

KIM DANCY AND ALEXANDER HOLT

IN THE INTEREST OF FEW

The Regressive Benefits of
Federal Student Loan Refinancing

About the Authors



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INTRODUCTION

In 2016, both the Democrat and Republican presidential nominees argued that student loan debt was too high and was harming young Americans. Indeed, Hillary Clinton made reducing student loan debt a centerpiece of her campaign. The Trump campaign, while light on specifics, also gave support to this idea.

For her part, Clinton incorporated a vision similar to the legislation introduced in Congress in 2013 by Senator Elizabeth Warren (D-MA), which would allow existing borrowers to refinance existing student loans, thereby opting to lower the interest rates on their outstanding loans to current, historically-low rates. In a surprising moment of bipartisan consensus, President Donald Trump has also suggested that borrowers should be able to lower their student loan interest rates, though it was not included in his first budget proposal. Nonetheless, Trump's populist impulses, his previous statements, and plans released by his allies in Congress all suggest that interest rate cuts may be a rare area of agreement between Trump and prominent progressives like Senator Warren. Indeed, in a poll commissioned by New America just before the 2016 presidential election, 90 percent of likely voters favored allowing borrowers to refinance loans at current rates, and the popularity of refinancing did not fade across party lines.¹ Fully 94 percent of likely Democratic voters favored such a policy, and 85 percent of likely Republican voters did.

The popularity of refinancing proposals is a result of the unique way in which interest rates are set on federal student loans. Private loans, including mortgages and other personal loans, carry interest rates determined by the dollar amount and time horizon of the loan, as well as an assessment of the level of risk involved in lending to a particular borrower. In contrast, interest rates for federal student loans are set by the U.S. Congress and are not differentiated for individual borrowers. This means that a student with bad credit and a low bank balance enrolled in a low-quality program with poor earnings potential can borrow with exactly the same terms as an independently wealthy straight-A student at Harvard. Interest rates on federal student loans in no way account for the individual's risk of default.

Prior to 2013, Congress set these interest rates arbitrarily (at that time, 6.8 percent for undergraduate loans). But that year Congress passed a law that resets rates each year automatically based on the borrowing costs faced by the U.S. government, plus a markup that varies depending on the type of loan disbursed. Because of this change, coupled with low borrowing costs for the federal government today, federal student loan interest rates are near historic lows, much lower for most loan types than they were five years ago. Interest rates for federal student loans disbursed after July 1, 2017 are 4.45 percent for undergraduate

loans, 6 percent for graduate student loans (for the first \$20,500), and 7 percent for graduate student loans above \$20,500 as well as for loans to parents.¹

Members of both political parties argue that this gap between historic and current interest rates is unfair to borrowers with older loans. Republican Congressman Tom Reed (R-NY), who co-chaired Trump's presidential transition team, has championed an even more generous approach to refinancing than the one proposed by Warren, which would allow borrowers to refinance *all* existing federal student loans to the same low rate—an extra benefit to parent and graduate borrowers whose loans carry higher interest rates. For the sake of simplicity, our analysis is based on Warren's proposal. Warren also allows for private student loans in good standing to be refinanced as federal student loans, conferring all of the benefits afforded to federal student loan borrowers.

Refinancing advocates argue that they are leveling the playing field for student loan borrowers. After all, consumers with mortgages or car loans can refinance their loans at historically low rates in the private market, so student loan borrowers ought to be able to as well. In fact, some student loan borrowers can and do refinance their loans with private companies that specialize in such transactions. However, many students are unable or unwilling to refinance for a lower rate. Private lenders are able to choose which borrowers they offer refinancing services to and at which rates, and these lenders often only want to refinance borrowers with high, stable incomes. Furthermore, borrowers themselves often do not want to refinance in the private market because doing so eliminates the generous protections, including income-based repayment (IBR) plans and loan forgiveness, that come with federal student

¹ The new interest rates for student loans have risen in recent years as the economy has improved. The interest rates for loans made in the 2017–18 academic year are marginally higher than those made for the preceding academic year. The savings to borrowers who refinance to current rates falls as current interest rates increase.

loans. Allowing students to refinance through the federal government would make the benefit much more widely available, and it would allow borrowers to retain federal protections. In 2014, the Congressional Budget Office estimated that if implemented, Warren's plan would cost taxpayers just under \$60 billion over a three-year period.²

Yet for all of the talk of refinancing and its popularity with the public, there has been little analysis of which types of borrowers would benefit or by how much. Clinton's campaign touted the fact that borrowers would save thousands of dollars over the life of their loans. That is an enticing vision, though less so when stretched over 10 or 20 years, but it fails to provide detail on which borrowers would benefit most, or how much any proposed change would save borrowers on their monthly bills.

Outside of campaign materials, researchers have responded mostly negatively towards the idea. Writing for the Brookings Institute, Susan Dynarski, a professor of public policy and education at the University of Michigan, uses existing patterns of debt and repayment to surmise that refinancing will not meaningfully decrease defaults or help struggling borrowers. Dynarski notes that refinancing is an expensive and poorly targeted policy because all borrowers, even those with high incomes, benefit.³

Our report builds on the existing research on student loan refinancing by providing a detailed breakdown of the changes to borrowers' interest rates, monthly savings, and total savings over the remaining repayment period, along with analyses of how each of these figures varies according to borrower demographics. We use the 2013 Survey of Consumer Finances (SCF), a triennial survey developed by the Federal Reserve Board.⁴ The SCF records details about household finances, including the monthly payment, current interest rates, the original amount borrowed, and the outstanding balance on each education loan reported by households. This allows us to estimate the portion of borrowers who would be able to lower their interest rates under refinancing, their average monthly savings, the total

amount saved over the life of the loan, and the share of borrowers who would benefit from enrolling in income-based plans instead of refinancing. (For a more detailed discussion of our methodology, please see **Appendix A.**)

We find that although many households would be eligible for refinancing, a large portion of the benefits would go to a small number of households with high debt balances. Furthermore, we find that increased outreach to low-income borrowers about the benefits of income-based repayment plans would be more beneficial than refinancing for the population of borrowers most at risk of default.

Other key findings:

- A slight majority of U.S. households would benefit from refinancing. In total, 52.8 percent of households with student debt could potentially lower their interest rate through refinancing. The average interest rate across all student loans is 5.8 percent before refinancing, and drops to 4.2 percent if all eligible borrowers refinance.
- On average, households would save \$8 per month. Borrowers who have not earned a bachelor's degree would see the smallest difference, in part because their current monthly payments are already relatively low; the average borrower with only a high school diploma saves about \$7 a month. Meanwhile, the typical student with a bachelor's degree saves \$9 per month, as does the typical borrower with a master's or professional degree. This difference in savings stems from the fact that borrowers with higher levels of educational attainment typically have higher amounts of debt, making a lower interest rate more valuable to these borrowers.
- For the total amount paid over the life of a loan, the average household would save \$941 in nominal dollars, paying off a total of \$30,988 in principal and accumulated interest without refinancing, compared to \$30,057 with refinancing. Borrowers with bachelor's degrees save slightly more—\$1,111 in nominal dollars, on average, over the life of the loan. These borrowers typically have taken on higher debt loads in order to get through four or more years of schooling, which explains the higher savings they would receive.
- Among households with current income in the highest quintile, the average savings would be nearly twice as high (\$10 per month) than for households in the lowest income quintile (\$6). This is largely because borrowers with higher levels of income tend to have greater degree attainment and have borrowed larger sums to pay for their degrees.
- Hispanic households would save more than white households, both in terms of monthly payments and total payments, while black households would save less than either white or Hispanic households. This is likely because Hispanic families reported having much larger interest rates before refinancing, on average 6.5 percent. These rates drop to 4.2 percent on average after refinancing, the largest cut for any group.
- Of the total costs of refinancing, we find that over half (50.8 percent) of the total benefits would go to households in the highest two income quintiles.

