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ABSTRACT

A study of the debt levels of graduate and professional students is reported in narrative, data tables, and graphs. Highlights include: total annual borrowing through federal loan programs has accelerated dramatically, with more than a million graduate and professional students now borrowing nearly $8 billion per year; graduate and professional student borrowing is increasing even faster than the record rate of increase in total student loan borrowing; average debt levels are high, especially for students attending professional schools in medicine, dentistry, and law; low-income and minority students are the groups most likely to borrow at the graduate and professional level; professional school graduates face repayment burdens that are prohibitively high in some cases, particularly for those choosing lower-paying, public service-oriented jobs; and doctoral recipients generally appear to have modest repayment burdens. An appendix contains descriptions of the major student loan programs. (MSE)

Graduating into Debt

The Burdens of Borrowing for Graduate & Professional Students

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The Education Resources Institute, Inc. (TERI) was incorporated in June 1985 for the purpose of aiding students in attaining an education and assisting educational institutions in providing an education in an economical fashion. To achieve this purpose, TERI functions as a private guarantor of student loans disbursed by participating lending institutions.

TERI's Higher Education Information Center (HEIC) division receives funds from federal, state and private grants, membership fees from colleges and universities, and other sources. These revenues are used to provide information at no cost to students and their families about financial aid for post-high school education and career opportunities.

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The Institute for Higher Education Policy is a non-profit, non-partisan organization whose mission is to foster access to and quality in postsecondary education. The Institute's activities are designed to promote innovative solutions to the important and complex issues facing higher education. These activities include research and analysis, policy formulation, program evaluation, strategic planning and implementation, and seminars and colloquia.

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Table of Contents

Foreword

This year, nearly 2 million Americans are enrolled in post-baccalaureate education, ranging from graduate programs in the arts, humanities, and sciences to professional programs in medicine, dentistry, and law. The academic experiences of these students vary widely and result in careers as diverse as that of the entire U.S. workforce. One important issue, however, draws these students together: how they pay for their educations. Financing for graduate and professional students varies significantly from that of undergraduate students, who generally have far greater access to grant funds and who can rely more often on parental support to ease the college financing burden. For professional students—and increasingly for graduate students—loans often represent the main resource with which they can pay for their educations.

Much has been written about student borrowing at the undergraduate level. For example, in September of 1995 we jointly produced a report entitled *College Debt and the American Family*, which provided a comprehensive overview of information about student loan borrowing trends since 1990. This report raised serious concerns about the increase in total student borrowing since the early 1990s, as evidenced by overall borrowing trends and information regarding the demographic profile of student loan borrowers and their families.

For graduate and professional students, what has been reported about their borrowing patterns is largely anecdotal in nature. Stories about medical students with hundreds of thousands of dollars in loan debt, for example, have been the focus of several newspaper and television news stories. But whether these students represent the mainstream of borrowers at the post-baccalaureate level, or simply are anomalies in a system where most students borrow, has been difficult to discern.

One reason why no comprehensive studies of graduate and professional student borrowing have been conducted is that no central source of information regarding borrowing trends at the graduate and professional level exists. Instead, a wide range of sources, including the U.S. Department of Education, professional school associations, and research organizations, have collected such information. Because of this diffused approach, a complete picture of borrowing by students beyond the undergraduate level has not yet emerged.

In this report, we endeavor to fill that void, drawing together these numerous sources of information. Attempting such a compilation has been a complicated task, requiring that diverse sources of information representing a range of methodologies be reconciled.

As a result, extreme care should be exercised in comparing data across sources.

The difficulties we have encountered in preparing this report have only reinforced our belief in its necessity. The information presented in the report portrays a complex picture of student borrowing at the graduate and professional level, where overall borrowing has escalated in the last few years but where individual debt levels vary significantly, depending on the field of study and type of program. We believe that such a thorough portrait of graduate and professional student borrowing over the last few years is essential to increase awareness about the effects of student borrowing on the educational, career, and personal opportunities of individuals, and what impact these may have on the social and economic development of the nation.

Our motivation for preparing such a report relates directly to the missions of our two organizations. The Education Resources Institute (TERI), based in Boston, is a non-profit organization that serves as a private guarantor of non-governmental student loans and provides an array of services that promote access to higher education. The Institute for Higher Education Policy, based in Washington, DC, is a non-profit, nonpartisan research organization whose mission is to foster access to and quality in postsecondary education. Both TERI and The Institute have taken an intense interest in the explosion in student borrowing in recent years and have worked together to increase public and policymaker understanding of the role of student loans in postsecondary education financing. We hope that this report helps to further that understanding and expand awareness about the growing loan debt facing the graduate and professional student cohort of American higher education.

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Executive Summary

growing list of recent studies, reports, and articles has pointed out that paying for higher education is now one of the most important financial decisions in the lives of Americans. Much of the focus has been at the undergraduate level, where students have seen tuition increases outpace inflation for more than a decade, and where borrowing levels have exploded in the last few years. But comparatively little attention has been paid to the financing needs and concerns of the nearly 2 million students attending graduate and professional schools annually.

After paying for an undergraduate education, a substantial investment is needed to meet the higher costs of an advanced degree. In 1994-95, annual tuition for students attending graduate school averaged $6,177 and was even higher for those at professional schools—$12,194 in law, $13,666 in medicine, and $14,398 in dentistry. This is in addition to annual living costs of $10,000 or more for many graduate and professional students. By comparison, undergraduate students paid significantly less, with average tuition of $4,030 in 1994-95, and average total costs of $8,286, including room and board.

Even though many graduate and professional students work, either full-time or part-time, the significant costs of graduate and professional school training require most students to seek financial aid. Unfortunately, these students typically are not eligible for the broad range of need-based grant programs, such as Pell Grants, that are available to undergraduates. The result is that for graduate and professional students, loans increasingly have become the dominant form of financial assistance. For many students, these loans are in addition to those taken out at the undergraduate level.

In order to understand more fully the current loan burden that graduate and professional students face, and what impact borrowing may have on their life after graduating, The Education Resources Institute (TERI), in cooperation with The Institute for Higher Education Policy, has prepared this summary report. The report's main findings are compiled from a wide range of sources, including surveys by professional school associations, data systems maintained by the U.S. Department of Education, and previously published reports. It is important to note that because the information presented in this report is drawn from so many different surveys and studies, extreme care should be exercised in comparing data across sources. Despite these limitations, we believe that this report helps to present a more complete picture of student loan borrowing than is presented from these sources individually.

Our review of a broad range of data, information, and reports on graduate and professional student borrowing has revealed several important findings. These include:

Total annual borrowing through federal loan programs has accelerated dramatically, with more than 1 million graduate and professional students now borrowing nearly $8 billion per year.

Data from the Federal Family Education Loan (FFEL) program and the new Federal Direct Student Loan (FDSL) program—the main sources of student loans—indicate that the total amount borrowed by graduate and professional students through these programs has jumped from $4.4 billion in 1993 to $7.7 billion in 1995, a 74 percent increase in just two years. Much of this increase is due to a surge in the number of borrowers—from 620,000 in 1993 to just over 1 million in 1995.

Graduate and professional student borrowing is increasing even faster than the record rate of increase in total student loan borrowing.

The 74 percent increase in graduate and professional student borrowing exceeds the 54 percent increase in total student loan borrowing, when loan volume jumped from $17.6 billion in 1993 to a record $27.1 billion in 1995. Graduate and professional students account for 19 percent of all (undergraduate and graduate/professional) student borrowers but borrow 28 percent of the total student loan dollars. By comparison, graduate and professional students account for less than 14 percent of

the total enrollment in American higher education. In 1995, the average loan awarded to graduate and professional students ($7,697) through the primary federal programs was more than $3,000 larger than the average loan awarded to undergraduate students ($4,475).

Average debt levels are high, especially for students attending professional schools in medicine, dentistry, and law.

Surveys conducted by associations and private organizations indicate high cumulative debt levels for students in certain programs. A survey by the Association of American Medical Colleges found that the average student loan debt for medical school graduates in 1995 was $64,059. A similar survey by the American Association of Dental Schools reported that dental school graduates accumulated an average of $67,772 in loan debt. These surveys found that 81 percent of medical school graduates and 94 percent of dental school graduates borrowed to pay for their education. Meanwhile, law students who borrowed through one of the largest private loan organizations, Law Access*, reported a median cumulative debt amount of $40,300, a figure that actually underestimates law student debt because it does not take into account undergraduate borrowing.

Low-income and minority students are the groups most likely to borrow at the graduate and professional level.

A 1993 survey found that students from the lowest income levels are the most likely to borrow: 77 percent of students with incomes below $10,000 borrow, compared to 58 percent of those in the $10,000-$19,999 income range and 57 percent of those in the $20,000-$29,999 range. The same survey reported that borrowing rates are highest for black and Hispanic students. Sixty-two percent of black, non-Hispanic students and 60 percent of Hispanic students borrow, compared to 54 percent of white, non-Hispanic students.

Using cumulative debt data from the surveys discussed above, average monthly loan payments have been calculated for Ph.D. recipients and graduates of professional schools. These monthly payment amounts have then been compared with available salary information. These comparisons reveal that:

Professional school graduates face repayment burdens that are prohibitively high in some cases, particularly for those choosing lower-paying, public service-oriented jobs.

For professional students, average monthly student loan payments are quite high, and, contrary to widely held views, do not appear to be offset by the higher average earnings in their fields. Medical school graduates, who graduate with an average educational debt of $64,059, face an average monthly payment of $777, while dental school graduates, with an average cumulative debt of $67,772, have an average monthly payment of $822. Law school graduates, with a median debt level of $40,300, face a monthly payment of $489 as they begin their careers.

These monthly payments translate into significant repayment burdens for many professional school graduates, especially those choosing careers in lower-paying, public service-oriented fields. For instance, law school graduates choosing careers as legal services attorneys can expect starting salaries between $22,000 and $31,000. In that range, student loan payments can average 19-27 percent of their monthly salary. This contrasts with law school graduates who work as associates in large firms, where starting salaries average $50,000 to $87,000 per year and graduates can expect to pay a lower, yet still substantial 7-12 percent of their monthly salaries on student loans. Similarly, physicians practicing in the general and family practice areas face monthly student loan payments equal to 9 percent of their monthly income, while those working in community health clinics fare even worse, averaging 12 percent of their monthly income.

Doctoral recipients generally appear to have modest repayment burdens.

Compared with students pursuing careers in the medical, dental, and law fields, those graduating from Ph.D. programs appear to have more manageable student loan debt levels. For example, Ph.D.s in engineering, with a median cumulative debt of $9,300 in 1993, would have a monthly payment of $113, while doctorates in the social sciences, with a median cumulative debt of $14,500, would have a monthly payment of $176. These monthly payments represent anywhere from 2 to 5 percent of the average monthly salaries for Ph.D. recipients, depending on the field of study.

The findings of this study indicate that the borrowing for graduate and professional students is escalating, creating a new class of indebted students and leading to substantial increases both in the total amount borrowed and the total number of students borrowing. At the same time, the study also shows that there is a wide gap in borrowing levels among students depending on the field of study and type of program.

Student loan financing should be a major area of interest for policymakers and the general public in the coming years. Every effort must be made to ensure that the economic and social benefits that accrue to society because of advanced education are not overtaken by the rising costs to individuals that result from their increased need to borrow.

Introduction

The importance of a college education to the economic growth of the United States cannot be underestimated. College graduates on average earn higher salaries, have better jobs, and make larger contributions to the tax base than their counterparts without degrees. As the value of a college degree has risen, so too has the worth of a graduate or professional degree, offering even greater potential benefits to individuals and society.

