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ABSTRACT

This report presents an analysis of the debt levels and debt burdens of recent 4-year college graduates, based on student-reported data from five national surveys taken over the period 1977 to 1990. Report sections first describe the data and methodology of the study; second, present these findings and identify specific sub-groups most likely to exhibit high debt burdens; third, investigate the characteristics of non-working graduates with debt to determine if they are at risk for unmanageable debt burdens; fourth, assess the effect of alternative repayment assumptions on debt burden; and fifth, summarize the key debt burden findings and identify the subgroups of borrowers with potentially high debt burdens. Major findings include the following: (1) in 1986, over 50 percent of 4-year college graduates were indebted, dropping to 45.5 percent in 1990; (2) the median debt level in 1990 was \$7,000, up from \$2,000 in 1977; (3) the median debt burden (ratio of repayments to income) among graduates was highest in 1977 (5.2 percent), falling to 4.7 percent in 1990; and (4) under constant loan repayment assumptions, median debt burden has risen from 3.2 percent in 1977 to 4.7 percent in 1990. Overall, the report concludes that most college students are not overly burdened by their educational loans, except those who work at extremely low-paying jobs. The appendix contains data tables showing debt burden by bachelor's degree recipients and major fields and occupations. (GLR)

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DEBT BURDEN: THE NEXT GENERATION

Final Report

September, 1993

**Westat, Inc.
Rockville, MD**

The views expressed in this report, developed under contract to the U.S. Department of Education, do not necessarily reflect the position or policy of the Department, and no official endorsement by the Department should be inferred.

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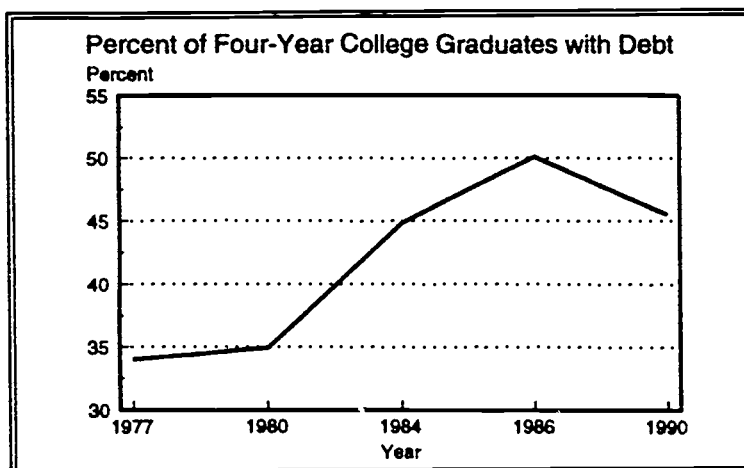
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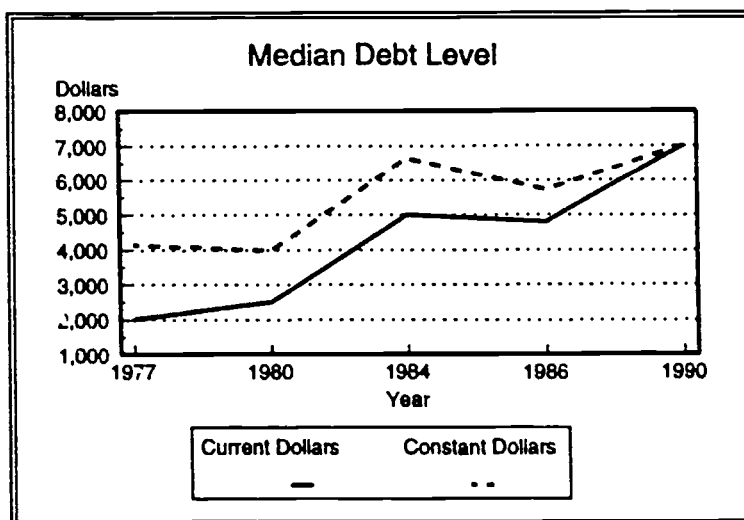
EXECUTIVE SUMMARY

This report presents an analysis of the debt levels and debt burdens of recent four-year college graduates, based on student-reported data from five national surveys taken over the period 1977 to 1990. Debt level refers to the total amount of education loans owed after the first year of graduation. Debt burden refers to the ratio of debt repayment to gross income (earnings) during the first year after graduation.

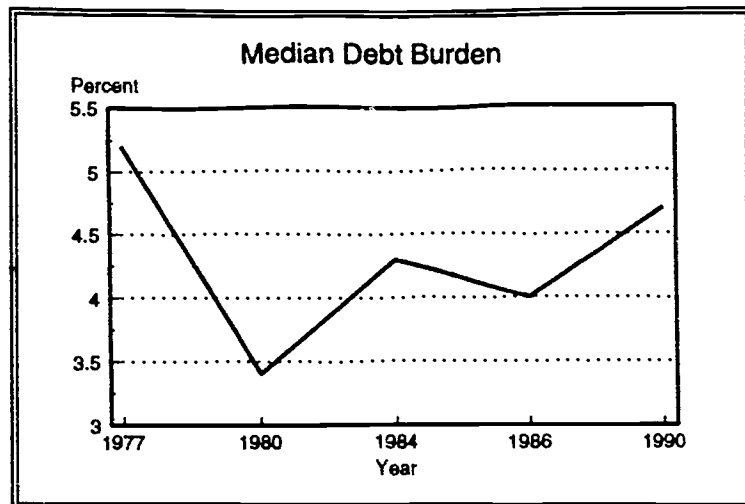
In 1977, only 34 percent of four-year college graduates were indebted at the time of the survey (which was between eight and 20 months after graduation). Through the 1980s the percentage with debt increased rapidly, reaching over 50 percent in 1986. This figure dropped somewhat in 1990, to only 45.5 percent.