WHO REFINANCES?

To identify which borrowers benefit from refinancing, we compare the interest rate reported on each loan to the estimated interest rate each loan would receive under refinancing.ⁱⁱ These new interest rates are based on the borrower's age, the original amount borrowed, the remaining amount owed on the loan, the presence of children over the age of 18, and the educational attainment of each household. We define borrowers who benefit from refinancing as any household that would receive a lower interest rate on at least one of the loans reported to SCF. The average current interest rate among all households with student debt is about 5.8 percent. After refinancing, the average interest rate drops to about 4.2 percent (see **Figure 1**).

Current interest rates are based on what individual borrowers reported to the SCF yet we see significant

ⁱⁱ The variety of repayment plans on federal student loans affects the duration of repayment along with the monthly amount due. However, since we base these estimates on the information provided by the borrower, we assume any alternate repayment plans are already reflected in the data source.

variation, with higher interest rates accruing for more historically disadvantaged groups. This is likely the result of combining federal with private student loans. Since private lenders underwrite their loans, those with low incomes and low credits scores tend to receive loans with higher interest rates. We see that low-income borrowers, less educated borrowers, those with high loan balances, and minority borrowers all have higher interest rates under current law. After refinancing, borrowers are given the same rates regardless of credit history or current income. This suggests that one benefit of refinancing is that it would provide more equitable borrowing terms for existing borrowers.

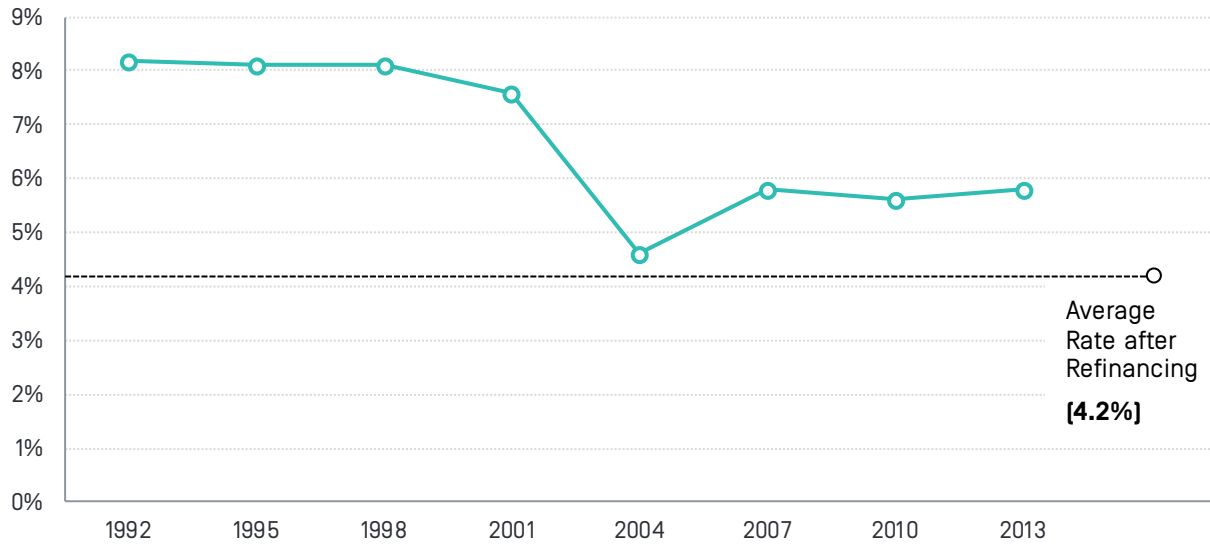
Slightly more than half of households with student debt would be able to lower their interest rates through refinancing. Hispanic households would refinance at higher rates (61.1 percent) than white or African American households (51.6 percent and 53.8 percent, respectively). (See **Figure 2**.) Borrowers with varying levels of educational attainment are all eligible at about the same rate, meaning that those with a bachelor's or graduate degree are as likely to be eligible for refinancing as those with an associate's degree or less.

Table 1 | Who Saves from Refinancing and What Are Current and Future Interest Rates?

	Share Who Benefit from Refinancing	Current Interest Rate	Interest Rate After Refinancing
All borrowers	52.8%	5.8%	4.2%
Highest Degree of Household Head			
High school degree or less	54.6%	6.3%	4.2%
Associate's degree	53.5%	5.9%	4.3%
Bachelor's degree	51.0%	5.6%	4.0%
Master's or Doctorate	50.6%	5.1%	4.3%
Race of Household Head			
White	51.6%	5.7%	4.2%
Black/African American	53.8%	6.0%	4.2%
Hispanic	61.1%	6.5%	4.2%
Other	52.5%	6.3%	4.1%
Household Income			
Less than \$24,000	57.6%	6.6%	4.3%
\$24,000 - \$41,000	54.7%	6.4%	4.1%
\$41,000 - \$63,000	55.3%	5.8%	4.1%
\$63,000 - 105,000	52.2%	5.6%	4.3%
Greater than \$105,000	46.1%	5.2%	4.1%
Total Outstanding Debt			
Less than \$5,000	40.3%	5.5%	3.9%
\$5,000 - \$12,000	49.6%	5.9%	4.0%
\$12,000 - \$22,000	52.2%	5.7%	4.2%
\$22,000 - \$44,000	61.7%	5.9%	4.4%
Greater than \$44,000	61.0%	6.0%	4.5%

Source: New America analysis of 2013 Survey of Consumer Finances, Federal Reserve Board.

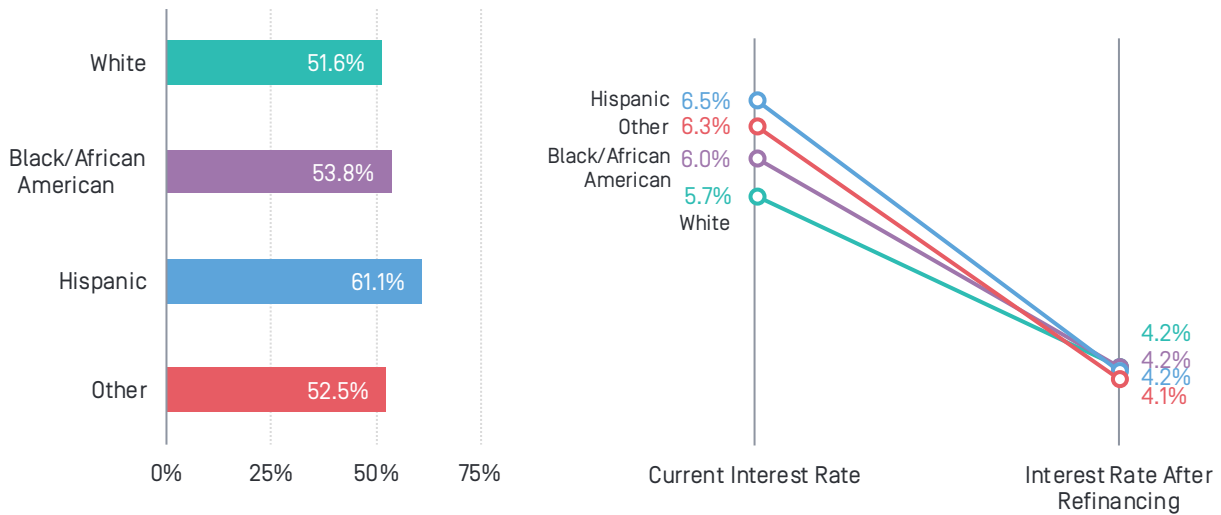
Figure 1 | Average Interest Rates for All Borrowers



Source: New America analysis of Survey of Consumer Finances, Federal Reserve Board, 1993–2013.



