Center for American Progress

How Gainful Employment Reduces the Government's Loan Forgiveness Costs

By CJ Libassi and Ben Miller   June 8, 2017

As the political climate in Washington shifts in favor of deregulation, the gainful employment rule has become one of the most endangered protections for college students. When fully implemented, the rule will terminate federal student aid eligibility for career training programs that leave their graduates with too much debt relative to their earnings.[1] Without this rule, hundreds of thousands of students run the risk of paying large sums of money to attend low-quality programs that leave them underemployed and mired in debt. These students would either face a lifetime of financial hardship or rely on payment plans based on their income that have long repayment terms and accumulate great deals of interest before ultimately obtaining taxpayer-supported loan forgiveness. The real winners would be colleges offering these low-value programs that would continue to pad their revenues with government-funded student loans.

While proponents and critics have debated the necessity of the gainful employment rule for years, critics of the rule have too often glossed over one of its crucial effects: Enforcing a strong regulation saves taxpayers money. To date, only a few estimates have tried to capture the financial effects of gainful employment. A preliminary score from the Congressional Budget Office (CBO), for example, suggests that undoing the rule would increase taxpayer spending by $1.3 billion over 10 years.[2] The U.S. Department of Education, meanwhile, estimated that the rule would save the public approximately $4.2 billion over 10 years due to reductions in federal financial aid spending.[3]

Neither of these two estimates, however, appear to measure another important source of taxpayer savings: reduced long-term loan forgiveness costs. By prohibiting federal lending at programs where debt levels far exceed a reasonable share of earnings, the gainful employment rule protects taxpayers from government-funded loans where low graduate earnings are likely to translate into substantial publicly funded loan forgiveness.

In this brief, we attempt to quantify the savings that gainful employment could generate from reduced long-term loan forgiveness costs. Using Department of Education data released in January 2017, we estimate that the typical graduate[4] who received federal financial aid at each one of the 2,042 career training programs that fail to abide by the

gainful employment rule has a student loan burden that would qualify for payment relief under income-driven repayment (IDR)—a group of programs that allow borrowers to make lower monthly payments based upon their income and forgive remaining amounts after 20 or 25 years in repayment.[5]

IDR plans are a safety net for those who are struggling. They are a vital resource for borrowers who work in fields with lower earning potential—such as public service—or who go through extended periods of financial hardship. However, without gainful employment regulations, low-performing programs leave large groups of borrowers with few options besides IDR plans, which extend borrowers' time in repayment; increase the amount of interest they pay; and could increase the amount the government spends on loan forgiveness.

In fact, given their incomes, graduates in nonpassing gainful employment programs are so over-indebted that they would have to see improbably high levels of earnings growth to make enough money to pay down their debt, according to our analysis. Absent such massive changes in income, we project that typical graduates from a troubled gainful employment program would pay back so little of their loan under an IDR plan that they would end up receiving approximately $22,000 in forgiveness after 20 or 25 years in repayment.[6] In aggregate, the loans at nonpassing gainful employment programs represent a substantial potential cost to the government. Given that nonpassing gainful employment programs graduated approximately 360,000 students primarily in 2011 and 2012—the most recent cohort with available debt and earnings data—we project the government will receive $1.5 billion less on these loans in present discounted terms compared with what taxpayers would receive from those loans repaid under the standard 10-year payment plan.

These findings highlight the importance of striking a balance between preserving IDR as a benefit for struggling borrowers while ensuring taxpayer-subsidized repayment plans are not used to bail out low-quality institutions and programs. IDR, after all, is a benefit for students that provides crucial insurance against life's ups and downs and guarantees that loans will never eat up more than a set share of graduates' income. IDR is not supposed to help colleges offer low-quality programs at a high price or make promises to students that they cannot fulfill.

If Congress or the Department of Education terminates the gainful employment rule, educational institutions would be able to sidestep issues of educational quality, economic return, and value by offering programs whose graduates will only be able to repay their debt using an IDR plan that spans two decades or more. These situations turn a benefit for struggling students into a de facto taxpayer-funded bailout for institutions that overcharge students.

We project the government will receive $1.5 billion less on loans at nonpassing gainful employment programs compared to what would be repaid on the standard 10-year plan.

The gainful employment rule provides an appropriate balance between preserving student benefits and ensuring IDR cannot be abused by career training programs. Because of the thresholds it sets for unacceptable levels of debt, only programs whose graduates' incomes fall far below the levels necessary to avoid needing IDR will be at risk of losing access to federal aid. Programs where reasonable income growth might allow borrowers to eventually repay are unaffected. And even if a given program loses access to aid, its past borrowers can still make use of the loan repayment safety net.

For many years, the absence of rules such as gainful employment allowed low-value programs to saddle students with debt, limiting borrowers to only one option for long-term repayment success: programs such as IDR that entail longer repayment periods and eventual taxpayer-funded forgiveness. While it is too late for the rule to affect the futures of students who have already graduated, it will be a powerful tool for shrinking taxpayers' future loan forgiveness liability in addition to protecting students from low-value programs.

The gainful employment regulation and IDR interaction

To understand how the gainful employment regulation and loan forgiveness interact, it is important to look at their approaches to defining an affordable monthly loan payment. Gainful employment requires all programs at private for-profit institutions as well as certificate programs at public and nonprofit schools to maintain certain thresholds of debt relative to earnings. Under gainful employment, a program "passes" if annual student loan payments are no more than 8 percent of graduates' annual earnings or 20 percent of their discretionary income. The latter is defined as a student's annual income above 150 percent of the federal poverty level for a single individual—$18,090 in 2017.[7]

A program "fails" the regulation if annual debt payments are more than 12 percent of annual earnings or 30 percent of discretionary income. Programs are in the "zone" if they fall in between, meaning the results are not good enough to pass but not bad enough to fail both debt-to-income tests.

Programs that fail or fall in the zone under gainful employment risk losing access to federal financial aid. Programs that fail twice in a three-year period can no longer offer federal financial aid to their students. Programs with no passing results in a four-year period—for example, if a program remains in the zone for the duration of that time—are also cut off. The idea is that programs whose typical graduates have debts that are exceedingly large relative to their income cannot be preparing students for gainful employment.

