Internet Appendix

The Distributional Effects of Student Loan Forgiveness

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A Additional Tables and Figures

Figure A.1: Partial Balance Forgiveness - Phased out Above $75,000

This figure displays the average change in student debt per capita after a partial balance forgiveness of $50,000 per person for households with per capita earnings below $75,000. For each additional dollar of per capita earnings, the amount forgiven per person is reduced by one dollar. The red line reports the ratio of the average discounted payment saving to the average balance reduction in each group. Error bars represent bootstrapped 90% confidence intervals.

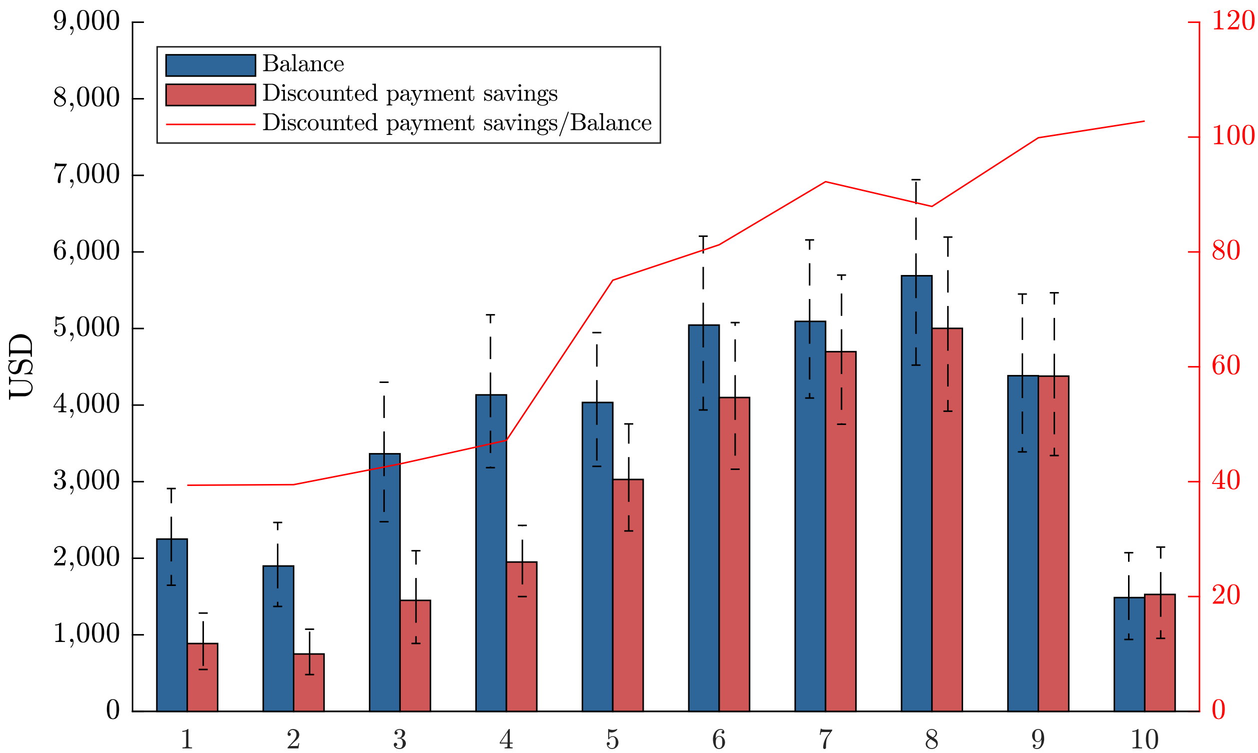

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Figure A.2: Discounted Payment Savings for Drop-outs

This figure displays discounted payment savings from full balance forgiveness by decile and drop-out status. A person is considered to have dropped out of college if their educational status in the SCF is "some college but no degree." Error bars represent bootstrapped 90% confidence intervals.

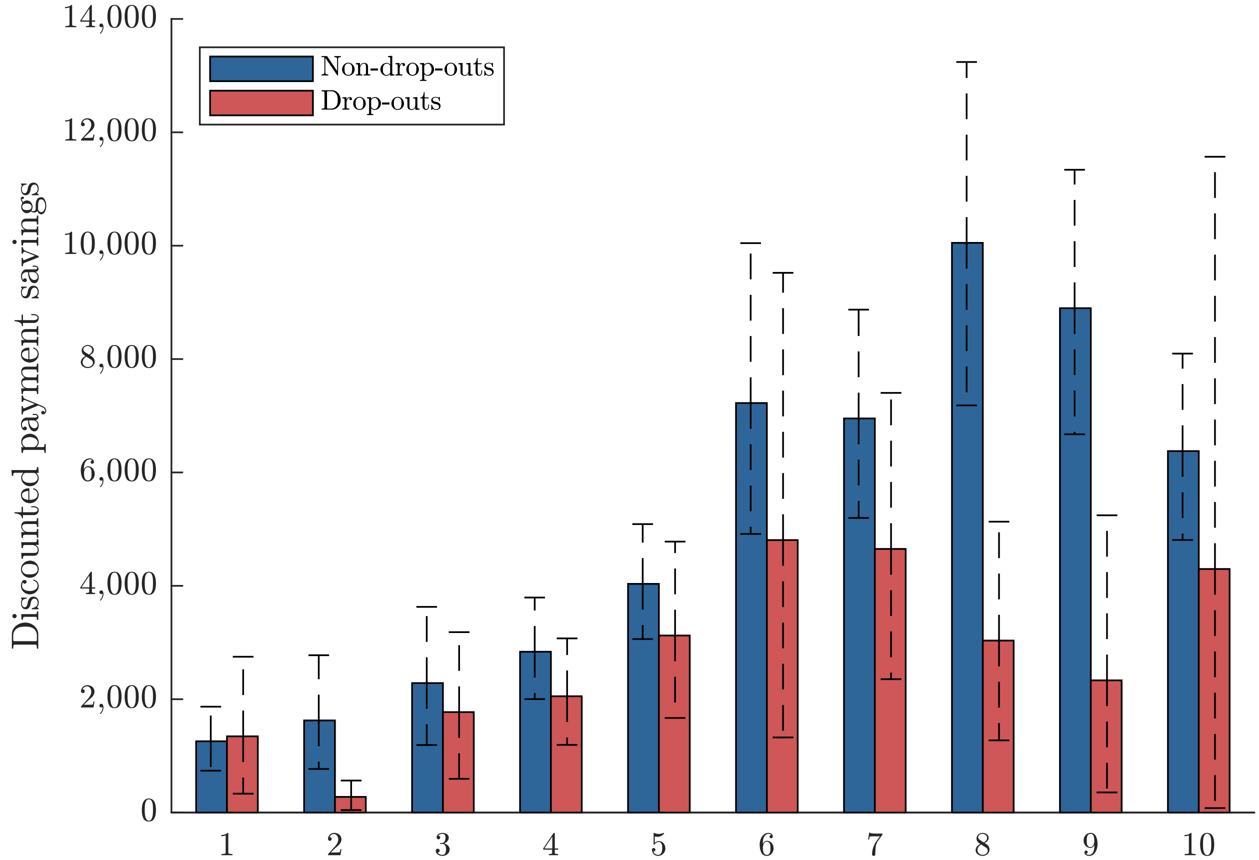


Figure A.3: Average Student Debt by Race/Ethnicity

This figure displays balances and present values of loans by race and ethnicity. Error bars represent bootstrapped 90% confidence intervals.

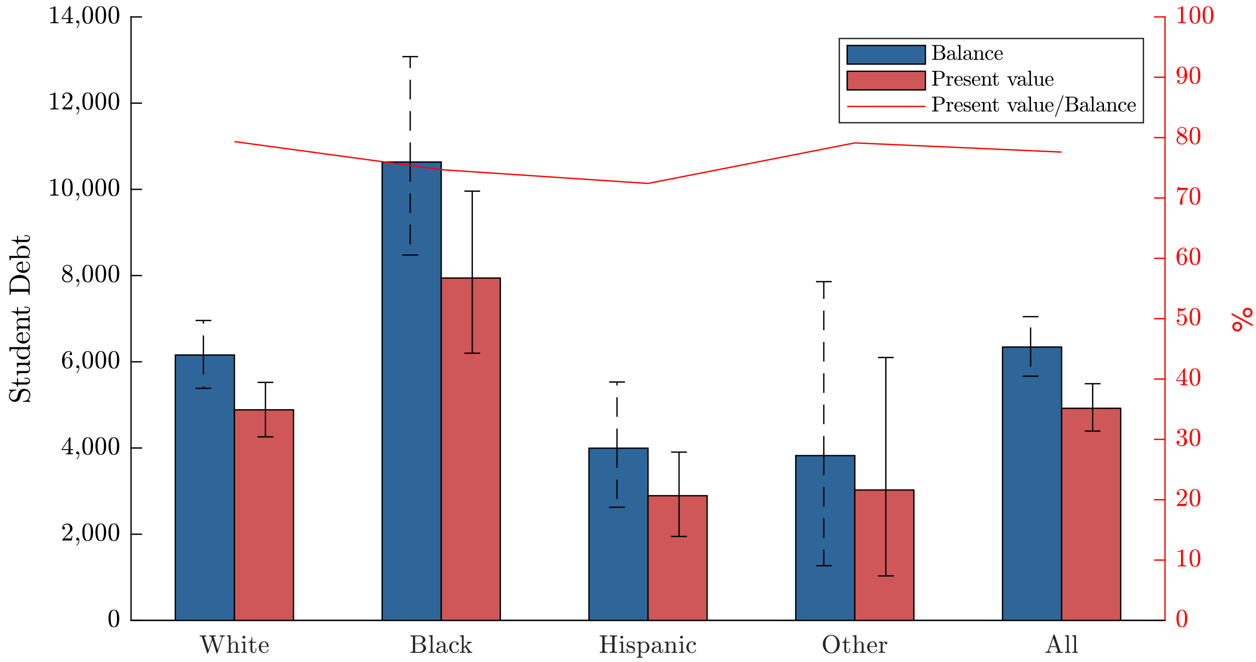


Figure A.4: Student Loan Delinquency and Market Returns

This figure displays mean annual 90-day delinquency rates by S&P-500 returns. The left panel uses contemporaneous returns, while the right panel uses lagged returns. The coefficient from a regression of delinquency rates on returns is .0185, with a standard error of .0161. The coefficient from a regression of delinquency rates on lagged returns is .0266, with a standard error of .0112. 90-day delinquency rates are obtained from the Federal Reserve Bank of New York.