Figure 2 | Share Who Benefit and Future Interest Rates, by Race of Household Head



Source: New America analysis of 2013 Survey of Consumer Finances, Federal Reserve Board.



Borrower Case Studies

The following examples are pulled directly from data reported to the SCF via a random number generator, and therefore illustrate the impact of refinancing and income-based repayment on real borrowers.



Richard

Highest Degree: High school **Household Income:** \$8,319

Monthly Payment: \$50 → N/A **Interest Rate:** 3% → N/A

Benefit from Refinancing: ■ ■ ■ ■ ■

Richard never finished his degree, and earns an annual salary of \$8,319, which he and his young daughter rely on to make ends meet. Richard first took out a student loan back in 2011; borrowing \$1000 at an interest rate of 3%. His current monthly payment is about \$50, and at this rate it would take him about three years to fully pay off the debt. Because Richard's interest rate is already so low, refinancing would not lower his interest rate, and thus would not impact his monthly payment or the total amount paid. However, because Richard's income is so low, he would qualify for zero-payments if he were to enroll in an income based repayment plan, saving him \$50 each month. These savings could be a huge help given his extremely low earnings.



Dinesh

Highest Degree: Master's **Household Income:** \$125,800

Monthly Payment: \$1,280 → \$1,195 **Interest Rate:** 7.7% → 5.7%

Benefit from Refinancing: ■ ■ ■ ■ ■

Dinesh holds a Master's degree and is married with three children. His family has taken out four students loans between 1999 and 2006. The combined monthly payment on these four loans is \$1,280, and they carry an average interest rate of 7.7% and an outstanding balance of \$120,000. Dinesh and his wife bring in \$125,800 each year. Because many of Dinesh's loans can be reasonably attributed to his graduate education, refinancing lowers his interest rate, but only to about 5.7%, on average. That change saves the family about \$85 per month, for a new monthly payment of about \$1,195. Over the course of repaying the loans, this translates to a total savings of about \$4,273. If instead Dinesh instead applied for income-based repayment, his monthly payment would drop to just \$700.



Monica

Highest Degree: Bachelor's **Household Income:** \$61,017

Monthly Payment: \$440 → \$382 **Interest Rate:** 6.5% → 4.45%

Benefit from Refinancing: ■■■■■

Monica took out a student loan back in 2006 and another in 2007. Monica borrowed \$57,000 in total at an average interest rate of 6.5%; her current balance on both loans is \$48,000. Her combined current monthly payment of \$440 is enough to pay off both loans in less than 17 years. Monica is unmarried, has no children, and earns \$61,017 annually. If refinancing were an available, Monica would lower her interest rate to 4.45%, effectively lowering her monthly payment to \$382, saving about \$58 per month or \$10,845 over the course of repayment.



Nelson

Highest Degree: Bachelor's **Household Income:** \$285,705

Monthly Payment: \$290 → N/A **Interest Rate:** 3% → N/A

Benefit from Refinancing: ■■■■■

Because Nelson's interest rate is so low and his income is so high, he would not benefit from refinancing nor from income-based repayment plans. Nelson has one outstanding student loan dating back to 2001. He initially borrowed \$60,000, at an average interest rate of just 3%. Nelson pays \$290 per month toward these loans, and his family earns \$258,705 annually.



Laurie

Highest Degree: High school **Household Income:** \$36,523

Monthly Payment: \$80 → \$70 **Interest Rate:** 9.3% → 4.45%

Benefit from Refinancing: ■■■■■

Laurie currently pays \$80 each month towards her student debt. Her interest rate is higher than average, at about 9.3%, and she owes \$10,000 despite never finishing a college degree. She is married with one child, and combined her family earns just \$36,523 annually. After refinancing, her interest rate would drop to 4.45%, a huge change that would only save her \$10 per month due to her relatively low balance. Over the course of repaying her loan, this would add up to about \$619. If Laurie were instead to enroll in income-based repayment, she could save over twice as much, lowering her monthly payment to \$60.

HOW REFINANCING AFFECTS MONTHLY PAYMENTS

Next, we compare borrowers' reported monthly payments on each loan with the amount that they would owe based on our calculations of their new interest rates. We assume the number of payments remains constant, as Senator Warren's bill prescribes, and that only borrowers in good standing can participate in loan refinancing. Each loan is then assigned the lower of the current monthly payment reported or the new amount owed.

On average, among all households, the availability of refinancing would lower monthly payments by \$8, dropping the average amount due each month from \$265 to \$256. These savings are not distributed equally among all households. Those who did not complete college and have only a high school diploma save \$7, as their monthly payments fall from \$164 to \$157, while those with a master's degree or higher save \$9, with monthly payments dropping from \$453 to \$443. White and African American households save about \$8 per month, while Hispanic households save about \$11 per month.

But it is high-income and high-balance households who consistently benefit most from refinancing proposals. Those from the highest income quintile (defined as those with household earnings above \$105,000) save \$10 per month from refinancing, while

those from the lowest income quintile (those earning below \$24,000) save just \$6 per month (see **Figure 3**). The pattern is even more pronounced for those with the highest balances; those with outstanding debt above \$44,000 save \$15 per month, on average, while those with the smallest balances save just under \$3.

Many of these findings could potentially be explained by the links between educational attainment, student loan borrowing, and earnings potential. Borrowers who have taken on the most debt tend to be the ones with the highest degree attainment. At the same time, the economic returns on additional education are thoroughly documented, such that borrowers in the top income quintile likely also have significant education. Additionally, since the interest rate, monthly payments, and total amount borrowed are all linked, we know that borrowers with the highest balances will be most affected by interest rate reductions.

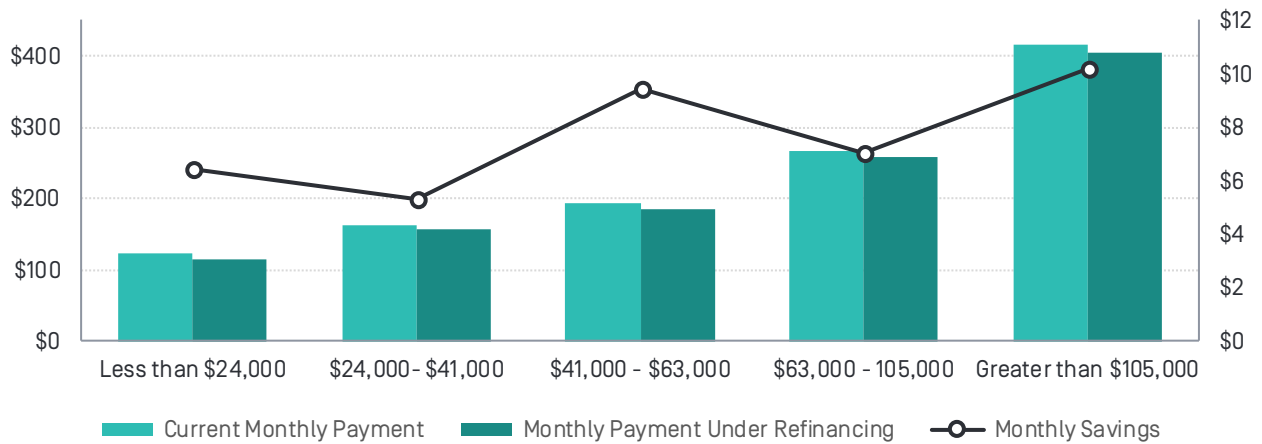
Comparing the share of the total monthly subsidy received by each group, we find that refinancing disproportionately helps some borrowers. To estimate this, we calculate the percentage of total savings based on the average for each group and the share of borrowers in our survey. We find that, for instance, borrowers who never finish a college degree make up

Table 2 | What Are the Monthly Savings to Borrowers Under Refinancing?

