

GRADUATE AND PROFESSIONAL SCHOOL DEBT: How Much Students Borrow

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Although concerns about student debt most often focus on undergraduate students, borrowing rates and average debt are higher among graduate and professional degree students¹ than undergraduates. Their high levels of debt contribute significantly to aggregate student debt. Policy solutions focusing only on undergraduates cannot appropriately address the issues of student debt in the United States. Moreover, examination of borrowing patterns among students pursuing advanced degrees can help identify barriers to enrollment in these programs as well as potential repayment problems.

There is wide variation in how students cover tuition and living expenses while they pursue graduate and professional degrees. As reported in the third brief in this series, The Price of Graduate and Professional School: How Much Students Pay, most research doctoral degree students attending public and private nonprofit schools benefit from generous institutional fellowships and assistantships that cover a significant portion of their expenses. But master's degree students in all sectors cover most of their expenses with earnings from employment and federal student loans. Borrowing is particularly important for professional degree students, most of whom have neither earnings from employment during the academic year nor grants

and fellowships to cover tuition and living expenses while they are enrolled.

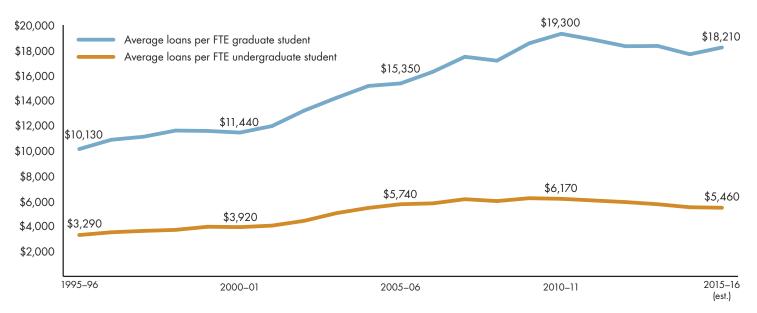
This brief reviews borrowing patterns and trends among advanced degree students, disaggregating by demographic characteristics as well as type of program and institutional sector.

Differences in Annual Borrowing between Undergraduates and Advanced Degree Students

During academic year 2015–16, advanced degree students borrowed an average of \$18,210—more than three times the \$5,460 average among undergraduates.

Annual borrowing for higher education has risen dramatically over the past two decades. Between 1995–96 and 2005–06, the average amount borrowed among advanced degree students increased 52 percent, from \$10,130 to \$15,350 (in 2015 dollars). Among undergraduates, the average increased 75 percent, from \$3,290 to \$5,740.

FIGURE 1: Average Annual Loans per Full-Time Equivalent (FTE) Student, 1995–96 to 2015–16



Notes: Includes both federal and non-federal loans.

Source: Sandy Baum, Jennifer Ma. Matea Pender and Meredith Welch, Trends in Student Aid 2016 (New York: College Board, 2016), table 3.

 $^{^{\}rm l}$ This brief uses the terms "graduate and professional students" and "advanced degree students" interchangeably.

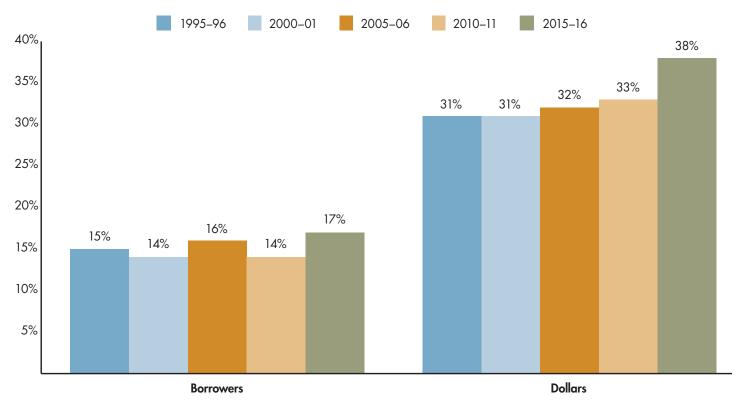
But graduate borrowing grew more rapidly than undergraduate borrowing between 2005-06 and 2010–11 and declined less over the next 5 years (Figure 1). Average borrowing per full-time equivalent advanced degree student peaked at \$19,300 (in 2015 dollars) in 2010-11. Average undergraduate borrowing has declined each year since then, but graduate borrowing has not, although it was \$1,090 lower in 2015–16 than at its peak.² In other words, borrowing is far higher among advanced degree students than among undergraduates, and there has been less of a post-recession decline. While the average undergraduate borrowed 5 percent less in 2015-16 than 10 years earlier, the average advanced degree student borrowed 19 percent more. One contributing factor may be that although inflation-adjusted grant aid per student grew significantly over the decade for students at both levels, the growth was more rapid for undergraduates than for graduate students.3