Because of the thresholds gainful employment sets for unacceptable debt, only programs whose graduates' incomes fall far below the levels necessary to avoid needing IDR will lose access to federal aid.

IDR allows borrowers who have too much debt relative to their income to cap their payments at as little as 10 percent of their discretionary income.[8] When 10 percent of a borrower's discretionary income falls below what they would have to pay to retire their debt in equal installments over 10 years, they are deemed to have a "partial financial hardship." Borrowers must have this status to participate in many IDR plans.[9] IDR comes with the additional protection that allows borrowers who have been making payments on these plans for 20 or 25 years to have any remaining loan balances forgiven.[10]

Gainful employment and IDR thus adopt different definitions of what equates to affordable. Programs can pass gainful employment with a typical ratio of debt-to-discretionary earnings at or below 20 percent—double what IDR deems affordable for an individual. IDR also only requires students to pay if their incomes are above 150 percent of the poverty line. By contrast, gainful employment allows programs to pass even if their earnings are so low that students with the same result would never make a payment under IDR.

For example, Jay's Technical Institute, a barber and beauty college in Houston, passes gainful employment because the typical graduate's annual debt payment of $492 represented just 5.6 percent of typical annual earnings of $8,733.[11] That income, however, is so low that a Jay's graduate with those earnings would have a $0 payment on IDR.

It is important to consider the gainful employment rule and IDR in tandem because the former considers higher levels of indebtedness relative to income to be acceptable than the latter. This means that the typical graduate at any program that fails the gainful employment metric will almost certainly lower their payments if they use one of the IDR plans and, in many cases, be on track for loan forgiveness.

Unless their incomes improve dramatically at some point during the repayment period, borrowers from failing gainful employment programs will pay down their principal balance much more slowly than under a standard 10-year plan, causing more interest to accumulate along the way. If sustained over time, this dynamic means the government will end up forgiving some portion of the loan's balance and accrued interest after 20 or 25 years in repayment. Though students must pay tax on that forgiveness under current law, these taxes would not come close to offsetting the government's liability.[12]

Glossary of terms

Below are quick definitions for some of the terms used in this brief.

10-year standard plan: The default payment option for federal student loan borrowers. Individuals on this plan repay their debt in equal installments over 10 years.

Income-driven repayment (IDR): A set of payment plans that allow borrowers to tie their monthly payments to a set share of their income. Depending on the plan, borrowers pay 10 or 15 percent of what is known as their discretionary income—their adjusted gross income minus 150 percent of the poverty level for their household size. Borrowers who are on IDR for 20 or 25 years—depending on the plan—also receive forgiveness on all remaining balances.

Partial financial hardship: This occurs when a borrower's calculated payment for IDR is less than what they would pay if they were using the 10-year standard plan. For example, if 10 percent of a borrower's discretionary income yielded a monthly payment of $100 and their 10-year standard payment was $200, then the borrower has a partial financial hardship. Most IDR plans require a borrower to have a partial financial hardship to participate.

Revised Pay as You Earn (REPAYE): One IDR plan option. REPAYE caps borrower payments at 10 percent of their discretionary income. Undergraduate borrowers receive forgiveness on any balances remaining after 20 years of payments, and graduate borrowers receive forgiveness after 25 years. One key difference between REPAYE and other IDR plans is that borrowers on REPAYE continue making payments tied to their income, even if their payment amount exceeds what a borrower would pay on the 10-year standard plan. This is one of a few provisions that reduces the likelihood of potential student loan forgiveness.

Repayment gap: A measure created for this paper of the difference between what the government would expect to receive from borrowers using the 10-year standard plan versus what we project they would pay using REPAYE, discounted to present terms. A positive repayment gap means that the federal government receives more money from a borrower under REPAYE than they do if the same individual used the 10-year standard plan. A negative number shows that a borrower pays less to the government under REPAYE than that person would under the 10-year standard plan.

Typical graduate: Our way of describing the debt and earnings outcomes at a gainful employment program in terms of a hypothetical student. The typical graduate is someone who finished a gainful employment program, received federal financial aid, had an annual debt payment equal to the median of all federally aided graduates from that program, and annual earnings equal to the higher of the median or mean of all federally aided graduates from that program.

Modeling IDR usage at gainful employment programs

We next attempt to estimate the costs of IDR usage at nonpassing gainful employment programs. First, we generate estimates of how many programs have typical earnings and debt that would allow a borrower to benefit from lower payments on IDR than they would make on the standard 10-year plan. Second, we look at how much more graduates from these programs would have to earn to avoid needing IDR. Third, we use estimates for income growth and inflation from the Department of Education's repayment estimator to get a sense of the potential forgiveness amounts borrowers from gainful employment programs might receive. Finally, we generate an estimate for total amount of reduced government revenue coming from using IDR instead of the standard 10-year plan across all nonpassing gainful employment programs.

In these analyses, we rely on the first official round of gainful employment results, which were released by the Department of Education in January 2017. In most cases, these results reflect the debt levels of federal financial aid recipients who graduated between July 2010 and June 2012 and their earnings in the 2014 calendar year.[13]

Result 1: All nonpassing programs produce typical graduates with financial hardships

Our analysis finds that the typical graduate who received federal financial aid from all 2,042 programs in failing or zone status under the gainful employment regulation has earnings relative to their debts that would result in having a lower monthly payment under IDR than they would to retire their loans in equal installments over 10 years. This is true regardless of the program's type or credential level.

TABLE 1

Number of programs and graduates at programs with partial financial hardship, by program gainful employment result

Graduates with typical earnings and typical debt at all failing
and zone programs qualify for a partial financial hardship

Panel A: Program-level results

Program status	Number of programs	Number of programs where a typical graduate has a partial financial hardship	Proportion of programs where a typical graduate has a partial financial hardship
Failing	803	803	100%
In zone	1,239	1,239	100%
Passing	6,595	3,804	58%

Panel B: Graduate-level results

Program status	Number of graduates	Number of graduates at programs where typical borrower has a partial financial hardship	Proportion of graduates at programs where typical borrower has a partial financial hardship
Failing	115,985	115,985	100%
In zone	243,242	243,242	100%
Passing	834,045	615,946	74%

Source: Authors' calculations using the gainful employment data for the 2015 debt measure year and a poverty line calculated using the 2014 Health and Human Services poverty guidelines. See U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, "Poverty Guidelines," January 26, 2017, available at https://aspe.hhs.gov/poverty-guidelines.