But students heading to graduate or professional school after obtaining a bachelor's degree encounter a very different world. Whether aiming for a professional degree in medicine or law, or entering graduate school to pursue a Ph.D. in English or chemistry, a vast array of programs and fields beckon them. However, a substantial investment is needed to meet the high costs of an advanced degree.

The cost of graduate and professional school, after paying for an undergraduate degree, can be high. The average cost of college tuition for undergraduates in 1994-95 was $4,030.[1] Including room and board, that cost rose to $8,286 annually. By comparison, graduate students faced higher tuition levels—$6,177 in 1994-95. Professional school students also confronted substantially higher tuition costs: $12,194 for law school, $13,666 for medical school and $14,398 for dental school.[2] This does not include the cost of living for students at the post-baccalaureate level, which typically runs $10,000 or more per year.

The term "graduate students" refers to students pursuing a master's degree or a Ph.D. "Professional students" are those seeking professional degrees in fields such as law, medicine, or dentistry. Almost 2 million people pursue graduate and professional study annually.

Many graduate and professional students opt to work on either a full- or part-time basis while pursuing an advanced degree to help meet educational costs, but numerous graduate and professional students require some form of financial assistance as well. Graduate and professional students face different options for financial assistance than undergraduates. For example, while undergraduates received more than $6.2 billion annually in federal need-based grant aid through the Pell Grant, State Student Incentive Grant, and Supplemental Educational Opportunity Grant programs in

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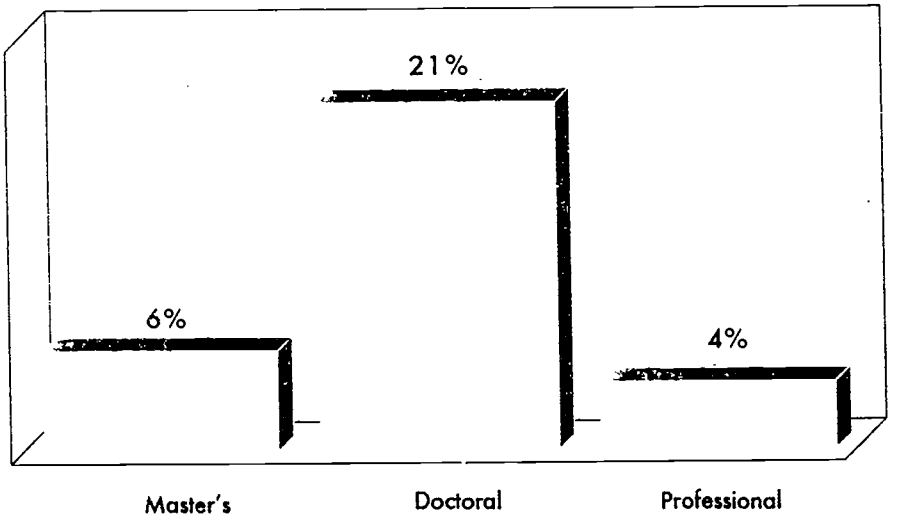
Data on tuition and fees are from the *Digest of Education Statistics, 1995*, National Center for Education Statistics, U.S. Department of Education, 1995.

Average tuition costs reflect the average costs at all institutions–public and private.

Percentage of Students Receiving Assistantships, by Degree Program, 1993



Source: NPSAS: 1993, Graduate and First-Professional Students Data Analysis System, National Center for Education Statistics, U.S. Department of Education.

1994-95,[3] graduate and professional students were not eligible for these programs. Depending on the type and length of the graduate program, students may qualify for various forms of financial aid, including research or teaching assistantships, grants and scholarships, and loans.

Historically, federal and state government support for graduate and professional students has gone to institutions, as subsidies for medical schools and teaching hospitals for example, rather than directly to students, as through financial assistance programs. After World War II, the federal government increased its sponsorship of research through financial support of university research endeavors. These funds—alone or in conjunction with institutional monies—are used to fund student research and teaching assistantships and fellowships, particularly for doctoral students. In 1993, 21 percent of doctoral students received an assistantship, compared to 6 percent of master's students and 4 percent of professional school students.[4]

Graduate and professional students increasingly rely on loans as part of their financial assistance. For many students, these loans are in addition to those taken out at the undergraduate level. In 1993, one third of all graduate and professional students reported having borrowed for their post-baccalaureate education, and 53 percent of graduate and professional students had accumulated debt from their undergraduate and/or graduate education.[5] The shortage of direct student subsidies for some programs has contributed to the increased reliance on student loans in professional programs in law, medicine, and other fields. Taken

3 *Trends in Student Aid: 1985 to 1995*, The College Board, 1995.

4 Note that these data indicate the percentage of students that received this type of aid in 1993 only. NPSAS: 1993, Graduate and First-Professional Students Data Analysis System, National Center for Education Statistics, U.S. Department of Education.

5 NPSAS: 1993, National Center for Education Statistics, U.S. Department of Education.

in conjunction with rising tuition at all levels of postsecondary education, graduate and professional students have had to turn to loans more frequently to cover these increases.

Student borrowing constitutes a substantial sum annually and amounts to sizeable individual debt levels, particularly for professional students. The higher earning potential of these students can offset the burden of this debt, but only for those students choosing fields of employment that realize higher wages. The significant debt that many students incur could compel them to seek these higher earnings and might dissuade them from practicing their professions in public service capacities or in rural areas of the country that cannot offer high salaries.

In order to understand more fully the current loan burden that graduate and professional students face, and what impact borrowing may have on their life after graduating, The Education Resources Institute (TERI), in cooperation with The Institute for Higher Education Policy, has prepared this summary report. The report's main findings are compiled from a wide range of sources, including surveys by professional school associations, studies and reports from research organizations, and data systems maintained by the U.S. Department of Education. It is important to note that because the information presented in this report is drawn from so many different surveys and studies, extreme care should be exercised in comparing data across sources. Despite these limitations, we believe that this report helps to present a more complete picture of student loan borrowing than is presented from these sources individually.

The information presented in this report focuses on four important aspects of graduate and professional student borrowing:

> how much graduate and professional students are borrowing each year, utilizing figures from the U.S. Department of Education to show the annual borrowing of graduate and professional students for federal fiscal years[5] 1993, 1994, and 1995 through the Federal Family Education Loan (FFEL) and Federal Direct Student Loan (FDSL) programs;

A post-baccalaureate student pursuing a degree in the health professions can borrow through an array of federal programs. Students demonstrating financial need can qualify for Health Professions Student Loans (HPSL) as well as Loans for Disadvantaged Students (LDS), both of which offer low-interest loans to low-income students. If these programs do not meet the student's needs, he/she might opt for a Health Education Assistance Loan (HEAL) which does not require students to demonstrate financial need and charges a higher interest rate than Stafford, HPSL, and LDS loans.[6]

Graduate and professional students also can borrow through private loan organizations. Medical students, for example, can utilize the MedLoans program. Graduate, law, business, medical, and dental students can take out federal and private loans from private lenders such as The Access Group®, a financial services group.[7] The federal loans made through this organization carry the same stipulations as other federal loans, but the private loans do not offer interest subsidies and usually have higher interest rates than federal loans.

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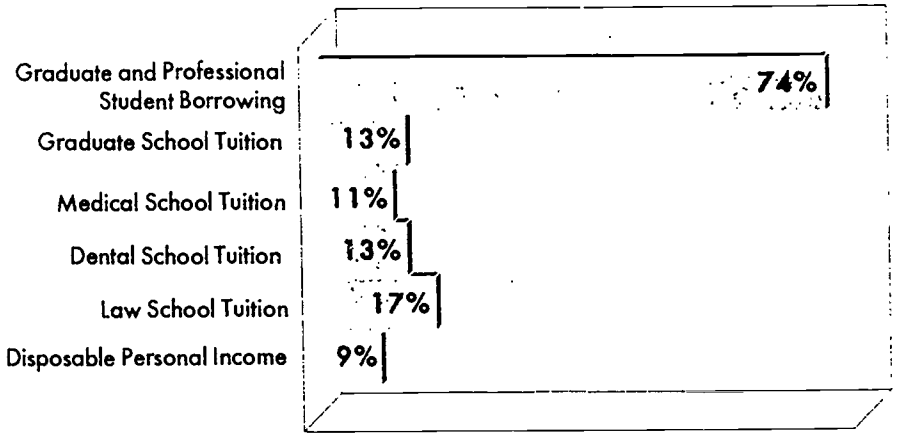
[a] With federal subsidized Stafford loans, the government pays the student's interest while he/she is enrolled and during any periods of deferment. Unsubsidized Stafford loans hold students responsible for the interest on the loans while they are in school and during periods of deferment.

[b] The Access Group® includes loans made through Law Access[b], Business Access[b], Graduate Access[c], Medical Access[c], and Dental Access[c].

[5] Federal fiscal years are measured from October 1 through September 30.

Percentage Change in Borrowing, Tuition, and Personal Income, 1993-1995



Sources: Office of the Undersecretary, Budget Service, U.S. Department of Education; *Digest of Education Statistics, 1995*, National Center for Education Statistics, U.S. Department of Education, 1995; Bureau of Economic Analysis, U.S. Department of Commerce, 1996.

who borrows to participate in post-baccalaureate education, based on data from the National Postsecondary Student Aid Study (NPSAS), which contains a nationally representative sample of approximately 14,000 graduate and professional students enrolled during the 1992-93 academic year;

how much debt graduate and professional school students are accumulating, using the National Research Council's Survey of Earned Doctorates, surveys of dental and medical school graduates, and data on law school graduates gathered from a private loan organization; and

what impact graduate and professional school borrowing has on these students' lives after graduation, by combining cumulative borrowing information with data on repayment schedules and average salaries.

The combination of these data illustrate the price that students must pay in order to obtain a graduate or professional degree and the burden of debt that they may carry into their careers.[9]

[9] Further information on student loan programs and repayment schedules is offered in the Appendix.

Annual Loan Volume[10]

In 1995, 1 million graduate and professional students borrowed $7.7 billion through the primary federal student loan programs, the FFEL and FDSL programs—which include subsidized Stafford loans, unsubsidized Stafford loans, Supplemental Loans for Students (SLS), and Parent Loans for Undergraduate Students (PLUS).[11] Graduate and professional students accounted for 19 percent of all (undergraduate and graduate/professional) student borrowers while the amount that they borrowed comprised 28 percent of the $27 billion in total student loans issued in 1995. By comparison, graduate and professional students accounted for less than 14 percent of the total enrollment in American higher education.[12]

Graduate and professional student borrowing has increased significantly in recent years and at a faster rate than student borrowing overall. In the last two years alone, the amount borrowed by graduate and professional students has grown by 74 percent. In 1993, loans issued to these students totaled $4.4 billion. This figure jumped by 42 percent in 1994 to $6.3 billion. From 1994 to 1995, graduate and professional student borrowing rose another 22 percent to its current level of $7.7 billion. In comparison, total student borrowing jumped by 54 percent during these two years, from $17.6 billion in 1993 to $27.1 billion in 1995.[13]

Much of the increase in the dollar amount borrowed in the past two years stems from an influx of graduate and professional borrowers into the FFEL and FDSL programs. From 1993 to 1994, the number of borrowers rose by 37 percent, from 620,000 to 847,000. The next year, another 155,000 students took out loans, bringing the number of graduate and professional borrowers to more than 1 million in 1995. Most of this growth occurred in the newly created unsubsidized Stafford program, where the number of borrowers jumped from 30,000 in 1993 to 401,000 in 1995.

This chapter describes borrowing on an annual basis, while the borrowing shown in the other chapters of the report reflects trends in cumulative borrowing by graduate and professional students, i.e. the amount that they had borrowed up to that point in graduate or professional school for college and/or post-baccalaureate study.