Graduate and Professional Student Borrowing and Federal Student Loan Programs

In 2015–16, only 17 percent of federal student loan borrowers were graduate and professional degree students, but they accounted for 38 percent of federal education loans—an increase from 32 percent in 2005–06.

In 1995–96, all federal loans for graduate and professional degree students were issued as Stafford loans. Fifty-nine percent of the loans were subsidized, with the government paying the interest while students were in school. That share declined to 43 percent in 2005–06. The following year, the federal government made more loans available to graduate and professional degree students through the Direct PLUS

FIGURE 2: Graduate and Professional Degree Student Borrowing as a Percentage of All Federal Student Loans, 1995–96 to 2015–16



Notes: Includes only federal loans. Borrower percentages include Direct Subsidized and Unsubsidized Loans. Dollar percentages include Parent and Grad PLUS loans.

Source: Sandy Baum, Jennifer Ma, Matea Pender and Meredith Welch, Trends in Student Aid 2016 (New York: College Board, 2016), table 6.

 $^{^2}$ Sandy Baum, Jennifer Ma, Matea Pender and Meredith Welch, Trends in Student Aid 2016 (New York: College Board, 2016), table 3.

³ Ibid.

Loan program, which allows students to borrow up to the full cost of attendance (including tuition and fees, books and supplies, housing, food, transportation, and other living expenses) less financial aid received for as long as they are enrolled. Total graduate and professional degree student borrowing from the federal government increased 27 percent from \$22.2 billion in 2005–06 to \$28.1 billion in 2007–08 (in 2015 dollars).4

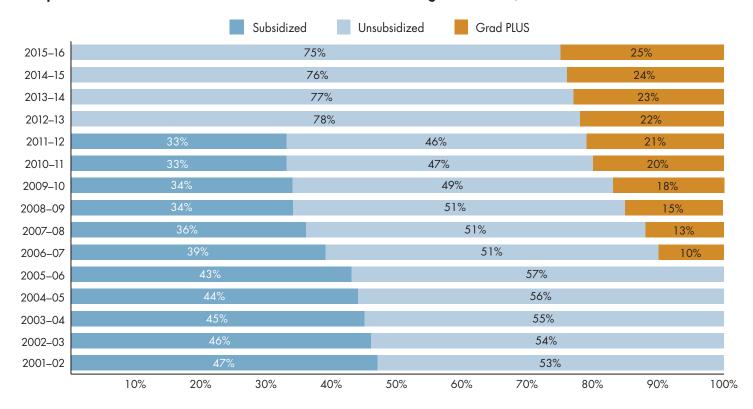
Another major change to the federal loans available to advanced degree students came in 2012–13, when the government eliminated their eligibility for subsidized loans. Three years later, 75 percent of federal loans to graduate and professional degree students were Direct Unsubsidized loans, and 25 percent were Grad PLUS loans (Figure 3). Under both of these programs, interest accrues from the time the loans are made.

Graduate and Professional Education Debt by Degree Type

In 2011–12, almost 60 percent of professional degree recipients had borrowed more than \$100,000 to fund their studies, compared with only 10 percent of advanced degree students overall. Almost 90 percent of professional degree recipients had debt, compared with about two-thirds of master's degree and just over half of research doctoral degree recipients).

Debt from advanced degree studies varies markedly by degree type and institutional sector. In 2011–12, professional degree recipients were the most indebted group, with 56 percent having borrowed \$100,000 or more for their professional degree studies. Four percent of master's degree recipients and 15 percent of research doctoral degree recipients had accumulated this much debt (Table 1).