Notes: "Typical earnings" is defined as the higher of the mean or median earnings for a graduate at a school that received federal financial aid. "Typical debt" is the median debt for these individuals. A program is considered to have a partial financial hardship if the typical earnings and debt of that program's graduates would qualify a student for a partial financial hardship.

Here is how we reached that conclusion: First, we generated an estimated IDR payment for the typical graduate at each gainful employment program by taking 10 percent of the reported discretionary income. For this purpose, we used the higher of the mean or median discretionary income. Next, we used the median debt payments from each program to calculate a borrower's loan payments on the standard 10-year plan.[14] Finally, we compared the two amounts. We concluded that a program had a typical borrower with a partial financial hardship if the estimated IDR payment fell below the standard one.

The partial financial hardship is an important indicator of whether a student would benefit from using IDR. For one, having a hardship is a requirement to participate in many IDR plans. However, even when a specific plan doesn't require it, such as REPAYE, the hardship terms indicate whether a student would stand to have a lower monthly payment in IDR plan than they would on the standard 10-year plan, and therefore whether they have an incentive to use it. Table 1 answers an important first-order question: Would the typical graduate at nonpassing gainful employment programs pay less on a monthly basis if they used IDR? There is a definitive yes for every program.

Result 2: Nonpassing programs are nowhere close to having the income needed to repay loans

Not only are graduates from nonpassing programs earning so little compared with their debt that they qualify for IDR, most are nowhere close to making enough to afford a standard 10-year payment. This suggests graduates would need a dramatic increase in their incomes as their careers unfold to avoid needing IDR for long periods of time—perhaps even until forgiveness after 20 or 25 years.

As Table 2 shows, typical graduates at more than 98 percent of nonpassing programs would need at least $10,000 more in annual earnings before they would cease receiving a payment reduction on IDR compared with the 10-year standard plan. Given that the average income for graduates from these programs is $18,916, that works out to a raise of more than 50 percent.

Many programs are even worse. For instance, we estimate that a majority of nonpassing programs at private, for-profit colleges would have to boost annual earnings for the typical graduate by more than $20,000 before that graduate would become ineligible for IDR. And at the extreme end, nearly one-quarter of these programs would need to increase their typical graduate's annual earnings by $30,000.

Graduates from nonpassing gainful employment programs would need a dramatic increase in their incomes as their careers unfold to avoid needing IDR for long periods of time.

TABLE 2

Earnings boost necessary to lift graduates out of partial financial hardship at nonpassing gainful employment program, by sector

Graduates with typical earnings and typical debt at many programs would
need to earn significantly more to avoid having a partial financial hardship

Panel A: Program-level results

Sector	Number of nonpassing programs where typical graduate has a partial financial hardship	Number of programs where the amount of additional annual earnings a typical program graduate would need to avoid a partial financial hardship is at least:		
		$10,000	$20,000	$30,000
Public	9	6	1	0
Private nonprofit	78	77	17	1
Private for-profit	1,903	1,870	1,043	468

Panel B: Graduate-level results

Sector	Number of graduates at nonpassing programs where typical graduate has a partial financial hardship	Number of graduates at programs where the amount of additional annual earnings a typical program graduate would need to avoid a partial financial hardship is at least:		
		$10,000	$20,000	$30,000
Public	423	297	31	0
Private nonprofit	18,008	17,939	1,183	38
Private for-profit	334,340	332,148	190,334	91,900

Source: Authors' calculations using the gainful employment data for the 2015 debt measure year and a poverty line calculated using the 2014 Health and Human Services poverty guidelines. See U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, "Poverty Guidelines," January 26, 2017, available at https://aspe.hhs.gov/poverty-guidelines.

Notes: "Typical earnings" is defined as the higher of a school's mean or median earnings, while "typical debt" is the median debt for the school. A program is considered to have a partial financial hardship if a student with typical earnings and debt from that program would have a lower payment through IDR than on the standard 10-year plan. The dollar increase categories are cumulative, not mutually exclusive, meaning schools and graduates in the ">$30,000" category are also in the ">$20,000" and ">$10,000" categories.
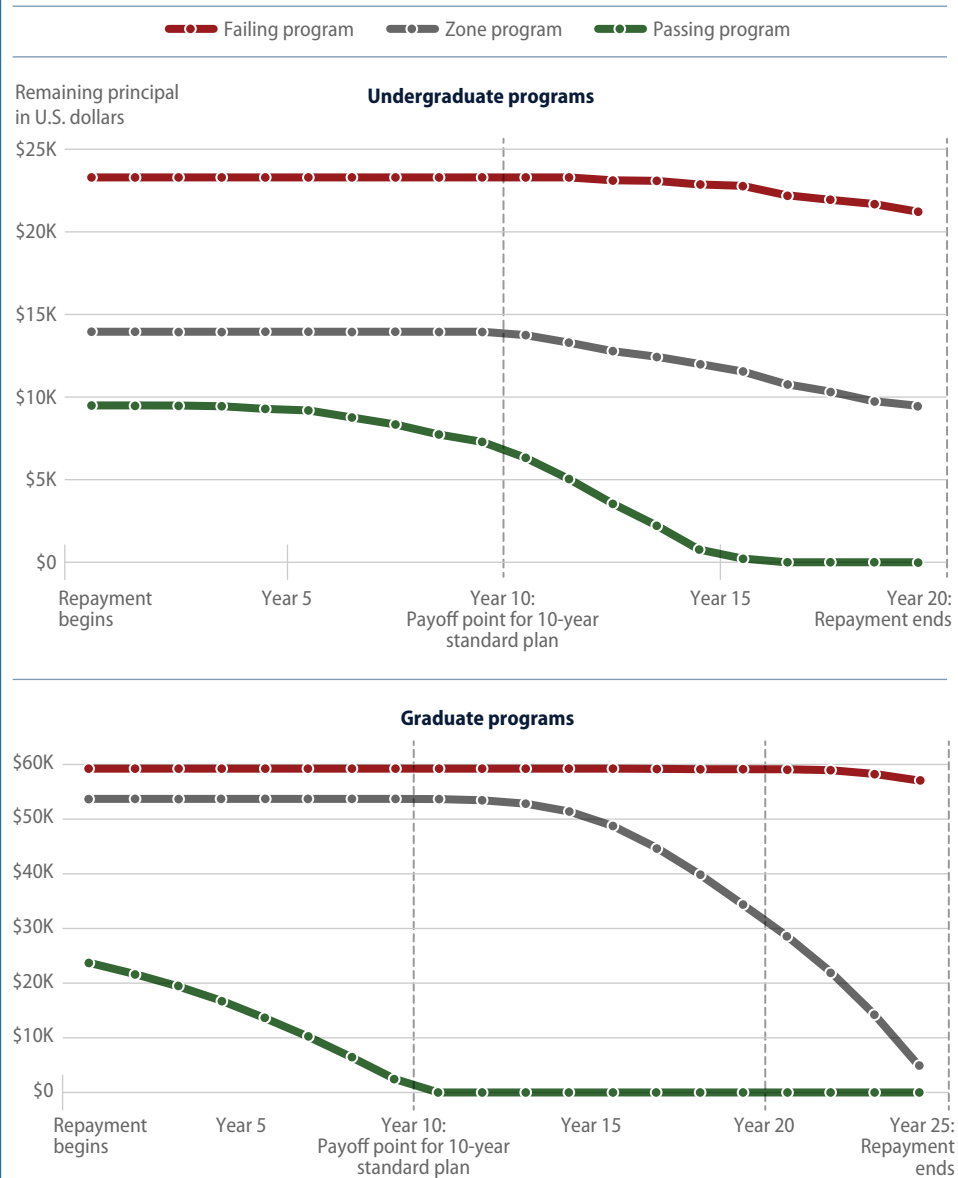
Result 3: Nonpassing programs will likely generate significant forgiveness costs