Office of the Undersecretary, Budget Service, U S Department of Education.

Digest of Education Statistics, 1995, National Center for Education Statistics, U.S. Department of Education, 1995.

For a more detailed examination of overall borrowing trends, see *College Debt and the American Family*, The Education Resources Institute and The Institute for Higher Education Policy, 1995. The 1995 data provided in *College Debt and the American Family* indicate lower total loan volume than the figures presented here. The *College Debt and the American Family* figures were based on earlier estimates than the data provided in this report.

Change in Federal Loan Volume, 1993-1995

Federal Family Education Loan Program and Federal Direct Student Loan Program

	FY 1993			FY 1994			% Change FY1993-FY1994		
	Undergraduate	Graduate	Total	Undergraduate	Graduate	Total	Undergraduate	Graduate	Total
Stafford Subsidized									
# of Borrowers	2,472,000	398,000	2,870,000	2,797,000	532,000	3,329,000	13%	34%	16%
Amount Borrowed	$8,353,000,000	$2,919,000,000	$11,272,000,000	$10,130,000,000	$3,828,000,000	$13,958,000,000	21%	31%	24%
Average Loan Borrowed	$3,379	$7,334	$3,928	$3,622	$7,195	$4,193	7%	[2%]	7%
Stafford Unsubsidized									
# of Borrowers	264,000	30,000	294,000	758,000	221,000	979,000	187%	637%	233%
Amount Borrowed	$779,000,000	$130,000,000	$909,000,000	$2,659,000,000	$1,841,000,000	$4,500,000,000	241%	1316%	395%
Average Loan Borrowed	$2,951	$4,333	$3,092	3,508	$8,330	$4,597	19%	92%	49%
PLUS									
# of Borrowers	237,000	0	237,000	252,000	0	252,000	6%	--	6%
Amount Borrowed	$1,171,000,000	$0	$1,171,000,000	$1,593,000,000	$0	$1,593,000,000	36%	--	36%
Average Loan Borrowed	$4,941	$0	$4,941	$6,321	$0	$6,321	28%	--	28%
SLS									
# of Borrowers	382,000	192,000	574,000	298,000	93,000	391,000	[22%]	[52%]	[32%]
Amount Borrowed	$1,356,000,000	$1,391,000,000	$2,747,000,000	$1,028,000,000	$641,000,000	$1,669,000,000	[24%]	[54%]	[39%]
Average Loan Borrowed	$3,550	$7,245	$4,786	$3,450	$6,892	$4,269	[3%]	[5%]	[11%]
Consolidated*									
# of Borrowers	0	0	83,000	0	0	108,000	--	--	30%
Amount Borrowed	$0	$0	$1,483,000,000	$0	$0	$2,012,000,000	--	--	36%
Average Loan Borrowed	$0	$0	$17,867	$0	$0	$18,630	--	--	4%
Total									
# of Borrowers	3,439,000	620,000	4,059,000	4,212,000	847,000	5,05[illegible],000	22%	37%	25%
Amount Borrowed	$13,140,000,000	$4,441,000,000	$17,581,000,000	$17,423,000,000	$6,309,000,000	$23,732,[illegible]00,000	33%	42%	35%
Average Loan Borrowed	$3,821	$7,163	$4,331	$4,137	$7,449	$4,691	8%	4%	8%

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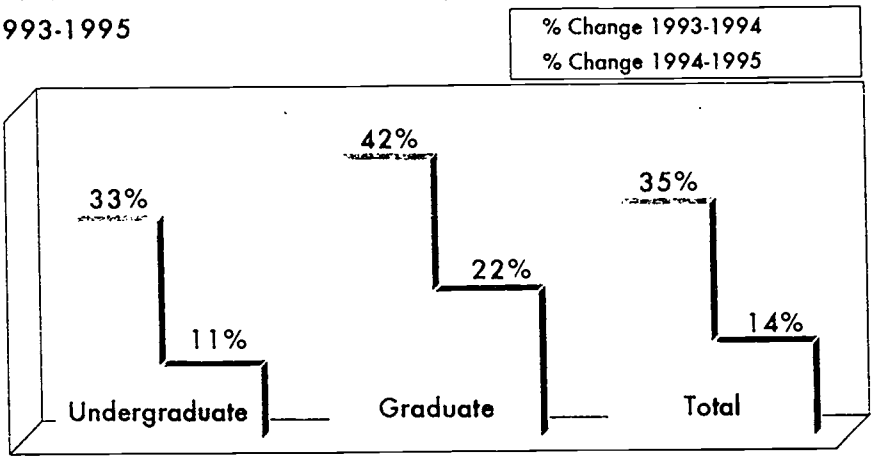
	FY 1994			FY 1995			% Change FY1994-1995		
	Undergraduate	Graduate	Total	Undergraduate	Graduate	Total	Undergraduate	Graduate	Total
Stafford Subsidized									
# of Borrowers	2,797,000	532,000	3,329,000	2,643,000	601,000	3,244,000	[6%]	13%	[3%]
Amount Borrowed	$10,130,000,000	$3,828,000,000	$13,958,000,000	$9,689,000,000	$4,578,000,000	$14,267,000,000	[4%]	20%	2%
Average Loan Borrowed	$3,622	$7,195	$4,193	$3,666	$7,617	$4,398	1%	6%	5%
Stafford Unsubsidized									
# of Borrowers	758,000	221,000	979,000	1,188,000	401,000	1,589,000	57%	81%	62%
Amount Borrowed	$2,659,000,000	$1,841,000,000	$4,500,000,000	$4,353,000,000	$3,135,000,000	$7,488,000,000	64%	70%	66%
Average Loan Borrowed	$3,508	$8,330	$4,597	$3,664	$7,818	$4,712	4%	[6%]	3%
PLUS									
# of Borrowers	252,000	0	252,000	268,000	0	268,000	6%	--	6%
Amount Borrowed	$1,593,000,000	$0	$1,593,000,000	$1,925,000,000	$0	$1,925,000,000	21%	--	21%
Average Loan Borrowed	$6,321	$0	$6,321	$7,183	$0	$7,183	14%	--	14%
SLS									
# of Borrowers	298,000	93,000	391,000	0	0	0	[100%]	[100%]	[100%]
Amount Borrowed	$1,028,000,000	$641,000,000	$1,669,000,000	$0	$0	$0	[100%]	[100%]	[100%]
Average Loan Borrowed	$3,450	$6,892	$4,269	$0	$0	$0	[100%]	[100%]	[100%]
Consolidated*									
# of Borrowers	0	0	108,000	0	0	240,000	--	--	122%
Amount Borrowed	$0	$0	$2,012,000,000	$0	$0	$3,446,000,000	--	--	71%
Average Loan Borrowed	$0	$0	$18,630	$0	$0	$14,358	--	--	[23%]
Total									
# of Borrowers	4,212,000	847,000	5,059,000	4,338,000	1,002,000	5,340,000	3%	18%	6%
Amount Borrowed	$17,423,000,000	$6,309,000,000	$23,732,000,000	$19,414,000,000	$7,712,000,000	$27,126,000,000	11%	22%	14%
Average Loan Borrowed	$4,137	$7,449	$4,691	$4,475	$7,697	$5,080	8%	3%	8%

[ ] denotes negative

* Consolidated loans do not represent new student borrowing. Borrowers utilize consolidated loans to combine different types and amounts of federal student loans into a simpler repayment schedule to retire old debt.

Growth in FFEL and FDSL Loan Volume, 1993-1995



Annual Volume in Billions	1993	1994	1995
Undergraduate	$13.1	$17.4	$19.4
Graduate	$4.4	$6.3	$7.7
Total	$17.6	$23.7	$27.1

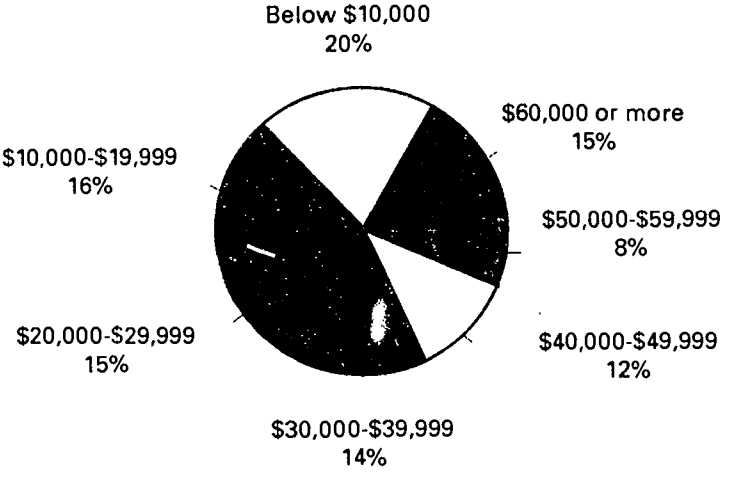
While the total number of graduate and professional student borrowers grew by 62 percent in two years, the average loan rose by only 7 percent, from $7,163 in 1993 to $7,697 in 1995.[14] The change in average loan size varied significantly between the subsidized and unsubsidized Stafford programs. From 1993 to 1994, the average loan in the unsubsidized Stafford program almost doubled, increasing from $4,333 to $8,330, but dropped slightly in the subsidized Stafford program. In 1995, however, the average subsidized Stafford loan rose for graduate and professional students but fell to $7,818 in the unsubsidized program.

Programmatic changes in the student loan programs played a role in the overall increase in borrowing since 1993. The 1992 Reauthorization of the Higher Education Act created the unsubsidized Stafford loan program and raised individual loan limits in each of the FFEL and FDSL programs. The influx of graduate and professional student borrowers into the FFEL and FDSL programs indicates that these students have taken advantage of the new unsubsidized Stafford program. The increase in loan limits, however, has not significantly raised the average loan size for graduate/professional borrowers. Undergraduate borrowers, on the other hand, have seen their average loan grow by 17 percent, from $3,821 in 1993 to $4,475 in 1995. They also have utilized the unsubsidized Stafford program, with the number of borrowers increasing from 264,000 in 1993 to 1,188,000 in 1995. The growth in the number of borrowers—both undergraduate and graduate/professional—in the FFEL and FDSL programs suggests that more and more students require financial assistance for their education and that assistance takes the form of loans.

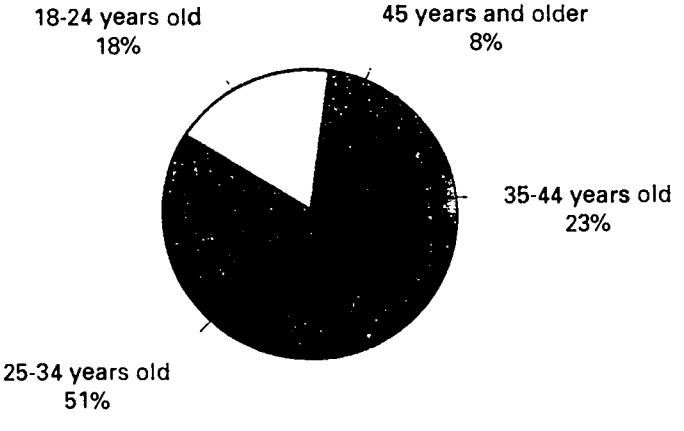
[14] Average loan is calculated by dividing the total amount borrowed by the number of borrowers.

Examining borrowing on an annual basis presents only a snapshot of the overall pattern. Given that students can take out both a subsidized Stafford loan and an unsubsidized Stafford loan in one year—and since many borrowers take out loans over the course of several years—a more complete picture of graduate and professional student loan debt is needed. Data on the characteristics of those who borrow, and the cumulative amounts that they take out, add further definition and clarity to this picture.

