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How CBO Analyzes the Sources of Lenders' Interest Income on Guaranteed Student Loans

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REPORT

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Preface

This report describes the method the Congressional Budget Office (CBO) uses to estimate the sources of lenders' interest income on student and parent loans in the Federal Family Education Loan program. That method accounts for the likely values of future interest rates and specific program rules, including those for setting borrowers' rates and for calculating the government's supplemental payments.

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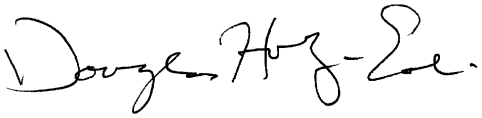
Christine Bogusz edited the report. Maureen Costantino prepared it for publication, and Annette Kalicki produced the electronic versions for CBO's Web site.



Douglas Holtz-Eakin
Director
June 2004

Introduction and Summary

The Federal Family Education Loan (FFEL) program guarantees loans to students and their parents to help pay for the students' postsecondary education. During fiscal year 2003, the program provided students and parents with $34 billion of loans. At the end of that year, the total outstanding volume of loans was about $230 billion. After entering repayment, borrowers pay interest and repay principal to private lenders who provide and service the loans. The federal government guarantees the loans, repaying lenders if borrowers default, die, or become disabled.

To make the loans more affordable to students and their parents, the government limits the interest rate that lenders may charge borrowers. However, limiting borrowers' rates creates a danger that lenders will not be willing to participate in the program if their costs of financing and servicing the loans exceed the interest rates they may charge borrowers. To avoid that situation, the government generally supplements the borrowers' interest payments with additional quarterly payments to meet a target interest rate (or lender yield), which is an indicator of lenders' costs (see Table 1 for details of program formulas that are discussed below).

The formulas for calculating interest rates are important. The Higher Education Act of 1965 is scheduled for reauthorization; during that process, the Congress is likely to consider several proposals for changing what borrowers pay and what lenders receive for federal student loans. To help the Congress evaluate those proposals, this analysis uses existing FFEL program rules to illustrate how those rules, including the method of setting borrowers' rates and calculating the government's supplemental payments, affect the amount of interest income lenders receive.[1]

Conventional wisdom holds that lenders who participate in the FFEL program receive the target yield built into the program's rules. In fact, however, under some conditions they receive more than that rate, because the law ensures only that they receive no less than that rate. There are two types of interest rate conditions for lenders. In the first, the target yield is above what borrowers pay. In those cases, the combination of borrowers' payments and the government's supplemental payments provides lenders with exactly the target yield (a condition called *no increment*). In the second type of condition, what borrowers alone pay is above the target rate guaranteed to lenders. In those cases, although the government makes no payments to lenders, lenders receive more than the guaranteed rate (a condition known as *positive increment*).

Based on simulations anchored around the Congressional Budget Office's (CBO's) current economic projections, the *positive-increment* conditions will occur an estimated 26 percent of the time and, on those occasions, lenders will receive an average of 91 basis points above the target yield (100 basis points equal 1 percentage point). Across both positive and *no-increment*

[1]Although the analysis in this paper is applied to FFEL program rules, some results are relevant to another government student loan program (the William D. Ford Federal Direct Loan Program). In that program, the government assumes the role of lender and provides loans directly to students and their parents. Consequently, changes in what borrowers pay mirror changes in the government's costs. Because the method of setting borrowers' rates is the same in both programs, the results for borrowers' rates in the FFEL program presented in this analysis also apply to the Direct Loan program (see the appendix for a description and comparison of the two programs).

conditions, lenders will receive an average of 24 basis points more than the target yield. (The target yield is projected to average 7.50 percent for the 2009-2010 academic year.[2])

Those estimates are based on the program rules in place through June 2006. For new loans made after that date, the rules will differ. At that time, the current variable rate paid by students will be replaced with a simple fixed rate of 6.8 percent. Under the new rules, *positive-increment* conditions for interest rates will occur more often and the increment will be larger than under current rules, CBO estimates. The *positive-increment* condition will occur 41 percent of the time, CBO estimates, and lenders will receive an average of 216 basis points above the target yield during those times. Across both *positive* and *no-increment* conditions, lenders will receive an average of 89 basis points more than the target yield.