The median debt level of college graduates with debt more than tripled during this period, from \$2,000 in 1977 to \$7,000 in 1990. In constant (inflation-adjusted) 1990 dollars, median debt rose 69 percent, from \$4,137 to \$7,000. A median debt level of \$7,000 indicates that half of the graduates had debt above \$7,000 and half below \$7,000.



The median debt burden (ratio of repayments to income) among graduates was at its highest level in 1977 (5.2 percent). It fell sharply in 1980 and climbed somewhat steadily to 4.7 percent in 1990. Fluctuations in debt burden are due mainly to changes in debt level, income, loan interest rates, and length of repayment. Under constant loan repayment assumptions, median debt burden has risen from 3.2 percent in 1977 to 4.7 percent in 1990.



Other Findings

- The percent of 1990 four-year graduates with debt burdens exceeding 10 percent -- a threshold for excessive debt burden -- grew from 6.5 percent in 1986 to 8.3 percent in 1990.
- Because private school students borrowed much more and earned slightly less than public school students, their median debt burden was substantially higher than their public school counterparts (6.2 versus 3.8 percent).
- When examining the data by major field, humanities majors exhibited the highest median debt burden (7.0 percent), while physical science majors exhibited the lowest (3.6 percent). This difference occurred because of the lower median income of humanities majors relative to physical science majors (\$16,000 versus \$29,700).
- Service sector employees exhibited a median debt burden of 5.3 percent, while professional employees experienced a 4.0 percent median debt burden.
- Only 4 percent of 1990 four-year graduates had debt but no income. Of these, one-fifth were enrolled in school and were probably in deferment.
- When the historical debt burdens were re-calculated using 1990 repayment terms, the new estimates were slightly lower than the actual median debt burdens. In fact, the 1977 median debt burden would have been 3.2 percent rather than 5.2 percent.

Conclusions

- The primary cause of excessive first year debt burden -- those exceeding 10 percent of gross income -- among four-year college graduates is low earnings (under \$10,000 per year).
- If real debt level increases continue to outpace real income increases, then debt burdens will undoubtedly increase unless program interest rates are reduced or the term of repayment is lengthened. Manipulation of these repayment terms, possibly through the income-contingent loan program, will be the only direct tool available to policy makers who wish to keep debt burdens below the ten percent threshold.

Caution should be used in interpreting these results due to the following data limitations:

- Unless otherwise indicated, the sample represents graduates of four-year colleges and universities who were not pursuing advanced degrees. For students not completing four-year degrees, debt levels and burdens were approximated using outside data sources.
- The data refer to debt owed at the time of the survey, not at the time of graduation. Therefore, any loans that were paid in full prior to the survey were excluded. Students included in the survey graduated anywhere from July 1, 1989 to June 30, 1990, while the survey was administered from July to December 1991.
- The data do not provide the terms of a student's repayment obligation. Therefore, we applied assumptions regarding interest rate and length of repayment period to the remaining principal at the time of the survey to calculate debt burdens.
- The estimated debt burdens are for the first year after graduation. Because incomes tend to grow while debt payments remain fairly constant, debt burdens will decrease over time. Thus, our estimates tend to represent the upper limits on debt burden.

I. INTRODUCTION

In 1966, the federal government instituted what is now known as the Federal Family Education Loan Program (FFELP), which ensured that low-interest, long-term loans were available to students attending postsecondary institutions. The FFELP grew steadily from its inception through the 1970s. In the middle 1970s concern grew over the ability of moderate income families to finance postsecondary study because their incomes were too high to qualify for federal aid, yet were not high enough to fully fund a college education. To alleviate this problem Congress passed the Middle Income Assistance Act in 1978, which extended FFELP eligibility to all students, regardless of family income. Consequently, the number of loans and the annual loan volume skyrocketed during FY 1979 and FY 1980. Although the 1980s saw restrictions again placed on eligibility, tuition increases exceeded the rate of inflation, which further spurred growth in the federal lending programs. The annual number of loans increased from 863,000 in FY 1970 to 4.5 million in FY 1990. During this same period, volume exploded from \$811 million to \$12.3 billion.

This precipitous growth in FFELP has generated concern over student indebtedness. The popular media often report on individuals who acquire large amounts of education debt and are then unemployed or underemployed to such an extent that they feel a tremendous burden in meeting repayments. The burden is often so great, the media tells us, that students are delaying making large-scale purchases (such as houses or cars), getting married, or having children. In short, the popular media uses anecdotal evidence to suggest that our system of financing postsecondary education is over-burdening an entire generation of Americans.

Does the available data support this conclusion? Before attempting to answer this question, we must first develop an indicator of excessive education debt burden. Cumulative debt levels alone do not show the degree of hardship placed on those in repayment. The average monthly payment may be extremely burdensome on an individual with low income and of little burden on an individual with high income. Therefore, an appropriate indicator of the hardship of repayment must include both components -- annual repayment level and annual income. Debt burden (the ratio of annual repayment to annual income) reflects the ability of students to repay their loans and suggests the level of hardship endured during the repayment period.

Researchers have not developed a consensus as to what size debt burden constitutes unmanageable debt. Thresholds range from 3-15 percent. A previous Department of Education report suggests that a convenient and defensible level of excessive debt burden should be 10 percent because mortgage lenders generally expect a family's non-housing debts not to exceed 10 percent.¹ This report considers debt burdens greater than 10 percent to be excessive, and uses this as a guideline for comparing changes across years. The terms "excessive debt burden" and "unmanageable debt burden" will be used interchangeably to characterize burdens greater than 10 percent.

This report uses data from a recent national survey of four-year college graduates to determine incidence of indebtedness, debt levels, and debt burdens of a recent graduating class. Section II describes the data and methodology used in the analysis. In Section III, we present these findings and identify specific sub-groups of the population who are the most likely to exhibit high debt burdens. In Section IV, we investigate the characteristics of non-working graduates with debt to determine if they were at risk for unmanageable debt burdens, and, in Section V, we assess the effect of alternative repayment assumptions on debt burden. In Section VI, we summarize the key debt burden findings and identify the subgroups of borrowers with potentially high debt burdens.

