

# CBO

## **Income-Driven Repayment Plans for Student Loans: Budgetary Costs and Policy Options**



**FEBRUARY 2020**

## At a Glance

Introduced as a way to make student loan repayment more manageable, income-driven plans limit payments to a percentage of borrowers' income and allow for loan forgiveness after 20 or 25 years. The Congressional Budget Office examined how income-driven plans differ from plans that require fixed monthly payments, how enrollment in income-driven plans has changed over time, and how those plans are projected to affect the federal budget.

- **Growth in Loans Repaid Through Income-Driven Plans.** The volume of loans in income-driven plans grew rapidly over the past decade as they became available to more borrowers and their terms became more favorable. CBO estimates that nearly half the volume of direct student loans in repayment was being repaid through income-driven plans at the end of 2017. Many borrowers—especially those with low income and large balances—make payments that are too small to cover the interest on their loans, which causes their balances to increase over time.
- **Budgetary Costs of Income-Driven Plans.** CBO projects that of the loans disbursed between 2020 and 2029, those repaid through income-driven plans will have greater lifetime costs to the government than those repaid through fixed-payment plans. Estimated under the accounting rules of the Federal Credit Reform Act of 1990, the cost for loans repaid through income-driven plans is equal to 16.9 percent of the disbursed amount; for other loans, the cost is -12.8 percent of the disbursed amount. In other words, for every dollar disbursed, the government is projected to lose 16.9 cents for loans repaid through income-driven plans but gain 12.8 cents for other loans.
- **Options for Changing Income-Driven Repayment.** CBO assessed the costs of policy options that would change the availability of income-driven plans or change how borrowers' required payments are calculated. CBO estimates that changes to income-driven plans for graduate students would have a much larger effect on the budget than changes for undergraduate students. That is because graduate students are more likely to participate in such plans and tend to have larger—sometimes much larger—loan balances.



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## Notes

Unless this report indicates otherwise, all years referred to are federal fiscal years, which run from October 1 to September 30 and are designated by the calendar year in which they end.

Numbers in the text, tables, and figures may not add up to totals because of rounding.

PLUS loans to parents are generally not eligible for repayment through income-driven plans and have been excluded from CBO's analysis in this report.

Student loan borrowers who took out student loans only for undergraduate studies are defined as undergraduate borrowers. Those defined as graduate borrowers took out at least one loan for graduate studies and may also have borrowed at the undergraduate level.

The estimates in this report are based on CBO's August 2019 baseline budget projections, which incorporate the assumption that current laws would generally remain unchanged.

In this report, the subsidy cost for a fiscal year is measured by multiplying the volume of loans disbursed in that year by their average subsidy rate (their projected cost as a percentage of dollars disbursed). In its baseline projections and cost estimates, CBO would adjust that total to account for the timing effects of multiple disbursements of some loans in two fiscal years.

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# Summary

The volume of outstanding student loans has grown considerably over the past decade as the number of borrowers and the amounts they borrow have increased. In the 2018–2019 academic year, the government issued \$76 billion in new loans to 7.6 million students. Overall, as of December 2018, outstanding student loans issued or guaranteed by the federal government totaled \$1.4 trillion—or 6.8 percent of gross domestic product (GDP).

Between 1965 and 2010, most federal student loans were issued by private lending institutions and guaranteed by the government, and most student loan borrowers made fixed monthly payments over a set period—typically 10 years. Since 2010, however, all federal student loans have been issued directly by the federal government, and borrowers have begun repaying a large and growing fraction of those loans through income-driven repayment plans. Required repayments in such plans depend not only on a loan’s balance and interest rate but also on the borrower’s income.

On average, borrowers in income-driven plans make smaller monthly payments than other borrowers, and the plans provide loan forgiveness if borrowers have not paid off their balance after making payments for a certain number of years. For those reasons, loans repaid through income-driven plans are more costly to the government than loans repaid through fixed-payment plans.

## **How Do Income-Driven Repayment Plans Differ From Other Repayment Plans?**

Introduced as a way to make student loan repayment more manageable, income-driven plans reduce the required monthly payments for borrowers with low income or large balances. Under the most popular income-driven plans, borrowers’ payments are 10 or 15 percent of their discretionary income, which is typically defined as income above 150 percent of the federal poverty guideline. Furthermore, most plans cap monthly payments at the amount a borrower would have paid under a 10-year fixed-payment plan.

The earnings and loan balances of borrowers in income-driven plans determine whether they will repay their loans in full. Borrowers who have not paid off their loans by the end of the repayment period—typically 20 or 25 years—have the outstanding balance forgiven. (Qualifying borrowers may receive forgiveness in as little as 10 years under the Public Service Loan Forgiveness, or PSLF, program.) CBO estimates that most borrowers in income-driven plans initially make payments that are too small to cover accruing interest—and therefore, over the first several years of repayment, their loan balances grow rather than shrink. If those borrowers eventually earn enough to make larger payments and fully repay their loans, they generally pay more than they would have in a fixed-payment plan.

CBO also found that borrowers default on their loans at much lower rates in income-driven plans than in other plans. Default rates are probably lower for loans in income-driven plans because payments are reduced for borrowers who have lower income and are less able to pay. But borrowers who opt in to the plans might be less likely to default for other reasons—for example, because they are more aware of their financial options.

## **How Has Enrollment in Income-Driven Repayment Plans Changed Over Time?**

The number of borrowers in income-driven plans grew rapidly between 2010 and 2017 as the plans became available to more borrowers and their terms became more favorable. Among borrowers who had taken out direct loans for undergraduate study, the share enrolled in income-driven plans grew from 11 to 24 percent. Among those who had taken out direct loans for graduate study (and for undergraduate study as well, in many cases), the share grew from 6 to 39 percent.

The volume of loans in income-driven plans has grown even faster than the number of borrowers because borrowers with larger loan balances are more likely to select such plans. In particular, graduate borrowers have much larger loan balances, on average, and are more likely to enroll in income-driven plans than undergraduate

borrowers. CBO estimates that about 45 percent of the volume of direct loans was being repaid through income-driven plans in 2017, up from about 12 percent in 2010.

### What Are the Budgetary Costs of Income-Driven Repayment Plans?

By law, CBO follows the procedures specified in the Federal Credit Reform Act of 1990 (FCRA) to estimate the costs of the student loan program. Under FCRA, a loan's lifetime cost to the government is described as a subsidy and is recorded in the budget in the year the loan is disbursed. The subsidy is measured by discounting all future cash flows associated with the loan—including the amount disbursed, the principal and interest paid, and debt collected from borrowers in default—to a present value, or current dollar amount. (The administrative costs of disbursing and servicing loans are not included.)

On that FCRA basis, CBO estimated in its August 2019 baseline budget projections that if current laws remained unchanged, \$1.05 trillion in federal student loans would be disbursed to students between 2020 and 2029, increasing the deficit by \$10.7 billion. (Those estimates exclude PLUS loans to the parents of students, which are not eligible for repayment through most income-driven plans.) Loans repaid through income-driven plans were projected to result in larger subsidies than loans repaid through fixed-payment plans. Specifically, CBO estimated that \$490.4 billion in disbursed student loans would be repaid through income-driven plans, with a subsidy of \$82.9 billion, and \$562.7 billion in loans would be repaid through fixed-payment plans, with a negative subsidy—in other words, a gain—of \$72.2 billion. For those loans, the government's projected cost as a percentage of loan dollars disbursed, known as the subsidy rate, is 16.9 percent, on average, for income-driven plans and -12.8 percent, on average, for fixed-payment plans.

CBO also estimates the costs of student loans using the fair-value method, which reflects the compensation a private investor would require to undertake the risk associated with those loans. In August 2019, CBO estimated that the fair-value subsidy of the loans disbursed to students between 2020 and 2029 would be \$262.8 billion; loans repaid through income-driven plans would have a subsidy of \$211.5 billion and a subsidy rate of 43.1 percent, and loans repaid through fixed-payment plans would have a subsidy of \$51.4 billion and a subsidy rate of 9.1 percent. (The costs of student loans appear larger

when estimated using the fair-value method because it accounts for the cost of market risk—the risk that arises because borrowers are more likely to default on their debt obligations when the economy is weak.)

The costs of loans repaid through income-driven and fixed-payment plans differ not only because of the terms of the plans but because of the borrowers who enroll in them. In particular, borrowers who select income-driven plans tend to borrow more money. CBO also expects the average subsidy rate of loans in income-driven plans to be higher for loans to graduate students than loans to undergraduate students, mainly because graduate students take out larger loans, which are less likely to be paid off.

Of the loans disbursed from 2020 to 2029 and repaid through income-driven plans, CBO estimates that undergraduate borrowers would have \$40.3 billion forgiven and graduate borrowers would have \$167.1 billion forgiven. (Those forgiven balances, which include unpaid interest, are discounted to their value in the year the loans were disbursed to make them more comparable to the original disbursement.) The forgiven amounts are equal to 21 percent of the disbursed amount for undergraduate borrowers and 56 percent of the disbursed amount for graduate borrowers. For comparison, the present value of payments on the same loans is equal to 84 percent of the disbursed amount for undergraduate borrowers and 82 percent of the disbursed amount for graduate borrowers. (Because accrued interest is included in the calculations, and interest rates on student loans are higher than the discount rate, loan payments and forgiven balances add up to more than 100 percent of the originally disbursed amounts.)

The repayment of student loans affects not only federal spending but also tax revenues. In both fixed-payment and income-driven repayment plans, student loan interest is deductible in the tax year in which it is paid. Those tax deductions reduce federal revenues. In addition, borrowers in income-driven plans whose loans are forgiven have the unpaid balance included in their taxable income for that year (unless the loans are forgiven through the PSLF program). The resulting tax revenues partly compensate the government for the cost of forgiven loans. However, income taxes that would be forgone through deductions for interest payments or collected on forgiven balances are not included in the estimated budgetary costs of income-driven repayment plans in this report.

## What Are Some Options for Changing Income-Driven Repayment Plans?

CBO assessed the costs of two broad sets of options for changing income-driven repayment plans. One set of options would change the availability of such plans. The other would change borrowers' payments. CBO analyzed how the options would affect the government's costs through 2029 if they applied to all loans taken out by new borrowers as of July 1, 2020. In addition, CBO separately examined how the costs of loans to undergraduate and graduate borrowers would change under the options.

The options were selected for this analysis either because they are similar to policies that lawmakers have considered in the past or because they illustrate how sensitive the plans' costs are to certain policy parameters.

### Options That Would Change the Plans' Availability

The three options in this category would change the availability of income-driven plans by making the Revised Pay as You Earn (REPAYE) plan the only income-driven plan, by making the REPAYE plan the only repayment plan, or by making fixed-payment plans the only repayment plans. The second and third options are diametric alternatives: enrolling all student borrowers

in income-driven plans or eliminating income-driven repayment entirely. In CBO's estimation, the second option would increase the subsidy cost of loans by \$36 billion from 2020 to 2029; the third would decrease the subsidy cost by \$122 billion over the same period.

When estimating the effects of changing income-driven repayment plans, CBO focused on the REPAYE plan for two reasons. First, it is the newest income-driven plan. Second, the plan does not cap borrowers' payments, which is also true of the income-driven plans in most recent Congressional proposals to modify the student loan program.

### Options That Would Change How Borrowers' Payments Are Calculated

The three options in this category would change borrowers' payments in income-driven repayment plans by changing the portion of discretionary income used to calculate payments, the definition of discretionary income, or the timing of loan forgiveness. Each of those options was analyzed in conjunction with the first option from the previous set—that is, CBO considered the REPAYE plan to be the only income-driven plan in each case.





# Chapter 1: An Introduction to Income-Driven Repayment Plans

Income-driven repayment plans are relatively new offerings in the student loan program, but the percentage of student loans being repaid through them is large and growing. The first income-driven plan was introduced in July 1994. Since then, several others have been created, each with slightly different features and parameters.

## An Overview of Federal Student Loans

Most student loans were issued by private lending institutions and guaranteed, or insured, by the federal government until 2010. Today, the vast majority are directly issued by the federal government. The volume of outstanding federal guaranteed and direct student loan debt has increased by 128 percent over the past 10 years. As of December 2018, it totaled \$1.4 trillion.

Between 1965 and 2010, the federal government guaranteed loans issued by banks and nonprofit lenders through the Federal Family Education Loan (FFEL) program. In 1994, the Congress established the William D. Ford Federal Direct Loan Program, which directly issued student loans with funds provided by the Treasury. The two programs operated in parallel, issuing loans under nearly identical terms, until the Health Care and Education Reconciliation Act eliminated new FFEL loans in 2010. Since then, all new federal student loans have been made through the direct loan program.<sup>1</sup>

There are three types of student loans: subsidized Stafford, unsubsidized Stafford, and PLUS. Subsidized Stafford loans are available to undergraduate students with financial need.<sup>2</sup> Those loans do not accrue interest until payments are due (in other words, the government

subsidizes the interest), whereas other loans begin to accrue interest after they are disbursed. Unsubsidized Stafford loans are available to both undergraduate and graduate students irrespective of their financial need. PLUS loans are available to graduate students and the parents of undergraduate students.

The various loans are subject to different limits and have different interest rates. Each type of loan is limited by the student's expected cost of attendance; Stafford loans are further limited on the basis of the borrower's academic level and dependency status. Interest rates have been higher for loans to graduate students than loans to undergraduate students since the 2013–2014 academic year.<sup>3</sup> After leaving school, students with multiple loans can combine them into a single consolidation loan with an interest rate that is a blend of the original ones.<sup>4</sup>

Once borrowers begin repaying their loans, they are required to make payments each month. Payments on Stafford loans and PLUS loans to graduate students typically begin once borrowers have been out of school for six months. Borrowers may suspend their loan payments by requesting a deferment if, for example, they are enrolled in school, serving in the military, or experiencing economic hardship. For borrowers with subsidized Stafford loans, interest accrual generally pauses during deferment. If borrowers are not eligible for deferment,

1. For a discussion of the motivations for providing federal student loans and other forms of student aid, see Congressional Budget Office, *Federal Aid for Postsecondary Students* (June 2018), [www.cbo.gov/publication/53736](http://www.cbo.gov/publication/53736).

2. Students are considered to have financial need if their cost to attend school exceeds their financial aid and expected contributions from their family.

3. Since that academic year, interest rates have been based on the high yield of the 10-year Treasury note from the last auction before June 1 of the previous academic year. Undergraduate Stafford loan interest rates are 2.05 percentage points higher than that rate, graduate Stafford loan interest rates are 3.6 percentage points higher, and PLUS loan interest rates are 4.6 percentage points higher.

4. For more information about the terms of the student loan program, see David P. Smole, *Federal Student Loans Made Through the William D. Ford Federal Direct Loan Program: Terms and Conditions for Borrowers*, CRS Report R40122 (Congressional Research Service, September 24, 2019), <https://go.usa.gov/xd5BZ>.

they may request forbearance, which also allows them to postpone or reduce their monthly payments, although interest still accrues.

A loan is considered to be delinquent if the borrower does not make a payment by the due date and to be in default when payments are at least 270 days late. Borrowers with delinquent loans have their information reported to credit agencies, and those with loans in default can have their wages and tax refunds garnished. Despite those potential consequences, student loans have the highest delinquency rate of all types of consumer debt, according to the Federal Reserve Bank of New York.<sup>5</sup> For example, in the first quarter of 2019, the 90-day delinquency rate was 10.9 percent for federal and private student loans and only 4.7 percent for auto loans.

### Income-Driven Repayment Plans

Income-driven repayment plans were introduced by the Congress to provide financial relief for borrowers who might otherwise be at risk of default. (The plans have similarities with those in other countries; see Box 1-1.) Throughout the history of the student loan program, most borrowers have enrolled in 10-year fixed-payment plans, which require fixed monthly payments under a schedule similar to that of a 10-year mortgage. Unless they select another option, borrowers are enrolled automatically in the 10-year fixed-payment plan.<sup>6</sup>

By contrast, income-driven plans tie payments to borrowers' household income, requiring payments of a fraction—usually 10 or 15 percent—of their discretionary income.<sup>7</sup> (In most income-driven plans, discretionary

income is defined as income over 150 percent of the federal poverty guideline.) Outstanding balances are forgiven after either 20 or 25 years of qualifying payments. A qualifying payment is any monthly payment that is equal to or greater than the amount scheduled under the plan; for borrowers with no discretionary income, qualifying payments may be as low as zero dollars.

Borrowers in income-driven plans may also qualify for forgiveness after 10 years of payments through the Public Service Loan Forgiveness program, which was created by the College Cost Reduction and Access Act of 2007. To qualify, borrowers must be employed full time by a public-service employer.<sup>8</sup> The Congress introduced the program to encourage highly educated borrowers to enter lower-paying jobs in fields such as public-interest legal services, public safety, health care, and education.<sup>9</sup> However, some researchers have suggested that the program's generous loan forgiveness might incentivize students to overborrow.<sup>10</sup> Although forgiven loan balances are typically included in borrowers' taxable income, balances forgiven through the PSLF program are not taxed.<sup>11</sup>

Income-driven plans offer several advantages to borrowers. One advantage is that required payments are small if a borrower's income is low. Those smaller required payments can help borrowers avoid default—and, in turn, consequences such as garnished wages and barriers to future borrowing. Also, most plans limit required payments to the amount borrowers would owe under a 10-year fixed-payment plan, regardless of how much their income rises. Finally, because borrowers' loans are

5. See Federal Reserve Bank of New York, Center for Microeconomic Data, *Quarterly Report on Household Debt and Credit* (November 2019), p. 12, [www.newyorkfed.org/microeconomics/hhdc.html](http://www.newyorkfed.org/microeconomics/hhdc.html).

6. Borrowers in fixed-payment plans who have larger balances can choose a longer term of repayment, up to 30 years. Borrowers can also select a graduated payment plan, under which payments are initially small and increase over time. Borrowers with FFEL loans can select an income-sensitive repayment plan, under which payments are adjusted annually on the basis of borrowers' income. Because the income-sensitive plan does not offer loan forgiveness, CBO did not classify it as an income-driven plan in this report.

7. Household income is generally defined as borrowers' adjusted gross income on their most recent tax return plus, for borrowers who are married and file jointly, their spouse's adjusted gross income. Under the Revised Pay as You Earn plan, the spouse's income is included regardless of the borrower's tax-filing status. A borrower's household includes the borrower, his or her spouse, and any dependent children.

8. Public-service employers include government agencies at any level, nonprofit organizations that are tax-exempt under section 501(c)(3) of the Internal Revenue Code, and other private nonprofit organizations that provide a public service. For more information about qualifying employers, see Department of Education, Office of Federal Student Aid, "Public Service Loan Forgiveness" (accessed January 27, 2020), <https://go.usa.gov/xppCF>.

9. See U.S. House of Representatives, Committee on Education and Labor, *College Cost Reduction Act of 2007: Report to Accompany H.R. 2669*, House Report 110-210 (June 25, 2007), pp. 48–49, <https://go.usa.gov/xppCh>.

