowed from any source for undergraduate education: 1989–90

	Offered course of study wanted	Could work while attending	Could live at home	Institution had a good reputation	Tuition less than at others	Good reputation for placing graduates	Could finish in shorter time	Obtained financial aid needed
Total	86.9	54.0	49.9	56.2	22.8	34.0	28.2	23.6
Amount borrowed for								
No borrowing	85.9	54.8	54.5	54.5	21.5	31.3	30.3	18.1
Less than $5,000	88.1	60.0	54.1	53.7	23.2	30.7	27.4	25.2
$5,000 or more	87.1	54.1	44.0	58.7	25.0	38.1	26.5	30.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

[35]National Center for Education Statistics, *Profile of Undergraduates in U.S. Postsecondary Education Institutions*, 7, 18, and 77; National Center for Education Statistics, *Student Financing of Graduate and First-Professional Education*, 6, 13.

Table 5.9—Average financial need* for graduate and first-professional students with financial need, by institution type and control, attendance status, and amount borrowed through student loan programs: 1989–90

		Public		Private, not-for-profit	
	Total	Non-doctoral granting	Doctoral granting	Non-doctoral granting	Doctoral granting
			All students		
Total	$10,239	$7,727	$8,916	$9,587	$13,715
Amount borrowed in 1989–90					
No borrowing	9,208	7,516	8,416	9,077	11,880
Less than $2,000	9,604	—	8,377	—	13,217
$2,000 or more	14,305	10,239	11,219	12,703	17,640
			Full-time, full-year		
Total	13,201	9,259	10,434	12,145	17,213
Amount borrowed in 1989–90					
No borrowing	12,082	8,865	9,872	11,313	16,060
Less than $2,000	9,663	—	—	—	—
$2,000 or more	14,891	10,072	11,520	13,715	18,557
			Part-time and/or part-year		
Total	8,723	7,569	8,032	9,029	10,848
Amount borrowed in 1989–90					
No borrowing	8,258	7,410	7,822	8,677	9,811
Less than $2,000	9,444	—	—	—	—
$2,000 or more	12,831	10,341	10,459	12,147	15,358

—Too few cases for a reliable estimate.
*Total cost minus expected family contribution.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Grant aid (usually called fellowships at this level) was received by 25 percent of graduate and first-professional students at public institutions (averaging $2,368) and by 36 percent at private, not-for-profit institutions (averaging $4,250) (table 5.11). At both types of institutions, borrowers were more likely than nonborrowers to receive grants. In each type of institution, borrowers and nonborrowers received similar amounts, on average, although the amounts for both groups were greater in private, not-for-profit institutions.

Table 5.10—Average unmet financial need* for graduate and first-professional students with financial need, by institution type and control, attendance status, and amount borrowed through student loan programs: 1989–90

	Total	Public		Private, not-for-profit	
		Non-doctoral granting	Doctoral granting	Non-doctoral granting	Doctoral granting
		All students			
Total	$8,205	$7,308	$7,408	$8,615	$9,854
Amount borrowed in 1989–90					
No borrowing	8,369	7,378	7,628	8,668	10,374
Less than $2,000	7,630	—	6,634	—	9,821
$2,000 or more	7,311	5,979	5,946	8,341	8,358
		Full-time, full-year			
Total	9,128	7,209	7,425	9,926	11,267
Amount borrowed in 1989–90					
No borrowing	10,382	7,693	8,215	10,551	13,863
Less than $2,000	6,397	—	—	—	—
$2,000 or more	6,979	—	5,835	8,427	7,916
		Part-time and/or part-year			
Total	7,849	7,307	7,390	8,321	8,993
Amount borrowed in 1989–90					
No borrowing	7,836	7,349	7,438	8,348	8,924
Less than $2,000	8,091	—	—	—	—
$2,000 or more	7,981	6,000	6,508	8,166	9,328

—Too few cases for a reliable estimate.
*Total cost minus expected family contribution minus financial aid.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Compared with grants, a relatively small proportion of graduate and first-professional students had teaching or research assistantships in 1989–90 (10 percent compared with 29 percent), but the average assistantship was worth more than twice as much as the average grant ($7,038 compared with $3,238). Nonborrowers and $2,000-or-more borrowers were about equally likely to receive assistantships, but nonborrowers had larger average amounts for their assistantships. Because assistantships are usually awarded without respect to financial need, smaller assistantships may have forced some students to borrow to meet their financial need. Assistantships were much more available to doctoral students than to master's or first-professional students (29 percent compared with 10 percent and 3 percent). A full 56 percent

Table 5.11—Percentage of graduate and first-professional students with grants, tuition waivers, and assistantships, by institution type and control and amount borrowed through student loan programs: 1989–90

	Percent with grants*	Average grant	Percent with tuition waivers	Average tuition waiver	Percent with assistantships	Average assistant-ship
			All students			
Total	29.4	$3,238	7.8	$2,681	9.6	$7,038
Amount borrowed in 1989–90						
No borrowing	26.3	3,127	7.6	2,650	9.2	7,471
Less than $2,000	51.0	3,616	17.5	—	21.9	—
$2,000 or more	43.7	3,549	8.4	2,865	10.7	5,248
			Public 4-year			
Total	25.4	2,368	9.2	2,251	11.8	6,806
Amount borrowed in 1989–90						
No borrowing	22.7	2,328	8.6	2,206	10.8	7,112
Less than $2,000	44.6	3,039	20.2	—	28.4	—
$2,000 or more	42.9	2,451	12.8	2,532	17.1	5,554
			Private, not-for-profit 4-year			
Total	36.1	4,250	5.6	3,857	6.1	7,781
Amount borrowed in 1989–90						
No borrowing	33.2	4,163	5.8	3,893	6.3	8,636
Less than $2,000	65.0	4,486	11.5	—	7.8	—
$2,000 or more	44.3	4,448	4.6	3,644	5.3	4,419

—Too few cases for a reliable estimate.
*Grants include scholarships and fellowships.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

of doctoral students in engineering and 50 percent of doctoral students in the natural sciences received assistantships.[36]

Among graduate and first-professional students with loans, aid from loans made up an average of 81 percent of their total financial aid (table 5.12). The percentage was particularly high for first-professional students (86 percent) compared with master's and doctoral students (79 percent and 59 percent, respectively) (figure 5.2). At the undergraduate level, the average was 59 percent (table 4.5).

[36]National Center for Education Statistics, *Student Financing of Graduate and First-Professional Education*, 56–58.