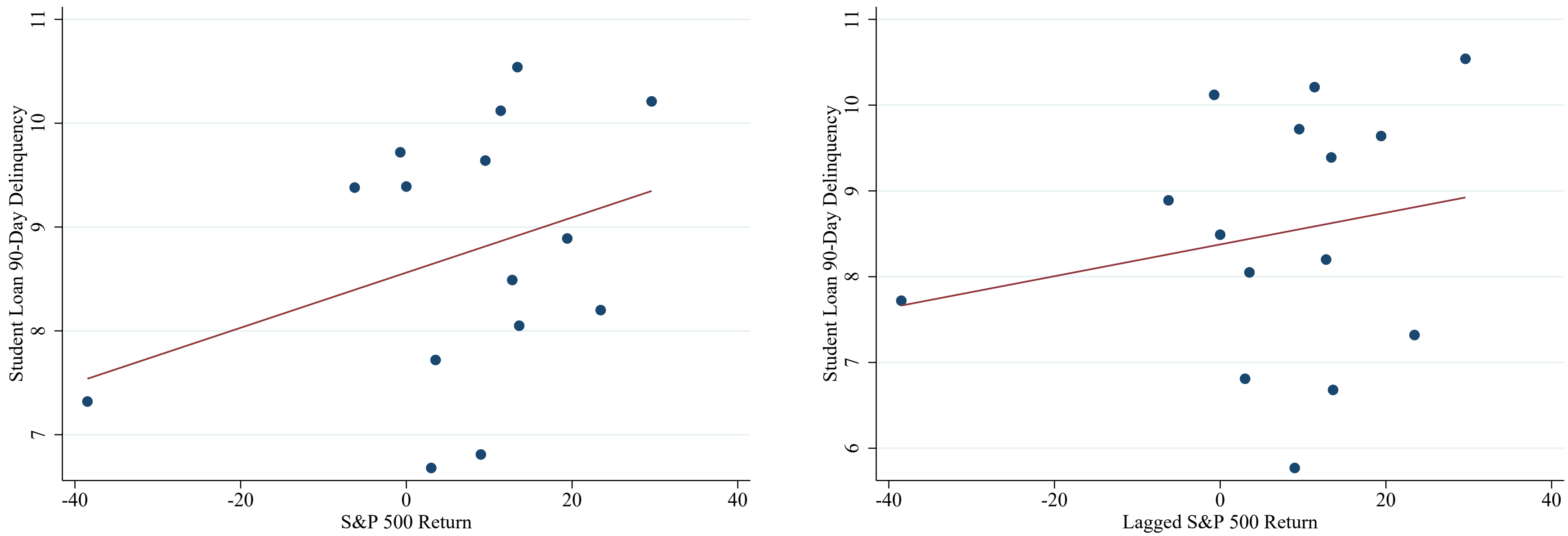


Table A.1: Variable Descriptions

This table describes the main variables used in the analysis. All variables are taken from the Federal Reserve's 2019 Survey of Consumer Finances (SCF). The actual variable labels from SCF are included in the description. Any monetary variables are in terms of 2019 dollars.

Name	Description
Balance	Current balance of each education loan. SCF main dataset: x7824 x7847 x7870 x7924 x7947 x7970
Initial Balance	Original amount borrowed for each education loan, excluding finance charges. SCF main dataset: x7805 x7828 x7851 x7905 x7928 x7951
Payment	Yearly payment on each education loan. Converted to annual payments based on the frequency of payments. SCF main dataset: x7815 x7838 x7861 x7915 x7038 x7961
Interest Rate	The annual rate of interest charged on each education loan. SCF main dataset: x7822 x7845 x7868 x7922 x7945 x7968
Year Left School	The last year that the borrower attends the program that they used each education loan for. SCF main dataset: x7880 x7885 x7890 x7895 x7900 x7995
First Repayment Year	The year that a borrower begins making payments on each education loan. SCF main dataset: x7811 x7834 x7857 x7911 x7934 x7957
Why Zero	Explains why the payments on an education loan are zero. Options include being in forbearance or a job or public service loan forgiveness program, not being able to afford payments, and still being enrolled or in the post-graduation grace period. SCF main dataset: x9300, x9301, x9302, x9303, x9304, x9305
IDR	Indicates whether the payments on an education loan are affected by either being in an income-based repayment program or hardship deferral. SCF main dataset: x7422 x7424 x7426 x7428 x7430 x7432
Family Income	Total income for each household. Taken directly from SCF Survey Extract data.
Wage Income	Income from wages and salaries for each household. Taken directly from SCF Survery Extract data.
Number of Adults	Number of adults in each household. Value is either one or two depending on whether the reference person is married. Taken directly from SCF Survey Extract data.
Number of Children	Number of children in each household. Taken directly from SCF Survey Extract data.

Table A.2: Income Decile Cutoffs

This table shows highest level of each earnings decile, by age and earnings decile. Age groups go from youngest to oldest vertically, and earnings deciles go from lowest to highest horizontally. Each observation shows the top income in the group. All data comes from the Federal Reserve's 2019 Survey of Consumer Finances (SCF). Any monetary variables are in terms of 2019 dollars.

Age	**Earnings Decile**									
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
25	0	12,200	21,900	25,500	28,000	33,600	38,200	40,700	47,900	85,500
30	12,200	20,400	25,500	32,600	40,700	49,400	56,000	71,300	87,600	214,800
35	4,400	16,300	20,900	26,500	36,100	47,900	56,000	66,200	73,800	189,400
40	1,000	14,300	23,400	30,000	39,200	49,400	67,200	91,600	119,600	381,800
45	0	15,300	25,500	34,600	40,700	48,900	58,000	74,300	113,000	743,200
50	4,100	13,200	18,800	36,700	39,700	46,300	64,100	87,600	115,600	1,730,800
55	0	0	18,800	30,500	44,300	50,900	66,200	89,100	127,300	7,885,300
60	0	0	13,200	21,400	31,600	36,700	59,100	69,200	130,300	3,563,400

Table A.3: Student Debt by Earnings and Wealth Quartile

This table reports the average student debt per person by quartile of wealth and earnings, including households without debts. Wealth is defined using the SCF "networth" variable, which is the sum of all assets minus liabilities. Quartiles are built within age groups. Panel A reports the average balance while Panel B reports present values.

Panel A. Outstanding Balance

Earnings	Wealth quartile			
quartile	1	2	3	4
1	5,950	1,248	1,887	917
2	12,664	2,338	3,402	2,449
3	30,226	3,634	3,660	3,551
4	45,952	10,907	6,040	3,938

Panel B. Present Value

	1	2	3	4
1	2,216	657	1,012	1,114
2	5,890	2,169	2,020	1,334
3	22,903	3,672	3,838	3,952
4	38,752	11,648	6,357	4,064

Table A.4: Discounted Payment Savings from Forgiving Balances and Targeted IDR Enrollment

This table reports the total and per capita discounted payment savings of the policies we evaluate, by race/ethnic group, including households without student debt. First, we consider canceling all student loan balances, or only $50,000 or $10,000 per person, or up to $50,000 with a phase out range between $75,000 and $125,000 in earnings. Second, we consider enrolling households who would benefit from income-driven repayment. In IDR policy (a), they pay 10% of their discretionary income, in line with current IDR rules. In policy (b), loans are also forgiven 10 years after the first repayment. In policy (c), discretionary income is limited to earnings above three times the poverty line. In policy (d), payments are reduced to 7.5% of discretionary income. The last two rows report the discounted payment savings and change in balance for the entire population. Panel A is analogous to Table 2 and Panel B is analogous to Table 4. All present values are in pre-tax dollars.

Panel A: Discounted Payment Savings

	Per person ($)								Total ($bn)								Share of total cost (%)							
	Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
White	4,885	3,382	1,206	2,920	219	3,142	1,139	568	413.7	286.5	102.2	247.3	18.5	266.1	96.5	48.1	64.3	67.8	70.5	67.0	51.6	64.1	55.5	53.6
Black	7,942	4,887	1,392	4,423	790	5,309	3,002	1,625	149.9	92.2	26.3	83.5	14.9	100.2	56.6	30.7	23.3	21.8	18.1	22.6	41.4	24.1	32.5	34.1
Hispanic	2,894	1,763	631	1,595	112	1,831	888	380	52.1	31.8	11.4	28.7	2.0	33.0	16.0	6.8	8.1	7.5	7.8	7.8	5.6	8.0	9.2	7.6
Other	3,025	1,286	567	1,068	54	1,705	530	453	27.7	11.8	5.2	9.8	0.5	15.6	4.9	4.1	4.3	2.8	3.6	2.7	1.4	3.8	2.8	4.6

Panel B: With a 2% risk premium

	Per person ($)								Total ($bn)								Share of total cost (%)							
	Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
White	4,347	2,999	1,060	2,573	210	2,713	1,057	541	368.2	254.0	89.8	217.9	17.8	229.8	89.5	45.8	64.8%	68.3%	70.8%	67.4%	52.0%	64.8%	56.3%	54.9%
Black	6,907	4,216	1,190	3,792	740	4,454	2,687	1,475	130.3	79.6	22.5	71.6	14.0	84.0	50.7	27.8	22.9%	21.4%	17.7%	22.1%	40.8%	23.7%	31.9%	33.4%
Hispanic	2,528	1,548	553	1,393	108	1,537	792	338	45.6	27.9	10.0	25.1	1.9	27.7	14.3	6.1	8.0%	7.5%	7.9%	7.8%	5.7%	7.8%	9.0%	7.3%
Other	2,633	1,147	510	946	56	1,414	487	403	24.1	10.5	4.7	8.7	0.5	13.0	4.5	3.7	4.2%	2.8%	3.7%	2.7%	1.5%	3.7%	2.8%	4.4%

B Taxation of Loan Forgiveness

In the main analysis, we assume that loan forgiveness under IDR is untaxed and compute deciles based on pre-tax income. This is consistent with any forgiveness that happens after Dec. 31, 2020, and before Jan. 1, 2026, under the American Rescue Plan Act of 2021. However, under current law forgiveness after Jan. 1, 2026 is still taxed. While many experts believe that these rules will be changed before forgiveness under IDR occurs,[1] under current law loan forgiveness is treated as taxable income. In this appendix we explore the implications of taxes on loan forgiveness programs.

First, we project how much taxes borrowers will pay under the current system. We assume that 2019 tax brackets (Table B.1) will grow at the same rate as consumer prices. For couples, we multiply the cutoffs by two, which is equivalent to assuming that they will file jointly. Taxable income is the sum of a family's earnings and forgiven balances in a given year, minus the standard deduction. Family earnings evolve under the same assumptions as in Section 3.1. As for tax brackets cutoffs, we assume the standard deduction to be twice as large for couples and to grow at the same rate as inflation. We define the tax cost related to balance forgiveness as the increase in taxes resulting from the inclusion of the forgiven balance to its taxable income.