10. For example, see Kevin J. James and Andrew P. Kelly, *Balancing Risk and Responsibility: Reforming Student Loan Repayment* (American Enterprise Institute, Center on Higher Education Reform, November 2015), <https://tinyurl.com/rxavjs>.

11. For more information, see Alexandra Hegji, *The Public Service Loan Forgiveness Program: Selected Issues*, CRS Report R45389 (Congressional Research Service, October 29, 2018), <https://go.usa.gov/xd5B8>.

## Box 1-1.

**Income-Driven Repayment Plans in Other Countries**

Australia and the United Kingdom have income-driven repayment plans for student loans that are similar to those in the United States.<sup>1</sup> However, unlike borrowers in the United States, borrowers in those countries do not have a choice of repayment plans: All are required to enroll in income-driven plans, which are administered in coordination with the national tax authorities.<sup>2</sup> That design keeps borrowers with low earnings or large balances from enrolling in income-driven plans at greater rates than other borrowers who would receive less benefit.

Australia was among the first countries to adopt an income-driven student loan repayment system, in 1989. Borrowers pay a percentage of their annual income above a threshold. For example, borrowers who began repaying their loans in the 2018–2019 academic year paid between 2 and 8 percent of income over 51,957 Australian dollars (roughly \$38,864 in

2018 U.S. dollars). The repayment rate is based on a progressive formula, such that borrowers pay a larger portion of their income as their earnings increase. Payments are collected by the Australian Tax Office, and borrowers can elect to have their student loan payments withheld from their wages like income taxes. Unlike in the United States, unpaid balances are not forgiven.

The United Kingdom adopted an income-dependent repayment policy for all student loan borrowers in 1998. As in the Australian and U.S. systems, borrowers pay a percentage of their income above a threshold. Among those who began repaying their loans in the 2018–2019 academic year, undergraduate borrowers owed 9 percent of their income over £25,000 (roughly \$33,250 in 2018 U.S. dollars), and graduate borrowers owed 6 percent of their income over £21,000 (roughly \$28,000 in 2018 U.S. dollars). Loan balances are forgiven after a period that depends on borrowers' age or when their last loan was issued—once the borrower is 65 years old, after 25 years, or, for more recent loans, after 30 years. Forgiven balances are not treated as taxable income. As in Australia, payments are collected by the national tax authority—Her Majesty's Revenue and Customs.

1. As a percentage of gross domestic product, the total outstanding balances of the U.S. and U.K. student loan programs are close in size, at 6.8 percent and 6.4 percent, respectively. Australia's student loan program has an outstanding balance that is roughly half as large, at 3.8 percent of gross domestic product.

2. In the United States, by contrast, student loan payments are collected by private servicers without assistance from the Internal Revenue Service.

forgiven as long as they make the required amount of payments, many borrowers will not have to pay off the full principal or all of the interest that has accrued during the repayment period.

However, income-driven plans may also have disadvantages. Some borrowers may pay more interest over their repayment term than they would have in a fixed-payment plan, although borrowers can avoid accruing additional interest by paying more than their plan requires. Furthermore, borrowers who receive loan forgiveness may face a large tax liability if the forgiven balance is included in their taxable income.

**Types of Income-Driven Repayment Plans**

Four major types of income-driven repayment plans have been created over the years. Policymakers have generally made newer plans more favorable to borrowers by decreasing borrowers' payments, speeding up their loan forgiveness, or subsidizing their interest. Some plans were created for future borrowers; others were available

to current borrowers as soon as they went into effect (see Table 1-1).

**Income-Contingent Repayment.** The oldest income-driven plan is the income-contingent repayment (ICR) plan, which was introduced in July 1994.

*Payments and Forgiveness.* Payments in the ICR plan are equal to 20 percent of borrowers' discretionary income, up to a cap calculated by multiplying what borrowers' payments would be under a 12-year fixed-payment plan by an "income percentage factor" based on their income and marital status.<sup>12</sup> Under the ICR plan, discretionary income is defined as income above the federal poverty

12. That factor varies from 0.5052 to 2. See Annual Updates to the Income Contingent Repayment (ICR) Plan Formula for 2019—William D. Ford Federal Direct Loan Program, 84 Fed. Reg. 23539 (May 22, 2019), <https://go.usa.gov/xpsJ2>.

Table 1-1.

**Income-Driven Repayment Plans**

<b>Repayment Plan</b>	<b>Introduction</b>	<b>Monthly Payment</b>	<b>Time Until Loan Forgiveness<sup>a</sup></b>	<b>Eligible Borrowers</b>
Income-Contingent Repayment	July 1994	20 percent of discretionary income, up to a cap based on the borrower's earnings and marital status and the amount he or she would pay under a 12-year fixed-payment plan <sup>b</sup>	25 years	Borrowers with direct subsidized or unsubsidized loans, direct PLUS loans for students, or PLUS loans made to parents if consolidated
Income-Based Repayment				
Original plan for new borrowers before July 1, 2014	July 2009	15 percent of discretionary income, up to the amount the borrower would pay in a 10-year fixed-payment plan <sup>c</sup>	25 years	Borrowers with direct or FFEL subsidized or unsubsidized loans, direct or FFEL PLUS loans for students, or direct or guaranteed consolidation loans that do not include PLUS loans made to parents
Updated plan for new borrowers on or after July 1, 2014	July 2014	10 percent of discretionary income, up to the amount the borrower would pay in a 10-year fixed-payment plan <sup>c</sup>	20 years	Same as in the original plan
Pay as You Earn	December 2012	10 percent of discretionary income, up to the amount the borrower would pay in a 10-year fixed-payment plan <sup>c</sup>	20 years	New borrowers on or after October 1, 2007, who received a disbursement of any of the following loans on or after October 1, 2011: direct subsidized or unsubsidized loans, direct PLUS loans for students, or direct consolidation loans that do not include PLUS loans made to parents
Revised Pay as You Earn	December 2015	10 percent of discretionary income <sup>c</sup>	20 years if all loans being repaid were for undergraduate study; 25 years if any loans being repaid were for graduate or professional study	Borrowers with direct subsidized or unsubsidized loans, direct PLUS loans for students, or direct consolidation loans that do not include PLUS loans made to parents

Source: Congressional Budget Office, using information from the Department of Education.

FFEL = Federal Family Education Loan program.

a. Borrowers participating in the Public Service Loan Forgiveness program may have their loans forgiven in as little as 10 years.

b. Discretionary income is defined as income above the federal poverty guideline.

c. Discretionary income is defined as income above 150 percent of the federal poverty guideline.

guideline.<sup>13</sup> Unpaid loan balances are forgiven after 25 years.

*Eligibility and Enrollment.* Only loans made under the direct loan program are eligible for repayment through the ICR plan. That restriction limited access to the plan before 2010, when the majority of student loans were originated through the FFEL program.<sup>14</sup> Few eligible borrowers choose the ICR plan today because other income-driven plans require smaller payments and offer earlier loan forgiveness. Furthermore, borrowers can more easily determine what their monthly payments will be under newer income-driven plans, which do not base their caps on an income percentage factor. However, for student borrowers with consolidation loans that include balances from PLUS loans to parents, the ICR plan is the only income-driven plan available.<sup>15</sup>

**Income-Based Repayment.** The income-based repayment (IBR) plan was created under the College Cost Reduction and Access Act of 2007 and became available to borrowers in July 2009. The plan was amended by the Health Care and Education Reconciliation Act of 2010 for new borrowers on or after July 1, 2014.

*Payments and Forgiveness.* The original version of the IBR plan limits payments to 15 percent of discretionary income, capped at the amount borrowers would have paid under the standard repayment plan (a 10-year fixed-payment plan), and offers loan forgiveness after 25 years of repayment. The updated version limits payments to 10 percent of discretionary income, subject

to the same cap, and offers loan forgiveness after just 20 years of repayment. In each case, discretionary income is defined as income above 150 percent of the federal poverty guideline.

*Eligibility and Enrollment.* Both direct and FFEL loans can be repaid through the IBR plan. Borrowers are eligible as long as they demonstrate that their payments would be lower than under the 10-year fixed-payment plan. That expanded eligibility, combined with the IBR plan's greater benefits and simplicity, probably explain why it had a significantly higher take-up rate than the ICR plan in the decade after it was introduced. Both enrollment and the volume of loans in the plan grew rapidly over time; however, new enrollment declined after the introduction of the Pay as You Earn (PAYE) plan, which requires smaller payments and allows for faster loan forgiveness than the original IBR plan.

**Pay as You Earn.** The PAYE plan was created by the Department of Education and became available on December 21, 2012.<sup>16</sup>

*Payments and Forgiveness.* Required payments are limited to 10 percent of borrowers' discretionary income, capped at the amount borrowers would have paid under the standard repayment plan. Discretionary income is defined as household income above 150 percent of the federal poverty guideline. Loan balances are forgiven after 20 years of repayment.

*Eligibility and Enrollment.* To qualify for the PAYE plan, students must have borrowed for the first time on or after October 1, 2007; must have received a disbursement of a direct loan on or after October 1, 2011; and must demonstrate that their payments would be lower under the PAYE plan than under the 10-year fixed-payment plan. Consolidation loans that include PLUS loans to parents are not eligible for PAYE.

13. The federal poverty guidelines are updated annually by the Department of Health and Human Services. In 2019, the federal poverty guideline was \$12,490 for single-person households in the 48 contiguous states and D.C. and increased by \$4,420 with each additional household member. Household members include the borrower, his or her spouse, his or her children if they receive more than half of their support from the borrower, and other individuals who live with and receive more than half of their support from the borrower. See Office of the Assistant Secretary for Planning and Evaluation, "U.S. Federal Poverty Guidelines Used to Determine Financial Eligibility for Certain Federal Programs" (accessed November 25, 2019), <https://aspe.hhs.gov/poverty-guidelines>.

14. If they met the other criteria, borrowers of guaranteed loans could gain access to the income-contingent plan by consolidating their balance into a direct consolidation loan.

15. PLUS loans to parents are eligible for repayment through the ICR plan only if they have been consolidated.

16. The Department of Education created the PAYE plan using existing statutory authority granted by the Higher Education Act to amend the terms of the ICR plan. See Federal Perkins Loan Program, Federal Family Education Loan Program, and William D. Ford Federal Direct Loan Program, 77 Fed. Reg. 66087 (November 1, 2012), <https://go.usa.gov/xpprw>.

**Revised Pay as You Earn.** The REPAYE plan was also created by the Department of Education and became available on December 17, 2015.<sup>17</sup>

*Payments and Forgiveness.* The REPAYE plan limits payments to 10 percent of borrowers' discretionary income, defined as income above 150 percent of the federal poverty guideline. Unlike in the other income-driven plans, the payment amount is not capped. Loan balances are forgiven after 20 years for undergraduate borrowers and 25 years for graduate borrowers.

The REPAYE plan differs from other plans because married borrowers must pay 10 percent of their household's discretionary income even if they and their spouse file taxes separately. In other income-driven plans, married borrowers who file separately pay a percentage of their individual discretionary income.

All borrowers in the REPAYE plan are eligible for an interest subsidy, which reduces the unpaid interest added to their loan balance by half. That subsidy limits the growth of the loan balance for borrowers with very low earnings.

*Eligibility and Enrollment.* All direct loans are eligible for repayment through the REPAYE plan except for PLUS loans to parents or consolidation loans that include such loans.

### How Borrowers Enroll in Income-Driven Repayment Plans

Borrowers enroll in income-driven plans by submitting an application to their loan servicer. (Servicers are private companies with federal contracts to collect loan payments, maintain records, and communicate with borrowers.) The application asks borrowers to report whether their household has income. If it does, borrowers are asked to document their adjusted gross income (AGI) from their most recent tax return or to provide more current documentation if their income has significantly changed since their last tax filing.<sup>18</sup> Borrowers are

also asked to report their household size, which is used to determine the federal poverty guideline that applies to their household. Once applications are submitted, the servicer reviews them to determine whether borrowers are eligible.<sup>19</sup> Borrowers have to report their income and household size each year so that their required payment can be updated.<sup>20</sup> Borrowers may also request to have their payments recalculated at any time if their household income or size changes.

### Repayment Schedules Under Income-Driven Repayment and Standard Fixed-Payment Plans

The earnings and loan balances of borrowers in income-driven plans determine their required payments over time—including whether they will repay their loans in full or have some of their balance forgiven. Those factors also determine whether loans repaid through such plans result in greater costs to the government.

Consider two borrowers who have just graduated, each with an income of \$40,000, which grows by 3 percent annually. The first borrower has a loan balance of \$25,000, and the second has a loan balance of \$50,000. The first borrower's annual payments would initially be lower under the PAYE plan than under the standard repayment plan (a 10-year fixed-payment plan; see the top left panel of Figure 1-1). The borrower would repay the loan in full under either repayment schedule, but it would take five years longer under the PAYE plan (see the top right panel of Figure 1-1).

Under either repayment schedule, the present value of the cash flows from repayment would exceed the amount disbursed for the loan. In other words, the loan would generate a net gain for the government. But the present value of those cash flows would be larger under the PAYE

17. The REPAYE plan was created under the same statutory authority that was used to create the PAYE plan. See Student Assistance General Provisions, Federal Family Education Loan Program, and William D. Ford Federal Direct Loan Program, 80 Fed. Reg. 67203 (October 30, 2015), <https://go.usa.gov/xppr6>.

18. Adjusted gross income comprises income from many sources, including wages and salaries, interest, dividends, capital gains, business income, and some pension and Social Security income.

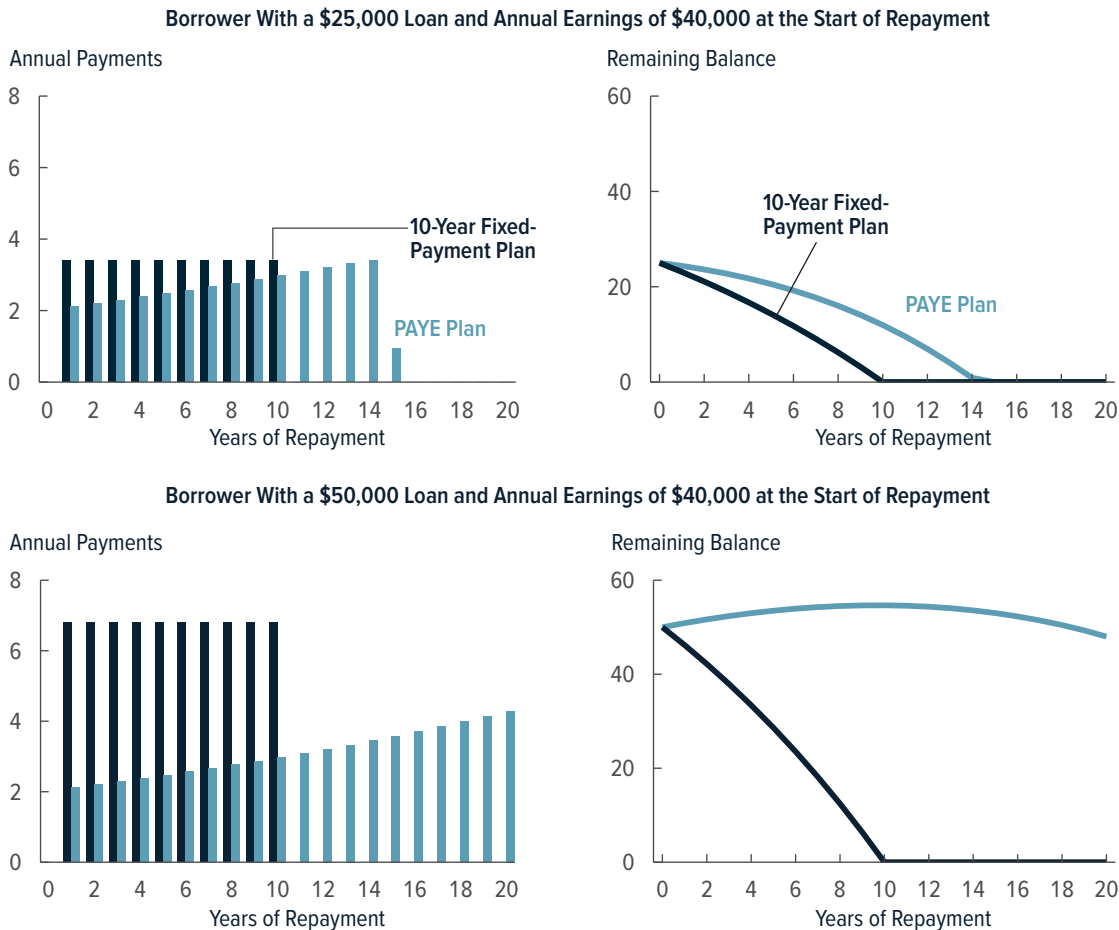
19. A recent report analyzed the procedures in place for verifying borrowers' information and identified signs of potential fraud or errors in information borrowers had reported about their income and household size. See Government Accountability Office, *Federal Student Loans: Education Needs to Verify Borrowers' Information for Income-Driven Repayment Plans*, GAO-19-347 (July 25, 2019), [www.gao.gov/products/GAO-19-347](http://www.gao.gov/products/GAO-19-347). The FUTURE Act, Public Law 116-91 (enacted in December 2019), allows the Department of Education to use data from the Internal Revenue Service to determine borrowers' eligibility for or required payments in income-driven plans.

20. Borrowers in the ICR, IBR, or PAYE plan who fail to recertify that information remain in the plan but must pay the maximum payment. Borrowers in the REPAYE plan who fail to recertify it are enrolled in a fixed-payment plan.

Figure 1-1.

### Repayment Schedules for Two Hypothetical Borrowers, by Type of Repayment Plan

Thousands of Dollars



Source: Congressional Budget Office.

In CBO's calculations, the borrowers' earnings increase annually by 3 percent, and the loans have an interest rate of 6 percent.

In the PAYE plan, monthly payments are capped at the amount borrowers would pay in a 10-year fixed-payment plan.

PAYE = Pay as You Earn.

plan because the loan would accrue more interest over the repayment period.<sup>21</sup> Specifically, the subsidy rate for the loan—its overall cost as a percentage of the initial balance—would be -15.2 percent under the PAYE plan and -10.2 percent under the fixed-payment plan.

21. Whether that additional interest leads to a greater net gain for the government depends on how the interest rate on the loan compares with the discount rate. In the example, the government's discount rate is lower than the loan interest rate.

The second borrower's annual repayment amounts would be lower under the PAYE plan than under the fixed-payment plan for the duration of repayment (see the bottom left panel of Figure 1-1). Moreover, because the payments in the PAYE plan would initially be less than the accruing interest, the loan balance would grow during the borrower's first 10 years in repayment (see the bottom right panel of Figure 1-1). The borrower would not repay the loan in full and would instead receive forgiveness after 20 years of repayment. Overall, the loan would result in a net cost to the government under the

income-driven plan but not the standard fixed-payment plan. Specifically, the lifetime cost to the government would be 19.7 percent of the originally disbursed amount under the income-driven plan and -10.2 percent of the originally disbursed amount under the fixed-payment plan. (See Appendix A for an explanation of how CBO calculated present values when estimating loan subsidies.)