	Current Monthly Payment	Monthly Payment Under Refinancing	Monthly Savings
All borrowers	\$264.94	\$256.77	\$8.17
Highest Degree of Household Head			
High school degree or less	\$164.20	\$157.46	\$6.74
Associate's degree	\$242.73	\$234.32	\$8.40
Bachelor's degree	\$269.22	\$260.04	\$9.18
Master's or Doctorate	\$452.84	\$443.51	\$9.33
Race of Household Head			
White	\$294.25	\$286.27	\$7.98
Black/African American	\$156.13	\$147.93	\$8.20
Hispanic	\$235.81	\$224.85	\$10.96
Other	\$283.34	\$276.46	\$6.89
Household Income			
Less than \$24,000	\$121.85	\$115.41	\$6.44
\$24,000 - \$41,000	\$161.88	\$156.59	\$5.30
\$41,000 - \$63,000	\$192.96	\$183.54	\$9.42
\$63,000 - 105,000	\$265.04	\$258.04	\$7.00
Greater than \$105,000	\$414.42	\$404.22	\$10.20
Total Outstanding Debt			
Less than \$5,000	\$119.27	\$116.38	\$2.88
\$5,000 - \$12,000	\$161.29	\$156.90	\$4.39
\$12,000 - \$22,000	\$205.15	\$196.81	\$8.34
\$22,000 - \$44,000	\$283.79	\$272.14	\$11.65
Greater than \$44,000	\$590.42	\$575.41	\$15.00

Source: New America analysis of 2013 Survey of Consumer Finances, Federal Reserve Board.

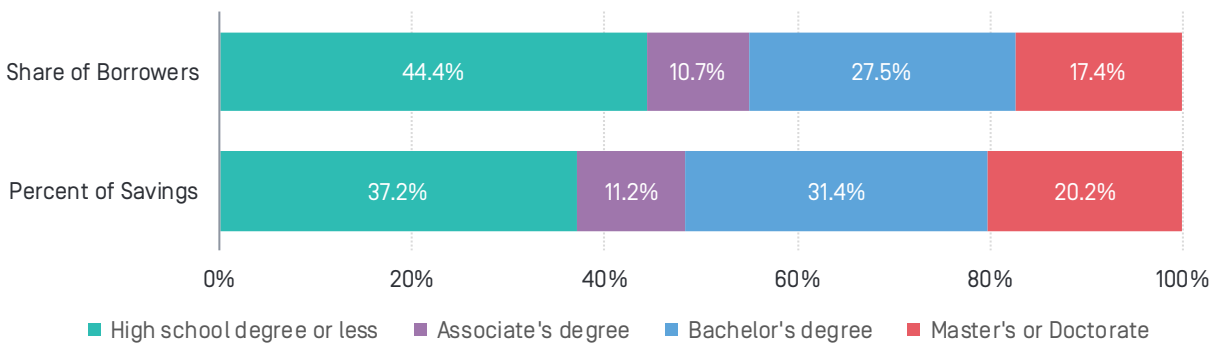
Figure 3 | Monthly Savings to Borrowers, by Household Income



Source: New America analysis of 2013 Survey of Consumer Finances, Federal Reserve Board.



Figure 4 | Monthly Savings as a Share of All Savings, by Highest Degree of Household Head



Source: New America analysis of 2013 Survey of Consumer Finances, Federal Reserve Board.



Note: The share of borrowers, combined with their average monthly savings, are used to generate an estimate of the total monthly savings that accrue to each group.

a full 44.4 percent of our sample,ⁱⁱⁱ yet receive a third of the monthly savings from an interest rate cut. In contrast, borrowers with a bachelor's degree or higher

make up a similar portion of borrowers, but receive 51.6 percent of the monthly savings (see **Figure 4**).

Other groups are similarly overrepresented in terms of the monthly savings from refinancing, relative to the share of the population of borrowers. In particular, Hispanic borrowers, those with high earnings, and those with high balances receive a disproportionate share of savings from refinancing.

ⁱⁱⁱ This figure includes those who left school without finishing, as well as those who take on loans on behalf of their children or another family member, yet do not themselves hold a degree.

Table 3 | Total Monthly Savings as a Share of All Borrowers' Savings

	Share of Borrowers	Share of Savings
Highest Degree of Household Head		
High school degree or less	44.4%	37.2%
Associate's degree	10.7%	11.2%
Bachelor's degree	27.5%	31.4%
Master's or Doctorate	17.4%	20.2%
Race of Household Head		
White	65.6%	64.0%
Black/African American	22.7%	22.7%
Hispanic	7.1%	9.4%
Other	4.7%	3.9%
Household Income		
Less than \$24,000	15.3%	12.6%
\$24,000- \$41,000	17.2%	11.7%
\$41,000 - \$63,000	21.1%	25.5%
\$63,000 - 105,000	25.3%	22.7%
Greater than \$105,000	21.1%	27.5%
Total Outstanding Debt		
Less than \$5,000	20.2%	6.9%
\$5,000 - \$12,000	20.2%	10.6%
\$12,000 - \$22,000	20.9%	20.8%
\$22,000 - \$44,000	18.9%	26.2%
Greater than \$44,000	19.8%	35.4%

Source: New America analysis of 2013 Survey of Consumer Finances, Federal Reserve Board.



HOW REFINANCING AFFECTS TOTAL AMOUNT PAID OVER THE LIFE OF THE LOAN

Of course, reducing monthly payments is not the only thing that matters to borrowers. A lower interest rate also means a lower total amount paid over the life of a loan: if a loan accrues less interest, the borrower has to pay fewer dollars back in total.^{iv} To calculate these changes, we create repayment schedules for each loan that allow us to identify the total amount each borrower will pay over the remaining life of the loan and the number of payments he or she will make, using current interest rates and monthly payments reported to SCF.

We assume the monthly payment reported to SCF does not change over time. While some borrowers will pay higher monthly payments later on in the course of their repayment plan, there is no way to identify these borrowers or estimate future payment amounts with the available data. We use the calculation of the number of payments along

^{iv} Because of forgiveness provisions for federal student loans, some borrowers will not repay the full amount owed on their loans derived from their reported monthly payment, balance, and interest rate. While this is rare, we limit the number of payments borrowers make on their loans to the equivalent of 12 monthly payments for 25 years, after which we assume the remaining balance is forgiven.

with new interest rates to determine a new monthly payment amount. This allows us to create a new repayment schedule and compare the total amount paid after refinancing. All figures represented here are in nominal dollars and not adjusted for inflation, which likely overestimates the financial impact of refinancing, since borrowers would receive these savings over the remaining life of their loan, and future savings are less valuable to borrowers compared to immediate savings due to inflation and other factors.^v

^v Borrowers with federal loans also may choose from a variety of repayment plans, including certain plans where the monthly payment amount increases over the course of repayment. For these borrowers, the total amount saved is likely overestimated, since the duration of the repayment period would be shortened by the increased monthly payments. For borrowers in income-based plans, this is also the case for many: since income growth leads to higher monthly payments, the repayment period may be shorter than predicted here, leading to lower overall interest savings.