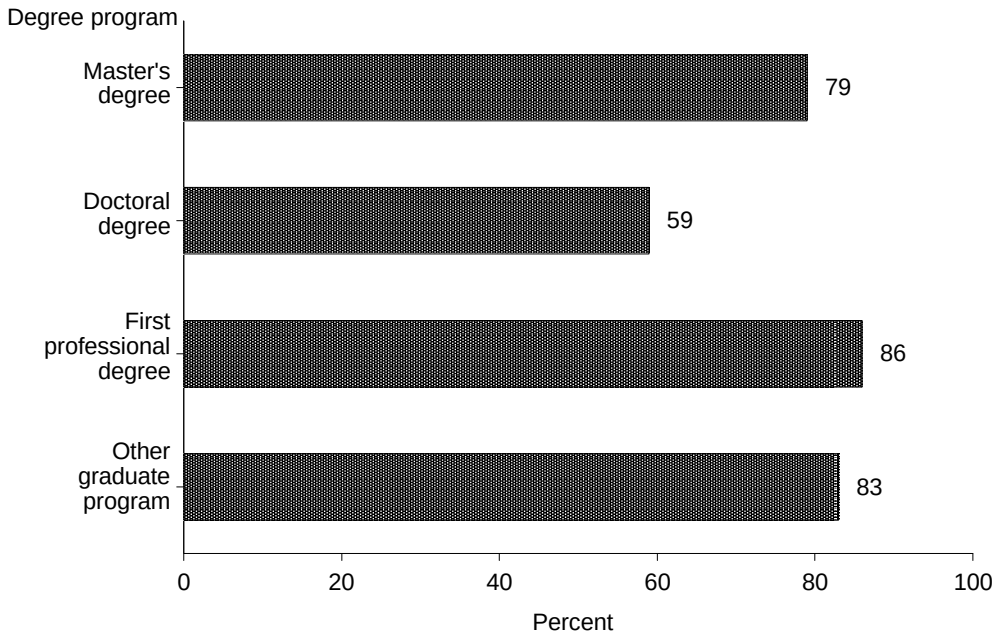
Table 5.12—Average percentage of loans to total aid for graduate and first-professional students with loans, by degree program and amount borrowed through student loan programs: 1989–90

	Total	Master's degree	Doctoral degree	First-professional degree	Other graduate program
Total	80.9	79.3	59.2	85.6	82.5
Amount borrowed in 1989–90					
$1,000 to $1,999	55.8	66.4	—	47.7	—
$2,000 or more	82.6	80.6	64.3	86.3	85.1

—Too few cases for a reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Figure 5.2—Average percentage of loans to total aid for graduate and first-professional students with loans, by institution type: 1989–90



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Actions Taken When Short of Funds

Graduate and first-professional students who found themselves short of funds were most likely to cut down on their expenses to adjust (85 percent) (table 5.13). They next most commonly reported working or taking an additional job (58 percent). Those who borrowed $2,000 or more in 1989–90 were more likely than nonborrowers to have cut down on their expenses, worked or taken an additional job, or applied for a loan. Nonborrowers, on the other hand, were more likely to have reduced their course load or withdrawn from school.

Compared with undergraduates, graduate and first-professional students were more likely to have cut down on their expenses or applied for a loan when they were short of funds. Undergraduates were more likely than graduate and first-professional students to have worked more, asked their parents for money, reduced their course load, withdrawn from school, moved back home, or transferred to another school (table 4.6).

Table 5.13—Percentages of graduate and first-professional students who had taken different actions when their expenses were greater than the money they had available, by amount borrowed through student loan programs: 1989–90

	Cut down on expenses	Worked or took an additional job	Asked parents for money	Reduced course load	Applied for a loan	Withdrew from school	Moved back home	Transferred to a less expensive school
Total	85.3	58.0	45.9	22.4	31.3	8.9	9.2	3.6
Amount borrowed in 1989–90								
No borrowing	83.5	55.2	44.7	26.6	22.3	10.9	9.9	4.0
Less than $2,000	82.1	59.5	44.3	14.7	53.4	10.1	5.8	0.0
$2,000 or more	89.7	64.2	48.7	13.2	50.9	4.1	7.5	2.7

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

Chapter 6

Adjustments for Background Variation

Chapters 1 through 5 described the proportions of undergraduates and graduates who borrowed. In order to examine variation according to student and institutional characteristics, the populations were subdivided (e.g., into full-time, full-year and part-time and/or part-year attendance status) and were crosstabulated into various strata (e.g., by gender, age, institution type, income group, and so on). However, this approach of controlling for group differences by crosstabulation has limitations with survey data, because sample size limits the number of cells into which the data can be usefully subdivided and because there are complex interrelationships among variables that cannot be disentangled in tabular analyses.

To overcome these limitations, linear models are frequently used to examine several sets of variables simultaneously. This chapter proposes one such model (linear regression) to estimate these effects (adjusted means).[37] The regression model takes into account the effect of all variables simultaneously and, hence, controls for overlapping effects that can influence tabular findings. By estimating the joint effect of all variables taken together, regression models can be used to test individual parameters while "holding constant" the influence of other variables. This is particularly useful when studying financial aid because of the way that financial aid is given to students.

Financial aid distributed through federally sponsored programs is awarded on the basis of family financial resources (mainly income) and the cost of attendance at the institution the student chooses. Therefore, variation in borrowing by student characteristics such as gender and race–ethnicity, for example, reflects to a large extent the distribution of students by gender and race–ethnicity among income groups and types of institutions. However, whether or not a student borrows also depends on the availability of aid that is not need based, the availability of financial resources other than income (such as savings or gifts from friends and relatives), opportunities to reduce costs, the student's willingness to borrow, and the student's willingness and ability to substitute work for loans. Regression analysis allows us to control for income and cost and to determine the effects of other variables on the likelihood of borrowing.

In order to investigate the contribution of various factors that appeared in the tabular analysis to be associated with borrowing, regressions of relevant variables were conducted on the proportions of undergraduates and of graduate and first-professional students who borrowed in 1989–90. Because attendance other than full-time, full-year encompasses such a wide variety of patterns, the analysis was limited to students who attended full time, full year. The models were reduced by removing redundant variables.[38] The regression coefficients were then used to adjust the means (in this case, proportions).

---

[37]See appendix B for a description of the means adjustment method.

[38]See the note at the bottom of each table in this chapter to see which variables were removed from the initial model.

Full-Time, Full-Year Undergraduates

Table 6.1 shows the adjusted proportions of full-time, full-year undergraduates who borrowed through federal, state, or institutional loan programs to finance their education when taking into account the variation of the student and institutional characteristics listed in the table. The unadjusted means are included for comparison. As expected, given the criteria for awarding financial aid, full-time, full-year undergraduates in the highest income group were less likely than those in other income groups to borrow, and full-time, full-year undergraduates attending institutions with costs greater than $15,000 were more likely than those at institutions with lower costs to borrow.

Patterns of financial aid receipt are due largely to variation in income and cost. Therefore, observed differences by other characteristics may reflect other factors mentioned above: students' and their families' access to other financial resources (such as savings, gifts, or aid that is not based on need), opportunities to reduce costs, willingness to borrow (on the part of both students and parents), and willingness and ability to work.

Overall, full-time, full-year financially independent undergraduates were more likely than their financially dependent counterparts to borrow (table 2.3), but table 6.1 indicates that after controlling for other student and institutional characteristics (including age), the reverse was true: dependents were more likely than independents to borrow. However, although full-time, full-year dependent undergraduates were more likely than their independent counterparts to borrow, they were also more likely to work (and worked about the same number of hours, on average, as did independent undergraduates).[39] A difference in willingness to borrow may provide at least a partial explanation for greater borrowing on the part of dependent undergraduates: independent undergraduates were more likely than dependent undergraduates to report that they had not applied for financial aid because they were not willing to go into debt (table 4.7).

Table 6.1 also indicates that among full-time, full-year undergraduates, females were more likely than males to borrow. Another study using NPSAS:90 data showed that females were less likely than males to work in 1989–90,[40] which suggests that females may be more likely than males to substitute loans for work. Why that might be the case cannot be determined from the NPSAS data.

[39]National Center for Education Statistics, *Undergraduates Who Worked While Enrolled in Postsecondary Education: 1989–90*.

[40]National Center for Education Statistics, *Undergraduates Who Worked While Enrolled in Postsecondary Education: 1989–90*.