### Effects of Income-Driven Repayment Plans on Spending

Currently, student loans repaid through income-driven plans, as a whole, are estimated to have a larger cost than loans repaid through fixed-payment plans.<sup>22</sup> Different aspects of repayment in income-driven plans have different effects on costs.

Income-driven plans tend to increase a loan's outstanding balance by extending its repayment. Because interest is collected on a larger balance for a longer period of time, the loan accrues more interest. Later payments are discounted to reflect that they are less valuable than earlier payments, but because the interest rate on the loan is generally higher than the discount rate, the value of the additional interest outweighs that effect. As a result, income-driven plans reduce a loan's cost to the government when most of the original balance is repaid. (The additional interest received by the government is partly offset through tax deductions; those effects are described below. In the budget, however, estimates of the subsidy costs of the student loan program exclude effects on tax revenues.)

Loan forgiveness, by contrast, increases the government's cost for student loans repaid through income-driven plans. Forgiven balances represent missed cash flows that could have been collected if repayment terms were

longer. (The cost of loan forgiveness is partly offset through taxes on the forgiven balances. Those effects are excluded from estimates of subsidy costs.)

### Effects of Income-Driven Repayment Plans on Tax Revenues

Income-driven plans affect tax revenues in two ways. First, student loan borrowers can deduct the interest they pay on loans from their taxable income—and loans repaid through income-driven plans tend to accrue more interest, which increases borrowers' deductions.<sup>23</sup> Second, forgiven loan balances are included in borrowers' taxable income (unless they are forgiven through the PSLF program). In the budget, tax revenues are recorded in the year they are collected, in contrast to the subsidy costs of loans, which are recorded in the year loans are issued.

To illustrate how those effects on taxes influence the cost of loans, CBO included the present value of tax revenue changes in its estimates of subsidy rates for the loans repaid by the two hypothetical borrowers. For the borrower with the \$25,000 loan, accounting for effects on taxes increases the subsidy rate under the fixed-payment plan by 3.7 percentage points, to -6.5 percent, and increases the subsidy rate under the income-driven plan by 5.5 percentage points, to -9.7 percent. For the borrower with the \$50,000 loan, accounting for such effects increases the subsidy rate under the fixed-payment plan by 3.5 percentage points, to -6.7 percent; by contrast, it decreases the subsidy rate under the income-driven plan by 1.7 percentage points, to 18.0 percent. In the last case, the subsidy shrinks because the effect of tax revenues from loan forgiveness (a 9.6 percentage-point decrease) exceeds the effect of deductions for interest (a 7.9 percentage-point increase).

22. See Chapter 3 for details about differences in the budgetary costs of loans in different repayment plans.

23. Deductions for student loan interest are based on borrowers' interest payments, income, and filing status. The maximum deduction is \$2,500; that cap is gradually reduced as borrowers' income rises. For more information, see Internal Revenue Service, "Topic No. 456: Student Loan Interest Deduction" (accessed December 14, 2019), [www.irs.gov/taxtopics/tc456](http://www.irs.gov/taxtopics/tc456).



# 2

## Chapter 2: Borrowers and Loans in Income-Driven Repayment Plans

Both the number of borrowers and the total volume of loans in income-driven plans grew rapidly over the past decade as eligibility expanded and plans with more favorable terms were introduced. In 2017, roughly half of eligible borrowers' student debt was being repaid through income-driven plans, and most borrowers enrolling in such plans were selecting the Pay as You Earn or Revised Pay as You Earn plan.

The share of debt repaid through income-driven plans has grown faster than the share of borrowers enrolled in those plans for two reasons. First, the borrowers in income-driven plans tend to have larger original loan balances than those in fixed-payment plans. For example, graduate borrowers take out much larger loans, on average, and are more likely to enroll in income-driven plans than undergraduate borrowers.<sup>1</sup> Second, a considerable share of borrowers in such plans make payments that are too small to cover their accruing interest, so their loan balances grow over time. Despite their larger balances and slower repayment, borrowers in income-driven plans are less likely than borrowers in fixed-payment plans to default on their loans.

### Growth in the Share of Borrowers and the Share of Loans

From 2010 to 2017, the share of all borrowers repaying direct loans through income-driven plans increased from 10 percent to 27 percent. The share of undergraduate borrowers in such plans increased from 11 percent (600,000 of 5.6 million borrowers) to 24 percent (4.6 million of 19.3 million borrowers; see Figure 2-1). The share of graduate borrowers increased from 6 percent (100,000 of 1.8 million borrowers) to 39 percent (1.8 million of 4.7 million borrowers).

Over the same period, the share of outstanding direct-loan balances in income-driven plans increased even faster. Between 2010 and 2017, the total balance of loans in those plans grew from \$24 billion, or 12 percent, to \$384 billion, or 45 percent. By 2017, undergraduate borrowers were repaying \$153 billion, or 34 percent, of their loans through income-driven plans; for graduate borrowers, the volume of loans in income-driven plans was \$231 billion, or 56 percent (see Figure 2-2). Growth in the share of loans in such plans was particularly rapid after the PAYE plan was introduced in December 2012.

### Changes in the Distribution of Loans Among Income-Driven Repayment Plans

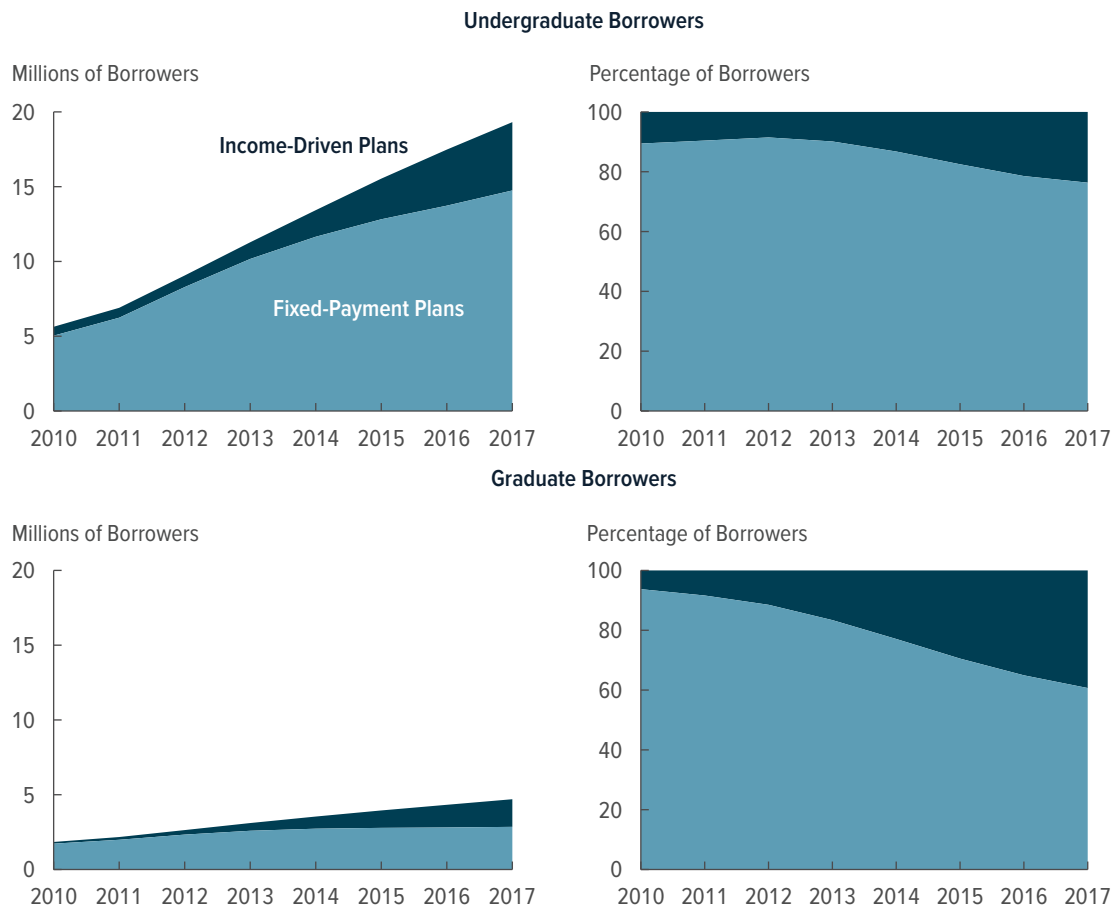
The distribution of outstanding loan volume among income-driven plans changed considerably between 2010 and 2017 (see Figure 2-3 on page 16). Of the total volume of loans in income-driven plans, the share in the income-contingent repayment plan declined from about 80 percent to less than 10 percent. By contrast, the share in the income-based repayment plan, which had been introduced in 2009, grew quickly, amounting to about half the volume of loans in income-driven plans by 2017. After the introduction of the PAYE and REPAYE plans in December 2012 and December 2015, respectively, the shares of loans in those plans also increased considerably.

Categorizing borrowers into repayment cohorts, or groups based on the year in which they began repaying their loans, makes those trends more apparent.<sup>2</sup> The share of student debt repaid through income-driven plans has risen over time for recent cohorts—those that began repaying loans from 2010 to 2014—and is likely to continue rising for those that began repaying loans between 2015 and 2017, in the Congressional Budget Office's assessment. Among undergraduate borrowers in 2017, the share of the original volume of loans being

1. Undergraduate borrowers acquire loans for undergraduate study only; graduate borrowers may have undergraduate loans as well as graduate loans.

2. The loans held by a given repayment cohort would have been disbursed over previous years.

Figure 2-1.

**Borrowers With Direct Student Loans, by Type of Repayment Plan, 2010 to 2017**

Source: Congressional Budget Office, using data from the Department of Education's National Student Loan Data System.

repaid through income-driven plans was highest for the 2014 repayment cohort, at 33 percent (see Figure 2-4 on page 16). Among graduate borrowers in 2017, that share was highest for the 2015 repayment cohort, at 56 percent. (CBO expects shares in later cohorts to exceed those levels as borrowers switch from fixed-payment to income-driven plans.) Otherwise, the volume of loans has shifted from the original IBR plan to the PAYE plan and the updated IBR plan (for new borrowers on or after July 1, 2014) as borrowers in more recent cohorts have become eligible for those plans.

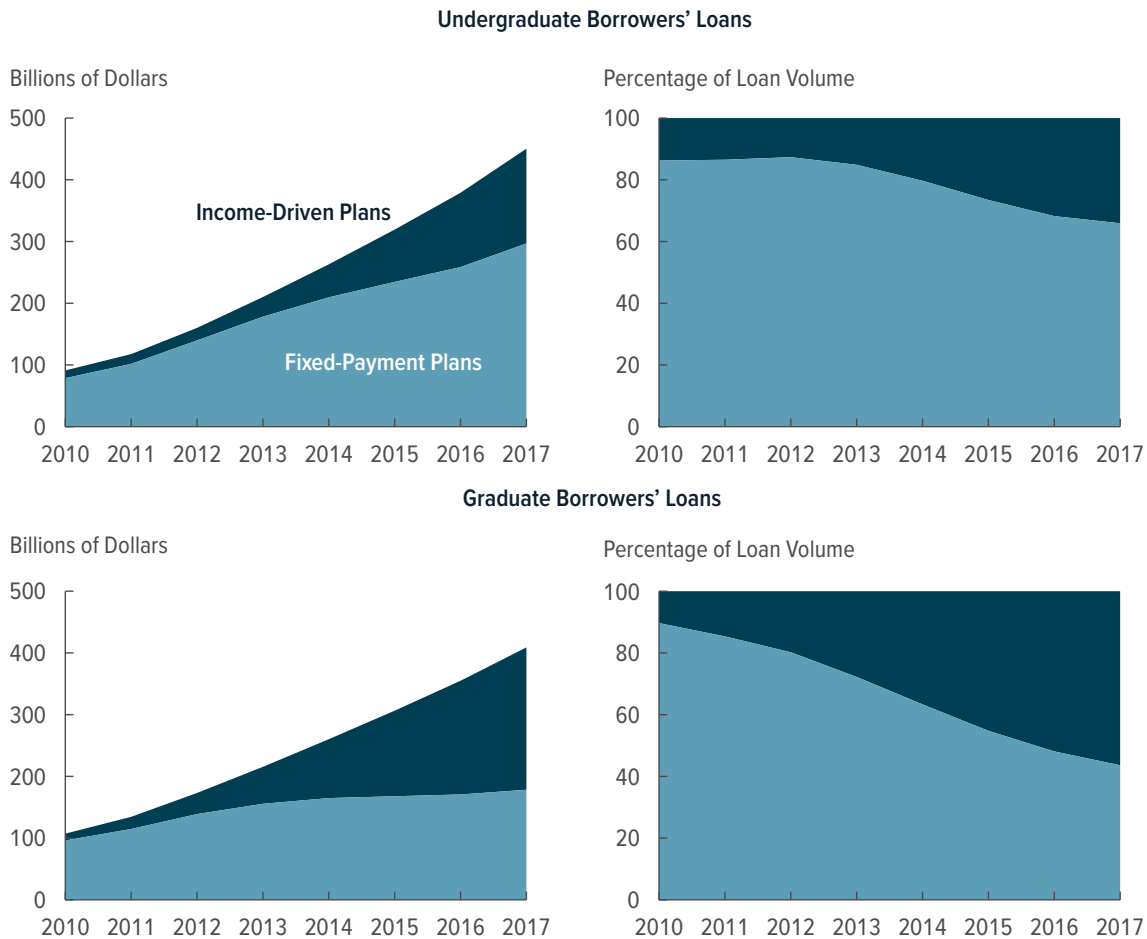
### Differences Between Borrowers in Income-Driven and Fixed-Payment Plans

Borrowers in income-driven plans have larger balances, on average, than borrowers in fixed-payment

plans—mainly because borrowers in income-driven plans tend to take out larger loans and to repay those loans more slowly. However, their default rates are about half as high as those of borrowers in fixed-payment plans.

Part of the reason that borrowers in income-driven plans tend to have larger loan balances is that a disproportionate share of those borrowers are graduate students, who borrow more, on average, than undergraduates. In 2017, graduate borrowers comprised 30 percent of borrowers in income-driven repayment plans but only 15 percent of borrowers in fixed-payment plans. Those in income-driven plans had received an average of \$92,000 of loan disbursements; by contrast, those in fixed-payment plans had received \$59,000, and undergraduate borrowers in income-driven and fixed-payment plans had received \$25,100 and \$18,500, respectively.

Figure 2-2.

**Direct Student Loans, by Type of Repayment Plan, 2010 to 2017**

Source: Congressional Budget Office, using data from the Department of Education's National Student Loan Data System.

Loans are often repaid more slowly under income-driven plans because the required payments are too small to cover the accruing interest. As a result, borrowers in such plans typically see their balance grow over time rather than being paid down. For example, the median balance of those who began repaying their loans in 2012 increased as a percentage of the original disbursement for six years (see Figure 2-5 on page 17).<sup>3</sup> By the end of 2017, over 75 percent of those borrowers owed more than they had originally borrowed. By contrast, the median balance among borrowers in fixed-payment plans decreased steadily.

Despite their larger balances and slower repayment, borrowers in income-driven plans default at lower rates

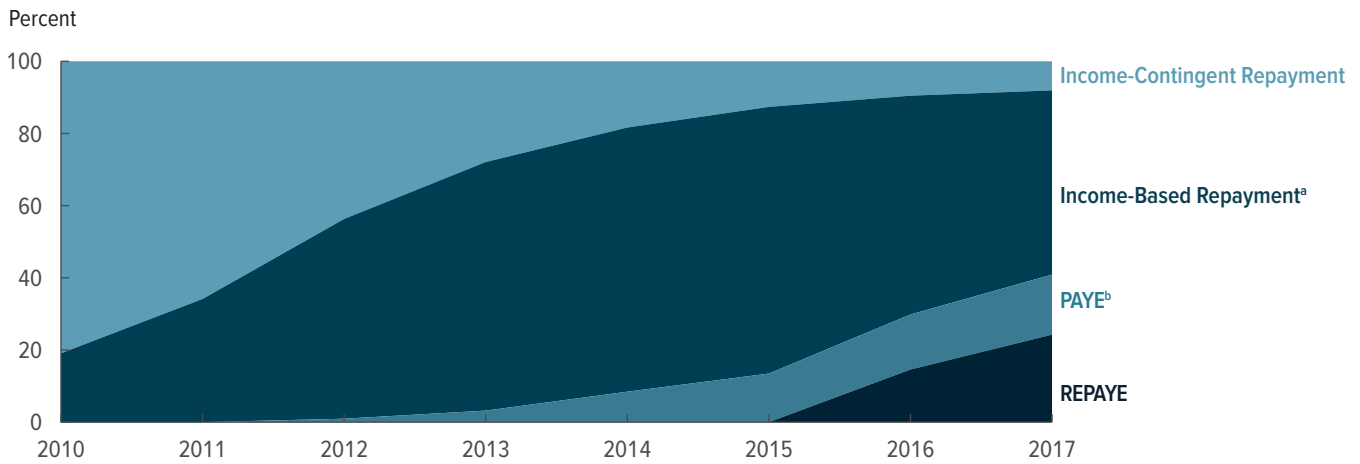
than borrowers in fixed-payment plans. Among borrowers who began repaying their loans in 2012, those who enrolled in an income-driven plan by the end of 2013 were about half as likely as those in fixed-payment plans to default on their loans by 2017 (see Figure 2-6 on page 17).

Borrowers in income-driven plans could be less likely to default for various reasons. For example, given that borrowers are automatically enrolled in a 10-year fixed-payment plan unless they select another plan, those who choose other options may have greater financial literacy. Alternatively, borrowers in income-driven plans may be less likely to default because those plans keep payments at a more manageable level when borrowers have low income.

3. CBO's analysis excluded borrowers who defaulted on their loans.

Figure 2-3.

**Distribution of Student Debt in Income-Driven Repayment Plans, 2010 to 2017**



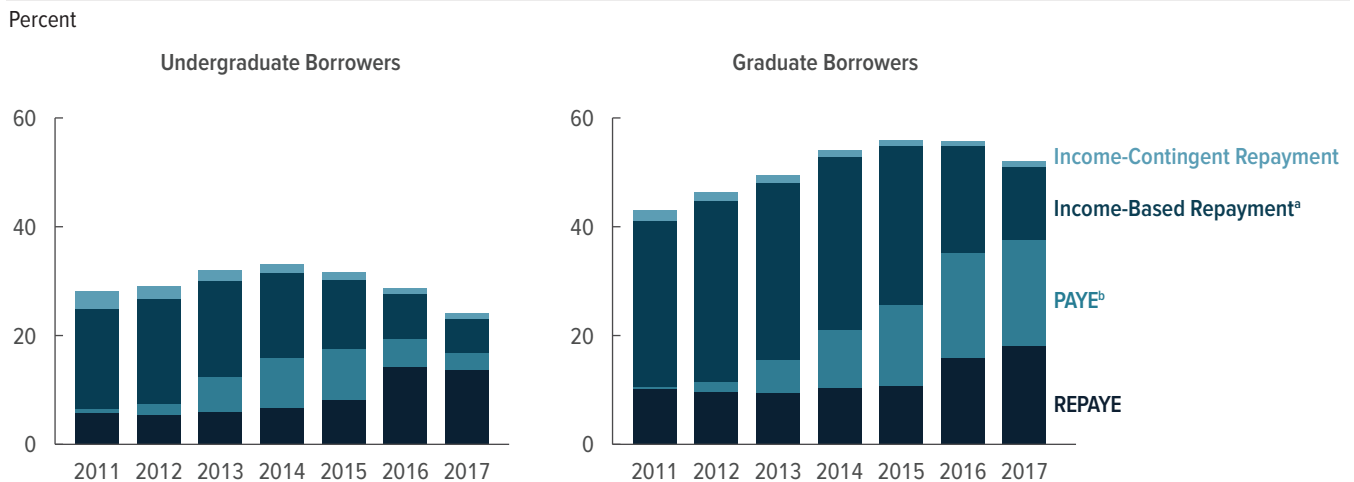
Source: Congressional Budget Office, using data from the Department of Education’s National Student Loan Data System.

