Balancing Passion and Practicality: The Role of Debt and Major on Students' Financial Outcomes

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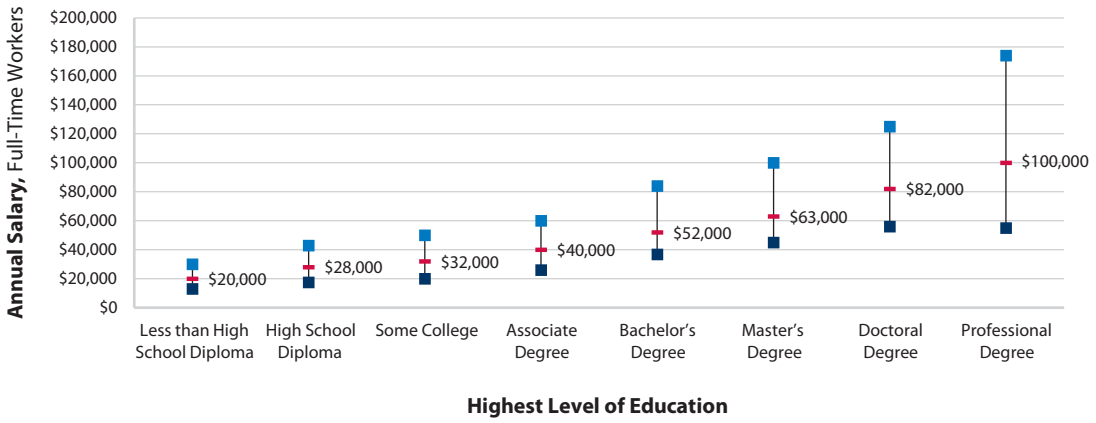
As the importance of a college degree climbs and federal and state grant funding remains inadequate, millions of students in the U.S. continue to take out student loans each year to help pay for their rising education costs. In October 2011, the total amount of outstanding student loan debt in the U.S. exceeded $1 trillion (Chopra, 2012), resulting in Americans owing more on student loans than they do on credit cards. This translates to 37 million U.S. borrowers and counting. Although a college education typically provides long-term financial benefits, in the short term, the student loans used to finance the degree may burden the borrower.

Considering the potential costs and benefits of a college degree, are there certain undergraduate majors that are more likely to lead to occupations that yield sufficient income to repay student loans? With a focus on Texas where data allow, the following tables and charts highlight the relationships between undergraduate major, student debt level, and post-graduation earnings.

Annual Earnings, Full-Time Texas Workers: 25th, 50th, and 75th Percentiles (2010)



Source: U.S. Census Bureau, American Community Survey (2010)

One million dollars is the oft-cited figure representing the difference in lifetime earnings between an individual with a bachelor's degree and one with a high school diploma. However, as the chart above shows, incomes also vary widely within the same level of education. For example, 50 percent of bachelor's-level workers in Texas make between $36,800 to $84,000 per year, indicating that 25 percent make less than $36,800 and 25 percent make more than $84,000. Consequently, many workers with associate degrees are making more than those with bachelor's degrees, while other bachelor's graduates are making more than some master's degree holders.

In general, higher education leads to higher earnings — but are these financial payoffs consistent across all undergraduate majors? To what extent do the out-of-pocket costs — that is, the educational costs remaining after accounting for grants and scholarships — required to earn these degrees vary by major? Personal or family savings, work, and/or student loans must cover these expenses. Because incomes vary significantly even within educational levels, student loan repayment may challenge some borrowers more than others. Borrowers are more likely to encounter these burdens in the years immediately following their graduation or departure from school.

Median Monthly Income and Student Loan Payment by Major for Bachelor's Level Workers, U.S. (2009)

Undergraduate Major Category	Monthly Income after Taxes	Monthly Federal Student Loan Payment	Debt-to-Income Ratio
Engineering	$3,250	$229	7%
Computer Science	$2,969	$265	9%
Healthcare Fields	$2,600	$253	10%
Business	$2,364	$250	11%
Math and Science	$1,682	$227	13%
General Studies	$1,815	$238	13%
Education	$1,990	$249	13%
Social Sciences	$1,625	$229	14%
Humanities	$1,300	$237	18%

Source: U.S. Department of Education, National Center for Education Statistics, B&B: 09 Baccalaureate and Beyond Longitudinal Study

Mark Kantrowitz (2012) and other financial aid experts recommend that student loan payments comprise no more than 10 to 15 percent of borrowers' overall monthly income. NCES data indicate that graduates from most major categories slant toward the dangerous end of this spectrum. Only engineering and computer science graduates have debt-to-income ratios under 10 percent. With a debt-to-income ratio of 18 percent, humanities majors' average monthly payments exceed the highest recommended ratio.