Table 6.1—Percentage of full-time, full-year undergraduates who borrowed and the adjusted percentage taking into account the covariation of the variables listed in the table[1]

	Unadjusted proportions[2]	Adjusted proportions[3]	WLS coefficient[4]	Standard error[5]
Total	29.87	29.87	0.222	(†)
Gender				
Female	31.25	30.97	0.023	0.006**
Male	28.35	28.62	(†)	(†)
Race–ethnicity				
American Indian	20.49	17.55	-0.127	0.043**
Asian/Pacific Islander	24.26	22.15	-0.081	0.017**
Black, non-Hispanic	41.11	33.64	0.034	0.020
Hispanic	32.95	27.12	-0.031	0.017
White, non-Hispanic	29.03	30.23	(†)	(†)
Age as of 12/31/89				
24–29 years	47.15	36.40	0.072	0.015**
30 years or older	39.09	30.70	0.015	0.017
Less than 24 years	27.38	29.16	(†)	(†)
Dependency Status				
Independent	42.28	24.50	-0.070	0.016**
Dependent	26.14	31.49	(†)	(†)
Family income				
Less than $10,000	45.20	45.53	0.343	0.011**
$10,000–$29,999	41.56	41.13	0.299	0.008**
$30,000–$49,999	26.76	27.81	0.166	0.008**
$50,000 or more	12.06	11.23	(†)	(†)
Parent's education (maximum of mother and father)				
High school or less	37.35	33.89	0.086	0.008**
Postsecondary, but less than a bachelor's	33.61	33.02	0.077	0.007**
Bachelor's or higher	22.49	25.30	(†)	(†)
Type and control of institution				
Public				
Less-than-4-year	13.40	11.84	-0.210	0.019**
Private, not-for-profit				
Less-than-4-year	36.10	33.22	0.004	0.028
4-year	44.59	38.58	0.058	0.024*
Private, for-profit	68.91	55.39	0.226	0.031**
Public, 4-year	25.64	32.80	(†)	(†)

Table 6.1—Percentage of full-time, full-year undergraduates who borrowed and the adjusted percentage taking into account the covariation of the variables listed in the table[1]—Continued

	Unadjusted proportions[2]	Adjusted proportions[3]	WLS coefficient[4]	Standard error[5]
Total cost 1989–90				
Less than $2,000	6.57	13.67	-0.278	0.027**
$2,000–$4,999	16.20	19.02	-0.224	0.015**
$5,000–$9,999	27.28	27.14	-0.143	0.014**
$10,000–$14,999	37.46	35.59	-0.059	0.012**
$15,000 or more	42.93	41.46	(†)	(†)
Student level				
2nd year/sophomore	28.87	30.40	-0.005	0.007
3rd year/junior	32.25	29.19	-0.017	0.008*
4th year/senior	32.84	27.34	-0.035	0.009**
5th year/higher	44.48	32.98	0.021	0.029
1st year/freshmen	27.87	30.88	(†)	(†)

[1]Last group in each category is the reference group for comparison.
[2]Estimates from NPSAS:90 NCES Data Analysis System.
[3]Proportions adjusted for differences in the proportion borrowing associated with differences in other variables in the table (see appendix B for details).
[4]Weighted least squares coefficient.
[5]Standard error of regression coefficient adjusted for design effect (see appendix B for details).
* p <= .05
** p <= .01
†Not applicable for reference group.

NOTE: The variables grade point average, program type, and student aspiration were redundant (no significant differences) and were removed from the model.

Among undergraduates who attended full time, full year, Asians were less likely than whites to borrow. However, they were also less likely to work.[41] This suggests that either they had greater other financial resources (such as savings or family assistance) or they were able to reduce their costs below the institutional budget. As a group, Asians were not any more likely than whites to receive grants.[42]

Parent education and family income tend to be closely related. However, even after controlling for income, full-time, full-year undergraduates who had at least one parent with a bachelor's degree were less likely to borrow. Families with more highly educated parents may have had greater other financial resources such as savings or relatives who were willing to contribute to financing the student's education.

[41]National Center for Education Statistics, *Undergraduates Who Worked While Enrolled in Postsecondary Education: 1989–90*.

[42]National Center for Education Statistics, *Financing Undergraduate Education: 1990,* 28.

Table 2.1 showed that undergraduates in their 3rd and 4th years were more likely than those in their 1st and 2nd years to borrow. However, table 6.1 shows that, controlling for other student and institutional characteristics, full-time, full-year undergraduates in their 1st year were slightly more likely to borrow than were those in their 3rd or 4th years. However, they were also slightly less likely to work,[43] which suggests that, on average, full-time, full-year undergraduates may prefer (or be encouraged by their institutions) to borrow rather than work to pay their educational costs during their first year.

Full-time, full-year undergraduates who attended private, not-for-profit 4-year institutions were more likely than those who attended public 4-year institutions to borrow, even after controlling for cost and income. Additionally, full-time, full-year undergraduates at less-than-4-year public institutions were less likely than those at 4-year public institutions to borrow. This finding illustrates that factors other than the cost of attending and income affect the likelihood of borrowing.

Full-Time, Full-Year Graduate and First-Professional Students

Like undergraduates, borrowing among graduate and first-professional students was related to income and cost. Full-time, full-year postbaccalaureate students with incomes of less than $5,000 were more likely than those with incomes of $10,000 or more to borrow in order to finance their education in 1989–90 (table 6.2), as were those attending institutions with annual costs of $15,000 or more compared with those attending institutions with costs of less than $10,000.

Asian and Hispanic full-time, full-year graduate and first-professional students were less likely than their white counterparts to borrow, even controlling for other types of aid (grants, tuition waivers, and assistantships) as well as for other student and institutional characteristics. This suggests that differences in willingness to borrow and other sources of assistance may at least in part explain the different borrowing rates. For example, Asians enrolled in graduate and first-professional programs were considerably more likely than those belonging to other racial–ethnic groups to receive financial help from their families in 1989–90.[44]

Full-time, full-year graduate and first-professional students with tuition waivers and assistantships, were less likely to borrow than were those who did not receive these types of financial aid. However, those with grants were more likely than those without grants to borrow. Those with grade point averages of 3.0 or higher were less likely to borrow than were those with grade point averages of 2.0–2.9.

[43]National Center for Education Statistics, *Undergraduates Who Worked While Enrolled in Postsecondary Education: 1989–90*.

[44]National Center for Education Statistics, *Student Financing of Graduate and First-Professional Education*, 77.

Table 6.2—Percentage of full-time, full-year graduate and first-professional students who borrowed and the adjusted percentage taking into account the covariation of the variables listed in the table[1]