So far, we have examined the implications of the gainful employment debt and earnings data for the payments a borrower would make in a single year. However, repayment outcomes are determined over the life of a loan. Unfortunately, the prospects of graduates from many of these programs are not any rosier over the long term. In fact, we estimate that, if graduates from nonpassing programs made use of IDR plans, the government would receive $1.5 billion less on these loans in present discounted terms compared with what borrowers using the standard 10-year plan would repay.

To understand the government's potential exposure to losses from student loan forgiveness, we calculated the total amounts a typical graduate from nonpassing programs would pay if they stayed on the REPAYE plan—an IDR option available to borrowers that is less likely to generate forgiveness than other plans. We looked at borrowers' results on REPAYE until they paid off their loan or received forgiveness.[15]

An explanation of how we modeled REPAYE can be found in the methodology. (see Appendix A) We then compared those amounts, in net present value, to what those graduates would have paid in total under the standard 10-year plan.

FIGURE 1

Median principal balance remaining for typical graduates at gainful employment programs

Remaining balance by program status and level, throughout repayment

Failing program　　Zone program　　Passing program

Undergraduate programs

Remaining principal in U.S. dollars

Graduate programs

Notes: Sample includes all programs subject to gainful employment regulation with a nonzero starting principal balance. It assumes income growth of 5 percent per year and an increase in the federal poverty level of 2 percent per year. The authors calculate the remaining prinicipal balance for each program at the end of each month. We note the 10-year (120 month) point, because that is when a 10-year standard loan is scheduled to be paid off.

Source: Authors' projections using as a baseline the gainful employment data for the 2015 debt measure year and the poverty line for a single individual from the 2014 Health and Human Services poverty guidelines. See U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, "Poverty Guidelines," January 26, 2017, available at https://aspe.hhs.gov/poverty-guidelines.

The first thing our modeling shows is that, were they to use REPAYE, the typical graduate from every failing or zone program would receive some amount of loan forgiveness. In other words, these graduates earn so little relative to their debt that even two decades or more of payments tied to income are insufficient to pay off their debts.

Figure 1 shows just how slowly typical graduates from such programs pay off their loans. For both graduate and undergraduate career training programs that do not pass the debt-to-earnings test, debt levels start high and are paid down slowly. By contrast, passing programs start off with lower initial loan balances and typically pay down completely by the end of the IDR repayment term of either 20 or 25 years.

Second, we find that the projected forgiveness amounts are substantial. As Figure 2 shows, typical graduates at more than half of failing programs in the gainful employment data would have at least $40,000 forgiven in nominal terms. Zone programs have a smaller—but still considerable—median forgiveness amount, at just under $20,000. By contrast, nearly all passing programs pay off, and those that do not have very small projected forgiveness amounts.

FIGURE 2

Distribution of total principal and interest left at forgiveness time, by program status

Failing and zone programs likely to have a great deal of debt forgiven
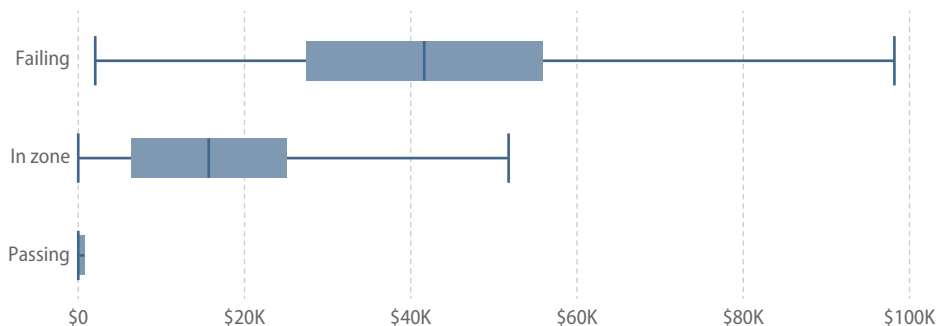
Notes: All values are in nominal terms. Distributions are student-weighted. Outliers are not pictured. The leftmost end of each whisker represents the lower-adjacent value, while the rightmost is the upper-adjacent value. The lower-adjacent value is the smallest observation greater than or equal to the first quartile minus 1.5 times the interquartile range. Similarly, the upper-adjacent value is the largest observation less than or equal to the third quartile plus 1.5 times the interquartile range.