Graduate and Professional Student Borrowers by Income



Graduate and Professional Student Borrowers by Age



Who Borrows?

tudents from every graduate and professional field encounter borrowing as a reality in financing their education. Who are these students? What percentage of each income level and age group do they represent? Are they concentrated more in one institutional sector than another? Data from the U.S. Department of Education indicate that the number of graduate and professional students who borrow each year is growing. Understanding the demographic characteristics of these students is crucial in order to comprehend the future impact of their borrowing.[15]

Borrowers as of 1993

Of all graduate and professional students, roughly 53 percent borrow for their postsecondary education.[16] While virtually every income level is represented in the group using loans, a significant percentage of these student borrowers have low income levels. For example:

36 percent of borrowers have annual incomes below $20,000.

15 percent of borrowers have incomes of $60,000 or higher.

The other characteristics of graduate and professional student borrowers largely reflect that of the graduate and professional student population as a whole.

Of graduate and professional student borrowers, 82 percent are white, while 7 percent are black, non-Hispanic, 6 percent are Asian/Pacific Islander, and 5 percent are Hispanic.

Borrowers represent all age groups, with slightly more than half—51 percent—falling between the ages of 25 and 34. About 23 percent of the students using loans are ages 35-44, and 18 percent are 18-24 years old.

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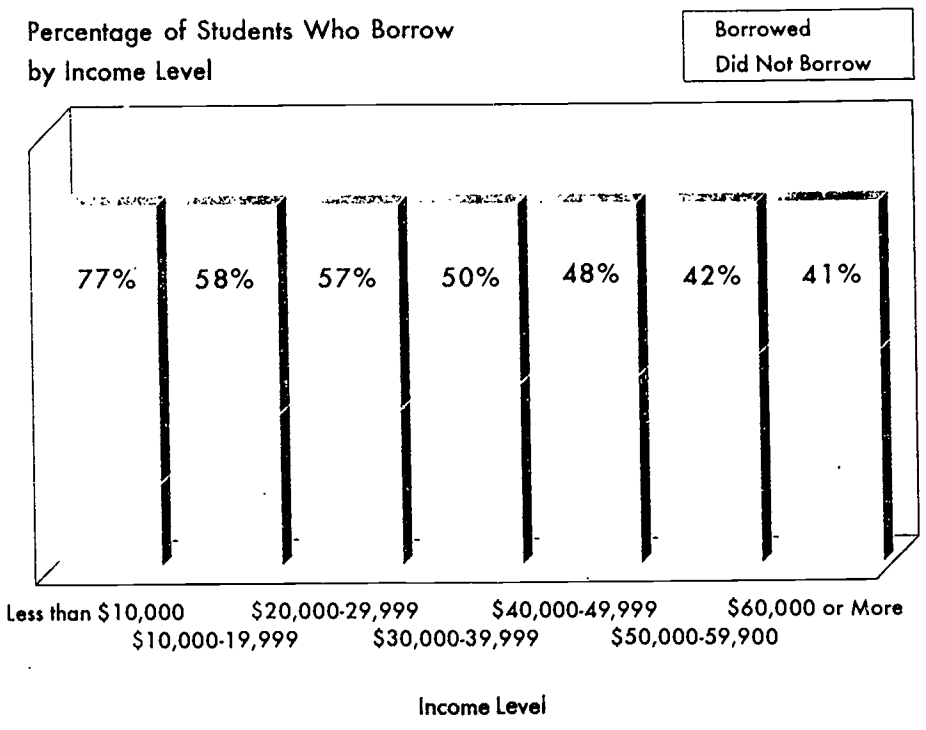
[15] "Borrowers" are defined as graduate and professional students who use loans to finance their baccalaureate and/or post-baccalaureate education. Unless otherwise indicated, data in this chapter are derived from the NPSAS: 1993 Data Analysis System. NPSAS is conducted every three years by the National Center for Education Statistics, U.S. Department of Education. The data used in this report stem from the Graduate and First-Professional part of the survey, which uses information from approximately 14,000 student records from the 1993 academic year.

[16] Data for this chapter reveal characteristics of borrowers for the 1993 academic year, the most recent year for which such information is available. As demonstrated in the previous chapter, significant growth in student borrowing has occurred since 1993; the impact of these changes on individual cumulative debt levels will be captured in the NPSAS 1996 Survey. Thus, NPSAS analyses are utilized here to show borrower characteristics, which are unlikely to change dramatically on an annual basis.



Borrowers are nearly split between public and private institutions: 57 percent attend public institutions and 43 percent attend private institutions.

About 57 percent of borrowers are enrolled on a part-time basis, while 43 percent attend full-time.

Borrowing by Degree Program

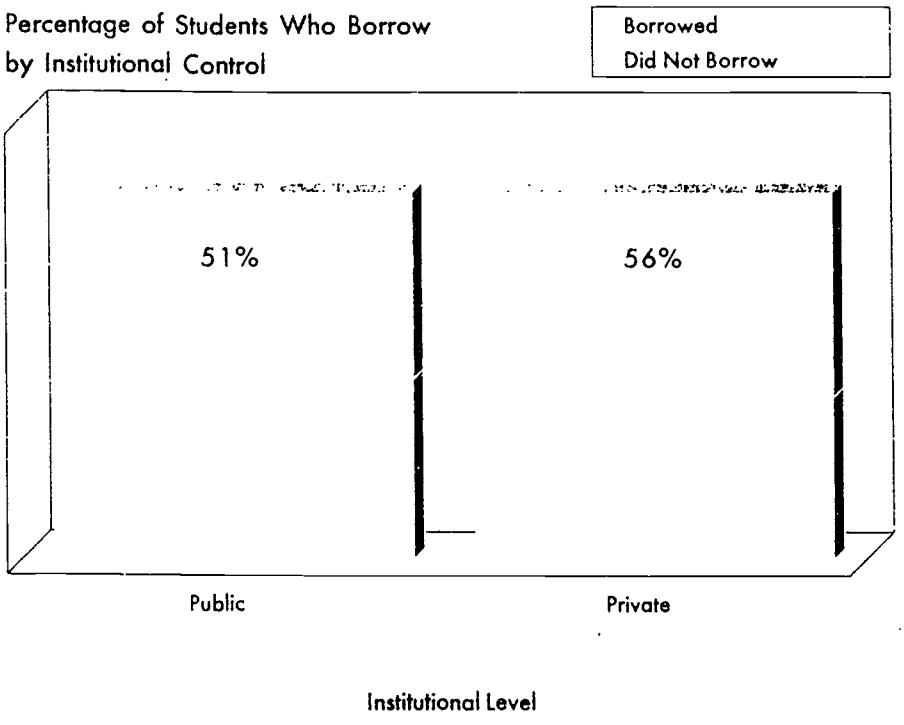
A substantial portion of graduate and professional students use loans to finance their education, yet the percentage of students who borrow varies by degree program. A larger proportion of professional students borrow than master's and doctoral students.

75 percent of professional students borrow for their education, in comparison to slightly more than half of master's students—52 percent—and doctoral students—54 percent.

The higher tuition levels at professional schools might contribute to a higher incidence of borrowing among professional students. In 1993, annual tuition levels at professional schools, including law, medical, and dental schools, averaged about twice as high as those for graduate programs.[17] Perhaps more significant than the tuition charged, however, is the type of financial aid available to master's and doctoral students versus professional students. Institutional aid, in the form of assistantships and fellowships, most likely contributes to the reduced need for loans among graduate students and results in smaller proportions of these students borrowing, compared to professional school students.

Program length is another factor that should be considered. While time-to-degree varies widely depending

[17] *Digest of Education Statistics, 1995*, National Center for Education Statistics, U.S. Department of Education, 1995.



on the field of study and the degree program, the slight difference in borrowing patterns between master's and doctoral students could relate to the shorter program length of master's programs.

Borrowing by Income Level

With 53 percent of graduate and professional students borrowing for their education, the use of loans is not restricted to one income group, but spans a broad spectrum. Students at the lowest end of the income scale, however, borrow in the highest percentages. A significant percentage of students with higher income levels borrow as well.

Of graduate and professional students with annual incomes below $10,000, 77 percent borrow for their education. Fifty-eight percent of those in the $10,000-$19,999 range use loans, compared to 57 percent of those in the $20,000-$29,999 range.

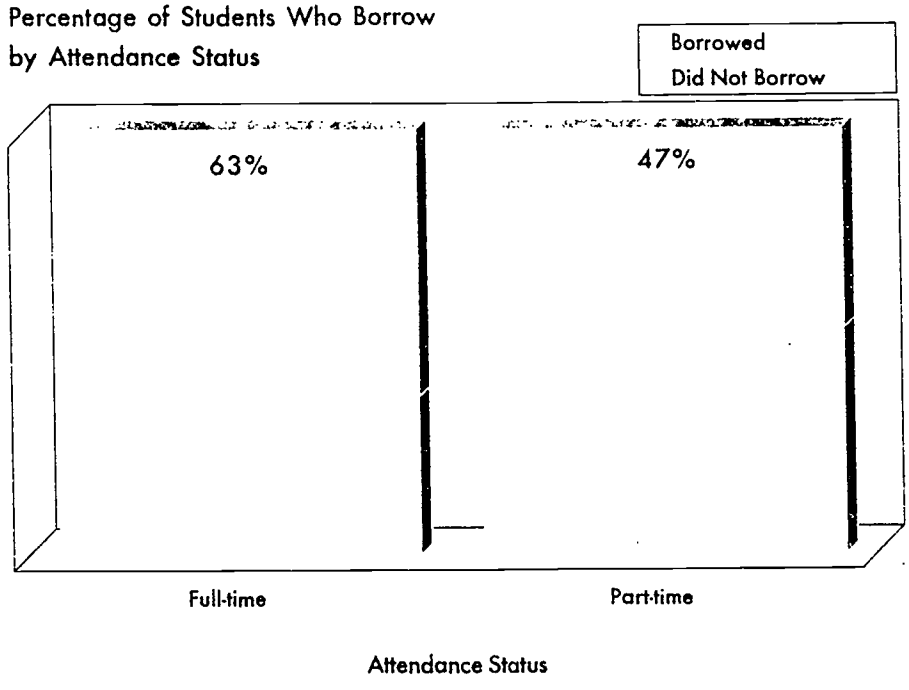
Approximately 42 percent of graduate and professional students earning $50,000-$59,999 use loans for their education, compared to 41 percent of students earning over $60,000 annually.[18]

Borrowers by Institutional Control

Similar percentages of graduate and professional students at public and private institutions use loans to finance their education.

Approximately 51 percent of students at public institutions and 56 percent of students at private institutions accumulate debt.

[18] Income levels shown here are measured for the students as graduate or professional students and do not reveal their income levels as undergraduates. The percentage of students who borrow, however, refers to borrowing from the undergraduate and/or graduate and professional level.



The fact that similar percentages of students from both public and private institutions use loans might indicate that the financial aid available to graduate and professional students at both types of institutions is comparable. Simultaneously, this information seems to indicate that the higher sticker price of private institutions does not necessarily translate into significantly higher percentages of students borrowing at private schools.

Borrowers by Attendance Status

A significant number of graduate and professional students borrow for their education, regardless of attendance status.

> More than half—63 percent—of all full-time students use loans for their education while 47 percent of part-time students borrow.

Since attending graduate or professional school on a full-time basis costs more per year than attending school part-time, a larger percentage of full-time students might borrow to meet the higher price. In addition, for full-time students who are employed while attending school, their income is probably lower than that of part-time students who, under most circumstances, could work more hours.