FIGURE 3: Composition of Federal Loans for Graduate and Professional Degree Students, 2001–02 to 2015–16



Source: Sandy Baum, Jennifer Ma, Matea Pender and Meredith Welch, Trends in Student Aid 2016 (New York: College Board, 2016), table 6.

⁴ Sandy Baum, Jennifer Ma, Matea Pender and Meredith Welch, *Trends in Student Aid 2016* (New York: College Board, 2016), table 1B.

Loans for Graduate and Professional Degree Students

William D. Ford Federal Direct Loan Program

Direct Unsubsidized Loan

- Lender: U.S. Department of Education
- Loan terms
 - Students can borrow up to \$20,500 a year, not to exceed the total student budget (cost of attendance). The aggregate maximum is \$138,500 in undergraduate and graduate loans combined. Students enrolled in certain health profession programs may be eligible for higher loan limits.
 - The interest rate is 1.55 percentage points higher than the rate on undergraduate loans. It was 5.31 percent in 2016–17 and is 6.0 percent for 2017–18. A one-time origination fee is imposed when the loan is disbursed.
 - No credit check is required.

Direct (Grad) PLUS Loan

- Lender: U.S. Department of Education
- Loan terms
 - Students can borrow up to their cost of attendance minus other aid received.
 - The interest rate was 6.31 percent in 2016–17 and is 7 percent for 2017–18. A one-time origination fee is imposed when the loan is disbursed.
 - Borrowers must not have an adverse credit history.

Other Loans

Federal Perkins Loan

- Lender: University attended, with a portion of funds originally supplied by the federal government.
- The interest rate is 5 percent.
- Graduate students can borrow as much as \$8,000 a year, up to a total of \$60,000, including undergraduate Perkins Loans.
- Less than 1 percent of graduate borrowing occurs through this program.

Private Loans

- Graduate students also borrow from banks and other private lenders with varying terms and interest rates.
- Private loans are not eligible for the protections offered to federal student loan borrowers, including income-driven repayment and forbearance for financial hardship.

Source: U.S. Department of Education, Office of Federal Student Aid.

A larger share of research doctoral degree students than master's or professional degree students attend public universities, which have the lowest tuition prices. In 2011–12, almost 60 percent of professional degrees—but only about 30 percent of research doctoral and 40 percent of master's degrees—came from private nonprofit universities, which have higher sticker prices. Eight to 10 percent of master's and research doctoral degree students attended for-profit institutions, which rarely award professional degrees.⁵

Graduates of for-profit institutions accrue much more debt than students who earn their degrees in the public and private nonprofit sectors (Table 1). Almost 60 percent of research doctoral degree students from this sector borrowed \$100,000 or more, four times the proportion among private nonprofit university graduates and more than seven times the proportion among graduates of public universities.

The pattern among master's degree students is predictable. Those attending public universities were most likely to graduate without debt (43 percent) and least likely to have borrowed \$50,000 or more (11 percent). Students attending for-profit institutions were least likely to graduate without debt (19 percent). Twenty percent of for-profit and 22 percent of private nonprofit master's degree recipients borrowed \$50,000 or more.

Virtually all of the small share of research doctoral degree students who attended for-profit institutions borrowed \$50,000 or more. Almost 60 percent borrowed \$100,000 or more. In contrast, 8 percent of public and 15 percent of private nonprofit doctoral degree recipients borrowed \$100,000 or more. Research doctoral degree students at these universities benefit from institutional funding not available to students at for-profit schools.

⁵ National Center for Education Statistics (NCES), National Postsecondary Student Aid Study (NPSAS), 2012, PowerStats.

TABLE 1:
Distribution of Debt Amounts by Degree Type and Field and Institution Sector, 2011–12 Degree Recipients