Lenders would prefer a stable spread between their income and expenses to a volatile one if the average were the same because it is costly for them to protect themselves from the risks associated with that volatility. Although CBO estimates that the average amount that lenders receive above the target yield will increase when the rules change in 2006, it also finds that the extra income will be much more variable. Generally, lenders will earn much more under the fixed rate rules than under the variable rate rules in a low-interest-rate environment like the one of the past few years and about the same in a relatively high-interest-rate environment like the one of the mid-1990s.

Because the student loan program has an annual volume that is seven times that of the loan program for parents, it is the main focus of this analysis. However, the parent loan program has different rules, and those rules affect what lenders receive as well. In the parent loan program, the government sets a target yield for lenders but guarantees that lenders will receive that rate only when interest rates are high. In effect, there are three types of interest rate conditions for lenders: a *no-increment* one when lenders get exactly the target yield (as a result of the government supplementing what borrowers pay), a *positive-increment* one when borrowers pay lenders more than the target yield, and a *negative-increment* one when borrowers pay less than the target yield and the government does not make up the shortfall. Under variable rates, the shortfall of income in the third type mitigates most of the extra income in the second type. Nevertheless, CBO's analysis finds that lenders receive somewhat more interest income on parent loans than on student loans, primarily because parents pay a higher interest rate.

Sources of Lenders' Interest Income on Student Loans

The amounts that lenders receive from borrowers and the government depend on formulas specified in law and on the current level of two market interest rates, one used to calculate what

[2]That average is derived from CBO's simulations of the path of future interest rates intended to reflect the variability and quarter-to-quarter changes in those rates. That average is slightly higher than the interest rate assumption of 7.46 percent for CBO's January 2004 baseline economic forecast. All the results in this analysis are derived from CBO's simulations. The 2009-2010 academic year is used as a reference point because it occurs after CBO's interest rate projections have attained their ultimate levels.

borrowers pay and the other used to calculate the target yield for lenders, which determines what the government pays. The dependence of the amounts that borrowers and the government pay on market interest rates makes each amount variable. The amounts also are subject to maximums and minimums in the formulas, so changes in the market rates do not always lead to changes in interest rates.

Under the variable rate rules, borrowers' interest rate on student loans is reset each July 1. The statutory formula for loans in repayment specifies that the rate will be the bond-equivalent yield on 91-day Treasury bills sold at auction during the last week in May (TB) plus an add-on of 2.3 percentage points.[3] In addition, there is a cap of 8.25 percent that protects borrowers from very high interest rates.

Another statutory formula specifies that the target lender yield is the sum of an index of market interest rates published by the Federal Reserve Board plus an add-on. That index is the average yield over the quarter on the three-month commercial paper of financial institutions (CP), and for loans in repayment the add-on is 2.34 percentage points. CP is the interest rate that banks and similar institutions pay on short-term loans they take to finance their operations, including loans to students. The add-on is intended to cover other costs, such as administration and servicing, and provide a return on the equity investment that the lender has made in the student loans.[4]

On the basis of longer-term trends in the economy rather than the current unusually low interest rates, CBO projects that in 2008 and beyond the target lender yield will be 7.50 percent and the rate for student borrowers (for loans issued before 2006) will be 7.03 percent. CBO expects that each of those rates will be above its projected level half of the time and below that level half of the time. If each of those rates happened to be at exactly its projected level, the government's supplemental payment would be 47 basis points, an amount below what the government can expect to pay on average. One reason is that when TB rates are high enough for the borrower rate to be constrained by the cap of 8.25 percent, the target yield, which is unconstrained, is likely to be much more than 47 basis points above the (capped) borrower rate. A second reason is that the CP and TB rates used to calculate the target and borrower rates do not always move in concert. It is very possible for the target yield to be below the borrower rate (*positive-increment* conditions). Although the government would make no payments to lenders under those conditions, it also would not receive any savings to offset the cases in which it made large payments to lenders because the target yield was unusually far above what borrowers paid.