	Unadjusted proportions[2]	Adjusted proportions[3]	WLS coefficient[4]	Standard error[5]
Total	39.48	39.59	0.292	(†)
Race–ethnicity				
American Indian	—	45.05	0.028	0.052
Asian/Pacific Islander	15.42	24.13	-0.181	0.012**
Black, non-Hispanic	47.84	43.56	0.013	0.020
Hispanic	40.57	35.40	-0.069	0.016**
White, non-Hispanic	43.07	42.26	(†)	(†)
Age as of 12/31/89				
24–29 years	43.58	41.20	0.052	0.009**
30 years or older	32.12	39.64	0.037	0.013**
Less than 24 years	40.06	35.97	(†)	(†)
Marital status				
Married	31.81	36.04	-0.047	0.009**
Separated	73.79	75.07	0.343	0.029**
Not Married	42.74	40.76	(†)	(†)
Family income				
$5,000–$9,999	42.99	44.95	0.025	0.009**
$10,000–$19,999	37.30	39.58	-0.029	0.009**
$20,000–$29,999	37.21	37.56	-0.049	0.011**
$30,000–$49,999	35.85	36.67	-0.058	0.011**
$50,000 or more	22.73	24.02	-0.184	0.014**
Less than $5,000	46.21	42.46	(†)	(†)
Degree program				
Doctoral degree	19.03	27.82	-0.099	0.018**
First-professional degree	61.80	48.21	0.105	0.029**
Other graduate program	30.84	35.45	-0.022	0.034
Master's degree	30.13	37.68	(†)	(†)
Control and type of institution				
Public nondoctoral	25.24	33.38	-0.051	0.018**
Private, not-for-profit nondoctoral	30.49	38.51	0.001	0.036
Private, not-for-profit doctoral	47.22	41.83	0.034	0.019
Public doctoral	35.62	38.46	(†)	(†)
Total cost 1989–90				
Less than $2,000	—	17.25	-0.232	0.095*
$2,000–$4,999	22.01	33.26	-0.072	0.027**
$5,000–$9,999	30.11	35.21	-0.053	0.014**
$10,000–$14,999	40.79	41.64	0.012	0.011
$15,000 or more	43.68	40.47	(†)	(†)

Table 6.2—Percentage of full-time, full-year graduate and first-professional students who borrowed and the adjusted percentage taking into account the covariation of the variables listed in the table[1]—Continued

	Unadjusted proportions[2]	Adjusted proportions[3]	WLS coefficient[4]	Standard error[5]
Field of study				
Arts and humanities	29.46	30.31	-0.050	0.032
Natural sciences	15.22	26.31	-0.090	0.025**
Social sciences	36.93	40.17	0.048	0.038
Engineering	14.24	25.83	-0.095	0.025**
Law	58.62	43.62	0.083	0.033*
Business	33.10	38.12	0.028	0.022
Medicine	61.97	52.58	0.172	0.038**
Other	27.40	35.40	0.001	0.024
Education	24.72	35.34	(†)	(†)
Grant aid				
Received grant aid	48.56	52.21	0.209	0.010**
No grant aid	33.53	31.34	(†)	(†)
Tuition waiver				
Received tuition waiver	31.87	32.61	-0.079	0.023**
No tuition waiver	40.47	40.50	(†)	(†)
Assistantship				
Received assistantship	21.46	33.87	-0.073	0.013**
No assistantship	44.42	41.15	(†)	(†)
Grade point average (cumulative)				
Less than 2.0	48.19	37.87	-0.004	0.028
2.0–2.9	57.49	45.52	0.073	0.014**
3.0 or higher	30.43	38.27	(†)	(†)

[1]Last group in each category is the reference group for comparison.
[2]Estimates from NPSAS:90 NCES Data Analysis System.
[3]Proportions adjusted for differences in the proportion borrowing associated with differences in other variables in the table (see appendix B for details).
[4]Weighted least squares coefficient.
[5]Standard error of regression coefficient adjusted for design effect (see appendix B for details).
NOTE: Estimates of totals do not include data with missing values for urbanicity and school lunch.
—Too few cases for a reliable estimate.
* p <= .05
** p <= .01
[†]Not applicable for reference group.

NOTE: The variable gender was redundant (no significant differences) and was removed from the model.

Full-time, full-year graduate students with majors in the natural sciences and engineering were less likely than those majoring in education to borrow in 1989–90, even after controlling for the receipt of other types of aid (grants, tuition waivers, and assistantships). It should be noted, however, that the amounts of these other types of assistance were not controlled for. Full-time, full-year graduate and first-professional students in law and medicine were more likely than graduate students in education to borrow.

Graduate and first-professional students enrolled in public nondoctoral institutions were less likely than those enrolled in public doctoral institutions to borrow even after controlling for cost. This

is similar to the pattern observed for undergraduates: factors other than the cost of attending and income appear to affect the likelihood of borrowing.

Appendix A

Glossary

This glossary describes the variables used in this report. It is organized into three sections: student background characteristics, student financial aid-related characteristics, and institutional characteristics. Within each section, variables are described in the order that they appear in the report.

These variables used in this report were taken directly from the PEDAR undergraduate and graduate Data Analysis Systems, NCES software applications that general tables from the NPSAS:90 data. A description of the DAS software can be found in appendix B. The labels in parentheses correspond to the names of the variables in the DAS.

Student Background Characteristics

Gender of student (GENDER)

Male

Female

Race–ethnicity (RACE)

Asian	A person having origins in any of the Pacific Islander original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or Pacific Islands. This includes people from China, Japan, Korea, the Philippine Islands, Samoa, India, and Vietnam.
Black, non-Hispanic	A person having origins in any of the black racial groups of Africa, not of Hispanic origin.
Hispanic	A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.
American Indian	A person having origins in any of the original peoples of North America and who maintains cultural identification through tribal affiliation or community recognition.
White, non-Hispanic	A person having origins in any of the original peoples of Europe, North Africa, or the Middle East (except those of Hispanic origin).

Age as of 12/31/89 (AGE)

This is a continuous variable that was aggregated to the following categories:

23 years old or younger	Student was 23 years old or younger as of 12/31/89.
24 to 29 years old	Student was between 24 and 29 years old as of 12/31/89.
30 years old or older	Student was 30 years old or older as of 12/31/89.

Dependency status (DEPEND)

Dependent — Students were financially dependent if they did not meet any of the criteria for independence (see below).

Independent — A student was considered independent by meeting one of the following criteria:

- 24 years of age by December 31 of the academic year;
- a military veteran;
- a ward of the court or both parents are deceased;
- has legal dependents other than a spouse;
- is married or a graduate student and not claimed as a tax exemption for the calendar year coinciding with the beginning of the academic year; and
- is a single undergraduate but not claimed as a tax exemption for the 2 years previous to the beginning of the academic year and has at least $4,000 in financial resources.

Income and dependency level (INCOME)

The source of income for dependent students is their parents or guardians, whereas the source of independent students' income refers to their own assets or earnings including those of their spouse if they are married. Incomes in NPSAS:90 were derived from three sources: institutional records, parental reports, and student reports (in priority order).

Dependent students

Less than $30,000	Income of less than $30,000 in 1989.
$30,000 to $49,999	Income between $30,000 and $49,999 in 1989.
$50,000 or more	Income of $50,000 or more in 1989.

Independent students

Less than $10,000	Income of less than $10,000 in 1989.
$10,000 to $29,999	Income between $10,000 and $29,999 in 1989.
$30,000 or more	Income of $30,000 or more in 1989.

Parent Education (PAREDUC)

The highest level of education completed by the student's parents (mother or father, whichever was highest).

High school or less	High school diploma, GED, or less than a high school diploma.
Postsecondary, but less than a bachelor's	Trade school, 2 years of college or more (but not a bachelor's degree).
Bachelor's or higher	Bachelor's degree, master's degree, doctoral degree, or professional degree.

Undergraduate Degree Program (PRGOTYP)

Type of program undergraduate was enrolled in during the 1989–90 academic year.

Associate's degree	Student pursuing an associate's degree.
Bachelor's degree	Student pursuing a Bachelor of Arts or Bachelor of Science degree.
Undergraduate's certificate	Student pursuing a certificate or other formal program other than an associate's or bachelor's degree.
Other undergraduate	Student is not in any of the above programs.

Cumulative Grade Point Average (GPA)

The cumulative grade point average was reported by the institution and converted to a 4.0 scale. If the cumulative grade point average was not available, the most recent GPA was used instead.