Table 4 | What Are the Total Savings Over the Remaining Life of the Loan?

	Current Balance	Total Paid Over Remaining Life of the Loan	Total Paid Under Refinancing	Total Savings Over Remaining Life of Loan
All borrowers	\$29,470	\$30,998	\$30,057	\$941
Highest Degree of Household Head				
High school degree or less	\$19,194	\$20,938	\$20,177	\$761
Associate's degree	\$22,306	\$22,732	\$21,681	\$1,051
Bachelor's degree	\$29,591	\$29,870	\$28,759	\$1,111
Master's or Doctorate	\$51,462	\$54,760	\$53,766	\$994
Race of Household Head				
White	\$31,825	\$33,455	\$32,562	\$892
Black/African American	\$20,263	\$20,055	\$19,041	\$1,014
Hispanic	\$20,905	\$23,175	\$21,746	\$1,429
Other	\$41,284	\$46,575	\$45,888	\$686
Household Income				
Less than \$24,000	\$16,594	\$17,517	\$16,662	\$855
\$24,000 - \$41,000	\$21,078	\$23,051	\$22,398	\$653
\$41,000 - \$63,000	\$19,490	\$18,841	\$17,877	\$964
\$63,000 - 105,000	\$33,487	\$32,561	\$31,701	\$859
Greater than \$105,000	\$41,455	\$46,964	\$45,803	\$1,161
Total Outstanding Debt				
Less than \$5,000	\$2,665	\$3,069	\$2,969	\$100
\$5,000 - \$12,000	\$8,482	\$10,367	\$10,019	\$348
\$12,000 - \$22,000	\$17,373	\$22,291	\$21,218	\$1,073
\$22,000 - \$44,000	\$31,404	\$34,942	\$33,472	\$1,470
Greater than \$44,000	\$93,835	\$90,917	\$88,988	\$1,929

Source: New America analysis of 2013 Survey of Consumer Finances, Federal Reserve Board.

On average, among all student loan borrowers, total savings over the remaining life of a loan are \$941,^{vi} with the average borrower paying a total of \$30,998 under current interest rates and \$30,057 after refinancing.

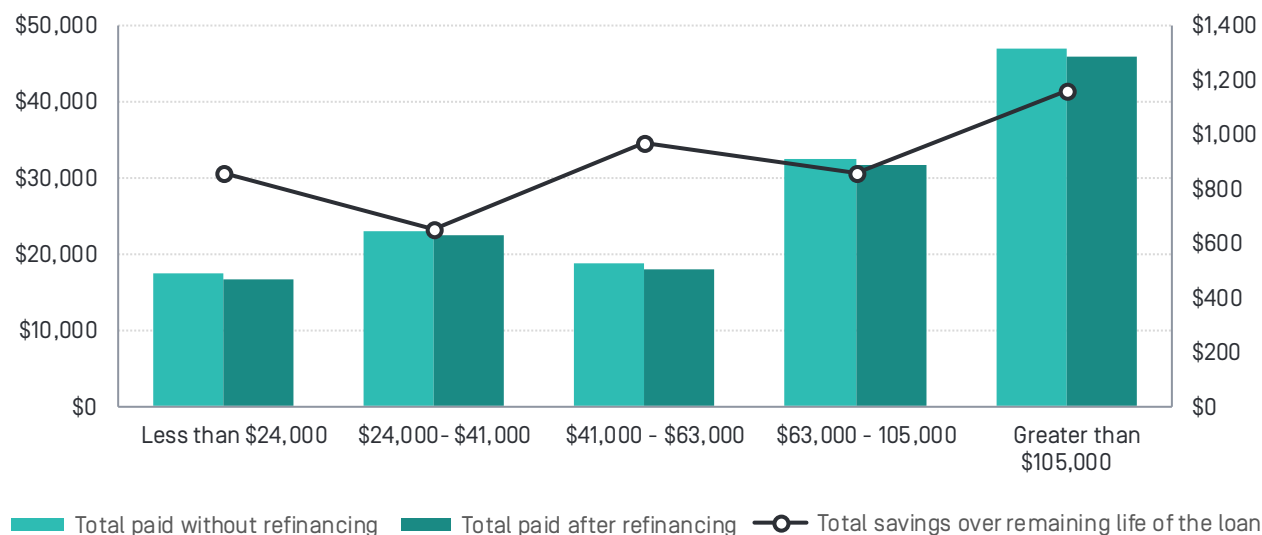
As with the monthly savings, the total amount saved varies across borrower characteristics. Total savings are lowest for those without a college degree, at an average of \$761 over the course of the loan. In contrast, bachelor's degree holders save an average of \$1,111. Likewise, Hispanic households realize greater total savings (\$1,429) than white households (\$892) or black households (\$1,014).

^{vi} Total savings are calculated for borrowers with loans where the monthly payment is sufficient to cover the interest charged, plus some share of principal owed. For borrowers where this is not the case, the total amount owed is dependent upon forgiveness at some future point, or increased monthly payments as income increases, neither of which can be reliably predicted given the available data.

Borrowers with higher incomes save more than less affluent borrowers. Specifically, borrowers from the lowest income quintile save about \$855, while those in the highest income quintile save \$1,161 (see **Figure 5**). By far the strongest predictor of the amount saved is a borrower's outstanding balance. For households which owe more than \$44,000, total savings average \$1,929, nearly 20 times greater than those for households with balances below \$5,000, which save an average of \$100 over the entire course of the loan. This is a mathematical reality, given that interest is charged each month as a percentage of the outstanding debt, making an interest rate cut most valuable in nominal dollars when large sums of money are involved.

In terms of the total savings, some households are overrepresented relative to the population of borrowers in our data. We calculate the share of total dollars saved among borrowers from different demographics to evaluate what share of the refinancing costs would benefit each group.

Figure 5 | Total Savings Over the Remaining Life of the Loan, by Household Income



Source: New America analysis of 2013 Survey of Consumer Finances, Federal Reserve Board.



Table 5 | Share of Lifetime Savings by Demographic Group

	Share of Borrowers	Share of Savings
Highest Degree of Household Head		
High school degree or less	44.4%	36.3%
Associate's degree	10.7%	12.1%
Bachelor's degree	27.5%	32.9%
Master's or Doctorate	17.4%	18.6%
Race of Household Head		
White	65.6%	61.8%
Black/African American	22.7%	24.2%
Hispanic	7.1%	10.6%
Other	4.7%	3.4%
Household Income		
Less than \$24,000	15.3%	14.4%
\$24,000 - \$41,000	17.2%	12.4%
\$41,000 - \$63,000	21.1%	22.4%
\$63,000 - 105,000	25.3%	23.9%
Greater than \$105,000	21.1%	26.9%
Total Outstanding Debt		
Less than \$5,000	20.2%	2.1%
\$5,000 - \$12,000	20.2%	7.2%
\$12,000 - \$22,000	20.9%	23.1%
\$22,000 - \$44,000	18.9%	28.5%
Greater than \$44,000	19.8%	39.2%

Source: New America analysis of 2013 Survey of Consumer Finances, Federal Reserve Board.