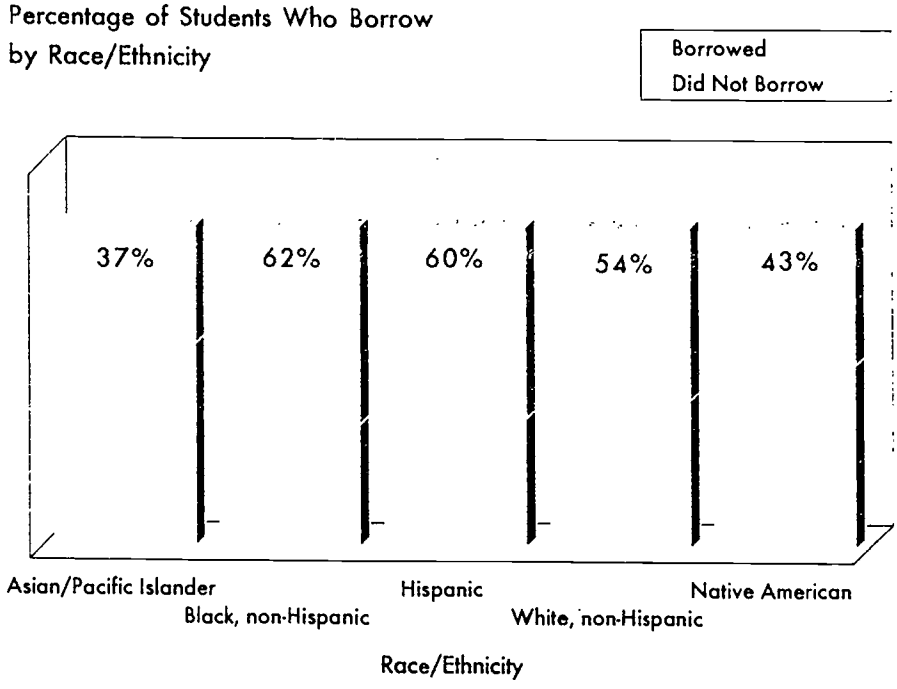
Borrowers by Age

While significant proportions of graduate and professional students of all ages use loans for their postsecondary education, younger students borrow at higher rates than older students. Significant percentages of students 35 and older take out loans as well.

> 57 percent of 18-24-year-olds and 60 percent of 25-34-year-olds accumulate debt for their education.

> 48 percent of students ages 35-44 borrow, compared to 33 percent of students ages 45 and older.

Percentage of Students Who Borrow by Race/Ethnicity



The significantly smaller proportion of students who borrow in the highest age group, 45 years and older, indicates the higher income that these students are likely to earn and thus the lessened need for borrowing for their education. Conversely, the substantial percentage of students within the 18-24 and 25-34 age groups who rely on loans reflects the lower average incomes of these groups and thus the greater need to borrow. About 60 percent of graduate and professional students ages 18-24 and 39 percent of those ages 25-34 have annual incomes below $20,000. In contrast, only 16 percent of those ages 35-44 and 11 percent of those ages 45 and older have annual incomes below $20,000.

Younger students are also more likely to attend graduate and professional school on a full-time basis: 64 percent of students under the age of 25 attend full-time, compared to 22 percent of students 35-44 years old and 17 percent of students 45 years and older. These factors--having a low income, attending full-time, and being under the age of 35—taken alone or in combination contribute to higher rates of borrowing.

Borrowers by Race/Ethnicity

Borrowing rates are highest among black and Hispanic graduate and professional students.

Approximately 62 percent of black, non-Hispanic graduate and professional students and 60 percent of Hispanic students use loans for their undergraduate and/or post-baccalaureate education.

By comparison, 54 percent of white, non-Hispanic students borrow for their education, and 43 percent of Native American graduate and professional students borrow.

Smaller percentages of Asian/Pacific Islanders--37 percent--use loans for their education than any other racial/ethnic group.

Cumulative Borrowing

The NPSAS survey provides important information about the proportion of students using loans to finance their education and their demographic and educational characteristics. Additionally, several other surveys compile information from participants during their final year of study about the amount of debt that they have accumulated over the course of their education. This information presents the most recent data available on the cumulative debt of doctoral, law, medical, and dental students.[19] Reliable data on the cumulative debts of master's students are not available from national data sources.

Doctoral Recipients

The National Research Council's (NRC) Survey of Earned Doctorates gathers information from doctoral recipients during their final year of study on a range of issues, including the sources of support for their education.[20]

> The 1994 Survey shows that 47 percent of doctoral recipients accumulated debt from their undergraduate and/or graduate education by the time they received their degrees.[21]
>
> This proportion varied by field of study, from 62 percent of doctoral recipients in the social sciences to 38 percent of those in engineering.

As with the percentage of borrowers, the amount borrowed varied by field of study. Almost a quarter of the 1994 doctoral recipients in the social sciences—23 percent—used more than $20,000 in loans. This figure contrasts with 13 percent of all doctoral recipients and 10 percent of those in engineering[22] having debt above $20,000.

However, these data likely underestimate the current cumulative debt levels for Ph.D. recipients. The NRC survey asks doctoral recipients how much they owe in student loans at the time of graduation. Students who did not progress immediately from the undergraduate level to graduate school have most likely repaid some portion of their undergraduate debt in the

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19 The information on graduate and professional student borrowing in this chapter stems from several separate and distinct sources, each of which is footnoted. These sources used their own data collection formats and mechanisms and are designed to offer information solely about each individual group.

20 With a 95 percent response rate, percentages as stipulated in the discussion of NRC's survey refer to the entire population of doctoral recipients in 1994. *Summary Report 1994: Doctorate Recipients from United States Universities*, Simmons and Thurgood, 1995.

21 The survey asks how much each graduate will owe from expenses related to their graduate and undergraduate education.

22 Note that this figure, 10 percent, is a percentage of the total doctoral recipients in engineering.

interim, thus potentially lowering the cumulative debt amount that they report in the survey. Cumulative debt levels for students who take a longer time to complete their Ph.D.s also are more probable to be under-reported since, by the time they graduate, these students may have entered and/or subsequently deferred repayment at least once, if not several times. In addition, the cumulative debt levels for doctoral students as presented in this report rely on 1993 data, the most recent year available; this is less up-to-date than the 1995 data on professional students cited elsewhere in this report.

Fifty-two percent of doctoral recipients indicated that their primary source of support during graduate school fell under the category of "university," which included institutionally- and federally-funded research assistantships. Thirty-six percent cited "personal" sources—including loans and their own earnings—as their primary form of support, however. These figures indicate that despite the significant role that university- and federally-funded assistantships play in supporting doctoral education, a substantial proportion of students still must borrow in order to pay for their education.

Professional School Students

The cumulative borrowing levels of law students were substantially higher than those for doctoral students.

> Data provided by The Access Group* on law school graduates show median cumulative borrowing levels of $40,300 in 1995.[23]

This figure does not include any undergraduate loans of law students and thus significantly underestimates the actual cumulative debt that these students might face upon graduation.

The 1995 borrowing level for law school graduates results from two years of significant increases in cumulative debt amounts. In 1993, median cumulative borrowing was $30,300 for law school graduates through the Law Access® program, and increased the following year by 19 percent to $36,200. Thus, in only two years, the median debt level for

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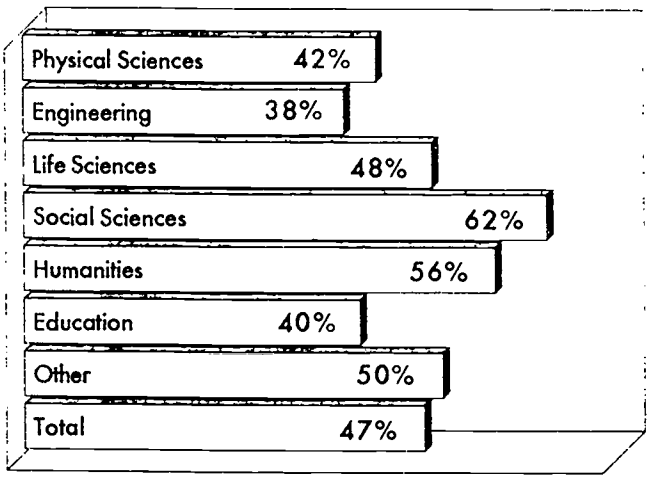
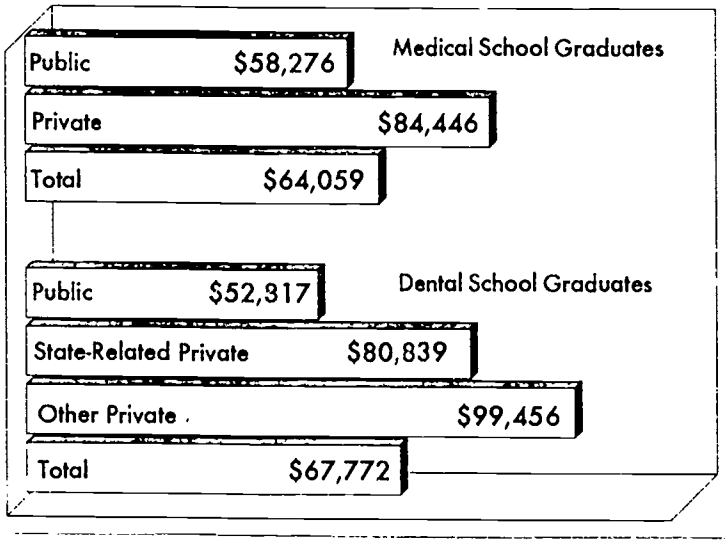
[23] Data on law student borrowing were provided by The Access Group® and include public (federal and other) and private loans, but reflect only loans made through this organization. No information on the percentage of law students that borrow or on the percentage of borrowers that use these loans was available, but The Access Group® estimates that the majority of law students who borrow use their organization.

Percentage of Ph.D. Recipients with Cumulative Debt, by Field of Study, 1994



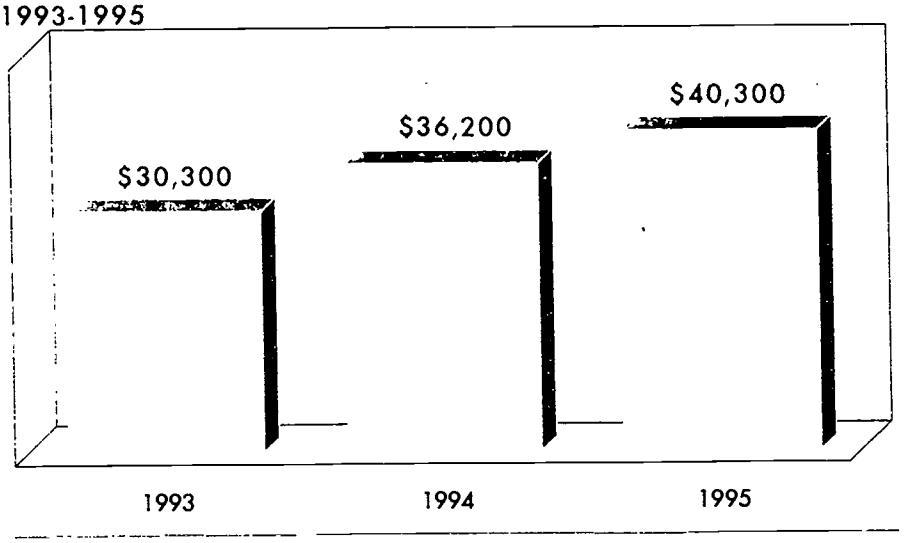
Source: *Summary Report 1994: Doctorate Recipients from United States Universities*, Simmons and Thurgood, 1995.