¹ "Debt Burden Facing College Graduates." Prepared for the U.S. Department of Education, Office of Policy and Planning, under contract No. LC89082001.

II. DATA AND METHODOLOGY

This report presents an analysis of debt levels and debt burdens reported by 1989-90 graduates of four-year colleges and universities in the 1991 Recent College Graduate Survey (RCG:91). The survey was conducted using a nationally representative sample of graduates who received their bachelor's degrees between July 1, 1989 and June 30, 1990. It provides data on each graduate's major field of study, debt level, occupation, income, and other demographic characteristics. The RCG:91 is the latest in a series of surveys of college graduates conducted for the National Center of Education Statistics. The surveys cover the graduating classes of 1977, 1980, 1984, 1986, and now, 1990.

We limited our analysis to bachelor's degree recipients who were not enrolled in postsecondary education at the time of the survey (July-December, 1991). Borrowers were defined as students who borrowed education funds from any source, including the government, parents, institutions, etc. and who were still in the process of repaying at the time of the interview. By including borrowing from parents, banks, etc., we have a more comprehensive view of indebtedness than if we analyzed borrowing from the government alone. However, by excluding those loans that were paid in full by the interview date, we may be underestimating the percent with debt, especially among students who may have taken small loans that they were able to repay within the time between graduation and the interview.

The RCG:91 data do not indicate the repayment terms of the student's loan. For our analysis, we assumed that all education debt was borrowed under the federal Stafford loan program. As a result, repayment terms are assumed to be eight percent for 10 years, as was the case for Stafford loans taken during the four years preceding graduation.² These assumptions are applied to the existing principal at the time of the survey, not at the time of graduation. While this is consistent with previous studies, it includes some borrowers who have begun repaying their loans. As a result, the monthly payment

² The 1986 Amendments to the Higher Education Act instituted a new interest rate provision for new borrowers who secured loans after July 1, 1988. Some borrowers in the RCG sample probably fall under this provision. Loan interest rates under the new provisions are fixed at 8 percent for the first four years of repayment and then rise to 10 percent for the remainder of the repayment period. However, if general interest rates fall below a certain level, borrowers are to be credited for excess interest payments. The quarterly credit is equal to 10 percent minus the sum of the 91-day Treasury bill rate plus 3.25 percent, multiplied by the outstanding loan balance, and all divided by four. According to administration forecasts in the 1993 Economic Report of the President, 91-day Treasury bills are to yield no higher than 4.4 percent between now and 1998. In this current low interest rate environment, borrowers who secured loans under this provision will probably pay the equivalent of somewhat less than 8 percent over the life of their loans. As a result, our assumption to use 8 percent over 10 years would, at worst, yield a slight overestimate in annual repayments and, correspondingly, in debt burdens.

estimates we assign to them will be biased downward slightly, as will the debt burden estimates. The effect of alternative repayment assumptions on debt burdens is discussed in Section V.

III. DEBT BURDEN FINDINGS

Percentage with Debt, Median Debt, and Income Levels

The percentage of four-year college graduates who left school with some educational debt rose steadily from 34.0 percent in 1977 to 50.1 percent in 1986, and dropped off somewhat in 1990 to 45.5 percent (see Table 1). This small decline may reflect changes in the family's decision-making process regarding the choice of institution. Families faced with rapidly rising tuition costs may have decided to enroll their students in lower cost institutions, thereby reducing the need to borrow.

The median debt level more than tripled between 1977 and 1990, from \$2,000 to \$7,000. In constant 1990 dollars, median debt increased by 69 percent, from \$4,137 to \$7,000. In constant dollars, the 1990 value represents the highest median debt exhibited by four-year college graduates to date.

Income was defined as the annual earnings from work on a job held during April, 1991.³ Median first-year incomes more than doubled from 1977 to 1990 (see Table 2). In constant 1990 dollars, median income actually fell slightly, from \$20,680 to \$20,500.

Table 1. Percentage with debt and median debt, in current and constant dollars, for bachelor's degree recipients: 1977, 1980, 1984, 1986, 1990

Year	Percent with debt	Median debt ^{a/}	
		Current dollars	Constant dollars ^{b/}
1977	34.0	\$2,000	\$4,137
1980	34.9	2,500	3,970
1984	44.8	5,000	6,635
1986	50.1	4,800	5,724
1990	45.5	7,000	7,000

Source: Surveys of Recent College Graduates.

^{a/} Of those with debt.

^{b/} In 1990 dollars.

³ To the extent that graduates receive unearned income such as dividends and interest, the income estimates are underestimated and debt burdens are overestimated.

Table 2. Debt burden of bachelor's degree recipients in their first year after graduation, with debt and employed: 1977, 1980, 1984, 1986, 1990

Year	Median debt ^{a/}	Median first-year income ^{b/}	Percent with first-year income ^{c/}	Median first-year debt burden ^{d/} (percent)
1977	\$2,000	\$10,000	88.8	5.2
1980	2,500	13,280	88.3	3.4
1984	5,000	16,700	90.8	4.3
1986	4,800	18,600	90.6	4.0
1990	7,000	20,500	91.1	4.7

Source: Surveys of Recent College Graduates, Westat computations.

^{a/} Of those with debt

^{b/} Of those with debt and first-year income.

^{c/} The median of individual debt burdens, not the ratio of median debt to median first-year income. Individual debt burdens are calculated as the ratio of annual repayment to gross income. Annual repayment is the total of monthly payments required to amortize the debt. Computed only for those with debt and first-year income.

Debt Burdens

Individual debt burdens (ratio of annual repayment to annual income) were calculated for each college graduate that had both debt and income. From 1977 to 1990, the overall median debt burden declined slightly, from 5.2 to 4.7 percent.⁴ This financial indicator is well below the 10 percent threshold, above which debt is considered unmanageable. However, the 1990 level is up from the 1986 level of 4.0 percent. Median debt increased more quickly than median income, which produced the slight increase in median debt burden.