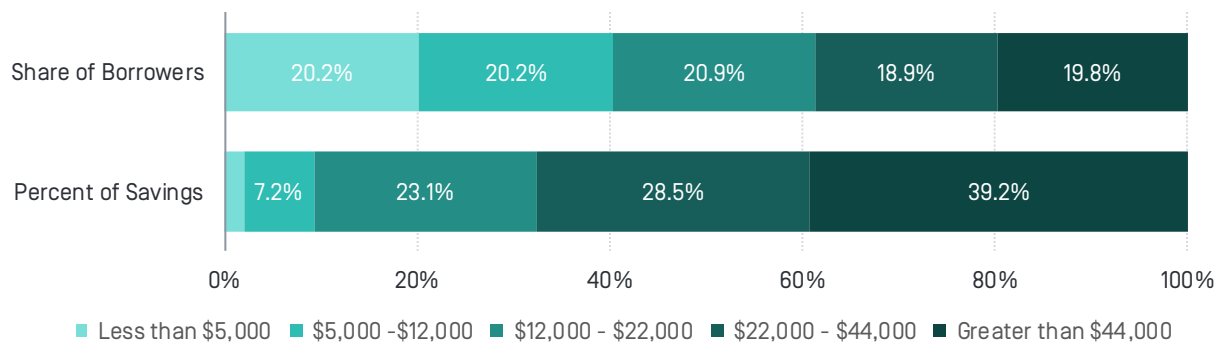
Note: The share of borrowers, combined with their average lifetime savings, are used to generate an estimate of the total monthly savings that accrue to each group.



Unsurprisingly, these contrasts are most pronounced for borrowers from different debt levels, with low-debt households making up about 20 percent of the population with any student debt, yet receiving 2 percent of the savings from refinancing (see **Figure 6**). High-debt households make up a fifth of borrowers but receive nearly half the benefits from refinancing. Likewise, high-income

borrowers make up about 21.1 percent of households with debt, but receive 26.9 percent of the benefits from refinancing (see **Figure 7**). Because income, educational attainment, and debt are highly correlated measures, those with high balances, with advanced degrees, and with the highest earnings tend to be overrepresented in terms of the savings from refinancing.

Figure 6 | Share of Lifetime Savings, by Total Outstanding Debt

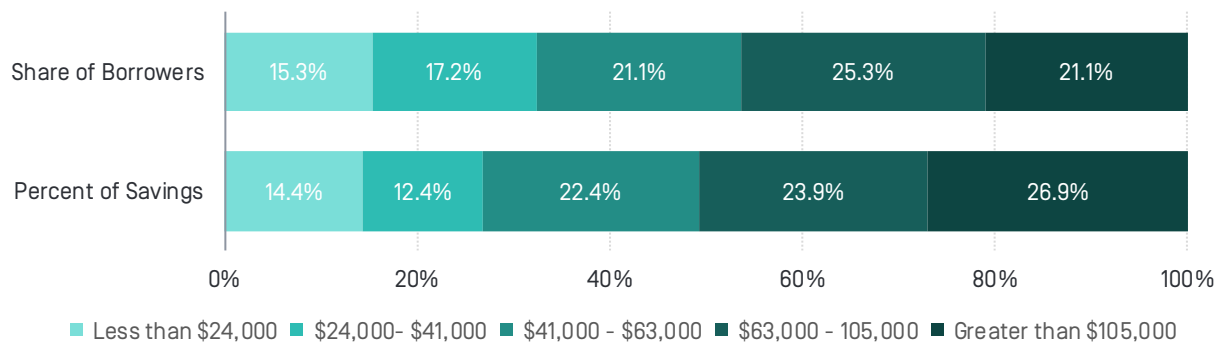


Source: New America analysis of 2013 Survey of Consumer Finances, Federal Reserve Board.

Note: The share of borrowers, combined with their average lifetime savings, are used to generate an estimate of the total monthly savings that accrue to each group.



Figure 7 | Share of Lifetime Savings, by Household Income



Source: New America analysis of 2013 Survey of Consumer Finances, Federal Reserve Board.

Note: The share of borrowers, combined with their average lifetime savings, are used to generate an estimate of the total monthly savings that accrue to each group.



THE INTERSECTION OF REFINANCING AND INCOME-BASED REPAYMENT

Borrowers in the federal direct student loan portfolio who enroll in an IBR plan would not benefit from refinancing in all cases—because monthly payments in IBR are based on income, an interest rate reduction would not affect the monthly payments for those borrowers. While many could secure a lower interest rate through refinancing, their monthly savings from refinancing are effectively zero because their monthly payment is based on their income, not their level of debt. To estimate the share of borrowers who maximize savings from either refinancing or IBR, we calculate a monthly payment based on Revised Pay As You Earn (REPAYE),⁵ which allows those with federal student loans to pay back 10 percent of their income in excess of an exemption that is based on family size.^{vii}

Using households' reported income, REPAYE terms, and reported monthly payments, we generate estimates of how refinancing and IBR interact. Around 57.4 percent of households would save more

from enrolling in IBR than refinancing. An additional 27.1 percent would not save from refinancing or IBR. This leaves 15.5 percent of households that would gain more from refinancing proposals than from existing IBR policies. However, there is significant variation in the composition of each group.

For instance, for households from the lowest income quartile, 95.9 percent would save more from IBR, because these borrowers would likely have a very low or zero monthly payment. In contrast, among households in the highest income quartile, just 25.5 percent benefit from enrolling in IBR, and 25 percent of high-income households benefit more from refinancing than from enrolling in IBR (see **Figure 8**).

Because payments for borrowers in IBR change significantly over time, and forgiveness occurs after 10, 20, or 25 years, we do not attempt to estimate the total savings to borrowers from enrolling in income-based plans, nor do we attempt to compare these benefits with those accrued under refinancing over the course of a loan. However, for the many low-income borrowers enrolled in IBR who are expected to reach forgiveness, refinancing would have no effect on the total amount paid on the loan. Refinancing would decrease the amount forgiven, but would not change the total amount the borrower pays.

^{vii} The IBR payment amount is based strictly on income, and then compared to the current monthly payment amount reported by borrowers to SCF. If a borrower's income is low—for any reason—she will be more likely to save money through enrolling in IBR, but the amount borrowed also matters since the standard monthly payment will be determined from this amount.

Table 6 | How Does Refinancing Compare to IBR?

	Share Who Benefit More from IBR	Share Who Benefit More from Refinance	Share Who Neither Benefit from Refinance or IBR	Average Monthly Payment Under IBR	Average Monthly Payment Under Current Law	Average Monthly Payment Under Refinance
All borrowers	57.4%	15.5%	27.1%	\$226	\$265	\$257
Highest Degree of Household Head						
High school degree or less	66.8%	14.1%	19.1%	\$146	\$164	\$157
Associate's degree	50.6%	15.9%	33.5%	\$214	\$243	\$234
Bachelor's degree	54.9%	17.2%	27.8%	\$260	\$269	\$260
Master's or Doctorate	40.9%	16.4%	42.7%	\$387	\$453	\$444
Race of Household Head						
White	52.4%	17.0%	30.7%	\$264	\$294	\$286
Black/African American	71.6%	11.0%	17.4%	\$128	\$156	\$148
Hispanic	65.5%	11.6%	22.8%	\$146	\$236	\$225
Other	44.6%	24.1%	31.3%	\$296	\$283	\$276
Household Income						
Less than \$24,000	95.9%	1.2%	2.9%	\$33	\$122	\$115
\$24,000 - \$41,000	83.5%	4.6%	11.9%	\$76	\$162	\$157
\$41,000 - \$63,000	61.3%	14.6%	24.1%	\$170	\$193	\$184
\$63,000 - 105,000	37.6%	25.6%	36.7%	\$264	\$265	\$258
Greater than \$105,000	25.5%	25.0%	49.5%	\$496	\$414	\$404
Total Outstanding Debt						
Less than \$5,000	47.6%	20.2%	32.3%	\$134	\$119	\$116
\$5,000 - \$12,000	59.0%	19.5%	21.6%	\$180	\$161	\$157
\$12,000 - \$22,000	49.3%	19.3%	31.4%	\$200	\$205	\$197
\$22,000 - \$44,000	67.4%	11.4%	21.3%	\$276	\$284	\$272
Greater than \$44,000	64.0%	7.0%	29.0%	\$345	\$590	\$575