Source: Authors' projections using as a baseline the gainful employment data for the 2015 debt measure year and the poverty line for a single individual from the 2014 Health and Human Services poverty guidelines. See U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, "Poverty Guidelines," January 26, 2017, available at https://aspe.hhs.gov/poverty-guidelines.

However, these forgiveness estimates should not be confused with the loss to the government. Because students in IDR are likely to accumulate more interest and pay down principal more slowly than they would under a standard 10-year plan, it is possible for a student to repay more in total to the government under IDR than they would on the standard 10-year plan and still receive loan forgiveness. A simplified example (with all figures discounted to present dollars) shows how this works. Imagine the government expects to receive $14,000 in repaid principal and interest from a borrower using the standard 10-year plan. That borrower instead goes on IDR, where they repay $16,000 in principal and interest but still receive $1,000 in forgiveness. In this case, the government has not taken a loss because it still recovered more from the borrower than it originally expected.

To get a sense of how much less the government can expect to be repaid by graduates at nonpassing career training programs, we calculated a repayment gap—the difference between the total amount a typical graduate from each program would repay the government on a 10-year standard plan versus REPAYE, discounted to present dollars. For example, if we project that the government would receive $12,000 from a borrower using the 10-year standard plan and $11,000 from REPAYE, then the repayment gap is -$1,000.

FIGURE 3

Distribution of repayment gaps for the typical graduate, by program status

Graduates in failing and zone programs would pay back much less
over the life of their loan using REPAYE than the 10-year standard plan
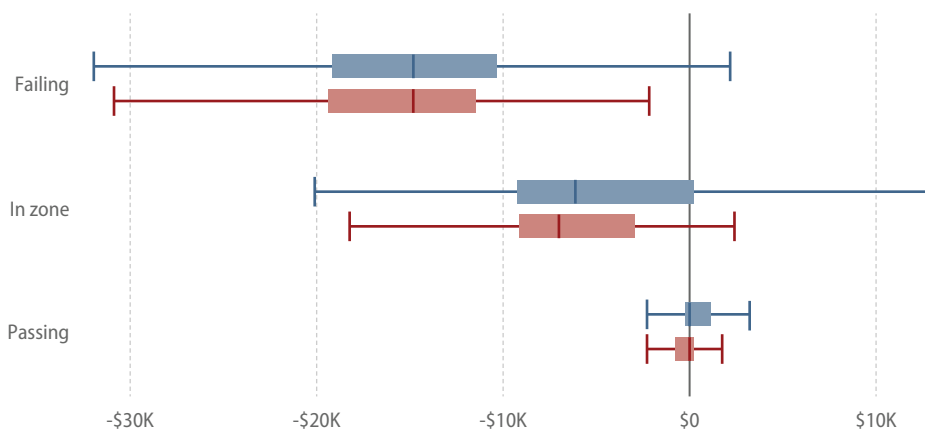
Notes: Outliers are not pictured. Distributions are student-weighted. The "repayment gap" is defined as the amount a student would repay under the plan with the cheapest monthly payment option (between REPAYE and the 10-year standard), minus the amount repaid under the 10-year standard plan. Negative numbers imply a student repays less under REPAYE than under the 10-year standard plan, while positive numbers imply a student repays more under REPAYE than the 10-year standard. All payment amounts are discounted to when a student enters repayment. The authors discounted each monthly payment as it is received, rather than discounting the total amount received at the beginning or end of the year as some agencies do. The leftmost end of each whisker represents the lower-adjacent value, while the rightmost is the upper-adjacent value. The lower-adjacent value equals the smallest observation greater than or equal to the first quartile minus 1.5 times the interquartile range. Similarly, the upper-adjacent value is the largest observation less than or equal to the third quartile plus 1.5 times the interquartile range.

Sources: Authors' projections using as a baseline the gainful employment data for the 2015 debt measure year and the poverty line for a single individual from the 2014 Health and Human Services poverty guidelines. See U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, "Poverty Guidelines," January 26, 2017, available at https://aspe.hhs.gov/poverty-guidelines. The high and low discount rates are borrowed from the U.S. Government Accountability Office, *Federal Student Loans: Borrower Interest Cannot Be Set in Advance to Precisely and Consistently Balance Federal Revenues and Costs* (January 2014), pp. 37, available at http://www.gao.gov/assets/670/660548.pdf.

Under this repayment comparison, we find that roughly half of failing programs' typical graduates have a repayment gap of -$15,000. The median zone program, meanwhile, has a typical graduate with a repayment gap of roughly -$6,000.[16]

All told, we estimate the national repayment gap from one year of data on nonpassing gainful employment to be -$1.5 billion. We arrive at this projection by multiplying the repayment gap estimate for the typical graduate at each nonpassing program by half the number of reported graduates at each program. We decided not to use the total number of graduates because it is possible every school has some borrowers who will have incomes high enough that they are unlikely to use REPAYE. While that number may not be as high as half at each program, we choose this share because the income figures used reflect the higher of the mean or median for the school. This means that at least half the graduates from a program have earnings at or below the level used for our modeling. Thus, a qualification rate of half of all graduates is an absolute lower bound.[17]

Projecting the repayment gap only off the number of graduates also likely understates the total revenue loss from nonpassing gainful employment programs. As noted in the second finding, the typical graduate at almost all nonpassing programs is considerably far from not having a partial financial hardship. Thus, even graduates well above the median or mean income would likely still benefit from IDR. In addition, looking at the number of graduates fails to account for the substantial number of students who drop out of gainful employment programs.[18] Though students who drop out likely have lower debt levels than graduates, they also probably make less money and may be even more likely to need REPAYE.

The way the gainful employment rule calculates a graduate's typical debt payment also likely understates the repayment gap. The rule affords institutions the ability to limit the loan amounts used to judge their debt-to-earnings ratios to just the amount charged for tuition, fees, and required expenses. As a result, graduates may have taken on additional debt for living expense that is not reported and also not repaid.

Conclusion

IDR is a crucial safety net to help individual borrowers manage their student loan debt. But without accountability for colleges, low-return programs can take advantage of this safety net to reel in millions of dollars in taxpayer money without any risk.