PAYE = Pay as You Earn; REPAYE = Revised Pay as You Earn.

- a. Loans in this category are those repaid through the original income-based repayment plan, which covers borrowers who took out loans before July 1, 2014.
- b. This category combines loans repaid through the PAYE plan with those repaid through the updated income-based repayment plan, which covers borrowers who first took out loans on or after July 1, 2014, and has very similar terms.

Figure 2-4.

**Percentage of the Disbursed Volume of Loans in Each Income-Driven Plan in 2017, by Borrowers’ First Year of Repayment**



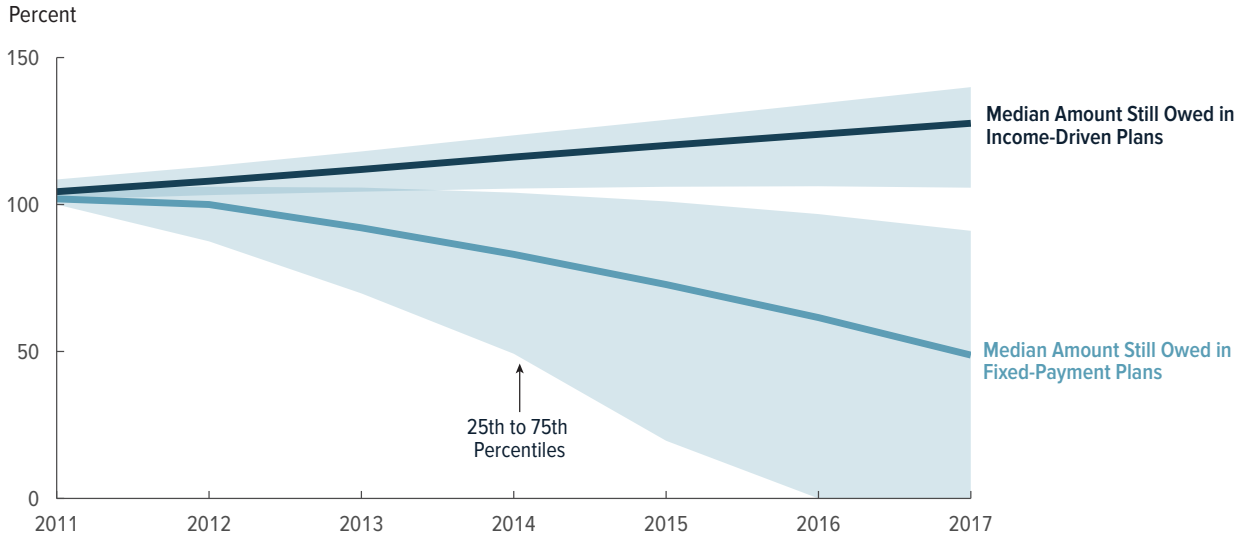
Source: Congressional Budget Office, using data from the Department of Education’s National Student Loan Data System.

PAYE = Pay as You Earn; REPAYE = Revised Pay as You Earn.

- a. Loans in this category are those repaid through the original income-based repayment plan, which covers borrowers who took out loans before July 1, 2014.
- b. This category combines loans repaid through the PAYE plan with those repaid through the updated income-based repayment plan, which covers borrowers who first took out loans on or after July 1, 2014, and has very similar terms.

Figure 2-5.

**Percentage of Original Balance Remaining for Borrowers Who Began Repaying Loans in 2012, by Type of Repayment Plan**

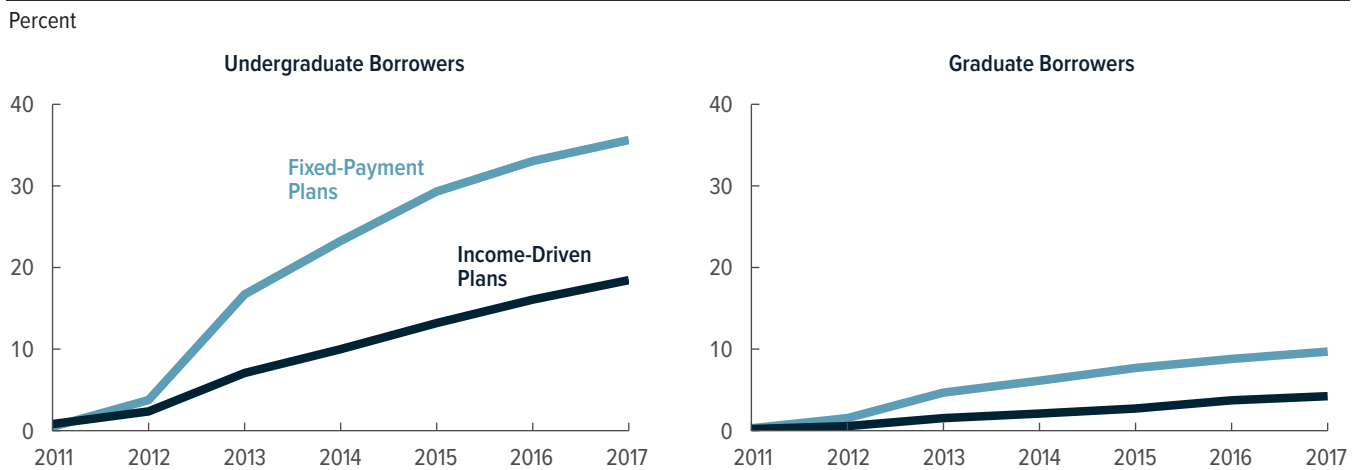


Source: Congressional Budget Office, using data from the Department of Education’s National Student Loan Data System.

CBO examined borrowers who began repaying their loans in 2012 because the number of borrowers and the volume of loans in income-driven plans had begun increasing by that year and the borrowers’ payments for the next several years could be observed. Borrowers who defaulted on their loans were excluded from the analysis.

Figure 2-6.

**Cumulative Default Rates of Borrowers Who Began Repaying Loans in 2012, by Type of Repayment Plan**



Source: Congressional Budget Office, using data from the Department of Education’s National Student Loan Data System.

In this figure, borrowers are categorized as repaying through an income-driven plan if they were enrolled in such a plan in their first or second year of repayment.



## Chapter 3: The Budgetary Costs of Income-Driven Repayment Plans

The Congressional Budget Office projects that \$1.05 trillion in student loans will be disbursed between 2020 and 2029, increasing the deficit by \$10.7 billion during that period.<sup>1</sup> That increase is largely due to loans in income-driven repayment plans, which are projected to result in costs to the government, rather than loans in fixed-payment plans, which are projected to result in gains. Specifically, CBO projects that \$490.4 billion in student loans disbursed over the 2020–2029 period will be repaid through income-driven plans, with a lifetime cost to the government of \$82.9 billion. By contrast, \$562.7 billion of loans will be repaid through fixed-payment plans, with a lifetime cost of –\$72.2 billion.<sup>2</sup>

To estimate the costs of student loans in income-driven plans, CBO projected the expected cash flows from those loans over the duration of their repayment. To that end, CBO projected the earnings and resulting loan payments of borrowers enrolled in the plans, using historical information on recent borrowers. (For more details on CBO’s analytic method, see Appendix B.)

Several factors explain the larger projected costs of loans repaid through income-driven plans. In CBO’s assessment, borrowers who enroll in such plans take out larger loans and have less income, on average, than borrowers in fixed-payment plans. Because payments in income-driven plans are a percentage of the borrowers’ income, many of those borrowers are expected to make reduced payments. A considerable share of their loans

is also expected to be forgiven. For those reasons, loans in income-driven repayment plans are projected to have higher subsidy rates—that is, greater costs as a share of loan dollars disbursed—than loans in fixed-payment plans over the next 10 years.

### How the Cost of Student Loans Is Calculated

CBO calculates the costs of the student loan program following the procedures specified in the Federal Credit Reform Act of 1990. FCRA estimates are used in the federal budget for most credit programs, including the student loan program. CBO prepares fair-value estimates as well to provide a more comprehensive picture of the programs’ long-term costs.<sup>3</sup> (For information about those estimates, see Box 3-1.) This report focuses on costs estimated under FCRA rules because CBO uses those estimates in its baseline budget projections.

Under FCRA, a loan’s lifetime cost to the government is described as a subsidy. It is measured by projecting all of the expected future cash flows associated with the loan and then discounting those projected cash flows to their present value at the date the loan is disbursed (for an example, see Appendix A).<sup>4</sup> (Discounting reflects the fact that a dollar collected in the future is less valuable than a dollar today.) A positive subsidy means that the loan has a net cost. A negative subsidy means that the present value of all future cash flows from the loan, including interest and fees, exceeds the government’s cost of making the loan—in other words, the loan results in a net gain.<sup>5</sup>

1. This report focuses on Stafford loans to undergraduate and graduate students and PLUS loans to graduate students. PLUS loans to the parents of students are not eligible for repayment through most income-driven plans and have been excluded from the analysis. In August 2019, CBO estimated that \$156 billion of such loans would be disbursed between 2020 and 2029; because the rate of repayment for those loans is expected to be relatively high, CBO projected that they would decrease the deficit by \$48.2 billion.

2. The estimates in this report exclude the administrative costs of disbursing and servicing loans.

3. Those fair-value estimates are provided as supplemental information, as requested by the Congress most recently in the House’s budget resolution, H. Con. Res. 71, in October 2017.

4. Following FCRA guidelines, CBO discounts cash flows associated with loans using interest rates on Treasury securities from the year the loans were disbursed.

5. For information on how the budgetary treatment of credit programs differs from that of noncredit programs, see Congressional Budget Office, *Cash and Accrual Measures in Federal Budgeting* (January 2018), [www.cbo.gov/publication/53461](http://www.cbo.gov/publication/53461).

## Box 3-1.

**Fair-Value Estimates of the Cost of Student Loans**

The Congressional Budget Office measures the costs of the student loan program using two approaches: a standard approach based on the procedures required by the Federal Credit Reform Act of 1990 (FCRA) and, when requested, an alternative fair-value approach. Under the FCRA approach, estimated costs are the average projected cash flows of the program, discounted using interest rates on Treasury securities, which reflect the cost of the debt the government issues to fund the loans. Under the fair-value approach, estimated costs further reflect the compensation a private investor would require to undertake the risk of making those loans. In CBO's view, those estimates are a more comprehensive measure of the costs of student loans than FCRA estimates.

The costs of the student loan program appear lower when estimated using FCRA procedures because they do not include the cost of market risk, which is the risk that arises because borrowers are more likely to default on their debt obligations when the economy is weak. Fair-value estimates account for the cost of that financial risk as expressed through approximations of market prices—in particular, the higher interest rates that private lenders would charge if they were to offer loans with similar terms. Fair-value estimates can help policymakers understand trade-offs when considering some different types of legislation.

For federal loans issued to students over the 2020–2029 period, the average projected subsidy rate (that is, the

cost as a share of the originally disbursed amount) is 1 percent when measured under the FCRA approach but 25 percent when measured under the fair-value approach (see the table). The higher fair-value estimate reflects the fact that a private lender would require borrowers to pay an interest rate that compensated for the market risk associated with the loans; the loan is subsidized in the sense that the government charges borrowers a lower rate than they would receive from private lenders.

Income-driven plans involve more market risk than fixed-payment plans because of their formulas for required payments and their forgiveness of borrowers' unpaid balances. If the economy performs poorly, borrowers' earnings will be more likely to decrease, lowering their required payments under income-driven plans. Those reduced payments will eventually lead to more loan forgiveness. (That additional risk is partly offset because borrowers in income-driven plans are less likely than borrowers in fixed-payment plans to default on their loans.) Under the FCRA approach, the average projected subsidy rate is –12.8 percent for loans in fixed-payment plans and 16.9 percent for loans in income-driven plans. Under the fair-value approach, the average projected subsidy rate is 9.1 percent for loans in fixed-payment plans and 43.1 percent for loans in income-driven plans. The difference is larger under the fair-value approach because the estimates account for market risk.

	FCRA Estimate	Fair-Value Estimate
All Federal Loans		
Subsidy (Billions of dollars)	11	263
Subsidy rate (Percent)	1.0	25.0
Loans in Fixed-Payment Plans		
Subsidy (Billions of dollars)	-72	51
Subsidy rate (Percent)	-12.8	9.1
Loans in Income-Driven Plans		
Subsidy (Billions of dollars)	83	212
Subsidy rate (Percent)	16.9	43.1

Source: Congressional Budget Office, using data from the Department of Education's National Student Loan Data System.

A subsidy rate expresses the subsidy cost of a loan in cents per dollar disbursed. Like the subsidy cost, it reflects the value of all future cash flows associated with the loan. Under the FCRA approach, those cash flows are discounted to their net value at the time of the loan's disbursement using interest rates on Treasury securities and represent the budgetary effect of the loans. Under the fair-value approach, the cash flows are discounted using interest rates in the private market.

FCRA = Federal Credit Reform Act of 1990.



To estimate the cost of the student loan program under FCRA, CBO allocates payments from borrowers to the loans they took out while in school. Borrowers with multiple loans generally make just one monthly payment, even if they took out different types of loans in different years. For example, a student pursuing an undergraduate degree might take out both subsidized Stafford and unsubsidized Stafford loans over four years and repay all of those loans together in an income-driven plan. CBO proportionally allocates amounts from such payments to each of the borrower's original loans, using weights that are based on each loan's outstanding balance and interest rate.

Student loan repayment plans affect the budget not only through their subsidy costs but through their effect on tax revenues. In both fixed-payment and income-driven plans, student loan interest may be tax deductible in the tax year in which it is paid. Those tax deductions reduce federal revenues. In addition, borrowers whose loans are forgiven must include the unpaid balance in their taxable income for that year (unless the loans are forgiven through the Public Service Loan Forgiveness program). Income taxes forgone through deductions for interest payments or collected on forgiven balances are not included in the estimated budgetary costs of the income-driven repayment program in this report.

### **Projected Subsidy Rates for Loans Repaid Through Income-Driven Plans**

In CBO's projections, loans disbursed from 2020 to 2029 and repaid through income-driven plans have an average subsidy rate of 16.9 percent. By contrast, loans repaid through fixed-payment plans have an average subsidy rate of -12.8 percent. In other words, for every dollar spent on loans that are repaid through income-driven plans, the government is expected to lose 16.9 cents, and for every dollar spent on loans that are repaid through fixed-payment plans, it is expected to gain 12.8 cents.

Estimates of the subsidy cost of loans in income-driven plans include loans forgiven through the PSLF program. Because the PSLF program speeds up the forgiveness of loans, borrowers in the program may make far fewer payments than they otherwise would have. As a result, the average subsidy rates are much higher for their loans than for other loans in income-driven plans—which pushes up the average costs for all the loans.

Projected subsidy rates differ for undergraduate and graduate borrowers. Over the 2020–2029 period, loans in income-driven plans are projected to have average subsidy rates of 15.9 percent for undergraduate borrowers and 17.5 percent for graduate borrowers (see Table 3-1). (Appendix C provides separate projections for subsidized Stafford loans, unsubsidized Stafford loans to undergraduate and graduate students, and PLUS loans to graduate students.)

Projected subsidy rates also differ for loans in different income-driven repayment plans (see Table 3-2). (For projected subsidy rates for different types of loans, see Appendix C.) In CBO's projections, loans in the original income-based repayment plan have the lowest subsidy rates, on average, because that plan requires borrowers to pay a larger share of their earnings for a longer period of time than the Pay as You Earn or Revised Pay as You Earn plans. (For this analysis, CBO excluded loans repaid through the income-contingent repayment plan because very few recent borrowers are enrolled in that plan.)<sup>6</sup> Average projected subsidy rates are highest for loans in the PAYE plan.

The PAYE and REPAYE plans have similar terms, but two differences make subsidy rates lower, on average, for loans in the REPAYE plan. First, the PAYE plan caps payments at the amount a borrower would owe in the standard 10-year fixed-payment plan. By contrast, payments in the REPAYE plan are not capped, which means that borrowers end up repaying a larger share of their principal before their loans are forgiven. Second, all borrowers in the PAYE plan receive loan forgiveness after 20 years of repayment, but for graduate borrowers in the REPAYE plan, loan forgiveness takes 25 years. That longer repayment term reduces the subsidy rates for graduate borrowers' loans. A third difference partly offsets those two effects: The REPAYE plan's interest subsidy reduces borrowers' unpaid interest by half, which reduces some borrowers' total payments.

### **Forgiveness of Loans in Income-Driven Plans**

Because loan forgiveness ends borrowers' payments, it reduces cash flows to the government and raises the subsidy cost of the student loan program. Borrowers

6. Generally, borrowers select the ICR plan only if it is the sole income-driven plan for which they are eligible, as is the case for borrowers whose consolidation loan includes a parent's PLUS loan.

Table 3-1.

**Volume and Subsidy Rates of Loans, by Type of Repayment Plan, 2020 to 2029**

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2020– 2029 <sup>a</sup>
<b>All Federal Loans</b>											
Loans to Undergraduate Borrowers											
Volume (Billions of dollars)	45.4	46.6	48.1	49.7	51.6	53.3	55.1	57.1	59.2	61.5	527.5
Subsidy rate (Percent)	1.4	3.7	4.6	4.9	4.9	4.9	4.9	4.8	4.7	4.7	4.4
Loans to Graduate Borrowers											
Volume (Billions of dollars)	42.6	44.7	47.0	49.3	51.2	53.4	55.7	58.1	60.6	63.1	525.7
Subsidy rate (Percent)	-6.0	-2.6	-1.7	-1.8	-1.8	-2.1	-1.8	-2.5	-2.3	-2.0	-2.4
<b>Loans in Fixed-Payment Plans</b>											
Loans to Undergraduate Borrowers											
Volume (Billions of dollars)	27.9	28.8	29.8	31.0	32.4	33.7	35.1	36.7	38.4	40.3	334.0
Subsidy rate (Percent)	-5.3	-3.3	-2.3	-2.0	-2.0	-1.8	-1.8	-1.7	-1.7	-1.6	-2.3
Loans to Graduate Borrowers											
Volume (Billions of dollars)	18.1	19.1	20.1	21.2	22.1	23.3	24.4	25.6	26.8	28.1	228.7
Subsidy rate (Percent)	-31.4	-29.0	-28.2	-28.0	-28.0	-27.9	-27.9	-27.9	-27.8	-27.6	-28.3
<b>Loans in Income-Driven Plans</b>											
Loans to Undergraduate Borrowers											
Volume (Billions of dollars)	17.5	17.8	18.3	18.7	19.2	19.6	20.0	20.4	20.8	21.2	193.5
Subsidy rate (Percent)	12.1	14.8	15.9	16.3	16.4	16.5	16.7	16.7	16.6	16.6	15.9
Loans to Graduate Borrowers											
Volume (Billions of dollars)	24.5	25.6	26.9	28.1	29.0	30.1	31.3	32.5	33.8	35.0	297.0
Subsidy rate (Percent)	12.9	17.1	18.1	18.0	18.1	17.8	18.6	17.4	17.8	18.6	17.5

Source: Congressional Budget Office, using data from the Department of Education's National Student Loan Data System.