Average Cumulative Debt, by Program and Control of Institution, 1995



Source: *Medical School Graduation Questionnaire*, Association of American Medical Colleges, 1995, and *Survey of Dental Seniors*, American Association of Dental Schools, 1996.

Increase in Median Cumulative Borrowing Among Law School Graduates, 1993-1995



Note: Numbers represent borrowing occumulated from law school only and include public (federal and other) and private loans, but reflect only those made through The Access Group'.
Source: The Access Group'.

law school graduates grew by 33 percent from $30,300 to $40,300. This jump might relate to the increase in the cost of tuition at law schools during this time: from 1992-93 to 1994-95, the average tuition at law schools increased 17 percent.[24]

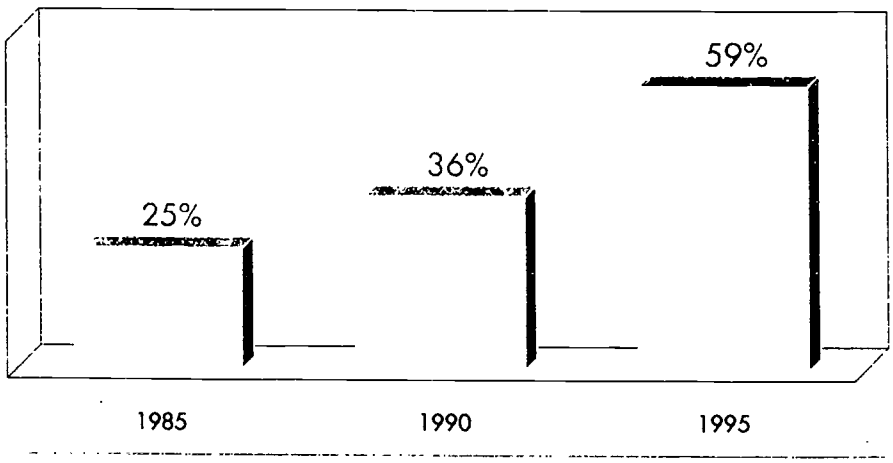
Borrowing is even more commonplace for students graduating from medical school than for law or doctoral students.

> According to a survey conducted by the Association of American Medical Colleges (AAMC), 81 percent of medical school graduates in 1995 acquired some debt over the course of their education.[25]
>
> 72 percent of medical school graduates had more than $25,000 in debt by their graduation, and 33 percent of all 1995 medical school graduates accumulated more than $75,000 in debt by their final year.
>
> The average educational debt for medical students grew steadily over the last few years, from $55,859 in 1992 to $64,059 in 1995—a 15 percent jump in three years.

The survey indicates that the rate of borrowing does not vary by control of institution, with 81 percent of private medical school students and 82 percent of students at public institutions having some debt by graduation. However, students at private medical schools borrowed substantially more, on average, graduating with $84,446 in debt compared to $58,276 in debt for those at public institutions. A smaller, yet still substantial, portion of students at public medical schools graduated with more than $75,000 in debt: 24 percent of students at public

[24] *Digest of Education Statistics, 1995*, National Center for Education Statistics, U.S. Department of Education, 1995.
[25] *Medical School Graduation Questionnaire*, Association of American Medical Colleges, Section for Educational Research, 1995.

Percentage of Seniors in Dental Schools Graduating with More than $50,000 in Loan Debt, 1985, 1990, and 1995



Source: Survey of Dental Seniors, American Association of Dental Schools, 1996.

medical schools graduated with more than $75,000 in debt, compared to 47 percent of students at private medical schools. These students most likely borrowed more because of the higher price of attending a private medical school.

Regardless of the institutional control of their school, medical students across the spectrum have increased their cumulative borrowing significantly in the last 10 years. In 1985, only 3 percent of medical school students graduated with more than $75,000 in debt. Eight percent of the students at private medical schools had amassed this amount, compared to less than 1 percent of those attending public medical schools. Interestingly, in 1985, a slightly larger percentage of medical school attendees borrowed—87 percent, compared with 81 percent in 1995.

Borrowing is the most prevalent among students in dental school. Like medical students, dental students accumulate significantly larger debt levels than doctoral recipients, and that amount has increased steadily.

A survey of dental school seniors by the American Association of Dental Schools shows that 94 percent of dental students used loans to finance their dental education in 1995.[26]

Although 48 percent received some type of scholarship or grant, virtually all students in dental school borrowed funds to pay for their education.

In 1992, dental school seniors graduated owing an average of $55,550 in loans. By

[26] Survey of Dental Seniors, American Association of Dental Schools, 1996.

1995, this figure had grown to $67,772—a 22 percent increase. That same year, 59 percent of dental school seniors graduated with more than $50,000 in loans.

Average cumulative borrowing varied by control of institution for dental students as well. Dental students at "state-related" private institutions and "other private" institutions graduated with $80,839 and $99,456 in loans, respectively, in 1995. In comparison, students at public dental schools graduated with $52,817 in debt.[27]

Law, medical, and dental school students rely more heavily on loans than doctoral recipients for a number of reasons. The lack of other sources of financial aid for professional students, such as institutional and federal fellowships and assistantships, affects their borrowing patterns. The structure of financial assistance for medical and dental students does not include the opportunity to acquire additional income from a teaching assistant position—something a large number of graduate students can utilize. Instead, the primary subsidies that medical students receive come through funding for teaching hospitals, not in the form of assistantships for residents. Without other options for financial assistance, professional students are forced to borrow to pay for their education.

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[27] Public dental schools are supported by state revenues. "State-related" institutions are private institutions that receive a portion of their funds from the state, and "other private" institutions receive no state support. American Association of Dental Schools.

The Impact of Cumulative Borrowing

As this report details, using loans to finance postsecondary education—either undergraduate or graduate and professional—is common for students today. The data show that multiple years of borrowing lead to increasing levels of cumulative debt for all borrowers, particularly for professional students. However, measuring the significance of these debt levels for individuals is more complex than determining the amount that they borrowed. To assess the impact of education debt, average monthly payments have been calculated and compared with the starting salaries of graduates in their field.[28] Although other factors influence how students manage their debt, these comparisons offer a sense of what impact borrowing can have for graduate and professional students in different fields of study.

The calculation of monthly repayment amounts for graduate and professional students is complicated by the variety of loan programs through which students borrow as well as the number of different repayment schedules available. The variety of programs and loan terms require that several assumptions be made before an illustration of repayment amounts can be completed. For purposes of this analysis, an interest rate of 8 percent is used. This rate represents a compromise between the variability in federal loan programs (which currently pulls them below 8 percent) and the slightly higher rate charged by private lenders.[29] The second assumption concerns repayment schedules. In this analysis, the schedule for a standard 10-year repayment plan is assumed. Other repayment options have been established, including extended repayment schedules and income-contingent plans, but the vast majority of borrowers still use a 10-year schedule.

To understand the relationship between the amount borrowed and monthly payments, average monthly payments have been calculated for sample loan amounts. Students borrowing $10,000 for their education would face monthly payments of $121 upon graduation. Borrowing $30,000 would result in monthly payments of $364, while taking out $75,000 in loans would require monthly payments of $910.

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[28] The lack of comprehensive data on cumulative debt levels and salaries stipulate that the calculations performed in this chapter involve data from a number of separate sources. Several assumptions have been made (and footnoted) in bringing these numbers together in order to provide a more complete portrayal of the impact of graduate and professional borrowing.

[29] For example, while federal Stafford loans have a variable interest rate that is capped at 8.25 percent, private loans for law students made through The Access Group' use a variable interest rate based on the 91-day Treasury Bill rate plus 3.25 percent.

Examples of Monthly Student Loan Payments for Student Borrowers

Total Amount Borrowed:	Average Monthly Payment:
$5,000	$61
$10,000	$121
$15,000	$182
$20,000	$243
$30,000	$364
$50,000	$607
$75,000	$910
$100,000	$1,213

Note: Calculations assume a standard 10-year repayment schedule and an 8 percent interest rate.

Monthly Student Loan Payments for Doctoral Recipients, 1993

Field of Study	Cumulative Debt Level	Average Monthly Payment
Physical Sciences	$8,500	$103
Engineering	$9,300	$113
Life Sciences	$9,800	$119
Social Sciences	$14,500	$176
Humanities	$10,000	$121
Education	$10,100	$123
Other	$12,000	$146
Total	$10,500	$127

Note: Calculations assume a standard 10-year repayment schedule and an 8 percent interest rate. Median debt levels were available for Ph.D. recipients, rather than average debt levels. As a result, a normal distribution is assumed for Ph.D. recipients.
Source: *Summary Report 1993: Doctorate Recipients from United States Universities*, Thurgood and Clarke, 1995

To show monthly payments in a more practical scenario, cumulative debt information from the previous chapter has been used to calculate the average monthly repayment amounts for graduate and professional students. These calculations indicate that doctoral recipients, in general, appear to have modest monthly repayment amounts. For example, Ph.D.s in engineering, with a cumulative debt of $9,300, would have a monthly payment of $113, while doctorates in the social sciences, with a cumulative debt of $14,500, would have a monthly payment of $176. For professional students, the average monthly payments are dramatically higher. A medical school graduate with an educational debt of $64,059 would face a monthly payment of $777, while a dental school graduate, with a cumulative debt of $67,772, would have a monthly payment of $822. Law students with a debt level of $40,300 would face a monthly payment of $489 as they begin their careers.

Comparison of Payments to Starting Salaries

To assess the impact of monthly loan payments on graduate and professional students, monthly payments are compared with income levels in the fields in which students received their degrees. Most available information on income by degree attainment and field of study is offered in salary information. Salaries are typically measured in terms of average salary for a field, rather than by the starting salary that graduates earn when they first begin to repay their student loans. Where starting salary information was available, it has been compared with repayment data.[31]

The starting salaries for doctoral recipients show that their monthly loan payments comprise a modest percentage of their gross monthly income, 2-5 percent. This suggests that debt resulting from students loans probably does not represent a substantial burden for many doctoral recipients.[32]

However, other surveys present a more complex picture. Among doctoral recipients in the sciences, for example, starting salaries ranging from

Depending on the loan program utilized, students might receive subsidies that pay the interest on their loans while they are in school and even after school—as is the case for medical school graduates during a residency program. Some federal loans, such as Stafford loans, offer variable interest rates that cannot exceed 8.25 percent, while other federal programs, such as Health Education Assistance Loans (HEAL), limit interest rates to the 91-day Treasury bill, plus 3 percent. Private loan programs do not offer interest subsidies and usually—but not always—use slightly higher interest rates than federal loans.[30]

In addition to variations in interest rates and interest subsidies, students begin repayment at different times depending on the loan program. Most federal loan programs allow students a six-month "grace period" after graduation before they must begin repaying their loans. For students borrowing through the federal subsidized Stafford loan program, interest begins to accrue six months after graduation. For those with loans through the unsubsidized Stafford program, interest accrues as soon as the loan is issued, but repayment still begins six months after graduation. Most private loan programs do not offer a grace period and require repayment to begin immediately upon graduation.

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30 On average, a 2 percent increase in the interest rate translates to about a 10 percent increase in the monthly payment.

31 Data have not been adjusted for inflation.

32 One caveat about these data, however, concerns the lack of accurate information on starting salaries. Much of the data on starting salaries are collected from institutional placement offices that report salary offers made to graduates within a few months of graduation. Since the top graduates are most likely to obtain the highest paying employment offers in the shortest amount of time, these figures could be biased toward those with higher salaries.

