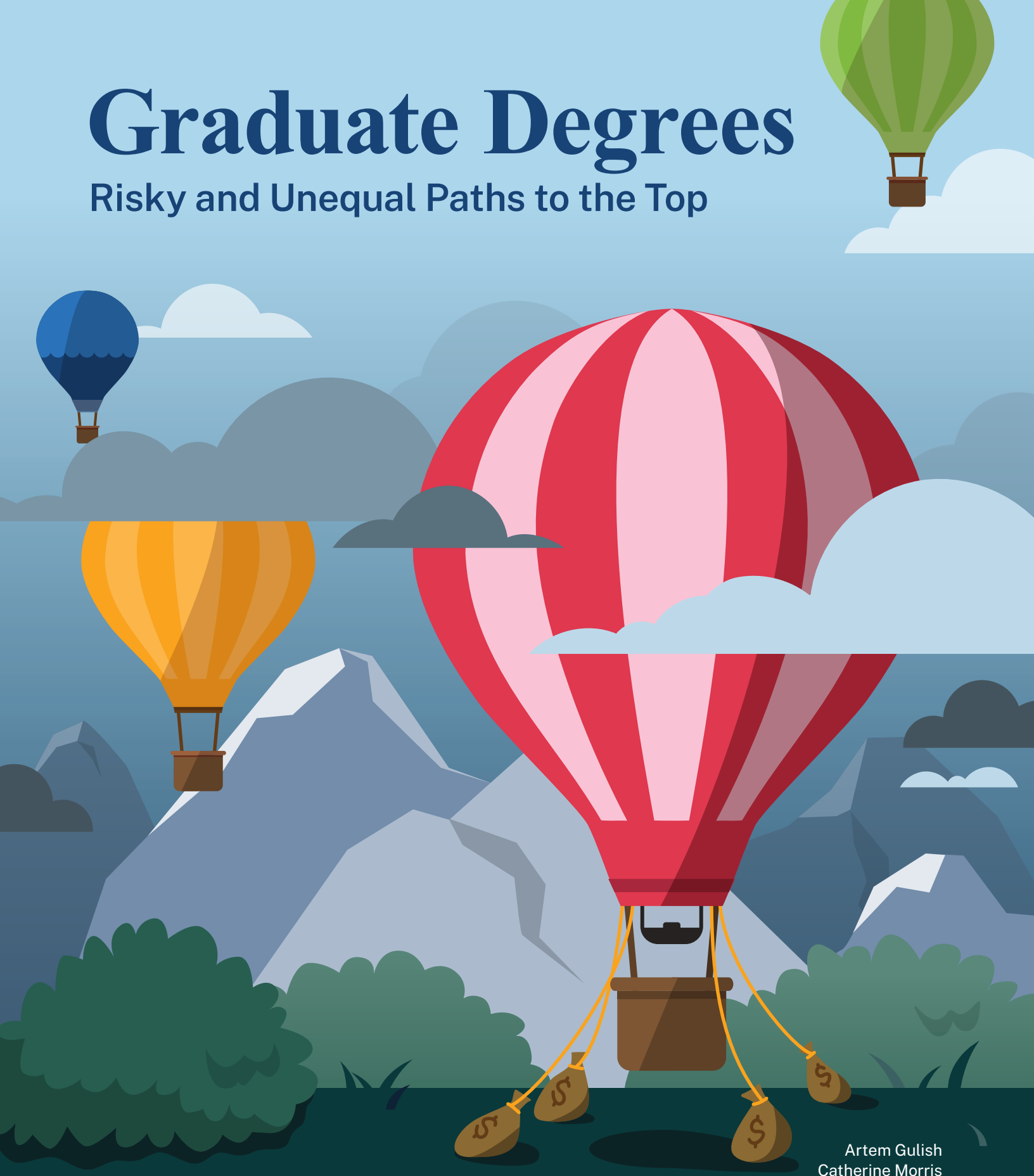
Graduate Degrees

Risky and Unequal Paths to the Top



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Graduate degrees offer the highest earnings and employment prospects of all educational credentials — but the growing costs of attaining a graduate degree have diminished their returns. Minimizing the risk to borrowers will require greater regulatory scrutiny and transparency about program outcomes.

Introduction

Graduate degrees—which include master's, professional, and doctoral degrees[1]—offer the highest earnings prospects and best chances of finding employment of all educational credentials.[2] The graduate degree earnings premium relative to the earnings of workers with a bachelor's degree has held steady for the past three decades, and it has even increased for doctoral degrees. However, the growing costs of attaining a graduate degree have diminished the returns that accrue to graduate degree completers.[3]

The promise of high earnings and career advancement makes graduate degrees attractive. But when combined with high costs, graduate degrees are a potentially high-risk investment. High debt is not necessarily a problem, provided that borrowers earn enough to repay their debt. However, a substantial number of programs leave graduates with levels of debt that they cannot reasonably repay. Minimizing the risks to borrowers will require closer regulatory scrutiny and greater transparency about graduate program outcomes.

The Grad PLUS Loan Program is one major source of debt that requires stricter scrutiny. Although just 16 percent of graduate students hold Grad PLUS loans,[4] the program now accounts for 32 percent of all graduate student loan disbursements.[5] Grad PLUS loans do not require students to demonstrate financial need, and—unlike federal Stafford loans—do not carry any annual or aggregate loan limits beyond the cost of attendance established by each institution.[6] Higher limits incentivize higher student borrowing and may even encourage some graduate schools to increase their prices.[7] To address the dual issues of runaway costs and unmanageable debt, we propose reasonable program-level regulations mediating access to the Grad PLUS Loan Program.

1 This report uses the term "professional degrees" to refer to educational credentials that some sources label first professional degrees, doctor's–professional practice degrees, or professional doctoral degrees. This report uses the term "doctoral degrees" to refer to educational credentials that some sources label doctorate degrees, doctor's–research/scholarship degrees, or research/academic doctoral degrees.

2 Among adults ages 25–64, the median earnings for full-time, full-year workers with graduate degrees are $99,000 (compared to the overall median of $63,000), and the employment-to-population ratio for those with graduate degrees is 87 percent (compared to 75 percent for all adults). Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2022.

3 The net tuition for graduate degree programs has more than tripled on an inflation-adjusted basis, from $3,000 in 2000 to $10,000 in 2020. Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2000, 2020.

4 Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2020.

5 Georgetown University Center on Education and the Workforce analysis of data from the Congressional Budget Office (CBO), "Baseline Projections—Federal Student Loan Programs," 2023.

6 Black et al., "PLUS or Minus?," 2023.

7 Black et al., "PLUS or Minus?," 2023; Mitchell, "Mike Meru Has $1 Million in Student Loans," 2018.

Stafford and Grad PLUS loans are the primary sources of public borrowing for graduate students.

The federal government currently offers two types of educational financing to graduate students:

- **Direct Unsubsidized Stafford loans** account for 68 percent of annual federal loans disbursed to graduate students.[8] Students do not need to demonstrate financial need to receive these loans. Graduate students can borrow up to $20,500 annually and up to $138,500 in the aggregate for both undergraduate and graduate studies, with some exceptions.[9]
- **Grad PLUS loans** are typically used by students who need additional funding after exhausting their borrowing through the Direct Unsubsidized Stafford Loan Program. Students do not need to demonstrate financial need to receive these loans and can borrow up to their program's cost of attendance, with no annual or aggregate limits.[10]

The federal government does not offer grant aid or subsidized loans to graduate students. Those seeking additional financing may rely on private funds, including student loans offered by institutions, financial entities, community and industry organizations, and other private entities.

Before the introduction of the Grad PLUS Loan Program in 2006, federal Stafford loans and private debt financed the bulk of graduate education.[11] By providing a source of financing for students who have reached their federal Stafford loan limit, the Grad PLUS program facilitates access to graduate education. The students who use it would otherwise have to seek private loans, which offer fewer borrower protections than federal loans and lack income-driven repayment and loan forgiveness options.[12] Grad PLUS loans also broaden access to graduate education for those who might have been denied private loans in the past.

However, due to the high levels of borrowing permitted under Grad PLUS, institutions have limited incentive to keep costs in line with expected earnings. While borrower protections — such as income-driven repayment options and loan forgiveness opportunities — address the symptoms of the graduate student debt problem, they do not reach its root causes. These safeguards also do not hold institutions or programs accountable for poor outcomes, and they do little to discourage students from enrolling in graduate programs likely to expose them to financial adversity.

Current borrower protections — such as income-driven repayment and student loan forgiveness — address the symptoms of the graduate student debt problem, but do not address its root causes.

8 Georgetown University Center on Education and the Workforce analysis of data from the Congressional Budget Office (CBO), "Baseline Projections — Federal Student Loan Programs," 2023.

9 Students in certain designated professional healthcare programs are eligible for higher borrowing limits under Direct Stafford Loans, up to $26,667 in additional funds annually with an aggregate limit of $224,000. US Department of Education, *2023–24 Federal Student Aid Handbook*, 2023.

10 US Department of Education, *2023–24 Federal Student Aid Handbook*, 2023.

11 Graduate students enrolled prior to July 2012 had access to subsidized federal Stafford loans; those loans have since been discontinued. US Department of Education, "Direct Subsidized and Direct Unsubsidized Loans," 2024.

12 Public Service Loan Forgiveness (PSLF) is another alternative for borrowers employed by qualifying public and nonprofit entities to discharge their federal student loan debt.

Nor does the Grad PLUS Loan Program promote greater transparency about debt and earnings outcomes, which would help students evaluate which programs are most likely to yield positive returns and which programs they should avoid.

Furthermore, current federal loan policy does not leave much room for policymakers to target specific goals — for example, increasing the number of professionals with graduate credentials in socially valuable but lower-paid occupations, or providing assistance for underrepresented students from low-income family backgrounds or underserved racial/ethnic minority groups.

To address these issues, we propose a regulatory scheme that would parallel the US Department of Education's 2023 Gainful Employment (GE) and Financial Value Transparency (FVT) regulations.[13] Our proposed measures are more stringent than the GE and FVT regulations and are designed to mediate access to Grad PLUS loans specifically rather than to Title IV financial aid more broadly. For a program to maintain eligibility for Grad PLUS borrowing, it will have to pass the following two tests:

- **In-field earnings premium test** — Program graduates must have median earnings that are at least 5 percent above the median earnings of young workers (ages 25–34) who are not enrolled in postsecondary education and who hold bachelor's degrees in the same broad field of study in the state where the institution is located.[14]
- **Debt-to-earnings test** — Median graduate federal loan payments must not exceed 10 percent of program completers' median discretionary earnings, defined as earnings above the living wage for a single individual without children in the state where the program is located.[15]

> Increased transparency is not just a good policy idea — it is something that graduate students want.

Under this proposal, if a graduate program fails either test for two of three consecutive academic years, its students will not be eligible to receive funding from Grad PLUS loans. In addition, all graduate programs will be required to notify prospective students of their performance on these tests. Students who enroll in programs that fail either test will have to provide signed acknowledgment that they were informed of this fact prior to receiving Title IV financial aid funds; the programs will be responsible for obtaining these acknowledgments.

Increased transparency is not just a good policy idea — it is something that graduate students want. Third Way and Global Strategy Group polling found that a substantial majority (76 percent) of current and recent graduate students believe that graduate schools should be more transparent about post-graduation outcomes, including the employment rates and income of recent graduates.[16] In this report, we present a potential regulatory pathway to such transparency and evaluate which graduate programs would likely be affected by our suggested regulations.

Some may argue that graduate degree programs require an even stricter standard than the one we have outlined, with a higher earnings threshold than we recommend. However, we believe that such an approach would be overly restrictive, limiting individual choice for students who may want to pursue graduate education options with lower earnings due to academic or personal interests. As long as programs are transparent about

13 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

14 This test uses the reference group recommended by Matsudaira and Turner (2020) (bachelor's degree holders in the same broad field as the graduate degree program and in the same state as the institution). Instead of subtracting amortized program costs from graduates' earnings, as Matsudaira and Turner recommend, we use a separate debt-to-earnings test to measure affordability, adding a 5 percent cushion to account for noise in the data. Matsudaira and Turner, *Towards a Framework for Accountability*, 2020. For more information about our proposed regulatory metrics, see Appendix A.

15 This metric would only encompass students with federal graduate student loans. If median annual earnings for program graduates are below the living wage for the state where the program is located, the program will fail this metric regardless of borrowers' debt levels; Glasmeier, "Living Wage Calculator," 2023. We calculate expected debt payments using a graduated repayment option adjustment to account for earnings growth over the course of borrowers' careers. The repayment periods we use for loan payment calculations are 15 years for master's degrees and 20 years for doctoral and professional degrees. For more information on the construction of our proposed debt-to-earnings test metric, see Appendix A.

16 Cecil, "Transparency Is the Name of the Game for Graduate Students," 2024.

their financial outcomes, offer at least some minimal earnings benefits, and enable completers to attain earnings sufficient to repay their loans without financial duress or additional cost to taxpayers, students should be allowed to obtain financing to attend them, including through Grad PLUS loans.

Available data suggest how our proposed regulatory standards would affect graduate programs.

We applied our proposed regulatory framework to currently available College Scorecard data on student debt and earnings four years after graduation to assess the framework's likely impact on graduate programs. This evaluation provided two general insights. First, a relatively small share of graduate degree programs do not lead to better earnings than a bachelor's degree in the same broad field: among programs with available earnings data, 14 percent of master's degree programs and 4 percent of professional degree programs do not pass our earnings premium test.[17] Second, among programs with available earnings and debt data, a more substantial 41 percent of master's degree programs and 67 percent of professional degree programs do not pass our debt-to-earnings test.[18]

These results likely reflect the broader trends within graduate education, as the College Scorecard captures the earnings of 65 percent of master's and professional degrees awarded.[19] At the same time, the high level of data missingness in the College Scorecard limits the generalizability of the findings. To protect graduates' privacy, the College Scorecard suppresses earnings data for graduates of many small programs, including 77 percent of master's degree programs, 70 percent of professional degree programs, and 93 percent of doctoral degree programs.[20] As more graduating cohorts join the College Scorecard database, a more complete evaluation may be possible in the future. Cohort pooling, combined with other statistical techniques, may help address some of the challenges associated with privacy considerations and expand the number of graduate programs for which outcome measures are available.

To address the problem of earnings data missingness in the near term, we recommend that the Department of Education consider instituting a pass/fail approach on the earnings premium and debt-to-earnings tests for programs subject to data suppression. Under this approach, the department would withhold specific information about median earnings and median debt and only release pass/fail outcomes. This would potentially allow the Department of Education to hold more programs accountable. It would also help prevent more graduate students from borrowing amounts that they are unlikely to be able to repay without undue financial strain—and it would prevent them from relying on public funds for loan forgiveness.

We recommend a pass/fail approach on our earnings premium and debt-to-earnings tests for programs subject to data suppression.

17 Doctoral degree programs are excluded from this analysis due to the exceptionally low availability of earnings data (7 percent) in the College Scorecard. Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, College Scorecard, 2023; and the US Census Bureau, American Community Survey (ACS), 2009–21 (pooled). For more about these metrics, see Appendix A.

18 Doctoral degree programs are excluded from this analysis due to the exceptionally low availability of earnings and debt data in the College Scorecard (4 percent). Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, College Scorecard, 2023; Glasmeier, "Living Wage Calculator," 2023. For more about these metrics, see Appendix A.

19 For doctoral programs, though, the coverage in the College Scorecard is substantially lower, with earnings data available for programs that represent only 23 percent of awards. Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, College Scorecard, 2023.

20 Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, College Scorecard, 2023.

We also recommend that the Department of Education include additional metrics in the program data it collects and reports. While earnings and debt data are critical measures of the economic value of programs, they are not the only means to assess program success. For example, another important outcome is degree completion, a measure that graduate programs — unlike undergraduate programs — are not currently required to report. The following policies would complement our regulatory framework and shed a brighter light on the full spectrum of program outcomes:

- Requiring relevant outcome metrics to be published on each program's website and through a centralized web portal maintained by the Department of Education. These outcome metrics would include completion rates, withdrawal rates, loan repayment rates, the share of students with loans, the breakdown of loans held at the time of completion by loan type and by when the loans were taken out (during graduate or undergraduate studies), the primary occupations for which the program prepares students, and any applicable post-graduation licensure requirements.
- Using targeted grants to promote graduate education in socially valuable but lower-paid professions and to support graduate students from marginalized and underrepresented groups.
- Requiring all institutions to provide adequate career and financial aid counseling to graduate students.
- Requiring graduate programs to report the same basic information as undergraduate programs to the Department of Education, including admissions rates, retention rates, graduation rates, financial aid awards, and net price.[21]

Graduate education has grown substantially over recent decades, as have costs and associated student debt.

Promoting greater transparency about graduate program outcomes has become more urgent due to the expansion of graduate education and the related increase in student loan debt. Total graduate enrollments increased by 49 percent from 2000 to 2020.[22] This expansion in graduate education coincided with growing employer demand for workers with graduate degrees and new entry-level requirements for certain professions.[23] To meet new demand, institutions expanded their graduate degree program offerings, particularly at the master's degree level. Some institutions may also view such programs as an attractive source of revenue.[24]

The growing demand for graduate degrees is also a response to their promising returns. Adults with graduate degrees have the highest employment rates compared to adults with other education levels (87 percent for graduate degree holders compared to 75 percent for all adults ages 25–64).[25] And workers with graduate degrees have the highest earnings compared to workers with other education levels ($99,000 annually, compared to $78,000 for workers with bachelor's degrees and $46,000 for workers with high school diplomas).[26]

Although graduate degrees offer the highest earnings and employment rates of all educational credentials, the earnings premium for graduate degree holders relative to bachelor's degree holders has not changed much in the past 30 years, with the exception of the

21 Net price equals the cost of attendance minus grant aid.

22 Georgetown University Center on Education and the Workforce analysis of data from Table 303.80 of the US Department of Education, *Digest of Education Statistics* (online tables), 2021.

23 Professions with new graduate education requirements include athletic trainers, certified nurse anesthetists, registered dieticians, and occupational therapists. Horton, "Upgrading Nurse Anesthesia Educational Requirements," 2007; Athletic Training Strategic Alliance, "Strategic Alliance Degree Statement," 2015; Academy of Nutrition and Dietetics, *Visioning Report*, 2012; Hilton, "The Evolving Postbaccalaureate Entry," 2005.

24 Marcus, "In-Demand Graduate Programs Become a Cash Cow for Colleges in Financial Distress," 2017; Marcus, "Universities Increasingly Turn to Graduate Programs to Balance Their Books," 2019.

25 Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2022.

26 These values reflect median earnings among full-time, full-year workers, ages 25–64, inflation-adjusted to 2022 dollars. Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2022.

premium associated with doctoral degrees.[27] At the same time, the direct costs of earning a graduate degree (as measured by net tuition and fees) have more than tripled since 2000.[28] Graduate student loans now account for nearly half of all federal student loan disbursements.[29]

Furthermore, potential earnings and debt vary by field of study. For instance, graduate degree holders who studied science, technology, engineering, and mathematics (STEM) have some of the highest earnings and lowest debt levels. In fact, more than two-thirds of STEM graduate students do not accrue any federal student loan debt for their graduate studies.[30] Those with advanced degrees in healthcare and social sciences (including law degrees) experience high earnings premiums relative to bachelor's degree workers in those fields, but graduates of those programs also tend to accumulate higher levels of debt. Graduate degree holders in the humanities and the arts, meanwhile, have the lowest earnings among workers with graduate degrees — and relatively low earnings premiums relative to workers with bachelor's degrees in the same broad field of study. Although their debt levels tend to be lower,[31] some humanities and arts programs yield median earnings that are insufficient for graduates to meet their median monthly debt payments without facing undue financial burden.

Healthcare programs require special considerations.

Graduate healthcare programs are major contributors to graduate student debt. Among students completing their graduate programs, 54 percent of those who studied healthcare have more than $45,000 in cumulative graduate student debt, while 54 percent of those who studied in any other field do not have any graduate student debt.[32] Most of the debt associated with graduate healthcare programs is not borrowed through Grad PLUS loans, but instead is due to higher loan limits on Stafford loans for students in those programs.[33] These carve-outs are motivated by the critical role that medical and related health professions play in individual and community well-being. In addition, due to residency requirements, the early-career earnings of medical and other healthcare professionals tend to be much lower than their likely mid-career earnings as fully licensed experienced professionals.[34]

Graduate student loans now account for nearly half of federal student loan disbursements.

27 Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 1992–22.

28 Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2000, 2020.

29 Monarrez and Matsudaira, *U.S. Department of Education: Trends in Federal Student Loans for Graduate School*, 2023.

30 Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2020.

31 Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and US National Science Foundation, National Survey of College Graduates, 2021; US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2020.

32 Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2020.

33 Students in Doctor of Allopathic Medicine, Doctor of Osteopathic Medicine, Doctor of Dentistry, Doctor of Veterinary Medicine, Doctor of Optometry, Doctor of Pediatric Medicine, and Doctor of Naturopathic Medicine or Doctor of Naturopathy programs are eligible for an additional $20,000 annually if they are in a nine-month-academic-year program and an additional $26,667 if they are in a 12-month-academic-year program. Students in Doctor of Pharmacy, Doctor of Chiropractic, Doctor of Clinical Psychology, and master's or doctoral degrees in public health or health administration are eligible for an additional $12,500 in direct unsubsidized Stafford loans if they are in a nine-month-academic-year program and an additional $16,667 if they are in a 12-month-academic-year program. US Department of Education, *2023–24 Federal Student Aid Handbook*, 2023.

34 The median earnings of workers ages 40–49 with a professional degree in health are over $210,000. Georgetown University Center on Education and the Workforce analysis of the data from the US Census Bureau and US National Science Foundation, National Survey of College Graduates 2015, 2017, 2019, and 2021 (pooled).

Our proposed regulations for Grad PLUS loans will not have a major impact on these healthcare programs because graduate students in these programs primarily rely on Stafford loans. With input from public health experts and the medical community, federal policymakers should separately evaluate whether a modified set of earnings- and debt-based accountability standards for these programs could limit the financial risk to individuals without harming public health by constraining access to education and training for critical health professions.

Systemic inequalities are evident both in graduate degree attainment and in earnings gaps by gender and race/ethnicity among graduate degree holders.

Graduate education provides important access to opportunity, but it also reflects inequalities that it inherits from the pre-K through 16 educational system and then carries forward into the labor force. For example, only 8 percent of graduate degree holders are Hispanic/Latino (compared with 17 percent of the adult population ages 25–64) and 9 percent are Black/African American (compared with 12 percent of the adult population).[35] Moreover, graduate degrees do not lead to equal pay for historically underrepresented racial/ethnic groups. In fact, some of the largest wage gaps in the labor market are found among graduate degree holders. For example, Black/African American, Hispanic/Latino, and American Indian/Alaska Native graduate degree holders each have median annual earnings of $85,000 or less, compared to more than $100,000 for white and Asian/Asian American graduate degree holders.

Some of the largest wage gaps by race/ethnicity in the labor market are found among graduate degree holders.

Similarly, inequality is high among men and women with graduate degrees. Women, seeking to bolster their economic opportunities and overcome disparities in the labor market, helped drive the growth of graduate education. Between 1970 and 2021, women's share of graduate enrollments increased from 35 percent to 61 percent, as the number of female graduate students grew by 370 percent (compared to 57 percent growth in the number of male graduate students).[36] But while graduate degrees helped improve women's status in the workforce, the gender wage gap is wider among workers with graduate degrees than among all workers ages 25–64. Among all workers, women earn 80 cents on the dollar relative to men; but among workers with graduate degrees, women only earn 71 cents on the dollar.[37] Although women represent a higher share of overall graduate enrollment than men, occupational stratification and labor-market discrimination perpetuate high levels of earnings inequality.[38]

35 Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2018–22 (pooled).

36 Georgetown University Center on Education and the Workforce analysis of data from Table 303.80 of the US Department of Education, *Digest of Education Statistics* (online tables), 2021.

37 Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2018–22 (pooled).

38 The earnings and earnings gaps are for full-time, full-year workers. Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2018–22 (pooled).

Graduate education provides significant value to students and society, but it needs greater regulatory oversight to address cost, debt, and equity challenges.

Throughout this report, we will explore our proposed regulatory agenda alongside the current outcomes of graduate education, including value, cost, and equity. In Part I, we discuss the evolving value of graduate degrees. In Part II, we delve into the variation in earnings and earnings premiums by field of study, along with the prevalence of different fields of study and occupations among graduate degree holders. In Part III, we address costs and debt, including the specific dynamics of Grad PLUS loans and an overview of Grad PLUS loan recipients. In Part IV, we examine racial/ethnic and gender equity challenges. In Part V, we detail our proposed program-level regulatory tests, and we analyze the performance of graduate programs on those tests based on currently available data. Finally, in Part VI, we present a series of policy recommendations designed to enhance the value of graduate education, promote equitable outcomes, and curtail superfluous costs and debt.

PART

I

The Value of Graduate Degrees

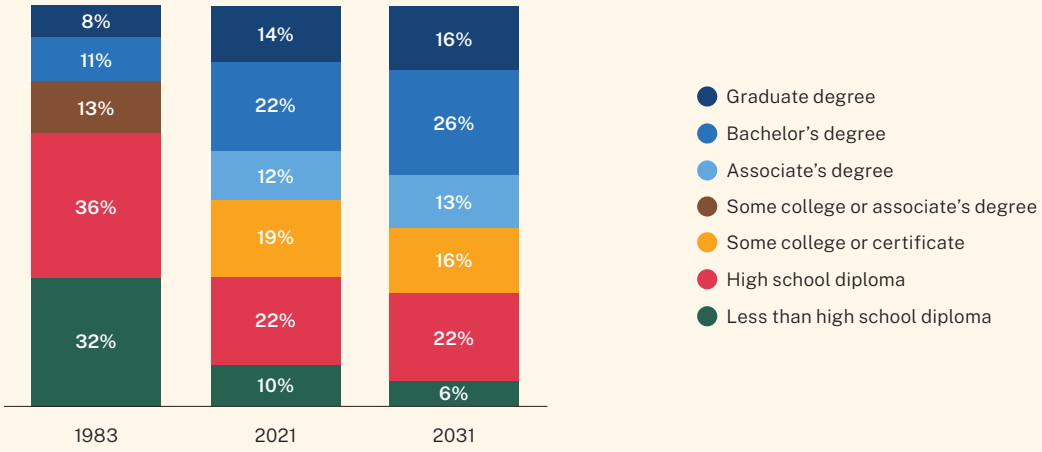
Graduate education is increasingly vital to the US economy and the workforce. Graduate degrees continue to offer the highest employment rates and median earnings of any education level, and these degrees benefit the wider US economy via increased consumer spending and higher tax revenues. Graduate education is also associated with a range of health, general well-being, social, and civic benefits. Yet, the rapid growth of graduate degree programs — particularly master's degree programs — has led some to question whether institutions are putting their own financial interests ahead of students' interests and market demands. These concerns are especially salient in the case of online master's degree programs operated by third-party, for-profit online program management companies.

Adding to these concerns is the fact that the graduate-to-bachelor's-degree earnings premium has not budged in the past 30 years, other than for doctoral degrees. Meanwhile, as we will discuss in Part III, net tuition and fees more than tripled from 2000 to 2020.[39] Without a commensurate increase in the earnings premium, these growing costs and debt levels reduce the returns graduate students can expect from their investment. In addition, median earnings and the in-field earnings premium vary substantially by the type of graduate degree and the field of study. In other words, although graduate degrees have high value overall, high returns are not guaranteed by all programs across all institutions.

Despite these concerns, the growing importance of graduate degrees is evident in the expanding share of workers who hold these degrees. In 1983, jobs requiring graduate degrees were 8 percent of all jobs; by 2021, that share had nearly doubled, to 14 percent. We expect demand for workers with graduate degrees to increase further into the next decade, reaching 16 percent by 2031 (Figure 1), as the tasks involved in a variety of professional and scientific occupations become more complex.

FIG. 1

Jobs that demand graduate degrees have grown from 8 percent of all jobs in 1983 to 14 percent in 2021, and they are projected to reach 16 percent by 2031.



Source: Carnevale et al., *After Everything*, 2023; Carnevale et al., *Learning and Earning by Degrees*, 2024.

Note: Before 1992, the education variable in the Current Population Survey was identified as years of schooling. We are therefore unable to differentiate between "some college or certificate" and "associate's degree" in those years. "Certificate" refers to sub-baccalaureate postsecondary certificates. Values may not sum to 100 percent due to rounding.

39 Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2000 and 2020.

Our projections indicate that overall employment will grow by 10 percent from 2021 to 2031.[40] The number of jobs requiring a graduate degree, however, will increase at more than twice that rate, or 23 percent, from 22.4 million jobs in 2021 to 27.6 million jobs in 2031.[41] Graduate education will continue to play a major role in preparing some of the most educated and skilled professionals to handle the increasingly complex challenges organizations will face as new technologies, such as artificial intelligence (AI), become more prominent in our working lives.

Graduate education has become a major part of the American higher education landscape.