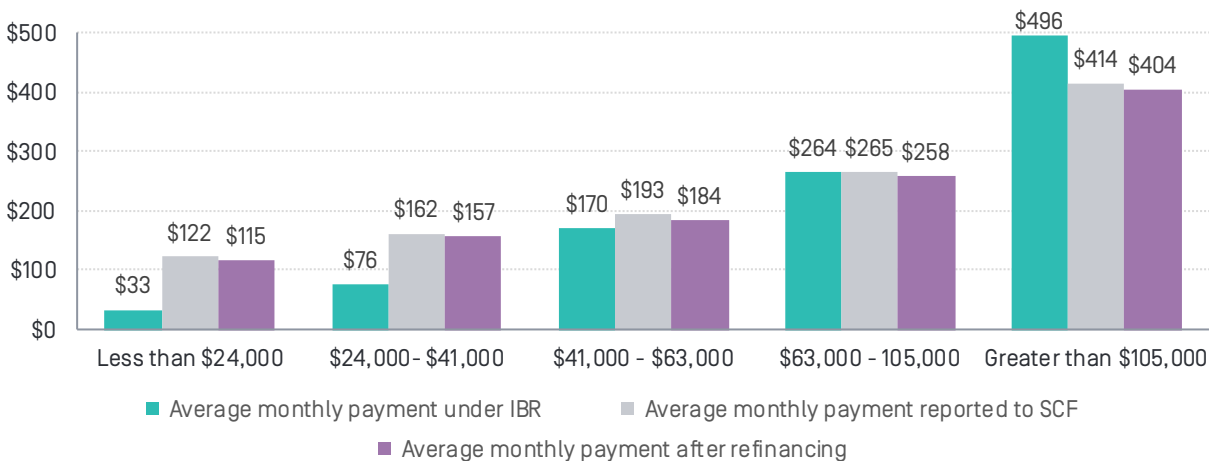
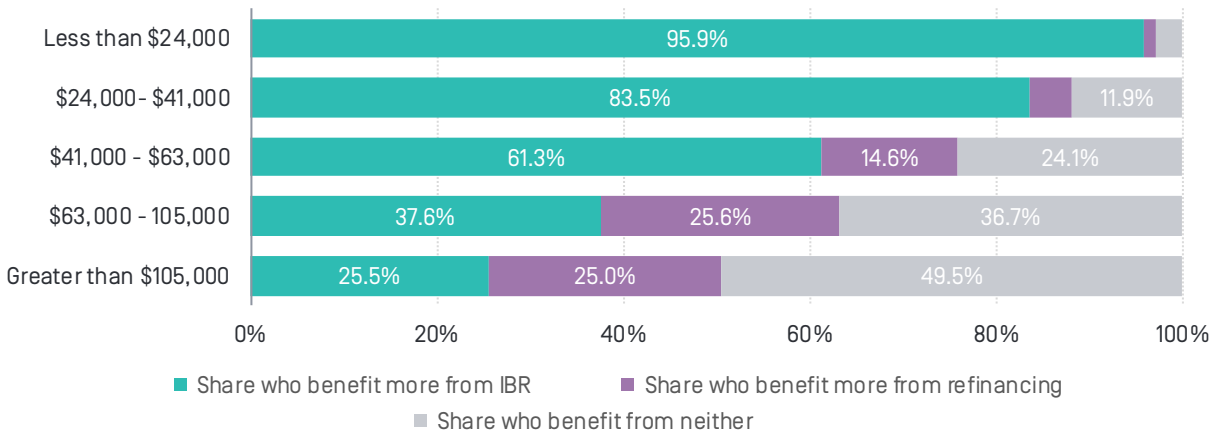
Source: New America analysis of 2013 Survey of Consumer Finances, Federal Reserve Board.

In recent years, many policy experts have focused on the subgroup of borrowers using income-based plans making payments that do not cover the interest accruing on their balances each month, causing the amount owed on the loans to increase over time. These borrowers are able to avoid default, but because their outstanding debt is increasing, they could have more trouble securing additional credit. While not all borrowers in IBR plans meet these conditions, they are an important subgroup in the refinancing debate because lower interest

rates should mean more borrowers are able to make progress in paying down their debt.

Looking at loans currently in repayment, 6.7 percent of households with student debt reported at least one loan with a monthly payment amount insufficient to cover accruing interest, thus increasing the total balance each month. After refinancing, this number drops to 3.7 percent of households with student debt.

Figure 8 | Share Who Benefit More from IBR or Refinancing, by Household Income



Source: New America analysis of 2013 Survey of Consumer Finances, Federal Reserve Board.



IMPROVEMENTS ON REFINANCING PROPOSALS

Refinancing would disproportionately help a small number of high-debt households while costing the government a significant amount of money. Since wealthier people are more educated and thus tend to have higher debt levels, refinancing helps wealthier borrowers save the most. The majority of borrowers would not benefit from refinancing, and the average household with student debt would save just \$8 per month.

Those worried about the burden of student debt on borrowers with low incomes and/or high debt loads should know that a much more targeted and generous program already exists. Income-based repayment plans ensure that borrowers owe an affordable percentage of their monthly income and that they will not have to make payments beyond 10, 20, or 25 years.

The vast majority of low-income borrowers would face lower monthly payments if they were to use income-based plans instead of refinancing. Furthermore, since many of those borrowers are not making principal payments, they may have their loans forgiven before making payments sufficient to repay the entire balance of the loan. In that case, refinancing would *never* change their monthly payments, their number of payments, or their total amount paid.

Rather than expending significant taxpayer dollars on a poorly targeted, complex program, Congress should instead allocate a fraction of the cost of refinancing to modest improvements for income-based repayment plans. First, the Department of Education should increase outreach to low-income borrowers, as well as delinquent and defaulted borrowers, about the benefits of IBR. Many of these borrowers would face \$0 monthly payments if they enroll, thus helping the most at-risk borrowers without the added cost of subsidizing everyone else. Congress should also encourage the Department to create processes in tandem with the Internal Revenue Service to make enrolling and staying in IBR easier for borrowers hoping to use income-based plans for multiple years.

Congress should pair this increased outreach with a reform to the IBR program that makes forgiveness tax-free. This more modest proposal likely costs less than \$50 million, making Warren's \$60 billion proposal over 1,000 times more expensive. By not taxing the forgiven amount, the government eliminates the pernicious effect of interest on borrowers who receive loan forgiveness through IBR.

Compared with other policy alternatives, refinancing is poorly targeted, expensive, and not designed to provide the relief needed for the lowest-income borrowers.