Compared to public school graduates, 1990 private school graduates were more likely to graduate with debt, and, among those with debt, experience a much higher median debt (see Table 3). Surprisingly, median first-year income was actually lower for private school students, and with higher median debt, this resulted in a higher median debt burden for private school graduates (6.2 percent) than for public school graduates (3.8 percent). Private school graduates comprised approximately 33 percent of four-year college graduates.

⁴ The dramatic drop in median debt burden between 1977 and 1980 is due primarily to an increase in the assumed period of repayment -- from five to seven years. See Section VI for details on the affects of alternative repayment assumptions.

Table 3. Estimated debt burden for bachelor's degree recipients in their first year after graduation, by control of institution: 1990

Control	Weighted count	Percent with debt	Median debt ^{a/}	Percent with first-year income ^{a/}	Median first-year income ^{b/}	Median first-year debt burden ^{c/} (percent)
Public	546,650	41.6	\$5,000	91.9	\$20,800	3.8
Private	273,193	53.3	9,000	90.0	20,000	6.2
All	819,843	45.5	7,000	91.1	20,500	4.7

Source: 1991 Survey of Recent College Graduates.

^{a/} Of those with debt.

^{b/} Of those with first-year income and debt.

^{c/} The median of individually computed debt burdens, not the ratio of median first-year income. Computed only for those with debt and first-year income.

The decline from 1986 to 1990 in the portion of graduates that incur debt (Table 1) appears to be a positive finding -- a smaller portion of four-year college students need loans. However, among those students who did indeed take loans, a larger portion had debt burdens above the 10 percent threshold (see Table 4). The proportion of graduates with debt burdens greater than 10 percent rose from 6.5 to 8.3 percent. Much of this increase can be attributed to private school students, among whom the percentage with excessive debt burdens increased from 9.2 to 13.0 percent.

Differences by Field of Study

When distributed by major field of study, humanities majors exhibited the greatest median debt burden -- 7.0 percent (see Table 5). Humanities majors had both the highest median debt level (\$8,000) and the lowest median income (\$16,000) of all majors. Humanities majors accounted for approximately 9 percent of all college graduates in 1990.

This finding was further supported by an analysis of debt by detailed major field (see Table A-1). The majors that produced graduates with low median debt burdens were the sciences, especially the physical sciences, engineering, and computer and information sciences.

Table 4. Percentage distribution of bachelor's degree recipients by level of debt burden in their first year after graduation and by control of institution: 1990

Level of first-year debt burden	Control of institution		
	Public (percent)	Private (percent)	All institutions (percent)
<u>1986</u>			
No Debt	51.3	46.1	49.9
> 0 ≤ 5%	28.2	23.9	26.6
> 5 ≤ 10%	10.7	16.2	12.2
Over 10%	5.0	9.2	6.5
Not Calculable ^{a/}	3.9	4.8	4.8
<u>1990</u>			
No Debt	58.3	46.7	54.5
> 0 ≤ 5%	23.2	19.3	21.9
> 5 ≤ 10%	9.1	15.4	11.2
Over 10%	5.9	13.0	8.3
Not Calculable ^{a/}	3.5	5.6	4.1

Source: 1991 Survey of Recent College Graduates.

^{a/} A debt burden ratio cannot be computed for those who have debt but no first-year income at the time surveyed.

Differences by First Occupation

In general, professional workers enjoyed the lowest median debt burden (4.0 percent), while graduates employed in service occupations exhibited a median debt burden of 5.3 percent (see Table 6). Professional and service workers accounted for 53 and 10 percent of all working 1990 graduates, respectively. This difference in median debt burdens is due primarily to higher relative incomes of professional workers. When teachers were separated from other professionals, their median debt burden stood at 5.4 percent, while the median burden for the remaining professionals fell to 3.6 percent (see Table A-2).

An inspection of debt burdens by detailed occupation shows that the occupations of handlers, equipment cleaners, helpers, laborers, and military personnel exhibited the greatest median debt burden -

Table 5. Debt burden of 1990 bachelor's degree recipients, by major field

Major Field	Weighted count	Percent with debt	Median debt ^{a/}	Annual repayment ^{b/}	Percent with income ^{c/}	Median income ^{c/}	Median first-year debt burden ^{d/} (percent)
Humanities	71,976	49.6	\$8,000	\$1,165	86.7	\$16,000	7.0
Social Sciences	146,638	48.9	6,500	946	89.7	18,000	5.2
Education	83,223	53.5	6,000	874	95.8	18,400	5.1
Other	109,774	45.3	6,000	874	90.8	17,700	5.2
Biology	22,259	53.5	6,000	874	89.4	20,000	4.7
Business	221,957	42.1	6,500	946	90.8	21,000	4.4
Physical Sciences	164,016	50.1	7,500	1092	93.0	29,700	3.6
All	819,843	45.5	7,000	1,019	91.1	20,500	4.7

^{a/} Of those with debt.

^{b/} Loan terms of 8 percent for 10 years were assumed.

^{c/} Of those with debt and first-year income.

^{d/} The median of individual debt burdens, not the ratio of median debt to median income in the first year after graduation. Individual debt burdens are calculated as the ratio of annual repayment to gross income, where annual repayment is the total of monthly payments required to amortize the debt. Computed only for those with debt and first-year income.

Table 6. Debt burden of 1990 bachelor's degree recipients, by first occupation

Occupation	Weighted count	Percent with debt	Median debt ^{a/}	Annual repayment ^{b/}	Median income ^{c/}	Median first-year debt burden ^{d/} (percent)
Service	71,249	48.7	\$6,200	\$903	\$15,600	5.3
Sales/Administration	275,501	45.5	6,500	946	19,800	4.2
Professional	396,102	50.0	6,800	990	21,800	4.0
Not employed	76,991	42.5	7,600	1,106	--	--
All	819,843	45.5	7,000	1,019	20,500	4.7

^{a/} Of those with debt

^{b/} Loan terms of 8 percent for 10 years calculated were assumed.