	No debt	\$1-\$24,999	\$25,000— \$49,999	\$50,000— \$74,999	\$75,000— \$99,999	\$100,000 or more			
All	35%	19%	22%	10%	4%	10%			
Master's degree (82%)	35%	21%	26%	11%	3%	4%			
Research doctoral degree (7%)	46%	14%	9%	9%	7%	15%			
Professional degree (11%)	13%	3%	8%	8%	11%	56%			
Master's degree recipients									
Public (46%)	43%	24%	22%	9%	1%	1%			
Private nonprofit (40%)	32%	18%	26%	12%	4%	6%			
For-profit (10%)	19%	20%	41%	10%	6%	4%			
Master of Science (MS) (29%)	39%	22%	20%	12%	3%	4%			
Master of Arts (MA) (14%)	36%	18%	26%	13%	3%	4%			
Master of Education or Teaching (19%)	35%	22%	33%	8%	N/A	N/A			
Master of Business Administration (MBA) (16%)	43%	19%	25%	7%	3%	2%			
Other Master's degree (22%)	25%	21%	27%	14%	4%	7%			
	Resea	rch doctoral de	gree recipients						
Public (61%)	51%	17%	11%	9%	5%	8%			
Private nonprofit (29%)	48%	12%	8%	7%	11%	15%			
For-profit (8%)	5%	3%	2%	17%	15%	59%			
Doctor of Philosophy (Ph.D.) (64%)	51%	14%	9%	10%	6%	9%			
Doctor of Education (Ed.D.) (15%)	21%	16%	14%	9%	11%	28%			
Professional degree recipients									
Public (38%)	12%	5%	11%	12%	11%	50%			
Private nonprofit (59%)	14%	2%	7%	6%	12%	59%			
Medicine, dentistry, pharmacy, veterinary, other medical doctoral (49%)	12%	2%	7%	7%	8%	64%			
Law (LL.B. or J.D.) (38%)	12%	4%	6%	10%	12%	56%			

Notes: Percentages in parentheses reflect share of type of degree or sector within each degree category. Categories may not sum to 100% because of omitted groups. Excludes international students.

Source: National Center for Education Statistics (NCES), National Postsecondary Student Aid Study (NPSAS) 2012, PowerStats.

The for-profit sector does not produce enough professional degrees to yield data. Students earning their degrees from private nonprofit universities borrow more than those at public universities: 73 percent of public and 77 percent of private nonprofit professional degree recipients borrowed \$50,000 or more for their professional education; 50 percent and 59 percent, respectively, borrowed \$100,000 or more.

The shares of 2011–12 advanced degree recipients who did not borrow or who borrowed less than \$25,000 ranged from 60 percent of research doctoral degree students to 14 percent of those earning professional degrees in medicine, dentistry, pharmacy, veterinary, and other medical doctoral fields. Sixty-four percent of medical professional students graduated with \$100,000 or more in debt, as did 56 percent of law school students.

Some differences by field of study within degree types are also significant. In particular, within the research doctoral degree category, students earning doctor of education degrees borrowed much more than those earning doctor of philosophy degrees.

There are several explanations other than demographics for these differences in debt. As the second brief in this series documents, tuition levels differ across programs, even within institutions. As the third brief in this series reveals, institutional grants and fellowships are concentrated in research doctoral degree programs, with considerable variation across fields. Moreover, most master's degree students are employed while they are in graduate school, but few professional degree students have earnings during the academic year. In addition, master's degree programs tend to be shorter (1 or 2 years) than doctoral and professional degree programs.

Changes in Graduate and Professional Degree Student Debt

The share of graduate and professional degree students who accrued at least \$75,000 of debt more than doubled between 2007–08 and 2011–12.

The share of advanced degree recipients who had borrowed for graduate or professional studies rose slightly, from 61 percent in 2003–04 to 65 percent in 2011–12 (Table 2). But the share of students accumulating large levels of debt has increased significantly. The share of advanced degree recipients borrowing at least \$75,000 more than doubled, from 7 percent in 2007–08 to 15 percent in 2011–12.

The most dramatic increase was among professional degree students. Only 2 percent of 2007–08 graduates borrowed \$200,000 or more, but that share had risen to 15 percent 4 years later. The share borrowing \$100,000 or more was 13 percent in 2003–04, 31 percent in 2007–08 and 56 percent in 2011–12 (Table 2).

Borrowing in the First Year of Graduate Study

Among 2007–08 bachelor's degree recipients who were enrolled in professional degree programs in 2009, 43 percent borrowed more than \$30,000 for their first year of study. The majority of master's and research doctoral degree students did not borrow.