Monthly Student Loan Payments for Graduates of Professional Schools, 1995

Medical Schools: 1995	Cumulative Debt Level	Average Monthly Payment
Public	$58,276	$707
Private	$84,446	$1,024
Total	$64,059	$777

Dental Schools: 1995

Public	$52,817	$641
State-Related Private	$80,839	$981
Other Private	$99,456	$1,206
Total	$67,772	$822

Law Schools: 1995

Total	$40,300	$489

Note: Calculations assume a standard 10 year repayment schedule and an 8 percent interest rate. Monthly payments are calculated from average debt levels for medical and dental graduates and from the median debt level for law graduates; thus a normal distribution is assumed for the law graduates.
Source: Association of American Medical Colleges, American Associated of Dental Schools, The Access Group®. Data provided by The Access Group® include public (federal and other) and private loans, but reflect only loans made through this organization.

Comparison of Monthly Student Loan Payments to Monthly Earnings

Doctoral Recipients	Monthly Loan Payment	Starting Salary	Monthly Salary	Loan Payment as a % of Monthly Salary
Mathematics	$103	$39,500	$3,292	3%
Computer Science	$103	$56,513	$4,709	2%
Physics/Astronomy	$103	$50,600	$4,216	2%
Chemistry	$103	$50,933	$4,244	2%
Engineering	$113	$55,200	$4,600	2%
Life Sciences	$119	$41,600	$3,467	3%
Social Sciences	$176	$42,600	$3,550	5%
Humanities	$121	$32,800	$2,733	4%
Education	$123	N/A	N/A	N/A
Other	$146	N/A	N/A	N/A

Note: Calculations assume a standard 10-year repayment schedule and an 8 percent interest rate. Mathematics, computer science, and physics/astronomy are all classified under physical sciences. Starting salary information represents gross income and was obtained from the following sources: for humanities Ph.D. recipients: *Survey of Humanities Doctorates*, National Research Council; for physical sciences Ph.D. recipients: National Association of Colleges and Employers; and for engineering, life sciences, and social sciences Ph.D. recipients: SRS 1991 *Survey of Doctorate Recipients*, National Science Foundation.

$20,000-$25,000 for the growing number of Ph.D. recipients who take positions as "post-docs"—postdoctoral research positions—have been reported.[13] With starting salaries at this level, the loan payments of graduates in the physical sciences would increase from 2-3 percent to 5-6 percent of their monthly income. For Ph.D.s in the life sciences, if their income was $20,000-$25,000, loan payments would comprise 6-7 percent of their monthly income.

For graduates of professional schools, the most extensive information of this type was available for attorneys.[14] Overall, entry-level attorneys in the public sector face high monthly payments. Loan repayments for lawyers working as public defenders and in public interest law comprise as high as 25 percent of their income. Even the highest paid attorneys in the field of legal services pay 19 percent of their income on loan repayment, while those earning near the bottom of the scale in legal services face payments of 27 percent of their salary. Monthly payments for entry-level government attorneys are as high as 20 percent of monthly income.

Attorneys in the private sector fare better in terms of entry-level salaries, but still confront significant monthly debt payments. First-year associates in small law firms must commit 8-15 percent of their salary to loan repayment. Debt payments for associates in large law firms—despite their high salaries—comprise 7-12 percent of monthly income.

Obtaining data on entry-level salaries for medical and dental school graduates was more difficult. Mean salaries for physicians age 35 and under are available; although these figures do not represent starting salaries for physicians, they offer a reference point for comparison with monthly loan payments. Nevertheless, this comparison indicates that family practice physicians and pediatricians face the greatest hardship from their education debt, with monthly payments comprising 8 and 9 percent of their monthly in-

13 Scienc tober, 1992.

14 Salary information was listed in income ranges, and salaries were varied by regional characteristics.

Comparison of Monthly Student Loan Payments to Monthly Earnings, 1995

Type of Attorney	Monthly Loan Payment	Starting Salary	Monthly Salary	Loan Payment as a % of Monthly Salary
Public Defender				
Low Range	$489	$23,856	$1,988	25%
High Range	$489	$45,000	$3,750	13%
Public Interest				
Low Range	$489	$25,000	$2,083	23%
High Range	$489	$60,000	$5,000	10%
Legal Services				
Low Range	$489	$21,685	$1,807	27%
High Range	$489	$30,900	$2,575	19%
Government				
Low Range	$489	$29,898	$2,492	20%
High Range	$489	$43,400	$3,617	14%
Small Firm Associate				
Low Range	$489	$38,254	$3,188	15%
High Range	$489	$72,803	$6,067	8%
Large Firm Associate				
Low Range	$489	$50,000	$4,167	12%
High Range	$489	$87,000	$7,250	7%

Note: Calculations assume a standard 10-year repayment schedule and an 8 percent interest rate. Starting salary information was obtained from *The National Law Journal*, The New York Law Publishing Company, 1995.

come.[35] Physicians in the other specialties confront lower payments—as a percentage of their income—according to these data.

For physicians who practice in community health centers—public health clinics—the burden of debt is even heavier. Salary data for physicians in the areas of family practice, pediatrics, and internal medicine in these clinics reveal that these physicians face monthly payments equal to 12 percent of their income. Starting salaries for physicians in family practice and internal medicine in public clinics are estimated at $60,000-$70,000, translating to monthly loan payments falling in the 13-15 percent range.

Using salary information for physicians does not tell the entire story of the burden of debt for medical school graduates, however. In general, medical students graduate after four years and then enter a residency program, lasting from one to 10 years, depending on the field specialty. As residents, these graduates earn about $25,000-$35,000 annually. In 1995-96, the salary for a first-year resident averaged $31,650.[36] Some of the student loan programs, such as the HEAL program, defer loan payments for four years of a residency program, but interest still accrues. Using the $31,650 salary figure, monthly payments for residents would comprise 29 percent of their income. Even for those with four-year residencies whose loan programs offer deferment options, they still must begin payments with four years of interest added to the principal amount already owed. Thus, medical graduates as residents face extraordinarily high monthly loan payments while those pursuing ca-

[35] Net income is defined as all earnings from medical practice (including fringe benefits and contributions into deferred compensations plans) after expenses and before taxes.

[36] This figure represents the mean salary for first-year residents in the 400 AAMC member hospitols, which include the major teaching hospitals. Association of American Medical Colleges.

Comparison of Monthly Student Loan Payments to Monthly Earnings

Type of Physician	Monthly Loan Payment	Mean Net Income Age 35 and Under, 1993	Monthly Salary	Loan Payment as a % of Monthly Salary
General/Family Practice	$777	$108,700	$9,058	9%
Internal Medicine	$777	$131,000	$10,917	7%
Surgery	$777	$176,400	$14,700	5%
Pediatrics	$777	$113,100	$9,425	8%
Ob/Gyn	$777	$174,300	$14,525	5%
Radiology	$777	$188,300	$15,692	5%
Anesthesiology	$777	$187,900	$15,658	5%
Physicians in Community Health Clinics				
General/Family Practice	$777	$76,731	$6,394	12%
Internal Medicine	$777	$79,377	$6,615	12%
Pediatrics	$777	$78,937	$6,578	12%
Ob/Gyn	$777	$110,575	$9,215	8%

Note: Calculations assume a standard 10-year repayment schedule and an 8 percent interest rate. Assuming that starting salaries for these fields would average lower than the "age 35 and under" category, loan payments would make up even higher proportions of their monthly salaries. Starting salary information represents gross income and was obtained from the following sources: for physicians age 35 and under: *Socioeconomic Characteristics of Medical Practice 1995*, American Medical Association; and for physicians in community health centers: Bureau of Primary Health Care, Health Research and Services Administration.

reers in pediatrics and family medicine also bear the burden of their education borrowing.

Graduates of dental school also face high monthly payments, as a percentage of their monthly income. Data from the American Dental Association show that dentists within five years of graduation from dental school earn $67,750 annually—slightly less than the $67,772 average debt that graduates accumulate.[17] With this starting salary, dental school graduates face monthly payments comprising 15 percent of their income.

Further Effects of Student Loan Debt

The available data indicate that the impact of student loan debt is particularly troubling for the post-graduate lives of many professional students:

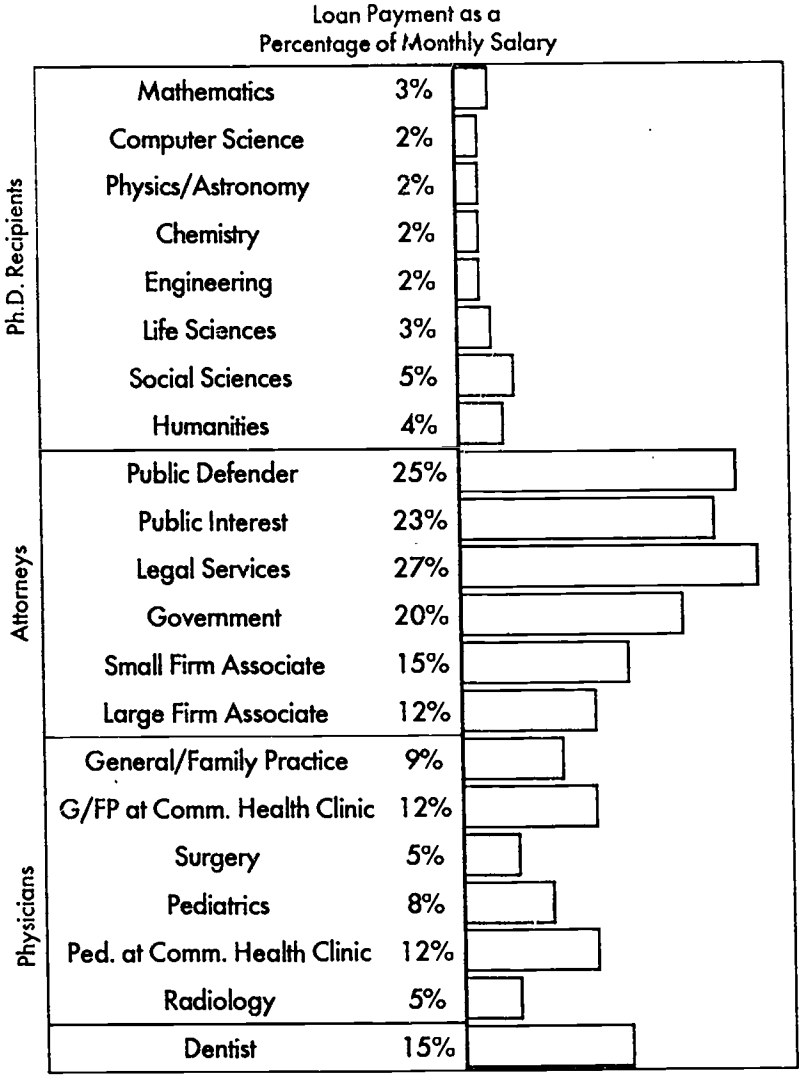
Law school graduates who choose public service-oriented jobs face high monthly payments of up to one-fourth of their monthly income. The prospect of spending a fourth of every month's salary on loan payments probably turns more than one idealistic graduate away from public service as they realize the difficulty of pursuing a career with the burden of substantial student loans.

During their residency programs, medical school graduates' loan payments can comprise up to a third of their monthly income. Particularly if the residency lasts longer than four years or if deferment of payments is not an option, many residents "moonlight," working nights and weekends in hospital emergency rooms to earn extra income. Some graduates go so far

[17] *1994 Survey of Dental Practice: Income from the Private Practice of Dentistry*, American Dental Association, 1995.

[18] American Medical Student Association/Foundation.