Before the second half of the 20th century, graduate education was all but absent from the American higher education landscape. For much of the 1800s, American colleges and universities focused on providing an undergraduate liberal arts education. Students who wanted an advanced degree had to go abroad, and an estimated 10,000 Americans pursued graduate education in Europe in the 19th century.[42] American institutions began offering graduate degree programs in the mid-19th century, beginning with Yale University, which awarded the first American doctoral degree in 1861.[43] The Morrill Land Grant Acts provided support through the sale of federal lands for states to establish scientific, technical, and research institutions. Some of the resulting land-grant institutions later became the earliest providers of American graduate education.[44]

The number of institutions offering graduate programs grew slowly but steadily through the first half of the 20th century. Graduate education received a further boost from federal policymakers through the post-World War II GI Bill. Concerns about the technological innovations of rival nations prompted further investment in graduate education in the 1960s and 1970s.[45] Following the launch of Sputnik by the Soviet Union in 1957, Congress passed the National Defense Education Act (NDEA) in 1958. This legislation, intended primarily to boost science, technology, engineering, and mathematics (STEM) and foreign language education to keep the United States competitive with its international adversaries, included some of the first federal student loans made available to both graduate and undergraduate students via institutions, as well as fellowships for graduate studies that would help build capacity for college teaching. The Higher Education Act of 1965 and its subsequent reauthorizations expanded and built upon many of these programs.[46]

These developments translated to significant growth in the number of graduate degrees awarded

Graduate education will continue to play a major role in preparing some of the most educated and skilled professionals to handle the increasingly complex challenges organizations will face as new technologies become more prominent in our working lives.

40 Overall employment will increase by around 15 million jobs, from approximately 155 million jobs in 2021 to more than 170 million jobs in 2031. Carnevale et al., *After Everything*, 2023.

41 Carnevale et al., *After Everything*, 2023.

42 Thurgood et al., *U.S. Doctorates in the 20th Century*, 2006; Walters, "The Rise of Graduate Education," 1965.

43 Yale Graduate School of Arts and Sciences, "Mission & History," 2024.

44 Thurgood et al., *U.S. Doctorates in the 20th Century*, 2006.

45 Thurgood et al., *U.S. Doctorates in the 20th Century*, 2006.

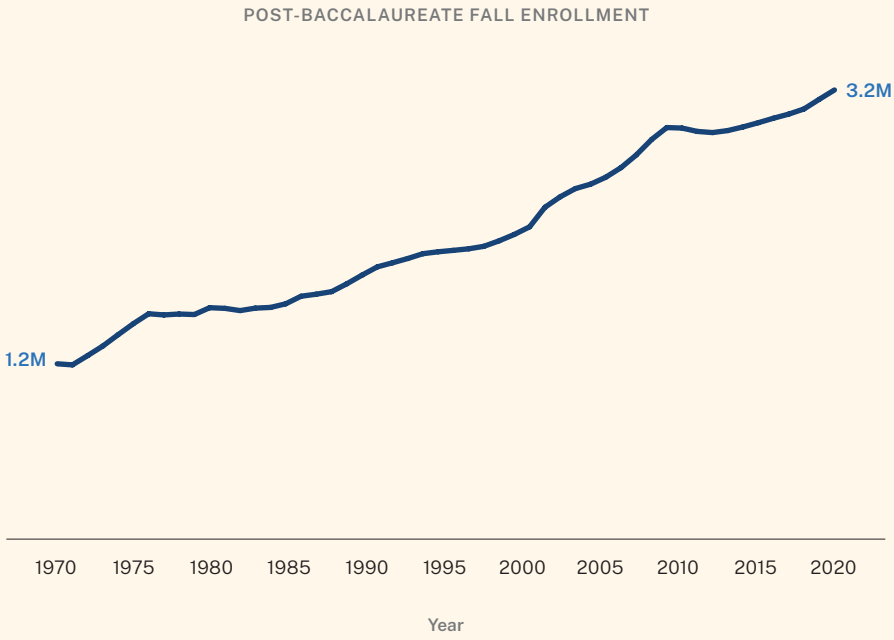
46 Flattau et al., *The National Defense Education Act of 1958,* 2006.

and in graduate enrollment overall. In the 1969–70 academic year, American colleges and universities awarded 214,000 master's degrees and more than 59,000 doctoral degrees.[47] Subsequently, graduate enrollments nearly tripled from 1.2 million to 3.2 million between 1970 and 2021 (Figure 2).

Graduate enrollments nearly tripled from 1.2 million to 3.2 million between 1970 and 2021.

FIG. 2

Enrollment in graduate degree programs has nearly tripled since 1970.



Source: Georgetown University Center on Education and the Workforce analysis of data from Table 303.80 of the US Department of Education, *Digest of Education Statistics* (online tables), 2021.

Note: M=millions.

47 Georgetown University Center on Education and the Workforce analysis of data from Table 318.10 of the US Department of Education, *Digest of Education Statistics* (online tables), 2022.

Institutions see graduate degrees as a lucrative part of their business model.

In the 21st century, new credentialing demands and professional licensing requirements drove up both total graduate enrollments and the number of graduate programs offered.[48] Certain fields now require a post-baccalaureate credential for entry-level positions, making a graduate degree a prerequisite for entry into some careers. These include roles as certified registered nurse anesthetists, athletic trainers, registered dieticians, and occupational therapists.[49] New entrants to the workforce might also seek out a graduate degree to distinguish themselves from the competition. More experienced workers, meanwhile, may turn to graduate degrees to advance their careers to the next level.

Growing interest from students is not the only reason that institutions have been expanding their graduate degree program offerings;[50] institutions also see graduate degrees as a lucrative part of their business model. In 2019–20, public colleges and universities received revenues of $18,580 from every full-time equivalent (FTE) master's degree student and $30,890 from every FTE doctoral degree student. This compares favorably with the $15,150 from each FTE bachelor's degree student and $11,350 from each FTE associate's degree student.[51] Moreover, at private nonprofit universities, the institutional subsidy per FTE student is much smaller for master's degree students (17 percent in the 2019–20 academic year) than for bachelor's degree students (44 percent).[52] In short, relative to bachelor's degrees, master's degrees bring in more revenue at lower costs for institutions. These benefits help shore up institutions' finances, compensating for uncertainty in their funding streams due to declining undergraduate enrollments and flagging state appropriations.[53]

The financial incentives associated with providing graduate degrees, combined with the impact of weak regulatory requirements, have led some experts to question universities' motives in offering more of these programs.[54] For example, Andrew Policano, author of *From Ivory Tower to Glass House: Strategies for Academic Leaders During Turbulent Times*, has called graduate degree programs, "an irresistible source of revenue for colleges and universities."[55] And Kevin Carey, vice president for education policy and knowledge management at New America, has said that "universities see master's degree programs as largely unregulated cash cows that help shore up their bottom line."[56] Adding to these concerns is the growing presence of third-party, for-profit online program management companies that market and deliver online master's degree programs in partnership with nonprofit universities — while charging as much as 80 percent of tuition and fees in commissions.[57]

48 For examples, see Pappano, "The Master's as the New Bachelor's," 2011.

49 Horton, "Upgrading Nurse Anesthesia Educational Requirements," 2007; Athletic Training Strategic Alliance, "Strategic Alliance Degree Statement," 2015; Academy of Nutrition and Dietetics, *Visioning Report*, 2012; Hilton, "The Evolving Postbaccalaureate Entry," 2005.

50 The median number of master's degree programs offered by universities grew from seven in 2012 to nine in 2021, and the total number of master's degree programs grew by 33 percent over the same period. The number of PhD and professional degree programs also grew, though their numbers remained substantially smaller than the number of master's degree programs. Master's degree programs still make up a majority (74 percent) of graduate programs. Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2012, 2021.

51 Ma and Pender, *Trends in College Pricing and Student Aid 2022*, 2022.

52 The institutional subsidy as a share of education-related expenditures is also smaller for master's and doctoral degree students than for bachelor's degree students at public institutions, though the differences are not as pronounced (46 percent for master's degree students and 40 percent for doctoral degree students, compared with 57 percent for bachelor's degree students in the 2019–20 academic year). Ma and Pender, *Trends in College Pricing and Student Aid 2022*, 2022.

53 Marcus, "In-Demand Graduate Programs Become a Cash Cow for Colleges in Financial Distress," 2017; Marcus, "Universities Increasingly Turn to Graduate Programs to Balance Their Books," 2019.

54 Weissmann, "Master's Degrees Are the Second Biggest Scam in Higher Education," 2021.

55 Marcus, "In-Demand Graduate Programs Become a Cash Cow for Colleges in Financial Distress," 2017.

56 Carey, "Is the Master's Degree an Expensive Anachronism?," 2014; Carey, "The Creeping Capitalist Takeover of Higher Education," 2019.

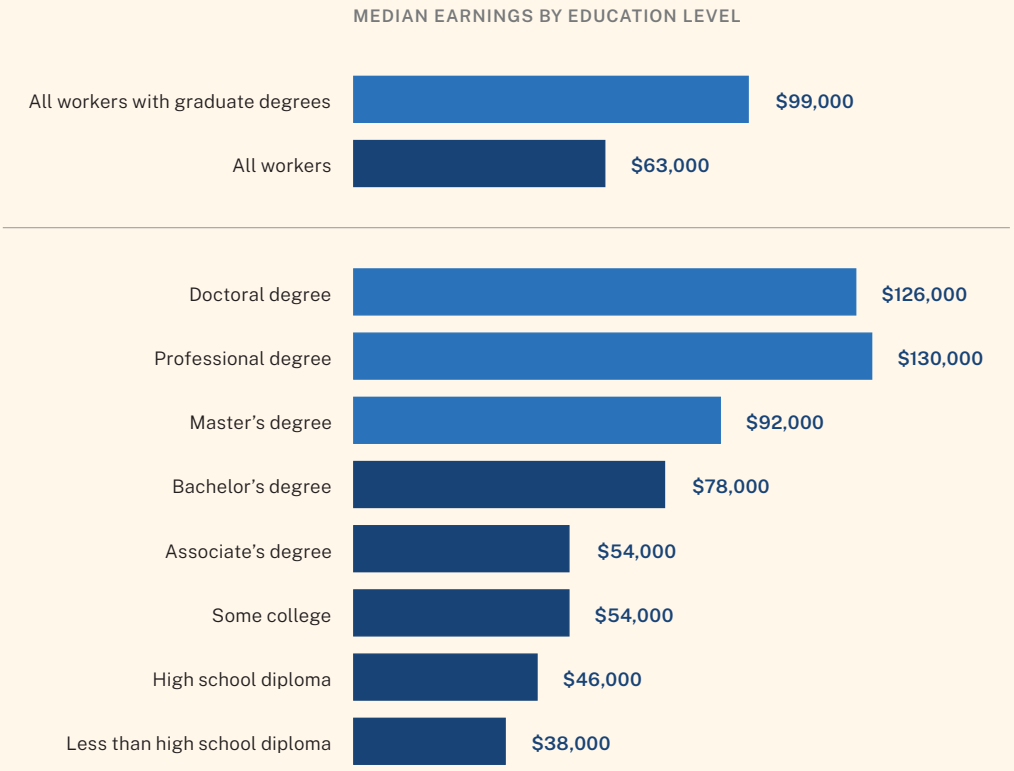
57 Hall and Dudley, *Dear Colleges*, 2019; Marcus, "Universities Increasingly Turn to Graduate Programs to Balance Their Books," 2019.

Graduate degrees lead to the highest median earnings and the highest likelihood of employment among all education levels.

Students have clear monetary incentives to pursue graduate education. Graduate degree holders have median earnings of $99,000, approximately 57 percent more than the median earnings of $63,000 for all full-time, full-year workers (Figure 3). However, median earnings vary significantly by graduate degree type. Workers with professional degrees have the highest median annual earnings ($130,000). They are followed by workers with doctoral degrees, with median annual earnings of $126,000, and those with master's degrees, with median annual earnings of $92,000. Median earnings among graduate degree holders also vary by field of study and occupation, as we will explore in Part II of this report.

FIG. 3

Workers with graduate degrees have the highest median earnings, led by workers with professional degrees who have median annual earnings of $130,000.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2022.

Note: These numbers reflect median earnings among full-time, full-year workers, ages 25–64, with positive earnings in 2021. Earnings have been inflation-adjusted to 2022 dollars and are rounded to the nearest thousand.

In addition to higher median earnings, graduate education offers a greater likelihood of employment, particularly for workers with professional or doctoral degrees. Overall, the employment-to-population ratio for graduate degree holders is 87 percent, compared to 75 percent for all adults (Figure 4). Among graduate degree holders, those with doctoral degrees are most likely to be employed, with an employment-to-population ratio of 90 percent, followed by those with professional degrees (89 percent) and those with master's degrees (86 percent).

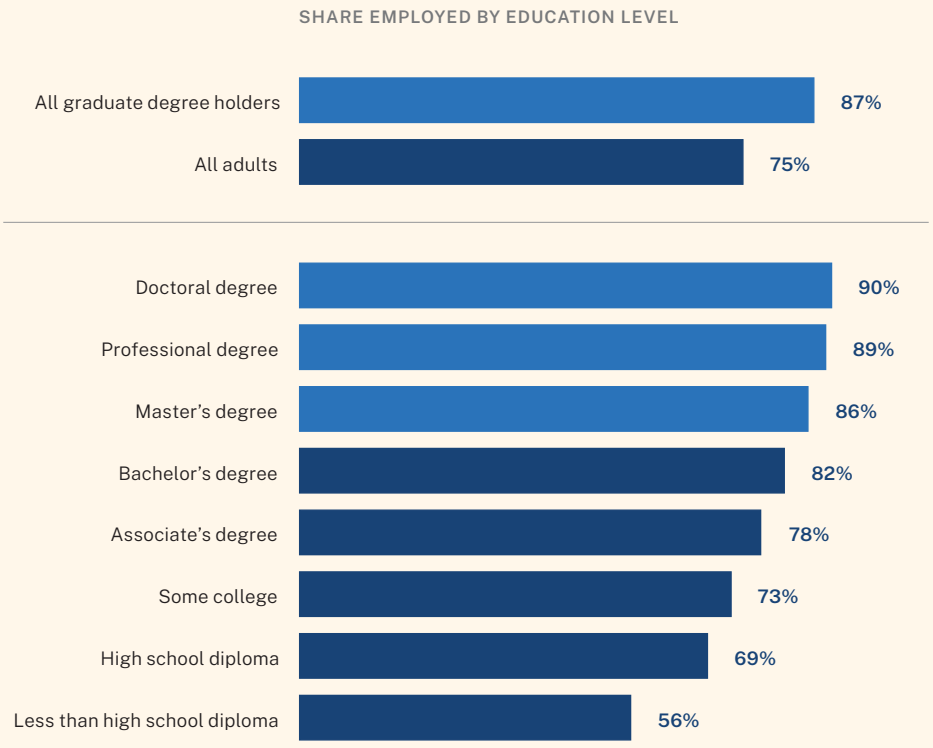
Graduate education offers many nonpecuniary benefits.

Higher earnings are not the only incentive to pursue graduate education. In fact, higher levels of education are correlated with a range of positive life outcomes,[58] from better health and improved civic engagement to stronger critical-thinking skills[59] and weaker inclinations toward authoritarianism.[60]

Research consistently finds that individuals with higher levels of educational attainment are more

FIG. 4

Nearly nine in 10 graduate degree holders are employed, compared to three in four adults of all education levels.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2022.

Note: These shares reflect the employment-to-population ratios for adults ages 25–64.

58 Correlation is not causation: the specific interactions between higher levels of education and these outcomes are not well established.

59 Assari, "Race, Education, Attainment, and Happiness in the United States," 2019; Salinas-Jiménez et al., "Education as a Positional Good," 2011; Gallup and Lumina Foundation, *Education for What?*, 2023.

60 Carnevale et al., *The Role of Education in Taming Authoritarian Attitudes*, 2020.

likely to report higher levels of health and well-being. Advanced degree holders, in fact, report some of the highest levels of well-being.[61] For example, a 2023 study by Gallup and Lumina Foundation found that 75 percent of graduate degree holders rated their life as 7 or higher on a 10-point scale, compared to 69 percent of bachelor's degree holders, 59 percent of associate's degree holders, and 56 percent of those with some postsecondary education, but no degree.[62]

It is possible that these higher levels of well-being are driven in part by the financial rewards associated with advanced degrees. Higher-paying jobs tend to carry fringe benefits that support the pursuit of health and happiness, such as access to employer-subsidized health insurance, retirement benefits, and paid leave.[63] Access to subsidized healthcare is likely an important contributor to overall health, and better health contributes to overall well-being. Advanced degree holders are more likely than other groups to have access to this and other contingent benefits,[64] and they also report higher levels of health and happiness. For instance, 65 percent of graduate degree holders and 61 percent of bachelor's degree holders rated their health as excellent or very good,[65] compared with 43 percent of those with no postsecondary education. Research also indicates that advanced degree holders are more likely to vote, to contribute to community organizations, and to trust their neighbors.[66]

Graduate education can transform society, advancing innovation, technology, education, and the arts.

Beyond its impact on individuals' lives, graduate education can transform society, advancing innovation, technology, education, and the arts. Individuals with graduate degrees have made numerous critical advancements in research and science.[67] And while median earnings tend to be lower for people working in education[68] and the arts,[69] the positive social impact of their work is not easily quantified and may far exceed the individual benefits. Several caring professions, such as counseling and social work, also require graduate degrees for entry—and these professions likewise have a strong impact on individuals and society.

The tendency of graduate degree holders to offer generally positive assessments of their education reflect both the monetary and nonmonetary benefits. A majority of graduate degree holders indicate that the benefits of their education exceed the costs, a higher share than among bachelor's or associate's degree holders within the same age groups.[70] However, employment status influences whether graduates feel the degree was worth it. A Third Way survey of graduate students found that 56 percent of graduates who are employed full time said the degree was worth it, while just 9 percent of those who are unemployed felt the same.[71] In other words, perceptions of graduate education connect strongly to how individuals fare after attaining their degrees.

61 Keyes, "The Mental Health Continuum," 2002.

62 Gallup and Lumina Foundation, *Education for What?*, 2023.

63 Georgetown University Center on Education and the Workforce analysis of data from Walsh and Beach, *National Compensation Survey*, 2021.

64 Trostel, *It's Not Just the Money*, 2015.

65 Gallup and Lumina Foundation, *Education for What?*, 2023.

66 Gallup and Lumina Foundation, *Education for What?*, 2023; Trostel, *It's Not Just the Money*, 2015; Assari, "Race, Education, Attainment, and Happiness in the United States," 2019; Salinas-Jiménez et al., "Education as a Positional Good," 2011.

67 Council of Graduate Schools, *Graduate Education and the Public Good*, 2008.

68 While teachers generally need a bachelor's degree, they typically receive higher compensation with a master's degree. Baum and Espinosa, "Exploring the Importance of Low-Wage, High Social Value Careers," 2021.

69 Frey, "The Social Value of Art," 2019.

70 The age groups used in this analysis were 18–29, 30–44, 45–59, and 60+. Board of Governors of the Federal Reserve System, *Report on the Economic Well-Being of US Households in 2023*, 2024.

71 Robinson, "Employment and Earnings Outcomes Shape Graduate Students' Perceptions of Program Value," 2024.

Completion rates across graduate degree programs are not well understood.

Students who enroll in advanced education must complete a graduate degree to reap its full benefits. But the extent to which they complete their degrees is uncertain. Graduate programs do not report completion rates to the National Center for Education Statistics (NCES), nor do regular longitudinal studies follow cohorts of graduate school entrants.

The best available national data on graduate student completion can be obtained from the Baccalaureate and Beyond (B&B) Longitudinal Study. This study follows a cohort of bachelor's degree holders for 10 years after they complete their undergraduate degrees. While not fully representative of the outcomes of a cohort of starting graduate students, the study hints at completion rates among students who entered a master's, professional, or doctoral degree program after earning a bachelor's degree.[72]

Students who enroll in advanced education programs must complete a graduate degree to reap its full benefits.

Overall, 83 percent of students from the most recent B&B cohort who began a post-baccalaureate degree or certificate program completed such a program. The differences among program types are significant: the completion rate for master's degree programs was 80 percent, compared with 84 percent for professional degree programs. In contrast, 56 percent of students enrolled in a doctoral degree program completed a doctoral degree, although a large majority (78 percent) of those who did not complete a doctoral degree program attained another graduate credential instead—usually a master's degree or a professional degree.[73]

72 Baccalaureate and Beyond: 2008/2018 (B&B: 08/18) is the latest version of the study for which a full 10-year follow-up is available and is our data source for this analysis.

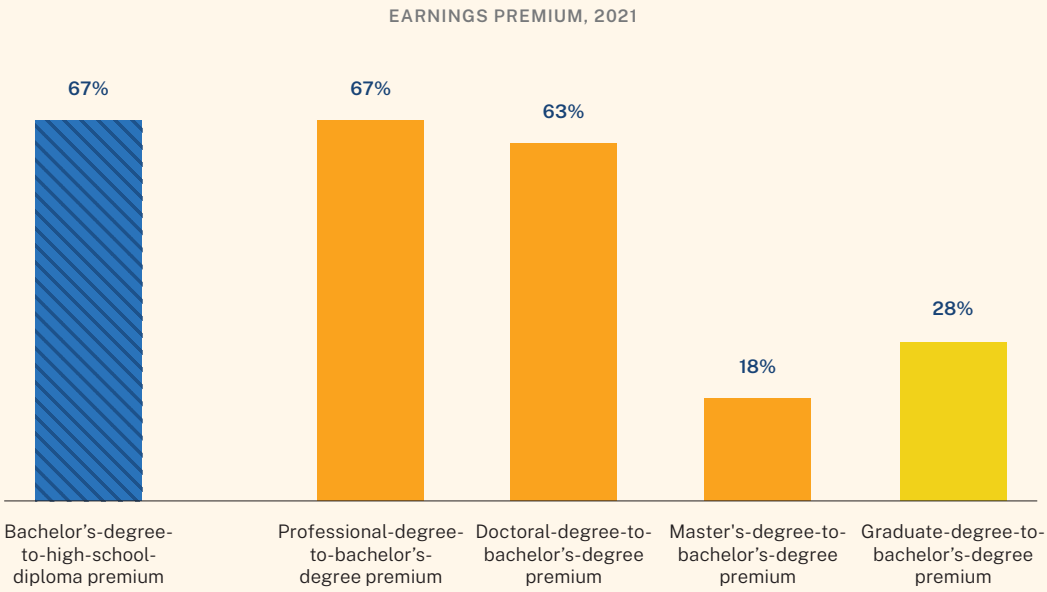
73 Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Center for Education Statistics (NCES), Baccalaureate and Beyond: 2008/2018 (B&B: 08/18) Study, 2018. The completion rates described in this paragraph exclude students who were still enrolled in their post-baccalaureate degree or certificate program at the time of the follow-up survey.

Graduate degrees offer an earnings premium of 28 percent over bachelor's degrees, but that premium hasn't changed much since the 1990s.

An evaluation of the graduate-degree-to-bachelor's-degree earnings premium offers a deeper understanding of the financial returns associated with graduate degrees. Overall, workers with graduate degrees benefit from a 28 percent earnings premium compared to workers with bachelor's degrees. This earnings premium varies by the type of graduate degree: compared to the median earnings among workers with a bachelor's degree, the median earnings are 67 percent higher among workers with a professional degree[74] and 63 percent higher among workers with a doctoral degree (Figure 5). In contrast, master's degrees offer a more modest 18 percent earnings premium relative to bachelor's degrees. Moreover, not all graduate degree holders earn more than bachelor's degree holders. In fact, approximately one in three workers with an advanced degree earns less than $78,000, the median earnings among bachelor's degree holders.[75]

FIG. 5

The professional-degree-to-bachelor's-degree earnings premium is 67 percent, roughly equal to the bachelor's-degree-to-high-school-diploma earnings premium.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2022.

Note: These numbers reflect median earnings among full-time, full-year workers, ages 25–64, with positive earnings in 2021. The values shown in the figure are calculated based on earnings that have been inflation-adjusted to 2022 dollars.

74 Notably, this is roughly commensurate with the earnings premium between workers with a bachelor's degree and workers with no more than a high school diploma.

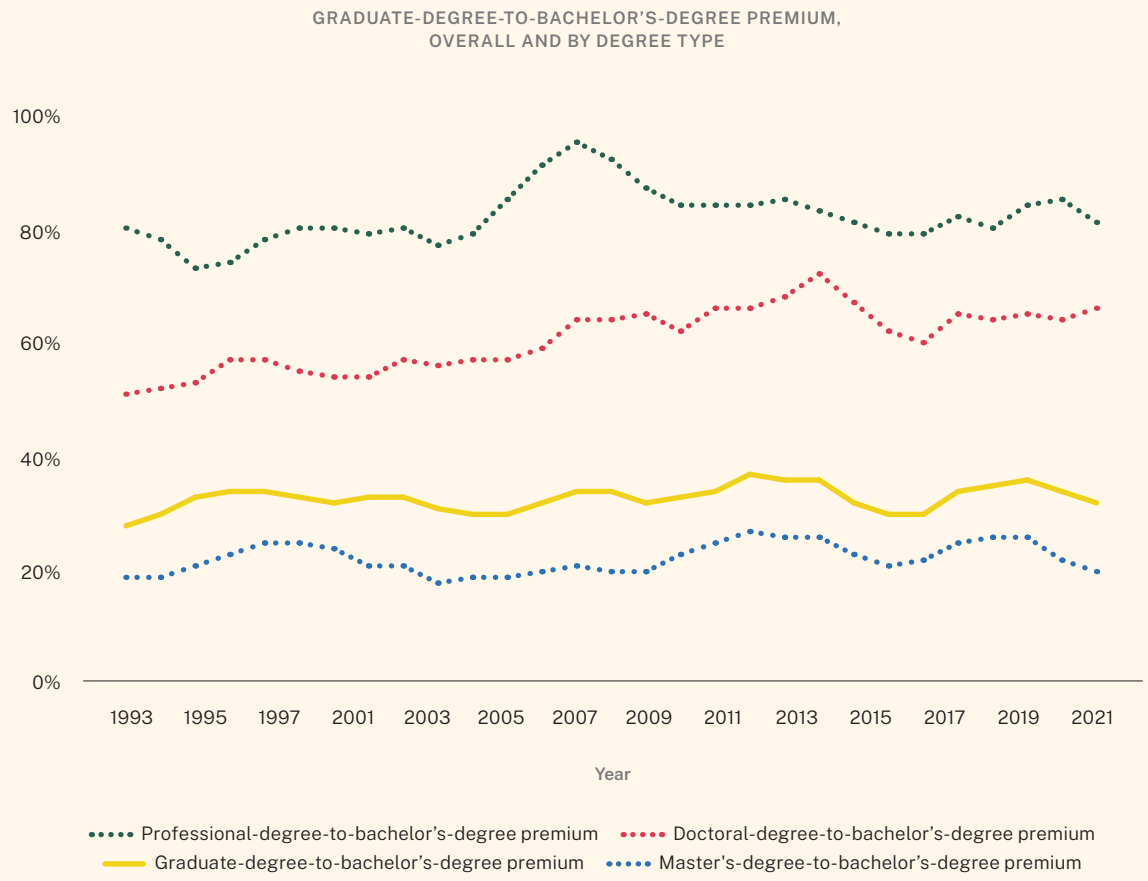
75 A similar share (32 percent) of bachelor's degree holders earns more than the median earnings among graduate degree holders ($99,000). These median earnings are based on earnings among full-time, full-year workers, ages 25–64, with positive earnings, inflation-adjusted to 2022 dollars. Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2020–22 (pooled).

The graduate-degree-to-bachelor's-degree earnings premium is much as it was three decades ago. The one notable exception is doctoral degrees: the earnings premium associated with these degrees has increased from just over 50 percent in the early 1990s to just over 60 percent by the early 2020s (Figure 6).

The earnings premium associated with doctoral degrees has increased from just over 50 percent in the early 1990s to just over 60 percent by the early 2020s.

FIG. 6

The graduate-degree-to-bachelor's-degree earnings premium is much the same today as it was 30 years ago.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 1992–2022.

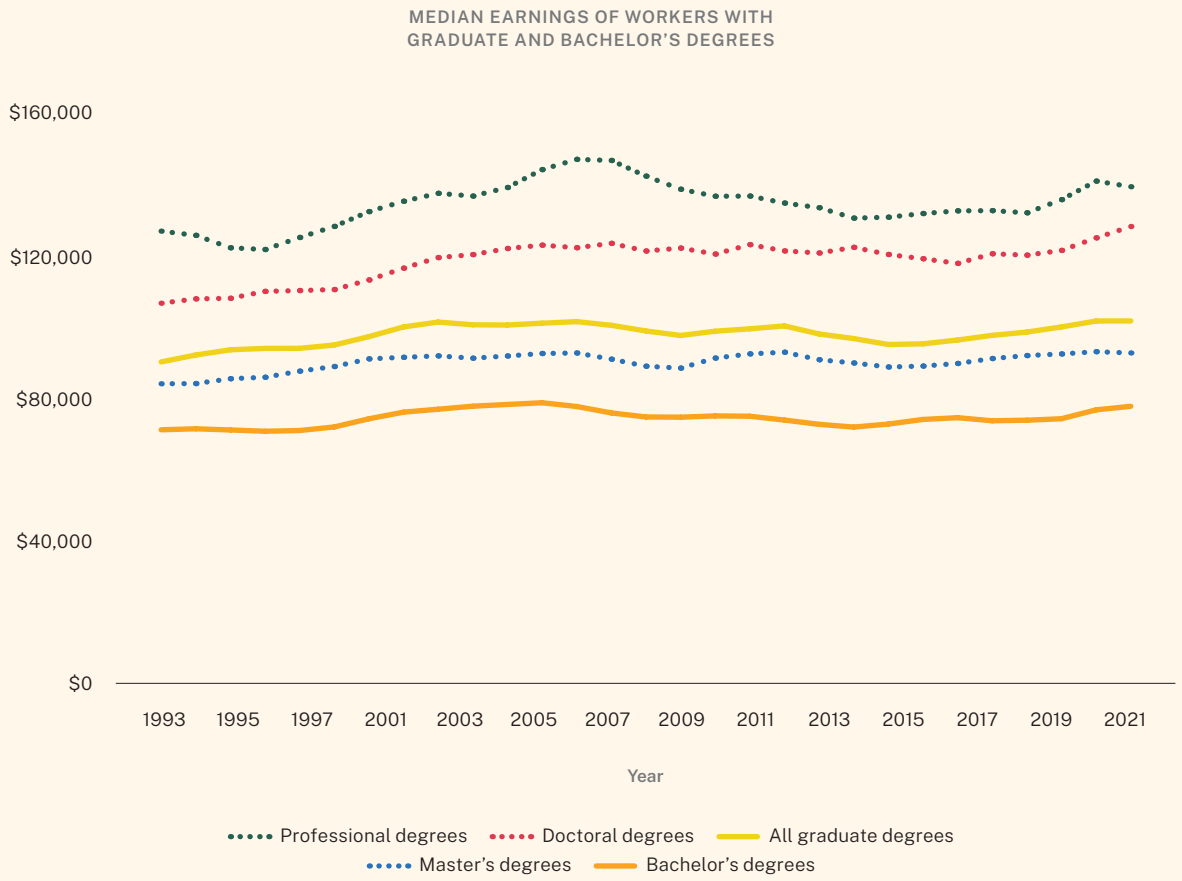
Note: The figure shows three-year moving averages in the respective premiums relative to the median earnings of workers, ages 25–64, with bachelor's degrees as their highest level of attainment. The values shown in the figure are calculated based on earnings that have been inflation-adjusted to 2022 dollars.