Appendix A: Detailed Methodology

We use the 2013 Survey of Consumer Finances (SCF), a triennial survey sponsored by the Federal Reserve Board, which records details of outstanding education loans for each household, including monthly payment, total amount borrowed, and current interest rates. We use this data to estimate individual-level payments for the entire course of each loan. We assume monthly payments and interest rates are constant, as is the case for the 10-year standard repayment plan that is typical of federal student loans, and calculate the number of payments and total amount paid for each loan reported to the SCF.

Borrowers can report up to six education loans to SCF, with a seventh catch-all category used for all remaining loans. Each loan is treated separately, but monthly payments and total amount paid are combined to generate the amounts reported here. Borrowers who reported being delinquent on any loan are excluded from this analysis because of the requirement that borrowers be in good standing to receive refinancing benefits. While SCF does not differentiate between federally backed bank-based loans and those made by private lenders without federal support, Warren’s bill allows private loans of all types to be refinanced and so all education-related loans in good standing are included here. Most borrowers report loan data on a monthly basis; for all others, loans are converted to a monthly payment amount to retain consistency.

Calculating the Total Amount Paid

Monthly payment, current interest rate, and the total amount borrowed for each education loan is reported to the SCF. To calculate the total amount the borrower pays over the life of a loan, we first exclude any loan whose reported monthly payments are insufficient to cover the interest that accrues each month^{viii} and place it in a separate category.

^{viii} For loans where the interest accrued is greater than payment amount, the balance owed will actually increase

These borrowers are assumed to make monthly payments until forgiveness takes effect. For the remaining loans, we add accumulated interest and subtract monthly payments from the remaining balance each month until the outstanding balance reaches zero. In doing so, we calculate the number of payments it takes for the borrower to finish paying off the loan and the total amount paid during that time.

Assigning New Interest Rates

Household heads can borrow either for their own education or for the education of a child or spouse, and there are multiple types of loans available to individuals. Because each of these loans currently carries a different interest rate, we infer the loan type in order to assess the “new” interest rate that should be assigned to the loan. We do this by generating estimates of the amount borrowed for children based on the presence of children of college age, the age of the household head, and the year the loan was initially taken out. Next, we assign any remaining loans to the education of the household head or spouse, based on the amount borrowed to Subsidized Undergraduate Stafford, Unsubsidized Undergraduate Stafford, Graduate Stafford, or Graduate PLUS in accordance with the average amount borrowed in each loan category for degree completers in 2012, using the National Postsecondary Student Aid Study, assigning debt to loans with the lowest interest rates first. **Table 7** shows the allocation of household debt to each type of loan, based on our analytical framework.

If the resulting calculation for any reason gives the loan a higher interest rate than the person self-reported to SCF, we leave the original reported rate in place and assume that that borrower would not refinance that loan. We test the sensitivity of our results under these assumptions and confirm that we have not distorted the effects of refinancing. We

each month and will never reach zero.

Table 7 | Allocation of Household Debt to Each Type of Loan

	Undergraduate Stafford	Graduate Stafford	Graduate PLUS	Parent PLUS	Total Amount Borrowed
All borrowers	\$20,405	\$4,346	\$3,226	\$6,927	\$34,904
Highest Degree of Household Head					
High school degree or less	\$15,382	\$1,160	\$586	\$5,131	\$22,258
Associate's degree	\$22,025	\$0	\$0	\$6,776	\$28,801
Bachelor's degree	\$27,436	\$2,598	\$2,641	\$6,758	\$39,432
Master's or Doctorate	\$21,417	\$18,102	\$13,032	\$11,967	\$64,518
Race of Household Head					
White	\$21,799	\$4,699	\$4,194	\$7,991	\$38,683
Black/African American	\$17,037	\$2,518	\$760	\$5,027	\$25,342
Hispanic	\$17,879	\$1,963	\$363	\$4,495	\$24,700
Other	\$21,274	\$12,246	\$6,189	\$4,925	\$44,634
Household Income					
Less than \$24,000	\$17,923	\$1,447	\$1,775	\$3,084	\$24,228
\$24,000 - \$41,000	\$18,417	\$1,798	\$450	\$5,063	\$25,728
\$41,000 - \$63,000	\$20,814	\$3,152	\$1,183	\$4,421	\$29,570
\$63,000 - 105,000	\$21,153	\$4,098	\$3,228	\$8,544	\$37,022
Greater than \$105,000	\$22,559	\$9,801	\$8,325	\$12,002	\$52,686
Total Outstanding Debt					
Less than \$5,000	\$6,472	\$214	\$782	\$1,931	\$9,398
\$5,000 - \$12,000	\$10,752	\$155	\$0	\$3,161	\$14,069
\$12,000 - \$22,000	\$17,594	\$684	\$0	\$4,163	\$22,440
\$22,000 - \$44,000	\$23,811	\$3,221	\$424	\$8,353	\$35,810
Greater than \$44,000	\$44,722	\$18,016	\$15,375	\$17,528	\$95,640

Source: New America analysis of 2013 Survey of Consumer Finances, Federal Reserve Board.

do so by running this analysis while assigning all loans the lowest possible interest rate (4.45 percent). Under this low-end estimate, just 60.8 percent of borrowers refinance, and savings reach to \$12 per month, or \$1,363 over the life of the loan.

Calculating New Monthly Payments and New Total Paid

Once a new interest rate has been estimated, this interest rate is used with individuals' reported balances and the number of payments generated earlier to estimate a new monthly payment. The new monthly payment is capped at the original amount the borrower reported to SCF.

Borrowers with monthly payments less than the accumulated interest on their loans each month are assigned to a separate category for later analysis. For all other borrowers, we repeat the process of calculating the total amount paid and the number of payments using the same method described above. Additionally, borrowers who require more than 25

years (300 monthly payments) to pay back their loans are treated as making 300 payments, after which we assume any remaining balance is forgiven.

Calculating IBR Payment Amounts and Comparisons to Refinancing

Income protections are calculated using household size and 2013 poverty thresholds. This amount is subtracted from borrowers' reported household income, and 10 percent of the remaining amount is divided into 12 monthly payments. We then classify borrowers as benefitting from IBR under one of two conditions: 1) their estimated payment under IBR is less than their estimated payment under refinancing; or 2) their estimated payments are equal in both circumstances, and their currently reported payment is zero. We then compare borrowers' savings under IBR with their savings under refinancing, comparing the new monthly payment in each case and assigning borrowers to the category with the lower payment amount. For borrowers whose payment is zero in all three cases, we assume that IBR would

Notes

¹ Rachel Fishman and Manuela Ekowo, "Higher Education in the Election" New America's Education Policy Program, <https://www.newamerica.org/education-policy/edcentral/higher-education-election/>.

² Douglas W. Elmendorf, Director, Congressional Budget Office, letter to the Honorable Elizabeth Warren, U.S. Senate (June 6, 2014), https://www.cbo.gov/sites/default/files/113th-congress-2013-2014/costestimate/s2432ltr0_0.pdf.

³ Susan M. Dynarski, "What Does Cutting Rates on Student Loans Do?" Evidence Speaks series, Brookings, April 14, 2016, <https://www.brookings.edu/research/what-does-cutting-rates-on-student-loans-do/>.

⁴ Board of Governors of the Federal Reserve System, *2013 Survey of Consumer Finances*, September 4, 2014. <https://www.federalreserve.gov/econres/scfindex.htm>

⁵ U.S. Department of Education, Federal Student Aid, "Announcement of New REPAYE Plan," <https://teststudentaid.ed.gov/testise/about/announcements/repaye>.



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