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[3]That rate applies when loans are in repayment. When the borrower is in school and during a six-month grace period after he or she leaves or the loan is in a deferment status, the borrower's interest rate is lower. It is calculated using a smaller add-on of 1.7 percentage points. Furthermore, for the type of student loan that is means-tested, the government pays that interest to the lender on behalf of the student during those periods. This analysis focuses only on interest paid and received when loans are in repayment, because the major results are qualitatively the same when the loans are not in repayment.

[4]When students are in school, the add-on is 1.74 percentage points, because students are not making payments and the loans need little or no servicing.

For that second reason, the 7.50 percent target yield is also less than what lenders can expect to receive. Although lenders receive at least the target yield (projected to be 7.50 percent), they sometimes receive more. Those *positive-increment* conditions occur when the borrower rate is above the target yield and, consequently, the lender receives from the borrower alone an increment above that rate.

The Variability of Future Interest Rates

How much interest income lenders will receive depends on how much borrowers and the government will pay, which in turn requires information on the likely values of future TB and CP interest rates. With that information, the quantitative significance of various features of the statutory formulas can be investigated. By how much will lenders' income exceed the target set in law? How likely is it that students will pay the capped rate of 8.25 percent? How often will the government need to make supplemental payments to lenders and how large will they be?

Answering those questions requires more information than just the average value of future interest rates. If rates were always at their expected value, then lenders would receive exactly the target yield, student interest rates would never hit the cap, and the government's payments would be perfectly predictable. Actual interest rates will differ in the future from their expected values, however. So in order to estimate the quantitative significance of the features of current law, CBO used an entire distribution of future interest rates—centered on the levels described above, but with significant variation based on historical patterns. In particular, CBO considered 10,000 possible scenarios for the level and quarter-to-quarter changes in the TB and CP rates over a period that extends more than 10 years into the future. The variation of interest rates across the scenarios approximates historical experience (see Table 2).

In addition, in order to more fully analyze program features in low- and high-interest-rate environments, CBO considered two additional sets of interest rate assumptions. Those alternatives differ from CBO's basic projection in simple ways—one has all interest rates 2 percentage points higher than in the basic projection, and the other has all interest rates 2 percentage points lower.

The results presented here are based on scenarios for the 2009-2010 academic year. Data for that year do not reflect current and temporary business cycle conditions but do reflect CBO's expectations for longer-term economic trends. Consequently, although the results do not reflect the current low-interest-rate environment, they do reflect the broad range of environments that could affect participants in the FFEL program in the future.

The analysis simulates current program rules for student loans and the rules that are due to take effect in 2006. The rules are applied to each of the scenarios and then averaged across all of them to produce estimates of the average interest rates borrowers can expect to pay, the average supplemental payment the government can expect to make to lenders, and, consequently, the average total amount that lenders can expect to receive. The average target yield is calculated and used as a basis for comparing the total amount lenders receive. The same analytical approach is

also applied to current program rules for parent loans and the rules that are due to take effect in 2006.

Estimates of Lenders' Interest Income Under Variable Rate Rules for Student Loans
Using the interest rate scenarios described above to simulate the current rules for variable rate student loans in 2009-2010, CBO estimates that the average amount borrowers will pay is 6.39 percent and the average supplemental payment from the government will be 1.34 percent. Consequently, lenders will receive 7.74 percent. As a point of comparison, the target yield is 7.50 percent (see the top panel of Table 3).

As discussed earlier, lenders in the student loan program face two types of interest rate conditions. Under *no-increment* conditions, lenders receive exactly the target yield. That rate, which is an indicator of lenders' costs, is above what borrowers pay lenders, but the government makes up the difference with a supplemental payment to lenders. Under *positive-increment* conditions, lenders receive more than the target yield because the borrower rate is above the target and what borrowers alone pay provides lenders with an increment to the target yield. CBO projects that *no-increment* conditions will be likely to occur 74 percent of the time, when the government pays lenders an average of 182 basis points to guarantee them the target rate. *Positive-increment* conditions for lenders are projected to occur the other 26 percent of the time, when the government makes no payment to lenders, but the 6.08 percent the borrowers pay is 91 basis points above the target yield. Averaging the 8.33 percent lenders will receive under *no-increment* conditions and the 6.08 percent they will receive under *positive-increment* conditions in proportion to how likely each condition is to occur yields an overall rate of 7.74 percent, which is 24 basis points above the average target yield of 7.50.