Less than 2.0	Student had lower than a C average.
2.0–2.9	Student had a C to B average.
3.0 or higher	Student had a B average or higher.

Aspiration, Degree Planned (EXEDCOL)

The highest level of education that the student expected to complete.

Less than a bachelor's degree	Student expected to attend a trade school or some college, but not to earn a bachelor's degree.
Bachelor's degree	Student expected to earn a bachelor's degree.
Master's degree	Student expected to earn a master's degree.
Ph.D./professional	Student expected to earn a doctoral or first-professional degree.

Enrollment Status (ATTNST3)

This variable represents students' enrollment (reported by the student) over the entire academic year (9 months).

Full-time, full-year	This category includes students who were enrolled full time for 9 months. Note that this category may exclude some students enrolled full time in a private, for-profit institution if the program is shorter than 9 months.
Part-time and/or part-year	This category includes students who were not enrolled full time for at least nine months. Thus, it includes students enrolled full time for one term and part time for an entire year, and students enrolled full or part time for one term and not enrolled for a second.

Undergraduate Level (UGRDLVL1)

1st year–freshman	Student's level was freshman or first year.
2nd year–sophomore	Student's level was sophomore or second year.

3rd year–junior	Student's level was junior or third year.
4th year–senior	Student's level was senior or fourth year.
5th year–undergrad.	Student's level was fifth-year undergraduate.

Considerations in Selecting the Institution (COURSOFF; SCHNWRK; LIVEHOME; GD_REP; TUITLESS; PLACEMT; SHORTER; FINAID)

Students were asked to indicate whether certain reasons were “very important,” “somewhat important,” or “not important” to them in deciding upon the school they attended in Fall 1989. Table 3.12 reports the percentages that reported the following reasons were “very important:”

The school offered the course of study the student wanted.
The student could work while attending the school.
The student would live at home.
The school had a good reputation.
The tuition and other direct school expenses were less at the school than at other schools.
The school had a good reputation for placing its graduates
The student could finish the course in a short period of time.
The student obtained the financial aid needed at the school.

Plans for Next Year (ENROLLED)

Students who did not expect to be enrolled in the same program the next year were asked about their enrollment plans for the next year.

Undergraduate program	Student reported planning to be enrolled in another program at the undergraduate level.
Graduate/professional program	Student reported planning to enroll in a master's, doctoral, or professional program.

Importance of Factors in Determining Life's Work (FACTORA, FACTORB, FACTORC, FACTORD, FACTORE, FACTORF)

Students were asked to indicate whether certain factors were “very important,” “somewhat important,” or “not important” in determining the kind of work they planned to be doing for most of their lives. Table 3.16 reports the percentages of students who reported that the following were “very important.”

Work that seems important and interesting.
Job security and permanence.
Meeting and working with friendly people.
Freedom to make their own decisions.
Good income to start or within a few years.
Previous work experience in the area.

Importance of Goals (FINDWORK, WELLOFF)

Students were asked to indicate the importance of a series of statements to them personally—whether they were "very important," "somewhat important," or "not important." Table 3.17 reports the percentages of students who reported that the following were "very important:"

Being able to find steady work.
Being very well off financially.

Actions Taken When Expenses Were Greater Than Money Available (CUTDOWN, ADDJOB, ASKPARNT, REDUCELD, APPLOAN, WITHDRAW, BACKHOME, TRANSFER)

Students who indicated that their school expenses for the 1989–90 school year were greater than the money and other resources they had available were asked if they had taken certain actions. Table 4.6 shows the percentage who indicated that they had done the following:

Cut down on expenses.
Worked or taken an additional job.
Asked parents for money or more money.
Reduced their course load.
Applied for a loan or additional loan.
Withdrawn from school.
Moved back home.
Transferred to a less expensive school.

Graduate Degree Program (PROGTYP)

Type of program graduate and first-professional students were enrolled in during the 1989–90 academic year.

Master's degree	An award that requires the successful completion of a program of study of at least the full-time equivalent of one, but not more than two academic years of work beyond the bachelor's degree.

Doctoral degree	An award that requires work at the graduate level and terminates in a doctoral degree. The doctoral degree classification includes such degrees as Doctor of Education; Doctoral of Juridical Science; Doctor of Public Health; and the Doctor of Philosophy degree in any field such as agronomy, food technology, education, engineering, public administration, ophthalmology, or radiation. For the Doctor of Public Health degree, the prior professional degree is generally earned in the closely related professional field of medicine or of sanitary engineering.
First-professional degree	One of the following degrees: Chiropractic (D.C. or D.C.M.); Pharmacy (D.Phar.), Dentistry (D.D.S. or D.M.D); Podiatry (Pod.D. or D.P.); Medicine (M.D.); Veterinary Medicine (D.V.M.); Optometry (O.D.); Law (L.L.B. or J.D.); Osteopathic Medicine (D.O.); Theology (M.Div. or H.H.L. or B.D.)
Other graduate program	A program or course at the postbaccalaureate level that does not necessarily lead to a graduate or first-professional degree. Includes professional education programs.

Field of Study (MAJORS) (Graduate and first-professional students only)

NCES-coded majors were reported on the Student Record by a 2-digit Classification of Instructional Programs (CIP) code. For the purpose of this report, the majors were aggregated as follows:

Arts and Humanities	Liberal arts, philosophy, theology, English, art, music, visual or performance art.
Natural Sciences	Mathematics, life science, physical science.
Social Sciences	Psychology, economics, history, political science, social science (other), public administration, social work.
Engineering	Engineering, engineering technology, architecture, computer science.
Law	Law, legal assistance.
Business	Accounting, finance, business (other), marketing, journalism, communication.
Education	Secondary education, education (other).

Medicine	Medicine (M.D.), dentistry, optometry, pharmacy, chiropractic, veterinary medicine, nursing, medicine (other).
Other	Agriculture, home economics, occupational (other), library science, parks/recreational, ethnic studies/foreign language.

Student Financial Aid-Related Variables

Stafford Loan (STAFFAMT)

The amount borrowed between July 1989 and June 1990 through the federally sponsored Stafford loan program. The percentage of students with Stafford loans is the percentage with positive amounts recorded for this variable.

SLS (SLSAMT)

The amount borrowed between July 1989 and June 1990 through the federally sponsored Supplemental Loans for Students (SLS) program. The percentage of students with SLS loans is the percentage with positive amounts recorded for this variable.

Perkins (PERKAMT)

The amount borrowed between July 1989 and June 1990 through the federally sponsored Perkins loan program. The percentage of students with Perkins loans is the percentage with positive amounts recorded for this variable.

PLUS (PLUSAMT)

The amount borrowed between July 1989 and June 1990 through the federally sponsored Parent Loans for Undergraduate Students (PLUS) program. The percentage of students with PLUS loans is the percentage with positive amounts recorded for this variable.

Stafford receipt (STAFFORD)

No Stafford received	The student did not receive a Stafford loan between July 1989 and June 1990.
Some aid received	The student received a Stafford loan, but less than the maximum permitted.
Maximum aid received	The student borrowed the maximum amount permitted by the program.

Total Loan Amount (TOTLOAN)

Total loans received between July 1989 and June 1990. This includes all loans through federal, state, or institutional programs except PLUS loans (which are made to parents). Loans are a type of student financial aid that advances funds and that are evidenced by a promissory note requiring the recipient to repay the specified amounts under prescribed conditions. The percentage of students with loans is the percentage with positive amounts recorded for this variable. The average amount received is the average for all students who received loans.