The earnings premium appears to have stagnated largely due to stalled earnings growth among workers with graduate degrees. Real (inflation-adjusted) earnings of graduate degree holders were only 12 percent higher in 2021 than in 1993 (Figure 7). Again, the primary exception was workers with doctoral degrees, whose earnings have grown 20 percent over that time period.

The graduate-to-bachelor's-degree earnings premium varies not just by type of advanced degree (master's, doctoral, or professional), but also by occupation and field of study. In Part II, we examine the roles fields of study and occupations play in the graduate degree landscape.

FIG. 7

Median earnings for workers with graduate degrees have increased by just 12 percent over the past three decades.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 1992–2022.

Note: The figure shows three-year moving averages in the median earnings of full-time, full-year workers, ages 25–64, with graduate and bachelor's degrees. Earnings have been inflation-adjusted to 2022 dollars.

PART

II

Fields of Study and Occupations

The value of graduate education is often substantial, but it varies by degree type, field of study, and occupational choice.

In this section, we analyze earnings by field of study, as well as the in-field earnings premium associated with obtaining a graduate degree. The extent to which earnings and earnings premiums differ across fields of study has implications for the fields of study that graduate students choose.

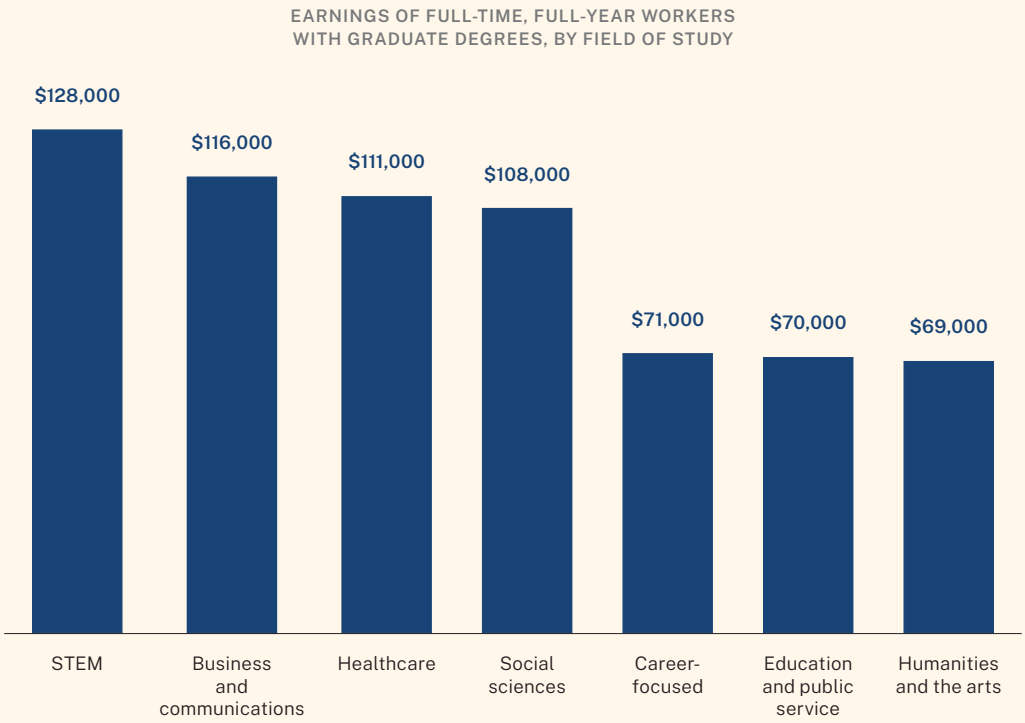
Occupational demand is another important factor for graduate students to consider when selecting a field of study. Some occupational clusters — such as managerial and professional office — demonstrate robust demand for workers with advanced degrees and are expected to grow their graduate workforce over the next decade. Other occupational clusters, such as science, technology, engineering, and mathematics (STEM) and social sciences, are expected to maintain high demand for workers with graduate degrees. Recognizing where demand is shifting can help graduate students and policymakers identify where the best opportunities and investments may lie.

Workers with graduate degrees in STEM have the highest earnings.

Graduate degrees (including master's, doctoral, and professional degrees) in STEM lead to the highest median annual earnings ($128,000), followed by graduate degrees in business and communications ($116,000). Graduate degrees in education and public service offer the second-lowest median annual earnings ($70,000), while graduate degrees in the humanities and the arts offer the lowest ($69,000) (Figure 8).

FIG. 8

Workers with graduate degrees in STEM have the highest median annual earnings.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and US National Science Foundation, National Survey of College Graduates, 2021.

Note: These numbers reflect median earnings among full-time, full-year workers, ages 25–64, with positive earnings in 2021. Earnings have been inflation-adjusted to 2022 dollars and are rounded to the nearest thousand. Career-focused fields of study include criminal justice/protective service; parks, recreation, leisure, and fitness studies; and home economics.

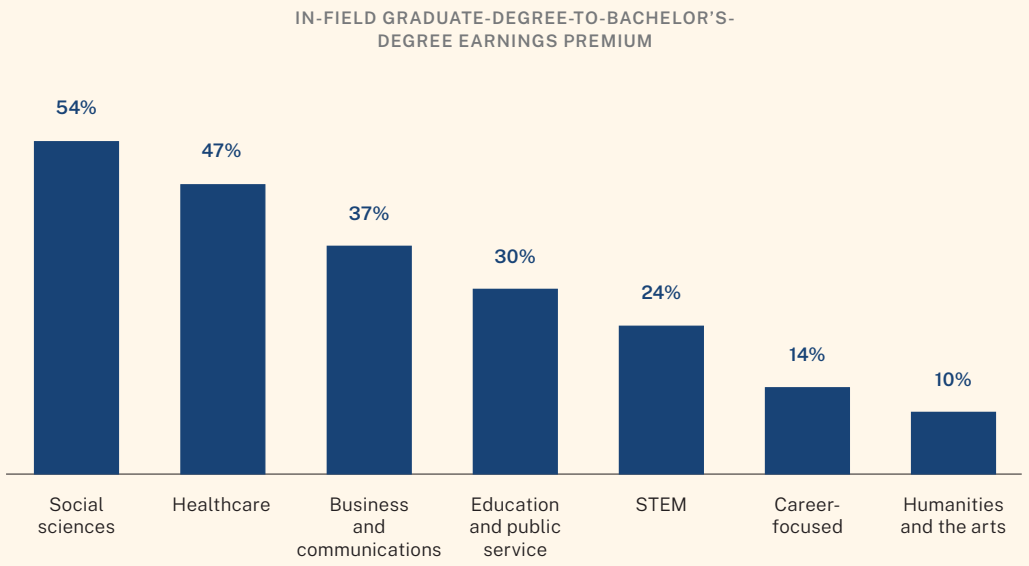
Graduate degrees in the social sciences lead to the highest in-field earnings premium.

Higher median earnings within a field do not necessarily reflect a greater economic advantage associated with attaining a graduate degree. In some fields, workers with bachelor's degrees already have high earnings, and the incremental increase from obtaining a graduate degree is relatively small. Graduate degrees in the social sciences offer the highest in-field graduate-degree-to-bachelor's-degree earnings premium,[76] followed by graduate degrees in healthcare and in business and communications (Figure 9). In contrast, fields with elevated earnings at the bachelor's degree level, such as STEM, tend to offer a lower graduate-degree-to-bachelor's-degree earnings premium. Yet low in-field earnings premiums are not always due to high earnings at the bachelor's degree level. For example, the humanities and the arts offer the lowest graduate-degree-to-bachelor's-degree earnings premium among occupational groups (10 percent) along with relatively low median earnings for bachelor's degree holders ($63,000).

> Higher median earnings within a field do not necessarily reflect a greater economic advantage associated with attaining a graduate degree.

FIG. 9

Workers with graduate degrees in the social sciences, including law degrees, earn the highest wage premium relative to workers with bachelor's degrees in the same broad field of study.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and US National Science Foundation, National Survey of College Graduates, 2021.

Note: Social sciences include professional and doctoral degrees in the law—a primary driver of the earnings boost shown here. The earnings premiums are based on the median earnings for full-time, full-year workers, ages 25–64, with a graduate degree relative to those for workers with a bachelor's degree in each field, inflation-adjusted to 2022 dollars. Career-focused fields of study include criminal justice/protective service; parks, recreation, leisure, and fitness studies; and home economics.

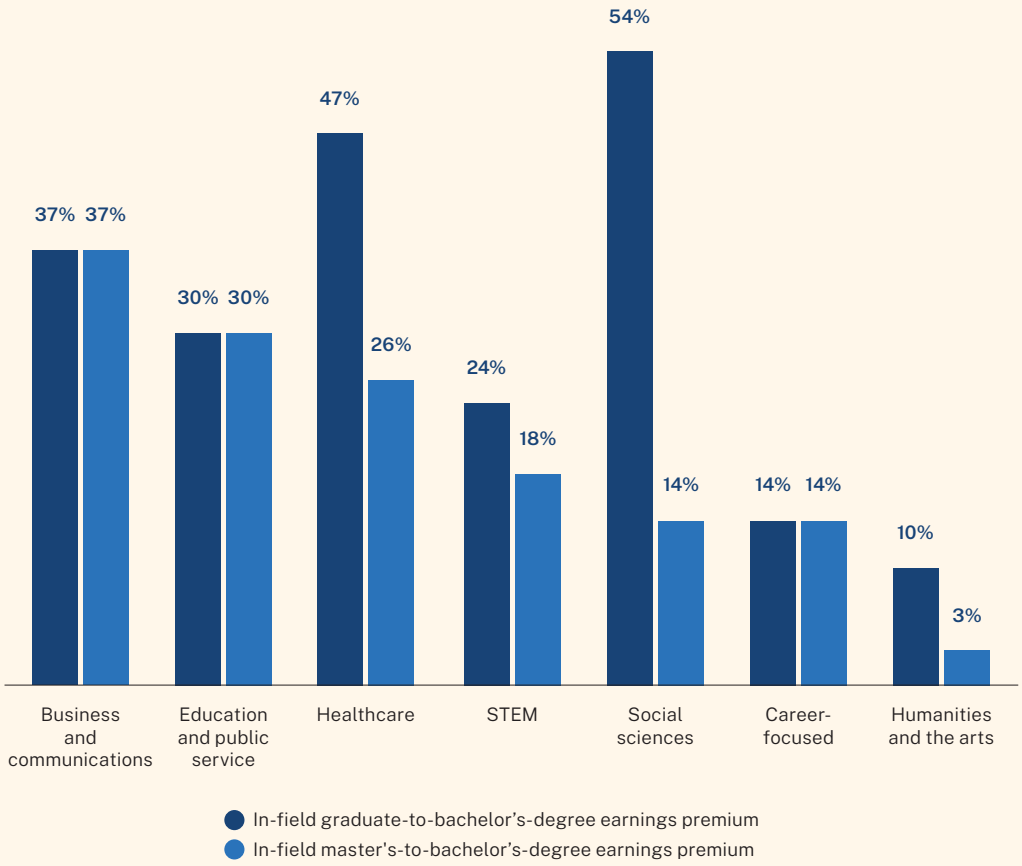
76 The in-field earnings premium associated with the social sciences is primarily driven by professional and doctoral degrees in law that lead to a juris doctorate. Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and US National Science Foundation, National Survey of College Graduates, 2021.

Master's degrees in business and communications lead to the highest earnings premium.

Master's degrees make up the lion's share of graduate degrees awarded (82 percent).[77] Business and communications master's degrees offer the most meaningful boost in earnings, with a master's-degree-to-bachelor's-degree earnings premium of 37 percent,[78] followed by education and public service (30 percent) and healthcare (26 percent). Notably, the earnings boost associated with master's degrees in healthcare, STEM, social sciences, and the humanities and the arts are lower than the earnings boosts associated with all graduate degrees in these fields (Figure 10).

FIG. 10

Among master's degrees, those in business and communications have the highest in-field premium relative to bachelor's degrees, followed by those in education and public service.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and US National Science Foundation, National Survey of College Graduates, 2021.

Note: Social sciences include professional and doctoral degrees in the law—a primary driver of the earnings boost shown here. The earnings premiums are based on the median earnings for full-time, full-year workers, ages 25–64, with a master's degree or a graduate degree relative to those for workers with a bachelor's degree in each field, inflation-adjusted to 2022 dollars. Career-focused fields of study include criminal justice/protective service; parks, recreation, leisure, and fitness studies; and home economics.

77 US Department of Education, Table 318.10, *Digest of Education Statistics* (online tables), 2021.

78 This earnings boost seems to be driven by master's degrees in business-related fields, such as a Master of Business Administration (MBA), with the master's-degree-to-bachelor's-degree premium for business-related fields of study standing at 39 percent. Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and US National Science Foundation, National Survey of College Graduates, 2021.

School district policies have encouraged teachers to earn master's degrees.

Master's degrees in education are among the most-conferred graduate degrees. American colleges and universities award roughly 150,000 master's degrees in education annually, second only to the number of master's degrees in business.[79] These degrees may be so popular because many school districts offer strong incentives for teachers to earn graduate degrees. Currently, three states — Connecticut, Maryland, and New York — require teachers to attain a graduate degree by a certain point in their careers to remain in the teaching profession, and many other states and school districts offer other kinds of incentives.[80] According to the National Council on Teacher Quality, roughly 90 percent of large school districts in the United States offer pay increases or bonuses to teachers who earn master's degrees, usually with larger increases for teachers with more experience.[81] Our research indicates that graduate degrees in education and public service lead to earnings of $70,000 at the median, a 30 percent increase over the median earnings of bachelor's degree holders in the same field ($54,000).[82]

While teachers with master's degrees have earned more than those with bachelor's degrees since at least the 1960s, earnings incentives for master's degrees have become controversial in recent decades. The evidence does not conclusively show that master's degrees in education lead to higher teacher quality,[83] although some researchers have identified benefits associated with holding an advanced degree in the relevant subject matter.[84] Although increasing the number of teachers with master's degrees is of uncertain value to school districts or their students, it is of definite value to the institutions that offer such degrees.[85] First, these institutions can expect steady enrollment from a sizable group of professionals who are present in most communities. Second, because master's degrees in teaching generally translate to higher pay, graduate degree completers receive an in-field earnings premium, regardless of program quality. Additionally, the cost of offering such programs is relatively low, because master's degrees in education programs do not require much specialized equipment, and are thus less expensive to offer than technical programs like applied engineering, biotechnology, and healthcare. Thus, while institutions are limited in how high they can raise tuition for degrees leading to these modestly compensated jobs, they also incur lower costs associated with offering these degrees.[86] In addition, lower earnings in the field make it easier to recruit teaching faculty in education than in fields like nursing.[87]

The incentives surrounding master's degrees in teaching complicate efforts to hold programs accountable because teachers who participate in these programs generally receive an earnings boost. Instead of relying on federal accountability efforts that focus on earnings outcomes to vet graduate teaching programs, school districts need to play a more active role in vetting these programs. Districts should only offer pay increases to teachers who participated in programs that have been proven to strengthen teaching quality and thus contribute to districts' goals for talent development.

79 Georgetown University Center on Education and the Workforce analysis of data from Table 323.10 of the US Department of Education, *Digest of Education Statistics* (online tables), 2022. Numbers are rounded to the nearest thousand.

80 Gedye, "Master's of None," 2020; Nittler, "You Don't Get What You Pay For," 2019.

81 Nittler, "You Don't Get What You Pay For," 2019.

82 Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and US National Science Foundation, National Survey of College Graduates, 2021.

83 Gedye, "Master's of None," 2020; Miller and Roza, *The Sheepskin Effect and Student Achievement*, 2012; Walsh and Tracy, *Increasing the Odds,* 2004.

84 Jackson, "Non-Cognitive Ability, Test Scores, and Teacher Quality," 2012; Rice, *Teacher Quality,* 2003. Master's degrees in math and science offer the most benefits for teaching quality. Miller and Roza, *The Sheepskin Effect and Student Achievement,* 2012.

85 Gedye, "Master's of None," 2020.

86 Gedye, "Master's of None," 2020.

87 Carnevale et al., *Nursing*, 2015.

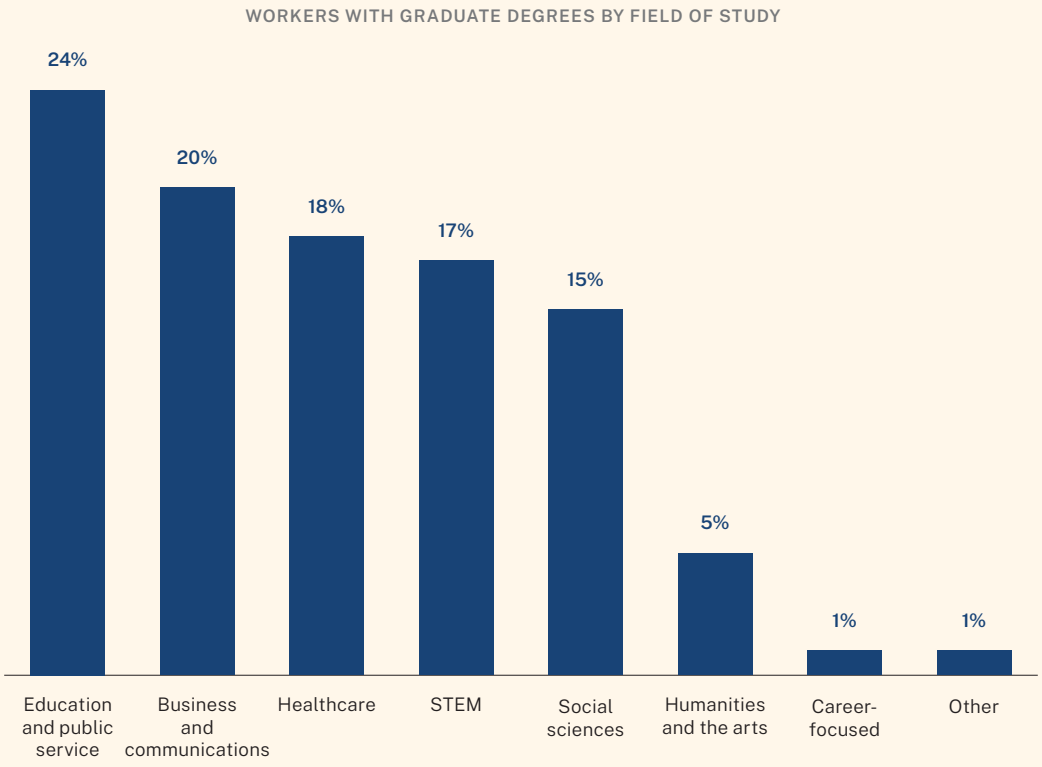
Education and public service is the most prevalent degree field among workers with graduate degrees, but the share of graduate students opting for this field of study is declining.

The in-field earnings premiums associated with master's degrees — which account for 82 percent of graduate degrees awarded[88] — appear to drive the popularity of certain fields of study among workers with graduate degrees. The top five fields by master's degree earnings premiums are also the ones in which workers are most likely to hold graduate degrees (Figure 11). Workers with graduate degrees are most likely to hold these degrees in education and public service (24 percent), followed by business and communications (20 percent). These are followed by healthcare (18 percent), STEM (17 percent), and social sciences (15 percent).

However, over the past several decades, the relative popularity of different fields of graduate study has been shifting. Student demand for graduate degrees

FIG. 11

Education and public service is the most prevalent field of study among workers with graduate degrees.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and US National Science Foundation, National Survey of College Graduates, 2021.

Note: This analysis includes workers ages 25–64. Values may not sum to 100 percent due to rounding. Career-focused fields of study include criminal justice/protective service; parks, recreation, leisure, and fitness studies; and home economics.

88 US Department of Education, Table 318.10 of the US Department of Education, *Digest of Education Statistics* (online tables), 2021.

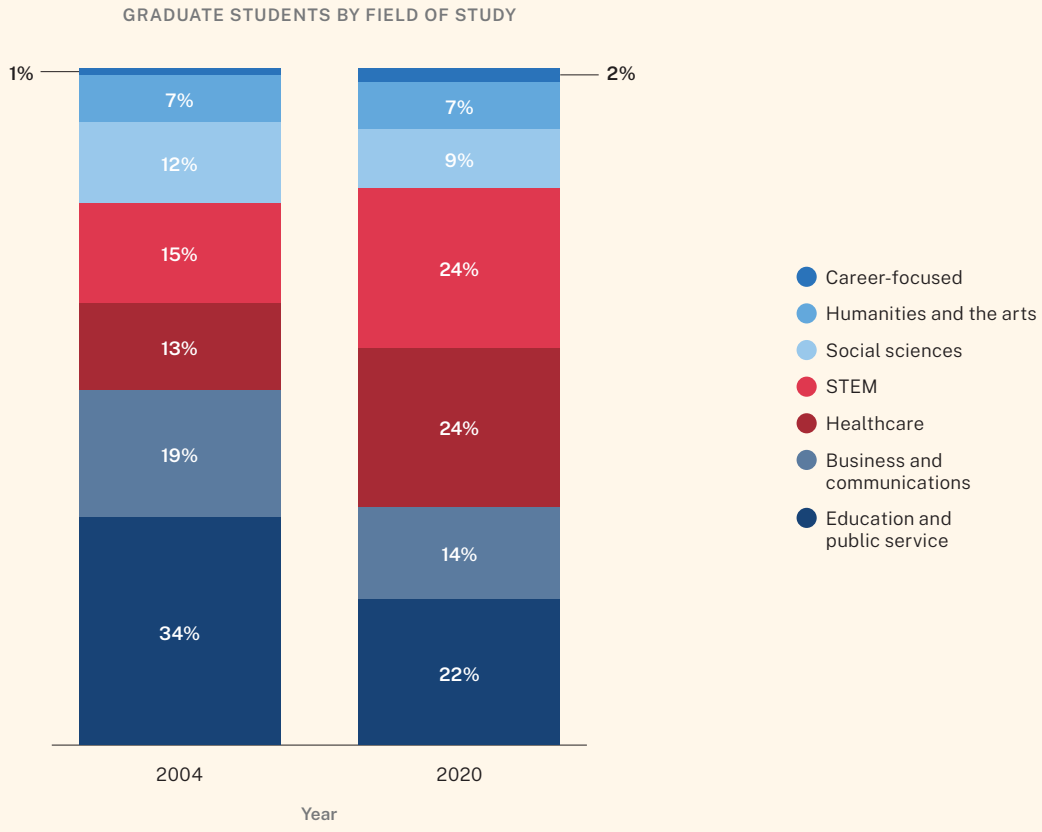
in STEM and healthcare has grown: each field now accounts for 24 percent of enrollments, compared to 15 percent and 13 percent of enrollments, respectively, in 2004 (Figure 12). Meanwhile, education and public service has declined in popularity relative to other programs, alongside business and communications. Between 2004 and 2020, education and public service fields fell from 34 percent to 22 percent of graduate enrollments. Business and communications fields declined from 19 percent to 14 percent of graduate enrollments over the same period.

Managerial and professional office occupations will become the top source of jobs for workers with graduate degrees by 2031.

CEW's future jobs projections indicate that there will be approximately 170 million total jobs in the United States by 2031, an increase of 10 percent from 2021.[89] While the number of jobs that require a graduate degree will make up a relatively small share (16 percent) of the total jobs available, the number of jobs that

FIG. 12

Healthcare and STEM have become the most popular fields of study among graduate students, while the share of graduate students who study education and public service has declined.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2004 and 2020.

Note: Values may not sum to 100 percent due to rounding. Career-focused fields of study include criminal justice/protective service; parks, recreation, leisure, and fitness studies; and home economics.

89 There were approximately 155 million jobs available in 2021. Carnevale et al., *After Everything*, 2023.

demand graduate degrees is growing. Specifically, the number of jobs that demand graduate degrees will grow by 23 percent, from 22.4 million in 2021 to 27.6 million in 2031.[90]

Currently, education is the most prevalent occupational cluster[91] among workers with graduate degrees, but by 2031, that distinction will go to managerial and professional office occupations. Education occupations account for 5.6 million workers with graduate degrees (Table 1). As noted earlier, many states and school districts strongly incentivize teachers to obtain graduate degrees;[92] roles within postsecondary education — especially faculty roles — also tend to demand graduate

> The number of jobs that demand graduate degrees will grow by 23 percent, from 22.4 million in 2021 to 27.6 million in 2031.

TABLE 1

By 2031, managerial and professional office occupations will become the largest source of job opportunities for workers with graduate degrees, supplanting education.

Occupational cluster	Graduate employment (in thousands) 2021	2031 (PROJECTED)
Managerial and professional office	3,989	6,703
Education	5,550	5,561
STEM and social sciences	3,998	4,211
Healthcare professional and technical	1,979	3,997
Sales and office support	3,438	2,949
Community services and arts	797	2,001
Food and personal services	894	944
Blue-collar	1,596	880
Healthcare support	122	310
Total	22,363	27,556

Source: Carnevale et al., *After Everything*, 2023.

90 Carnevale et al., *After Everything*, 2023.

91 While there is some connection between fields of study and occupations, not all fields of study are linked to specific occupations, and fields of study and occupations are classified into different categories.

92 Nittler, "You Don't Get What You Pay For," 2019.

degrees.[93] While education occupations will continue to grow into the next decade, their growth will not match that of managerial and professional office occupations, currently the third largest occupational cluster for graduate degree holders. Managerial and professional office occupations will experience a 68 percent increase in employment of graduate degree holders between 2021 and 2031, adding 2.7 million net new jobs for workers with graduate degrees and becoming the top occupational cluster for workers with these degrees by 2031.

The second largest occupational cluster among graduate degree holders in 2021 is STEM and social sciences occupations. While STEM and social sciences occupations will drop to the third spot among the largest occupational clusters for graduate degree holders, STEM professionals with graduate degrees will continue to play a critical role in the US economy as the country seeks to capitalize on innovations in AI, semiconductor manufacturing, and renewable energy while remaining competitive with international rivals.[94]

The dominance of managerial and professional office occupations can be explained by the fact that they straddle all industries and include many professions that deal with traditional business functions, such as management and finance. These occupations are expected to add 2.7 million jobs for workers with graduate degrees by 2031 (Figure 13). Healthcare professional and technical occupations, along with community services and the arts, will add over a million jobs each for graduate degree holders through 2031 (2 million and 1.2 million new jobs, respectively).

As this section has demonstrated, there is quite a bit of variation in how workers with graduate degrees fare by field of study and occupation. The expected labor-market outcomes associated with a particular graduate degree — including earnings and employment among program completers — are important considerations when evaluating a program's economic value, but they are not the only factors relevant to the decisions of students, educators, and policymakers. As we explore in the next section, costs and student loans borrowed to pay for graduate degree programs are also important considerations.

The expected labor-market outcomes associated with a particular graduate degree are important considerations when evaluating a program's economic value, but they are not the only factors relevant to the decisions of students, educators, and policymakers.