A subsidy rate reflects the government's cost for a loan in cents per dollar disbursed. By law, the costs of federal student loans are measured using procedures prescribed in the Federal Credit Reform Act of 1990. Subsidy costs do not include the administrative costs of disbursing and servicing loans.

Loans in income-driven plans include loans that receive forgiveness through the Public Service Loan Forgiveness program.

a. Values for the volume of loans are cumulative totals; values for subsidy rates are averages.

in income-driven plans receive forgiveness of their outstanding balances after 20 or 25 years of qualifying payments. Borrowers in the PSLF program receive forgiveness after 10 years of payments if they work for public-service employers throughout that period.

CBO projects that a greater share of graduate borrowers' loans than undergraduate borrowers' loans will be forgiven. Graduate borrowers are projected to hold 50 percent of the volume of student loans disbursed from 2020 to 2029—including 61 percent of the volume of loans in income-driven plans—but to account for 81 percent of the amount that is forgiven.

For loans disbursed to undergraduate students between 2020 and 2029, CBO estimates that an outstanding balance of \$40.3 billion, in present-value terms, will

ultimately be forgiven.<sup>7</sup> For loans made to graduate students over the same period, CBO estimates that the forgiven balance will be much larger, amounting to \$167.1 billion in present-value terms. Those forgiven balances represent 21 percent of the amount disbursed to undergraduate borrowers and 56 percent of the amount disbursed to graduate borrowers (see Table 3-3). For comparison, the present value of the payments on those loans is projected to equal 84 percent of the amount disbursed to undergraduate borrowers and 82 percent

7. Forgiven amounts are discounted to their present value in the year the loans were disbursed, using the discount rates that are used to discount cash flows under FCRA. The undiscounted forgiven amounts are \$84.6 billion for loans to undergraduate students and \$342.8 billion for loans to graduate students.

Table 3-2.

**Average Subsidy Rates, by Type of Loan and Repayment Plan, 2020 to 2029**

Percent

	IBR <sup>a</sup>	PAYE <sup>b</sup>	REPAYE
Loans to Undergraduate Borrowers	4.2	17.0	13.6
Loans to Graduate Borrowers	-6.2	20.9	13.5

Source: Congressional Budget Office, using data from the Department of Education's National Student Loan Data System.

A subsidy rate reflects the government's cost for a loan in cents per dollar disbursed. By law, the costs of federal student loans are measured using procedures prescribed in the Federal Credit Reform Act of 1990. Subsidy costs do not include the administrative costs of disbursing and servicing loans.

CBO excluded one payment plan—the income-contingent repayment plan—from its estimates because the share of borrowers enrolled in that plan is very small.

IBR = income-based repayment; PAYE = Pay as You Earn; REPAYE = Revised Pay as You Earn.

- a. Loans in this category are those repaid through the original income-based repayment plan, which covers borrowers who took out loans before July 1, 2014.
- b. This category combines loans repaid through the PAYE plan with those repaid through the updated income-based repayment plan, which covers borrowers who first took out loans on or after July 1, 2014, and has very similar terms.

of the amount disbursed to graduate borrowers.<sup>8</sup> (See Appendix C for separate projections for subsidized Stafford loans, unsubsidized Stafford loans to undergraduate and graduate students, and PLUS loans to graduate students.)

**Differences by Borrowers' Academic Level**

The difference in projected loan forgiveness for undergraduate and graduate borrowers is driven by two factors. First, graduate students borrow much more, on average, than undergraduate students. Although graduate borrowers are also projected to have greater lifetime earnings, CBO expects that a larger share of those borrowers will have income too low to fully repay their loans through income-driven plans. Second, interest rates are considerably higher for loans to graduate students than loans to undergraduate students. Compared with Stafford loans to undergraduate students, Stafford loans to graduate students have interest rates that are 1.55 percentage points higher, and PLUS loans to graduate students have interest rates that are 2.55 percentage points higher. Those higher interest rates cause unpaid interest to accrue at faster rates for graduate students' loans.

That faster accrual of interest, combined with required payments that do not cover the accruing interest, can lead graduate borrowers' debt burden to increase over time. As a result, CBO expects that graduate borrowers in income-driven plans will be more likely than undergraduate borrowers to have outstanding balances larger than the amount they originally borrowed—at least in the initial years of repayment. Such borrowers are also likely to have more debt forgiven.

**Differences by Borrowers' Original Balances and Earnings**

On average, borrowers who take out larger loans are projected to have a larger share of their original balance forgiven. CBO projects that over the 2020–2029 period, undergraduate borrowers who take out the smallest loans (those in the lowest quintile, or fifth, of the distribution of original loan balances) will have an average of \$40, or 1 percent of the disbursed amount, forgiven; for graduate borrowers, that amount is \$700, or 2 percent of the disbursed amount. (Those quintiles include borrowers in fixed-payment plans, who necessarily receive no forgiveness.) By contrast, undergraduate borrowers who take out the largest loans (those in the highest quintile) are projected to have an average of \$6,000, or 12 percent of the disbursed amount, forgiven; for graduate borrowers, that amount is \$118,000, or 53 percent of the disbursed amount.

8. Those percentages sum to more than 100 percent because both the forgiven and repaid amounts include accrued interest, and the loan interest rates are higher than the discount rates.

Table 3-3.

### Disbursed, Forgiven, and Paid Amounts of Loans Issued From 2020 to 2029 and Repaid Through Income-Driven Plans

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2020–2029 <sup>a</sup>
<b>Loans to Undergraduate Borrowers</b>											
Disbursement (Billions of dollars)	17.5	17.8	18.3	18.7	19.2	19.6	20.0	20.4	20.8	21.2	193.5
Forgiven Balance (Billions of dollars)	4.2	4.0	3.9	3.9	4.0	4.0	4.1	4.1	4.0	4.1	40.3
Percentage of Disbursement Forgiven	23.9	22.7	21.4	21.1	20.7	20.7	20.4	19.9	19.4	19.3	20.9
Percentage of Disbursement Repaid	87.9	85.2	84.1	83.7	83.6	83.5	83.3	83.3	83.4	83.4	84.1
<b>Loans to Graduate Borrowers</b>											
Disbursement (Billions of dollars)	24.5	25.6	26.9	28.1	29.0	30.1	31.3	32.5	33.8	35.0	297.0
Forgiven Balance (Billions of dollars)	15.5	15.4	15.4	15.8	16.3	16.4	17.1	17.6	18.2	19.4	167.1
Percentage of Disbursement Forgiven	63.3	60.1	57.1	56.2	56.1	54.3	54.5	54.1	53.9	55.5	56.3
Percentage of Disbursement Repaid	87.1	82.9	81.9	82.0	81.9	82.2	81.4	82.6	82.2	81.4	82.5

Source: Congressional Budget Office, using data from the Department of Education's National Student Loan Data System.

Loans in income-driven plans include loans that are forgiven through the Public Service Loan Forgiveness program.

Forgiven debt and payments are expressed as present values. To calculate those present values, CBO used the interest rates on Treasury securities to translate future cash flows into current dollars in the years loans would be disbursed.

Forgiven balances and payments add up to more than 100 percent because they include accrued interest.

a. Values for disbursements and forgiven balances are cumulative totals; values for the percentage of disbursements forgiven or repaid are averages.

In addition, among students who borrow similar amounts, those with lower earnings are projected to have a greater share of their loans forgiven (see Figure 3-1). For instance, among graduate students who take out the largest loans, those with the lowest earnings (in the bottom quintile of the distribution of earnings) are projected to have an average of \$161,000, or 77 percent of their disbursed amount, forgiven, whereas those with the highest earnings (in the top quintile) are projected to have an average of \$57,000, or 21 percent of their disbursed amount, forgiven.

Accounting for differences in the size of loans, CBO also expects a greater share of forgiven student debt to be held by borrowers with the lowest earnings (see Figure 3-2). However, that pattern is weaker for graduate borrowers with large loans. Among graduate borrowers who take out the largest loans (totaling \$122,000 or more), those with the highest earnings (above \$114,000 per year) are projected to hold 9 percent of the forgiven debt. By contrast, among undergraduate borrowers who take out the largest loans (totaling \$32,000 or more), those with the

highest earnings (above \$69,000 per year) are projected to hold only 3 percent of the forgiven debt.

#### Effects of Loan Forgiveness on Tax Revenues

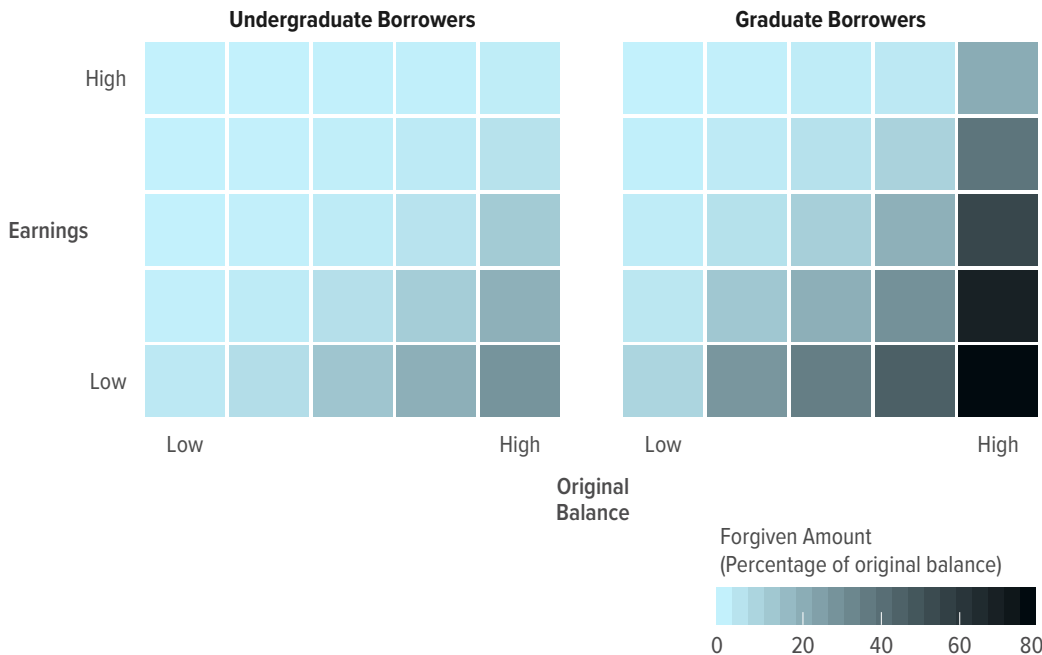
Although loan forgiveness stops a borrower's payments, it still results in tax revenues in most cases because the forgiven amount is included in the borrower's taxable income. In the budget, the effects of tax revenues are recorded in the year those taxes are collected. Taxes on the forgiven balances of loans issued between 2020 and 2029 will be collected in 2040 at the earliest. Thus, CBO's estimates of the costs of student loans exclude those effects.

However, including those effects in estimates of the loans' lifetime costs to the government could be informative to policymakers. In CBO's assessment, doing so would reduce the average subsidy rate of loans in income-driven plans.

To approximate the present value of revenues from forgiven loans, one would multiply the average effective

Figure 3-1.

### Forgiveness of Loans Issued From 2020 to 2029, by Borrowers' Projected Earnings and Original Balance



Source: Congressional Budget Office.

Each square represents borrowers in one quintile, or fifth, of the distribution of projected earnings and one quintile of the distribution of original loan balances. Those quintiles include borrowers in fixed-payment plans, who are not eligible for loan forgiveness, and borrowers in the Public Service Loan Forgiveness program.

Earnings and original loan balances were measured in 2020 dollars. Forgiven amounts were discounted to their present value in the year of the loans' disbursement, using the interest rates on Treasury securities.

Earnings were calculated as projected average annual earnings within the first 20 years after borrowers began repaying their loans. Earnings in the lowest quintile are under \$22,000 per year for undergraduate borrowers and under \$40,000 per year for graduate borrowers; earnings in the highest quintile are \$69,000 or more per year for undergraduate borrowers and \$114,000 or more per year for graduate borrowers.

Original loan balances in the lowest quintile are \$6,000 or less for undergraduate borrowers and \$37,000 or less for graduate borrowers. Original loan balances in the highest quintile are over \$32,000 for undergraduate borrowers and over \$122,000 for graduate borrowers.

tax rate that would apply to the forgiven balances included in borrowers' income by the present value of those balances.<sup>9</sup> For example, if the average effective tax rate would be 20 percent and the present value of the

forgiven balances was equal to 50 percent of the original loans, then the present value of the expected tax revenues from forgiveness would equal 10 percent of the disbursed amount. Thus, including those revenues in the subsidy estimate would reduce the subsidy rate by 10 percentage points.<sup>10</sup> (That calculation cannot be directly applied to the results in Table 3-3 because the forgiven amounts shown there include balances forgiven under the PSLF program, which are not taxable.)

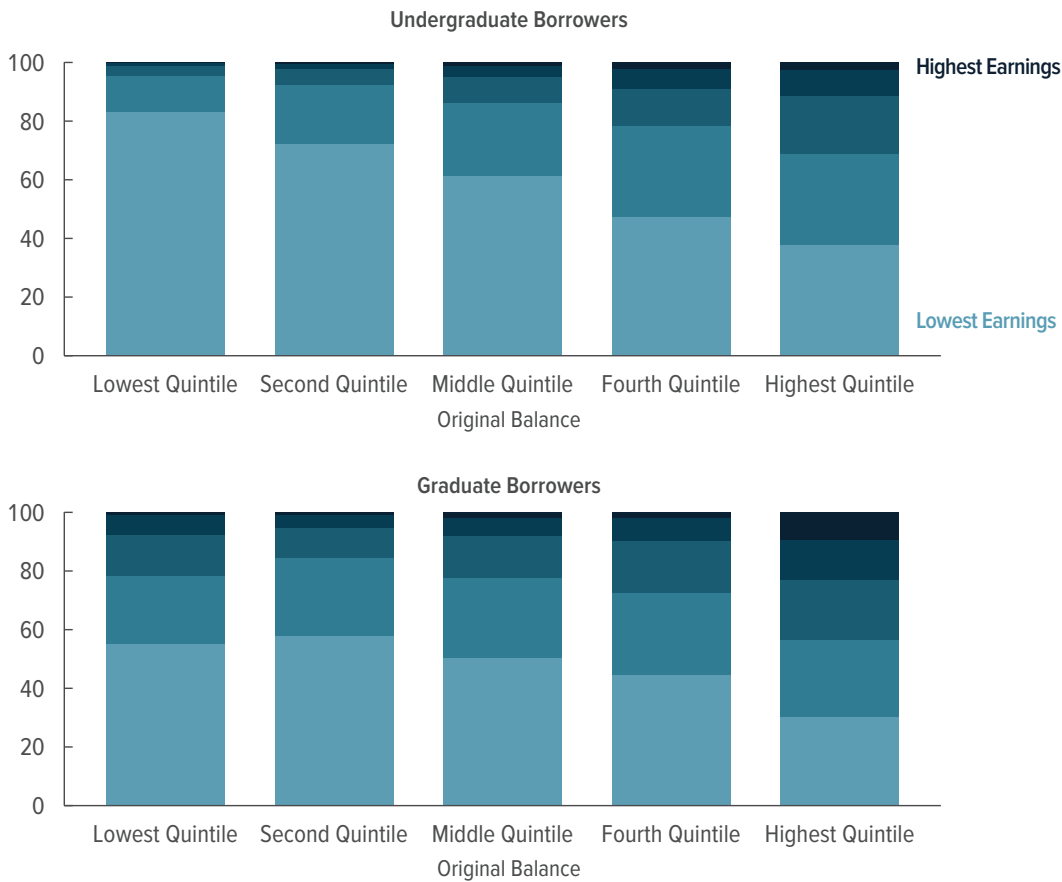
9. This calculation incorporates the assumption that borrowers would pay the tax on their forgiven balances. However, because borrowers whose loans are forgiven are likely to have lower income, they might be unable to pay the tax, which could be several times larger than their average annual loan payment. If borrowers did not pay the tax in full, the Internal Revenue Service would start a collection process. Borrowers could apply to pay through an installment plan or have the amount they owe reduced if paying it would be an economic hardship.

10. Many borrowers in income-driven plans pay more interest than they would in fixed-payment plans and can therefore deduct more from their taxes. Those deductions would partially offset the revenues obtained through taxing loan forgiveness.

Figure 3-2.

**Distribution of Forgiven Student Debt Issued From 2020 to 2029, by Borrowers' Projected Earnings and Original Balance**

Percent



Source: Congressional Budget Office, using data from the Department of Education's National Student Loan Data System.

Each borrower is grouped into one quintile, or fifth, of the distribution of projected earnings and one quintile of the distribution of original loan balances. Those quintiles include borrowers in fixed-payment plans, who are not eligible for loan forgiveness, and borrowers in the Public Service Loan Forgiveness program.

Earnings and original loan balances were measured in 2020 dollars. Forgiven amounts were discounted to their present value in the year of the loans' disbursement, using the interest rates on Treasury securities.

Earnings were calculated as projected average annual earnings within the first 20 years after borrowers began repaying their loans. Earnings in the lowest quintile are under \$22,000 per year for undergraduate borrowers and under \$40,000 per year for graduate borrowers; earnings in the highest quintile are \$69,000 or more per year for undergraduate borrowers and \$114,000 or more per year for graduate borrowers.

Original loan balances in the lowest quintile are \$6,000 or less for undergraduate borrowers and \$37,000 or less for graduate borrowers. Original loan balances in the highest quintile are over \$32,000 for undergraduate borrowers and over \$122,000 for graduate borrowers.