Figure B.1 shows the average present value of these tax costs. The top panel shows amounts for all households, the middle panel shows households with student debt and the bottom panel shows households with any projected tax bill. These tax bills largely mirror the benefits of IDR forgiveness, with the middle of the income distribution paying the largest tax bills. Effectively, taxing loan forgiveness under IDR undoes some of the benefits of IDR loan forgiveness. Panel C reports the average balance by decile and per person for households who will have to pay such taxes. These present values are quite substantial. It is important to note that it is not clear how much the IRS will actually collect from individuals in the bottom 10% if they owe $14,000.

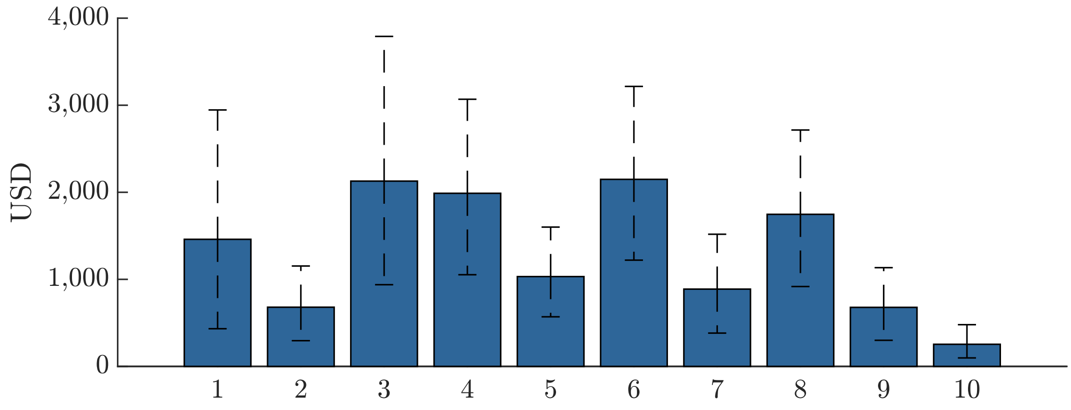
Nonetheless, we can assume that these taxes will be paid and estimate the benefits of combining the policies we previously considered with an end to such taxation. To that purpose, Table B.2 repeats the analysis in Table 2, but assumes that these taxes are removed and reports the results in post-tax dollars. To be specific, we measure the discounted payment saving of each policy, under the assumption that borrowers would have paid taxes when their loan is forgiven under the status-quo, but that all taxes are removed under new policies. The levels of forgiveness increase substantially–because it now includes the benefit from eliminating IDR forgiveness taxes–but the basic patterns regarding income progressivity and regressivity of various options do not. Under universal and capped forgiveness plans, the majority of benefits accrue to the top income deciles, while under IDR plans the majority of forgiveness accrues to the middle and bottom of the income distribution.

[1] For example, the Wall Street Journal, June 24, 2018 writes that "the IRS would likely be forced to cut deals or write off taxable amounts altogether, some experts say."

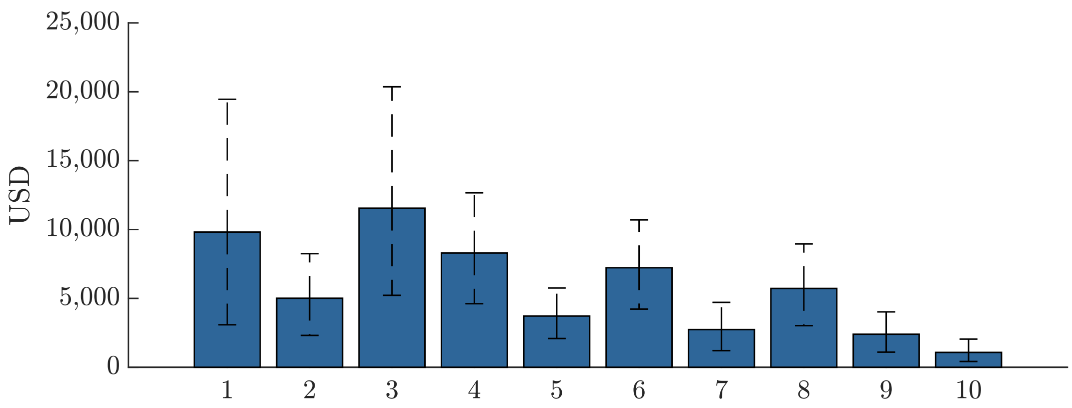
Figure B.1: Present value of taxes on forgiven balances

This figure displays the average present value of projected taxes on balances forgiven in the future, per person and within-cohort decile of earnings. Panel A reports the mean for the entire sample. Panel B reports the mean for households with student debts. Panel C reports the mean for households projected to have to pay such taxes.

Panel A. All households



Panel B. Households with student debt



Panel C. Households with projected tax bill

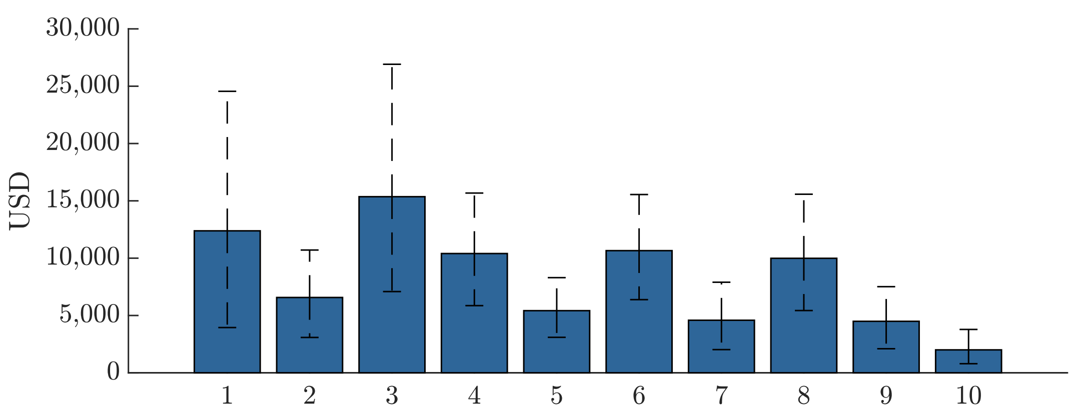


Table B.1: 2019 Tax Brackets

This table displays the tax rates applicable to each income bracket for single individuals. The standard deduction is $12,200 in 2019.

Bracket	**Rate**
Up to $9,700	10%
$9,701 –$39,475	12%
$39,476 –$84,200	22%
$84,201 –$160,725	24%
$160,726 –$204100	32%
$204,101 –$510,300	35%
Over $510,301	37%

Table B.2: Discounted Payment Savings from Forgiving Balances and Targeted IDR Enrollment– Post-Tax Dollars

This table reports the total and per capita discounted payment savings of the policies we evaluate, by within-cohort decile of earnings group, including households without student debt combined with ending taxation on canceled balances. First, we consider canceling all student loan balances, or only $50,000 or $10,000 per person, or up to $50,000 with a phase out range between $75,000 and $125,000 in earnings. Second, we consider enrolling households who would benefit from income-driven repayment. In IDR policy (a), they pay 10% of their discretionary income, in line with current IDR rules. In policy (b), loans are also forgiven 10 years after the first repayment. In policy (c), discretionary income is limited to earnings above three times the poverty line. In policy (d), payments are reduced to 7.5% of discretionary income. The last two rows report the discounted payment savings and change in balance for the entire population. Unlike in Table 2, we combine these policies with end to forgiveness taxation, including under IDR. All present values are in post-tax dollars and include the benefits of this change in the tax policy.

	Per person ($)							
	Balance Forgiveness				IDR Enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	2,736	2,346	1,846	2,346	1,673	2,464	2,140	1,801
2	2,094	1,429	1,019	1,429	723	1,741	1,252	930
3	4,309	3,578	2,580	3,578	2,275	3,584	3,403	2,581
4	4,696	3,939	2,672	3,939	1,765	3,772	3,164	2,143
5	4,899	4,060	2,226	4,060	1,188	3,655	2,676	1,555
6	8,933	6,247	3,545	6,247	2,199	5,883	4,154	3,030
7	7,458	5,585	2,608	5,585	847	4,632	2,329	1,381
8	10,826	6,925	3,357	6,749	2,047	7,503	3,635	2,986
9	8,952	6,186	2,432	5,057	844	5,993	1,731	1,377
10	6,521	4,477	1,645	1,781	227	4,269	441	424
All	6,226	4,533	2,413	4,128	1,380	4,398	2,509	1,830

	Total ($bn)							
	Balance Forgiveness				IDR Enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	31.5	27.0	21.2	27.0	19.2	28.3	24.6	20.7
2	26.1	17.8	12.7	17.8	9.0	21.7	15.6	11.6
3	57.6	47.8	34.5	47.8	30.4	47.9	45.5	34.5
4	62.7	52.6	35.7	52.6	23.6	50.4	42.2	28.6
5	64.1	53.1	29.1	53.1	15.5	47.8	35.0	20.3
6	120.6	84.3	47.9	84.3	29.7	79.4	56.1	40.9
7	101.4	75.9	35.5	75.9	11.5	63.0	31.7	18.8
8	143.5	91.8	44.5	89.5	27.1	99.5	48.2	39.6
9	121.0	83.6	32.9	68.3	11.4	81.0	23.4	18.6
10	85.5	58.7	21.6	23.4	3.0	56.0	5.8	5.6
All	814.0	592.7	315.5	539.8	180.5	575.0	328.1	239.2

	Share of total cost (%)							
	Balance Forgiveness				IDR Enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	3.9	4.5	6.7	5.0	10.7	4.9	7.5	8.7
2	3.2	3.0	4.0	3.3	5.0	3.8	4.8	4.8
3	7.1	8.1	10.9	8.9	16.9	8.3	13.9	14.4
4	7.7	8.9	11.3	9.7	13.1	8.8	12.9	12.0
5	7.9	9.0	9.2	9.8	8.6	8.3	10.7	8.5
6	14.8	14.2	15.2	15.6	16.5	13.8	17.1	17.1
7	12.5	12.8	11.2	14.1	6.4	11.0	9.7	7.8
8	17.6	15.5	14.1	16.6	15.0	17.3	14.7	16.5
9	14.9	14.1	10.4	12.7	6.3	14.1	7.1	7.8
10	10.5	9.9	6.8	4.3	1.7	9.7	1.8	2.3
All	100%	100%	100%	100%	100%	100%	100%	100%

Income of beneficiaries								
	55,345	46,263	53,495	45,444	35,904	54,474	38,151	38,789

Ratios								
Top 50/Bottom 50	2.28	1.92	1.31	1.66	0.81	1.86	0.97	1.02
Top 30/Bottom 30	2.88	2.39	1.37	1.85	0.67	2.28	0.85	0.90
Top 30/Middle 30	1.42	1.23	0.88	0.95	0.61	1.33	0.58	0.71

C Alternative Discount Rates and Earnings Growth

In the main analysis, we assume a discount rate of 3%, and an earnings growth rate of 2%. In this section, we repeat the analysis in Table 2 but vary these assumptions. We vary earnings growth rates from 1 to 3%, and allow discount rates to be 1, 3, 5 and 7%. The results are shown in tables C.1 to C.11. Our basic pattern of results and conclusions remain unchanged.