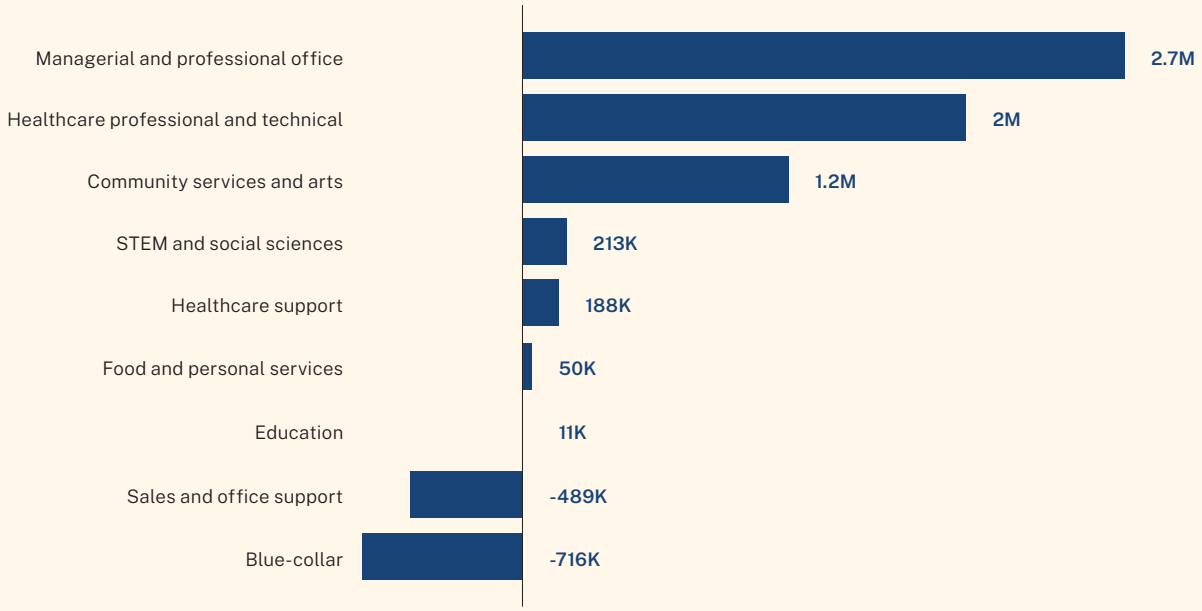
93 For example, postsecondary faculty often need a doctoral degree to teach at a four-year university and at least a master's degree to teach at a community college. US Bureau of Labor Statistics, "Postsecondary Teachers," 2024.

94 In recent years, the CHIPS and Science Act of 2022 and the Inflation Reduction Act of 2022 have highlighted policymakers' prioritization of these arenas and should fuel continued demand for professionals with expertise in these areas. Michelson, "New Job, Career Paths from Inflation Reduction Act, CHIPS Act and Infrastructure Bill," 2022.

FIG. 13

Managerial and professional office occupations will add the largest number of jobs for graduate degree holders through 2031.

CHANGE IN THE NUMBER OF JOBS FOR GRADUATE DEGREE HOLDERS, 2021–31



Source: Carnevale et al., *After Everything*, 2023.

Note: M=million; K=thousand.

PART

III

Cost and Debt

While the graduate-degree-to-bachelor's-degree earnings premium has not changed substantially in recent decades, the costs and debt associated with earning a graduate degree are rapidly growing. As of 2021, graduate students were 21 percent of borrowers but received 47 percent of federal student loan disbursements.[95] Meanwhile, the median debt that individual borrowers assumed for graduate school grew from $44,000 in 2000 to $50,000 in 2020.[96] Graduate student loan debt is of concern to graduates and taxpayers alike: when borrowers cannot pay back their debts, taxpayers will ultimately be responsible for subsidizing student loan debt via income-based repayment plans and loan forgiveness.[97]

Grad PLUS loans play a disproportionate role in graduate student loan debt. While 16 percent of graduate students take out student loans to pay for some portion of their graduate studies, Grad PLUS loans account for 32 percent of federal student loan disbursements to graduate students.[98] Grad PLUS borrowing also presents equity challenges. Students with lower incomes and those from marginalized racial/ethnic groups, students enrolled in expensive programs, students in professional degree programs, and students enrolled at private nonprofit institutions are more likely to take out Grad PLUS loans. While Grad PLUS loans enable students from marginalized and low-income backgrounds to pursue programs that they might not otherwise be able to finance, the higher debt amounts these students can generally expect to accumulate are not without risks, exacerbated by the current dearth of information about program outcomes. The lack of clarity around costs, debt, and program outcomes may discourage students from pursuing graduate degrees, particularly in more expensive but lucrative programs, such as those in medicine and law.

The lack of clarity around costs, debt, and program outcomes may discourage students from pursuing graduate degrees.

The net price of a graduate degree has more than tripled over the past two decades, contributing to increased debt.

There are several ways to evaluate the costs of a postsecondary program. Although the media most commonly points to increases in sticker prices — or institutions' published tuition and fees — these do not represent most students' actual costs. Net tuition and fees represent the direct costs students actually pay for a degree program after subtracting any grant aid. Even with this more conservative metric, students' direct costs have more than tripled over the past two decades, from $3,000 per year in 2000 to $10,000 per year in 2020 (Figure 14).[99]

95 Monarrez and Matsudaira, *U.S. Department of Education: Trends in Federal Student Loans for Graduate School*, 2023.

96 Debt amounts taken out by individual borrowers are measured as the median cumulative loans borrowed for graduate school through the graduation year. Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2000, 2020.

97 Congressional Budget Office (CBO), *Income-Driven Repayment Plans for Student Loans*, 2020.

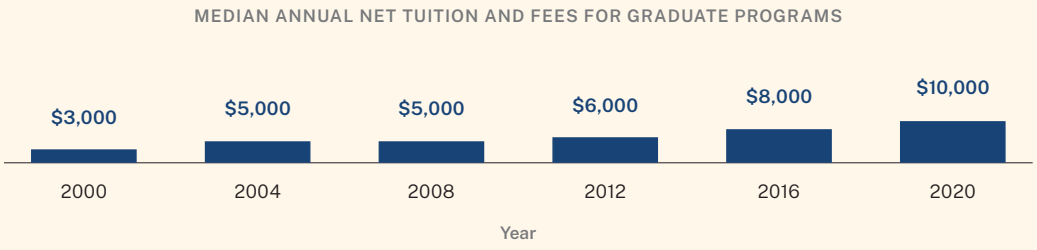
98 Georgetown University Center on Education and the Workforce analysis of data from the Congressional Budget Office (CBO),"Baseline Projections — Federal Student Loan Programs," 2023 and US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2020.

99 Numbers are inflation-adjusted to 2022 dollars.

Median cumulative graduate school debt increased from $34,000 in 2000 to $50,000 in 2020 (Figure 15).[100] On the whole, higher prices often lead to higher borrowing, but increases in net costs do not necessarily translate directly to equivalent debt. Some students or their families have the means to fund their education without student loans. Others may need to borrow even more than the net tuition and fees to cover room and board and other living expenses during their studies, as well as any books, supplies, and equipment they need to complete their coursework.

FIG. 14

Net tuition and fees more than tripled between 2000 and 2020.

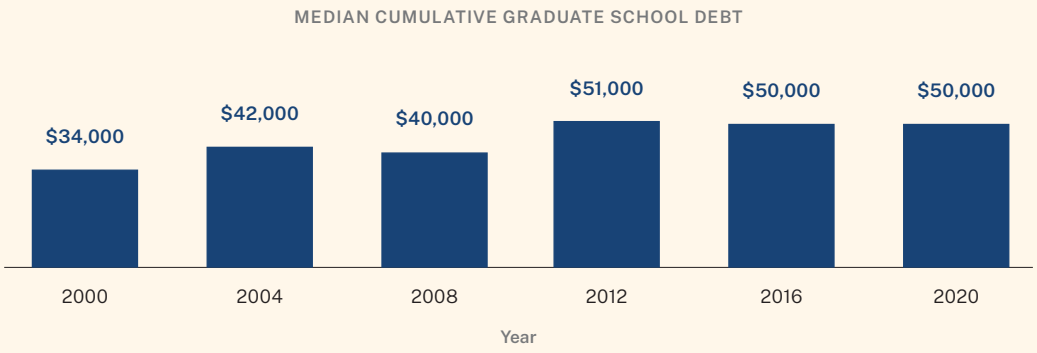


Source: Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2000, 2004, 2008, 2012, 2016, and 2020.

Note: Net tuition and fees are inflation-adjusted to 2022 dollars and rounded to the nearest thousand.

FIG. 15

The median cumulative graduate school debt has grown from $34,000 in 2000 to $50,000 in 2020.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2000, 2004, 2008, 2012, 2016, and 2020.

Note: These figures include both federal student loans and loans from other sources, such as states, institutions, and private lenders, borrowed for graduate studies through the graduation year. Median cumulative graduate school debt balances are only for student borrowers with graduate loans, do not include interest, and are inflation-adjusted to 2022 dollars and rounded to the nearest thousand.

100 While the cumulative debt has increased less than the annual net tuition and fees in percentage terms, in inflation-adjusted dollar amounts it increased within a similar range, by about $16,000 for the entire education program. This would roughly equate to an increase of $8,000 per year for two-year master's degree programs (the most popular type of graduate degree program), compared to an increase of $7,000 in annual net tuition and fees. Also, while the median cumulative graduate debt better captures what a typical graduate student borrows, average cumulative graduate debt is another commonly used metric that is more reflective of high levels of borrowing at the top of the borrowing distribution. The average cumulative graduate student debt increased from around $48,000 in 2000 to $78,000 in 2020. The dollar amounts are inflation-adjusted to 2022 dollars. Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2000, 2020.

Many graduate degree completers also hold substantial debt from their undergraduate studies. Borrowers with both graduate and undergraduate student loans hold $63,000 in cumulative debt at the median, 26 percent higher than the median cumulative debt of $54,000 associated with graduate studies alone.[101] In other words, cumulative graduate student loan debt understates the full debt burden borne by many graduate degree holders.

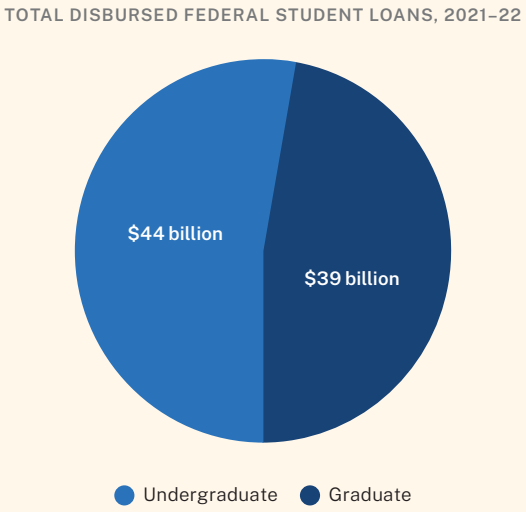
Graduate student loan debt now makes up close to half of the total federal student loan balance.

The aggregate graduate student loan debt balance has reached $39 billion (Figure 16). Graduate student loans account for 47 percent of all federal student loan disbursements,[102] and if current trends continue, they will account for the majority of federal student loan disbursements in the near future.[103] As Katherine Meyer of the Brookings Institution has pointed out, student loans can help low-and middle-income students access college education they otherwise would not be able to afford, but high student debt levels can become problematic if students borrow more than they can reasonably expect to repay based on their earnings after graduation.[104]

The Congressional Budget Office projects that graduate loans will grow by $521 billion between 2023 and 2033.[105] Furthermore, the federal government is expected to forgive 56 percent of the loan amounts disbursed between 2020 and 2029 through income-driven repayment plans, ultimately passing the cost on to taxpayers.[106]

FIG. 16

Graduate student debt now accounts for 47 percent of disbursed federal student loans.



Source: Monarrez and Matsudaira, *U.S. Department of Education: Trends in Federal Student Loans for Graduate School*, 2023.

101 The original dollar amount from the survey was inflation-adjusted to 2022 dollars. The cumulative amount borrowed for undergraduate education is higher (around $27,000) if graduate degree completers with undergraduate loans but without graduate loans are included. Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study: Graduate Students (GR), 2020.

102 Specifically, the report refers to the decline in federal undergraduate student loan volume and ongoing growth in graduate student loan volume.

103 Monarrez and Matsudaira, *U.S. Department of Education: Trends in Federal Student Loans for Graduate School*, 2023.

104 Meyer, "The Causes and Consequences of Graduate School Debt," 2022.

105 The total amounts repaid by borrowers and forgiven by the federal government add up to more than 100 percent of the amount of loans disbursed due to interest that accrues on the loans. Congressional Budget Office (CBO), "Baseline Projections—Federal Student Loan Programs," 2023.

106 The forgiven portion includes loans forgiven through the Public Service Loan Forgiveness (PSLF) program. Congressional Budget Office (CBO), *Income-Driven Repayment Plans for Student Loans*, 2020.

Growth in graduate student borrowing is concentrated at the top of the borrowing distribution.

High graduate student debt is not an issue across the board: the majority of growth in borrowing is concentrated at the top of the borrowing distribution, with the top quartile of borrowers taking out disproportionately large loans. Between 1996 and 2020, the 75th percentile of borrowing grew from $61,000 to $96,000, an increase of roughly 57 percent. On the other end of the distribution, the 25th percentile of borrowing grew by just $6,000 — from $19,000 in 1996 to $25,000 in 2020 — a more reasonable increase of around 32 percent (Table 2).

Healthcare programs disproportionately contribute to high levels of borrowing among graduate students.

Graduate school debt also varies by field of study: graduate program completers in the healthcare fields are more likely to take out debt than those in other fields (73 percent in health versus 53 percent across all fields). They hold the most debt at the median ($93,000), well above the overall median ($50,000) across all fields of study (Figure 17).

Between 1996 and 2020, the 75th percentile of borrowing grew from $61,000 to $96,000, an increase of roughly 57 percent.

Comparing the amounts of debt between graduate program completers in healthcare and non-healthcare fields underscores the role of healthcare programs in the growing graduate student debt problem. While the majority (54 percent) of graduate program completers outside of healthcare fields have no graduate student debt, a similar majority (54 percent) of healthcare completers carry more than $45,000 in graduate student debt when they graduate (Figure 18).

After graduates in healthcare, graduates in the social sciences accumulate the next highest median debt ($61,000), followed by those in career-focused fields ($46,000). Graduates in education and public service hold the lowest median debt, at $35,000. However, as we will explore in Part V, even lower debt balances can be burdensome for graduates with lower earnings.

TABLE 2

Borrowing among those with the highest debt balances for graduate education has grown by 73 percent compared to 43 percent at the median.

Distribution of cumulative amount borrowed for graduate studies at graduation

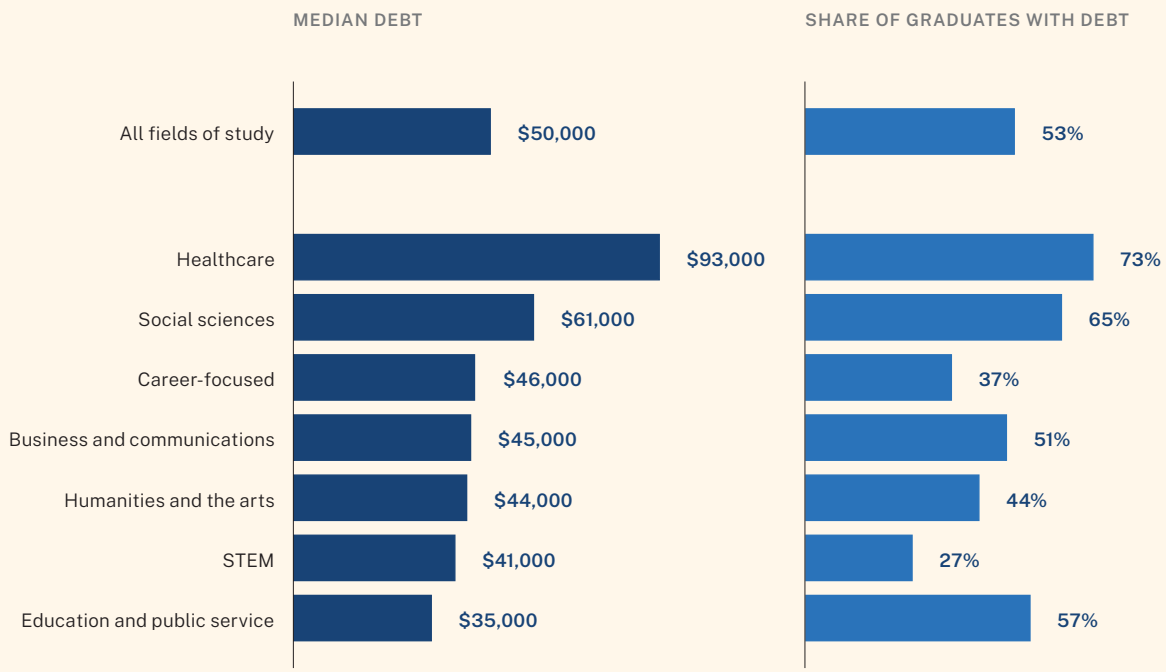
YEAR	10TH PERCENTILE	25TH PERCENTILE	MEDIAN	75TH PERCENTILE	90TH PERCENTILE
1996	$8,000	$19,000	$35,000	$61,000	$104,000
2020	$13,000	$25,000	$50,000	$96,000	$180,000
Percent change	63%	32%	43%	57%	73%

Source: Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 1996, 2000, 2004, 2008, 2012, 2016, and 2020.

Note: All dollar amounts are inflation-adjusted to 2022 dollars.

FIG. 17

Completers of graduate healthcare programs hold higher amounts of debt than graduates of other programs — and are most likely to borrow federal loans.

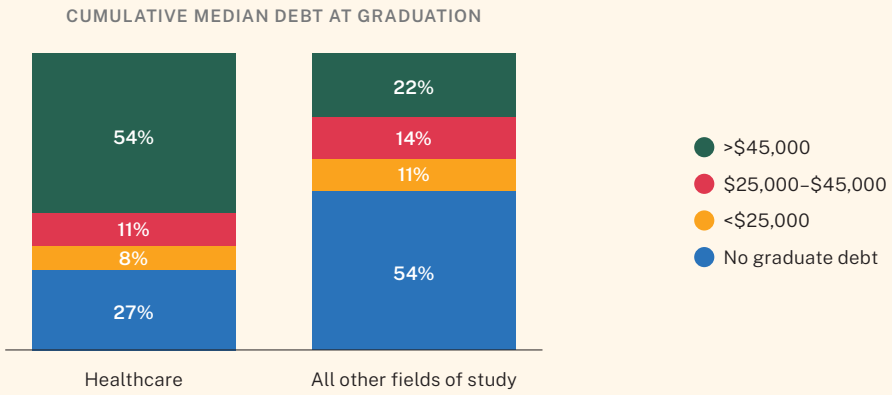


Source: Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2020.

Note: All dollar amounts are inflation-adjusted to 2022 dollars.

FIG. 18

Fifty-four percent of graduate program completers who studied healthcare hold more than $45,000 in debt upon graduation, while 54 percent of graduate program completers in all other fields of study hold no debt at all.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2020.

Note: Values may not sum to 100 percent due to rounding. All dollar amounts are inflation-adjusted to 2022 dollars and rounded to the nearest $5,000.

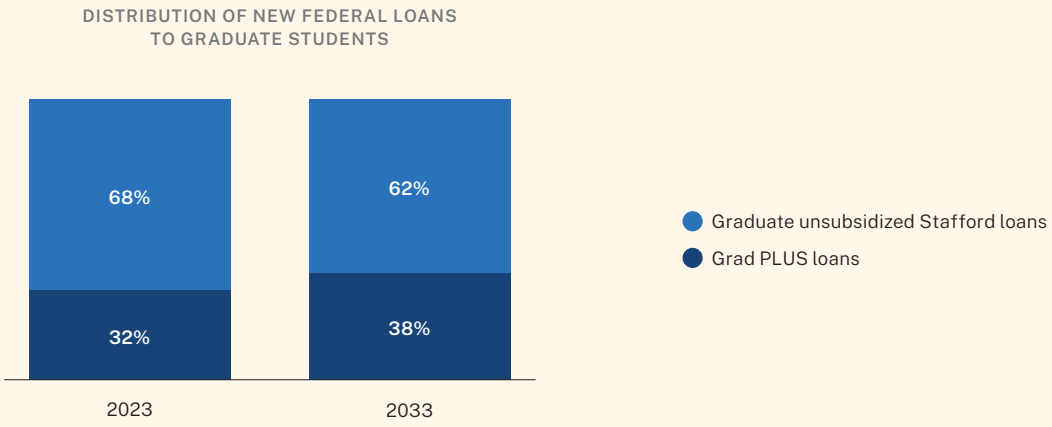
Grad PLUS loans have become a major contributor to graduate student borrowing, but they still account for less than a third of federal graduate student loan disbursements.

Although just 16 percent of students rely on Grad PLUS loans to fund their studies,[107] Grad PLUS loans make up a disproportionate 32 percent of federal loan disbursements. This share is expected to grow to 38 percent by 2033 (Figure 19). On the whole, the costs associated with Grad PLUS are growing rapidly: the total amount of outstanding Grad PLUS loans increased by 91 percent between 2014 and 2022.[108] A 2023 report from the American Enterprise Institute, the Century Foundation, and EducationCounsel found that the median Grad PLUS loan balance had nearly tripled compared to 10 years ago (from $21,800 to $57,800).[109] Their report calls for reasonable limits on graduate loans, along with a host of other reforms to graduate financial aid policies in response to the rapid growth in the cumulative Grad PLUS loan debt.[110] Nonetheless, it's important to note that these loans still make up around one-third of federal graduate student loan disbursements, whereas direct unsubsidized Stafford loans account for approximately two-thirds of federal graduate student loan disbursements.

The costs associated with Grad PLUS loans are growing rapidly.

FIG. 19

Grad PLUS loans are expected to grow from 32 percent of the loan amounts disbursed in 2023 to 38 percent in 2033.



Source: Georgetown University Center on Education and the Workforce analysis of data from the Congressional Budget Office (CBO), "Baseline Projections — Federal Student Loan Programs," 2023.

Note: The shares in the figure are based on projected loan volumes for each year. Labels are rounded to the nearest percentage point.

107 Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2020.

108 The total amount of outstanding Grad PLUS loans (measured in 2022 dollars) grew from $51.1 billion in Q4 of 2014 to $97.9 billion in Q4 of 2022. Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, "Portfolio by Loan Type," 2023.

109 Akers et al., *A Framework for Reforming Federal Graduate Student Aid Policy*, 2023.

110 These proposed reforms included offering grant aid to address equity concerns and advance socially beneficial aims, ensuring that graduate programs provide sufficient return on investment for students, strengthening consumer protections in private lending, and improving transparency through more and better data. Akers et al., *A Framework for Reforming Federal Graduate Student Aid Policy*, 2023.

Grad PLUS borrowing is more common among students in particularly expensive graduate programs.

Grad PLUS borrowing is more common among students in particularly expensive graduate programs. Thirty percent of students completing graduate programs with tuition and fees of more than $70,000 take out Grad PLUS loans, compared to just 5 percent of students completing graduate programs where tuition and fees are less than $25,000 (Figure 20).

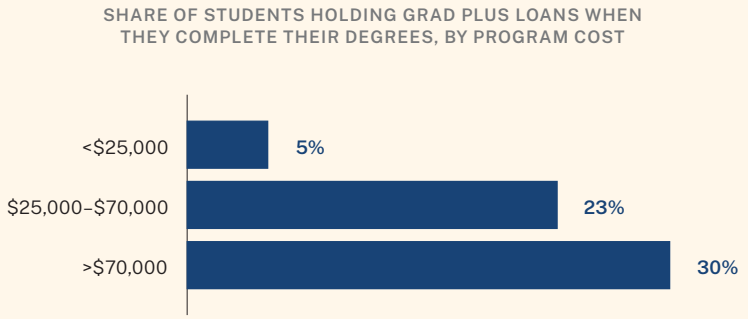
Grad PLUS borrowers are also more concentrated in professional degree programs: 38 percent of Grad PLUS borrowers are enrolled in these programs, compared to 7 percent of graduate students completing their programs without Grad PLUS loans. They are more likely than students without Grad PLUS loans to be enrolled in private nonprofit institutions, with 57 percent of students completing their degrees with Grad PLUS loans enrolled in these institutions compared to 44 percent of all graduate students.

Master's degree students make up the majority of enrollments in graduate education. Among these students, Grad PLUS borrowers are even more heavily concentrated at private nonprofit colleges and universities, with 71 percent of Grad PLUS borrowers enrolled in these institutions compared to 49 percent of all students enrolled in master's degree programs.[111]

Low-income students and students from marginalized racial/ethnic groups tend to be overrepresented among Grad PLUS borrowers. For instance, 68 percent of Grad PLUS loan borrowers completing their degrees

FIG. 20

At the most expensive graduate programs, close to one-third of completers have Grad PLUS loans.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2020.

Note: All dollar amounts have been inflation-adjusted to 2022 dollars and rounded to the nearest $5,000.

111 Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2020.

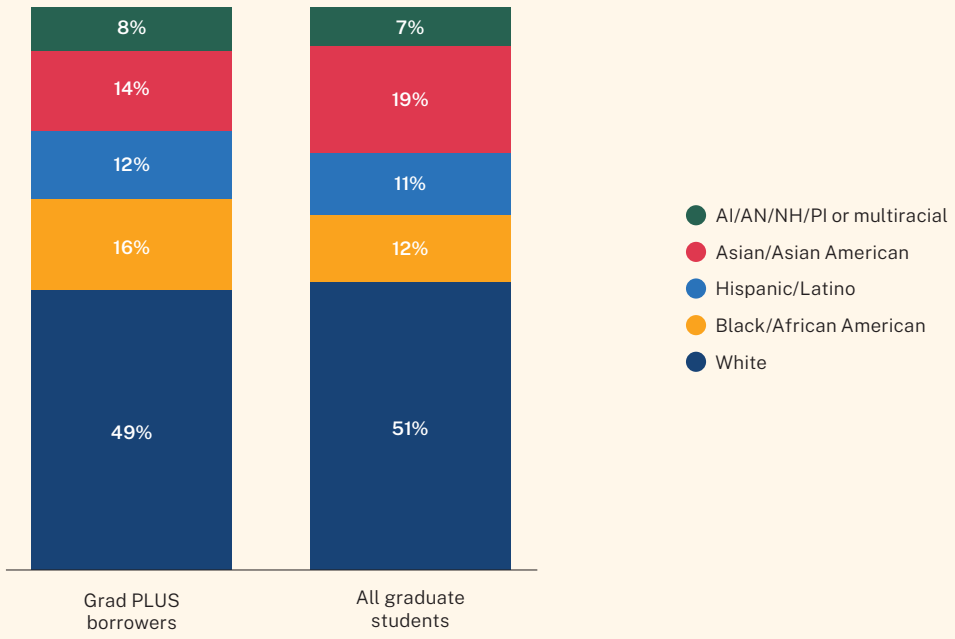
have annual incomes of less than $30,000,[112] compared with 46 percent of all graduate students completing their degrees. Similarly, Black/African American students make up more than 16 percent of Grad PLUS loan borrowers completing their degrees, compared with less than 12 percent of all graduate students completing their degrees (Figure 21).

The current federal graduate student loan system may inadvertently discourage some low-income students and those from marginalized racial/ethnic groups from pursuing higher-paying fields due to higher costs and the risks associated with taking out large amounts of debt.

FIG. 21

Black/African American students are overrepresented among Grad PLUS borrowers relative to their representation within the broader graduate student population.

GRAD PLUS BORROWERS AND ALL GRADUATE STUDENTS, BY RACE/ETHNICITY



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2020.

Note: These distributions reflect Grad PLUS borrowing among students completing their graduate degree in 2020. AI=American Indian, AN=Alaska Native, NH=Native Hawaiian, and PI=Pacific Islander. Values may not sum to 100 percent due to rounding.

112 The National Postsecondary Student Aid Study (NPSAS) measures income for graduate students according to the individual students' income, not their family income, as all graduate students are considered to be independent.

The fact that low-income students and students from historically underrepresented racial/ethnic groups are most likely to rely on Grad PLUS loans suggests that these loans may facilitate access to graduate education for these students. At the same time, if these students are taking on high levels of debt to attend programs that do not lead to earnings sufficient to repay their loans, then the Grad PLUS Loan Program may be putting a disproportionate debt burden on them without yielding commensurate benefits.

This possibility is of particular concern because underserved and marginalized students have disproportionately borne the adverse consequences of high debt. Further, the current financing system for graduate education may discourage some low-income students and those from marginalized racial/ethnic groups from pursuing higher-paying fields due to higher costs and the risks associated with taking out large amounts of debt.[113] Thus, while the Grad PLUS program has eased access to financing, it has not fundamentally improved the graduate education system's role in perpetuating economic and racial/ethnic stratification in our society.[114]

In fact, there is little evidence that Grad PLUS loans have moved the needle on racial/ethnic equity.

According to a 2023 study of Texas public and nonprofit colleges and universities, there were no significant increases in either overall enrollment or enrollment share among Black/African American and Hispanic/Latino students after the introduction of Grad PLUS loans. Nor did completion or persistence improve significantly. However, Grad PLUS loans did appear to contribute to higher overall borrowing, a shift in student debt from private to federal loans, and an increase in program prices.[115] Another 2023 study, also using Texas public and nonprofit college and university data, found that the introduction of Grad PLUS loans had no meaningful impact on underrepresented groups' access to graduate programs that tend to lead to high earnings.[116]

In other words, Grad PLUS loans have opened up new doors to financing graduate education, but they have not addressed other structural barriers to equal opportunity. In the next section, we examine some of these barriers.

113 Pyne and Grodsky, "Inequality and Opportunity in a Perfect Storm of Graduate Student Debt," 2020.

114 Pyne and Grodsky, "Inequality and Opportunity in a Perfect Storm of Graduate Student Debt," 2020.

115 Black et al., "PLUS or Minus?," 2023.

116 Denning and Turner, "The Effects of Higher Student Loan Limits on Access to High-Earnings Graduate Programs," 2023.

PART

IV

Racial/Ethnic and Gender Equity Challenges

An advanced degree confers great advantages in the labor market, but not all graduates benefit equally. Cost and debt — the two major risks associated with graduate education — tend to fall more heavily on historically underrepresented racial/ethnic minority groups and on women. These groups also tend to earn less once employed. These disparities point to powerful structural forces that continue to channel underrepresented racial/ethnic minority groups and women toward fields of study associated with lower-paying occupations.