Amount Student Borrowed for Undergraduate Education (BORAMT1)

The total amount the student borrowed for undergraduate education through June 1990. It includes loans from all sources (including friends, relatives, and banks as well as through federal, state, and institutional loan programs) and for all undergraduate years. It includes loans that have been repaid.

Financial Need (RNEED1)

This variable represents the total cost of attending (TOTCOST, defined below) minus the expected family contribution (EFC3). It can be used to answer the question, "How much additional money do students need to meet their cost of attendance after subtracting their expected family contribution?" If negative, RNEED1 was set to 0. The average financial need is the average for all students with financial need.

Unmet Financial Need (RNEED4)

This variable represents the total cost of attending (TOTCOST, defined below) minus the expected family contribution (EFC3) minus total aid (TOTAID). It can be used to answer the question, "How much additional money do students need to meet their cost of attendance after subtracting their expected family contribution and all financial aid (excluding money from relatives or friends)?" If negative, RNEED4 was set to 0. The average unmet financial need is the average for all students with unmet financial need.

Grants (TOTGRT)

Total grants received between July 1989 and June 1990. Grants are a type of student financial aid that does not require repayment or employment. At the undergraduate level it is usually (but not always) awarded on the basis of need, possibly combined with some skills or characteristics the student possesses. Grants are more frequently awarded on a merit basis at the graduate level. Grants include scholarships and fellowships. The percentage of students with grants is the percentage with positive amounts recorded for this variable. The average amount received is the average for all students who received grants.

Tuition waivers (WAIVAMT)

Total tuition waivers for 1989–90. With waivers, students are excused from paying tuition or pay a discounted tuition. This variable includes waivers for institutional employees or dependents and other waivers or discounts. The percentage of students with tuition waivers is the percentage with positive amounts recorded for this variable. The average amount received is the average for all students who received tuition waivers.

Work Study (TOTWKST) (Undergraduates Only)

Total work-study aid received between July 1989 and June 1990. Work-study programs provide partial reimbursement of wages paid to students. They may be sponsored by the federal or state governments or by the institution. These programs are used infrequently by graduate students. The percentage of students with work study is the percentage with positive amounts recorded for this variable. The average amount received is the average for all students who received work study.

Assistantship (ASSTAMT) (Graduate Students Only)

Total of teaching, research, and other assistantships received between July 1989 and June 1990. Students provided with this type of support work with faculty teaching courses or conducting research or participate in formal work-study programs. The percentage of students with assistantships is the percentage with positive amounts recorded for this variable. The average amount received is the average for all students who received assistantships.

Ratio of Loans to Total Aid (LOANPCT)

Percentage that loans form of total aid. This variable is based on the ratio of TOTLOAN to TOTAID.

Reasons for Not Applying for Financial Aid (FAMPAY, HIINCOME, NODEBT)

Students who had never applied for financial aid (EVERAPLY) were asked if certain statements were important reasons why they had never applied for financial aid. Table 4.7 shows the percentage of students who responded “yes” to the following:

My family and I were able to pay for my education.
Family income was too high to qualify for financial aid.
I was not willing to go into debt for schooling.

Students who responded "yes" to any of the questions were then asked which was the most important reason why they had never applied for financial aid (IMPORTANT).

Institutional Characteristics

Control of institution (CONTROL)

Public	A postsecondary education institution operated by publicly elected or appointed officials in which the program and activities are under the control of these officials and which is supported primarily by public funds.
Private, not-for-profit	A postsecondary institution that is controlled by an independent governing board and incorporated under section 501(c)(3) of the Internal Revenue Code.
Private, for-profit	A postsecondary institution that is privately owned and operated as a profit-making enterprise. Includes career colleges and proprietary institutions.

Level of institution (TYPE)

Less-than-2-year	Institution where all of the programs are less than 2 years in duration. The institution must offer a minimum of one program of at least 3 months in duration that results in a terminal certificate or license or is creditable toward a formal 2-year or higher award.
2- to 3-year	Institution that confers at least a 2-year formal award (certificate or associate's degree) or offers a 2- or 3-year program that partially fulfills requirements for a baccalaureate or higher degree at a 4-year institution. The institution does not award a baccalaureate degree. These would include most community or junior colleges.
4-year nondoctoral-	Institution or subsidiary element that confers at least a baccalaureate granting degree in one or more programs, but does not award higher than a master's degree.
4-year doctoral-granting	Institution that confers a doctoral or first professional degree in one or more programs.

Type of institution (OFCON1) (combination of institution "level" and "control" defined above)

Public less-than-2-year	Public less-than-2-year institution.
Public 2- to 3-year	Public 2- to 3-year institution.
Public 4-year non-doctoral-granting	Public 4-year institution not offering doctoral degrees.
Public 4-year doctoral-granting	Public 4-year institution offering doctoral degrees.
Private, not-for-profit less-than-2-year	Private independent less-than-2-year institution.
Private, not-for-profit 2- to 3-year	Private independent 2- to 3-year institution.
Private, not-for-profit 4-year nondoctoral-granting	Private independent 4-year institution not offering doctoral degrees.
Private, not-for-profit 4-year doctoral-granting	Private independent 4-year institution offering doctoral degrees.
Private, for-profit less-than-2-year	Private, for-profit less-than-2-year institution.
Private, for-profit 2-year or more	Private, for-profit 2-year or more institution.

Total costs (TOTCOST)

Total student costs for 1989–90. The sum of costs reported for tuition (TUITCOST), room and board (ROOMCOST), books (BOOKCOST), and other off-campus costs (OTHRCOST, OTHRMCOST, OFFCOST). Costs were aggregated into categories.

Appendix B

Technical Notes and Methodology

The 1989–90 NPSAS Survey

The need for a nationally representative database on postsecondary student financial aid prompted the U.S. Department of Education to conduct the 1986–87 National Postsecondary Student Aid Study (NPSAS:87) and again in 1989–90 (NPSAS:90). The NPSAS sample was designed to include students enrolled in all types of postsecondary education. Thus, it included students enrolled in public institutions; private, not-for-profit institutions; and private, for-profit institutions. The sample included students at 4-year and 2-year institutions, as well as students enrolled in occupationally specific programs that lasted for less than 2 years.

The sample for the NPSAS:87 data collection consisted of students enrolled in the fall of 1986. The sample for the 1989–90 NPSAS (NPSAS:90), on the other hand, consisted of students enrolled in postsecondary education throughout the 1989–90 academic year, a more accurate representation of postsecondary students.

NPSAS:90 included a stratified sample of approximately 69,000 eligible students (about 47,000 of whom were undergraduates) from about 1,100 institutions. Students were included in the sample if they attended a NPSAS-eligible institution; were enrolled between July 1, 1989 and June 30, 1990; and were enrolled in one or more courses or programs including courses for credit, a degree or formal award program of at least 3 months' duration, or an occupationally or vocationally specific program of at least 3 months' duration. Regardless of their postsecondary status, however, students who were also enrolled in high school were excluded.

For each of the students included in the NPSAS sample, there were up to three sources of data. First, institution registration and financial aid records were extracted. Second, a Computer Assisted Telephone Interview (CATI) designed for each student was conducted. Finally, a CATI designed for the parents or guardians of a subsample of students was conducted. Data from these three sources were synthesized into a single system with an overall response rate of about 89 percent. For example, the variable age was determined by first checking student responses. If a student did not provide this information, age was taken from the institutional record abstract.