Table C.1: Discounted Payment Savings from Forgiving Balances and Targeted IDR Enrollment– Earnings Increase: 1% | Discount Rate: 1%

This table reports the total and per capita discounted payment savings of the policies we evaluate, by within-cohort decile of earnings group, including households without student debt. First, we consider canceling all student loan balances, or only $50,000 or $10,000 per person, or up to $50,000 with a phase out range between $75,000 and $125,000 in earnings. Second, we consider enrolling households who would benefit from income-driven repayment. In IDR policy (a), they pay 10% of their discretionary income, in line with current IDR rules. In policy (b), loans are also forgiven 10 years after the first repayment. In policy (c), discretionary income is limited to earnings above three times the poverty line. In policy (d), payments are reduced to 7.5% of discretionary income. The last two rows report the discounted payment savings and change in balance for the entire population. In comparison to Table 2, we use alternative earnings growth and discount rate assumptions.

	Per person ($)							
	Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	1,371	963	419	963	366	1,165	850	497
2	1,519	797	368	797	123	1,174	667	345
3	2,305	1,539	482	1,539	536	1,770	1,632	827
4	2,849	2,047	734	2,047	244	2,170	1,691	611
5	4,160	3,272	1,298	3,272	326	2,938	1,993	716
6	7,443	4,491	1,547	4,491	264	4,324	2,508	1,134
7	7,230	5,206	1,910	5,206	305	4,360	1,992	831
8	10,060	5,745	1,800	5,559	776	6,710	2,559	1,719
9	9,118	6,114	1,951	4,899	287	6,033	1,397	904
10	6,828	4,624	1,543	1,707	97	4,481	355	310
All	5,376	3,538	1,223	3,101	333	3,564	1,583	797

	Total ($bn)							
	Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	15.8	11.1	4.8	11.1	4.2	13.4	9.8	5.7
2	18.9	9.9	4.6	9.9	1.5	14.6	8.3	4.3
3	30.8	20.6	6.4	20.6	7.2	23.7	21.8	11.1
4	38.0	27.3	9.8	27.3	3.3	29.0	22.6	8.2
5	54.4	42.8	17.0	42.8	4.3	38.4	26.1	9.4
6	100.5	60.6	20.9	60.6	3.6	58.4	33.9	15.3
7	98.3	70.8	26.0	70.8	4.1	59.3	27.1	11.3
8	133.4	76.2	23.9	73.7	10.3	89.0	33.9	22.8
9	123.2	82.6	26.4	66.2	3.9	81.5	18.9	12.2
10	89.6	60.7	20.2	22.4	1.3	58.8	4.7	4.1
All	702.9	462.5	159.9	405.4	43.6	466.0	206.9	104.3

	Share of total cost (%)							
	Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	2.24	2.39	3.01	2.73	9.66	2.87	4.72	5.48
2	2.69	2.15	2.87	2.45	3.53	3.14	4.02	4.12
3	4.39	4.45	4.03	5.07	16.46	5.08	10.54	10.61
4	5.41	5.91	6.12	6.74	7.47	6.22	10.91	7.83
5	7.74	9.25	10.62	10.56	9.77	8.25	12.60	8.98
6	14.30	13.11	13.06	14.96	8.17	12.53	16.36	14.69
7	13.98	15.30	16.23	17.46	9.52	12.72	13.08	10.84
8	18.97	16.47	14.92	18.18	23.60	19.09	16.39	21.85
9	17.53	17.86	16.48	16.33	8.91	17.49	9.12	11.71
10	12.74	13.11	12.65	5.52	2.91	12.62	2.25	3.91
All	100%	100%	100%	100%	100%	100%	100%	100%

Income of beneficiaries								
	60,591	58,237	60,670	50,060	42,383	61,487	42,042	45,708

Ratios								
Top 50/Bottom 50	3.33	3.04	2.65	2.54	1.08	2.81	1.29	1.64
Top 30/Bottom 30	5.01	5.00	4.17	3.69	1.13	4.19	1.37	1.76
Top 30/Middle 40	1.20	1.10	0.96	0.81	1.02	1.25	0.53	0.89

Table C.2: Discounted Payment Savings from Forgiving Balances and Targeted IDR Enrollment– Earnings Increase: 1% | Discount Rate: 3%

This table reports the total and per capita discounted payment savings of the policies we evaluate, by within-cohort decile of earnings group, including households without student debt. First, we consider canceling all student loan balances, or only $50,000 or $10,000 per person, or up to $50,000 with a phase out range between $75,000 and $125,000 in earnings. Second, we consider enrolling households who would benefit from income-driven repayment. In IDR policy (a), they pay 10% of their discretionary income, in line with current IDR rules. In policy (b), loans are also forgiven 10 years after the first repayment. In policy (c), discretionary income is limited to earnings above three times the poverty line. In policy (d), payments are reduced to 7.5% of discretionary income. The last two rows report the discounted payment savings and change in balance for the entire population. In comparison to Table 2, we use alternative earnings growth and discount rate assumptions.

Per person ($)

Earnings Decile	Balance forgiveness: Full	50K	10K	Cap	Targeted IDR enrollment: Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	1,187	834	363	834	321	994	743	436
2	1,303	708	323	708	121	981	596	311
3	1,991	1,310	411	1,310	511	1,496	1,438	757
4	2,465	1,779	638	1,779	235	1,836	1,489	552
5	3,657	2,887	1,142	2,887	304	2,520	1,804	655
6	6,386	3,870	1,324	3,870	241	3,506	2,224	1,010
7	6,359	4,543	1,656	4,543	279	3,680	1,823	768
8	8,731	4,976	1,542	4,802	721	5,603	2,307	1,566
9	8,057	5,344	1,697	4,223	237	5,162	1,265	810
10	6,167	4,152	1,363	1,501	62	3,953	328	280
All	4,707	3,091	1,062	2,691	304	3,016	1,418	722

Total ($bn)

Earnings Decile	Balance forgiveness: Full	50K	10K	Cap	Targeted IDR enrollment: Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	13.6	9.6	4.2	9.6	3.7	11.4	8.5	5.0
2	16.2	8.8	4.0	8.8	1.5	12.2	7.4	3.9
3	26.6	17.5	5.5	17.5	6.8	20.0	19.2	10.1
4	32.9	23.8	8.5	23.8	3.1	24.5	19.9	7.4
5	47.8	37.8	14.9	37.8	4.0	33.0	23.6	8.6
6	86.2	52.3	17.9	52.3	3.3	47.3	30.0	13.6
7	86.4	61.8	22.5	61.8	3.8	50.0	24.8	10.4
8	115.7	66.0	20.4	63.7	9.6	74.3	30.6	20.8
9	108.9	72.2	22.9	57.1	3.2	69.7	17.1	10.9
10	80.9	54.5	17.9	19.7	0.8	51.9	4.3	3.7
All	615.4	404.1	138.8	351.8	39.8	394.4	185.5	94.4

Share of total cost (%)

Earnings Decile	Balance forgiveness: Full	50K	10K	Cap	Targeted IDR enrollment: Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	2.2	2.4	3.0	2.7	9.3	2.9	4.6	5.3
2	2.6	2.2	2.9	2.5	3.8	3.1	4.0	4.1
3	4.3	4.3	4.0	5.0	17.2	5.1	10.4	10.7
4	5.3	5.9	6.1	6.8	7.9	6.2	10.7	7.8
5	7.8	9.3	10.8	10.7	10.0	8.4	12.7	9.1
6	14.0	12.9	12.9	14.9	8.2	12.0	16.2	14.4
7	14.0	15.3	16.2	17.6	9.5	12.7	13.4	11.1
8	18.8	16.3	14.7	18.1	24.0	18.8	16.5	22.0
9	17.7	17.9	16.5	16.2	8.1	17.7	9.2	11.6
10	13.1	13.5	12.9	5.6	2.1	13.1	2.3	3.9
All	100%	100%	100%	100%	100%	100%	100%	100%

Income of beneficiaries	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
	61,051	58,440	61,030	50,034	40,693	62,192	42,087	45,419

Ratios	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
Top 50/Bottom 50	3.37	3.04	2.63	2.52	1.03	2.80	1.31	1.64
Top 30/Bottom 30	5.12	5.08	4.19	3.69	1.07	4.24	1.40	1.77
Top 30/Middle 40	1.22	1.11	0.97	0.80	0.96	1.28	0.53	0.89

Table C.3: Discounted Payment Savings from Forgiving Balances and Targeted IDR Enrollment– Earnings Increase: 1% | Discount Rate: 5%

This table reports the total and per capita discounted payment savings of the policies we evaluate, by within-cohort decile of earnings group, including households without student debt. First, we consider canceling all student loan balances, or only $50,000 or $10,000 per person, or up to $50,000 with a phase out range between $75,000 and $125,000 in earnings. Second, we consider enrolling households who would benefit from income-driven repayment. In IDR policy (a), they pay 10% of their discretionary income, in line with current IDR rules. In policy (b), loans are also forgiven 10 years after the first repayment. In policy (c), discretionary income is limited to earnings above three times the poverty line. In policy (d), payments are reduced to 7.5% of discretionary income. The last two rows report the discounted payment savings and change in balance for the entire population. In comparison to Table 2, we use alternative earnings growth and discount rate assumptions.