American Indian/Alaska Native/Native Hawaiian/Pacific Islander, Black/African American, and Hispanic/Latino adults are underrepresented among graduate degree holders relative to their share of the population.

American Indian/Alaska Native/Native Hawaiian/Pacific Islander (AI/AN/NH/PI), Black/African American, and Hispanic/Latino adults are underrepresented among graduate degree holders relative to their representation in the adult population (ages 25–64) overall. Hispanic/Latino adults make up 17 percent of the adult population but only 8 percent of graduate degree holders. Similarly, Black/African American adults make up 12 percent of the population but only 9 percent of graduate degree holders, and AI/AN/NH/PI adults are 1 percent of the population but only 0.5 percent of graduate degree holders. By contrast, white adults make up 62 percent of the population compared with 68 percent of graduate degree holders. Asian/Asian American adults make up 7 percent of the population and 13 percent of graduate degree holders (Figure 22).

The differences in graduate degree attainment are driven by well-documented inequalities in our educational system and society, many of which unfold long before individuals arrive at graduate school. These inequalities begin in the pre-K through 12 system and extend into the college admissions process and undergraduate education. Racial wealth and income gaps contribute to differences in how much families can invest in educational opportunities for their children, including funding their undergraduate and graduate education.[117] Family income also helps determine the communities where individuals reside, which then influence the schools their children attend and the social networks they can access.[118] These factors — when combined with other elements such as cultural expectations, exposure to crime, and environmental stress — have a cumulative impact on individuals' life, educational, and career trajectories. They affect students' likelihood of applying to and enrolling in selective colleges and programs, influence their choices of field of study, and affect their chances of landing high-quality entry-level jobs or internships that can help launch their careers. These disparities can in some cases be mediated by access to culturally responsive counseling, teaching, and guidance. Unfortunately, too many students lack access to these supports.[119]

The differences in graduate degree attainment are driven by well-documented inequalities in our educational system and society, many of which unfold long before individuals arrive at graduate school.

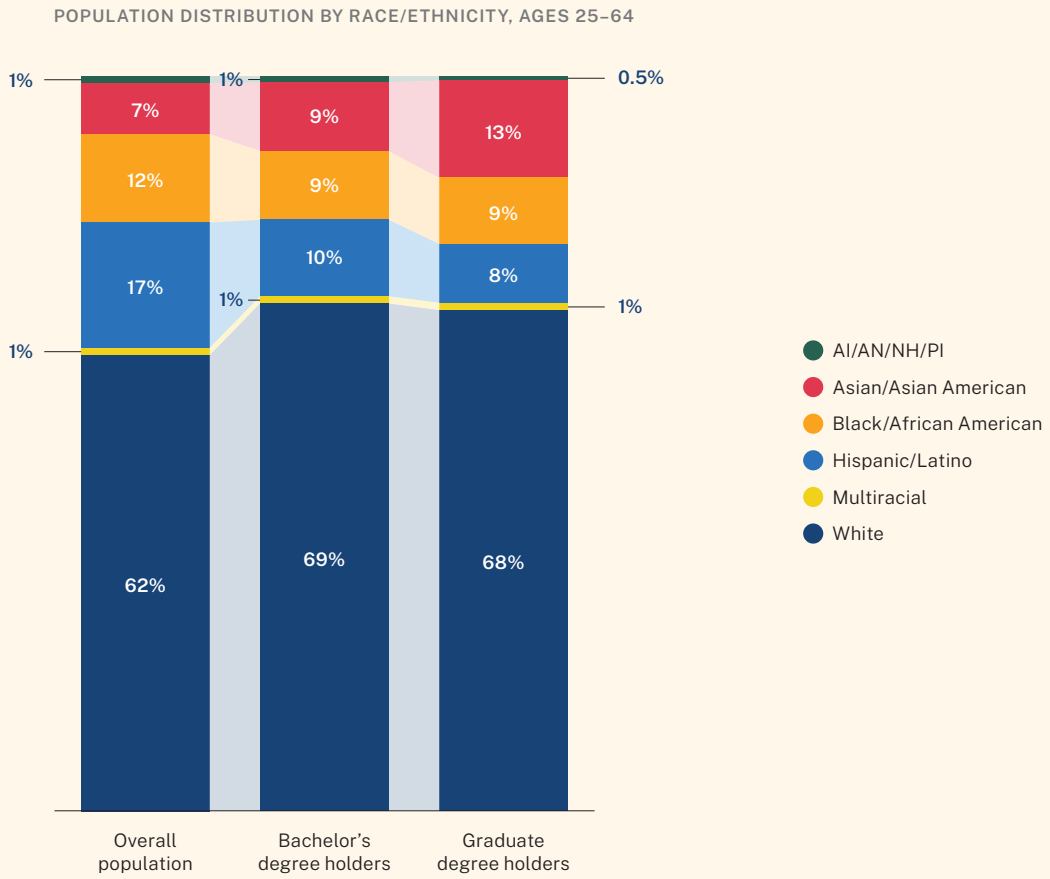
117 Board of Governors of the Federal Reserve System, *Greater Wealth, Greater Uncertainty*, 2023.

118 Chetty et al., *Social Capital and Economic Mobility*, 2022.

119 For more on racial/ethnic inequalities and how they affect education and career pathways, see Strohl et al., *Progress Interrupted*, 2024; Carnevale et al., *How Racial and Gender Bias Impede Progress toward Good Jobs*, 2022; Carnevale et al., *The Cost of Economic and Racial Injustice in Postsecondary Education*, 2021; Carnevale et al., *If Not Now, When?*, 2021; Carnevale et al., *Born to Win, Schooled to Lose*, 2019; Carnevale et al., The *Unequal Race for Good Jobs*, 2019.

FIG. 22

Hispanic/Latino adults are underrepresented among graduate degree holders relative to both bachelor's degree holders and the overall population.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2018–22 (pooled).

Note: AI=American Indian, AN=Alaska Native, NH=Native Hawaiian, and PI=Pacific Islander. Values may not sum to 100 percent due to rounding.

Moreover, undergraduate enrollments at selective colleges and universities do not reflect the true diversity of the college-age population in the United States. Hispanic/Latino, Black/African American, and American Indian/Alaska Native students collectively compose 37 percent of the college-age population, but just 21 percent of first-time enrollments at selective colleges. White and Asian American/Pacific Islander students, meanwhile, make up 60 percent of the college-age population, but 73 percent of enrollments at selective institutions.[120]

Further inequalities emerge in the types of graduate institutions that different student groups attend and how much debt they incur in pursuit of their graduate degrees. Black/African American graduate students disproportionately enroll in private, for-profit universities relative to white, Asian/Asian American, and Hispanic/Latino graduate students.[121]

120 Strohl et al., *Progress Interrupted*, 2024.

121 Monarrez and Matsudaira, *U.S. Department of Education: Trends in Federal Student Loans for Graduate School*, 2023.

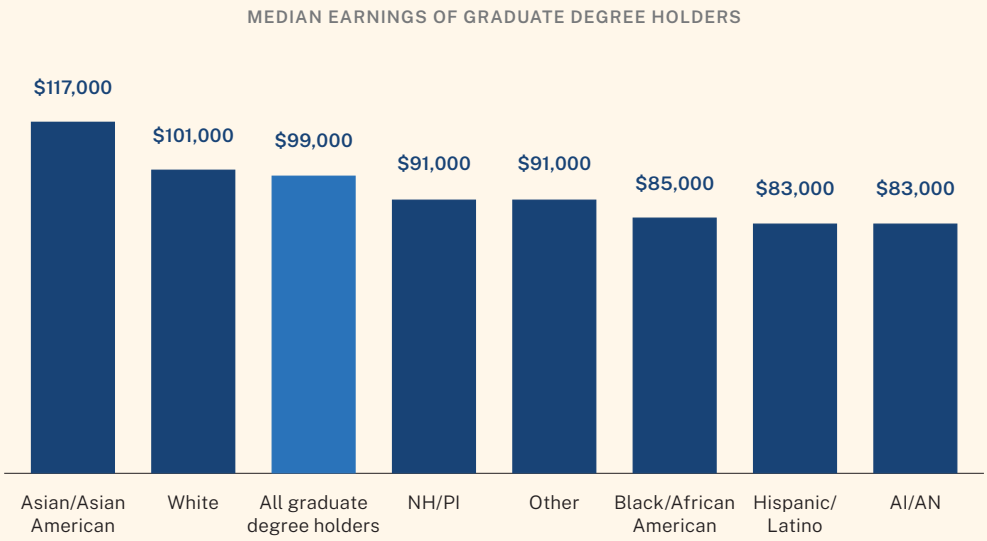
Compared to white graduate students, Black/African American and Hispanic/Latino graduate students are also more likely to take on federal student loans to pay for their graduate studies, have higher median graduate debt, and are more likely to have undergraduate student debt as well.[122] All these factors may deter some students from marginalized racial/ethnic groups from pursuing graduate education.

Nor does attaining a graduate degree lead to equal earnings in the labor market. While Asian/Asian American adults and white adults with graduate degrees earn more than $100,000 per year at the median ($117,000 and $101,000, respectively), both American Indian/Alaska Native adults and Hispanic/Latino adults earn $83,000 annually at the median (Figure 23).

Black/African American and Hispanic/Latino graduate students are more likely to take on federal student loans to pay for their graduate studies, have higher median graduate debt, and are more likely to have undergraduate student debt.

FIG. 23

The median earnings among American Indian/Alaska Native and Hispanic/Latino workers with graduate degrees are $18,000 below the median earnings of white workers with graduate degrees.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2018–22 (pooled).

Note: AI=American Indian, AN=Alaska Native, NH=Native Hawaiian, and PI=Pacific Islander. Earnings are for full-time, full-year workers ages 25–64 with graduate degrees and are inflation-adjusted to 2022 dollars and rounded to the nearest thousand.

122 Miller, *Graduate School Debt*, 2020.

Earnings gaps by race/ethnicity also exist among workers with graduate degrees in the same field of study. For example, in STEM, white workers with graduate degrees earn a median of $124,000 annually, and Asian/Asian American workers with graduate degrees earn $135,000. Hispanic/Latino workers with graduate degrees earn a median of $108,000, and Black/African American workers with graduate degrees earn $106,000 (Table 3). Similarly, in social sciences, white workers with graduate degrees earn a median of $116,000 per year and Asian/Asian American workers with graduate degrees earn $108,000, compared with annual earnings of $92,000 among Hispanic/Latino workers with graduate degrees and $74,000 among Black/African American workers with graduate degrees.

TABLE 3

Graduate degrees in STEM generally lead to the highest earnings, but equity gaps by race/ethnicity exist.

Field of study	Asian/Asian American	Black/ African American	Hispanic/ Latino	White	Multiracial	All graduate degree holders
STEM	$135,000	$106,000	$108,000	$124,000	$104,000	$128,000
Business and communications	$130,000	$85,000	$93,000	$124,000	$130,000	$116,000
Other	$130,000	*	*	$130,000	*	$113,000
Healthcare	$141,000	$97,000	$108,000	$108,000	$151,000	$111,000
Social sciences	$108,000	$74,000	$92,000	$116,000	$92,000	$108,000
Career-focused	*	$56,000	$56,000	$74,000	*	$71,000
Education and public service	$65,000	$70,000	$70,000	$70,000	$81,000	$70,000
Humanities and the arts	$81,000	$51,000	$65,000	$70,000	*	$69,000

Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and US National Science Foundation, National Survey of College Graduates, 2021.

Note: Earnings are for full-time, full-year workers ages 25–64 with graduate degrees and are inflation-adjusted to 2022 dollars and rounded to the nearest thousand.

*Indicates insufficient sample size for analysis. The earnings by field of study for American Indian/Alaska Native/Native Hawaiian/Pacific Islander workers with graduate degrees have been omitted due to insufficient sample sizes for analysis in all fields of study.

Low-income students face high barriers to attaining graduate degrees.

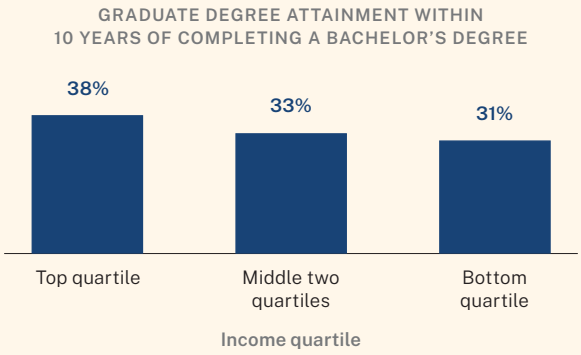
In prior research, we found that students from low-income backgrounds face high barriers to attaining a bachelor's degree — a critical stepping stone toward attaining a graduate degree. This is true even for academically qualified students. Only 30 percent of students from the lowest socioeconomic (SES) quartile who scored in the top half of their tenth-grade cohort on math attain a bachelor's degree within 10 years.[123] The contrast with students from the highest-SES quartile is stark: 35 percent of students with math scores in the bottom half of their tenth-grade cohort earn a bachelor's degree within 10 years, compared with 70 percent with math scores in the top half of their cohort.[124]

Even after attaining a bachelor's degree, low-income students continue to face barriers to graduate degree attainment. Among bachelor's degree completers, 38 percent of students from the highest income quartile attain a graduate degree within 10 years of earning their bachelor's degree, 7 percentage points higher than the graduate degree attainment rate (31 percent) for bachelor's degree completers from the lowest income quartile (Figure 24).

Two major factors contribute to the gaps in graduate degree attainment. First, enrollment in graduate programs is 4 percentage points higher for bachelor's degree completers from the highest income quartile than those from the lowest income quartile (49 percent vs. 45 percent). This reflects a greater tendency to pursue graduate education among higher-income students, who may feel less financial pressure than lower-income students to enter the labor market immediately after finishing their undergraduate studies. Second, among bachelor's degree completers who enroll in graduate school, those from the highest income quartile have completion rates of 81 percent, 9 percentage points higher than those of students from the lowest income quartile (72 percent), indicating that low-income students continue to face greater barriers to graduate program completion.

FIG. 24

Bachelor's degree completers from the highest income quartile are 7 percentage points more likely to attain a graduate degree within 10 years than those from the lowest income quartile.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Center for Education Statistics (NCES), Baccalaureate and Beyond: 2008/2018 (B&B: 08/18) study, 2018.

Note: Income quartile is based on parents' income in the student's junior year of college for dependent students and student's own income during the junior year of college for independent students.

123 Carnevale et al., *Born to Win, Schooled to Lose*, 2019.

124 Carnevale et al., *Born to Win, Schooled to Lose*, 2019.

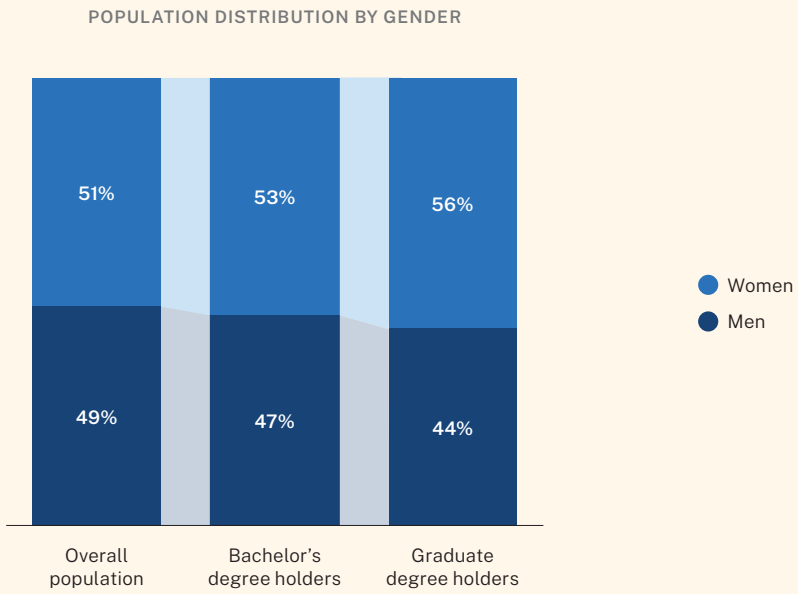
While women are now a majority of graduate degree holders, the gender wage gap is wider among workers with graduate degrees than among all workers.

Women, seeking to bolster their economic opportunities and overcome labor-market inequalities, played a major role in the growth of graduate education. Between 1970 and 2021, women's share of graduate enrollments increased from 35 percent to 61 percent.[125] Women now make up 56 percent of graduate degree holders compared to 53 percent of bachelor's degree holders and 51 percent of the population (Figure 25). However, strides by women in graduate degree attainment have not led to equality in earnings. Women with graduate degrees earn $85,000 per year, compared with $119,000 per year among men (Figure 26).

In fact, the gender wage gap is worse among workers with graduate degrees than among workers with bachelor's degrees or workers overall (Figure 27). While women in the overall workforce make 80 cents on the dollar compared with men,[126] the gender wage gap widens to 74 cents on the dollar for women with bachelor's degrees and 71 cents on the dollar for women with graduate degrees compared to similarly educated men.

FIG. 25

Women make up 56 percent of graduate degree holders, compared with 51 percent of the population ages 25–64.



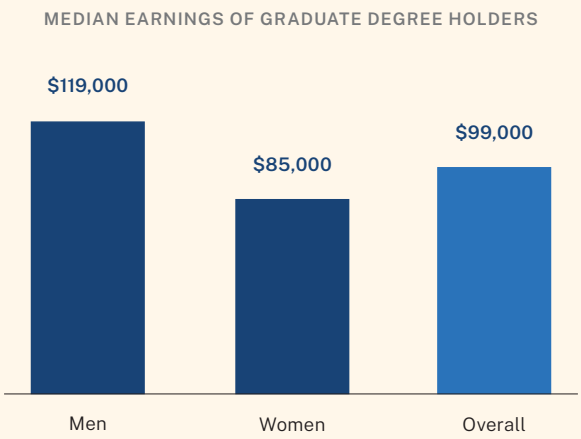
Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2018–22 (pooled).

125 During this period, the number of female graduate students grew by 370 percent, compared to 57 percent growth among male graduate students. Georgetown University Center on Education and the Workforce analysis of Table 303.80 of the US Department of Education, Digest of Education Statistics (online tables), 2022.

126 When controlling for field of study, the gender wage gap narrows to 92 cents. Blau and Kahn, "The Gender Pay Gap," 2007. For more detail on the gender wage gap and the factors contributing to it, see Carnevale et al., *Women Can't Win*, 2018.

FIG. 26

Women with graduate degrees have median earnings of $85,000, compared with $119,000 for men.

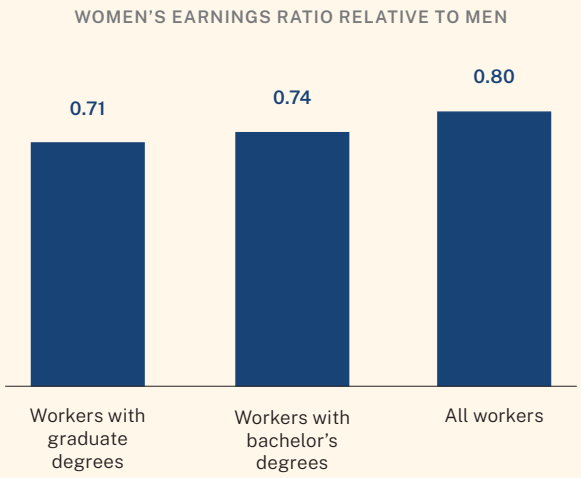


Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2018–22 (pooled).

Note: Earnings are for full-time, full-year workers, ages 25–64, and have been inflation-adjusted to 2022 dollars and rounded to the nearest thousand.

FIG. 27

Women with graduate degrees earn 71 cents on the dollar compared with men with graduate degrees — a larger gender wage gap than for the overall workforce.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, Current Population Survey, 2018–22 (pooled).

Note: Ratios in the figure are based on earnings for full-time, full-year workers, ages 25–64, that have been inflation-adjusted to 2022 dollars and rounded to the nearest thousand.

Segregation by field of study contributes to the gender wage gap among graduate degree holders.

One factor contributing to the gender wage gap among graduate degree holders is segregation by field. Graduate degree fields that lead to jobs with lower earnings (education and public service and humanities and the arts) tend to graduate far more women than men. Women account for 73 percent and 63 percent, and men account for 27 percent and 37 percent in these fields, respectively (Figure 28). In graduate degree fields that lead to jobs with higher earnings (STEM and business and communications), men account for 72 percent and 54 percent of workers with graduate degrees, and women account for 28 percent and 46 percent, respectively.

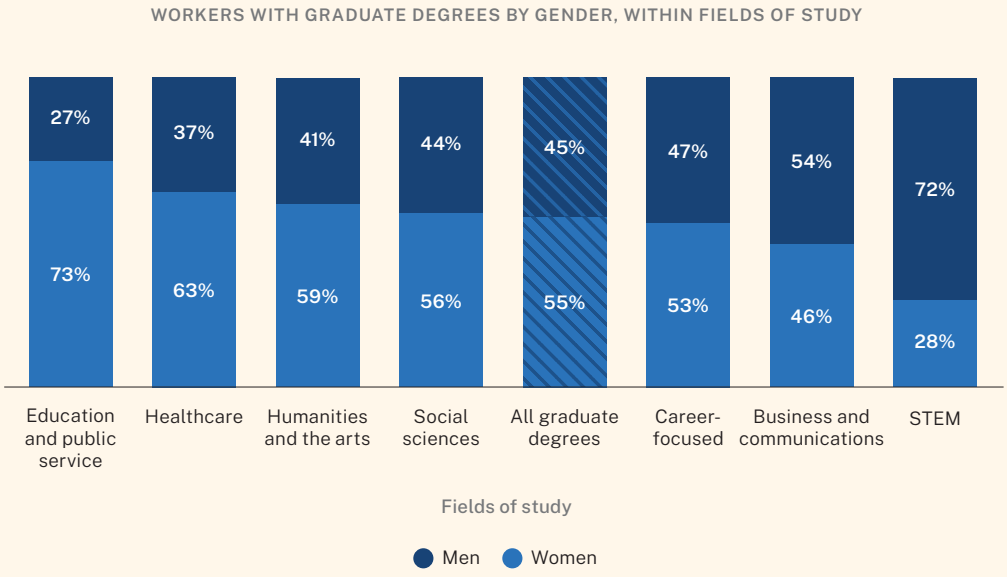
Graduate degree fields that lead to jobs with lower earnings tend to graduate far more women than men.

Even when women pursue graduate degrees in the same fields of study as men, they still earn less.

Segregation by field of study is not the only factor behind the gender wage gap. Labor-market inequalities affect women with graduate degrees, even when they are in the same fields of study as men.[127] In fact, in every graduate field of study except humanities and the arts — the lowest-paying field — women earn less than men, even among full-time, full-year workers (Figure 29).

FIG. 28

Women make up the largest share of workers with graduate degrees in education and public service fields, while men make up the largest share of workers with graduate degrees in STEM fields.



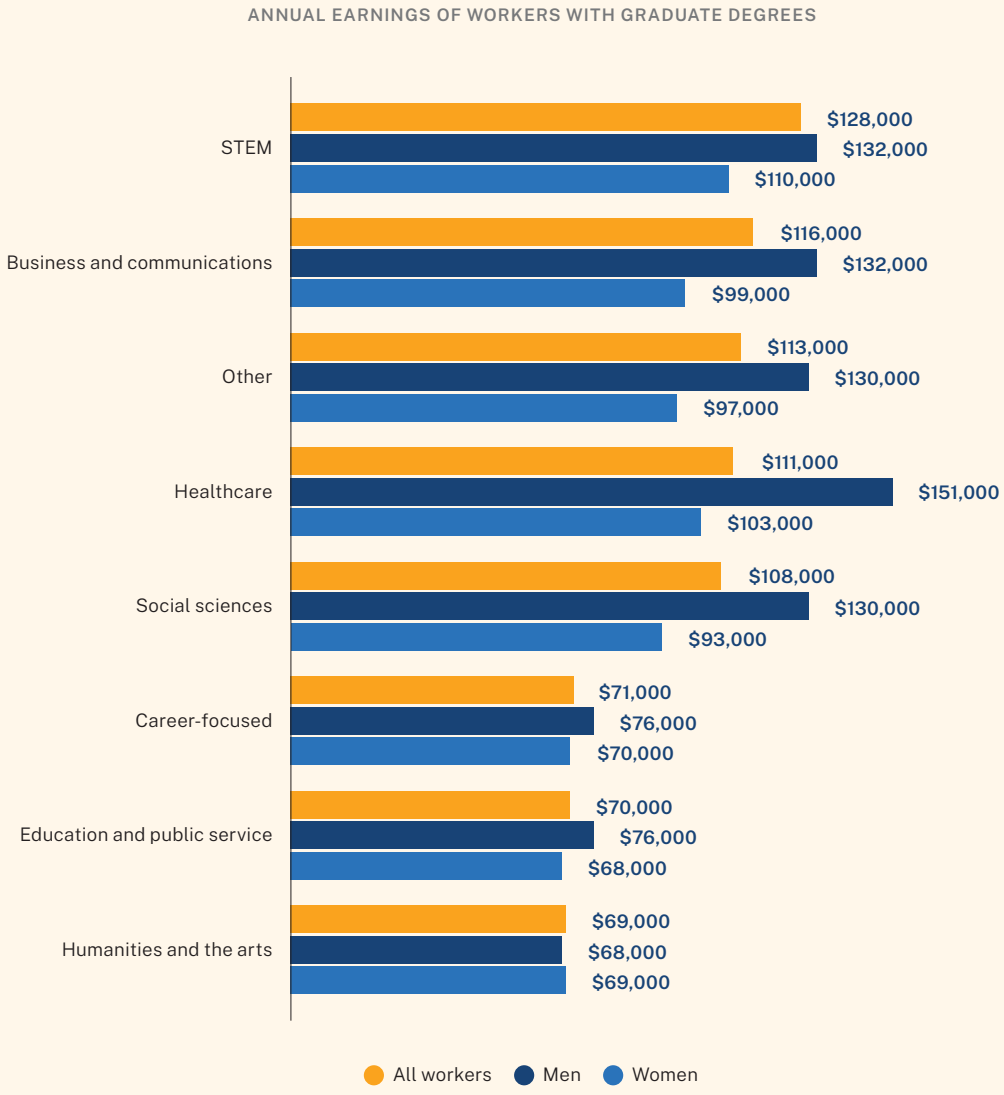
Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and US National Science Foundation, National Survey of College Graduates, 2021.

Note: Career-focused fields of study include criminal justice/protective service; parks, recreation, leisure, and fitness studies; and home economics. The gender distributions in the figure are for workers ages 25–64.

127 For more on the inequalities women face in education and the labor market, see Carnevale et al., *Women Can't Win*, 2018, and Goldin, "A Grand Gender Convergence," 2014.

FIG. 29

The gender wage gap among workers with graduate degrees favors men in every field of study except humanities and the arts — the lowest-paying field.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and US National Science Foundation, National Survey of College Graduates, 2021.

Note: The figure represents earnings for full-time, full-year workers, inflation-adjusted to 2022 dollars. Career-focused fields of study include criminal justice/protective service; parks, recreation, leisure, and fitness studies; and home economics.

PART

V

Our Proposed Program-Level Regulatory Tests and Their Application to Assess Program Value

Graduate degrees can be a high-value but also high-risk investment. They offer higher earnings than other credentials, and workers with a graduate degree are more likely to be employed than those without one. Although the costs and debt associated with graduate education have grown rapidly, the high rewards of graduate education can justify the expense. And yet, this general rule does not capture significant variation in the costs and outcomes of graduate programs. A more nuanced examination — one that considers degree type, field of study, and occupation — reveals substantial variation in graduate outcomes and arguably provides a more accurate understanding of the sort of returns graduates can expect from their advanced degrees.

At a high level, our analysis shows that not all graduate programs that lead to high earnings premiums require students to take on high levels of debt. Conversely, not all graduate programs that lead to high debt come with higher earning power. Degrees that yield high debt and low earnings are particularly problematic; they can leave some graduates with debt they cannot reasonably repay or earnings no better than what they would have made with a bachelor's degree in the same field of study. Some graduates suffer from both outcomes.

Encouragingly, efforts are underway to shed more light on program outcomes. The US Department of Education's 2023 Gainful Employment (GE) and Financial Value Transparency (FVT) regulations,[128] for instance, will require greater accountability on the part of institutions to ensure that students don't have too much debt coupled with earnings too low to repay it.[129] This is a major step in the right direction, representing a new era of transparency and accountability in higher education. Prospective students can make well-informed career and academic choices only if they have accurate information about critical outcomes — such as median earnings and debt — associated with the specific programs they are considering. Understanding program-level outcomes is also essential for policymakers, who can take regulatory steps at the program level to protect students and taxpayers.

Graduate degrees that yield high debt and low earnings can leave some graduates with debt they cannot reasonably repay.

The current loan repayment and regulatory system fails to protect students and creates perverse incentives for institutions.

Broadening access to graduate education is an important goal, as our society has a strong and growing need for workers with advanced degrees. However, the current system fails to protect students and creates perverse incentives for graduate program providers.

Income-driven repayment plans and loan forgiveness options offset some of the risk students assume by borrowing large amounts of money for their graduate studies. These programs can enable students from low-income and racially/ethnically marginalized backgrounds to pursue graduate education that they might not otherwise be able to afford, including graduate education in socially valuable but lower-paying careers. At the same time, these repayment and debt forgiveness programs can have the unintended effect of subsidizing graduate programs that leave students with high debt but little value to show for it. Moreover, if colleges and universities know that the federal government will step in and cover any additional costs they charge to students, they have little motivation to control program costs.