For more information on the NPSAS survey, consult *Methodology Report for the 1990 National Postsecondary Student Aid Study* (Longitudinal Studies Branch, Postsecondary Education Statistics Division, Washington, D.C.: U.S. Department of Education, National Center for Education Statistics, NCES 92-080, June 1992).

Accuracy of Estimates

The statistics in this report are estimates derived from a sample. Two broad categories of error occur in such estimates: sampling and nonsampling errors. Sampling errors happen because observations are made only on samples of students, not on entire populations. Nonsampling errors occur not only in sample surveys but also in complete censuses of entire populations.

Nonsampling errors can be attributed to a number of sources: inability to obtain complete information about all students in all institutions in the sample (some students or institutions refused to participate, or students participated but answered only certain items); ambiguous definitions; differences in interpreting questions; inability or unwillingness to give correct information; mistakes in recording or coding data; and other errors of collecting, processing, sampling, and estimating missing data.

Data Analysis System

The estimates presented in this report were produced using the PEDAR Data Analysis System (DAS) for undergraduates. The DAS software makes it possible for users to specify and generate their own tables from the NPSAS data. With the DAS, users can recreate or expand upon the tables presented in this report. In addition to the table estimates, the DAS calculates proper standard errors[45] and weighted sample sizes for these estimates. For example, table B.1 presents the standard errors that correspond to table 2.3 in the text. If the number of valid cases is too small to produce an estimate, the DAS prints the message "low-N" instead of the estimate.

In addition to tables, the DAS will also produce a correlation matrix of selected variables to be used for linear regression models. Also output with the correlation matrix are the design effects (DEFT) for all the variables identified in the matrix. Since statistical procedures generally compute regression coefficients based on simple random sample assumptions, the standard errors must be adjusted with the design effects to take into account the NPSAS stratified sampling method. (See discussion under "Statistical Procedures" below for adjustment procedure.)

[45]The NPSAS sample is not a simple random sample and, therefore, simple random sample techniques for estimating sampling error cannot be applied to these data. The PEDAR DAS takes into account the complexity of the sampling procedures and calculates standard errors appropriate for such samples. The method for computing sampling errors used by the DAS involves approximating the estimator by the linear terms of a Taylor series expansion. The procedure is typically referred to as the Taylor series method.

Table B.1—Standard errors for table 2.3: Percentage of undergraduates who participated in student loan programs in 1989–90 and average amount borrowed, by attendance status and selected student and institutional characteristics

	All		Full-time, full-year		Part-time and/ or part-year	
	Percent	Average amount	Percent	Average amount	Percent	Average amount
Total	0.65	42.81	0.75	37.36	0.51	80.77
Gender						
Male	0.65	57.36	0.92	47.72	0.55	121.77
Female	0.70	46.29	0.87	45.00	0.60	83.48
Race–ethnicity						
American Indian	2.38	279.95	4.26	452.63	2.07	456.22
Asian/Pacific Islander	1.21	146.44	2.11	167.68	0.93	355.96
Black, non-Hispanic	2.26	81.08	2.36	85.13	1.96	138.80
Hispanic	1.94	101.38	2.29	95.97	1.52	144.90
White, non-Hispanic	0.62	42.72	0.84	40.42	0.49	78.16
Age as of 12/31/89						
Less than 24 years	0.64	35.74	0.78	38.17	0.62	64.84
24–29 years	0.95	108.97	2.07	93.48	0.80	191.92
30 years or older	0.66	79.60	2.16	86.34	0.47	121.98
Dependency Status						
Dependent	0.66	34.27	0.82	40.08	0.60	55.00
Independent	0.87	67.66	1.32	59.84	0.59	115.63
Family income						
Dependent student						
Less than $30,000	1.01	34.91	1.23	42.15	1.05	57.43
$30,000–$49,999	0.92	58.57	1.23	65.19	0.92	109.07
$50,000 or more	0.49	76.74	0.72	83.67	0.41	158.13
Independent student						
Less than $10,000	1.44	73.85	1.64	69.79	1.18	131.52
$10,000–$29,999	0.81	75.80	2.03	101.92	0.64	117.78
$30,000 or more	0.51	276.96	3.27	174.04	0.41	459.20
Parent's education (maximum of mother and father)						
High school or less	0.78	45.14	1.06	49.20	0.72	67.68
Postsecondary, but less Bachelor's or higher	0.54	77.17	0.78	54.53	0.54	167.77
Degree program						
Associate's degree	0.76	157.35	1.74	126.17	0.57	261.07
Bachelor's degree	0.75	35.49	0.93	39.73	0.71	53.37
Undergraduate certificate	2.56	72.83	2.34	80.40	2.26	82.21
Other undergraduate	1.00	124.17	2.38	149.69	0.67	217.34

Table B.1—Standard errors for table 2.3: Percentage of undergraduates who participated in student loan programs in 1989–90 and average amount borrowed, by attendance status and selected student and institutional characteristics—Continued

	All		Full-time, full-year		Part-time and/ or part-year	
	Percent	Average amount	Percent	Average amount	Percent	Average amount
Grade point average (cumulative)						
Less than 2.0	1.00	70.12	1.72	79.49	0.91	116.25
2.0–2.9	0.73	50.01	1.00	45.20	0.63	113.48
3.0 or higher	0.76	59.35	0.94	55.37	0.63	122.27
Aspiration, degree planned						
Less than a bachelor's degree	1.18	79.02	2.49	85.47	1.14	98.28
Bachelor's degree	0.65	49.55	1.10	56.01	0.53	79.12
Master's degree	0.66	61.72	0.95	51.04	0.59	127.92
Ph.D./professional degree	0.78	127.29	1.11	67.32	0.93	285.78
Type and control of institution						
Public						
Less-than-4-year	0.49	257.65	1.56	204.05	0.37	391.93
4-year	0.81	38.55	1.06	46.61	0.70	54.56
Private, not-for-profit						
Less-than-4-year	2.81	231.22	3.72	115.54	2.54	280.88
4-year	1.10	50.74	1.29	52.19	1.08	78.47
Private, for-profit	2.70	73.02	2.28	90.13	2.90	89.36
Total cost 1989–90						
Less than $2,000	0.38	137.69	1.73	—	0.35	144.07
$2,000–$4,999	0.58	110.62	1.15	77.34	0.52	193.07
$5,000–$9,999	0.72	39.06	1.02	46.54	0.71	59.02
$10,000–$14,999	0.85	83.05	1.24	45.08	0.88	180.58
$15,000 or more	0.96	62.80	1.20	64.03	0.92	105.55

—Too few cases for a reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 National Postsecondary Student Aid Study (NPSAS:90), Data Analysis System.

For more information about the 1990 PEDAR Data Analysis System, contact:

Arlie Gordon
NCES Longitudinal Studies Branch
555 New Jersey Avenue, NW
Washington, DC 20208-5652
(202) 219-1367

Internet address: AGORDON@INET.ED.GOV

Statistical Procedures

The descriptive comparisons were tested in this report using Student's *t* statistics. Comparisons based on the estimates of the proportions include the estimates of the probability of a Type I error, or significance level. The significance levels were determined by calculating the Student's t values for the differences between each pair of means or proportions and comparing these with published tables of significance levels for two-tailed hypothesis testing.

The 1989–90 NPSAS survey, while representative and statistically accurate, was not a simple random sample. Instead, the survey sample was selected using a more complex three-step procedure with stratified samples and differential probabilities of selection at each level. First, postsecondary institutions were initially selected within geographical strata. Once institutions were organized by zip code and state, they were further stratified by control (i.e., public; private, not-for-profit; or private, for-profit) and offering (less-than-2-year, 2- to 3-year, 4-year nondoctoral-granting, and 4-year doctoral-granting). Sampling rates for students enrolled at different institutions and levels (undergraduate or other) varied, resulting in better data for policy purposes, but at a cost to statistical efficiency.