Student Loan Debt as a Percentage of Income



Note: Calculations assume a standard 10-year repayment schedule and an 8 percent interest rate.
Sources: Salary information was obtained from the following sources: *Survey of Humanities Doctorates*, National Research Council; National Association of Colleges and Employers; *SRS 1991 Survey of Doctorate Recipients*, National Science Foundation; *The National Law Journal*, The New York Law Publishing Company, 1995; *Socioeconomic Characteristics of Medical Practice 1995*, American Medical Association; and Bureau of Primary Health Care, Health Research and Services Administration.

as to postpone their education at this point in order to pay off their loans.[38]

> **Dental school graduates face high monthly payments of 15 percent of their income.** Increasing their already substantial burden, dentists opening their own practice usually borrow funds to purchase the equipment necessary to start a practice.

While some research has been conducted on the effect of debt on students' career choice, it remains inconclusive. To determine the importance of each piece of a monthly budget, credit underwriting guidelines for mortgage lenders were consulted. These guidelines specify that a potential borrower's debt payments—including mortgage payments—not exceed 33-36 percent of monthly gross income. If student loan payments fall between a quarter and a third of a graduate's monthly income, the probability of meeting these guidelines and securing a mortgage is significantly lower. The burden of borrowing for their education may prevent these students from buying a home early in their lives.

Although their debt is lower than that of professional school graduates, Ph.D. recipients still face sizable monthly payments for their student loans. While these payments probably do not affect significantly their ability to secure a mortgage for a home, they do impact their post-graduate budgets. The circumstances facing Ph.D. recipients in the social sciences who work in the non-profit sector might not be fully reflected in the averages reported in the previous tables. Salaries for Ph.D.'s in other sciences often begin at lower levels than formally reported by placement offices: an informal survey by the magazine *Science* reveals that the increasing number of Ph.D. recipients who take postdoctoral research positions earn salaries at half the levels of those formally reported by placement offices, often for multiple years following graduation.[39]

The trends of increased borrowing and greater levels of cumulative debt could have serious long-term consequences for these students—and the nation—as they start their post-graduate lives. Decreased participation in lower-paying public service-oriented fields, higher default rates, reduced consumption—all of these are potential effects of the ever-increasing borrowing by students to finance their educations.

Comparing loan payments with monthly income does not take into account the problems that some graduates face in securing employment at all. Job placement information shows a lower percentage of Ph.D. recipients with definite post-graduation commitments in the 1990s than in the 1970s and 1980s.[40] Two major studies released in the past few months, from the Journal of the American Medical Association and from the Pew Health Professions Commission, warn that medical school graduates face a tougher job market than in previous years, especially for medical specialists, such as anesthesiologists and gastroenterologists. Recent media reports suggest that the prospects are also dim for law school students: increasing numbers of graduates are taking low-paying jobs as legal assistants or leaving the field altogether. Using average salaries for these graduates to assess the impact of their student loans fails to recognize the increasing difficulty that these graduates face in obtaining jobs that pay these salaries. Furthermore, using salary data—whether starting or median salary—usually assumes that wages will increase over the course of the individual's lifetime and that the economy will support jobs for these individuals—neither of which is guaranteed.

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39 Science, October, 1992.

40 *Summary Report 1994: Doctorate Recipients from United States Universities*, Simmons and Thurgood, 1995.

Conclusion

The findings of this study indicate that borrowing for graduate and professional students is escalating, creating a new class of indebted students and leading to substantial increases both in the total amount borrowed and the total number of students borrowing. The study shows that the rate of increase in borrowing and total debt levels are considerably higher for students in the medical, dental, and law fields than for students in Ph.D. programs. Even with their significantly higher earning potential, students in these professional fields face monthly payments that are prohibitively high in some cases. Attorneys pursuing careers in the public sector and physicians practicing in the fields of pediatrics and family medicine carry a particularly troubling burden of debt.

While this report succeeds in providing a clearer understanding of the amount of debt that graduate and professional students accumulate, it also demonstrates the continued need for further research. The impact of debt after graduation relies in large part on determining at what point loan repayment becomes burdensome. Using mortgage underwriting guidelines—as we have done in this report—provides a common reference point, but when personal circumstances are factored in, the universality of this definition diminishes.

Even with that question decided, the lack of data on starting salaries inhibits conclusive analysis of borrowing's impact on students during the period of repayment. Analysts need to know the income of borrowers during those years rather than the average earnings in a given field. The data reported here present a foreboding picture for graduates of professional school who borrow for their education, but more extensive examination of the effect of debt on career choice is necessary.

In addition, the lack of reliable data on the cumulative debts of master's students represents a significant shortcoming. This gap in national data sources must be filled to gain a truly accurate portrait of graduate student debt.

The picture of student borrowing presented here and in *College Debt and the American Family* highlights some alarming trends: among them, the data show record levels of student loan volume with a greater proportion of low-income and minority students borrowing. While this report demonstrates possible problems for today's graduate and professional students, the combination of accelerated growth in borrowing at both the undergraduate and post-baccalaureate levels portends even greater obstacles for tomorrow's students as they launch their careers.

Student loan financing should be a major area of interest for policymakers and the general public in the coming years. Every effort must be made to ensure that the economic and social benefits that accrue to society because of advanced education are not overtaken by the rising costs to individuals that result from their increased need to borrow.

Appendix

Graduate and professional students have different options for borrowing than undergraduates. Most undergraduates who use loans to finance their education rely on federal Stafford loans—part of the FFEL and FDSL programs—and can borrow a total of $23,000 as dependent students or $46,000 as independent students. Graduate and professional students, though, may borrow a total of $138,500 in FFEL or FDSL loans, including any borrowing at the undergraduate level. For those who exhaust their loan limits or who pursue degrees in specified areas, other loans are available from the federal government and private lenders.

Depending on the type of loan used, students can repay their loans over a number of years. Interest begins accumulating as soon as the loan is issued and is either paid—by the student or the federal government, in the case of subsidized loans—or capitalized to the principal amount borrowed. Most federal loan programs provide a grace period of six months after the student leaves school before loan repayment must begin. Some of the health profession loan programs also offer periods of deferment during residency periods and for some fellowships for a limited number of years.

Standard loan repayment for federal loans spans a maximum of 10 years and includes a minimum monthly payment of $50. However, other, more flexible repayment options are available. For example, recently implemented repayment options for the FDSL program and some of the health profession loans include an income-contingent plan, which requires smaller monthly payments at the beginning of the repayment period and gradually increases payments as the borrower's income rises. A small number of loan forgiveness programs exist as well, offering at least partial forgiveness of loans for a specified number of years of medical or dental service in an area of the country that lacks an adequate number of medical, dental, or other health professionals.

Federal Student Loans

The federal government provides low-interest loans to students for postsecondary education from a number of sources. This report focuses on

Loan Limits Before and After the 1992 Reauthorization

	Before the 1992 Reauthorization		After the 1992 Reauthorization	
	Independent Students	Dependent Students	Independent Students	Dependent Students
Subsidized Stafford				
Freshmen	$2,625	$2,625	$2,625	$2,625
Sophomores	$2,625	$2,625	$3,500	$3,500
Juniors/Seniors	$4,000	$4,000	$5,500	$5,500
Graduate/Professional	$7,500	$7,500	$8,500	N/A
Subsidized Stafford and SLS				
Freshmen	$6,625	$2,625		
Sophomores	$6,625	$2,625		
Juniors/Seniors	$8,000	$4,000		
Graduate/Professional	$11,500	$7,500		
Subsidized and Unsubsidized Stafford				
Freshmen	$6,625	$2,625	$6,625	$2,625
Sophomores	$7,500	$3,500	$7,500	$3,500
Juniors/Seniors	$10,500	$5,500	$10,500	$5,500
Graduate/Professional	$18,500	$8,500	$18,500	N/A
PLUS	Not Eligible	$4,000	Not Eligible	No Limits

Aggregate Maximums	Before the 1992 Reauthorization	After the 1992 Reauthorization
Undergraduate		
Dependent	$17,250	$23,000
Independent	$37,250	$46,000
Graduate/Professional*	$74,750	$138,500
PLUS	$20,000	No Maximum

* Includes loans made at the undergraduate level.

the FFEL and FDSL programs, two of the main loan programs used by graduate and professional students. Other federal loan programs include PLUS loans, campus-based Perkins loans and a number of programs made available through the Department of Health and Human Services, such as Health Professions Student Loans (HPSL). Each program guarantees the loan against default, limits loans to the cost of education, and, with the exception of the PLUS program, has annual and aggregate loan limits.

Federal Family Education Loan (FFEL) Program

Formerly known as the Guaranteed Student Loan program, the FFEL program consists of federal Stafford loans—both subsidized and unsubsidized—and PLUS loans. Through this program, banks, credit unions, and other lenders provide low-interest loans to students. These loans are insured by state or non-profit guarantee agencies, who are in turn "reinsured" by the federal government.

Under the FFEL program, Stafford borrowers begin repayment on their loans after a grace period of six or nine months from the time that they leave school. PLUS borrowers do not have a grace period and begin repayment on their loans immediately from the time that they are disbursed.

Federal Direct Student Loan (FDSL) Program

Created as a pilot program in the 1992 Reauthorization of the Higher Education Act and then established as a full program under the 1993 Omnibus Budget Reconciliation Act, the FDSL program issues federal direct Stafford loans—subsidized and unsubsidized—and federal direct PLUS loans. Unlike the FFEL program, FDSL loans are originated by colleges and universities, with the capital for these loans provided through U.S. Treasury borrowing.

Borrowers in the FDSL program may repay their loans under the standard 10-year repayment plan or through income-contingent plans, which allow borrowers to repay a percentage of their monthly income rather than a fixed payment amount.

Health Education Assistance Loan (HEAL) Program

The HEAL program provides loans to graduate students in schools of medicine, dentistry, optometry, pharmacy, veterinary medicine, and public health. The HEAL program does not require students to demonstrate financial need and charges a higher interest rate than Stafford, HPSL, and LDS loans.

Health Professions Student Loan (HPSL) Program

This program provides long-term, low-interest loans to financially needy students pursuing a degree in medicine, dentistry, optometry, pharmacy, or veterinary medicine. The 1992 Reauthorization of the Health Public Service Act altered the HPSL program to include a stipulation that medical students receiving this loan after July 1, 1993 must complete a residency in primary care and practice in the primary care area for the life of the loan.

Loans for Disadvantaged Students (LDS) Program

The LDS program provides loans to eligible health professions schools for the purpose of making long-term, low-interest loans available for financially needy students pursuing a degree in medicine, dentistry, optometry, pharmacy, or veterinary medicine.

Stafford Loans

The federal Stafford loan program offers low-interest loans to students for college and post-baccalaureate study. Borrowers with *subsidized* Stafford loans—either through the FFEL or FDSL program—have the interest on their loans paid by the federal government, while they are in school and through the grace period—before repayment begins. Students with *unsubsidized* Stafford loans are responsible for the interest on their loans from the date of issue. They can pay the interest as they attend school, or have the interest amount added to the principal of their loan, on which interest accrues. Interest continues to accrue on unsubsidized loans during the grace period.

Students must undergo financial need analysis—to determine the total cost of attendance—in order to qualify for both subsidized and unsubsidized Stafford loans, although they must demonstrate financial need only for the subsidized Stafford program. Graduate and professional students are limited to borrowing a total of $18,500 annually through the Stafford program, including a maximum of $8,500 in subsidized Stafford loans.

Parent Loans for Undergraduate Students (PLUS)

The PLUS loan program issues loans to parents and spouses for the education of their children or spouses. These loans are not subject to annual or aggregate borrowing limits, as of the 1992 Reauthorization.

Supplemental Loans for Students (SLS)

The SLS program was created under the FFEL program to offer loans to independent students without an interest subsidy. The 1992 Reauthorization scheduled the SLS program for elimination as of July 1, 1994 to be replaced by the unsubsidized Stafford program.