High cumulative debt levels can come from high annual borrowing or from spending many years in school. Looking only at borrowing in the first year of graduate and professional school for students who continue their education immediately after graduating from college sheds light on this issue. Professional degree students do not accrue more debt only because they are in school for a longer time than master's

TABLE 2: Cumulative Amount Borrowed for Graduate and Professional School by Advanced Degree Recipients, 2003–04, 2007–08 and 2011–12

	Graduation year (with percentage of degrees awarded)	No debt	Less than \$25,000	\$25,000- \$49,999	\$50,000- \$74,999		\$75,00	O or more	
2003-04		39%	33%	17%	6%		6%		
All	2007–08	40%	26%	18%	9%	7%			
	2011–12	35%	18%	23%	11%		1	5%	
		No debt	Less than \$25,000	\$25,000— \$49,999	\$50,000— \$74,999	\$75,000 or more			
	2003–04 (76%)	43%	38%	16%	3%	1%			
Master's degree	2007–08 (80%)	42%	29%	20%	7%	2%			
	2011–12 (82%)	35%	21%	26%	11%	7%			
		No debt	Less than \$25,000	\$25,000— \$49,000	\$50,000— \$74,999	\$75,000— \$99,999			
	2003–04 (11%)	41%	24%	15%	10%	7%	3%		
Research doctoral degree	2007–08 (11%)	45%	15%	12%	15%	5%			
	2011–12 (7%)	46%	14%	9%	9%	7%			
		No debt	Less than \$25,000	\$25,000— \$49,000	\$50,000— \$74,999	\$75,000— \$99,999	\$100,000— \$149,999	\$150,000— \$199,999	\$200,000 or more
Professional degree	2003–04 (13%)	13%	12%	24%	20%	18%	10%	3%	0%
	2007–08 (9%)	11%	12%	11%	20%	16%	21%	8%	2%
	2011–12 (11%)	13%	3%	8%	8%	11%	23%	18%	15%

Notes: Excludes international students. Percentages following dates indicate share of advanced degree recipients earning specified type of degree. Sources: NCES, NPSAS 2004, 2008 and 2012, PowerStats.

degree students—they are more likely to take on a high level of debt for their first year of study than are students working toward other types of advanced degrees (Figure 4).

Annual borrowing patterns also reflect differences across institution types and demographic characteristics. The share of students enrolling in research doctoral degree programs immediately after college is too small to generate reliable data in sample surveys, but differences among master's degree students are clear, and some evidence about professional degree students is available.

Master's Degree Students

Black master's degree students and those enrolled in for-profit institutions are more likely than others to borrow and to borrow large amounts in their first year of study.

Three-quarters of students who enrolled in an advanced degree program immediately after graduating from college in 2007–08 enrolled in master's degree programs (Figure 4). Overall, 30 percent took loans in their first year, but patterns differed considerably across demographic groups and institutional sectors (Table 3):

- The share of master's degree students at for-profit institutions who borrowed in their first year was twice as high as the share at private nonprofit institutions; public sector students were least likely to borrow. Twenty percent of students at for-profit institutions borrowed \$30,000 or more, compared with 12 percent of private nonprofit and 2 percent of public sector first-year master's degree students.
- Fifty-four percent of black students borrowed, compared with 32 percent of Hispanic students and lower shares of white and Asian master's degree students.
- Students who received Pell grants as undergraduates were more than twice as likely as those who did not to borrow to pay for their first year of master's degree study. Eleven percent of Pell grant recipients and 5 percent of other master's degree students borrowed \$30,000 or more in their first year.

 Almost half of students who earned their bachelor's degrees at age 27 or older borrowed, compared with about a quarter of younger students.

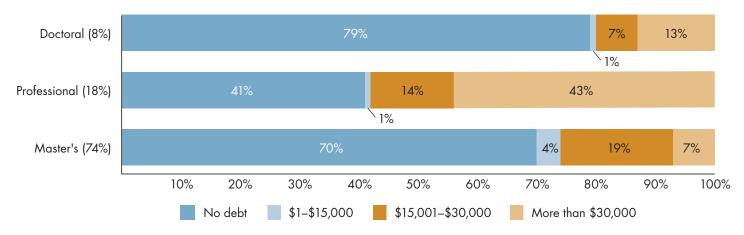
TABLE 3: Amount Borrowed by First-Year Master's Degree Students, 2008–09