Most Popular Majors for Bachelor's-Level Graduates by Unemployment Rates and Median Wages, Texas (2010)

Major	Percentage of Bachelor's-Level Graduates	Unemployment Rate	Median Annual Income
Business Management and Administration	8.8%	2.6%	$57,000
General Business	5.0%	2.6%	$60,000
Accounting	4.8%	3.6%	$68,000
Elementary Education	4.6%	2.1%	$44,000
Nursing	4.2%	1.5%	$60,000
General Education	4.1%	2.4%	$45,000
Marketing and Marketing Research	3.5%	2.5%	$60,000
Psychology	2.9%	3.2%	$42,000
Finance	2.6%	3.3%	$65,000
Computer Science	2.3%	2.8%	$80,500

Source: U.S. Census Bureau, American Community Survey (2010)

National Center for Education Statistics' (NCES) data suggest that the benefits of an undergraduate degree are largely dependent on the major that a student chooses. As the table to the left demonstrates, beginning bachelor's-level workers with engineering degrees make 2.5 times more per month after taxes than their humanities counterparts — $3,250 compared to $1,300. The science, technology, engineering, and mathematics (STEM) fields appear to outperform the humanities, social science, and education fields in terms of short-term earning potential.

Conversely, monthly student loan payments appear to be similar across undergraduate major categories, ranging only from $227 to $265 on average. In terms of debt-to-income ratios, net monthly incomes seem to drive the results, with lower-income graduates more likely to encounter repayment hardships than those with higher incomes.

Unemployment Rates by Education Level, Texas (2010)

Education Level	Unemployment Rate
High School Diploma	6.1%
Associate Degree	3.6%
Bachelor's Degree	3.0%
Master's Degree	2.3%
Doctoral Degree	0.9%
Professional Degree	1.1%

Source: U.S. Census Bureau, American Community Survey (2010)

While NCES data suggest that some undergraduate majors may lead to more financially favorable outcomes than others, those figures represent only those students who have found and maintained employment after graduating. In the current economy, there is greater competition for jobs, and not all graduates immediately find stable employment. However, as the American Community Survey (ACS) data in the table above shows, individuals with college degrees will typically have an easier time finding employment than those without. Though these figures are based on 2010 data, with unemployment rates continuing to fluctuate, higher levels of education will likely continue to be associated with higher rates of employment.

Within Texas, how do the 10 most popular undergraduate majors fare in terms of employment rates and median salaries? The ACS includes 170 majors, so the 10 majors shown in the table on the previous page are a small sample of the total range of academic fields. Of these most common majors, none has an unemployment rate above 4 percent, although accounting, psychology, and finance demonstrate rates that are higher than the average unemployment rate for bachelor's-level workers in Texas (3.0 percent).

Median Annual Income Boosts from Bachelor's to Graduate Degree, Texas (2010)

Occupation	Median Income for Bachelor's Degree	Median Income for Graduate Degree	Percentage Income Boost
Elementary and Middle School Teachers	$45,000	$49,450	9%
Miscellaneous Managers	$85,000	$100,000	18%
Registered Nurses	$60,000	$75,000	20%
Accountants and Auditors	$60,000	$73,500	23%
Sales Representatives	$78,000	$107,000	27%
Counselors	$32,500	$51,000	57%

Source: U.S. Census Bureau, American Community Survey (2010)

Similarly, seven of the 10 majors show median salaries that exceed the state median of $52,000 for bachelor's-level workers; only psychology, elementary education, and general education have lower median salaries. It is worth noting that the salary figures shown in the table to the left represent workers across all stages of their careers, and therefore recent graduates are likely to make less than what is shown. Those who make considerably less could qualify for economic hardship deferments, the Income-Based Repayment plan, or forbearances, which would decrease or temporarily relieve their monthly loan payments. Nonetheless, the data indicate that many workers in Texas have selected majors that should support their ability to repay their student loans.