	Per person ($)							
	Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	1,040	731	319	731	285	860	658	388
2	1,132	634	287	634	118	832	537	283
3	1,742	1,130	356	1,130	487	1,283	1,280	697
4	2,158	1,565	561	1,565	227	1,573	1,325	505
5	3,251	2,574	1,014	2,574	291	2,189	1,648	609
6	5,548	3,376	1,147	3,376	230	2,880	1,990	909
7	5,651	4,003	1,452	4,003	277	3,144	1,685	739
8	7,665	4,357	1,336	4,193	687	4,735	2,095	1,441
9	7,186	4,716	1,490	3,675	211	4,463	1,166	753
10	5,609	3,753	1,212	1,330	57	3,518	338	287
All	4,166	2,728	931	2,361	288	2,584	1,288	668

	Total ($bn)							
	Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	12.0	8.4	3.7	8.4	3.3	9.9	7.6	4.5
2	14.1	7.9	3.6	7.9	1.5	10.4	6.7	3.5
3	23.3	15.1	4.8	15.1	6.5	17.2	17.1	9.3
4	28.8	20.9	7.5	20.9	3.0	21.0	17.7	6.7
5	42.5	33.7	13.3	33.7	3.8	28.6	21.6	8.0
6	74.9	45.6	15.5	45.6	3.1	38.9	26.9	12.3
7	76.8	54.4	19.7	54.4	3.8	42.7	22.9	10.1
8	101.6	57.8	17.7	55.6	9.1	62.8	27.8	19.1
9	97.1	63.7	20.1	49.7	2.9	60.3	15.8	10.2
10	73.6	49.2	15.9	17.4	0.7	46.1	4.4	3.8
All	544.7	356.7	121.7	308.7	37.7	337.9	168.4	87.4

	Share of total cost (%)							
	Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	2.2	2.4	3.0	2.7	8.7	2.9	4.5	5.1
2	2.6	2.2	2.9	2.6	3.9	3.1	4.0	4.0
3	4.3	4.2	3.9	4.9	17.3	5.1	10.2	10.7
4	5.3	5.9	6.2	6.8	8.1	6.2	10.5	7.7
5	7.8	9.4	10.9	10.9	10.1	8.5	12.8	9.1
6	13.8	12.8	12.7	14.8	8.2	11.5	16.0	14.1
7	14.1	15.3	16.2	17.6	10.0	12.6	13.6	11.5
8	18.7	16.2	14.6	18.0	24.2	18.6	16.5	21.9
9	17.8	17.9	16.5	16.1	7.6	17.8	9.4	11.6
10	13.5	13.8	13.1	5.7	2.0	13.7	2.6	4.3
All	100%	100%	100%	100%	100%	100%	100%	100%

Income of beneficiaries								
	61,461	58,607	61,342	49,989	40,226	62,851	42,353	45,652

Ratios								
Top 50/Bottom 50	3.40	3.05	2.62	2.50	1.04	2.78	1.34	1.66
Top 30/Bottom 30	5.23	5.14	4.20	3.69	1.07	4.27	1.45	1.81
Top 30/Middle 40	1.23	1.11	0.97	0.80	0.93	1.30	0.54	0.90

Table C.4: Discounted Payment Savings from Forgiving Balances and Targeted IDR Enrollment– Earnings Increase: 1% | Discount Rate: 7%

This table reports the total and per capita discounted payment savings of the policies we evaluate, by within-cohort decile of earnings group, including households without student debt. First, we consider canceling all student loan balances, or only $50,000 or $10,000 per person, or up to $50,000 with a phase out range between $75,000 and $125,000 in earnings. Second, we consider enrolling households who would benefit from income-driven repayment. In IDR policy (a), they pay 10% of their discretionary income, in line with current IDR rules. In policy (b), loans are also forgiven 10 years after the first repayment. In policy (c), discretionary income is limited to earnings above three times the poverty line. In policy (d), payments are reduced to 7.5% of discretionary income. The last two rows report the discounted payment savings and change in balance for the entire population. In comparison to Table 2, we use alternative earnings growth and discount rate assumptions.

	Per person ($)								Total ($bn)								Share of total cost (%)							
	Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	921	648	283	648	257	751	589	349	10.6	7.4	3.2	7.4	3.0	8.6	6.8	4.0	2.2	2.3	3.0	2.7	8.0	3.0	4.4	4.9
2	996	573	256	573	114	716	488	260	12.4	7.1	3.2	7.1	1.4	8.9	6.1	3.2	2.6	2.2	3.0	2.6	3.9	3.0	3.9	3.9
3	1,541	987	313	987	463	1,114	1,151	645	20.6	13.2	4.2	13.2	6.2	14.9	15.4	8.6	4.2	4.2	3.9	4.8	16.8	5.1	10.0	10.5
4	1,909	1,390	498	1,390	221	1,364	1,190	465	25.5	18.6	6.6	18.6	3.0	18.2	15.9	6.2	5.2	5.8	6.2	6.8	8.0	6.2	10.3	7.5
5	2,917	2,316	908	2,316	286	1,922	1,518	576	38.2	30.3	11.9	30.3	3.7	25.1	19.9	7.5	7.8	9.5	11.0	11.1	10.1	8.6	12.9	9.2
6	4,875	2,978	1,003	2,978	224	2,395	1,796	831	65.8	40.2	13.5	40.2	3.0	32.3	24.3	11.2	13.5	12.7	12.6	14.7	8.2	11.0	15.7	13.6
7	5,068	3,559	1,284	3,559	287	2,715	1,565	719	68.9	48.4	17.5	48.4	3.9	36.9	21.3	9.8	14.2	15.2	16.2	17.7	10.6	12.6	13.8	11.9
8	6,798	3,853	1,169	3,698	670	4,049	1,925	1,345	90.1	51.1	15.5	49.0	8.9	53.7	25.5	17.8	18.5	16.1	14.4	17.9	24.0	18.3	16.5	21.7
9	6,464	4,198	1,321	3,228	210	3,897	1,088	720	87.3	56.7	17.8	43.6	2.8	52.6	14.7	9.7	17.9	17.8	16.6	16.0	7.7	18.0	9.5	11.8
10	5,134	3,413	1,086	1,185	79	3,156	352	316	67.3	44.8	14.2	15.5	1.0	41.4	4.6	4.1	13.8	14.1	13.2	5.7	2.8	14.1	3.0	5.0
All	3,723	2,431	824	2,091	283	2,239	1,181	630	486.8	317.8	107.7	273.4	36.9	292.8	154.4	82.3	100%	100%	100%	100%	100%	100%	100%	100%

Income of beneficiaries								
	61,824	58,744	61,612	49,928	40,975	63,463	42,720	46,255

Ratios								
Top 50/Bottom 50	3.42	3.04	2.60	2.48	1.10	2.76	1.36	1.71
Top 30/Bottom 30	5.32	5.19	4.20	3.67	1.15	4.30	1.51	1.90
Top 30/Middle 40	1.25	1.12	0.97	0.79	0.94	1.32	0.55	0.92

Table C.5: Discounted Payment Savings from Forgiving Balances and Targeted IDR Enrollment– Earnings Increase: 2% | Discount Rate: 1%

This table reports the total and per capita discounted payment savings of the policies we evaluate, by within-cohort decile of earnings group, including households without student debt. First, we consider canceling all student loan balances, or only $50,000 or $10,000 per person, or up to $50,000 with a phase out range between $75,000 and $125,000 in earnings. Second, we consider enrolling households who would benefit from income-driven repayment. In IDR policy (a), they pay 10% of their discretionary income, in line with current IDR rules. In policy (b), loans are also forgiven 10 years after the first repayment. In policy (c), discretionary income is limited to earnings above three times the poverty line. In policy (d), payments are reduced to 7.5% of discretionary income. The last two rows report the discounted payment savings and change in balance for the entire population. In comparison to Table 2, we use alternative earnings growth and discount rate assumptions.

	Per person ($)								Total ($bn)								Share of total cost (%)							
	Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	1,480	1,026	447	1,026	360	1,264	872	504	17.0	11.8	5.1	11.8	4.1	14.5	10.0	5.8	2.3	2.4	3.1	2.8	10.5	3.0	5.2	5.9
2	1,660	848	387	848	109	1,294	658	345	20.7	10.6	4.8	10.6	1.4	16.1	8.2	4.3	2.8	2.2	2.9	2.5	3.5	3.3	4.2	4.4
3	2,542	1,713	533	1,713	482	1,958	1,674	807	34.0	22.9	7.1	22.9	6.4	26.2	22.4	10.8	4.6	4.7	4.3	5.4	16.4	5.3	11.6	10.9
4	3,151	2,259	790	2,259	218	2,421	1,733	617	42.1	30.2	10.5	30.2	2.9	32.3	23.1	8.2	5.7	6.2	6.3	7.1	7.4	6.6	12.0	8.3
5	4,415	3,443	1,361	3,443	301	3,137	1,890	695	57.7	45.0	17.8	45.0	3.9	41.0	24.7	9.1	7.8	9.3	10.6	10.6	10.0	8.3	12.8	9.2
6	7,933	4,773	1,636	4,773	232	4,670	2,309	1,092	107.1	64.4	22.1	64.4	3.1	63.1	31.2	14.7	14.5	13.3	13.2	15.1	8.0	12.8	16.1	14.9
7	7,481	5,387	1,987	5,387	272	4,520	1,743	748	101.7	73.2	27.0	73.2	3.7	61.5	23.7	10.2	13.8	15.1	16.1	17.2	9.4	12.5	12.3	10.3
8	10,480	5,990	1,883	5,802	683	7,031	2,239	1,585	138.9	79.4	25.0	76.9	9.1	93.2	29.7	21.0	18.9	16.4	14.9	18.0	23.1	19.0	15.4	21.2
9	9,368	6,301	2,019	5,079	255	6,216	1,201	825	126.6	85.1	27.3	68.6	3.4	84.0	16.2	11.1	17.2	17.6	16.3	16.1	8.8	17.1	8.4	11.3
10	6,937	4,702	1,573	1,735	90	4,554	290	280	91.0	61.7	20.6	22.8	1.2	59.7	3.8	3.7	12.4	12.7	12.3	5.3	3.0	12.2	2.0	3.7
All	5,636	3,705	1,280	3,262	300	3,760	1,477	757	736.8	484.4	167.4	426.4	39.3	491.6	193.0	98.9	100%	100%	100%	100%	100%	100%	100%	100%

Income of beneficiaries								
	59,895	57,814	60,055	49,686	42,422	60,633	40,752	44,994

Ratios								
Top 50/Bottom 50	3.19	2.92	2.59	2.45	1.04	2.68	1.14	1.53
Top 30/Bottom 30	4.71	4.74	4.00	3.52	1.08	3.94	1.16	1.62
Top 30/Middle 40	1.17	1.07	0.95	0.80	1.01	1.21	0.49	0.85

Table C.6: Discounted Payment Savings from Forgiving Balances and Targeted IDR Enrollment– Earnings Increase: 2% | Discount Rate: 5%

This table reports the total and per capita discounted payment savings of the policies we evaluate, by within-cohort decile of earnings group, including households without student debt. First, we consider canceling all student loan balances, or only $50,000 or $10,000 per person, or up to $50,000 with a phase out range between $75,000 and $125,000 in earnings. Second, we consider enrolling households who would benefit from income-driven repayment. In IDR policy (a), they pay 10% of their discretionary income, in line with current IDR rules. In policy (b), loans are also forgiven 10 years after the first repayment. In policy (c), discretionary income is limited to earnings above three times the poverty line. In policy (d), payments are reduced to 7.5% of discretionary income. The last two rows report the discounted payment savings and change in balance for the entire population. In comparison to Table 2, we use alternative earnings growth and discount rate assumptions.