	No debt	\$1- \$15,000	\$15,001— \$30,000	\$30,000 Or more			
Graduate school sector							
Public	79% 5% 14%		2%				
Private nonprofit	66%	2%	20%	12%			
For-profit	32%	4%	44%	20%			
	Ra	ce/ethnicity	•				
White	73%	4%	16%	7%			
Black	46%	5%	38%	10%			
Hispanic	68%	3%	21%	8%			
Asian	79%	0%	12%	9%			
		Gender					
Male	73%	4%	19%	4%			
Female	68%	4%	19%	9%			
Undergraduate Pell status							
No Pell	78%	3%	13%	5%			
Pell	55%	5%	29%	11%			
Age at bachelor's degree completion							
22 or younger	75%	4%	14%	6%			
23 to 26	74%	4%	18%	4%			
27 or older	53%	3%	31%	12%			

Note: Excludes international students.

Source: NCES, Baccalaureate and Beyond Study (B&B) 2008–12, PowerStats.

FIGURE 4: Enrollment and Borrowing Patterns 1 Year after Bachelor's Degree



Note: Excludes international students. Source: NCES, B&B 2008–12, PowerStats.

Professional Degree Students

Borrowing patterns across demographic groups were different for professional degree students than for master's degree students. White students and those who did not receive Pell grants as undergraduates were more likely than others to borrow large amounts in their first year (Table 4):

- Forty-eight percent of private nonprofit university students borrowed more than \$30,000, compared with 36 percent of public university professional degree students.
- Black and white students were more likely than
 Hispanic and Asian students to borrow for the first
 year of their professional degree programs.
 A larger share of white students than students from
 other groups borrowed more than \$30,000.
- The percentage of students who borrowed \$30,000 or more in the first year was higher for those who did not receive Pell grants as undergraduates than for those who did.

Further analysis is needed to determine the causes of these patterns, but they are likely attributable to differences in the institutions and programs in which students enroll. The second brief in this series documents a wide range of tuition prices

across professional degree programs, even within institutions.⁶ For example, in 2015–16, average public in-state tuition ranged from \$22,530 for pharmacy programs to \$38,120 for dentistry programs. White students and those who did not receive Pell grants as undergraduates might enroll more often than others in programs that carry higher price tags.

Cumulative Graduate and Professional Education Debt Levels

Black and Hispanic students who earned master's degrees in 2011–12 were more likely than others to graduate with debt. Black students earning research doctoral degrees borrowed more than others.

The share of master's degree recipients without debt ranged from 20 percent of black students and 22 percent of Hispanic students to 38 percent of white students and 42 percent of Asian students. Black and Hispanic graduates were also most likely to have borrowed \$50,000 or more (Figure 5)

⁶ Sandy Baum and Patricia Steele (2017). The Price of Graduate and Professional School: How Much Students Pay, AccessLex and Urban Institute, https://www.accesslex.org/the-price-of-graduate-and-professional-school and https://www.urban.org/sites/default/files/publication/91016/price of grad professional school 0.pdf.

TABLE 4:
Amounts Borrowed by First-Year Professional Degree Students, 2008–09

	No debt	\$1-\$15,000	\$15,001-\$30,000	\$30,000 or more				
Sector								
Public	41%	3%	20%	36%				
Private nonprofit	40%	0%	12%	48%				
For-profit	N/A	N/A	N/A	N/A				
Race/ethnicity								
White	36%	1%	16%	48%				
Black	37%	4%	27%	32%				
Hispanic	55%	0%	3%	42%				
Asian	64%	0%	5%	31%				
Gender								
Male	40%	2%	9%	48%				
Female	42%	0%	19%	39%				
Undergraduate Pell status								
No Pell	40%	1%	13%	46%				
Pell	44%	1%	19%	36%				
Age at bachelor's degree completion								
22 or younger	43%	1%	14%	42%				
23 to 26	34%	1%	17%	48%				
27 or older	N/A	N/A	N/A	N/A				

Note: Excludes international students. Sample sizes for for-profit institutions and students age 27 or older are too small to yield reliable results. Source: NCES, B&B 2008–12, PowerStats.

But breaking students into the sectors in which they earned their degrees makes patterns by race and ethnicity less clear. In public universities, only black students, not Hispanic students, were more likely than others to borrow and to borrow large amounts.