In order to overcome unemployment or underemployment, some bachelor's degree holders are now seeking graduate degrees. In the table below, *graduate degree* represents master's, doctoral, and professional degrees.

The occupations in this table represent some of the most common occupations reported by Texas residents. ACS data indicate that the financial benefits of an advanced degree vary greatly depending on the occupation. For counselors, the boost in median income is over 50 percent, while it remains under 10 percent for elementary and middle school teachers. Considering that a graduate degree typically requires about $30,000 in student loans — and can often require much more — is the investment to obtain the advanced degree always worthwhile?

Comparison of Debt-to-Income Ratios for Bachelor's and Graduate Degrees, Texas

Occupation	Bachelor's Degree Debt-to-Income Ratio	Graduate Degree Debt-to-Income Ratio	Estimated Lifetime Graduate Degree Boost
Elementary and Middle School Teachers	8%	18%	$92,100
Accountants and Auditors	6%	12%	$363,600
Miscellaneous Managers	6%	12%	$408,600
Registered Nurses	4%	9%	$408,600
Sales Representatives	10%	18%	$513,600
Counselors	4%	8%	$828,600

Source: U.S. Census Bureau, American Community Survey (2010)

In the previous table, elementary and middle school teachers with graduate degrees make less than $5,000 more per year than their bachelor's-level counterparts. Factoring in the median $30,000 student loan indebtedness, repaid over a standard 10-year period, these teachers would be netting less income — *during* that 10-year period — than they would if they had not pursued a graduate degree.

In the short term, this seems like a poor financial decision. However, over the course of a lifetime — after those teachers successfully repay their student loans — they will start to accrue the financial benefits of that graduate degree (see table above). Furthermore, if they can lower the cost of their graduate degrees through part-time work, fellowships, grants, more timely graduation, or frugal budgeting, they may be able to reap the rewards even sooner. The data strongly underscore the importance of responsible borrowing and the careful selection of major and occupation in order to reap the greatest financial benefits of higher education.

PRACTICAL IMPLICATIONS

1. With U.S. Census data now available for major, occupation, and geographic area, schools have the opportunity to provide customized counseling. Institutions could offer personalized counseling through multiple outlets, including financial aid, career services, placement offices, counseling and advising, student services, and other departments that address financial and future occupational issues. Repeated exposure reinforces the message of responsible borrowing and careful planning. Since many schools have limited resources and students are not always required to meet with financial aid administrators or career service advisors, having this data available across departments increases the likelihood that students will encounter it at some point during their academic career.
2. At the undergraduate level, students often select their major during their sophomore years. This would be a good time for students to receive integrated academic and career counseling tailored to their selected majors and anticipated occupations.
3. First-generation students, who may not be familiar with the potential benefits and drawbacks of college and borrowing, can use these data to explore different scenarios, based on expected borrowing levels and anticipated occupations.
4. Borrowers should be reminded that failure to graduate from their given program might prevent them from reaping the full financial benefits of that degree. In addition, studies have indicated that borrowers who do not graduate are more likely to default on their student loans than those who do.
5. Faculty and administrators should promote not only graduation, but also timely graduation. Additional years of education often equate to additional student loans and the potential loss of income while the student is attending school. When possible, students should plan their academic schedules — which will often require declaring a major in their first or second year — so that they can efficiently complete their degrees.

SOURCES

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TG Internal Report

This handout is a snapshot of the August 2012 TG report *Balancing Passion and Practicality: The Role of Debt and Major on Students' Financial Outcomes* by Micki Neal, Carla Fletcher, Melissa Shook, and Jeff Webster. Other TG reports can be found on its corporate website (www.TG.org), including:

State of Student Aid and Higher Education in Texas (SOSA), November 2011

School Fact Sheets, 2011

Digging Deeper: An Analysis of Student Loan Debt in Texas, 2010

Comments and requests for additional information regarding this report or any of TG's other public policy publications are welcomed. Please direct questions to:

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