	Per person ($)								Total ($bn)								Share of total cost (%)							
	Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	1,114	775	338	775	282	926	675	393	12.8	8.9	3.9	8.9	3.2	10.6	7.8	4.5	2.3	2.4	3.1	2.8	9.5	3.0	4.9	5.4
2	1,222	669	300	669	107	906	532	283	15.2	8.3	3.7	8.3	1.3	11.3	6.6	3.5	2.7	2.2	3.0	2.6	3.9	3.2	4.2	4.2
3	1,896	1,244	388	1,244	455	1,398	1,316	690	25.4	16.6	5.2	16.6	6.1	18.7	17.6	9.2	4.5	4.5	4.1	5.1	17.8	5.3	11.1	11.1
4	2,356	1,705	599	1,705	210	1,730	1,356	508	31.5	22.8	8.0	22.8	2.8	23.1	18.1	6.8	5.5	6.1	6.3	7.0	8.2	6.5	11.4	8.1
5	3,426	2,693	1,058	2,693	273	2,317	1,578	592	44.8	35.2	13.8	35.2	3.6	30.3	20.6	7.7	7.9	9.5	10.9	10.9	10.4	8.6	13.0	9.3
6	5,876	3,564	1,207	3,564	198	3,092	1,865	881	79.3	48.1	16.3	48.1	2.7	41.7	25.2	11.9	14.0	12.9	12.8	14.9	7.8	11.8	15.8	14.3
7	5,831	4,137	1,505	4,137	240	3,247	1,507	669	79.3	56.2	20.5	56.2	3.3	44.1	20.5	9.1	14.0	15.1	16.1	17.4	9.5	12.5	12.9	10.9
8	7,957	4,526	1,392	4,361	613	4,944	1,895	1,354	105.5	60.0	18.5	57.8	8.1	65.5	25.1	18.0	18.6	16.1	14.5	17.9	23.8	18.5	15.8	21.5
9	7,377	4,859	1,539	3,810	186	4,595	1,025	696	99.7	65.7	20.8	51.5	2.5	62.1	13.9	9.4	17.5	17.7	16.4	15.9	7.4	17.5	8.7	11.3
10	5,701	3,819	1,238	1,354	46	3,577	276	250	74.8	50.1	16.2	17.8	0.6	46.9	3.6	3.3	13.2	13.5	12.8	5.5	1.8	13.2	2.3	3.9
All	4,346	2,845	971	2,473	262	2,711	1,216	638	568.2	372.0	126.9	323.3	34.2	354.5	159.0	83.4	100%	100%	100%	100%	100%	100%	100%	100%

Income of beneficiaries								
	60,870	58,270	60,824	49,686	39,698	62,116	41,190	44,889

Ratios								
Top 50/Bottom 50	3.27	2.95	2.57	2.43	0.97	2.67	1.20	1.56
Top 30/Bottom 30	4.97	4.91	4.06	3.54	1.00	4.06	1.27	1.68
Top 30/Middle 40	1.20	1.09	0.95	0.79	0.92	1.26	0.51	0.87

Table C.7: Discounted Payment Savings from Forgiving Balances and Targeted IDR Enrollment– Earnings Increase: 2% | Discount Rate: 7%

This table reports the total and per capita discounted payment savings of the policies we evaluate, by within-cohort decile of earnings group, including households without student debt. First, we consider canceling all student loan balances, or only $50,000 or $10,000 per person, or up to $50,000 with a phase out range between $75,000 and $125,000 in earnings. Second, we consider enrolling households who would benefit from income-driven repayment. In IDR policy (a), they pay 10% of their discretionary income, in line with current IDR rules. In policy (b), loans are also forgiven 10 years after the first repayment. In policy (c), discretionary income is limited to earnings above three times the poverty line. In policy (d), payments are reduced to 7.5% of discretionary income. The last two rows report the discounted payment savings and change in balance for the entire population. In comparison to Table 2, we use alternative earnings growth and discount rate assumptions.

	Per person ($)								Total ($bn)								Share of total cost (%)							
	Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	983	685	298	685	255	806	603	354	11.3	7.9	3.4	7.9	2.9	9.3	6.9	4.1	2.2	2.4	3.1	2.8	8.6	3.0	4.7	5.1
2	1,070	602	268	602	106	774	484	260	13.3	7.5	3.3	7.5	1.3	9.6	6.0	3.2	2.6	2.3	3.0	2.6	3.9	3.1	4.1	4.1
3	1,669	1,081	338	1,081	439	1,206	1,184	642	22.3	14.5	4.5	14.5	5.9	16.1	15.8	8.6	4.4	4.4	4.0	5.1	17.3	5.3	10.8	10.8
4	2,074	1,506	529	1,506	206	1,491	1,218	469	27.7	20.1	7.1	20.1	2.8	19.9	16.3	6.3	5.5	6.1	6.3	7.0	8.1	6.5	11.1	7.9
5	3,065	2,417	946	2,417	269	2,028	1,461	562	40.1	31.6	12.4	31.6	3.5	26.5	19.1	7.3	7.9	9.6	11.0	11.1	10.4	8.7	13.0	9.3
6	5,149	3,134	1,053	3,134	196	2,563	1,696	808	69.5	42.3	14.2	42.3	2.6	34.6	22.9	10.9	13.7	12.8	12.7	14.8	7.8	11.3	15.6	13.8
7	5,223	3,676	1,330	3,676	256	2,800	1,418	660	71.0	50.0	18.1	50.0	3.5	38.1	19.3	9.0	14.0	15.1	16.1	17.5	10.2	12.4	13.1	11.3
8	7,047	3,997	1,216	3,840	608	4,221	1,764	1,278	93.4	53.0	16.1	50.9	8.1	56.0	23.4	16.9	18.4	16.0	14.4	17.8	23.7	18.3	15.9	21.4
9	6,632	4,325	1,363	3,345	188	4,011	972	674	89.6	58.4	18.4	45.2	2.5	54.2	13.1	9.1	17.7	17.7	16.4	15.8	7.5	17.7	8.9	11.5
10	5,219	3,474	1,109	1,207	66	3,211	297	284	68.5	45.6	14.5	15.8	0.9	42.1	3.9	3.7	13.5	13.8	13.0	5.5	2.6	13.7	2.7	4.7
All	3,876	2,530	857	2,186	260	2,344	1,122	605	506.7	330.8	112.1	285.8	34.0	306.4	146.8	79.1	100%	100%	100%	100%	100%	100%	100%	100%

Income of beneficiaries								
	61,279	58,443	61,136	49,656	40,476	62,787	41,676	45,591

Ratios								
Top 50/Bottom 50	3.30	2.96	2.55	2.42	1.03	2.67	1.24	1.62
Top 30/Bottom 30	5.08	4.98	4.08	3.54	1.08	4.11	1.34	1.78
Top 30/Middle 40	1.22	1.10	0.96	0.78	0.93	1.29	0.52	0.90

Table C.8: Discounted Payment Savings from Forgiving Balances and Targeted IDR Enrollment– Earnings Increase: 3% | Discount Rate: 1%

This table reports the total and per capita discounted payment savings of the policies we evaluate, by within-cohort decile of earnings group, including households without student debt. First, we consider canceling all student loan balances, or only $50,000 or $10,000 per person, or up to $50,000 with a phase out range between $75,000 and $125,000 in earnings. Second, we consider enrolling households who would benefit from income-driven repayment. In IDR policy (a), they pay 10% of their discretionary income, in line with current IDR rules. In policy (b), loans are also forgiven 10 years after the first repayment. In policy (c), discretionary income is limited to earnings above three times the poverty line. In policy (d), payments are reduced to 7.5% of discretionary income. The last two rows report the discounted payment savings and change in balance for the entire population. In comparison to Table 2, we use alternative earnings growth and discount rate assumptions.

	Per person ($)								Total ($bn)								Share of total cost (%)							
	Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	1,594	1,090	476	1,090	350	1,368	889	507	18.3	12.5	5.5	12.5	4.0	15.7	10.2	5.8	2.4	2.5	3.1	2.8	11.4	3.0	5.7	6.2
2	1,812	904	405	904	94	1,425	642	350	22.6	11.3	5.0	11.3	1.2	17.8	8.0	4.4	2.9	2.2	2.9	2.5	3.3	3.4	4.5	4.7
3	2,790	1,896	590	1,896	423	2,155	1,687	775	37.3	25.3	7.9	25.3	5.7	28.8	22.6	10.4	4.8	5.0	4.5	5.7	16.1	5.6	12.7	11.1
4	3,468	2,482	850	2,482	190	2,686	1,753	615	46.3	33.1	11.3	33.1	2.5	35.9	23.4	8.2	6.0	6.6	6.5	7.4	7.2	6.9	13.1	8.8
5	4,664	3,603	1,423	3,603	279	3,330	1,760	674	61.0	47.1	18.6	47.1	3.7	43.6	23.0	8.8	7.9	9.3	10.7	10.6	10.4	8.4	12.9	9.4
6	8,406	5,048	1,722	5,048	205	4,999	2,079	1,052	113.5	68.2	23.3	68.2	2.8	67.5	28.1	14.2	14.7	13.5	13.3	15.3	7.9	13.1	15.8	15.2
7	7,705	5,543	2,052	5,543	247	4,656	1,490	670	104.8	75.4	27.9	75.4	3.4	63.3	20.3	9.1	13.6	14.9	16.0	16.9	9.5	12.3	11.4	9.8
8	10,875	6,220	1,959	6,029	602	7,326	1,933	1,449	144.2	82.4	26.0	79.9	8.0	97.1	25.6	19.2	18.7	16.3	14.9	17.9	22.6	18.8	14.4	20.6
9	9,589	6,459	2,076	5,232	223	6,371	1,014	737	129.6	87.3	28.0	70.7	3.0	86.1	13.7	10.0	16.8	17.3	16.1	15.8	8.5	16.7	7.7	10.7
10	7,033	4,772	1,600	1,757	83	4,616	239	251	92.3	62.6	21.0	23.0	1.1	60.6	3.1	3.3	12.0	12.4	12.0	5.2	3.1	11.7	1.8	3.5
All	5,887	3,864	1,335	3,416	270	3,949	1,361	714	769.7	505.2	174.5	446.6	35.3	516.3	178.0	93.4	100%	100%	100%	100%	100%	100%	100%	100%