The distribution of student loan rates is not symmetric around its middle value because of the effect of the 8.25 percent cap in the program rules. There is enough variability in interest rates that the chance the cap will take effect in 2009-2010 is about one-third. Because of the cap, the average interest rate of 6.39 percent is considerably lower than the average of the distribution of interest rates used to set the rate that borrowers pay (7.03 percent).[5]

The average amount the government can expect to pay lenders is 134 basis points, but that amount—which is the average of the 26 percent of the time when it makes no payment and the 74 percent of the time when it pays an average of 182 basis points—can vary widely. Furthermore, within those 74 percent of cases when the government makes a payment are 29 percent of cases when the student rate is at its cap and the government pays an average of 264 basis points to lenders.

[5]To illustrate this point consider a simple numerical example. Assume the variable borrower rate formula produces for two scenarios interest rates of 5.03 percent and 9.03 percent, which average to 7.03 percent. However, the cap constrains the 9.03 percent to be 8.25 percent. Thus, the average borrower rate across the two scenarios actually would be 6.64 percent.

Estimates of Lenders' Interest Income Under Fixed Rate Rules for Student Loans
Under the fixed rate rules scheduled to go into effect for new loans made after June 2006, the amount that borrowers and the government will pay will rise, and, consequently, the amount lenders will receive will also rise, CBO estimates. Borrowers will pay a fixed rate of 6.8 percent, which is 41 basis points higher than CBO's estimated average of 6.39 percent under the current variable rate with an 8.25 percent cap (see the second panel of Table 3).

Lenders will receive more income under the fixed rate rules than under the variable rate ones because the amount they receive—especially from borrowers, but also the government—will rise. *No-increment* conditions for lenders will occur an estimated 59 percent of the time when the target yield is above 6.8 percent, but the government will make up the shortfall. *Positive-increment* conditions will occur the other 41 percent of the time, when the 6.8 percent borrowers alone pay will give lenders an average of 216 basis points above the target yield. Not only will *positive-increment* conditions occur more often than under the current variable rate formula, but the average increment to the target rate that lenders receive will more than double. Averaging the target yield of 9.50 percent that lenders will receive under *no-increment* conditions with the 6.8 percent borrowers will pay them under *positive-increment* conditions yields 8.39 percent, which is 89 basis points above the overall average target yield of 7.50 percent.

Another effect of the change to a fixed borrower rate of 6.8 percent will be an increase in the volatility of lenders' interest income across high- and low-interest-rate conditions. Using the target yield both as a gauge of the level of interest rates and as a reference point for calculating lenders' interest income, CBO finds that under variable borrower rates, the average increment to the target income will vary from 14 basis points in high-interest-rate conditions to 30 basis points in low-interest-rate environments (see Table 4).[6] In contrast, under fixed rates, the increments will range from 30 to 197 basis points. Under both variable and fixed rates, the increment is caused by borrowers paying lenders more than the target yield. Under variable rates, the amount borrowers pay tends to rise and fall with changes in the target yield, because the TB rate used to calculate borrowers' rates tends to move up and down with the CP rate used to calculate the target yield. Under fixed rates, that is not the case. The borrower rate is fixed at 6.8 percent, and in low-interest-rate environments that rate can greatly exceed the target yield.

Lenders' Interest Income on Parent Loans
The parent loan program differs in some significant ways from the student loan program. Both the interest rate parents pay and the target lender yield are higher in the parent loan program. In addition, the government supplements what parents pay only when the parent borrower rate is at its cap.

[6]A low-interest-rate environment is represented by a downward shift of 2 percentage points in all 10,000 scenarios in CBO's projections. Such a shift preserves the full distribution of possible interest rates but at a lower level. The lower level interacts with the nominal interest rates specified in the program's rules to change lenders' interest income relative to the target rate. Similarly, a high-interest-rate environment is represented by an upward shift of 2 percentage points in all scenarios in CBO's projections.