# 4

## Chapter 4: Policy Options

The Congressional Budget Office analyzed two broad sets of policy options that would modify income-driven repayment plans: options that would change the availability of such plans and options that would change how borrowers' required payments are calculated. The options CBO analyzed are either similar to policies lawmakers have considered in the past or useful for illustrating how certain aspects of the plans affect the budget. CBO estimated how each of the options would affect the cost of the student loan program over the next 10 years, using procedures prescribed by the Federal Credit Reform Act of 1990.<sup>1</sup> (Estimates of the options' costs on a fair-value basis are available as supplemental material accompanying this report.)

The options in the first category would change the availability of income-driven plans by:

- Making the Revised Pay as You Earn plan the only income-driven repayment plan,
- Making that plan the only repayment plan in the student loan program, or
- Eliminating income-driven repayment plans altogether.

All of the options in the second category would be combined with that first option—making the REPAYE plan the only income-driven repayment plan—and would change borrowers' payments by:

- Adjusting the share of discretionary income used to calculate required loan payments,
- Adjusting the definition of discretionary income, or
- Adjusting the timing of loan forgiveness.

The costs of the options in the first category are measured in relation to CBO's August 2019 baseline projections. The costs of options in the second category are measured in relation to the cost of the first option.

Considerable uncertainty surrounds the budgetary effects of all the options. In general, CBO expects that borrowers would be more likely to enroll in income-driven plans under policies that made the terms more favorable and less likely to enroll under policies that made the terms less favorable. CBO adjusted the estimated costs of loans under the options to account for such behavioral effects. However, each option could alter students' incentives and affect whether they took out loans, how much they borrowed, or whether they chose to attend school at all.<sup>2</sup> That is especially true for the options that would bring about the most dramatic changes (eliminating income-driven repayment plans or making the REPAYE plan mandatory). Most of the estimates in this report do not account for those complex factors. (The only exception is the estimate for the policy to eliminate all income-driven repayment plans, which incorporates a small decrease in borrowing for graduate school.)

Costs are presented separately for loans to undergraduate students and loans to graduate students. Approximate costs of policies that would affect undergraduate and graduate students differently can be estimated by combining the cost of one policy for undergraduate students with the cost of another for graduate students. For example, the cost of expediting loan forgiveness for undergraduate borrowers and delaying it for graduate borrowers can be approximated by combining the corresponding estimates.<sup>3</sup>

1. Effects on the administrative costs of disbursing or servicing loans or on tax revenues are not included in the estimates.

2. For a discussion of how federal student aid affects incentives to obtain higher education, see Congressional Budget Office, *Federal Aid for Postsecondary Students* (June 2018), [www.cbo.gov/publication/53736](http://www.cbo.gov/publication/53736).

3. That combination would only approximate the total cost because the policy for graduate borrowers would apply to loans they took out for undergraduate study.

## Options That Would Change the Availability of Income-Driven Repayment Plans

The three options examined here would simplify income-driven repayment, expand the use of income-driven repayment plans, or eliminate them altogether. Each of the policies would apply to borrowers who took out their first loan on or after July 1, 2020. The effect of the policies would increase over time as a greater share of loans was held by those borrowers.

The first two options would make the REPAYE plan the only income-driven plan. CBO focused on that plan because it is the newest income-driven repayment plan and because, like plans proposed in the President's budget for fiscal year 2020 and by the Promoting Real Opportunity, Success, and Prosperity through Education Reform (PROSPER) Act (H.R. 4508), Aim Higher Act (H.R. 6543), and College Affordability Act (H.R. 4674), it does not cap borrowers' payments.

### Make the REPAYE Plan the Only Income-Driven Repayment Plan

Many policy proposals have sought to simplify income-driven repayment by reducing borrowers' options to a single income-driven plan.<sup>4</sup> Some borrowers are eligible for three or four different plans, and difficulties in choosing one may discourage those borrowers from enrolling in any of them. Under this option, the REPAYE plan would be the only income-driven plan available to borrowers who took out their first loan on or after July 1, 2020.

Under this option, the subsidy (or lifetime cost to the government) of loans issued from 2020 to 2029 would fall by \$22.7 billion, in CBO's estimation—\$4.4 billion for undergraduate borrowers' loans and \$18.3 billion for graduate borrowers' loans (see Table 4-1). Costs would fall because, in CBO's assessment, most new borrowers would otherwise have enrolled in the PAYE plan, and subsidy rates for loans in that plan are about 5 percentage points higher, on average, than for loans repaid through the REPAYE plan. (In other words, for each dollar disbursed, the government spends about 5 cents

less for loans that are repaid through the REPAYE plan.) In 2029, the policy would apply to almost all new loans because almost all borrowers in that year would have first borrowed after July 1, 2020, as required for the policy to apply. Average subsidy rates would be 1.1 percentage points lower for undergraduate borrowers' loans and 5.3 percentage points lower for graduate borrowers' loans (see Table 4-2).

### Make the REPAYE Plan the Only Repayment Plan

Under current law, if borrowers do not select a plan at the start of their repayment period, they are automatically enrolled in the standard repayment plan, in which borrowers fully pay off their loan balance after 10 years of fixed monthly payments. Borrowers can select other plans for which they are eligible, but some research has suggested that borrowers are not aware of their options. In 2015, for example, the Government Accountability Office advised the Department of Education to consistently and regularly notify borrowers about income-driven repayment plans because many borrowers who would benefit from the plans were not participating in them.<sup>5</sup>

Under this option, borrowers who took out their first loan on or after July 1, 2020, would automatically be enrolled in the REPAYE plan when their repayment period began and could not choose any other plan. The policy would make the student loan program more like the student loan programs of countries such as Australia and the United Kingdom, where the only available repayment plans are income-driven plans (see Box 1-1 on page 7). It would also prevent borrowers who would benefit from such plans from failing to enroll because of a lack of information.

In CBO's estimation, making the REPAYE plan the only repayment plan would increase the subsidy cost of loans disbursed over the 2020–2029 period by \$33.5 billion—\$16.0 billion for loans to undergraduate students and \$17.6 billion for loans to graduate students (see Table 4-1). In 2029, when the policy would apply to almost all new loans, the average subsidy rates for loans to undergraduate and graduate students would be

4. CBO provided estimates of such proposals in *An Analysis of the President's 2020 Budget* (May 2019), [www.cbo.gov/publication/55195](http://www.cbo.gov/publication/55195); cost estimate for H.R. 4508, Promoting Real Opportunity, Success, and Prosperity through Education Reform Act (February 6, 2018), [www.cbo.gov/publication/53547](http://www.cbo.gov/publication/53547); and cost estimate for H.R. 4674, College Affordability Act (December 10, 2019), [www.cbo.gov/publication/55939](http://www.cbo.gov/publication/55939).

5. See Government Accountability Office, *Education Could Do More to Help Ensure Borrowers Are Aware of Repayment and Forgiveness Options*, GAO-15-663 (August 25, 2015), [www.gao.gov/products/GAO-15-663](http://www.gao.gov/products/GAO-15-663).



Table 4-1.

### Change in the Subsidy Cost of Student Loans Under Options That Would Change Income-Driven Repayment, 2020 to 2029

Billions of Dollars

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total, 2020– 2029
<b>Options That Would Change the Availability of Income-Driven Repayment Plans<sup>a</sup></b>											
Make REPAYE the Only Income-Driven Repayment Plan											
Undergraduate borrowers' loans	-0.2	-0.2	-0.3	-0.3	-0.4	-0.5	-0.6	-0.6	-0.7	-0.7	-4.4
Graduate borrowers' loans	-0.3	-0.7	-0.9	-1.2	-1.5	-1.9	-2.3	-2.8	-3.2	-3.4	-18.3
Make REPAYE the Only Repayment Plan											
Undergraduate borrowers' loans	0.4	0.5	0.8	1.1	1.4	1.7	2.0	2.4	2.7	2.9	16.0
Graduate borrowers' loans	0.3	0.6	0.9	1.2	1.6	1.9	2.4	2.6	2.9	3.1	17.6
Eliminate All Income-Driven Repayment Plans											
Undergraduate borrowers' loans	-1.0	-1.2	-1.5	-1.9	-2.3	-2.7	-3.2	-3.6	-3.8	-3.9	-25.1
Graduate borrowers' loans	-2.2	-4.1	-5.4	-6.9	-8.6	-10.3	-12.4	-14.1	-15.9	-17.0	-96.9
<b>Options That Would Change How Borrowers' Payments Are Calculated<sup>b</sup></b>											
Adjust the Share of Discretionary Income Used to Calculate Monthly Payments											
Increase to 12 percent											
Undergraduate borrowers' loans	-0.2	-0.2	-0.3	-0.3	-0.4	-0.4	-0.5	-0.5	-0.6	-0.6	-4.0
Graduate borrowers' loans	-0.4	-0.6	-0.8	-1.1	-1.4	-1.6	-1.9	-2.2	-2.5	-2.6	-15.1
Decrease to 8 percent											
Undergraduate borrowers' loans	0.2	0.3	0.4	0.5	0.6	0.6	0.7	0.8	0.8	0.8	5.8
Graduate borrowers' loans	0.5	0.9	1.1	1.5	1.9	2.2	2.7	3.1	3.4	3.5	20.7
Adjust the Definition of Discretionary Income											
Exclude AGI under 125 percent of the federal poverty guideline											
Undergraduate borrowers' loans	-0.2	-0.2	-0.2	-0.3	-0.4	-0.4	-0.5	-0.6	-0.6	-0.6	-3.9
Graduate borrowers' loans	-0.2	-0.4	-0.5	-0.6	-0.8	-0.9	-1.1	-1.3	-1.4	-1.5	-8.8
Exclude AGI under 175 percent of the federal poverty guideline											
Undergraduate borrowers' loans	0.2	0.2	0.3	0.4	0.4	0.5	0.5	0.6	0.7	0.7	4.4
Graduate borrowers' loans	0.3	0.5	0.7	0.9	1.1	1.3	1.6	1.8	2.0	2.1	12.3
Adjust the Timing of Loan Forgiveness											
Delay by five years											
Undergraduate borrowers' loans	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-3.0
Graduate borrowers' loans	-0.4	-0.6	-0.8	-1.0	-1.2	-1.5	-1.8	-2.1	-2.3	-2.4	-14.1
Accelerate by five years											
Undergraduate borrowers' loans	0.3	0.3	0.4	0.5	0.6	0.7	0.7	0.8	0.8	0.8	6.0
Graduate borrowers' loans	0.6	1.0	1.3	1.7	2.1	2.4	2.9	3.3	3.7	3.8	22.7

Source: Congressional Budget Office.

All options would take effect for new borrowers on or after July 1, 2020.

By law, the costs of federal student loans are measured using procedures prescribed in the Federal Credit Reform Act of 1990. Subsidy costs do not include the administrative costs of disbursing and servicing loans.

AGI = adjusted gross income; REPAYE = Revised Pay as You Earn.

a. Measured in relation to CBO's August 2019 baseline budget projections.

b. Measured in relation to projected costs under the first option, "Make REPAYE the Only Income-Driven Repayment Plan."

Table 4-2.

### Change in the Subsidy Rate for Student Loans Under Options That Would Change Income-Driven Repayment, 2020 to 2029

Percentage Points

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Average, 2020– 2029
<b>Options That Would Change the Availability of Income-Driven Repayment Plans<sup>a</sup></b>											
Make REPAYE the Only Income-Driven Repayment Plan											
Undergraduate borrowers' loans	-0.4	-0.5	-0.6	-0.7	-0.8	-0.9	-1.0	-1.1	-1.2	-1.1	-0.8
Graduate borrowers' loans	-0.8	-1.5	-1.9	-2.4	-3.0	-3.6	-4.2	-4.8	-5.3	-5.3	-3.5
Make REPAYE the Only Repayment Plan											
Undergraduate borrowers' loans	0.8	1.1	1.7	2.2	2.7	3.3	3.6	4.2	4.6	4.8	3.0
Graduate borrowers' loans	0.7	1.4	1.9	2.5	3.2	3.6	4.3	4.5	4.7	4.9	3.3
Eliminate All Income-Driven Repayment Plans											
Undergraduate borrowers' loans	-2.1	-2.5	-3.2	-3.8	-4.5	-5.1	-5.7	-6.3	-6.5	-6.3	-4.8
Graduate borrowers' loans	-5.2	-9.4	-11.7	-14.3	-17.1	-19.6	-22.6	-24.7	-26.6	-27.3	-18.7
<b>Options That Would Change How Borrowers' Payments Are Calculated<sup>b</sup></b>											
Adjust the Share of Discretionary Income Used to Calculate Monthly Payments											
Increase to 12 percent											
Undergraduate borrowers' loans	-0.4	-0.4	-0.5	-0.6	-0.8	-0.8	-0.9	-1.0	-1.0	-0.9	-0.7
Graduate borrowers' loans	-0.8	-1.4	-1.8	-2.2	-2.7	-3.0	-3.5	-3.8	-4.0	-4.1	-2.9
Decrease to 8 percent											
Undergraduate borrowers' loans	0.5	0.6	0.8	0.9	1.1	1.2	1.3	1.4	1.4	1.3	1.1
Graduate borrowers' loans	1.2	2.0	2.4	3.0	3.6	4.2	4.8	5.3	5.5	5.5	3.9
Adjust the Definition of Discretionary Income											
Exclude AGI under 125 percent of the federal poverty guideline											
Undergraduate borrowers' loans	-0.4	-0.4	-0.5	-0.6	-0.7	-0.8	-0.9	-1.0	-1.0	-1.0	-0.7
Graduate borrowers' loans	-0.5	-0.9	-1.1	-1.3	-1.6	-1.8	-2.0	-2.2	-2.4	-2.4	-1.7
Exclude AGI under 175 percent of the federal poverty guideline											
Undergraduate borrowers' loans	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.1	1.1	0.8
Graduate borrowers' loans	0.7	1.2	1.5	1.8	2.2	2.5	2.9	3.1	3.3	3.3	2.3
Adjust the Timing of Loan Forgiveness											
Delay by five years											
Undergraduate borrowers' loans	-0.3	-0.4	-0.4	-0.5	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7	-0.6
Graduate borrowers' loans	-0.9	-1.4	-1.7	-2.1	-2.4	-2.9	-3.2	-3.6	-3.8	-3.8	-2.7
Accelerate by five years											
Undergraduate borrowers' loans	0.7	0.7	0.8	1.0	1.1	1.2	1.3	1.4	1.4	1.3	1.1
Graduate borrowers' loans	1.5	2.3	2.8	3.4	4.0	4.6	5.1	5.7	6.1	6.0	4.3

Source: Congressional Budget Office.

All options would take effect for new borrowers on or after July 1, 2020.

A subsidy rate reflects the government's cost for a loan in cents per dollar disbursed. By law, the costs of federal student loans are measured using procedures prescribed in the Federal Credit Reform Act of 1990. Subsidy costs do not include the administrative costs of disbursing and servicing loans.

AGI = adjusted gross income; REPAYE = Revised Pay as You Earn.

a. Measured in relation to CBO's August 2019 baseline budget projections.

b. Measured in relation to projected costs under the first option, "Make REPAYE the Only Income-Driven Repayment Plan."

4.8 and 4.9 percentage points higher, respectively (see Table 4-2).

Subsidy costs would rise under this option because some borrowers who otherwise would have enrolled in fixed-payment plans would repay their loans more slowly in the REPAYE plan and could have some of their debt forgiven. In CBO's assessment, however, borrowers who enroll in fixed-payment plans under current law borrow less and earn more, on average, than those in income-driven plans. For that reason, CBO expects that they would be more likely to fully repay their loans in the REPAYE plan, which would limit the overall increase in subsidy costs. To simplify the analysis, CBO modeled borrowers as always recertifying their income and making their required payments (rather than optional, larger payments).

Instead of eliminating the other payment plans, policy-makers might prefer to make the REPAYE plan the default plan, like the standard fixed-payment plan under current law. In that case, borrowers would automatically be enrolled in the REPAYE plan when their repayment period began unless they selected an alternative. In CBO's assessment, that policy would have a greater cost to the government than this option because it would allow borrowers to select the plan with the most favorable terms—and thus the largest subsidy—based on their expected earnings.

### **Eliminate All Income-Driven Repayment Plans**

Under this option, income-driven repayment plans would no longer be available for borrowers who took out their first loan on or after July 1, 2020. CBO analyzed this option to provide an estimate of the total cost of income-driven repayment plans, which would be equal to the savings that would come from eliminating them. The estimated costs of this option are very uncertain because the policy is a significant departure from current law. One source of uncertainty is the extent of the decline in borrowing: Some borrowers might not take out loans or even attend college in the absence of income-driven plans.

In CBO's estimation, eliminating income-driven plans would reduce the subsidy cost of student loans over the 2020–2029 period by \$122.0 billion—\$25.1 billion for loans to undergraduate students and \$96.9 billion for loans to graduate students (see Table 4-1 on page 29). (The latter estimate incorporates a small decline

in borrowing by graduate students over the 2020–2029 period. Because their loans would have a negative average subsidy rate, that decline in borrowing reduces the government's net gain from the policy.) In 2029, when the policy would apply to almost all new loans, average subsidy rates would be 6.3 percentage points lower for loans to undergraduate students and 27.3 percentage points lower for loans to graduate students (see Table 4-2).

Subsidy costs would fall because eliminating income-driven plans would end debt forgiveness. CBO also expects that many borrowers who otherwise would have enrolled in such plans would select fixed-payment plans with extended terms to lower their required payments. Those borrowers would accrue and pay more interest than borrowers in 10-year plans, further reducing the subsidy cost for their loans. However, because borrowers who currently enroll in income-driven plans tend to borrow more and earn less than borrowers in fixed-payment plans, CBO expected that they would be more likely to default on their loans in a fixed-payment plan, which would partly offset the reduction in costs.

### **Options That Would Change How Borrowers' Payments Are Calculated**

CBO examined three options that would change borrowers' required payments by changing the share of discretionary income used to calculate those payments, changing the definition of discretionary income, or changing the timing of loan forgiveness. Each of the policies would apply to borrowers who took out their first loan on or after July 1, 2020. Over time, as more of those borrowers began repaying their loans, the effects of each policy would increase.

To simplify the analysis and align the options with recently proposed policies, CBO considered the REPAYE plan to be the only income-driven plan available under all three options. Therefore, each option's budgetary effects are measured in relation to costs under the first option from the previous set. The costs are presented that way to isolate the effects of changing borrowers' payments from the effects of making the REPAYE plan the only income-driven plan. (In a cost estimate, CBO would measure the effects of the policies against its baseline budget projections.)<sup>6</sup> For each option, CBO

6. Such estimates are available as supplemental material accompanying this report.

examined the effects of equal but opposite changes to one parameter of the REPAYE plan.

### Adjust the Share of Discretionary Income Used to Calculate Monthly Payments

Under the REPAYE plan, borrowers' required monthly payments are 10 percent of their discretionary income. Recently proposed policies would alter that share.<sup>7</sup> CBO analyzed the effects of either increasing or decreasing the share by 2 percentage points, so that payments would equal 12 percent or 8 percent of borrowers' discretionary income. In each case, the policy would apply to borrowers who took out their first loan on or after July 1, 2020, and the REPAYE plan would be the only available income-driven plan for those borrowers. Unlike other income-driven plans, the REPAYE plan does not cap payments at the amount a borrower would pay under a 10-year fixed-payment plan. Therefore, payments would change for all borrowers with discretionary income—including those with high levels of income.