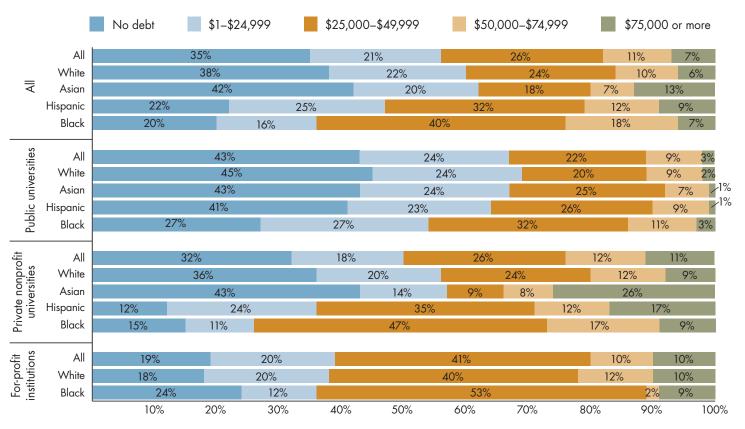
In the private nonprofit sector, however, both black and Hispanic students were more likely than others to borrow. Thirty-two percent of students earned master's degrees in this sector without accumulating debt, but only 12 percent of Hispanic and 15 percent of black students did. Asian students were least likely to borrow, but had the highest share of graduates with debt of \$50,000 or higher. The majority of Asian master's

degree recipients at private nonprofit universities who borrowed took out loans totaling \$50,000 or more.⁷

Sample sizes do not permit analysis of Hispanic and Asian students in the for-profit sector, but black students were less likely than white students to borrow \$50,000 or more, and less likely to have borrowed at all.

⁷The ethnic and socioeconomic diversity within the Asian category may contribute to these outcomes. A study of law students found wide debt disparities among Asian subgroups. For example, more than half of Filipino law students expected at least \$120,000 in debt, compared with just 15 percent of Chinese students. Aaron Taylor, Faheemah Mustafaa, and Chad Christensen (2017). (June 2017), Diversity Within Diversity: The Varied Experiences of Asian and Asian American Law Students, Bloomington, IN: Indiana University Center for Postsecondary Research, http://lssse.indiana.edu/wp-content/uploads/2015/12/Diversity-within-Diversity.pdf.

FIGURE 5: Cumulative Graduate Education Debt among 2011–12 Master's Degree Recipients by Race and Ethnicity



Note: Excludes international students.

Source: NCES, NPSAS 2012, PowerStats.

In sum, black students borrowed more than others to fund their master's degree studies, but differences in borrowing patterns across sectors were larger than racial and ethnic differences within sectors.

Fifty-four percent of students who completed research doctoral degrees in 2011–12 borrowed for their graduate study, but differences across racial and ethnic groups were stark (Figure 6).8 Seventy-four percent of Asian students, but only 24 percent of black students, graduated without debt. A third of black students borrowed \$100,000 or more, compared with 15 percent of doctoral degree recipients overall.

The disproportionate enrollment of black students in for-profit institutions contributes to their higher rates of graduate student loan indebtedness. While only 9 percent of 2011–12 research doctoral degree graduates received their degrees from for-profit

institutions, about one-third of black graduates attended these institutions. Ninety-five percent of research doctoral degree graduates of for-profit institutions borrowed for graduate school, compared with about half at public and private universities. About 60 percent of for-profit graduates borrowed at least \$100,000, compared with 15 percent of private and 8 percent of public university graduates (Figure 6).

In 2011–12, black research doctoral degree recipients were more likely than others to have incurred student loan debt and more likely to have borrowed \$100,000 or more.

Black research doctoral degree students were also more likely than others to borrow and to borrow large

⁸ Representation of black and Hispanic students in professional degree programs is too small to allow analysis of racial and ethnic differences in debt levels.