^{c/} Of those with debt and first-year income.

^{d/} The median of individual debt burdens, not the ratio of median debt to median income in the first year after graduation. Individual debt burdens are calculated as the ratio of annual repayment to gross income, where annual repayment is the total of monthly payments required to amortize the debt. Computed only for those with debt and first-year income.

- 11.1 percent (see Table A-3). However, these workers comprised less than 1 percent of the working graduate population. Those with the next highest median debt burden were employed in service occupations, which exhibited a median debt burden of 6.8 percent (6 percent of working graduates).⁵ The lowest median debt burden was enjoyed by those in the repair occupations, although the number of workers in this category was relatively small (.5 percent). Among occupations with significant numbers of workers, engineers, natural scientists, and mathematicians exhibited debt burdens below 4 percent.

Differences by First-Year Income

Not surprisingly, graduates with low incomes exhibited the highest median debt burden (see Table 7). For those making under \$10,000 the median debt burden was 14.6 percent, which easily surpasses the 10 percent threshold of unmanageable debt. Graduates with low incomes accounted for 9 percent of all working graduates. Incomes this low probably resulted from working part-time or at a low-wage job. For individuals making over \$30,000, the median debt burden was only 2.5 percent.

Differences by Gender and Marital Status

Among 1990 graduates, median female debt burden was 4.9 percent compared to 4.4 percent for males (see Table 8). The median debt level was actually higher for males (\$7,000 vs. \$6,800), which indicates that the gender difference in median debt burden was due entirely to a lower median income for females.

Median debt burden of 1990 graduates also differed by marital status. Married graduates exhibited a median debt burden of 4.1 percent, compared to 4.9 percent for unmarried graduates.

⁵ For the detailed occupation analysis, some jobs that were considered "service" in Table 6 were extracted and placed in more descriptive occupational titles for Table A-3. Therefore, the service group in Table 6 is larger than in Table A-3.

Table 7. Debt burden of 1990 bachelor's degree recipients, by starting salary

Salary	Weighted count	Percent with debt	Median debt ^{a/}	Annual repayment ^{b/}	Median income ^{c/}	Median first-year debt burden ^{d/} (percent)
Under \$10,000	65,335	50.8	7,000	1,019	6,600	14.6
\$10,000-19,999	255,213	51.2	6,500	946	15,600	5.6
\$20,000-29,999	272,541	47.7	6,000	874	24,000	3.3
\$30,000+	149,763	40.7	7,500	1,092	34,000	2.5
Not employed	76,763	42.5	7,600	1,106	--	--
All	819,843	45.5	7,000	1,019	20,500	4.7

^{a/} Of those with debt.

^{b/} Loan terms of 8 percent for 10 years were assumed.

^{c/} Of those with debt and first-year income.

^{d/} The median of individual debt burdens, not the ratio of median debt to median income in the first year after graduation. Individual debt burdens are calculated as the ratio of annual repayment to gross income, where annual repayment is the total of monthly payments required to amortize the debt. Computed only for those with debt and first-year income.

Table 8. Debt burden of 1990 bachelor's degree recipients, by gender and marital status

Gender And Marital Status	Weighted count	Percent with debt	Median debt ^{a/}	Annual repayment ^{b/}	Percent with income ^{c/}	Median income ^{c/}	Median first-year debt burden ^{d/} (percent)
Female	436,580	44.6	\$6,800	\$990	91.1	\$19,900	4.9
Male	383,263	46.6	7,000	1,019	91.2	22,000	4.4
Married	223,072	41.2	6,000	874	90.2	21,300	4.1
Not Married	596,771	47.1	7,000	1,019	91.5	20,000	4.9
All	819,843	45.5	7,000	1,019	91.1	20,500	4.7

^{a/} Of those with debt.

^{b/} Loan terms of 8 percent for 10 years were assumed.

^{c/} Of those with debt and first-year income.

^{d/} The median of individual debt burdens, not the ratio of median debt to median income in the first year after graduation. Individual debt burdens are calculated as the ratio of annual repayment to gross income, where annual repayment is the total of monthly payments required to amortize the debt. Computed only for those with debt and first-year income.

IV. CHARACTERISTICS OF INDEBTED NON-WORKING GRADUATES

The RCG:91 data show that 4.0 percent of college graduates had debt but were not working during the week of April 22, 1991. Student debt may be unmanageable for these graduates if no other source of income is available to meet repayment obligations. While the RCG:91 does not provide specific data on whether alternative sources of repayment funds were available, it does provide the characteristics of these indebted non-workers and their reason for not working.

In general, indebted non-workers were very similar to indebted working graduates in gender and marital status (see Table 9). Both groups were approximately one-half male and one-half female and 27 percent of both groups were married. Since the marital status distributions were identical, we conclude that graduates do not make employment decisions based on marital status. Note also that private school graduates were disproportionately represented among non-working graduates.

Table 9. Distribution of indebted working and non-working 1990 bachelor's degree recipients, by gender, marital status, and control of institution

Characteristic	Working graduates (percent)	Non-working graduates (percent)
Gender		
Male	46.8	48.5
Female	53.1	51.5
Marital Status		
Married	27.2	27.2
Not Married	72.8	72.8
Control of Institution		
Public	66.7	55.4
Private	33.3	44.6

Since this paper is concerned with identifying possible pockets of high debt burden, it is instructive to look at the reasons these graduates cited for not working. The reasons for not working provide insight into the question of whether these graduates experienced high debt burden levels (see Table 10). Reasons for not working, the percent indicating this reason, and assumptions regarding debt burden are presented below.