A close look at the gainful employment data highlights just how likely it is that graduates of the programs that do not pass this rule will need to rely on taxpayer-financed loan forgiveness if they want to avoid loan default or delinquency. This is nothing short of a debt disaster for students today and taxpayers tomorrow. The gainful employment regulation offers an important way to keep the costs of loan forgiveness

reasonable. This fact ought to factor into cost estimates of any attempt at repealing the rule, either in Congress or through administrative action. By banning problematic programs from using federal student aid, this rule ensures that offerings with poor returns cannot keep using IDR to skate by year after year. Any efforts to weaken or eliminate gainful employment must be strongly resisted.

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Appendix A: Data limitations and methodology

Because of data limitations, there are several caveats about the analyses in this paper that are worth noting. First is the estimate of the debt and earnings levels of a typical graduate. Gainful employment calculations are based on circumstances for the typical graduate who received federal financial aid—their median debt relative to the higher of mean or median earnings. Those figures are calculated from separate distributions, one for earnings and one for debt. The result is that a borrower with earnings at the median may not have debt that falls at the median, or vice versa. It is therefore possible that graduates with typical earnings have atypical debt levels for their program. This could potentially bias the results in either direction. If borrowers with typical—e.g., mean or median—income typically have higher debt levels than the median loan level, then IDR may be relied on more heavily than anticipated. By contrast, if typical income borrowers have lower debt levels than the median loan level, then the average need for IDR may not be as great. Unfortunately, there is no way to know which programs are affected and in which direction.

Second, the earnings data also include individuals who received only federal grants—but no loans—for their programs. While this number is likely small at most private for-profit colleges—which produce all but a few of the nonpassing programs—it could affect the results. Graduates who did not borrow will drive down a program's typical debt levels, potentially making its debt-to-earnings ratios look better than they really are for the subset of students who borrow. In addition, if nonborrowers have substantially higher incomes than borrowers, then they may make the debt-to-earnings ratios look artificially low for graduates who borrowed.

Third, the gainful employment regulations assume that every graduate is in a single-person household. IDR payments, however, assess an individual's actual household size and therefore would include income from any other individuals in the household. This means that the gainful employment results may be biased upward or downward in some cases. If a borrower is in a multiperson household without additional income earners—such as a single parent with at least one child—then that borrower would pay even less on IDR than anticipated due to the higher income exemption that comes with a larger household size. By contrast, if a borrower's household includes other income earners who do not have debt, then their overall earnings might be high enough to not need IDR.

Fourth, the loan amounts in the gainful employment metrics cap a graduate's debt level at the cost of tuition, fees, books, and required supplies. This means that any borrowing for living expenses is not included in the calculation. As a result, the actual debt levels for graduates at some programs are higher than we can observe in the data. Greater debt levels also mean a graduate must earn a higher wage to avoid having a partial financial hardship and benefiting from IDR.

Finally, the debt figures include both federal and private loans. Although only the former are eligible for federal IDR programs, we believe that the volume of private loans should be quite small, and, given how far typical graduates at most nonpassing programs are from being able to afford their loan payments, would not affect our analysis very much. Additionally, given that loans for living expenses are not included in gainful employment data, any overestimate of the loan forgiveness amounts resulting from including private loan amounts is likely offset by the underestimate that results from excluding the federal borrowing students do above and beyond what they need for tuition, fees, and required expenses.

Despite these caveats, we made the most conservative assumptions possible at every step in our analysis. Where possible, we made choices that would lead to lower likelihood of loan forgiveness to present the fairest possible picture for programs and institutions. Below we detail those assumptions and the methodology used to generate estimates.

Estimating debt levels

To estimate the amount of potential loan forgiveness owed by a graduate with typical earnings and debt at a given program, we first converted the annual debt payment amounts into the original principal amount. This required creating a reverse amortization calculator. The parameters for this calculator followed the guidance laid out in the gainful employment regulation, which define the assumed repayment timeframe of 10, 15, or 20 years based upon the credential type, as well as the underlying interest rate.[19] The regulations state that shorter undergraduate and graduate programs should use the average interest rate charged to students for unsubsidized Stafford loans for either the three or six years prior to the end of the cohort being measured. For this analysis, that generates an applicable interest rate of 6.8 percent in all cases.[20] The table below demonstrates our assumptions.

TABLE A1

Parameters used for converting annual debt payments to total loan balances

Credential level	Interest rate	Repayment time
Certificates of all levels, associate degree	6.8%	10 years
Bachelor's or master's degrees	6.8%	15 years
Doctoral or first professional degrees	6.8%	20 years

Source: Federal Register, *Program Integrity: Gainful Employment* (National Archives and Records Administration, October 2014), available at https://www.federalregister.gov/documents/2014/10/31/2014-25594/program-integrity-gainful-employment#p-2678.

Income needed

To obtain the amount of additional income necessary to avoid a partial financial hardship, we started with the estimated annual payment amount on a 10-year standard plan and then worked backward to determine how much money someone would have to earn for 10 percent of their discretionary income to equal that standard 10-year annual payment. For example, someone with a 10-year standard annual payment of $500 would have to earn $22,495 to avoid a partial financial hardship. This amount of income means that the earner would have $4,990 of income above $17,505—150 percent of the federal poverty line for 2014. We then took 10 percent of this discretionary income, or $499. Since that amount is just less than the 10-year standard annual payment, it does not qualify as a partial financial hardship, and thus we assume that graduate would not use IDR.

Forgiveness estimates

Generating our forgiveness estimates required projecting a borrower's repayment experience if they were to use the Revised Pay as You Earn, or REPAYE, plan. Because several factors can affect an IDR experience, we had to make numerous assumptions. In general, we made assumptions that we believe are more likely to generate larger borrower payments and thus reduce the likelihood of forgiveness.

Choice of IDR plan

The first of these assumptions was the choice of REPAYE as the IDR alternative to the standard 10-year plan. We chose REPAYE because it does not cap a borrower's repayment level at the standard 10-year amount, as other IDR programs do. This means that if borrowers' incomes rise enough to afford a larger payment than they would make on a standard 10-year plan, they do so, and can therefore end up repaying more quickly than they would on the standard 10-year plan.