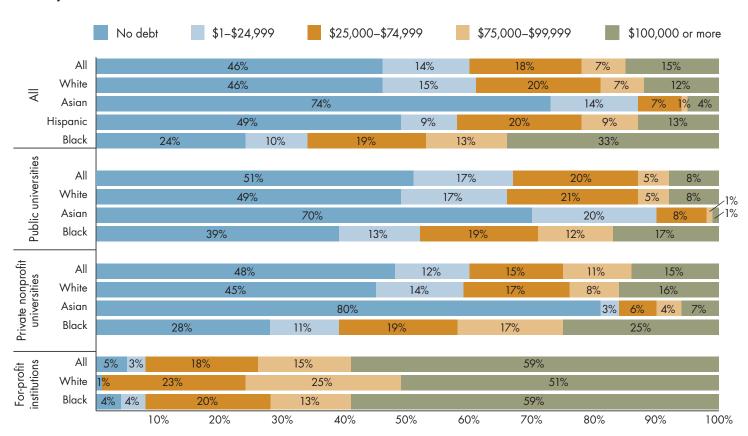
⁹ NCES, NPSAS 2012, PowerStats.

TABLE 5: Institutional Grant Aid to Research Doctoral Degree Students by Field of Study, 2011–12

	Percentage of research doctoral degree students	Percentage of black research doctoral degree students	Percentage of students receiving institutional grants	Percentage of students receiving \$15,000 or more
Life and physical sciences	24%	9%	63%	29%
Humanities	9%	4%	62%	27%
Math/engineering/computer science	18%	7%	53%	25%
Social/behavioral sciences	13%	12%	41%	17%
Others	13%	16%	39%	11%
Business/management	5%	12%	22%	6%
Education	17%	40%	17%	2%

Note: Excludes international students.
Source: NCES, NPSAS 2012, PowerStats.

FIGURE 6: Cumulative Graduate Education Debt among 2011–12 Research Doctoral Degree Recipients by Race and Ethnicity



Notes: Excludes international students. Hispanic student data is not reported by sector due to small sample sizes. Source: NCES, NPSAS 2012, PowerStats.

amounts within the public and private nonprofit sectors. Seventeen percent of black research doctoral degree students in the public sector borrowed \$100,000 or more, compared with 8 percent of white students. In the private nonprofit sector, those figures were 25 percent and 16 percent, respectively.

Black doctoral students are disproportionately enrolled in fields where institutional grant aid is relatively scarce. This aid is most generous in the life and physical sciences and the humanities. One-third of all research doctoral students, but only 13 percent of black students, were enrolled in these fields in 2011–12. Institutional aid was lowest in business management and education, where 22 percent of all students were enrolled, including 52 percent of black research doctoral students (Table 5).

In addition, more selective, better-resourced universities can provide larger subsidies to their students. Determining how much these racial differences in borrowing patterns reflect differences in the institutions that black students and other students attend, financing differences within institutions, and access to personal resources requires more evidence.

Conclusion

Borrowing for graduate and professional school has contributed significantly to the more than \$1 trillion in outstanding education debt. On average, graduate and professional degree students borrow over three times as much as undergraduate students each year. The federal government does not pay the interest on loans while students pursue advanced degrees, as they do for some loans for undergraduate students with financial need. Through the Grad PLUS program, the federal government provides loans that can cover the entire budgets of advanced degree students as long as they are in school, without specified dollar limits.

About one-third of 2011–12 advanced degree recipients graduated without debt, and only 10 percent borrowed \$100,000 or more. But debt levels have increased rapidly, and perhaps most important, there is considerable variation across borrowers. Professional degree students accrue much more debt than those pursuing master's and research doctoral degrees. And students enrolling in for-profit institutions, black students, and those from low-

income backgrounds are more likely than others pursuing similar degrees to graduate with high levels of debt.

Differences in borrowing by type of degree are sometimes associated with differences in post-graduation earnings prospects. For example, the high levels of debt accumulated by medical students would be a greater concern if they were common among those earning master's degrees in education.

But differences within degree types raise questions. Master's degree students who received Pell grants as undergraduates borrow more than others for their first year of graduate study, but this is not the case for students in professional degree programs. Black master's and research doctoral degree students borrow more than their white counterparts. Exploring the causes of these differences is an important goal for future research. Some of these differences are likely attributable to gaps in family resources. But choice of program and institution, including the disproportionate enrollment of black students in graduate programs in the for-profit sector, also appears to drive some differences.

It is not possible to evaluate the potential capacity of advanced degree holders to repay their debt without putting the amounts owed into the context of post-graduation earnings, which differ across degree types. Although master of arts and master of education students borrow less than medical and law students, they have lower earnings. The next brief in this series will focus on outcomes of advanced degrees, including earnings differentials.





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