If required payments were 12 percent of borrowers' discretionary income, the subsidy cost of loans in income-driven plans over the 2020–2029 period would fall by \$19.0 billion—\$4.0 billion for loans to undergraduate students and \$15.1 billion for loans to graduate students, in CBO's estimation (see Table 4-1 on page 29). In 2029, when the policy would apply to almost all new loans, average subsidy rates would be 0.9 percentage points lower for undergraduate borrowers' loans and 4.1 percentage points lower for graduate borrowers' loans (see Table 4-2 on page 30).

By contrast, if required payments were 8 percent of borrowers' discretionary income, the subsidy cost of loans in income-driven plans would rise by \$26.4 billion—\$5.8 billion for loans to undergraduate students and \$20.7 billion for loans to graduate students. In 2029, when the policy would apply to almost all new loans, average subsidy rates would be 1.3 percentage points higher for loans to undergraduate students and 5.5 percentage points higher for loans to graduate students.

7. The President's budget for fiscal year 2020 proposed increasing the share to 12.5 percent, and the PROSPER Act would have increased it to 15 percent. CBO analyzed the effects of increasing the share to 15 percent in *Options for Reducing the Deficit: 2019 to 2028* (December 2018), p. 28, [www.cbo.gov/publication/54667](http://www.cbo.gov/publication/54667). That analysis differs from the analysis here because it was based on the PAYE plan.

Increasing the share of discretionary income used to calculate borrowers' payments would have smaller effects, in absolute terms, than decreasing that share. That is because increasing borrowers' payments would cause some of them to pay off their balances sooner, which means they would pay less interest on their loans.

### Adjust the Definition of Discretionary Income

In income-driven repayment plans, borrowers' payments are a percentage of their discretionary income. Discretionary income, which is meant to reflect income after essential expenses (such as housing, food, and taxes), is typically defined as adjusted gross income above 150 percent of the federal poverty guideline for a borrower's household. Policymakers have considered altering that definition in recent years.<sup>8</sup>

CBO analyzed the effects of defining discretionary income as AGI over 125 percent of the federal poverty guideline or AGI over 175 percent of the federal poverty guideline. In each case, the policy would apply to borrowers who took out their first loan on or after July 1, 2020, and the REPAYE plan would be the only available income-driven plan for those borrowers.

To understand how the policies would change borrowers' payments, imagine that the federal poverty guideline in a given year is \$20,000 for a hypothetical borrower with an AGI of \$40,000. Under the REPAYE plan, that borrower would have \$30,000 (150 percent of \$20,000) for essential expenses, \$10,000 in discretionary income, and \$1,000 in loan payments. If the share of AGI excluded from discretionary income fell to 125 percent of the federal poverty guideline, the borrower would have \$25,000 (125 percent of \$20,000) for essential expenses, \$15,000 in discretionary income, and \$1,500 in payments. If the share rose to 175 percent of the federal poverty guideline, the borrower would have \$35,000 (175 percent of \$20,000) for essential expenses, \$5,000 in discretionary income, and \$500 in payments.

In CBO's estimation, defining discretionary income as AGI over 125 percent of the federal poverty guideline would decrease the subsidy cost of

8. For example, the Aim Higher Act (H.R. 6543, 115th Congress) and the College Affordability Act (H.R. 4674, 116th Congress) defined discretionary income as AGI over 250 percent of the federal poverty guideline for lower-income households and gradually decreased that amount to zero as borrowers' earnings increased.

student loans issued over the 2020–2029 period by \$12.7 billion—\$3.9 billion for loans to undergraduate students and \$8.8 billion for loans to graduate students (see Table 4-1 on page 29). In 2029, when the policy would apply to almost all new loans, the average subsidy rate for undergraduate borrowers' loans would be 1.0 percentage point lower, and the average subsidy rate for graduate borrowers' loans would be 2.4 percentage points lower (see Table 4-2 on page 30).

By contrast, CBO estimates that defining discretionary income as AGI over 175 percent of the federal poverty guideline would increase the subsidy cost of those loans by \$16.7 billion—\$4.4 billion for loans to undergraduate students and \$12.3 billion for loans to graduate students. In 2029, when the policy would apply to almost all new loans, the average subsidy rate for undergraduate borrowers' loans would be 1.1 percentage points higher, and the average subsidy rate for graduate borrowers' loans would be 3.3 percentage points higher.

The savings from decreasing the amount of borrowers' income that was considered discretionary would be slightly smaller, in absolute terms, than the costs of increasing that share. That is because increasing borrowers' required payments would cause some borrowers to pay off their balances sooner, which means they would pay less interest on their loans.

### Adjust the Timing of Loan Forgiveness

The different income-driven repayment plans vary how long borrowers must make payments before their loans are forgiven. Both the income-contingent repayment plan and the original income-based repayment plan require borrowers to make payments for 25 years before receiving loan forgiveness. That time was reduced to 20 years in the PAYE and updated IBR plans. The most recently introduced plan, the REPAYE plan, has different repayment terms for undergraduate and graduate borrowers—20 years and 25 years, respectively. Policymakers have considered adjusting the timing of loan forgiveness in other ways.<sup>9</sup>

CBO analyzed how the costs of student loans would change if loan forgiveness was delayed or accelerated by

five years. In each case, the policy would apply to borrowers who took out their first loans on or after July 1, 2020, and the REPAYE plan would be the only available income-driven plan for those borrowers.

Delaying the forgiveness of student loans by five years would decrease their subsidy cost over the 2020–2029 period by \$17.2 billion—\$3.0 billion for loans to undergraduate students and \$14.1 billion for loans to graduate students (see Table 4-1 on page 29). Borrowers who took out loans only for undergraduate studies would have their loans forgiven after 25 years of repayment, and borrowers who took out loans for graduate studies would have their loans forgiven after 30 years. In 2029, when the policy would apply to almost all new loans, average subsidy rates would be 0.7 percentage points lower for undergraduate borrowers' loans and 3.8 percentage points lower for graduate borrowers' loans (see Table 4-2 on page 30).

By contrast, CBO estimates that accelerating the forgiveness of student loans by five years would increase their subsidy cost over the 2020–2029 period by \$28.7 billion—\$6.0 billion for loans to undergraduate students and \$22.7 billion for loans to graduate students. Borrowers who took out loans only for undergraduate studies would have their loans forgiven after 15 years of repayment, and borrowers who took out loans for graduate studies would have their loans forgiven after 20 years. In 2029, when the policy would apply to almost all new loans, average subsidy rates would be 1.3 percentage points higher for undergraduate borrowers' loans and 6.0 percentage points higher for graduate borrowers' loans.

The savings from delaying loan forgiveness would be smaller, in absolute terms, than the costs of accelerating it for two main reasons. First, payments that will occur after 25 or 30 years of repayment are worth less, when discounted to present values, than payments that will occur after 15 or 20 years.<sup>10</sup> Second, increasing the time to forgiveness would cause some borrowers to fully repay their loan balance. Therefore, CBO expects that fewer payments would be made at the end of the repayment term if it was longer.

9. For example, the President's budget for fiscal year 2020 proposed adjusting the time to forgiveness to 15 years for new undergraduate borrowers and 30 years for new graduate borrowers.

10. Following FCRA procedures, CBO discounted payments associated with loans using projected interest rates for Treasury securities in the years the loans would be disbursed.





## Appendix A: Present-Value Calculations

To estimate the subsidy cost of a student loan, as defined by the Federal Credit Reform Act of 1990 (FCRA), the Congressional Budget Office discounts associated cash flows to their present value at the date the loan is disbursed. Expressing the cost of a loan as a present-value subsidy means it can be recorded in the budget in the year the loan is issued, which makes it easier to compare the budgetary effects of guaranteed and direct loans or loans and other forms of assistance, such as grants.

Subsidies are calculated by summing the present values of the government's cash outflows and inflows. The loan disbursement is the main outflow, and the borrower's payments are the main inflows. Under FCRA accounting, the outflows and inflows are discounted to present values using interest rates on Treasury securities from the year of the loan's disbursement with maturities that match the timing of the cash flows. For example, the loan disbursement is not discounted, payments that are received in the following year are discounted at the 1-year rate, and payments that are received 10 years after the disbursement are discounted at the 10-year rate. The rates are based on "zero-coupon" Treasury securities, which pay no interest, only a lump sum at maturity.<sup>1</sup>

Although they are not part of the subsidy calculation, this report includes estimates of forgiven balances discounted using FCRA procedures. Discounting makes it easier to compare forgiven balances, which may include large amounts of unpaid interest, with disbursed

amounts. The discounted forgiven amount reveals how much lower the subsidy would be if borrowers fully paid off their debt in the year it was forgiven.

To illustrate those concepts, consider the case from Chapter 1 of a hypothetical borrower repaying a \$50,000 loan through the Pay as You Earn plan (see Table A-1). The loan in that example has an interest rate of 6 percent, which would be consistent with the interest rate on an undergraduate Stafford loan issued when the 10-year Treasury note rate was approximately 4 percent. (Undergraduate Stafford loans for a given academic year have an interest rate 2.05 percentage points higher than the high yield of the 10-year Treasury note from the last auction before the previous June.) To simplify the analysis, CBO used a single discount rate of 4 percent.

The loan's subsidy is equal to the present value of the disbursement (column A in Table A-1) minus the present value of the payments (column E): \$9,862. The subsidy rate is the subsidy divided by the disbursement: 19.7 percent. (Subsidy rates indicate a loan's cost to the government in cents per dollar disbursed, which allows for easier comparisons of loan programs of different sizes.) In the 20th year of repayment, the borrower receives forgiveness for an unpaid balance of \$47,999 (column D), which has a present value of \$21,906 (column F). As a percentage of the disbursement, the present value of the forgiven amount is 44 percent.

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1. The rates for zero-coupon Treasury securities differ slightly from the rates of Treasury securities that pay semiannual interest, such as 10-year Treasury notes.

Table A-1.

**Discounted Payments and Forgiven Balance for a Hypothetical Borrower**

Dollars

Year	Disbursement	Balance	Payments	Forgiven Amount	Discounted Payments	Discounted Forgiven Amount
	A	B	C	D	E	F
0	50,000	50,000				
1		50,874	2,127		2,045	
2		51,664	2,209		2,042	
3		52,370	2,294		2,040	
4		52,987	2,383		2,037	
5		53,513	2,474		2,034	
6		53,945	2,569		2,030	
7		54,278	2,666		2,026	
8		54,511	2,767		2,022	
9		54,639	2,872		2,018	
10		54,659	2,980		2,013	
11		54,567	3,092		2,008	
12		54,359	3,207		2,003	
13		54,032	3,327		1,998	
14		53,582	3,451		1,993	
15		53,004	3,578		1,987	
16		52,293	3,710		1,981	
17		51,446	3,847		1,975	
18		50,458	3,988		1,969	
19		49,324	4,134		1,962	
20		47,999	4,285	47,999	1,955	21,906
<b>Total</b>	<b>50,000</b>	<b>n.a.</b>	<b>61,960</b>	<b>47,999</b>	<b>40,138</b>	<b>21,906</b>

Source: Congressional Budget Office.

In CBO's calculation, the borrower begins repaying the loan with an income of \$40,000, which increases annually by 3 percent. The loans have an interest rate of 6 percent.

The borrower in this example makes payments under the Pay as You Earn plan.

The discount rate is 4 percent.

CBO discounted payments and the forgiven balance by dividing their value by  $1.04^t$ , where  $t$  is the number of years after the loan's disbursement.

n.a. = not applicable.



# B

## Appendix B: CBO’s Approach to Estimating the Cash Flows of Loans in Income-Driven Repayment Plans

Cash flows in income-driven repayment plans depend on borrowers’ household income and household size. Therefore, to project the costs of income-driven plans, the Congressional Budget Office projected household income and size for borrowers who would enroll in those plans. CBO’s analysis also accounted for the fact that different types of borrowers might choose income-driven and fixed-payment plans. In particular, the borrowers who choose income-driven plans might be more likely to benefit more from particular features of those plans, such as loan forgiveness.

CBO projected the characteristics of such borrowers and, in turn, their household income over the course of repayment. Most income-driven plans define household income as the borrower’s income, plus his or her spouse’s income if the borrower is married and files taxes jointly. In the Revised Pay as You Earn (REPAYE) plan, spouses’ income is included even for married borrowers who file taxes separately.<sup>1</sup>

The model used for the analysis shares features and methods with other models CBO has developed to make long-term projections of the federal budget and the economy.<sup>2</sup> It projects earnings and payments of individual

borrowers and households, calculates cash flows on the basis of those earnings, and then sums the cash flows for the set of borrowers in income-driven plans. The methods differ from those used in the other models (which are typically used to make long-term projections for the whole population) because people repaying student loans in income-driven plans differ, on average, from members of the overall population.

This appendix focuses on the two main components of CBO’s model: the underlying data and the four-step method CBO used to project the lifetime cash flows of loans disbursed between 2020 and 2029 and repaid through income-driven plans.

### Data Sources

CBO’s main source for historical information on borrowers’ loan balances and repayment plans was the National Student Loan Data System (NSLDS)—the Department of Education’s central database for administering the federal student loan program. The NSLDS contains detailed information on student-loan borrowers compiled by schools and loan servicers, which are required to report new information within 30 to 120 days. That information includes borrowers’ sex, age, school of attendance, loan disbursements, educational attainment, repayment plan, and payment history. CBO analyzed longitudinal data for a random 4 percent sample from that data set, so the data tracked the same borrowers over time. CBO used the borrowers’ information to project the demographic characteristics of future borrowers.

To project the income of borrowers in income-driven repayment plans, CBO used a number of statistical models. The agency supplemented the data from the NSLDS with data from several other sources to model the following variables:

1. For the purposes of the analysis, CBO equated adjusted gross income, which is used to calculate required payments in income-driven plans, with earnings. Using data from the Survey of Consumer Finances, CBO estimated that earnings from wages and salaries are the predominant source of household income for people between the ages of 21 and 54 with at least some college education—a population that resembles the population of student borrowers. On average, earnings comprise more than 86 percent of income for households headed by someone with a college degree and about 80 percent of income for households headed by someone with some college education.
2. The method CBO used to model borrowers’ earnings over time is consistent with the method used to simulate earnings for individuals and households in the Congressional Budget Office Long-Term Model, known as CBOLT. See Congressional Budget Office, *An Overview of CBOLT: The Congressional Budget Office Long-Term Model* (April 2018), [www.cbo.gov/publication/53667](http://www.cbo.gov/publication/53667).

A working paper with more details on the model will follow the release of this report.

- The Current Population Survey (CPS) for relationships between borrowers' demographic characteristics and their earnings, family size, and spouses' characteristics;
- The Survey of Income and Program Participation (SIPP) for borrowers' marital status;
- The Survey of Consumer Finances (SCF) for the student debt of borrowers' spouses; and
- Records from the NSLDS matched with imputed information on borrowers' tax returns for the relationship between type of repayment plan and earnings.<sup>3</sup>

### How CBO Projected the Characteristics of Borrowers in Income-Driven Repayment Plans Over Time

CBO used information on past borrowers from the NSLDS to project the characteristics of future borrowers in income-driven repayment plans at the time they began repaying their loans. To model the choice of an income-driven repayment plan for borrowers taking out loans between 2020 and 2029, CBO used information on recent borrowers' enrollment in income-driven repayment plans and modeled the choice of a plan as a function of borrowers' characteristics, including their loan balance. CBO then used information from other data sources to project how the demographic characteristics of borrowers in those plans would change over time.

### Modeling Which Borrowers Would Choose Income-Driven Repayment Plans

CBO projected borrowers' selection of a given plan with a statistical model based on data from the NSLDS. Those data provide information on borrowers who recently began repaying their loans and whose choice of

repayment plan can be observed for several years after their graduation. The model relates the choice of a plan to the following characteristics of borrowers: sex, age, the total amount borrowed, educational attainment, the type of school attended (for example, a two-year, four-year, or for-profit school), and the selectivity of that school.<sup>4</sup> CBO estimated that, on average, 33 percent of undergraduate borrowers and 49 percent of graduate borrowers would select an income-driven plan to repay loans issued between 2020 and 2029. Those borrowers were estimated to account for 37 percent of the volume of loans disbursed to undergraduate students and 56 percent of the volume of loans disbursed to graduate students.

When borrowers begin repaying their loans, the model assigns probabilities to their enrollment in a fixed-payment plan or one of three alternatives: the income-based repayment (IBR) plan for new borrowers before July 1, 2014; the Pay as You Earn (PAYE) plan or the IBR plan for new borrowers on or after July 1, 2014; or the REPAYE plan. (Borrowers in the updated IBR plan were grouped with those in the PAYE plan because those plans have very similar terms.) CBO used the estimated probabilities to randomly assign borrowers with certain characteristics to plans; to simplify the analysis, CBO modeled borrowers as remaining in the same plan until their loan balance is repaid or forgiven.

CBO projected enrollment in income-driven plans using a statistical model based on the behavior of borrowers who entered repayment between 2013 and 2015. That model suggested that most borrowers who would receive loans over the 2020–2029 period and enroll in an income-driven plan would choose the PAYE or updated IBR plan (see Table B-1). Over the same period, enrollment in the original IBR plan would gradually fall: By 2029, only 2 percent of borrowers enrolling in an income-driven plan would select it. That decline occurs because, over time, fewer borrowers entering repayment will qualify for that plan (that is, fewer will have begun borrowing before July 1, 2014). CBO expected that no student borrower who began repaying loans in the future would select the income-contingent repayment (ICR)

3. The Department of Education provided CBO with information on a sample of borrowers from the NSLDS and their imputed tax-return information through 2013. The imputed information was based on imputations of borrowers' income provided by the Department of the Treasury. CBO did not use the data to directly project borrowers' earnings over time; instead, the agency used the data to model the relationship between borrowers' income and income-driven repayment. For a more detailed discussion of the Treasury data, see Appendix III in Government Accountability Office, *Federal Student Loans: Education Needs to Improve Its Income-Driven Repayment Plan Budget Estimates*, GAO-17-22 (November 30, 2016), [www.gao.gov/products/GAO-17-22](http://www.gao.gov/products/GAO-17-22).

4. CBO used data from the 2008 Barron's Admissions Competitiveness Index, provided by the National Center for Education Statistics, to categorize schools by their level of selectivity.

Table B-1.

### Projected Distribution Among Income-Driven Repayment Plans of the Volume of Loans Issued From 2020 to 2029

Percent	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
IBR <sup>a</sup>	19	15	12	9	7	6	5	4	3	2
PAYE <sup>b</sup>	65	69	72	75	77	78	80	80	81	82
REPAYE	17	16	16	16	16	16	16	16	16	16

Source: Congressional Budget Office, using data from the Department of Education's National Student Loan Data System.

IBR = income-based repayment; PAYE = Pay as You Earn; REPAYE = Revised Pay as You Earn.