- **Going to school (19.3%)⁶:** Individuals enrolled in school during April, 1991 were probably granted loan deferment. Because they were not in repayment, they did not experience debt burden.
- **Already secured a new job (4.8%):** Although these graduates may have been highly burdened in April because of unemployment, their burdens should have decreased sharply as they began working the new job.
- **Family responsibilities, not wanting to work, retired, or other (24.1%):** We assume that these individuals were not actively engaged in a job search. Whether or not they felt a debt hardship is unclear given that no data on outside sources of income is available.
- **Moving/travelling/relocating (5.2%):** It is unclear whether these graduates were actively looking for work during their periods of transition. Debt burden may have been excessive if no other sources of income were available.
- **Could not find a job respondent wanted or laid off (46.6%):** These graduates were considered unemployed since they were participating in the labor force but were not employed. Although outside sources of income may exist, we assume that the burden for these individuals is high because they want to work, perhaps, to meet financial obligations.

⁶ Students enrolled at the time of the survey, July-December 1991, were excluded from the entire debt burden analysis. However, some graduates, although they were not enrolled at the time of the survey, were enrolled during April 1991, and comprise this group.

Table 10. Reasons cited for not working in April, 1991

Reason Not Working	All (percent)	Gender		Marital Status		Control of Institution	
		Males (percent)	Females (percent)	Married (percent)	Unmarried (percent)	Public (percent)	Private (percent)
Going to school	19.3	16.7	21.8	15.2	20.8	18.5	20.2
Family responsibilities	10.6	1.1	19.5	28.8	3.8	13.5	7.0
Could not find a job respondent wanted	35.3	42.3	28.6	29.8	37.3	34.3	36.4
Did not want to work	4.0	4.0	4.1	3.9	4.1	4.7	3.2
Already secured a new job	4.8	7.0	2.7	5.6	4.5	3.7	6.2
Laid off	11.3	14.3	8.5	6.9	13.0	11.0	11.7
Retired	.1	.3	--	0	.2	.3	0
Moving/traveling/ relocating	5.2	3.9	6.4	4.1	5.5	5.2	5.1
Other	9.4	10.4	8.4	5.7	10.8	8.8	10.2

In summary, approximately 4 percent of the estimated 819,843 college graduates had debt and were not working in April of 1991. Almost one-fifth were enrolled in school, probably in deferment, and were at no risk of having high debt burdens. Almost one-half were unemployed and were possibly experiencing severe debt burden. Because of the unavailability of data, we cannot determine whether the remaining 30 percent were experiencing great burden. Overall, only about three percent of all four-year college graduates were likely candidates for high debt burdens because they had debt but were not working.

V. ALTERNATIVE REPAYMENT ASSUMPTIONS

Differences in debt burdens over time are a result of a number of factors. Recall that debt burden is defined as the ratio of annual repayments to annual income. Differences in annual repayment are a function of different debt levels, loan interest rates, and repayment periods. First-year incomes for college graduates fluctuate over time due to the changing structure of the economy and the overall health of the economy. In this section we identify the effects of alternative loan term assumptions on the historical debt burden estimates.

The terms of loan repayment used in this study differed for each survey year (see Table 11). These term assumptions were based on the terms offered by FFELP in the years leading up to graduation. Note that an 8.5 percent rate was assumed for 1986 because loans were probably taken at both 8 and 9 percent interest.

In general, we expect that with all other factors held constant, higher interest rates should produce higher debt burdens because the "total paid back" would be greater than at a lower interest rate. Similarly, shorter repayment periods should result in higher debt burdens because repayment is compressed into a short time span, necessitating larger annual payments.

Table 11. Assumptions Regarding Repayment Terms

Year	Interest Rate (percent)	Period (years)
1977	7	5
1980	7	7
1984	9	10
1986	8.5	10
1990	8	10

To quantify the relationship between alternative repayment assumptions and debt burdens, we calculated adjustment factors which convert a debt burden using one set of terms to a debt burden using an alternative set of terms. These factors can be used to put all debt burden calculations in this report on an equal basis. In developing these adjustment factors, we first calculated the monthly payments per \$1,000 borrowed under each year's repayment terms assumptions. The adjustment factor is then expressed as the ratio of the monthly payment for the new year (the year's terms that debt burden will be converted to) to the monthly payment for the base year (the year's terms that the debt burden will be converted from).

$$\text{Adjustment Factor} = \frac{\text{Monthly Payment}_{\text{new year}}}{\text{Monthly Payment}_{\text{base year}}}$$

To use these adjustment factors, an analyst must multiply the actual debt burden in a given year (base year) by the factor that corresponds to the base year and the desired new year. For example, to adjust the 1977 median debt burden to 1990 repayment terms, multiply the 1977 estimate of 5.2 by .6128 to get a median debt burden of 3.2. This indicates that if the loan terms had been 8 percent for 10 years (new year's terms), the 1977 debt burden would have been 3.2 percent rather than 5.2 percent (see Table 12).

Table 12. Adjustment Factors and Debt Burdens Adjusted to 1990 Terms

Base Year (converted from)	New Year (converted to)					Debt Burden Adjusted to 1990 Terms
	1977	1980	1984	1986	1990	
1977	1.0000	.7621	.6399	.6263	.6128	5.2 * .6128 = 3.2
1980	1.3121	1.0000	.8396	.8217	.8038	3.4 * .8038 = 2.7
1984	1.5627	1.1910	1.0000	.9787	.9574	4.3 * .9574 = 4.1
1986	1.5968	1.2169	1.0218	1.0000	.9782	4.0 * .9782 = 3.9
1990	1.6323	1.2440	1.0445	1.0223	1.0000	4.7 * 1.000 = 4.7

These adjustment factors allow the analyst to remove the affect of different terms of repayment on debt burdens through time. For instance, if all median debt burden estimates were adjusted to the 1990 terms of 8 percent for 10 years, then the median debt burden would have increased from 3.2 percent to 4.7 percent. These data suggest that the relatively high debt burdens of 1977 and 1984 are due, in part, to the shorter repayment period, and higher interest rate, respectively.