While spiraling costs are affecting all of postsecondary education, they are of particular concern for graduate

128 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

129 GE regulations apply to graduate degree programs at for-profit colleges and universities, as well as graduate certificate programs across all institutions. FVT regulations apply to graduate degree programs at public and nonprofit colleges and universities.

education. A 2023 American Enterprise Institute, EducationCounsel, and Century Foundation report aptly noted that US graduate education is marked by a "combination of effectively unlimited federal student lending, no federal grant funding, and no outcomes expectations for eligible programs."[130] Especially at issue is the Grad PLUS Loan Program, in which individual student borrowing is limited only by the cost of attendance determined by institutions. There is some evidence that the Grad PLUS Loan Program has led to price increases at higher-cost graduate programs without also improving access or outcomes for underrepresented groups.[131]

Some policymakers have called for the elimination of Grad PLUS loans or limits on federal graduate borrowing.[132] However, without careful calibration, such a change could limit access to some high-value but high-cost programs. Eliminating Grad PLUS loans would also disproportionately affect students from lower-income and historically underrepresented racial/ethnic backgrounds. Students in these groups may be less able to secure traditional financing for their graduate studies on the private market, potentially leading private lenders to raise their interest rates and reduce borrower protections.[133] For example, Delisle and Cohn (2022) find that restoring the $20,000 limit on graduate borrowing that was in place before 2006 could affect half of master's degree programs, including those where graduates' higher earnings are more than enough to compensate for their higher debt — such as nursing programs.[134]

By establishing certain minimum standards, the current GE and FVT regulations offer students some basic protections. Nevertheless, a stricter set of standards is needed to limit graduate programs' indirect access to higher levels of funding through the Grad PLUS program.

The Department of Education's Gainful Employment and Financial Value Transparency Regulations

The US Department of Education's new Gainful Employment (GE) regulations require programs to meet certain minimum standards to maintain eligibility for Title IV funding. These standards focus on the earnings premium that postsecondary programs offer relative to the earnings of high school graduates, as well as a debt-to-earnings test. The debt-to-earnings test is based on anticipated median debt payments being either less than 8 percent of total median earnings or less than 20 percent of discretionary earnings. The regulations define discretionary earnings as those above 150 percent of the Federal Poverty Guideline for a single individual.[135]

The department's Financial Value Transparency (FVT) regulations do not penalize low-performing programs by removing their Title IV funding. However, they do require programs to report information needed to calculate financial value metrics (earnings premiums and debt-to-earnings ratios) for publication on a consumer information website. Students who enroll in graduate degree and certificate programs that fail the debt-to-earnings test will be required to acknowledge that they have reviewed information regarding the program's status prior to receiving any federal financial aid.[136]

130 Akers et al., *A Framework for Reforming Federal Graduate Student Aid Policy*, 2023.

131 Black et al., "PLUS or Minus?," 2023.

132 For example, the Lowering Education Costs and Debt Act, introduced by Senator Bill Cassidy and other Republican senators in June 2023, would limit aggregate graduate borrowing to $130,000 and eliminate the Grad PLUS Loan Program; Akers et al., *A Framework for Reforming Federal Graduate Student Aid Policy,* 2023; Knott, "Republicans Unveil Sweeping Higher Education Legislation," 2023.

133 Akers et al., *A Framework for Reforming Federal Graduate Student Aid Policy*, 2023.

134 Delisle and Cohn, *Master's Degree Debt and Earnings*, 2022.

135 In 2024, the Federal Poverty Guideline (FPL) for a single individual was $15,060 in the 48 contiguous states and Washington, DC, meaning that 150 percent of the FPL was $22,590. US Department of Health and Human Services, "Poverty Guidelines," 2024.

136 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

New program-level regulations should govern access to Grad PLUS loans.

Our primary policy recommendation is a new regulatory scheme that would govern access to the Grad PLUS Loan Program, modeled after the Education Department's 2023 Gainful Employment (GE) and Financial Value Transparency (FVT) regulations.[137] To create this regulatory scheme, we would modify the department's earnings premium and debt-to-earnings tests to account for the unique dynamics of graduate education and the specific aim of regulating access to Grad PLUS loans. In short, graduate programs would have to pass the following tests for their students to maintain eligibility for Grad PLUS loans:

- **In-field earnings premium test** — Program graduates must have median earnings that are at least 5 percent above the median earnings of young workers (ages 25–34) who are not enrolled in postsecondary education and who hold bachelor's degrees in the same broad field of study in the state where the institution is located.[138]
- **Debt-to-earnings test** — Median graduate federal loan payments must not exceed 10 percent of program completers' median discretionary earnings, defined as earnings above the living wage for a single individual without children in the state where the program is located.[139]

Our earnings premium test parallels the similar test in the GE and FVT regulations, but it sets a stricter standard.[140] While the Department of Education sets its threshold based on the earnings of high school graduates, we establish minimum earnings at 5 percent above the median earnings among bachelor's degree holders in the same field in the state where the institution is located.[141] We argue that if graduate degrees holders still do not earn more than bachelor's degree holders in the same field after four years in the workforce, they have not received much financial value from their investment of time and money.

Some may argue for an even stricter standard, with a higher threshold for the in-field earnings premium. But we believe that such an approach would be overly restrictive, limiting individual student choice. Some students may want to pursue graduate education in programs that yield lower earnings premiums but that align with their academic interests or professional goals. They may see these programs as leading to careers with flexible scheduling, appealing work environments, or opportunities to make social contributions. As long as program outcomes are transparent, students receive appropriate guidance when making choices, the program offers at least some minimal earnings benefit, and completers earn enough to repay their loans without financial duress or government subsidies, students should be allowed to use federal student loan financing to pursue their chosen education programs.

137 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

138 This test uses the reference group recommended by Matsudaira and Turner (bachelor's degree holders in the same broad field as the graduate degree program and in the same state as the institution). Instead of subtracting amortized program costs from graduates' earnings, as Matsudaira and Turner recommend, we use a separate debt-to-earnings test to measure affordability, adding a 5 percent cushion to account for noise in the data. Matsudaira and Turner, *Towards a Framework for Accountability*, 2020. For more information about our proposed regulatory metrics, see Appendix A.

139 This metric would only encompass students with federal graduate student loans. If median annual earnings for program graduates are below the living wage for the state where the program is located, the program will fail this metric regardless of borrowers' debt levels; Glasmeier, "Living Wage Calculator," 2023. We calculate expected debt payments using a graduated repayment option adjustment to account for earnings growth over the course of borrowers' careers. The repayment periods we use for loan payment calculations are 15 years for master's degrees and 20 years for doctoral and professional degrees. For more information on the construction of our proposed debt-to-earnings test metric, see Appendix A.

140 This stricter standard aligns with a recommendation made by Tia Caldwell of New America, using the reference group recommended by Matsudaira and Turner; Caldwell, "Six Ways to Strengthen Gainful Employment Regulations," 2023; Matsudaira and Turner, *Towards a Framework for Accountability*, 2020.

141 The 5 percent buffer addresses noise in the data to ensure graduates' earnings are actually higher than those of bachelor's degree holders in the same field.

Our debt-to-earnings test also parallels the debt-to-earnings test in the GE and FVT regulations,[142] with some key differences. The Department of Education's GE regulations set a minimum standard for career programs to maintain Title IV eligibility, an essential source of funding that sustains many programs. In contrast, our recommended regulatory regime would affect eligibility for Grad PLUS borrowing, not Title IV eligibility overall. Additionally, under the Department of Education's regulations, programs pass the debt-to-earnings test if graduates' estimated debt payments are either (1) less than 8 percent of their total earnings or (2) less than 20 percent of their earnings above 150 percent of the federal poverty level.[143] Our recommended debt-to-earnings test sets a higher threshold, requiring that graduates' debt payments are within 10 percent of their earnings above the living wage of the state where the program is located.

One consequence of this difference is that under our proposal, any program for which graduates' median earnings fall below the state living wage would fail our proposed debt-to-earnings test, regardless of the level of graduates' debt. Under the Education Department's GE and FVT regulations, in contrast, programs could pass the debt-to-earnings test as long as the estimated debt payments of graduates are below 8 percent of their total earnings. We posit that if graduates cannot expect to earn even a living wage at the median after completing a program, they should not be funding their participation in that program using Grad PLUS loans.[144]

Another key difference is that the Department of Education's GE and FVT regulations only consider student debt acquired to pay for tuition, fees, and equipment and supplies required for coursework, whereas our recommended regulations would consider all of completers' graduate debt. This difference is due to the somewhat different goals of these regulations. The GE and FVT regulations are centered on program accountability and transparency around economic outcomes, whereas our recommended regulations seek to address issues like whether borrowers can reasonably afford their debt payments without relying on additional assistance from the federal government. Regardless of whether borrowed funds cover direct educational expenses or the costs of living, we believe that debt repayment should be affordable based on the median earnings graduates can expect in the labor market.[145]

Under our proposed regulations, if a graduate degree program fails either the in-field earnings premium

> Debt repayment should be affordable based on the median earnings graduates can expect in the labor market.

142 Our proposed debt-to-earnings test also broadly aligns with one of the policy options put forward by Ben Miller of the Center for American Progress (CAP), which calls for ensuring that graduate programs do not leave their graduates with more debt than they can afford to repay based on their earnings through gainful employment-type regulations. CAP's proposal, however, suggests less punitive consequences — such as tailored loan limits. Miller, *Graduate School Debt*, 2020.

143 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

144 The practical impact on programs with low earnings and low debt levels is likely to be small since most of their students do not need Grad PLUS loans.

145 In our recommended regulatory framework, debt payments would also be calculated slightly differently than in the GE and FVT regulations. While the same payback periods would be used (15 years for master's degrees and 20 years for doctoral and professional degrees), a graduated repayment adjustment that discounts payments in the early years after graduation would be applied to account for the fact that graduates' earnings can be expected to grow over the course of the repayment period.

Our proposed regulations would require each graduate program to inform prospective students of the program's performance on the in-field earnings premium test and the debt-to-earnings test.

test or the debt-to-earnings test for two out of three consecutive years, that program would lose access to Grad PLUS loans for its students. Unlike the Education Department's Gainful Employment regulations that apply to all Title IV funds, our proposed regulations would apply only to Grad PLUS loans. As long as a program meets other legislative and regulatory requirements (including those stemming from the recent GE and FVT regulations), its students would maintain access to direct unsubsidized Stafford loans with their existing limits of $20,500 per year and $138,500 in the aggregate (including loans for undergraduate education).[146]

Moreover, similar to the recent GE and FVT regulations, our proposed regulations would require each graduate program to inform prospective students of the program's performance on the in-field earnings premium test and the debt-to-earnings test. If a graduate program failed either test for one year or longer, students would have to acknowledge having received this information and institutions would have to record this acknowledgment before distributing federal financial aid funds.

The College Scorecard's public data are limited due to privacy considerations.

Although the College Scorecard provides the best available data on graduate program outcomes, it has certain limitations. First, it reflects the outcomes only of Title IV federal financial aid recipients. Second, it does not include data on earnings and debt for small programs due to privacy considerations. The latter point has a significant impact on the availability of graduate program data, especially data on doctoral degree programs and graduate certificate programs, many of which are too small to be included in the College Scorecard. Any new data that the Department of Education collects as a result of the GE and FVT regulations — along with any regulatory uses of those data — will be subject to similar limitations.[147]

For completeness and transparency, in this report we evaluate the percentage of the programs that do not pass each of our proposed tests as a share of all programs with available data and as a share of all programs, including those with suppressed data. We have excluded aggregate analysis of doctoral programs from this section due to extremely limited data availability. Analysis of master's degree programs in clinical, counseling, and applied psychology; master's degree programs in mental and social health services and allied professions; professional degree programs in healthcare professions; professional degree programs in clinical, counseling, and applied psychology; and professional degree programs in mental and social health services and allied professions are also excluded from our analysis.[148]

146 US Department of Education, *2023–24 Federal Student Aid Handbook*, 2023.

147 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

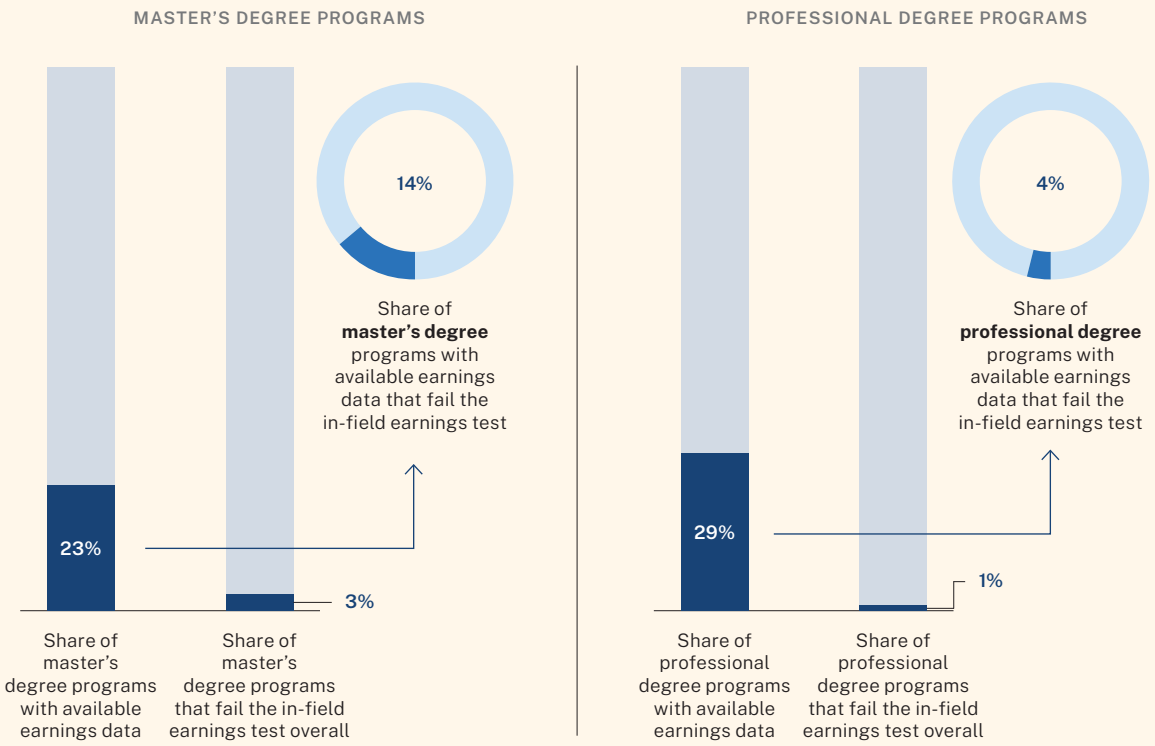
148 The earnings data from the College Scorecard used in these analyses represent earnings four years after graduation. Many health professions, as well as some mental health and other clinical specialties, require extensive post-graduation professional training and experience under the guidance of experienced professionals before an individual becomes a fully licensed professional. During this early-career stage, workers' wages in these professions can differ substantially from the wages they will likely garner when their formal work-based learning is complete. In applying the new GE and FVT regulations, the Department of Education intends to use earnings six years after graduation when such early-career requirements exist, when at least half of graduates obtain a relevant license, and when the profession's earnings trajectory is atypical (with growth between early-career and mid-career earnings that is at least two standard deviations above the average). We do not currently have complete information about the specific programs that will be affected by this exception. US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

Fourteen percent of master's degree programs with available data would fail our proposed in-field earnings premium test, as would 4 percent of professional degree programs.

Our analysis shows that 14 percent of master's degree programs with earnings and debt data available in the College Scorecard would not pass our proposed earnings premium test. This means that graduates of these programs do not earn meaningfully more than workers with bachelor's degrees in the same broad field (Figure 30). These programs account for 3 percent of all master's degree programs with data reported in the College Scorecard.[149] Among professional degree programs, only 4 percent of those with relevant data available in the College Scorecard would not pass our proposed earnings premium test. These programs are an even lower share of all professional degree programs (1 percent).

FIG. 30

Approximately 14 percent of master's degree programs with available data would not pass our in-field earnings premium test.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, College Scorecard, 2023; and the US Census Bureau, American Community Survey (ACS), 2009–21 (pooled).

Note: Earnings from the College Scorecard are measured four years after graduation. The in-field earnings premium is calculated relative to 25-to-34-year-olds with bachelor's degrees in the same field of study working in the state where the institution is located. Doctoral degree programs are excluded from this figure due to the exceptionally low availability of earnings data (7 percent) in the College Scorecard. The following programs are also excluded from this analysis due to potentially atypical earnings trajectories: master's degree programs in clinical, counseling, and applied psychology; master's degree programs in mental and social health services and allied professions; professional degree programs in healthcare professions; professional degree programs in clinical, counseling, and applied psychology; and professional degree programs in mental and social health services and allied professions.

149 "All programs" exclude master's degree programs in clinical, counseling, and applied psychology; master's degree programs in mental and social health services and allied professions; professional degree programs in healthcare professions; professional degree programs in clinical, counseling, and applied psychology; and professional degree programs in mental and social health services and allied professions.

The fields of study with the largest numbers of master's degree programs that would fail our proposed in-field earnings premium test are communications disorders, sciences, and services; music; business administration, management, and operations; and rehabilitation and therapeutic professions (Table 4). Seven doctoral degree programs in music, two doctoral degree programs in law, and four professional degree programs in architecture, among others, would also fail our proposed earnings premium test.

Given that graduate studies require large investments of time and financial resources, it is concerning that some graduates do not earn more than the median for bachelor's degree holders in the same field. However, the in-field earnings premium test only considers the financial benefit side of the equation. Program costs and related debt are also important factors to consider. Overly burdensome debt is an issue that plagues many programs.

TABLE 4

Master's degree programs in communications disorders, sciences, and services; music; and business administration, management, and operations have the largest number of programs that would fail the in-field earnings premium test.

Field of study	Broad field of study	Number of programs failing in-field earnings premium test
MASTER'S DEGREES		
Communication disorders, sciences, and services	Healthcare	75
Music	Humanities and the arts	62
Business, administration, management, and operations	Business and communications	55
Rehabilitation and therapeutic professions	Healthcare	51
Health and physical education/fitness	Healthcare	47
Fine and studio arts	Humanities and the arts	40
Health and medical administrative services	Healthcare	34
Teacher education and professional development, specific levels and methods	Education and public service	34
Architecture	STEM	31
Criminal justice and corrections	Career-focused	27
Human resources management and services	Business and communications	27
Communication and media studies	Business and communications	26

Continued on next page

TABLE 4

Continued

Psychology, general	Social sciences	22
Drama/theatre arts and stagecraft	Humanities and the arts	21
Public health	Healthcare	21
Rhetoric and composition/writing studies	Humanities and the arts	21
Student counseling and personnel services	Education and public service	20
Alternative and complementary medicine and medical systems	Healthcare	19
Biology, general	STEM	18
Natural resources conservation and research	STEM	18
Education administration and supervision	Education and public service	17
Dietetics and clinical nutrition services	Healthcare	16
Theological and ministerial studies	Education and public service	16
Accounting and related services	Business and communications	15
Journalism	Business and communications	14
Allied health diagnostic, intervention, and treatment professions	Healthcare	12
City/urban, community, and regional planning	STEM	12
Film/video and photographic arts	Humanities and the arts	12
Human development, family studies, and related services	Career-focused	11
Teacher education and professional development, specific subject areas	Education and public service	11
Other*	N/A	267
DOCTORAL DEGREES		
Music	Humanities and the arts	7
Law	Social sciences	2
Biochemistry, biophysics, and molecular biology	STEM	1
Biology, general	STEM	1
Chemistry	STEM	1
City/urban, community, and regional planning	STEM	1
Human resources management and services	Business and communications	1
Natural resources conservation and research	STEM	1
Neurobiology and neurosciences	STEM	1

Continued on next page

TABLE 4

Continued

PROFESSIONAL DEGREES		
Architecture	STEM	4
Religion/religious studies	Humanities and the arts	3
Law	Social sciences	1
Legal professions and studies, other	Social sciences	1
Theological and ministerial studies	Education and public service	1
Total	N/A	1,098

Source: Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, College Scorecard, 2023; and the US Census Bureau, American Community Survey (ACS), 2009–21 (pooled).

Note: Earnings from the College Scorecard are measured four years after graduation. The in-field earnings premium is calculated relative to 25-to-34-year-olds with bachelor's degrees in the same field of study working in the state where the institution is located. The College Scorecard has earnings data available for 23 percent of master's degree programs, 7 percent of doctoral degree programs, and 30 percent of professional degree programs. The following programs are also excluded from this analysis due to potentially atypical earnings trajectories: master's degree programs in clinical, counseling, and applied psychology; master's degree programs in mental and social health services and allied professions; professional degree programs in healthcare professions; professional degree programs in clinical, counseling, and applied psychology; and professional degree programs in mental and social health services and allied professions.

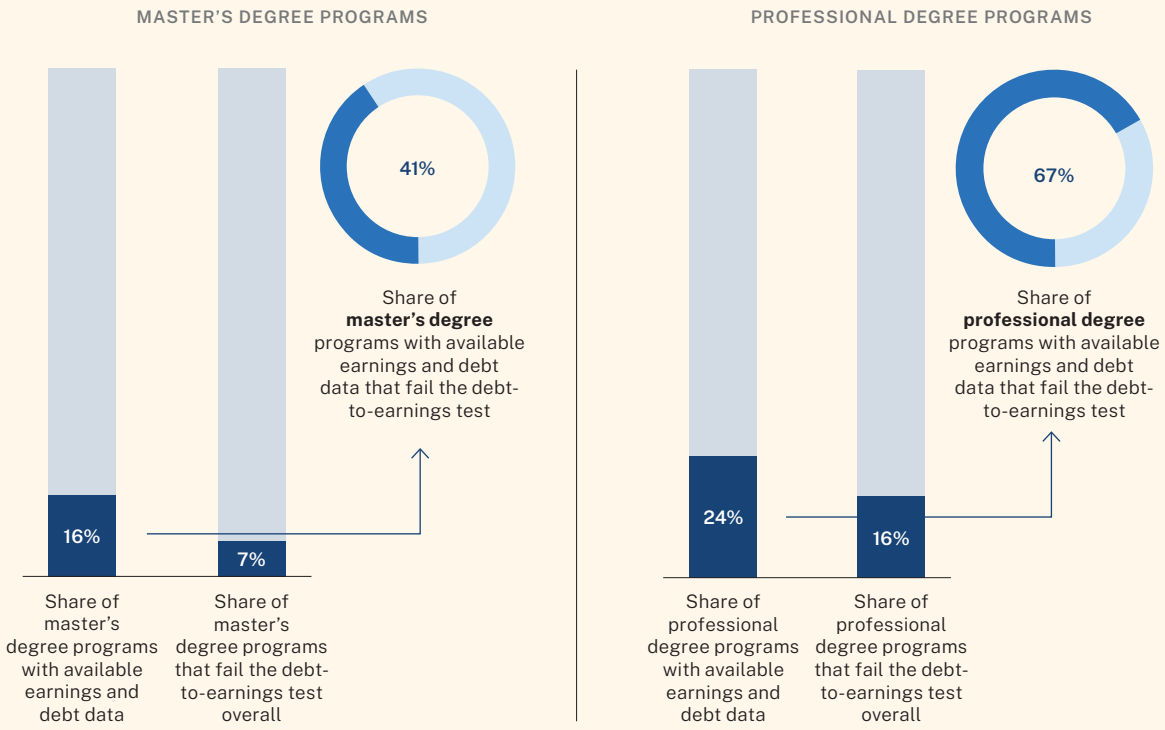
*Master's degrees with fewer than 10 failing programs within a given field of study were grouped in an "other" category; see Appendix B for a list of these programs.

Among programs with available data, 41 percent of master's degree programs and 67 percent of professional degree programs would fail our proposed debt-to-earnings test.

Evaluating debt payments against median annual earnings allows us to consider whether graduate school debt puts undue financial burden on graduates.[150] Forty-one percent of master's degree programs and 67 percent of professional degree programs for which earnings and graduate student debt data are available in the College Scorecard would fail our proposed debt-to-earnings test (Figure 31).

FIG. 31

Among programs with available debt and earnings data, 41 percent of master's degree programs and 67 percent of professional degree programs would not pass our proposed debt-to-earnings test — equating to 7 percent of all master's degree programs and 16 percent of all professional degree programs.



Source: Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, College Scorecard, 2023; and Glasmeier, "Living Wage Calculator," 2023.

Note: Earnings from the College Scorecard are measured four years after graduation. The debt-to-earnings metric is based on an analysis of debt payments amortized over 20 years for professional degrees and over 15 years for master's degrees, with a graduated repayment adjustment to account for earnings growth over the repayment period. If the payments under these assumptions exceed 10 percent of the individual's earnings above the state living wage for an individual adult without children, the program is considered to fail the debt-to-earnings test. Doctoral degree programs are excluded from this figure due to the exceptionally low availability of earnings and debt data in the College Scorecard (4 percent). The following programs are also excluded from this analysis due to potentially atypical earnings trajectories: master's degree programs in clinical, counseling, and applied psychology; master's degree programs in mental and social health services and allied professions; professional degree programs in healthcare professions; professional degree programs in clinical, counseling, and applied psychology; and professional degree programs in mental and social health services and allied professions.

150 Earnings reflect outcomes four years after graduation. Program-level debt data from the College Scorecard may include debt from other graduate programs within that institution. It does not include any debt acquired during undergraduate education or at other postsecondary institutions.

Largely due to the lack of complete debt and earnings data for many programs with smaller enrollments, failing master's degree programs represent just 7 percent of all master's degree programs and 16 percent of all professional degree programs. By field of study, the largest number of master's degree programs that would fail our proposed debt-to-earnings test include master's degree programs in social work, student counseling and personnel services, and teacher education and professional development (Table 5). Eighteen doctoral programs in the law would also fail the debt-to-earnings test, along with 14 programs in educational administration and supervision and 10 programs in business administration, management, and operations, among others. Among professional degree programs, 120 law degree programs would fail the debt-to-earnings test, along with three professional degree programs in social work and three in theological and ministerial studies, among others.

TABLE 5

Master's degree programs in social work, student counseling and personnel services, and teacher education and professional development top the list of programs that would fail the debt-to-earnings test.

Field of study	Broad field of study	Number of programs failing debt-to-earnings test
MASTER'S DEGREES		
Social work	Education and public service	180
Student counseling and personnel services	Education and public service	176
Teacher education and professional development, specific levels and methods	Education and public service	162
Communication disorders sciences and services	Healthcare	129
Rehabilitation and therapeutic professions	Healthcare	112
Educational administration and supervision	Education and public service	81
Business administration, management, and operations	Business and communications	76
Special education and teaching	Education and public service	71
Allied health diagnostic, intervention, and treatment professions	Healthcare	70
Public administration	Education and public service	69
Teacher education and professional development, specific subject areas	Education and public service	65
Health and physical education/fitness	Career-focused	55
Education, general	Education and public service	54
Music	Humanities and the arts	50
Theological and ministerial studies	Education and public service	50
Public health	Healthcare	49

Continued on next page

TABLE 5

Continued

Human resources management and services	Business and communications	48
Health and medical administrative services	Healthcare	45
Curriculum and instruction	Education and public service	43
Criminal justice and corrections	Career-focused	42
Library science and administration	Education and public service	39
Fine and studio arts	Humanities and the arts	29
Psychology, general	Social sciences	29
Rhetoric and composition/writing studies	Humanities and the arts	25
Accounting and related services	Business and communications	20
Alternative and complementary medicine and medical systems	Healthcare	15
Film/video and photographic arts	Humanities and the arts	15
Human development, family studies, and related services	Career-focused	15
Drama/theatre arts and stagecraft	Humanities and the arts	14
International relations and national security studies	Social sciences	12
Communication and media studies	Business and communications	11
History	Humanities and the arts	11
Architecture	STEM	10
Dietetics and clinical nutrition services	Healthcare	10
Education, other	Education and public service	10
Information science/studies	STEM	10
Registered nursing, nursing administration, nursing research, and clinical nursing	Healthcare	10
Other*	N/A	292
DOCTORAL DEGREES		
Law	Social sciences	18
Educational administration and supervision	Education and public service	14
Business administration, management, and operations	Business and communications	10
Music	Humanities and the arts	9
Psychology, general	Social sciences	8
Curriculum and instruction	Education and public service	6
Education, general	Education and public service	6
English language and literature, general	Humanities and the arts	2
Human resources management and services	Business and communications	2

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TABLE 5

Continued

Teacher education and professional development, specific levels and methods	Education and public service	2
Teacher education and professional development, specific subject areas	Education and public service	2
Psychology, other	Social sciences	2
Communication and media studies	Business and communications	1
Criminal justice and corrections	Career-focused	1
Dispute resolution	Other	1
Education, other	Education and public service	1
Educational/instructional media design	Education and public service	1
Human services, general	Education and public service	1
Public administration	Education and public service	1
Religion/religious studies	Humanities and the arts	1
Social work	Education and public service	1
Student counseling and personnel services	Education and public service	1
Theological and ministerial studies	Education and public service	1
PROFESSIONAL DEGREES		
Law	Social sciences	120
Social work	Education and public service	3
Theological and ministerial studies	Education and public service	3
Legal research and advanced professional studies	Social sciences	2
Educational administration and supervision	Education and public service	1
Library science and administration	Education and public service	1
Student counseling and personnel services	Education and public service	1
Total	N/A	2,582

Source: Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, College Scorecard, 2023; and Glasmeier, "Living Wage Calculator," 2023.