- Loans in this category are those repaid through the original income-based repayment plan, which covers borrowers who took out loans before July 1, 2014.
- This category combines loans repaid through the PAYE plan with those repaid through the updated income-based repayment plan, which covers borrowers who first took out loans on or after July 1, 2014, and has very similar terms.

plan, so loans repaid through that plan were excluded from the analysis.<sup>5</sup>

CBO also projected that over the next 10 years, the share of newly disbursed loans repaid through the Public Service Loan Forgiveness (PSLF) program would remain relatively constant, at a higher level than past rates of take-up indicate. Those estimates are highly uncertain, however, because the program is still relatively new: The earliest date at which borrowers could receive forgiveness through the PSLF program was October 1, 2017, and very few participating borrowers had received forgiveness as of September 30, 2019. On the basis of estimates of the eligible population and growth in the submission of employment certification forms for the PSLF program, CBO expects the share of borrowers receiving forgiveness through the program in the 2030s (for loans disbursed over the 2020–2029 period) to be considerably larger.

Using data on past borrowers, CBO estimated that graduate and undergraduate borrowers who had larger loan balances would be more likely to enroll in income-driven repayment plans, for two main reasons. First, such borrowers typically have smaller required monthly payments under such plans than they would under the standard fixed-payment plan. Second, conditional on being in an

income-driven plan, borrowers with larger loan balances are less likely to fully repay their loan by the end of the repayment period, which means they are more likely to receive loan forgiveness.

For similar reasons, borrowers with higher expected earnings would be less likely to enroll in income-driven plans. Because direct information on borrowers' postgraduation earnings or expected earnings was not available, CBO relied on imputations from the NSLDS-matched data on tax returns and estimated that enrollment in income-driven plans is inversely correlated with borrowers' postgraduation earnings. CBO took that estimated relationship into account when projecting the earnings of future borrowers.<sup>6</sup> Specifically, borrowers in income-driven repayment plans were projected to have lower lifetime income, on average, than borrowers in fixed-payment plans.<sup>7</sup> Overall, that meant that the projected rate of enrollment in income-driven repayment plans was higher for borrowers with large balances and low earnings than for borrowers with small balances or high earnings.

CBO's modeling choices were guided by the available data. Because there were no data directly linking

5. Only a small fraction of recent borrowers use the ICR plan. CBO expects that borrowers would generally select the plan only if it was the sole income-driven plan for which they were eligible, as is the case for borrowers with a consolidation loan that includes a parent's PLUS loan. All other borrowers would benefit more from the IBR, PAYE, or REPAYE plans.

6. The estimated relationship also accounted for characteristics of borrowers including their age, sex, educational attainment, type of school attended, and selectivity of that school.

7. Although the estimated relationship between lifetime income and enrollment in an income-driven plan was based on data with imputations, those findings were confirmed with data from the Survey of Consumer Finances.

borrowers' repayment history to their postgraduation earnings at the time CBO conducted its analysis, the agency instead used statistical imputations when modeling the relationship between enrollment in income-driven repayment plans and borrowers' earnings.<sup>8</sup>

### Modeling Changes in Borrowers' Demographic Characteristics Over Time

CBO modeled changes in demographic characteristics in several steps. First, CBO used historical data from the NSLDS to project the characteristics of future borrowers at the time they began repaying their loans, preserving the statistical relationships between characteristics (such as sex, age, academic level, and loan balance) observed in the group of borrowers who began repaying their loans in 2016.

Second, CBO used data from multiple sources to model year-to-year changes in demographic outcomes for each borrower in the sample over the duration of loan repayment. To model household size, CBO projected demographic changes in marital status and the number of dependent children for each borrower's household over time. CBO modeled each borrower's marriage outcomes as conditional on his or her sex, age, education, previous marital status, and year of birth, using data from the SIPP.<sup>9</sup> The number of dependent children in a borrower's household was modeled to match patterns in the CPS data based on individuals' sex, age, and education.

Third, to simulate household earnings, which include spouses' earnings for borrowers who are married, CBO simulated the demographic characteristics of borrowers'

spouses using data from the CPS and accounted for the correlation between spouses' educational attainment.<sup>10</sup>

### How CBO Projected Borrowers' Household Earnings Over Time

After the characteristics of future borrowers and their spouses were projected, CBO used those characteristics to project year-to-year household earnings for each borrower in the sample. To account for variability in borrowers' labor market experience over time, CBO separately modeled borrowers' and their spouses' labor force participation, full-time and part-time status, hours of work, hourly wage rates, and spells of unemployment on a yearly basis. Those labor market outcomes were projected to depend on characteristics of borrowers including sex, age, year of birth, marital status, number of children, and educational attainment.<sup>11</sup> For years in which borrowers were married, their projected annual household earnings included their spouses' earnings. Growth in borrowers' earnings matched the growth in aggregate earnings projected in CBO's long-term macroeconomic forecast.

In addition, to reflect the inverse relationship between borrowers' lifetime earnings and their enrollment in income-driven repayment plans, CBO modeled the average lifetime earnings of future borrowers in income-driven plans as being lower than the average lifetime earnings of similar borrowers in fixed-payment plans.

To project the household earnings of borrowers in the PSLF program, CBO made one adjustment to the foregoing methods. Using data from the CPS on workers in private-versus public-sector jobs, CBO estimated that workers in the public and nonprofit sectors were more

8. The FUTURE Act (Public Law 116-91), enacted in December 2019, lets borrowers grant the Department of Education access to their tax records in order to determine their eligibility or recertify their income for income-driven plans.

9. To project changes in borrowers' marital status, CBO used the same analytic method used in CBOLT. For details, see Josh O'Harra and John Sabelhaus, *Projecting Longitudinal Marriage Patterns for Long-Run Policy Analysis*, Technical Paper 2002-2 (Congressional Budget Office, October 2002), [www.cbo.gov/publication/14080](http://www.cbo.gov/publication/14080). Further, to account for differences between the sample of student borrowers and the overall population represented in the SIPP data, CBO adjusted borrowers' marriage rates for consistency with the marriage rates of student borrowers in the NSLDS-matched data on tax returns.

10. Because borrowers' discretionary income could be affected by their spouses' student loan repayment obligations, CBO also simulated spouses' loan amounts, using information from the SCF on spouses' likelihood of carrying a student loan and information from the NSLDS on the loan balances of individuals with the demographic characteristics of the spouses predicted to have loans.

11. To project the earnings of borrowers and their spouses, CBO applied a method it initially developed for use in CBOLT. For details, see Jonathan A. Schwabish and Julie H. Topoleski, *Modeling Individual Earnings in CBO's Long-Term Microsimulation Model*, Working Paper 2013-04 (Congressional Budget Office, June 2013), [www.cbo.gov/publication/44306](http://www.cbo.gov/publication/44306); and Congressional Budget Office, *Projecting Labor Force Participation and Earnings in CBO's Long-Term Microsimulation Model* (October 2006), [www.cbo.gov/publication/18237](http://www.cbo.gov/publication/18237).

likely to have earnings in the middle of the distribution than to have very high or very low earnings. CBO used that information, combined with recent information on the share of borrowers in the PSLF program, to probabilistically project which borrowers would be most likely to participate in the program.<sup>12</sup>

### **How CBO Projected Borrowers' Required Payments**

Borrowers' payments in income-driven plans are determined by the type of plan and the borrowers' discretionary income. In most income-driven plans, discretionary income is defined as adjusted gross income above 150 percent of the federal poverty guideline for a borrower's household. The federal poverty guidelines increase with the number of members in a borrower's household and are updated annually to reflect changes in the consumer price index. Borrowers' required monthly payments are either 10 or 15 percent of their discretionary earnings, depending on their payment plan.

### **How CBO Accounted for Irregular Payments**

To project lifetime cash flows for loans repaid through income-driven plans, CBO needed to account for circumstances in which borrowers' actual payments would differ from their required payments. The required payments alone indicate what the cash flows from loans would be if borrowers never defaulted, deferred their payments, or prepaid. By contrast, actual payments reflect outcomes such as default, recovery (through debt collection), deferment, forbearance, and prepayment.

To incorporate those outcomes into the projected cash flows, CBO used historical data from the NSLDS to estimate statistical models relating those outcomes to borrowers' characteristics, including their choice of repayment plan. CBO then used those estimates to project outcomes for future cohorts of borrowers (that is, groups categorized on the basis of the year they began repaying their loans). For cases in which borrowers were projected to default on loans, CBO used historical data to estimate their likelihood of recovery.

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12. Recent reports have shown that approval rates for loan forgiveness in the PSLF program are lower than the potential eligibility rates, probably because borrowers (or loan servicers) are misinformed about the program; see Government Accountability Office, *Public Service Loan Forgiveness: Education Needs to Provide Better Information for the Loan Servicer and Borrowers*, GAO-18-547 (September 27, 2018), [www.gao.gov/products/GAO-18-547](http://www.gao.gov/products/GAO-18-547), and *Public Service Loan Forgiveness: Improving the Temporary Expanded Process Could Help Reduce Borrower Confusion*, GAO-19-595 (September 5, 2019), [www.gao.gov/products/GAO-19-595](http://www.gao.gov/products/GAO-19-595). Because CBO was focused on loans issued in 2020 or later, it estimated that a higher percentage of borrowers eligible for loan forgiveness would receive it as the misinformation was corrected over time.





## Appendix C: Projections for Different Types of Student Loans

Earlier in this report, the Congressional Budget Office provides projections for loans made to undergraduate and graduate borrowers (see Chapter 3). The tables in this appendix provide separate projections for the types

of loans made to those borrowers—subsidized Stafford and unsubsidized Stafford loans for undergraduates, and unsubsidized Stafford and PLUS loans for graduates.

Table C-1.

### Average Subsidy Rates, by Type of Loan and Repayment Plan, 2020 to 2029

Percent

	Income-Based Repayment <sup>a</sup>	PAYE <sup>b</sup>	REPAYE
Loans to Undergraduate Borrowers			
Subsidized Stafford loans	9.7	24.6	19.6
Unsubsidized Stafford loans	0.7	10.3	8.3
Loans to Graduate Borrowers			
Unsubsidized Stafford loans	-7.0	15.5	9.2
PLUS loans	-4.3	31.0	20.9

Source: Congressional Budget Office, using data from the Department of Education's National Student Loan Data System.

A subsidy rate reflects the government's cost for a loan in cents per dollar disbursed. By law, the costs of federal student loans are measured using procedures prescribed in the Federal Credit Reform Act of 1990. Subsidy costs do not include the administrative costs of disbursing and servicing loans.

CBO excluded one payment plan—the income-contingent repayment plan—from its estimates because the share of borrowers enrolled in that plan is very small.

PAYE = Pay as You Earn; REPAYE = Revised Pay as You Earn.

a. Loans in this category are those repaid through the original income-based repayment plan, which covers borrowers who took out loans before July 1, 2014.

b. This category combines loans repaid through the PAYE plan with those repaid through the updated income-based repayment plan, which covers borrowers who first took out loans on or after July 1, 2014, and has very similar terms.

Table C-2.

**Volume and Subsidy Rates of Student Loans, by Type of Loan and Payment Plan**

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2020– 2029 <sup>a</sup>
<b>Subsidized Stafford Loans</b>											
Fixed-Payment Plans											
Volume (Billions of dollars)	13.8	14.3	14.8	15.3	16.0	16.6	17.3	18.0	18.8	19.7	164.6
Subsidy rate (Percent)	0	2.2	3.5	4.0	4.2	4.4	4.5	4.5	4.6	4.7	3.8
Income-Driven Plans											
Volume (Billions of dollars)	8.2	8.3	8.5	8.7	8.9	9.1	9.3	9.4	9.5	9.7	89.7
Subsidy rate (Percent)	19.5	21.9	23.4	24.2	24.3	24.2	24.2	23.9	23.6	23.5	23.3
Total											
Volume (Billions of dollars)	22.0	22.6	23.3	24.1	24.9	25.7	26.5	27.4	28.4	29.4	254.2
Subsidy rate (Percent)	7.3	9.5	10.8	11.3	11.4	11.4	11.3	11.2	11.0	10.9	10.7
<b>Unsubsidized Stafford Loans to Undergraduate Borrowers</b>											
Fixed-Payment Plans											
Volume (Billions of dollars)	14.1	14.5	15.1	15.7	16.4	17.1	17.8	18.7	19.6	20.6	169.5
Subsidy rate (Percent)	-10.5	-8.6	-8.0	-7.9	-8.0	-7.9	-7.8	-7.8	-7.7	-7.7	-8.1
Income-Driven Plans											
Volume (Billions of dollars)	9.3	9.5	9.7	10.0	10.3	10.5	10.8	11.0	11.3	11.5	103.8
Subsidy rate (Percent)	5.6	8.6	9.3	9.5	9.6	9.9	10.3	10.5	10.6	10.8	9.5
Total											
Volume (Billions of dollars)	23.4	24.0	24.8	25.7	26.7	27.6	28.6	29.7	30.8	32.1	273.3
Subsidy rate (Percent)	-4.1	-1.8	-1.2	-1.2	-1.2	-1.1	-1.0	-1.0	-1.0	-1.0	-1.4
<b>Unsubsidized Stafford Loans to Graduate Borrowers</b>											
Fixed-Payment Plans											
Volume (Billions of dollars)	14.0	14.7	15.4	16.2	16.9	17.8	18.6	19.5	20.5	21.6	175.3
Subsidy rate (Percent)	-27.9	-25.7	-25.0	-24.8	-24.8	-24.6	-24.6	-24.6	-24.5	-24.4	-25.0
Income-Driven Plans											
Volume (Billions of dollars)	16.5	17.1	17.8	18.4	19.0	19.6	20.3	21.1	21.9	22.6	194.2
Subsidy rate (Percent)	8.5	12.2	12.9	13.2	13.2	12.9	13.6	12.4	13.0	13.5	12.6
Total											
Volume (Billions of dollars)	30.5	31.8	33.2	34.7	35.9	37.4	38.9	40.6	42.3	44.2	369.5
Subsidy rate (Percent)	-8.2	-5.3	-4.7	-4.6	-4.7	-5.0	-4.7	-5.4	-5.2	-5.1	-5.2
<b>PLUS Loans to Graduate Borrowers</b>											
Fixed-Payment Plans											
Volume (Billions of dollars)	4.1	4.4	4.7	4.9	5.2	5.5	5.8	6.0	6.3	6.5	53.4
Subsidy rate (Percent)	-43.3	-40.0	-38.9	-38.7	-38.7	-38.6	-38.6	-38.5	-38.4	-38.3	-39.1
Income-Driven Plans											
Volume (Billions of dollars)	8.0	8.5	9.1	9.7	10.1	10.5	11.0	11.5	12.0	12.4	102.8
Subsidy rate (Percent)	21.8	26.8	28.2	27.2	27.5	27.0	27.6	26.4	26.7	27.9	26.8
Total											
Volume (Billions of dollars)	12.1	12.9	13.8	14.6	15.3	16.0	16.8	17.5	18.2	18.9	156.2
Subsidy rate (Percent)	-0.4	4.2	5.5	4.9	4.9	4.5	4.9	4.0	4.3	5.1	4.3

Source: Congressional Budget Office, using data from the Department of Education's National Student Loan Data System.

Loans in income-driven plans include loans that receive forgiveness through the Public Service Loan Forgiveness program.

A subsidy rate reflects the government's cost for a loan in cents per dollar disbursed. By law, the costs of federal student loans are measured using procedures prescribed in the Federal Credit Reform Act of 1990. Subsidy costs do not include the administrative costs of disbursing and servicing loans.

a. Values for the volume of loans are cumulative totals; values for subsidy rates are averages.



Table C-3.

**Disbursed, Forgiven, and Repaid Amounts of Student Loans in Income-Driven Plans, by Type of Loan**

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2020– 2029 <sup>a</sup>
<b>Subsidized Stafford Loans</b>											
Disbursement (Billions of dollars)	8.2	8.3	8.5	8.7	8.9	9.1	9.3	9.4	9.5	9.7	89.7
Forgiven Balance (Billions of dollars)	1.7	1.6	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	16.0
Percentage of Disbursement Forgiven	20.9	19.6	18.2	17.8	17.7	17.6	17.5	17.0	16.6	16.7	17.9
Percentage of Disbursement Repaid	80.5	78.1	76.6	75.8	75.7	75.8	75.8	76.1	76.4	76.5	76.7
<b>Unsubsidized Stafford Loans to Undergraduate Borrowers</b>											
Disbursement (Billions of dollars)	9.3	9.5	9.7	10.0	10.3	10.5	10.8	11.0	11.3	11.5	103.8
Forgiven Balance (Billions of dollars)	2.5	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.4	2.5	24.3
Percentage of Disbursement Forgiven	26.5	25.4	24.2	23.9	23.3	23.3	23.0	22.4	21.7	21.4	23.4
Percentage of Disbursement Repaid	94.4	91.4	90.7	90.5	90.4	90.1	89.7	89.5	89.4	89.2	90.5
<b>Unsubsidized Stafford Loans to Graduate Borrowers</b>											
Disbursement (Billions of dollars)	16.5	17.1	17.8	18.4	19.0	19.6	20.3	21.1	21.9	22.6	194.2
Forgiven Balance (Billions of dollars)	9.0	8.8	8.7	9.0	9.2	9.2	9.6	9.6	10.0	10.4	93.4
Percentage of Disbursement Forgiven	54.6	51.5	49.0	48.8	48.2	47.0	47.0	45.7	45.6	46.0	48.1
Percentage of Disbursement Repaid	91.5	87.8	87.1	86.8	86.8	87.1	86.4	87.6	87.0	86.5	87.4
<b>PLUS Loans to Graduate Borrowers</b>											
Disbursement (Billions of dollars)	8.0	8.5	9.1	9.7	10.1	10.5	11.0	11.5	12.0	12.4	102.8
Forgiven Balance (Billions of dollars)	6.5	6.6	6.7	6.8	7.1	7.2	7.5	8.0	8.3	9.0	73.6
Percentage of Disbursement Forgiven	81.3	77.3	72.9	70.3	70.9	68.0	68.4	69.4	69.0	72.8	71.6
Percentage of Disbursement Repaid	78.2	73.2	71.8	72.8	72.5	73.0	72.4	73.6	73.3	72.1	73.2

Source: Congressional Budget Office, using data from the Department of Education's National Student Loan Data System.

Forgiven amounts include balances forgiven through the Public Service Loan Forgiveness program. Forgiven balances and payments are discounted to present values in the year of a loan's disbursement, using interest rates on Treasury securities. Forgiven balances and payments add up to more than 100 percent because they include accrued interest.

a. Values for disbursements and forgiven balances are cumulative totals; values for the percentage of disbursements forgiven or repaid are averages.





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## About This Document

This report was prepared at the request of the Chairman of the Senate Committee on the Budget and the Chairman of the Senate Committee on Health, Education, Labor, and Pensions. In keeping with the Congressional Budget Office's mandate to provide objective, impartial analysis, the report makes no recommendations.

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CBO continually seeks feedback to make its work as useful as possible. Please send any comments to [communications@cbo.gov](mailto:communications@cbo.gov).

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