REPAYE also has more generous interest accumulation protections for borrowers, meaning they must pay less to shrink their principal balance. First, REPAYE matches the interest accumulation protections of the other IDR plans in the first three years of subsidized loan repayment by forgiving all interest that goes unpaid each month. But REPAYE goes beyond this by forgiving half of all unpaid interest that accumulates on subsidized loans each month after the first three years, as well as in all years of unsubsidized loan repayment.[21] We capture each of these sources of instant interest forgiveness as part of our calculation of the total nominal forgiveness amounts in Figure 2.

Finally, REPAYE also extends the repayment period for graduate borrowers to 25 years. All these factors mean that borrowers on REPAYE are likely to pay down their principal balance more quickly and thus are less likely to need loan forgiveness than their counterparts on other IDR options.

Income trajectory assumptions

The next set of assumptions concerns graduate incomes and circumstances. First, we estimated that the typical graduate's income grows by 5 percent each year. This assumption is the same one that the Department of Education's repayment estimator tool makes.[22]

Second, we assumed that all borrowers with a partial financial hardship would make use of REPAYE and stay on that plan until their debt was paid down or they received forgiveness. Because our income and inflation growth estimates both increase at a constant rate, the projections do not allow for a borrower who does not qualify for a partial financial hardship at the beginning of their time in repayment to qualify for one at any future point. As a result, our estimates do not include any borrowers entering REPAYE part way through repayment.

Third, we assumed that all borrowers are in single-person households over the entire course of their repayment. The effects of this assumption can vary. If borrowers are in multi-income households where only one person has student debt, our assumption would undercount money available for paying down loans. But in cases where borrowers are in multi-person households with only one income, our model overstates how much a student can repay by overlooking a larger discretionary income deduction.

Fourth, we assumed that the poverty level used to determine the discretionary income adjustment amount increases by 2 percent—the rate equal to the inflation estimate provided by the CBO.

Fifth, we assumed that no borrowers qualified for or took advantage of Public Service Loan Forgiveness—a program that provides forgiveness after 10 years in repayment instead of 20—or any other early forgiveness program.[23]

Sixth, we assumed that every typical graduate who qualifies for a reduced payment on IDR—compared with the payment on the standard 10-year plan—would use it. This may result in overestimates of how many borrowers are on IDR, since only about one-quarter of borrowers are currently on an IDR plan. That said, this amount reflects the repayment choice of all borrowers. We do not know how many borrowers would benefit from IDR. Therefore, it is possible that the share of borrowers who would benefit from IDR and are on IDR could be higher than the overall percentage of borrowers using these plans. Overestimating the number of borrowers who use IDR is also a generous assumption for schools because we do not account for substantial rates of default and delinquency at gainful employment programs. Incorporating default and delinquency could generate a different set of costs for the government if it cannot secure payments. Assuming a borrower uses IDR instead of defaulting on their loan may ultimately be a lower cost to the federal government.

Next, we made an assumption about when typical graduates started repaying their loans. Though the gainful employment data include individuals in multiple cohorts, we assumed that all typical gradautes started repaying their loans in January 2013—six months after June 30, 2012, the final day of the cohort measurement period. To calculate payments for this and the following year, we assumed that the typical graduate had annual earnings such that a 5 percent annual increase in income would produce the income observed in 2014. This assumption potentially overstates resources for repaying loans if graduates attended full time and had no recorded earnings to calculate their first year of payments.

Interest accumulation assumptions

After that, we established assumptions for interest accumulation. Under REPAYE, all subsidized Stafford loans accumulate no unpaid interest for the first three years and half of the unpaid interest they otherwise would for all other years. Similarly, unsubsidized Stafford loans accumulate only half of the unpaid interest they otherwise would for all years. Since we do not know the exact breakdown of subsidized and unsubsidized loans for borrowers, we assumed that every typical graduate from an undergraduate program had their entire balance in subsidized loans.

This overstates the presence of subsidized debt. For example, the first-year loan limit overall is $9,500 for independent students but only $3,500 for subsidized loans. However, this choice is more generous to schools because it minimizes interest accumulation. It also offsets a policy we did not model, which is the different and lower interest rates on subsidized loans during this period. Assumptions for graduate programs were more straightforward—we assumed that all graduate program debt comprised only unsubsidized loans.

Next, we calculated payment allocation and total costs. Each loan payment first goes to any unpaid interest and then to principal. We first cap any unpaid interest under the terms of REPAYE, then we add any remaining amounts to a running total of accumulated interest. In REPAYE, unpaid interest does not get capitalized unless a borrower leaves the plan, and we assume no attrition from the plan once students have entered it.

The last thing we did was find the present discounted value of loan payments under the standard plan and REPAYE. Each payment gets discounted based on the number of months the payment is made after the student enters repayment. We use two separate discount rates, 2.8 percent and 5 percent, to demonstrate that our cost estimates are not particularly sensitive to the discount rate we choose, even across a reasonably wide range of discount rates. We borrow our high—5 percent—and low—2.8 percent—discount rates that the Government Accountability Office uses to test the sensitivity of its analysis to their choice of discount rates when modelling student loan interest rate-setting policies. After calculating the present discounted value of both the standard and true repayment amounts, we could compare them with each other to find the net loss or gain to the government.

Sensitivity of our estimates to our assumptions

To further check our estimates, we tested our analysis using different assumptions about the rate of income growth used to calculate the repayment gap as well as the discount rate. Though the income growth rate changes the magnitudes of the total repayment gap for passing and nonpassing programs, the general story remains the same: Nonpassing programs result in the government being repaid hundreds of millions, if not billions, of dollars less than they would from loans repaid on the 10-year standard plan, because their graduates earn so little that they need to use IDR to afford their loans. Similarly, the different discount rates produced a total repayment gap of- $1.5 to -$1.7 billion. The figures in the main body of this paper represent the lower of these two estimates.

Aggregating forgiveness to estimate the total repayment gap

Because gainful employment programs have many graduates who could be helped by loan forgiveness, it is important to get a sense of the aggregate repayment gap for each program. However, the nature of the gainful employment data makes this aggregation challenging. Without student-level data on earnings and debt, it is impossible to know the exact number of graduates who would receive loan forgiveness using our projections. Even programs where the typical graduate will have a partial financial hardship will also have graduates whose individual debt and earnings levels do not qualify them for IDR.