If real debt level increases continue to outpace real income increases, then debt burdens will undoubtedly increase unless program interest rates are reduced or the term of repayment is lengthened. Manipulation of these repayment terms, possibly through the income-contingent loan program, will be the only direct tool available to policy makers who wish to keep debt burdens below the 10 percent threshold.

VI. CONCLUSIONS

The primary finding of this analysis is that, consistent with previous research and contrary to popular opinion, the vast majority of college graduates who borrow are not experiencing excessive debt burden. In fact, fewer than half of the 1990 college graduates were in debt less than one year after graduation. Among those with debt, the median debt burden was 4.7 percent. That is, their annual repayments were only 4.7 percent of their first-year's gross income. This is well below the excessive debt threshold of 10 percent, which mortgage lenders consider excessive for non-housing debt.

However, the percent with debt burdens greater than 10 percent has grown since 1986, from 6.5 to 8.3 percent. One specific sub-group that faces relatively larger debt burdens are those graduates earning less than \$10,000 per year. The median debt burden for these graduates was 14.6 percent.

Another sub-group that is at high risk for excessive debt burdens are those who had debt but were not working. This group has relatively few members, however. Less than four percent of the 1990 college graduates were indebted and not working.

Finally, we conclude that terms of repayment have an affect on debt burdens. In the past, however, a relatively high interest rate of 9 percent (1984) and a relatively short repayment period of five years (1977) did not generate an inordinately high median debt burden.

In summary, the data indicate that most college students are not overly burdened by their education loans. The main risks for high debt burdens are to those who work at extremely low-paying jobs.

APPENDIX

Table A-1. Debt burden of 1990 bachelor's degree recipients, by detailed major field

Major field	Weighted Count	Percent with debt	Median debt ^{a/}	Annual repayment ^{b/}	Percent with income ^{a/}	Median income ^{c/}	Median first-year debt burden ^{d/} (percent)
HUMANITIES							
Foreign Languages	6,082	53.9	8,000	1,165	88.2	17,700	9.3
Visual and Performing Arts	33,413	47.7	8,000	1,165	83.8	14,600	8.0
Letters	27,007	43.2	8,000	1,165	89.2	16,900	6.8
Philosophy and Religion	4,367	55.4	7,000	1,019	88.9	19,500	5.0
Theology	1,107	N/A	N/A	N/A	N/A	N/A	N/A
SOCIAL SCIENCES							
Parks and Recreation	1,923	59.3	5,000	728	100	13,500	5.9
Public Affairs	10,982	53.3	6,500	946	93.4	17,300	5.8
Protective Services	12,757	47.8	6,000	874	92.9	18,700	5.4
Psychology	34,250	47.0	6,500	946	85.2	17,900	5.3
History	15,433	45.6	5,000	728	90.3	18,000	5.0
Social Sciences	71,293	46.2	7,000	1,019	90.2	18,700	4.9
EDUCATION							
Education	83,224	53.5	6,000	874	95.8	18,400	5.1
OTHER							
Area and Ethnic Studies	2,237	42.4	\$9,500	\$1,383	88.9	\$16,800	12.0
Multi/Interdisciplinary	2,465	36.4	9,000	1,310	74.3	25,000	7.3
Leisure and Recreation	3,546	45.4	9,000	1,310	94.7	15,600	7.1
Home Economics	6,617	52.3	7,750	1,128	90.7	18,000	6.3
Library/General	11,563	30.4	6,000	874	85.5	15,600	6.3
Communications	52,422	44.0	6,000	874	90.9	16,700	5.5
Agricultural Sciences	2,249	61.3	5,500	801	100	18,000	5.0
Architecture/Env. Design	9,850	41.2	7,000	1,019	88.9	20,000	5.0
Natural Resources	2,656	50.2	7,000	1,019	77.3	19,400	5.0
Voc. Home Economics	3,085	36.8	5,700	830	96.6	15,900	5.0
Transportation	4,262	46.8	8,600	1,252	100	22,800	4.7
Industrial Arts	355	39.0	8,000	1,165	100	30,000	3.9
Agribusiness	4,712	44.5	5,800	844	94.0	20,800	3.4

Table A-1. Debt burden of 1990 bachelor's degree recipients, by detailed major field

Major field	Weighted Count	Percent with debt	Median debt ^{a/}	Annual repayment ^{b/}	Percent with income ^{c/}	Median income ^{c/}	Median first-year debt burden ^{d/} (percent)
Law	1,921	52.1	5,000	728	100	17,500	2.9
Communication Tech.	234	N/A	N/A	N/A	N/A	N/A	N/A
Construction Trades	646	N/A	N/A	N/A	N/A	N/A	N/A
Consumer, Misc. Services	0	N/A	N/A	N/A	N/A	N/A	N/A
Mechanics and Repairers	100	N/A	N/A	N/A	N/A	N/A	N/A
Military Sciences	306	N/A	N/A	N/A	N/A	N/A	N/A
Precision Production	549	N/A	N/A	N/A	N/A	N/A	N/A
BIOLOGY							
Life Sciences	22,259	53.5	6,000	874	89.4	20,000	4.7
BUSINESS							
Business Administration	1,690	48.1	8,500	1,238	88.7	18,700	5.2
Business & Management	180,291	40.3	6,500	946	89.8	21,100	4.4
Marketing	39,975	39.0	6,000	874	95.8	21,000	4.1
PHYSICAL SCIENCES							
Mathematics	10,009	42.0	5,840	850	90.1	21,000	4.2
Physical Sciences	8,382	50.8	6,000	874	78.7	25,000	4.1
Health Sciences	44,495	45.0	8,500	1,238	96.0	29,200	4.0
Allied Health	11,560	56.8	7,500	1,092	95.3	29,800	3.6
Engineering	56,492	51.7	7,500	1,092	92.5	32,000	3.6
Engineering Tech.	9,316	46.2	6,500	946	90.9	22,900	3.6
Computer and Info. Sci.	23,310	47.0	6,000	874	95.3	28,000	3.2
Science Technologies	451	N/A	N/A	N/A	N/A	N/A	N/A
All	819,843	45.5	7,000	1,019	91.1	20,500	4.7

^{a/} Of those with debt.