Note: Earnings from the College Scorecard are measured four years after graduation. The debt-to-earnings metric is based on an analysis of debt payments amortized over 20 years for professional degrees and over 15 years for master's degrees, with a graduated repayment adjustment to account for earnings growth over the repayment period. If the payments under these assumptions exceed 10 percent of the individual's earnings above the state living wage for an individual adult without children, the program is considered to fail the debt-to-earnings test. The College Scorecard has earnings and debt data available for 16 percent of master's degree programs, 4 percent of doctoral degree programs, and 25 percent of professional degree programs. The following programs are also excluded from this analysis due to potentially atypical earnings trajectories: master's degree programs in clinical, counseling, and applied psychology; master's degree programs in mental and social health services and allied professions; professional degree programs in healthcare professions; professional degree programs in clinical, counseling, and applied psychology; and professional degree programs in mental and social health services and allied professions.

*Master's degrees with fewer than 10 failing programs within a given field of study were grouped in an "other" category; see Appendix B for a list of these programs.

Historically Black colleges and universities are notable pipelines to graduate education for many Black/African American students.

Historically Black colleges and universities (HBCUs) serve as notable pipelines to graduate education for Black/African American students.[151] While 53 percent of all Black/African American bachelor's degree completers enroll in a graduate degree program, 67 percent of Black/African American bachelor's degree completers who graduated from an HBCU enroll in an advanced degree program.[152] Some Black/African American students also pursue their post-baccalaureate studies at HBCUs. In the 2020–21 academic year, Black/African American students earned 72 percent of master's degrees and 60 percent of doctoral degrees conferred by HBCUs.[153] Notably, these institutions serve large numbers of Black/African American women — more than two-thirds (71 percent) of all graduate degrees awarded to Black/African American students by HBCUs in 2020–21 went to female students.[154]

Given HBCUs' notable role in producing advanced degrees among Black/African American graduates, it is worth unpacking these institutions' earnings and debt outcomes. The College Scorecard offers a general understanding of how recent graduates of HBCUs and predominantly Black institutions (PBIs) fare. Due to missing data at the doctoral and professional degree levels, we focus here on earnings and debt outcomes among master's degree completers. Our analysis shows that graduates of master's degree programs at HBCUs and PBIs have lower median earnings but equivalent debt amounts relative to the overall median (Table 6).

TABLE 6

Master's degree completers at HBCUs and PBIs tend to have lower earnings and similar debt than completers at other institutions.

Median earnings and debt outcomes, four years after graduation		
	MEDIAN EARNINGS	MEDIAN DEBT
HBCU/PBI	$59,000	$41,000
All master's degree programs	$72,000	$41,000

Source: Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, College Scorecard, 2023.

Note: Numbers have been rounded to the nearest thousand. HBCU=Historically Black College or University; PBI=Predominantly Black Institution.

151 For example, 31 percent of Black/African American scholars who earned a STEM PhD between 2010 and 2020 completed their undergraduate education at an HBCU. Velez and Heuer, *Exploring the Educational Experiences of Black and Hispanic PhDs in STEM*, 2023.

152 Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Center for Education Statistics (NCES), Baccalaureate and Beyond Longitudinal Study (B&B), 2008/18, 2018.

153 Georgetown University Center on Education and the Workforce analysis of data from Table 313.30 of the US Department of Education, *Digest of Education Statistics* (online tables), 2021.

154 Georgetown University Center on Education and the Workforce analysis of data from Table 313.30 of the US Department of Education, *Digest of Education Statistics* (online tables), 2021.

The National Postsecondary Student Aid Study (NPSAS) paints a slightly different picture of student debt at HBCUs. Black/African American students completing their master's degrees at HBCUs have slightly more median cumulative federal student loan debt than all students completing their master's degrees at all institutions ($46,000 versus $44,000). However, Black/African American borrowers in master's degree programs at HBCUs have less graduate student debt than Black/African American borrowers in master's degree programs overall, who owe a cumulative total of $52,000 at the median (Table 7).

Black/African American borrowers in master's degree programs at HBCUs have less graduate student debt than Black/African American borrowers in master's degree programs overall.

TABLE 7

Black/African American students completing their master's degrees have the highest median cumulative graduate federal loan debt burden.

Race/ethnicity	Cumulative federal loans borrowed for master's degree programs at all institutions	Cumulative federal loans borrowed for master's degree programs at HBCUs
Asian/Asian American	$46,000	*
AI/AN/NH/PI	*	*
Black/African American	$52,000	$46,000
Hispanic/Latino	$43,000	*
White	$31,000	*
All federal graduate loan borrowers	$44,000	$46,000

Source: Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2020.

Note: AI=American Indian, AN=Alaska Native, NH=Native Hawaiian, and PI=Pacific Islander; HBCU=Historically Black College or University. Loan amounts are inflation-adjusted to 2022 dollars and rounded to the nearest thousand.

*Data are unavailable due to insufficient sample size.

Once Black/African American graduates of master's degree programs enter the workforce, their median earnings are lower than those of all other racial/ethnic groups. Data from the National Survey of College Graduates show that at the median, Black/African American master's degree holders earn $61,000, compared to the median earnings of $74,000 across all workers with master's degrees (Table 8). These earnings are only slightly lower than the earnings of master's degrees holders who graduated from HBCUs ($59,000).[155]

As explored in Part IV, lower earnings and higher debt affect Black/African American master's degree holders regardless of where they earned their master's degrees. The reasons for this are complex, reflecting the legacy of centuries of discrimination and disenfranchisement that Black/African American individuals have faced in the United States. Moreover, these earnings and debt gaps both reflect and perpetuate persistent wealth gaps: the median wealth among Black/African American households is approximately $240,100 less than the median wealth among white households.[156] Broadening access to high-quality graduate education programs should help improve the financial well-being of Black/African American households, but the disproportionate debt burden that falls on Black/African American students limits the possible benefits of graduate education, especially if Black/African American students complete programs that don't lead to earnings commensurate with the debt they take on.

TABLE 8

The median earnings among Black/African American workers with master's degrees are $13,000 less than the median earnings among all workers with master's degrees.

Median earnings among workers with master's degrees, four years after graduation, by race/ethnicity	
Asian/Asian American	$91,000
AI/AN/NH/PI	*
Black/African American	$61,000
Hispanic/Latino	$72,000
White	$74,000
Multiracial	$95,000
All	$74,000

Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and US National Science Foundation, National Survey of College Graduates, 2021.

Note: AI=American Indian, AN=Alaska Native, NH=Native Hawaiian, and PI=Pacific Islander. Earnings are inflation-adjusted to 2022 dollars and rounded to the nearest thousand.

*Data are unavailable due to insufficient sample.

155 Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and US National Science Foundation, National Survey of College Graduates, 2021.

156 Perry et al., "Black Wealth Is Increasing, but So Is the Racial Wealth Gap," 2024.

Our regulatory framework — designed to promote transparency and accountability — would enable high-value programs to continue operating while putting the brakes on runaway costs and borrowing.

PART

VI

Additional Policy Recommendations

Too many graduate degree programs do not provide sufficient economic opportunity to justify their high costs. As discussed throughout this report, many graduate programs result in earnings that are too low for graduates to repay their debts without assuming an undue financial burden. In addition, when graduates can't repay their rising debts, some costs may be passed on to taxpayers through income-based repayment and student loan forgiveness. Meanwhile, inequality persists in who is able to attain a graduate degree, what fields they enter, and how much they earn after they complete their degrees.

In Part V of this report, we presented our primary regulatory proposal to govern access to Grad PLUS loans by limiting borrowing for graduate students in programs that may not provide economic value sufficient to justify the additional debt. In this section, we present several additional policy recommendations intended to address challenges and concerns related to graduate degree affordability while preserving the best elements of graduate education.

Federal and state governments should provide targeted grant aid to support graduate education in socially valuable professions.

Our proposed regulatory regime would not eliminate graduate education programs for socially valuable but lower-paying careers, provided that such programs do not put graduates in financially precarious positions. If these programs are unable to pass our proposed regulatory tests, their students will still have access to Federal Direct Stafford Loans, but will lose access to Grad PLUS loans. Alternatively, the students in these programs will be able to continue receiving funding from Grad PLUS loans if the programs pass our proposed in-field earnings premium and debt-to-earnings tests.

> Grants could support future work in high-need geographic areas with specific worker shortages (for example, rural areas with shortages of healthcare professionals).

Nonetheless, more-restricted borrowing options from the federal government may still discourage some students from pursuing socially valuable but lower-paying professions, thus contributing to worker shortages in fields like teaching. It may be harder for students to secure funding for programs leading to these professions without access to Grad PLUS loans, as private lenders would likely limit borrowing options due to the lower earnings outcomes associated with these programs.

At present, the onus of funding the credentials necessary for fields like teaching, counseling, and social work falls largely on the individuals who choose these vocations. Acquiring a degree takes time and money, and earnings in some of these fields have not kept up with rising expenses.[157] The problem of low earnings in these professions is beyond the scope of graduate education policy to address: society as a whole has a responsibility to share the costs of services such as social work and teaching and to pay professionals in these fields commensurately with the value they provide.

157 Newburger and Beckhusen, "Average Teachers' Earnings Are Declining, Lower than Similarly Educated Workers," 2022; Apgar and Dolan, "Post-Master's Career Progression of Social Workers," 2023; Barth, "Social Work Labor Market," 2003.

Targeted, upfront grant aid is a better way than loan forgiveness to address the societal goal of expanding the pool of teachers, counselors, social workers, and others in similarly undervalued professions.

In the meantime, we recommend that the federal government and state governments fund targeted grant programs to support graduate education in fields leading to work in these crucial yet undervalued professions. These grants would go to graduate students upfront and would stipulate that those who receive them work in the targeted professions after graduation. In some cases, the grants could support future work in high-need geographic areas with specific worker shortages (for example, rural areas with shortages of healthcare professionals). These grant programs would operate similarly to the current Teacher Education Assistance for College and Higher Education (TEACH) Grant Program, in which students sign an agreement to teach for four years in a high-need field and at a high-need school, or to repay the grants they received, which would be converted to Unsubsidized Direct Stafford loans.[158] Similarly, government and higher education institutions should consider offering grants to low-income graduate students and students from marginalized backgrounds.[159]

In some ways, our proposal also resembles the existing Public Service Loan Forgiveness (PSLF) program. The primary difference is that in our proposal, grants will be converted to loans only if recipients fail to meet specific conditions, whereas borrowers participating in PSLF must make payments for 10 years (unless their income is too low) before the remainder of their loans will be forgiven — an arrangement that has repercussions for their financial situation. PSLF also leaves graduates in limbo, hoping that the regulatory environment in 10 years will remain favorable to approving their application for loan forgiveness.

Targeted, upfront grant aid is a better way than loan forgiveness to address the societal goal of expanding the pool of teachers, counselors, social workers, and others in similarly undervalued professions. We believe that grants would be more effective at recruiting and rewarding rising professionals than the current income-driven repayment and loan forgiveness options, which can still create financial hardship for borrowers. The current income-driven repayment and loan forgiveness approach also incentivizes the proliferation of other graduate programs with little if any social value, but high costs and debt.

158 Barkowski et al., *Study of the Teacher Education Assistance for College and Higher Education (TEACH) Grant Program*, 2018.

159 The legal considerations around affirmative action could limit institutions' ability to support members of specific racial/ethnic groups enrolled in these programs.

To minimize the financial risks associated with Grad PLUS loans, eligibility must be tied to greater transparency about program outcomes.

Our proposed regulations would include an enhanced graduate program information system, requiring institutions to share a broader range of program outcomes on their program websites. This would provide potential students with more detailed information on program outcomes to guide their decision-making, including information about

- the primary occupations for which the program prepares students,
- the program completion rates,
- the program withdrawal rates,
- the loan repayment rates among borrowers,
- the share of students who have loans,
- the breakdown of all loans held by graduate borrowers by graduate and undergraduate share, and
- any relevant post-graduation requirements for licensure or entry into the occupations for which the program prepares students.

More complete information is essential, but it will not necessarily help all students make good decisions. Ideally, prospective graduate students would benefit from the guidance of trained counseling professionals. To ensure they receive that guidance, we support regulations from the Department of Education, adopted in fall 2023, that require institutions to provide students with sufficient financial aid and career counseling.[160]

These regulations are a step in the right direction. The Department of Education should go further by providing institutions with more guidance regarding sufficient staffing, proper credentialing for counseling staff, personalized student advising from assigned professionals, partnerships with recruiters and employers, and opportunities to complete geographically accessible externships required for licensure or entry into a career, among other supports. Further, to ensure such guidance is concrete and evidence-based, the Department of Education should commission additional research about best practices in this area and establish specific research-based thresholds institutions should meet.

Graduate programs should be required to report detailed information about admissions, retention, and completion rates.

Colleges and universities should be required to report the same type of information about graduate programs that they currently report on undergraduate programs to the Department of Education. These include all data elements necessary to calculate admissions rates, retention rates, and graduation rates, as well as any financial aid provided to graduate students and the net prices students pay. To the extent possible, these metrics need to be disaggregated by race/ethnicity and gender to allow for an examination of equity gaps within different types of graduate education programs across institutions.

Making information about graduate admissions more accessible is all the more important in the wake of the Supreme Court's 2023 decision to effectively end race-conscious affirmative action in admissions.[161] The Center on Education and the Workforce has done extensive work in this arena at the undergraduate level, tracking the continued underrepresentation of Black/African American, Hispanic/Latino, and Indigenous students at selective colleges and universities.[162] Much less is known about graduate admissions due to the lack of official public data on admissions and enrollment at the graduate level.

160 US Department of Education, "Financial Responsibility, Administrative Capability, Certification Procedures, Ability to Benefit (ATB)," 2023.

161 Carnevale et al., *Race, Elite College Admissions, and the Courts*, 2023.

162 Strohl et al., *Progress Interrupted*, 2024; Carnevale et al., *Race, Elite College Admissions, and the Courts*, 2023; Carnevale et al., *Race-Conscious Affirmative Action*, 2023; Carnevale et al., *Our Separate and Unequal Public Colleges*, 2018; and Carnevale and Strohl, *Separate and Unequal*, 2013.

Concrete data are essential to enacting effective policy. We cannot hope to significantly improve quality or equity in graduate education without sufficient data on fundamental topics like admissions and graduation rates. In a post-affirmative action environment, more complete data by race/ethnicity will be especially important to illuminate the impact of changing undergraduate demographics on graduate enrollment and attainment.

Without this critical information, many aspects of graduate programs' performance remain opaque. For instance, we know that many undergraduate students drop out of college with debt, but no degree.[163] In contrast, we know little about the extent of this issue in graduate education due to a lack of reliable, publicly available data.

According to our analysis of the Baccalaureate and Beyond Longitudinal Study (B&B), the degree completion rate is 80 percent for master's degree programs, 84 percent for professional degree programs, and 56 percent for doctoral degree programs.[164] That study, however, has several limitations: it follows a cohort of bachelor's degree graduates, not graduate school entrants, so is not representative of graduate school cohort outcomes,[165] and it does not support disaggregation by institution and program. Even with these limitations, it is a valuable study, and the Department of Education's plans to discontinue data collection for future cohorts are detrimental to the field.[166]

We cannot hope to significantly improve quality or equity in graduate education without sufficient data.

More complete College Scorecard data would further enhance our understanding of graduate program outcomes.

Another major data limitation stems from the size of many graduate degree programs and related privacy considerations that lead to data suppression. For small programs, the publication of median earnings and other metrics could inadvertently reveal outcomes for specific individuals, thereby violating their privacy. As a result, the College Scorecard offers earnings data for only 23 percent of master's degree programs, 7 percent of doctoral degree programs, and 30 percent of professional degree programs. Earnings and debt data are available for even smaller shares: 16 percent of master's degree programs, 4 percent of doctoral degree programs, and 25 percent of professional degree programs.[167] Similar limitations will apply to the new data that will be collected as a result of the recently enacted Financial Value Transparency (FVT) regulations. The Department of Education estimates that its new web portal will have missing earnings or debt data for 86 percent of master's degree programs, 97 percent of doctoral programs, and 64 percent of professional degree programs at public and nonprofit universities.[168]

These data limitations reflect a major tension between transparency and accountability on the one hand

163 Hess, "Millions of Student Loan Borrowers Don't Have a Diploma to Show for Their Debt," 2021.

164 These percentages exclude students still enrolled in their master's, professional, or doctoral degree programs. US Department of Education, National Center for Education Statistics (NCES), Baccalaureate and Beyond Longitudinal Study, 2008/18, 2018.

165 For more on graduate degree completion–related information from the Baccalaureate and Beyond Longitudinal Study (B&B), see page 26; US Department of Education, National Center for Education Statistics, Baccalaureate and Beyond Longitudinal Study, 2008/18, 2018.

166 Bauer-Wolf, "Higher Ed Groups, Researchers Ask Education Department to Preserve Key Sample Studies," 2023.

167 Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, College Scorecard, 2023. We excluded a small number of programs from this analysis due to atypical earnings trajectories; therefore, the shares cited in Figures 30 and 31 are slightly smaller.

168 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

and individual privacy on the other. The Department of Education has tried to address these concerns by injecting noise into the publicly available data on median earnings and by focusing on the share of enrollments for which data are available rather than the share of programs. Yet at some education levels, even the proportion of enrollments with available data is small. For example, the new data resulting from the FVT regulations will represent only 21 percent of all PhD enrollments at public and nonprofit universities. As data collection efforts capture more and more graduating cohorts, aggregation over these cohorts will generate enough sample to overcome privacy considerations for some small programs. In the meantime, the Department of Education should consider whether implementing a pass/fail approach on metrics such as the earnings premium and the debt-to-earnings for some smaller programs can extend coverage of its regulations and consumer information without compromising privacy.

Another policy development that would shed more light on college outcomes is the long-stalled College Transparency Act (CTA).[169] If passed, the CTA would lift the student unit record ban and create a privacy-protected, student-level federal data system that would include all postsecondary students, not just those who received federal aid. As a result, the number of completers for whom earnings data are available would increase, likewise increasing the number of programs with available data.

The Education Department should consider implementing a pass/fail metric for programs with missing earnings and/or debt data from the College Scorecard.

Professional healthcare programs require a more specialized regulatory approach.

A major theme throughout this report is the need to regulate access to Grad PLUS loans. However, one set of programs contributes substantially to graduate student debt without relying on Grad PLUS loans: professional degree programs in a number of healthcare fields. These programs have much higher borrowing limits for direct unsubsidized Stafford loans than the standard $20,500 annual limit for most graduate programs.

Specifically, students in some graduate healthcare programs are eligible for an additional $20,000 annually if they are in a 9-month-academic-year program and an additional $26,667 if they are in a 12-month-academic-year program.[170] Students in another set of professional healthcare programs are eligible for an additional $12,500 in direct unsubsidized Stafford loans if they are in a 9-month-academic-year program and an additional $16,667 if they are in a 12-month-academic-year program.[171] Students in these programs also have higher aggregate limits for direct Stafford loans ($224,000 for undergraduate and graduate studies, compared to $138,500 for students in other graduate programs).[172]

These carve-outs for professional healthcare programs are rooted in the unique needs of the medical field and its vital importance to communities and society

169 US Congress, *College Transparency Act,* 2023.

170 These programs include Doctor of Allopathic Medicine, Doctor of Osteopathic Medicine, Doctor of Dentistry, Doctor of Veterinary Medicine, Doctor of Optometry, Doctor of Pediatric Medicine, and Doctor of Naturopathic Medicine or Doctor of Naturopathy.

171 These programs include Doctor of Pharmacy, Doctor of Chiropractic, Doctor of Clinical Psychology, and master's or doctoral degrees in public health or health administration.

172 US Department of Education, *2023–24 Federal Student Aid Handbook*, 2023.

Medical education and training programs are very expensive, but they play a vital role in public health, necessitating higher loan limits for students in some cases.

at large. Between 1978 and 1998, many students in these professional healthcare programs met their additional borrowing needs through the Health Education Assistance Loan (HEAL) program, authorized under the Public Health Service Act and administered primarily by the Department of Health and Human Services (HHS), which insured certain loans issued to students in these programs by private lenders. The HEAL program stopped issuing new loans in 1998, and in 2014, program administration transferred to the Department of Education.[173] To address the unique needs of students in certain healthcare programs, the Secretary of Education has been raising their loan limits using his authority under the Higher Education Act of 1965.[174]

Medical education and training are very expensive, but they play a vital role in public health, necessitating higher loan limits for students in some graduate programs in health professions. Additionally, medical and health professionals with graduate degrees tend to be among the highest-compensated workers once they reach their full-career earnings potential.[175] However, not all professional healthcare programs pay off, and many require students to take on large amounts of debt and spend years completing residencies, fellowships, and other requirements for licensure and practice. This makes pursuing a healthcare degree a high-risk proposition, especially for students from low-income backgrounds and marginalized racial/ethnic groups.

Because some medical and health professions have atypical earnings growth trajectories, we are not able to assess, based on the earnings currently available in the College Scorecard, whether individual professional degree programs leading to these professions enable students to pay off their graduate loans after they complete their residencies and other requirements for licensure and acquire sufficient professional experience. Congress and the Department of Education need to review whether the higher borrowing limits for these programs are meeting their intended policy goals, whether there are better ways to achieve those policy goals, and whether an accountability standard can be implemented for these programs without hurting public health or limiting the availability of graduate training for vital healthcare professionals.

173 Jones, "Aggregate Loan Limit for Graduate and Professional Students Preparing for the Health Professions," 2008; US Department of Education, Office of Federal Student Aid, "Health Education Assistance Loan (HEAL) Information," 2021.

174 Jones, "Aggregate Loan Limit for Graduate and Professional Students Preparing for the Health Professions," 2008.

175 Workers ages 40–49 with a professional degree in health have median earnings exceeding $210,000; Georgetown University Center on Education and the Workforce analysis of the data from the US Census Bureau and US National Science Foundation, National Survey of College Graduates 2015, 2017, 2019, and 2021 (pooled).

To provide prospective students with a more robust understanding of potential outcomes, graduate programs should be required to report on admissions, completion, and other measures of academic and professional success.

Conclusion

Ensuring that all students who want to pursue graduate education can do so is a worthwhile policy aim. Direct federal loans with few limitations — including Grad PLUS loans — contribute to this goal. At the same time, unrestricted financing does not help to address the growing cost of graduate education, which has more than tripled over the past 20 years.[176] Nor does it help students distinguish between high-quality programs that will pay off and programs that will leave them with substantial debt and little to show for it.

Graduate student loan financing should not result in more students falling prey to high-cost programs that leave them with unaffordable debt and insufficient value in return. Pursuing graduate education will continue to be a high-risk endeavor as long as prospective students lack the information to distinguish between programs that are worth large amounts of graduate debt and those that are not. This uncertainty discourages graduate enrollment among students from lower socioeconomic backgrounds and marginalized racial/ethnic groups, heightening social stratification and the chronic equity challenges that afflict higher education and the labor market.

Eliminating Grad PLUS loans — the only source of funding that allows many students from marginalized and underrepresented backgrounds to pursue some higher-cost graduate programs — is not the answer. Instead, we recommend implementing a regulatory regime that promotes transparency and accountability while limiting Grad PLUS borrowing to programs that demonstrate sufficient value to graduates.

Pursuing graduate education will continue to be a high-risk endeavor as long as prospective students lack the information to distinguish between programs that are worth large amounts of graduate debt and those that are not.

This approach would help limit superfluous costs and borrowing without constraining students' ability to pursue high-quality programs with returns that justify the investment. It would maintain opportunity for students from marginalized and underrepresented backgrounds while reducing the risk posed by high-cost programs with insufficient value. And by reducing the risk, it would encourage more students from marginalized and underrepresented backgrounds to give graduate education a chance.

176 We measure cost here using net tuition and fees. Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, National Postsecondary Student Aid Study (NPSAS): Graduate Students (GR), 2000, 2020.

Most students want greater transparency about the outcomes of graduate education. A 2023 poll from Third Way and Global Strategy Group showed that the majority of current and recent graduate students support policies that would require institutions to be more transparent about economic outcomes.[177] To further boost transparency and help students make better decisions, institutions should also provide potential students with information about

- the primary occupations for which the program prepares students,
- the program completion rates,
- the program withdrawal rates,
- the loan repayment rates among borrowers,
- the share of students who have loans,
- the breakdown of all loans held by graduate borrowers by graduate and undergraduate share, and
- any relevant post-graduation requirements for licensure or entry into the occupations for which the program prepares students.

This information should be published on program websites and on a centralized Department of Education website provided to all potential students before they decide to enroll in a program. All graduate programs and the institutions that offer them should also offer sufficient career and financial aid counseling to guide students through the complex decision-making process along with any follow-up steps. All graduate programs should be required to report to the Department of Education the same information that undergraduate programs currently report, including completion rates, retention rates, and admissions rates. Without these data, researchers and other stakeholders are unable to fully evaluate program quality and identify concrete interventions to improve student outcomes.

Importantly, our proposed approach will preserve many programs in socially valuable but lower-paid fields, such as education and public service and humanities and the arts — provided that they are offered at a reasonable cost. Under our proposed regulatory regime, these programs either would not rely on Grad PLUS loans at all or, if they maintain access to Grad PLUS loans, would not lead to debts so high that graduates are unable to repay them without undue financial burden. To further ensure an adequate supply of professionals with postgraduate credentials in these socially valuable fields, we recommend targeting grant aid toward students seeking to enter these professions. Such grant aid could require students to work in specific high-need occupations and geographic areas for a set number of years, with the grants to be converted into repayable loans if these conditions are not met. Targeted grant aid can also be used to support graduate programs at HBCUs and other MSIs, as well as graduate students from underrepresented backgrounds and marginalized racial/ethnic groups at institutions of all types.

Simply cutting off funding for low-performing programs is not the solution to the complex challenges facing graduate education. A regulatory framework that promotes transparency and accountability offers a more nuanced approach, supporting students' achievement of graduate credentials that offer high value without excessive debt. Our approach would ensure that valuable programs can continue to operate while putting the brakes on runaway costs and borrowing. Meanwhile, programs that prepare students for work in lower-paying fields should not pay the price for the low monetary value that society has assigned to such work. Supporting such programs through grant aid would eliminate some financial constraints affecting many graduates — such as the need to pay down their debt for 10 years before it can be discharged under the Public Service Loan Forgiveness Program. Ultimately, our approach balances labor-market realities with the urgent need for greater accountability in graduate education.

177 Among survey respondents, 60 percent supported greater transparency about graduation rates, 58 percent supported greater transparency about employment rates of recent graduates, 57 percent supported greater transparency about graduates' typical income, and 59 percent supported greater transparency about graduates' debt relative to their earnings. Cecil, "Transparency Is the Name of the Game for Graduate Students," 2024.

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Appendix A.

Transparency and Accountability Metrics and Program-Level Data Limitations

Our regulatory proposal involves two tests that would regulate access to the Grad PLUS Loan Program:

- **In-field earnings premium test** — Program graduates must have median earnings that are at least 5 percent above the median earnings of young workers (ages 25–34) who are not enrolled in postsecondary education and who hold bachelor's degrees in the same broad field of study in the state where the institution is located.[1]
- **Debt-to-earnings test** — Median graduate federal loan payments must not exceed 10 percent of program completers' median discretionary earnings, defined as earnings above the living wage for a single individual without children in the state where the program is located.[2]

We modeled these tests on the earnings premium and debt-to-earnings tests that the US Department of Education adopted in its 2023 Gainful Employment (GE) and Financial Value Transparency (FVT) regulations,[3] while adapting the tests to account for the unique dynamics of graduate education. Our goal is to limit excessive borrowing rather than set a minimum standard by which a program is permitted to receive federal funds. Because most programs cannot operate without some access to federal funding, a regulatory approach that removes access to that funding based on graduates' earnings could force some closures among programs leading to socially necessary but low-paid occupations.

In-Field Earnings Premium Test

The earnings premium test in the GE and FVT regulations requires the median earnings of program completers who received federal financial aid to be higher than the median earnings of high school graduates ages 25–34 in the labor force in the state where the institution offering the program is located. In addition, if out-of-state students are more than half of all students in the evaluated program, the Department of Education will use the national median earnings for high school graduates ages 25–34 in the labor force.[4]

This threshold is appropriate for undergraduate programs; without an undergraduate degree, prospective students' next best alternative would generally be to enter the workforce with a high school diploma. But as Tia Caldwell of New America has pointed out, students who choose to pursue graduate

1 This test uses the reference group recommended by Matsudaira and Turner (2020) (bachelor's degree holders in the same broad field as the graduate degree program and in the same state as the institution). Instead of subtracting amortized program costs from graduates' earnings, as Matsudaira and Turner recommend, we use a separate debt-to-earnings test to measure affordability, adding a 5 percent cushion to account for noise in the data. Matsudaira and Turner, *Towards a Framework for Accountability*, 2020.

2 This metric would only encompass students with federal graduate student loans. If median annual earnings for program graduates are below the living wage for the state where the program is located, the program will fail this metric regardless of borrowers' debt levels; Glasmeier, "Living Wage Calculator," 2023. We calculate expected debt payments using a graduated repayment option adjustment to account for earnings growth over the course of borrowers' careers. The repayment periods we use for loan payment calculations are 15 years for master's degrees and 20 years for doctoral and professional degrees.