Income of beneficiaries								
	59,212	57,396	59,452	49,296	42,603	59,807	39,470	44,197

Ratios								
Top 50/Bottom 50	3.04	2.81	2.51	2.37	1.02	2.55	1.00	1.42
Top 30/Bottom 30	4.44	4.49	3.83	3.35	1.05	3.70	0.99	1.49
Top 30/Middle 40	1.13	1.05	0.93	0.78	0.99	1.17	0.45	0.81

Table C.9: Discounted Payment Savings from Forgiving Balances and Targeted IDR Enrollment– Earnings Increase: 3% | Discount Rate: 3%

This table reports the total and per capita discounted payment savings of the policies we evaluate, by within-cohort decile of earnings group, including households without student debt. First, we consider canceling all student loan balances, or only $50,000 or $10,000 per person, or up to $50,000 with a phase out range between $75,000 and $125,000 in earnings. Second, we consider enrolling households who would benefit from income-driven repayment. In IDR policy (a), they pay 10% of their discretionary income, in line with current IDR rules. In policy (b), loans are also forgiven 10 years after the first repayment. In policy (c), discretionary income is limited to earnings above three times the poverty line. In policy (d), payments are reduced to 7.5% of discretionary income. The last two rows report the discounted payment savings and change in balance for the entire population. In comparison to Table 2, we use alternative earnings growth and discount rate assumptions.

	Per person ($)							
	Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	1,370	939	409	939	309	1,159	776	445
2	1,534	795	355	795	95	1,176	576	311
3	2,380	1,596	495	1,596	426	1,795	1,494	724
4	2,963	2,130	732	2,130	191	2,241	1,543	555
5	4,072	3,162	1,245	3,162	263	2,833	1,614	615
6	7,170	4,321	1,467	4,321	182	4,032	1,885	932
7	6,760	4,833	1,775	4,833	216	3,918	1,395	626
8	9,408	5,368	1,673	5,191	553	6,098	1,795	1,332
9	8,467	5,648	1,804	4,512	182	5,449	935	675
10	6,356	4,288	1,416	1,549	51	4,074	214	218
All	5,130	3,362	1,154	2,952	247	3,324	1,235	649

	Total ($bn)							
	Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	15.7	10.8	4.7	10.8	3.6	13.3	8.9	5.1
2	19.1	9.9	4.4	9.9	1.2	14.7	7.2	3.9
3	31.8	21.3	6.6	21.3	5.7	24.0	20.0	9.7
4	39.5	28.4	9.8	28.4	2.6	29.9	20.6	7.4
5	53.3	41.4	16.3	41.4	3.4	37.1	21.1	8.1
6	96.8	58.3	19.8	58.3	2.5	54.4	25.5	12.6
7	91.9	65.7	24.1	65.7	2.9	53.3	19.0	8.5
8	124.7	71.2	22.2	68.8	7.3	80.8	23.8	17.7
9	114.4	76.3	24.4	61.0	2.5	73.6	12.6	9.1
10	83.4	56.2	18.6	20.3	0.7	53.4	2.8	2.9
All	670.7	439.6	150.9	386.0	32.3	434.5	161.4	84.9

	Share of total cost (%)							
	Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	2.3	2.5	3.1	2.8	11.0	3.1	5.5	6.0
2	2.9	2.3	2.9	2.6	3.7	3.4	4.4	4.6
3	4.7	4.9	4.4	5.5	17.6	5.5	12.4	11.4
4	5.9	6.5	6.5	7.4	7.9	6.9	12.8	8.7
5	7.9	9.4	10.8	10.7	10.7	8.5	13.1	9.5
6	14.4	13.3	13.1	15.1	7.6	12.5	15.8	14.8
7	13.7	14.9	16.0	17.0	9.1	12.3	11.7	10.0
8	18.6	16.2	14.7	17.8	22.7	18.6	14.7	20.8
9	17.1	17.4	16.2	15.8	7.6	16.9	7.8	10.7
10	12.4	12.8	12.3	5.3	2.1	12.3	1.7	3.4
All	100%	100%	100%	100%	100%	100%	100%	100%

Income of beneficiaries								
	59,779	57,688	59,911	49,345	40,141	60,620	39,595	43,901

Ratios								
Top 50/Bottom 50	3.10	2.84	2.51	2.37	0.92	2.56	1.04	1.43
Top 30/Bottom 30	4.59	4.60	3.89	3.38	0.95	3.78	1.03	1.50
Top 30/Middle 40	1.16	1.06	0.94	0.78	0.92	1.20	0.46	0.82

Table C.10: Discounted Payment Savings from Forgiving Balances and Targeted IDR Enrollment– Earnings Increase: 3% | Discount Rate: 5%

This table reports the total and per capita discounted payment savings of the policies we evaluate, by within-cohort decile of earnings group, including households without student debt. First, we consider canceling all student loan balances, or only $50,000 or $10,000 per person, or up to $50,000 with a phase out range between $75,000 and $125,000 in earnings. Second, we consider enrolling households who would benefit from income-driven repayment. In IDR policy (a), they pay 10% of their discretionary income, in line with current IDR rules. In policy (b), loans are also forgiven 10 years after the first repayment. In policy (c), discretionary income is limited to earnings above three times the poverty line. In policy (d), payments are reduced to 7.5% of discretionary income. The last two rows report the discounted payment savings and change in balance for the entire population. In comparison to Table 2, we use alternative earnings growth and discount rate assumptions.

	Per person ($)								Total ($bn)								Share of total cost (%)							
	Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	1,192	820	356	820	277	995	687	397	13.7	9.4	4.1	9.4	3.2	11.4	7.9	4.6	2.3	2.4	3.1	2.8	10.3	3.1	5.3	5.8
2	1,319	706	314	706	96	985	522	283	16.4	8.8	3.9	8.8	1.2	12.3	6.5	3.5	2.8	2.3	3.0	2.6	3.9	3.3	4.4	4.5
3	2,059	1,362	422	1,362	421	1,519	1,335	676	27.5	18.2	5.6	18.2	5.6	20.3	17.9	9.0	4.7	4.7	4.3	5.4	18.1	5.5	12.0	11.4
4	2,564	1,851	638	1,851	192	1,895	1,373	507	34.2	24.7	8.5	24.7	2.6	25.3	18.3	6.8	5.8	6.4	6.5	7.3	8.2	6.8	12.3	8.6
5	3,597	2,805	1,100	2,805	255	2,442	1,493	574	47.0	36.7	14.4	36.7	3.3	31.9	19.5	7.5	8.0	9.5	10.9	10.9	10.8	8.6	13.1	9.5
6	6,195	3,746	1,265	3,746	173	3,293	1,721	846	83.6	50.6	17.1	50.6	2.3	44.5	23.2	11.4	14.2	13.1	13.0	15.0	7.5	12.0	15.6	14.4
7	5,993	4,256	1,552	4,256	212	3,336	1,325	604	81.5	57.9	21.1	57.9	2.9	45.4	18.0	8.2	13.8	15.0	16.0	17.2	9.3	12.2	12.1	10.4
8	8,234	4,686	1,444	4,519	544	5,138	1,689	1,257	109.1	62.1	19.1	59.9	7.2	68.1	22.4	16.7	18.5	16.1	14.5	17.8	23.3	18.4	15.1	21.1
9	7,547	4,984	1,582	3,928	163	4,710	886	636	102.0	67.3	21.4	53.1	2.2	63.6	12.0	8.6	17.3	17.4	16.2	15.7	7.1	17.2	8.1	10.9
10	5,784	3,879	1,261	1,374	38	3,629	220	216	75.9	50.9	16.5	18.0	0.5	47.6	2.9	2.8	12.8	13.2	12.6	5.3	1.6	12.9	1.9	3.6
All	4,521	2,957	1,008	2,580	237	2,833	1,137	605	591.1	386.6	131.8	337.3	31.0	370.4	148.6	79.2	100%	100%	100%	100%	100%	100%	100%	100%

Income of beneficiaries								
	60,287	57,936	60,315	49,368	39,236	61,396	40,000	44,085

Ratios								
Top 50/Bottom 50	3.15	2.86	2.51	2.36	0.91	2.57	1.08	1.46
Top 30/Bottom 30	4.72	4.69	3.93	3.40	0.94	3.85	1.10	1.56
Top 30/Middle 40	1.18	1.07	0.94	0.78	0.90	1.23	0.47	0.83

Table C.11: Discounted Payment Savings from Forgiving Balances and Targeted IDR Enrollment– Earnings Increase: 3% | Discount Rate: 7%

This table reports the total and per capita discounted payment savings of the policies we evaluate, by within-cohort decile of earnings group, including households without student debt. First, we consider canceling all student loan balances, or only $50,000 or $10,000 per person, or up to $50,000 with a phase out range between $75,000 and $125,000 in earnings. Second, we consider enrolling households who would benefit from income-driven repayment. In IDR policy (a), they pay 10% of their discretionary income, in line with current IDR rules. In policy (b), loans are also forgiven 10 years after the first repayment. In policy (c), discretionary income is limited to earnings above three times the poverty line. In policy (d), payments are reduced to 7.5% of discretionary income. The last two rows report the discounted payment savings and change in balance for the entire population. In comparison to Table 2, we use alternative earnings growth and discount rate assumptions.