But we do have enough information to inform our estimate. Because the earnings data are the higher of either the mean or median income of graduates of a program, we know at least 50 percent of the relevant cohort has earnings equal to—or lower than—the earnings levels we use in our forgiveness calculations. While it is possible that the debt levels of these graduates are also lower, at least 50 percent of the graduates in each program must have debt at the median level or higher, so only a limited number of low earners can also experience low debts. And, given our finding that the typical graduate at so many programs is very far from having the earnings to avoid a partial financial hardship, it seems unlikely that even the highest earners are likely to avoid IDR if they also have anything approaching typical debt.

Therefore, our approach is to assume that 50 percent of graduates in each program will have, on average, the forgiveness amount we observe for the typical graduate. This allows us to multiply the forgiveness amount we find for a graduate with typical earnings and debt at each program by half the number of students in the program for a reasonable estimate of the repayment gap that failing and zone programs represent.

Endnotes

1 "U.S. Department of Education, "Education Department Releases Final Debt-to-Earnings Rates for Gainful Employment Programs," Press release, January 9, 2017, available at https://www.ed.gov/news/press-releases/education-department-releases-final-debt-earnings-rates-gainful-employment-programs.

2 Letter from The Institute for College Access and Success to President-elect Donald J. Trump and his Transition Team, "Recommendations to improve college affordability and success," December 16, 2016, available at http://ticas.org/sites/default/files/pub_files/ticas_transition_memo_to_president.pdf.

3 Federal Register, *Program Integrity: Gainful Employment* (National Archives and Records Administration, 2014), available at https://www.federalregister.gov/documents/2014/10/31/2014-25594/program-integrity-gainful-employment#p-2678.

4 Throughout this brief we refer to the "typical" graduate as a succinct way of characterizing a graduate from a program who had both earnings and debt equal to those used to calculate the debt-to-earnings ratio in the gainful employment data. That is, for the purposes of this analysis, a typical graduate of a program is a student with earnings that are the higher of the mean or median earnings for that program and who has median debt for the program. Though we recognize that a student with typical earnings does not necessarily also have typical debt, we believe that understanding the experience of a graduate who did have such earnings still produces a rough sense of the potential costs of failing to shut down failing programs.

5 Authors' estimate based upon analysis of data from Federal Student Aid, "Gainful Employment Information," available at https://studentaid.ed.gov/sa/about/data-center/school/ge (last accessed April 2017).

6 That is, in nominal terms, the median amount of unpaid principal and interest forgiven would be $22,168. At a discount rate of 2.8 percent, the median amount forgiven is $12,973, while at a discount rate of 5 percent, the amount is $8,671.

7 U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, "Poverty Guidelines," January 26, 2017, available at https://aspe.hhs.gov/poverty-guidelines.

8 Federal Student Aid, "Income-Driven Plans," available at https://studentaid.ed.gov/sa/repay-loans/understand/plans/income-driven (last accessed May 2017).

9 Federal Student Aid, "Glossary," available at https://studentloans.gov/myDirectLoan/glossary.action (last accessed May 2017).

10 Authors' analysis of data from Federal Student Aid, "Gainful Employment Information."

11 Office of Senator Elizabeth Warren, U.S. Senator for Massachusetts, "Menendez, Warren, Wyden, Stabenow, Booker Introduce Student Loan Tax Relief Act," Press release, July 15, 2016, available at https://www.warren.senate.gov/?p=press_release&id=1188.

12 Federal Student Aid, *Overview of Debt to Earnings Measure* (U.S. Department of Education, 2015), available at https://ifap.ed.gov/GainfulEmploymentOperationsManual/attachments/05ExplanationOfDebtMeasures2015.pdf.

13 The calculated annual payments for gainful employment programs are not always based upon the standard 10-year plan. All degree programs above an associate degree assume borrowers repay over 15 or 20 years. Thus, for these programs, we had to back out the median total student loan balance amount and then calculate how much they would pay over the shorter 10-year window. Furthermore, the student cohort varies slightly in a few cases. For smaller programs, the cohort reflects four years of graduates—from 2008 to 2012. Eventually, programs that have a medical or dental residency report six-year cohorts from 2008 through 2014, but those results are not reflected in these initial numbers.

14 We chose this plan because it is the IDR plan least likely to generate forgiveness.

15 As Figure 3 makes clear, these amounts are roughly similar at either end of a range of reasonable discount rates. We borrow our high—5 percent—and low—2.8 percent—discount rates that the Government Accountability Office uses in its modelling of student loan interest rate setting policies. See Government Accountability Office, Federal Student Loans: Borrower Interest Cannot Be Set in Advance to Precisely and Consistently Balance Federal Revenues and Costs," GAO-14-234, Report to Congressional Committees, January 2014, p. 37, available at http://www.gao.gov/assets/670/660548.pdf.

16 For more on this choice, see the "Aggregating forgiveness to estimate total costs" section of Appendix A.

17 If the median income is higher than the mean, half the students fall below the level of earnings used. If the mean income is higher than the median, more than half the students have incomes below the level used.

18 For example, the 2012 gainful employment informational rates reported data on 816,958 completers, but the program-level default rate—a measure that includes graduates and dropouts—had 1,031,416 students counted.

19 Federal Register, *Program Integrity: Gainful Employment*.

20 U.S. Department of Education, *Student Loans Overview: Fiscal Year 2017 Budget Proposal* (2016), available at https://www2.ed.gov/about/overview/budget/budget17/justifications/q-sloverview.pdf.

21 Federal Student Aid, *Income-Driven Repayment Plans: Questions and Answers* (U.S. Department of Education, 2016), available at https://studentaid.ed.gov/sa/sites/default/files/income-driven-repayment-q-and-a.pdf.

22 Federal Student Aid, "Repayment Estimator," available at https://studentloans.gov/myDirectLoan/mobile/repayment/repaymentEstimator.action (last accessed May 2017).

23 Federal Student Aid, "Public Service Loan Forgiveness," available at https://studentaid.ed.gov/sa/repay-loans/forgiveness-cancellation/public-service (last accessed May 2017).