^{b/} Loan terms of 8 percent for 10 years were assumed.

^{c/} Of those with debt and first-year income.

^{d/} The median of individual debt burdens, not the ratio of median debt to median income in the first year after graduation. Individual debt burdens are calculated as the ratio of annual repayment to gross income, where annual repayment is the total of monthly payments required to amortize the debt. Computed only for those with debt and first-year income.

N/A indicates insufficient cell size.

Table A-2. Estimated debt burden of teachers and other professionals among bachelor's degree recipients in their first year after graduation: 1990

Job category	Weighted count	Percent with debt	Median debt ^{a/}	Median first-year income ^{b/}	Median first-year debt burden ^{c/} (percent)
Teacher ^{d/}	91,478	53.4	\$6,500	\$18,050	5.4
Other Professional ^{e/}	304,513	47.3	7,000	24,000	3.6
Other Occupations ^{f/}	346,861	46.7	6,500	18,200	5.1
Not employed	76,991	42.5	7,600	--	--
All	819,843	45.5	7,000	20,500	4.7

Source: 1991 Survey of Recent College Graduates.

^{a/} Of those with debt.

^{b/} Of those with first-year income and debt.

^{c/} The median of individually computed debt burdens, not the ratio of median first-year income. Computed only for those with debt and first-year income.

^{d/} Includes elementary through postsecondary teachers.

^{e/} Includes managers, engineers, scientists, writers, and other professionals.

^{f/} Other occupations include sales workers, service workers, etc.

Table A-3. Debt burden of 1990 bachelor's degree recipients, by detailed occupation

Occupation	Weighted count	Percent with debt	Median debt ^{a/}	Annual repayment ^{b/}	Median income ^{c/}	Median first-year debt burden ^{d/} (percent)
Handlers, Equip. Cleaners, Helpers, Laborers, Military	4,286	43.5	\$10,000	\$1,456	\$13,900	11.1
Service Occupations	42,189	48.3	5,500	801	14,400	6.8
Writers, Artists, Entertainers, Athletes	35,667	42.5	7,750	1,128	17,700	6.7
Construction and Extractive Occupations	5,144	43.9	8,100	1,179	16,600	6.2
Vocational and Education Counselors	3,937	56.6	7,000	1,019	19,500	5.8
Administrative Support, Including Clerical	133,192	44.5	6,500	946	17,300	5.6
Teachers, Other than Postsecondary	90,391	51.0	6,500	946	18,200	5.4
Social, Recreation, and Religious Workers	23,647	59.4	6,000	874	17,900	5.2
Agricultural, Forestry	5,873	56.3	4,000	582	14,000	5.0
Production Working Occupations	8,548	49.9	7,500	1,092	19,200	4.9
Librarians, Archivists, and Curators	2,237	36.1	5,000	728	19,400	4.7
Marketing & Sales	83,446	42.8	6,800	990	20,000	4.5
Military	7,500	30.2	5,000	728	20,400	4.3
Health Technologists & Technicians	7,608	39.0	7,500	1,092	24,000	4.2
Pharm., Diet., Therapists, Physicians Asst.	18,967	59.2	10,000	1,456	33,000	4.1
Executive, Administrative, Managerial	113,088	39.7	6,500	946	23,000	4.0
Registered Nurses	27,552	41.6	7,500	1,092	27,500	4.0

Table A-3. Debt burden of 1990 bachelor's degree recipients, by detailed occupation

Occupation	Weighted count	Percent with debt	Median debt ^{a/}	Annual repayment ^{b/}	Median income ^{c/}	Median first-year debt burden ^{d/} (percent)
Engineering Technologists & Technicians	6,098	46.2	8,000	1,165	27,900	3.9
Social Scientists & Urban Planners	1,879	45.3	8,000	1,165	20,500	3.9
Technicians; Except Health, Engineering, Sci	35,394	43.2	7,000	1,019	26,300	3.8
Computer Scientists	7,095	40.2	8,000	1,165	30,000	3.7
Science Technicians	9,763	46.9	4,000	582	20,500	3.6
Natural Scientists & Mathematicians	11,150	44.6	5,000	728	23,900	3.4
Vehicle Mechanics & Repairers	1,691	57.0	4,000	582	28,000	3.4
Engineers, Surveyors, Architects	44,948	51.5	6,900	1,005	31,200	3.3
Precision Production Occupations	2,103	53.0	3,500	510	17,000	3.3
Mechanics & Repairers	1,609	47.9	3,500	510	14,400	2.6
Electrical & Electronic Equip. Repairers	705	68.4	4,000	582	28,100	1.7
Lawyers and Judges	284	N/A	N/A	N/A	N/A	N/A
Teachers, Postsecondary	1,087	N/A	N/A	N/A	N/A	N/A
Transportation & Material Moving	3,155	N/A	N/A	N/A	N/A	N/A
Electrical Engineering	111	N/A	N/A	N/A	N/A	N/A
Physicians & Dentists	689	N/A	N/A	N/A	N/A	N/A
Not employed	76,991	42.5	7,600	1,106	--	--
All	819,843	45.5	7,000	1,019	20,500	4.7

^{a/} Of those with debt.

^{b/} Loan terms of 8 percent for 10 years assumed.

^{c/} Of those with debt and first-year income.

^{d/} The median of individual debt burdens, not the ratio of median debt to median income in the first year after graduation. Individual debt burdens are calculated as the ratio of annual repayment to gross income, where annual repayment is the total of monthly payments required to amortize the debt. Computed only for those with debt and first-year income.

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