	Per person ($)							
	Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	1,049	723	314	723	251	864	614	358
2	1,149	634	280	634	97	837	477	260
3	1,803	1,178	365	1,178	413	1,302	1,203	633
4	2,245	1,627	561	1,627	191	1,623	1,233	469
5	3,209	2,513	982	2,513	254	2,129	1,390	546
6	5,415	3,285	1,102	3,285	173	2,723	1,579	781
7	5,364	3,780	1,370	3,780	229	2,873	1,267	602
8	7,283	4,132	1,260	3,974	545	4,381	1,600	1,203
9	6,784	4,436	1,401	3,449	167	4,111	857	624
10	5,296	3,530	1,130	1,227	56	3,259	249	253
All	4,024	2,626	889	2,277	238	2,444	1,058	579

	Total ($bn)							
	Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	12.1	8.3	3.6	8.3	2.9	9.9	7.1	4.1
2	14.3	7.9	3.5	7.9	1.2	10.4	5.9	3.2
3	24.1	15.8	4.9	15.8	5.5	17.4	16.1	8.5
4	30.0	21.7	7.5	21.7	2.5	21.7	16.5	6.3
5	42.0	32.9	12.8	32.9	3.3	27.9	18.2	7.1
6	73.1	44.4	14.9	44.4	2.3	36.8	21.3	10.5
7	72.9	51.4	18.6	51.4	3.1	39.1	17.2	8.2
8	96.5	54.8	16.7	52.7	7.2	58.1	21.2	15.9
9	91.7	59.9	18.9	46.6	2.3	55.5	11.6	8.4
10	69.5	46.3	14.8	16.1	0.7	42.7	3.3	3.3
All	526.1	343.3	116.3	297.7	31.1	319.5	138.3	75.7

	Share of total cost (%)							
	Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	2.3	2.4	3.1	2.8	9.3	3.1	5.1	5.4
2	2.7	2.3	3.0	2.7	3.9	3.3	4.3	4.3
3	4.6	4.6	4.2	5.3	17.7	5.4	11.6	11.2
4	5.7	6.3	6.4	7.3	8.2	6.8	11.9	8.3
5	8.0	9.6	11.0	11.0	10.7	8.7	13.1	9.4
6	13.9	12.9	12.8	14.9	7.5	11.5	15.4	13.9
7	13.9	15.0	16.0	17.3	10.0	12.2	12.4	10.8
8	18.3	16.0	14.4	17.7	23.2	18.2	15.3	21.1
9	17.4	17.5	16.3	15.7	7.2	17.4	8.4	11.1
10	13.2	13.5	12.8	5.4	2.4	13.4	2.4	4.4
All	100%	100%	100%	100%	100%	100%	100%	100%

Income of beneficiaries								
	60,741	58,144	60,668	49,369	39,984	62,124	40,625	44,891

Ratios								
Top 50/Bottom 50	3.19	2.87	2.50	2.35	0.97	2.57	1.13	1.53
Top 30/Bottom 30	4.84	4.77	3.95	3.41	1.01	3.91	1.18	1.66
Top 30/Middle 40	1.19	1.08	0.94	0.77	0.91	1.26	0.49	0.87

D Alternative Earnings Volatility

In the main analysis, we assume earnings volatility of 15%. In this section, we repeat the analysis in Table 2 but vary this assumption. We allow earnings volatility to be 10% and 20%. The results are shown in tables D.1 and D.2. Our basic pattern of results and conclusions remain unchanged.

Table D.1: Discounted Payment Savings from Forgiving Balances and Targeted IDR Enrollment –Volatility: 10%

This table reports the total and per capita discounted payment savings of the policies we evaluate, by within-cohort decile of earnings group, including households without student debt. First, we consider canceling all student loan balances, or only $50,000 or $10,000 per person, or up to $50,000 with a phase out range between $75,000 and $125,000 in earnings. Second, we consider enrolling households who would benefit from income-driven repayment. In IDR policy (a), they pay 10% of their discretionary income, in line with current IDR rules. In policy (b), loans are also forgiven 10 years after the first repayment. In policy (c), discretionary income is limited to earnings above three times the poverty line. In policy (d), payments are reduced to 7.5% of discretionary income. The last two rows report the discounted payment savings and change in balance for the entire population. In comparison to Table 2, we use an alternative earnings volatility assumption.

Per person ($)

Earnings Decile	Balance forgiveness				Targeted IDR enrollment			
	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	1,304	907	397	907	329	1,102	805	459
2	1,440	753	353	753	109	1,096	612	318
3	2,248	1,506	464	1,506	472	1,714	1,637	783
4	2,800	2,009	699	2,009	214	2,123	1,697	600
5	4,035	3,176	1,249	3,176	274	2,812	1,872	652
6	7,084	4,262	1,453	4,262	196	4,000	2,112	994
7	6,808	4,905	1,793	4,905	208	3,963	1,532	678
8	9,415	5,396	1,674	5,217	628	6,121	1,985	1,503
9	8,523	5,728	1,825	4,590	200	5,505	987	757
10	6,377	4,307	1,420	1,556	57	4,093	205	244
All	5,086	3,350	1,150	2,938	269	3,300	1,358	706

Total ($bn)

Earnings Decile	Balance forgiveness				Targeted IDR enrollment			
	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	15.0	10.4	4.6	10.4	3.8	12.7	9.2	5.3
2	17.9	9.4	4.4	9.4	1.4	13.7	7.6	4.0
3	30.1	20.1	6.2	20.1	6.3	22.9	21.9	10.5
4	37.4	26.8	9.3	26.8	2.9	28.3	22.6	8.0
5	52.8	41.5	16.3	41.5	3.6	36.8	24.5	8.5
6	95.6	57.5	19.6	57.5	2.6	54.0	28.5	13.4
7	92.5	66.7	24.4	66.7	2.8	53.9	20.8	9.2
8	124.8	71.5	22.2	69.2	8.3	81.1	26.3	19.9
9	115.1	77.4	24.7	62.0	2.7	74.4	13.3	10.2
10	83.7	56.5	18.6	20.4	0.8	53.7	2.7	3.2
All	665.0	438.0	150.3	384.1	35.1	431.5	177.6	92.2

Share of total cost (%)

Earnings Decile	Balance forgiveness				Targeted IDR enrollment			
	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	2.25	2.38	3.04	2.71	10.76	2.94	5.21	5.72
2	2.70	2.14	2.92	2.44	3.86	3.17	4.30	4.30
3	4.52	4.60	4.12	5.24	17.95	5.31	12.32	11.36
4	5.62	6.12	6.21	6.98	8.13	6.57	12.75	8.68
5	7.94	9.49	10.87	10.81	10.22	8.52	13.79	9.24
6	14.38	13.14	13.05	14.98	7.53	12.52	16.06	14.55
7	13.92	15.23	16.22	17.36	8.04	12.49	11.73	9.99
8	18.77	16.33	14.77	18.01	23.69	18.81	14.81	21.60
9	17.32	17.67	16.40	16.15	7.70	17.24	7.51	11.09
10	12.58	12.90	12.40	5.31	2.14	12.44	1.52	3.47
All	100%	100%	100%	100%	100%	100%	100%	100%

Income of beneficiaries								
	60,286	58,020	60,412	49,801	40,524	61,211	39,457	44,447

Ratios								
Top 50/Bottom 50	3.23	2.95	2.58	2.46	0.92	2.68	1.03	1.48
Top 30/Bottom 30	4.87	4.87	4.05	3.59	0.97	4.02	1.04	1.60
Top 30/Middle 40	1.17	1.08	0.95	0.79	0.99	1.22	0.44	0.86

Table D.2: Discounted Payment Savings from Forgiving Balances and Targeted IDR Enrollment –Volatility: 20%

This table reports the total and per capita discounted payment savings of the policies we evaluate, by within-cohort decile of earnings group, including households without student debt. First, we consider canceling all student loan balances, or only $50,000 or $10,000 per person, or up to $50,000 with a phase out range between $75,000 and $125,000 in earnings. Second, we consider enrolling households who would benefit from income-driven repayment. In IDR policy (a), they pay 10% of their discretionary income, in line with current IDR rules. In policy (b), loans are also forgiven 10 years after the first repayment. In policy (c), discretionary income is limited to earnings above three times the poverty line. In policy (d), payments are reduced to 7.5% of discretionary income. The last two rows report the discounted payment savings and change in balance for the entire population. In comparison to Table 2, we use an alternative earnings volatility assumption.

	Per person ($)								Total ($bn)								Share of total cost (%)							
	Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment				Balance forgiveness				Targeted IDR enrollment			
Earnings Decile	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%	Full	50K	10K	Cap	Pay 10%	Forgive 10 Yr	Pay 3x Pov.	Pay 7.5%
1	1,240	860	372	860	301	1,040	715	422	14.3	9.9	4.3	9.9	3.5	12.0	8.2	4.8	2.31	2.45	3.08	2.81	9.18	3.02	4.83	5.47
2	1,371	740	325	740	110	1,035	556	300	17.1	9.2	4.1	9.2	1.4	12.9	6.9	3.7	2.77	2.28	2.92	2.62	3.64	3.26	4.07	4.22
3	2,113	1,396	436	1,396	470	1,570	1,345	715	28.2	18.7	5.8	18.7	6.3	21.0	18.0	9.6	4.57	4.61	4.20	5.29	16.65	5.31	10.57	10.80
4	2,601	1,882	662	1,882	219	1,932	1,372	523	34.7	25.1	8.8	25.1	2.9	25.8	18.3	7.0	5.62	6.21	6.37	7.13	7.76	6.52	10.76	7.88
5	3,692	2,883	1,138	2,883	300	2,545	1,587	628	48.3	37.7	14.9	37.7	3.9	33.3	20.8	8.2	7.82	9.33	10.73	10.70	10.41	8.42	12.20	9.27
6	6,430	3,897	1,332	3,897	235	3,516	1,971	943	86.8	52.6	18.0	52.6	3.2	47.5	26.6	12.7	14.05	13.01	12.96	14.92	8.42	12.01	15.64	14.38
7	6,282	4,460	1,634	4,460	285	3,623	1,656	729	85.4	60.6	22.2	60.6	3.9	49.2	22.5	9.9	13.82	14.99	16.01	17.20	10.26	12.45	13.23	11.19
8	8,687	4,945	1,533	4,772	666	5,564	2,098	1,427	115.2	65.6	20.3	63.3	8.8	73.8	27.8	18.9	18.64	16.21	14.65	17.94	23.42	18.65	16.34	21.37
9	7,963	5,253	1,676	4,142	222	5,083	1,200	743	107.6	71.0	22.6	56.0	3.0	68.7	16.2	10.0	17.42	17.55	16.32	15.87	7.95	17.37	9.52	11.34
10	6,114	4,116	1,348	1,484	67	3,915	369	275	80.2	54.0	17.7	19.5	0.9	51.4	4.8	3.6	12.98	13.35	12.75	5.52	2.32	12.99	2.84	4.07
All	4,725	3,093	1,061	2,696	288	3,025	1,302	677	617.8	404.4	138.7	352.5	37.7	395.4	170.2	88.6	100%	100%	100%	100%	100%	100%	100%	100%

Income of beneficiaries								
	60,540	58,111	60,540	49,591	40,729	61,599	42,410	45,142

Ratios								
Top 50/Bottom 50	3.22	2.92	2.56	2.42	1.05	2.67	1.31	1.59
Top 30/Bottom 30	4.82	4.78	4.02	3.47	1.08	4.00	1.40	1.70
Top 30/Middle 40	1.20	1.09	0.96	0.79	0.92	1.25	0.56	0.87