Student's *t* values may be computed for comparisons using these tables' estimates with the following formula:

$$t = \frac{P_1 - P_2}{\sqrt{(se_1^2 + se_2^2)}}$$

where P_1 and P_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors. Note that this formula is valid only for independent estimates. When the estimates were not independent (for example, when comparing the percentages across a percent distribution—in this report, across a row in a table—a covariance term was added to the denominator of the *t*-test formula).

There are hazards in reporting statistical tests for each comparison. First, the test may make comparisons based on large *t* statistics appear to merit special attention. This can be misleading since the magnitude of the *t* statistic is related not only to the observed differences in means or percentages but also to the number of students in the specific categories used for

comparison. Hence, a small difference compared across a large number of students would produce a large *t* statistic.

A second hazard in reporting statistical tests for each comparison is making multiple comparisons among categories of an independent variable. For example, when making paired comparisons among different levels of income, the probability of a Type I error for these comparisons taken as a group is larger than the probability for a single comparison. When more than one difference between groups of related characteristics or "families" are tested for statistical significance, one must apply a standard that assures a level of significance for all of those comparisons taken together.

Comparisons were made in this report only when $p \leq .05/k$ for a particular pairwise comparison, where that comparison was one of *k* tests within a family. This guarantees both that the individual comparison would have $p \leq .05$ and that when *k* comparisons were made within a family of possible tests, the significance level of the comparisons would sum to $p \leq .05$.[46]

For example, in a comparison of the percentages of males and females who took out loans, only one comparison is possible (males v. females). In this family, $k = 1$, and the comparison can be evaluated with a Student's *t* test. When students are divided into five racial–ethnic groups and all possible comparisons are made, then $k = 10$ and the significance level of each test must be $p \leq .05/10$, or .005. The formula for calculating family size (k) is as follows: $k = j * (j - 1)/2$, where j is the number of categories for the variable being tested. In the case of race–ethnicity, there are five racial–ethnic groups (American Indian, Asian, black, Hispanic, and white), so $k = 5*(5-1)/2=10$.

Adjustments of means

Tabular results are limited by sample size when attempting to control for additional factors that may account for the variation observed between two variables. For example, when examining the percentages who borrow by race–ethnicity, it is impossible to know to what extent the observed variation is due to race–ethnicity and to what extent it is due to differences in other factors such as income, attendance status, and type of institution attended. However, if a table were produced showing race–ethnicity within attendance status, within income group, within institution type, the cell sizes would be too small to identify the patterns. For those cases where the sample size becomes too small to support controlling for another level of variation, one must use other methods to take such variation into account.

Adjusted values for subgroup populations were obtained by regressing the dependent variable on a set of descriptive variables such as dependency status, family income, race–ethnicity, etc. Substituting ones or zeros for the subgroup variable(s) of interest and the mean proportions for the other variables results in an estimate of the adjusted proportion for some specified

[46]The standard that $p \leq .05/k$ for each comparison is more stringent than the criterion that the significance level of the comparisons should sum to $p \leq .05$. For tables showing the *t* statistic required to ensure that $p \leq .05/k$ for a particular family size and degrees of freedom, see Olive Jean Dunn, "Multiple Comparisons Among Means," *Journal of the American Statistical Association* 56: 52–64.

subgroup holding all other variables constant. For example, consider the case in which two variables, family income and race–ethnicity, are used to describe borrowing rates. The variables family income and race–ethnicity are recoded into three dummy variables representing family income and four dummy variables representing race–ethnicity:

Family Income:

	I_1	I_2	I_3
Less than $10,000	1	0	0
$10,000–29,999	0	1	0
$30,000–49,999	0	0	1
$50,000 or more	0	0	0

and;

Race–ethnicity:

	R_1	R_2	R_3	R_4
American Indian	1	0	0	0
Asian, Pacific Islander	0	1	0	0
Black, non-Hispanic	0	0	1	0
Hispanic	0	0	0	1
White, non-Hispanic	0	0	0	0

Equation 1.1 is then estimated from the correlation matrix output from the DAS:

$$\hat{Y} = a + \beta_1 I_1 + \beta_2 I_2 + \beta_3 I_3 + \beta_4 R_1 + \beta_5 R_2 + \beta_6 R_3 + \beta_7 R_4 \qquad (1.1)$$

To estimate the adjusted mean for any subgroup evaluation at the mean of all other variables, one substitutes the appropriate values for that subgroup's dummy variables (1 or 0) and the mean for the dummy variable(s) representing all other subgroups. For example, say we had a case where Y=borrowing was being described by I_1 through R_4 (coded as shown above), and suppose the means for I_1 through R_4 are:

Variable	$\bar{X}$
I_1	0.202
I_2	0.246
I_3	0.263
R_1	0.006
R_2	0.047
R_3	0.077
R_4	0.051

Estimating 1.1 above from the correlation matrix and the regression results in:

$$\hat{Y} = 0.124+(0.330)I_1+(0.295)I_2+(0.147)I_3+(-0.139)R_1+(-0.075)R_2+(0.040)R_3+(-0.025)R_4$$

To estimate the adjusted value for blacks, one substitutes the appropriate values for the intercept and each dummy variable.

Variable	Value	β
a	1	0.124
I_1	0.202	0.330
I_2	0.246	0.295
I_3	0.263	0.147
R_1	0	-0.139
R_2	0	-0.075
R_3	1	0.040
R_4	0	-0.025

This results in:

$$\hat{Y} = 0.124+(0.330)(.202)+(0.295)(0.246)+(0.147)(0.26)+(-0.139)(0)+(-0.075)(0)+(0.040)(1)+(-0.025)(0)$$

$$\hat{Y} = 0.342$$

In this case the adjusted mean for blacks is 0.342 and represents the expected borrowing rate for black students who look like the average student across all the other variables (in this example, income).

It is relatively straightforward to produce a multivariate model using NPSAS:90 data, since one of the output options of the DAS is a correlation matrix, computed using pair-wise missing values.[47] This matrix can be used by most commercial regression packages to input the matrix and produce weighted least-square estimates of the parameters. That was the general approach used for this report, with two additional adjustments described below to reduce the effect of redundant parameters and to incorporate the design effect for statistical testing.

Since many of the independent variables are interrelated (as previously discussed in the report), the presence of some variables in the model is redundant. That is, the variance explained by them will have been accounted for by other variables in the model. Accordingly, redundant variables were removed from the model, resulting in a reduced regression model that was used to produce the parameter estimates shown in the above formula.

Most commercial regression packages compute parameter standard errors on the assumption of simple random sampling. For the NPSAS:90 data, this assumption is incorrect. A

[47] Although the DAS simplifies the process of making regression models, it also limits the range of models. Analysts who wish to use different error assumptions than pairwise or to estimate probit/logit models can apply for a restricted data license from NCES.

better approximation of their standard errors is to multiply each standard error by the DEFT of the dependent variable,[48] where DEFT is the ratio of the true standard error to the standard error computed under the assumption of simple random sampling. It is calculated by the DAS and is available with the correlation matrix.

[48]The adjustment procedure and its limitations are described in the *Analysis of Complex Surveys*, eds. C.J. Skinner, D. Holt, and T.M.F. Smith (New York: John Wiley & Sons, 1989).