3 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

4 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

education have generally already completed a bachelor's degree, making the earnings of bachelor's degree holders a more appropriate comparison point for an earnings premium test.[5] Moreover, since many graduate programs require specific undergraduate coursework, students generally consider graduate degrees in the same broad field as their bachelor's degrees. Thus, following an approach suggested by Jordan Matsudaira and Lesley Turner,[6] Caldwell recommends that the Department of Education use median earnings for bachelor's degree holders ages 25–34, in the same broad field of study, in the state where the institution offering the program is located as the comparison point for median earnings of graduate programs.[7]

In the final FVT and GE regulations, the Department of Education recognized the logic of this suggestion but argued that it was not fully viable due to (1) limited data on bachelor's degree holders' earnings by field of study and state and (2) incomplete understanding of the connection between undergraduate and graduate fields of study. Ultimately, the department argued that using the same earnings premium threshold for graduate programs as for undergraduate programs offers students some basic protections.[8]

Our aims differ from those of the Department of Education, however. The Department of Education seeks to weed out the most egregiously poor performers, whereas the objective of our proposed program-level outcomes tests is to regulate access to Grad PLUS loans. We argue that a higher standard is appropriate to grant graduate programs access to the higher levels of borrowing offered by Grad PLUS. We use the threshold proposed by Matsudaira and Turner — earnings among bachelor's degree holders, ages 25–34, in the same broad field of study in the state where the institution offering the program is located — as the basis for our proposed in-field earnings premium test for graduate degree program completers.[9]

We recognize that there is substantial noise in the College Scorecard's program-level median earnings data, including noise injected by the Department of Education to protect individual privacy. To account for this noise, we recommend that a graduate program's median earnings exceed Matsudaira and Turner's earnings threshold by at least 5 percent for its students to qualify for Grad PLUS loans.

To address data limitations driven by sample sizes for certain fields of study in some states in the 5-year pooled American Community Survey (ACS) data, we use a much larger 12-year pool (2009–21) to obtain median earnings of bachelor's degree holders by broad field of study. In addition, while the Department of Education's GE and FVT regulations use median earnings for everyone in the workforce to establish the performance threshold, we use the median earnings only among workers with positive earnings. We do this for comparability with the College Scorecard, which includes only program completers with positive earnings in its median earnings calculation for each program.[10]

In an additional deviation from the Department of Education's approach, we use completers' earnings four years after program completion instead of three years after program completion. While the Department of Education makes a reasonable case that earnings three years after completion are a sufficient outcome

5 Caldwell, "Six Ways to Strengthen Gainful Employment Regulations," 2023.

6 Matsudaira and Turner, *Towards a Framework for Accountability*, 2020.

7 Caldwell, "Six Ways to Strengthen Gainful Employment Regulations," 2023.

8 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

9 Matsudaira and Turner also subtract amortized program costs from median graduates' earnings prior to comparing them to the earnings of bachelor's degree holders in the same broad field in the state where the institution offering the program is located. We do not subtract program costs because we use a separate debt-to-earnings test. Matsudaira and Turner, *Towards a Framework for Accountability*, 2020.

10 US Department of Education, *Technical Documentation,* 2023.

metric for most programs,[11] we argue that a longer post-graduation follow-up period is better, as it gives graduates more time to settle into their careers and thus better reflects their ultimate earnings. At the time we conducted this analysis, four years following program completion was the longest follow-up period available in the College Scorecard data.[12]

Debt-to-Earnings Test

Our second test mediating access to Grad PLUS loans centers on a debt-to-earnings threshold. This test parallels the test with the same name in the Department of Education's FVT and GE regulations,[13] but with important differences to address our differing aims. We adjusted the Department of Education's methodology to better reflect graduate degree completers' ability to afford their debt payments over the full repayment term of their loans.

The debt-to-earnings test in the Department of Education's FVT and GE regulations applies to program completers who received federal financial aid. It requires their student loan payments to be no higher than either 8 percent of their annual earnings or 20 percent of their discretionary earnings, which the Department of Education defines as earnings above 150 percent of the Federal Poverty Guideline[14] for a single individual. For graduate degree completers, the Department of Education amortizes graduate student debt into equal payments made over 15 years for master's degree programs and over 20 years for doctoral and professional degree programs, using an interest rate of 5.82 percent based on the 3-year average (2016–19) for federal direct unsubsidized graduate loans.[15]

While the debt-to-earnings test in the FVT and GE regulations is a good starting point, it is not ideal for determining whether graduate program completers can repay their debts without undue financial stress or additional cost to taxpayers. First, the Department of Education includes both borrowers and non-borrowers in their metric,[16] reasoning that programs should receive credit for the outcomes of completers without debt. This approach does not capture the affordability of student loan payments for completers, as it combines outcomes for completers with no student loan payments and those for completers with potentially high payments.[17]

Second, the Department of Education includes only student debt accrued for direct education-related costs, such as tuition, fees, equipment, and supplies[18] — excluding loans borrowed to pay the cost of living. This makes sense if the goal is to evaluate the prices the institution charges students, as the institution has influence over direct costs and far less influence over the cost of living. However, this approach ignores several important considerations. First, it ignores opportunity costs. If students were not attending a postsecondary education program, they could use the time dedicated to their coursework toward working to pay their cost of living. Second, when students borrow to pay the cost of living during their studies, they must pay interest on the borrowed amount. In addition to these theoretical differences, the data necessary to separate direct educational

11 The Department of Education will use a six-year follow-up period for some graduate programs leading to occupations in the health and mental health professions. For more on the treatment of such programs in our proposed GE and FVT regulations, see the "Exclusions of Health and Mental Health-Related Programs" section of this appendix. US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

12 US Department of Education, College Scorecard, 2023.

13 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

14 In 2024, the Federal Poverty Guideline (FPL) for a single individual was $15,060 in the 48 contiguous states and Washington, DC, meaning that 150 percent of the FPL was $22,590. US Department of Health and Human Services, "Poverty Guidelines," 2024.

15 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

16 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

17 For graduate programs, the inclusion of non-borrowers in the FVT and GE regulations makes little practical difference: the regulations consider outcomes only for federal financial aid recipients, and because there are currently no federal grants for graduate students, all graduate federal financial aid recipients are federal student loan borrowers.

18 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

costs from the cost of living is not currently available in the College Scorecard, although the Department of Education intends to begin collecting these data as a result of the GE and FVT regulations.

Then, there is the Department of Education's threshold for the debt-to-earnings test. It includes two measures, and programs can meet either measure to pass the test:

1. Completers' student loan payments must be less than 8 percent of their annual earnings; or
2. Completers' debt payments must not exceed 20 percent of their discretionary earnings (earnings above 150 percent of the Federal Poverty Guidelines for a single individual).[19]

Each measure offers an incomplete assessment of affordability. As Caldwell pointed out in her recommendations, allowing programs to satisfy either measure could mean allowing a substantial number of programs to leave completers with unaffordable student loan payments.[20] The department's logic for using this less restrictive approach seems to be that this test, along with the earnings premium test, sets a minimum standard for Title IV eligibility of career programs, and most programs need access to Title IV funds to continue operating.[21]

While the Department of Education's approach may be reasonable for establishing Title IV eligibility, we think a higher standard is necessary to establish eligibility for Grad PLUS borrowing. First, the 8 percent threshold is based on mortgage underwriting standards that were adapted in early literature on student loan affordability. However, as Sandy Baum and Saul Schwartz point out, the Department of Education is not using the standard as intended. In the earlier literature, the 8 percent of borrower's income was meant to cover all non-mortgage debt, not just student loans. When used by mortgage lenders, the 8 percent threshold is intended to ensure that borrowers do not default on their mortgage; it is not meant to establish affordability from the borrower's perspective. Finally, the 8 percent threshold does not take into account the fact that younger borrowers are willing to pay a higher share of their income in expectation of a higher income in the future.[22]

The threshold of 20 percent of the annual discretionary income for a single individual is based on an alternative approach suggested by Baum and Schwartz. As the Department of Education acknowledges in their responses to public comments released with the final GE and FVT regulations,[23] Baum and Schwartz's analysis can support a stricter standard than the one used by the Department of Education.[24] Based on evidence presented in their study, Baum and Schwartz recommend 20 percent of discretionary income as the absolute maximum any student should pay on student loan repayment.[25] They also propose that students earning around the median income should not pay more than 10 percent of their income for student loans.[26] In contrast, the Department of Education uses the 20 percent of discretionary earnings threshold relative to the program's median debt and earnings, which means that a program could pass the debt-to-earnings test with nearly half of its completers using more than 20 percent of their discretionary earnings for debt payments.[27]

19 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

20 Caldwell, "Six Ways to Strengthen Gainful Employment Regulations," 2023.

21 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

22 Baum and Schwartz, *How Much Debt Is Too Much?*, 2006.

23 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

24 In a follow-up blog post to address the proposed rescinding of previous Gainful Employment rules by the Trump administration, Sandy Baum argues that an upper limit of 20 percent of discretionary income applied to median program graduates' earnings is not strict enough. Baum, "DeVos Misrepresents the Evidence Seeking Gainful Employment Deregulation," 2018.

25 Baum and Schwartz, *How Much Debt Is Too Much?*, 2006; Baum, "DeVos Misrepresents the Evidence Seeking Gainful Employment Deregulation," 2018.

26 Baum and Schwartz, *How Much Debt Is Too Much?*, 2006.

27 Baum and Schwartz, *How Much Debt Is Too Much?*, 2006.

Ten percent of discretionary income is the maximum students are expected to pay under the most recent income-driven repayment plan, Revised Pay as You Earn (REPAYE), including its latest update, the Saving on a Valuable Education (SAVE) plan.[28] Baum and Schwartz also recommend modifications for factors such as age, geographic location, family size, and family background.[29] The last two details are generally obtainable only in individual-level data and therefore are not currently available to the Department of Education due to the student unit record ban implemented by Congress as part of the Higher Education Act reauthorization in 2008.[30] We believe that adjustments accounting for age (more specifically, years since graduation) and geographic location (more specifically, the state where the institution offering the program is located) would improve this measure and have adopted adjustments related to these factors in our approach.

The other adjustment we made to Baum and Schwartz's proposed approach involves how discretionary income is defined. Discretionary income generally represents the portion of income that remains after subtracting expenditures on essential items such as housing, food, clothing, and transportation.[31] In the FVT and GE regulations, the Department of Education uses income 150 percent above the Federal Poverty Guidelines for a single individual to define discretionary income,[32] following Baum and Schwartz.[33] However, the Department of Education itself defines discretionary income inconsistently. For example, in the regulations for the SAVE plan, the Department of Education defines discretionary income as income 225 percent above the Federal Poverty Guidelines.[34] Moreover, the department's definitions of discretionary income do not generally account for differences in cost of living across the country.

To address these considerations, we use the following approach in our proposed debt-to-earnings test:

- We define discretionary earnings as earnings above the living wage for a single individual without children in the state where the institution offering the program is located. We determine the living wage using the MIT Living Wage Calculator.[35] If program completers' median earnings four years after graduation are below the living wage for an individual without children in the state where the program is located, the program fails the debt-to-earnings test regardless of the median size of completer's debt payments. This is because at the median, completers would not have any discretionary income to pay for student loans.
- For our debt-to-earnings test, we set the affordability threshold as follows: program completers must spend no more than 10 percent of their discretionary earnings, as defined above, on loan payments.
- We define graduate debt as all cumulative federal student debt borrowed for the graduate education program, including funds used for both direct educational costs and costs of living.
- Because we are interested in affordability for student borrowers, our calculations include only completers with federal student loan debt.[36]

28 US Department of Education, "Improving Income Driven Repayment for the William D. Ford Federal Direct Loan Program and the Federal Family Education Loan (FFEL) Program," 2023.

29 Baum and Schwartz, *How Much Debt Is Too Much?*, 2006.

30 New America, "Student Unit Record Data System," 2024.

31 Baum and Schwartz, *How Much Debt Is Too Much?*, 2006.

32 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

33 Baum and Schwartz, *How Much Debt Is Too Much?*, 2006.

34 US Department of Education, "Improving Income Driven Repayment for the William D. Ford Federal Direct Loan Program and the Federal Family Education Loan (FFEL) Program," 2023

35 Glasmeier, "Living Wage Calculator," 2023.

36 If the program has a large share of completers without federal student loans, the program's disqualification from the Grad PLUS Loan Program will not have a meaningful impact on its ability to operate, which should address concerns that the program would be inappropriately affected by outcomes among the minority of its students. We recommend that the Department of Education disclose the share of graduates in each program who borrowed federal loans in general and Grad PLUS loans specifically.

We amortize student loan debt for doctoral and professional degree programs over 20 years and for master's degree programs over 15 years, using a 6.5 percent interest rate[37] and applying an adjustment to the payments based on the graduated repayment option. The Education Department's GE and FVT regulations use straight-line amortization with equal payments, while our graduated repayment option adjustment relates to how long students have been in the workforce since completing their program (an adjustment that is indirectly related to age). The issue with straight-line amortization with equal payments over time is that program completers do not earn the same salary each year after graduation. In general, completers' earnings grow over time, such that their earnings 10 years after graduation are typically higher than their earnings three years after graduation. Thus, using early-career earnings to determine the affordability of the equal-size payments over the life of the student loans can lead to a faulty conclusion that the student debt is unaffordable. The graduated repayment plan for federal student loans accounts for the fact that completers' earnings generally grow over time.[38] We estimate borrowers' payments in the fourth year of repayment as 70 percent of the full straight-line amortized payment for doctoral and professional degrees and 77 percent of full payment for master's degrees for comparison with the earnings four years after completion reported in the College Scorecard.

Exclusion of Health and Mental Health Programs

The Department of Education's GE and FVT regulations acknowledge that certain programs — primarily in health and mental health professions, including medical, dental, osteopath, clinical counseling, clinical psychology, and marriage and family therapy — require prolonged post-graduation training and professional practice through residencies, apprenticeships, fellowships, and similar arrangements. Relative to their full earnings potential, workers in these fields earn much less in their early careers than workers in other fields.[39] The Department of Education will use earnings six years after completion rather than three years after completion to evaluate these programs.[40] Since six years of earnings and debt data after program completion are not available in the College Scorecard, we excluded the following programs from our analysis:

- professional degree programs under 2-digit CIP codes 51 (health professions and related programs) and 60 (health professions residency/fellowship programs) and 4-digit CIP code 42.28 (clinical, counseling, and applied psychology)
- doctoral degree programs under 2-digit CIP code 51 (health professions and related programs) and 4-digit CIP code 42.28 (clinical, counseling, and applied psychology)
- master's degree programs under 4-digit CIP codes 42.28 (clinical, counseling, and applied psychology) and 51.15 (mental and social health services and allied professions)

These exclusions do not appear to fundamentally change our overall results. Without these exclusions, the failure rate on the in-field earnings premium test would be 17 percent for master's degree programs with available earnings data in the College Scorecard (compared to 14 percent with exclusions) and 4 percent for professional degree programs (the same as with exclusions). Without the exclusions, the failure rate

37 We use a 6.5 percent interest rate based on the midpoint between the average rate for federal direct unsubsidized Stafford loans for graduate and professional students for the 2014–15 and 2015–16 academic years (around 6 percent) and the average rate for federal direct PLUS loans for the same academic years (around 7 percent). We chose these academic years to align with the cohorts we used from the College Scorecard Data by Field of Study. US Department of Education, Office of Federal Student Aid, "Interest Rates and Fees for Federal Student Loans," 2023.

38 The specific payment amount at any given point varies based on principal and interest in the graduated repayment plans, but we use this general approach to adjust for the fact that completers' earnings grow over time. We assume that repayment amounts start at around 50 percent of the full payment and increase every two years, reaching roughly 150 percent of full payment by the end of the repayment period. Zinn, "What is the Graduated Repayment Plan for Student Loans?," 2023; US Department of Education, Office of Federal Student Aid, "The Graduated Repayment Plan Starts with Lower Payments That Increase Every Two Years," 2023.

39 The Department of Education plans to expand the list of fields of study and credentials on this list based on statistical analysis of College Scorecard data. Graduate fields of study will qualify for this list based on atypically high (two standard deviations above the mean) earnings growth, information from the field regarding post-graduation training requirements that take at least three years to complete, and at least half of programs' graduates obtaining a license. US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

40 US Department of Education, "Financial Value Transparency and Gainful Employment," 2023.

on the debt-to-earnings test would be 44 percent for master's degree programs with available data in the College Scorecard (compared to 41 percent with exclusions) and 74 percent for professional degree programs (compared to 67 percent with exclusions).

College Scorecard Program-Level Data

To analyze how graduate programs would perform on our proposed regulatory tests, we used earnings and federal student debt data from the US Department of Education's April 2023 College Scorecard Data release. This release pools earnings among the 2014–15 and 2015–16 graduating cohorts, following them up to four years after completion (in the 2019 and 2020 calendar years). Its federal student debt numbers are based on pooled data for the 2018–19 and 2019–20 cohorts.[41]

The College Scorecard provides the most comprehensive program-level earnings and student debt data available from any public data source. Yet, it still has a number of important limitations that affect this analysis, including the suppression of earnings and debt for programs with small cohort sizes. As a further safeguard against disclosure of private information, the Department of Education does not make its suppression rules public.

Available earnings and debt data (i.e., the share of programs with non-privacy-suppressed data) in the College Scorecard breaks down as follows:

- Among master's degree programs, 23 percent have non-suppressed earnings four years post-completion and 16 percent have non-suppressed earnings and debt data.
- Among professional degree programs, 30 percent have non-suppressed earnings four years post-completion and 25 percent have non-suppressed earnings and debt data.
- Among doctoral degree programs, 7 percent have non-suppressed earnings four years post-completion and 4 percent have non-suppressed earnings and debt data.[42]

It also only includes students who received Title IV federal financial aid, which for graduate students is primarily in the form of loans. Also, as part of privacy-protection mechanisms, the Department of Education injects noise into earnings counts and median earnings data. Earnings data do not include any completers who were enrolled in another program during the year when earnings information was collected, died prior to the end of that year, or did not work during that year. The debt measure in the College Scorecard Data by Field of Study only includes federal student loans at the same level of study (in this report, graduate education) and in the same institution as the associated completed program. Fields of study are organized by Classification of Instructional Programs (CIP) codes.[43]

41 US Department of Education, *Technical Documentation,* 2023.

42 The CIP codes excluded from the program-level analysis are also excluded from these numbers. Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, College Scorecard, 2023.

43 For more information on the College Scorecard's program-level data and its limitations, see US Department of Education, *Technical Documentation: College Scorecard Data by Field of Study,* 2023 and the Data Sources and Methodology appendix in Strohl et al., *A Law Degree Is No Sure Thing*, 2024.

Appendix B.

Master's Degree Programs in the "Other" Category that Fail the In-Field Earnings Premium and Debt-to-Earnings Tests

TABLE B1

Master's degree programs in the "other" category that would fail our in-field earnings premium test

Field of study	Broad field of study	Number of programs failing in-field earnings premium test
Education, general	Education and public service	9
Social work	Education and public service	9
Museology/museum studies	Other	8
Physiology, pathology, and related sciences	Healthcare	8
Public relations, advertising, and applied communication	Business and communications	8
Ecology, evolution, systematics, and population biology	STEM	7
Psychology, other	Social sciences	7
History	Humanities and the arts	6
Marketing	Business and communications	6
Special education and teaching	Education and public service	6
Teaching English or French as a second or foreign language	Education and public service	6
Computer and information sciences, general	STEM	5
English language and literature, general	Humanities and the arts	5
Health professions and related clinical sciences, other	Healthcare	5
Public administration	Education and public service	5
Business, management, marketing, and related support services, other	Business and communications	4
Design and applied arts	Humanities and the arts	4

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TABLE
B1
Continued

Landscape architecture	STEM	4
Library science and administration	Education and public service	4
Parks, recreation, and leisure facilities management	Career-focused	4
Publishing	Business and communications	4
Religion/religious studies	Humanities and the arts	4
Research and experimental psychology	Social sciences	4
Social sciences, general	Social Sciences	4
Social sciences, other	Social sciences	4
Urban studies/affairs	Social sciences	4
Curriculum and instruction	Education and public service	3
Education, other	Education and public service	3
Family and consumer sciences/human sciences, general	Career-focused	3
Hospitality administration/management	Business and communications	3
Human services, general	Education and public service	3
Information science/studies	STEM	3
International relations and national security studies	Social sciences	3
Legal research and advanced professional studies	Social sciences	3
Natural resources management and policy	STEM	3
Political science and government	Social sciences	3
Visual and performing arts, other	Humanities and the arts	3
Agricultural business and management	STEM	2
Agricultural public services	STEM	2
Anthropology	Social sciences	2
Architectural sciences and technology	STEM	2
Audiovisual communications technologies/ technicians	Business and communications	2
Bible/biblical studies	Education and public service	2
Biochemistry, biophysics, and molecular biology	STEM	2
Biological and biomedical sciences, other	STEM	2
Business/commerce, general	Business and communications	2
Criminology	Social sciences	2
Environmental design	STEM	2
Forestry	STEM	2

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TABLE B1

Continued

Geological and earth sciences/geosciences	STEM	2
Graphic communications	Business and communications	2
Health services/allied health/health sciences, general	Healthcare	2
Homeland security	Education and public service	2
Legal support services	Social sciences	2
Mathematics	STEM	2
Microbiological sciences and immunology	STEM	2
Movement and mind-body therapies and education	Healthcare	2
Non-professional general legal studies	Social sciences	2
Parks, recreation, and leisure studies	Career-focused	2
Religious education	Education and public service	2
Sociology	Social sciences	2
Theology and religious vocations, other	Education and public service	2
Zoology/animal biology	STEM	2
Agriculture, general	STEM	1
Architecture and related services, other	STEM	1
Arts, entertainment, and media management	Business and communications	1
Business/corporate communications	Business and communications	1
Chemistry	STEM	1
Communication, journalism, and related programs, other	Business and communications	1
Communications technology/technician	Business and communications	1
Computer software and media applications	STEM	1
Culinary arts and related services	Career-focused	1
Dance	Humanities and the arts	1
Dental support services and allied professions	Healthcare	1
Educational/instructional media design	Education and public service	1
Engineering-related fields	STEM	1
English language and literature/letters, other	Humanities and the arts	1
Entrepreneurial and small business operations	Business and communications	1
Environmental control technologies/technicians	STEM	1
Family and consumer economics and related studies	Career-focused	1
Food science and technology	STEM	1

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TABLE
B1
Continued

Foods, nutrition, and related services	Career-focused	1
Foreign languages, literatures, and linguistics, other	Humanities and the arts	1
Health/medical preparatory programs	Healthcare	1
Industrial production technologies/technicians	STEM	1
International business	Business and communications	1
Law	Social sciences	1
Linguistic, comparative, and related language studies and services	Humanities and the arts	1
Medical illustration and informatics	Healthcare	1
Medicine	Healthcare	1
Multi/interdisciplinary studies, general	Other	1
Outdoor education	Career-focused	1
Pastoral counseling and specialized ministries	Education and public service	1
Peace studies and conflict resolution	Other	1
Philosophy	Humanities and the arts	1
Public administration and social service professions, other	Education and public service	1
Religious/sacred music	Education and public service	1
Security science and technology	Career-focused	1
Specialized sales, merchandising, and marketing operations	Business and communications	1
Visual and performing arts, general	Humanities and the arts	1
Wildlife and wildlands science and management	STEM	1
Total	N/A	267

Source: Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, College Scorecard, 2023; and the US Census Bureau, American Community Survey (ACS), 2009–21 (pooled).

Note: Earnings from the College Scorecard are measured four years after graduation. The in-field earnings premium is calculated relative to 25-to-34-year-olds with bachelor's degrees in the same field of study working in the state where the institution is located. The College Scorecard has earnings data available for 23 percent of master's degree programs, 7 percent of doctoral degree programs, and 30 percent of professional degree programs used in this analysis. The following programs are also excluded from this analysis due to potentially atypical earnings trajectories: master's degree programs in clinical, counseling, and applied psychology; master's degree programs in mental and social health services and allied professions; professional degree programs in healthcare professions; professional degree programs in clinical, counseling, and applied psychology; and professional degree programs in mental and social health services and allied professions.

TABLE
B2

Master's degree programs in the "other" category that would fail our debt-to-earnings test

Field of study	Broad field of study	Number of programs failing debt-to-earnings test
Arts, entertainment, and media management	Humanities and the arts	9
Ecology, evolution, systematics, and population biology	STEM	9
Legal research and advanced professional studies	Social sciences	9
Psychology, other	Social sciences	9
City/urban, community, and regional planning	STEM	8
Design and applied arts	Humanities and the arts	8
English language and literature, general	Humanities and the arts	8
Human services, general	Education and public service	8
Journalism	Business and communications	8
Natural resources conservation and research	STEM	8
Biology, general	STEM	7
Liberal arts and sciences, general studies and humanities	Humanities and the arts	7
Nutrition sciences	Other	7
Educational/instructional media design	Education and public service	6
Marketing	Business and communications	6
Public relations, advertising, and applied communication	Business and communications	6
Foods, nutrition, and related services	Career-focused	5
International/global studies	Other	5
Social sciences, general	Social sciences	5
Area studies	Humanities and the arts	4
Biological and biomedical sciences, other	STEM	4
Criminology	Social sciences	4
Health professions and related clinical sciences, other	Healthcare	4
Museology/museum studies	Other	4
Pastoral counseling and specialized ministries	Education and public service	4
Physiology, pathology, and related sciences	STEM	4
Security science and technology	Career-focused	4

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TABLE
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Clinical/medical laboratory science/research and allied professions	Healthcare	3
Community organization and advocacy	Education and public service	3
Family and consumer economics and related studies	Career-focused	3
Family and consumer sciences/human sciences, general	Career-focused	3
Finance and financial management services	Business and communications	3
Graphic communications	Business and communications	3
Hospitality administration/management	Business and communications	3
Peace studies and conflict resolution	Other	3
Political science and government	Social sciences	3
Public policy analysis	Education and public service	3
Publishing	Business and communications	3
Radio, television, and digital communication	Business and communications	3
Research and experimental psychology	Social sciences	3
Social sciences, other	Social sciences	3
Teaching English or French as a second or foreign language	Education and public service	3
Allied health and medical assisting services	Healthcare	2
Architectural sciences and technology	STEM	2
Bible/biblical studies	Education and public service	2
Biochemistry, biophysics, and molecular biology	STEM	2
Business/commerce, general	Business and communications	2
Computer software and media applications	STEM	2
Entrepreneurial and small business operations	Business and communications	2
Gerontology	Other	2
Homeland security	Career-focused	2
International and comparative education	Education and public service	2
Linguistic, comparative, and related language studies and services	Humanities and the arts	2
Microbiological science and immunology	STEM	2
Multi/interdisciplinary studies, general	Other	2
Multi/interdisciplinary studies, other	Other	2
Parks, recreation, and leisure facilities management	Career-focused	2

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Religious education	Education and public service	2
Theology and religious vocations, other	Education and public service	2
Visual and performing arts, other	Humanities and the arts	2
Agricultural public services	STEM	1
Agriculture, general	STEM	1
Air transportation	Career-focused	1
Anthropology	Social sciences	1
Apparel and textiles	Career-focused	1
Audiovisual communications technologies/ technicians	Business and communications	1
Bilingual, multilingual, and multicultural education	Education and public service	1
Bioethics/medical ethics	Healthcare	1
Biological and physical sciences	Other	1
Biotechnology	STEM	1
Business, management, marketing, and related support services, other	Business and communications	1
Cell/cellular biology and anatomical sciences	STEM	1
Communication, journalism, and related programs, other	Business and communications	1
Computer and information sciences, general	STEM	1
Dance	Humanities and the arts	1
Dispute resolution	Other	1
Economics	Social sciences	1
English language and literature/letters, other	Humanities and the arts	1
General sales, merchandising, and related marketing operations	Business and communications	1
Geography and cartography	Social sciences	1
Geological and earth sciences/geosciences	STEM	1
Health services/allied health/health sciences, general	Healthcare	1
Health/medical preparatory programs	Healthcare	1
Interior architecture	STEM	1
International business	Business and communications	1
Landscape architecture	STEM	1
Legal support services	Social sciences	1

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TABLE
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Library science, other	Education and public service	1
Medical illustration and informatics	Healthcare	1
Natural resources management and policy	STEM	1
Non-professional general legal studies	Social sciences	1
Parks, recreation, and leisure studies	Career-focused	1
Philosophy	Humanities and the arts	1
Philosophy and religious studies, other	Humanities and the arts	1
Public administration and social service professions, other	Education and public service	1
Religion/religious studies	Humanities and the arts	1
Social and philosophical foundations of education	Education and public service	1
Sociology	Social sciences	1
Sustainability studies	Other	1
Urban studies/affairs	Social sciences	1
Visual and performing arts, general	Humanities and the arts	1
Total	N/A	292

Source: Georgetown University Center on Education and the Workforce analysis of data from the US Department of Education, College Scorecard, 2023; and Glasmeier, "Living Wage Calculator," 2023.

Note: Earnings from the College Scorecard are measured four years after graduation. The debt-to-earnings metric is based on an analysis of debt payments amortized over 20 years for professional degrees and over 15 years for master's degrees, with a graduated repayment adjustment to account for earnings growth over the repayment period. If the payments under these assumptions exceed 10 percent of the individual's earnings above the state living wage for an individual adult without children, the program is considered to fail the debt-to-earnings test. The College Scorecard has earnings and debt data available for 16 percent of master's degree programs, 4 percent of doctoral degree programs, and 25 percent of professional degree programs used in this analysis. The following programs are also excluded from this analysis due to potentially atypical earnings trajectories: master's degree programs in clinical, counseling, and applied psychology; master's degree programs in mental and social health services and allied professions; professional degree programs in healthcare professions; professional degree programs in clinical, counseling, and applied psychology; and professional degree programs in mental and social health services and allied professions.

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