The interest rate on currently issued parent loans, which is reset annually, is TB plus 3.1 percentage points, 80 basis points higher than the rate paid by students (TB plus 2.3 percentage points). Furthermore, the cap is 9 percent (versus 8.25 percent for student loans). For new loans issued beginning in 2006, the interest rate on parent loans is scheduled to change to a fixed rate of 7.9 percent (versus 6.8 percent for student loans).

For parent loans, the government supplements what borrowers pay on a more limited basis than for student loans. The government makes that payment only when the borrower rate is at its cap of 9 percent. At those times, the government supplements the 9 percent with enough to guarantee lenders a target yield of CP plus 2.64 percentage points. That target is 30 basis points higher than the one used in the student loan program.[7]

The amount of interest lenders will receive on parent loans depends on which of three types of conditions apply to market interest rates. First, under *no-increment* conditions when the borrower rate is at 9 percent and the target yield is above 9 percent, the government will make up the shortfall to give lenders the target yield exactly. Those conditions will occur an estimated 28 percent of the time under CBO's interest rate projections (see the third panel of Table 3). Second, under *positive-increment* conditions when what borrowers alone pay is above the target yield, lenders will receive an increment of 103 basis points above the target rate. Those conditions will occur 39 percent of the time. Third, under *negative-increment* conditions, which do not exist for student loans but will occur 33 percent of the time in the parent loan program, the target yield is above what borrowers pay. Because what borrowers pay is below 9 percent, the government will not make a supplemental payment to make up the shortfall. The 6.08 percent that borrowers will pay is 111 basis points below the target rate, which will average 7.19 percent under those conditions. That offsets most of the increments that lenders will receive under *positive-increment* conditions. Averaging the 103 basis-point increment under variable conditions with the negative 111 basis-point increment under *negative-increment* conditions yields an average of just 3 basis points above the 7.8 percent target yield across all conditions. Still, lenders will receive a total of 7.83 percent on variable rate parent loans compared with 7.74 percent on variable rate student loans (see panels 1 and 3 of Table 3).

Changing to fixed parent borrower rates will have similar effects on lenders' interest income as it has on student loans. Lenders will receive more income primarily because borrowers will pay more. In particular, *positive-increment* conditions will occur more frequently and under those conditions the increment borrowers pay lenders above the target will more than double (see panels 3 and 4 of Table 3). Furthermore, the volatility of lenders' interest income as measured by the variation in the increment in low- compared with high-interest-rate environments will also

[7]The target lender yields have been adjusted several times over the history of the programs. Before 1998, the target yields in the two programs were the same, except that the target yield in the student loan program was based on a three-month interest rate and in the parent loan program on a one-year interest rate. When the Higher Education Act was reauthorized and amended in 1998, the target yield for student loans was reduced by 30 basis points but left unchanged on parent loans. In 2000, both target yields were adjusted to use the three-month CP rate and the 30-basis-point difference remained.

increase. In low-interest-rate environments, lenders can potentially earn very much more than the target yield because the fixed 7.9 percent borrower rate will not fall with the target rate (see panels 3 and 4 of Table 4).

Appendix: Federal Student Loan Programs

The Federal Family Education Loan (FFEL) and William D. Ford Federal Direct Loan (Direct Loan) programs provide students and their families with loans to help finance postsecondary education. The FFEL program offers federally guaranteed loans through private lenders. The Direct Loan program assists students and parents by providing loans directly from the federal government.

Together, the programs provided $45.8 billion of new loans during fiscal year 2003. The FFEL program accounted for $33.8 billion, or 74 percent, of that volume. At the end of 2003, about $230 billion of FFELs and $85 billion of direct loans were outstanding.

The terms of the student and parent loans offered by the two programs are almost identical. Most of the repayment options available to students are the same in the two programs, although the FFEL program offers four repayment plans and the Direct Loan program offers five, including the income-contingent repayment option under which borrowers repay on the basis of their income and the amount borrowed and which can extend for up to 25 years. Furthermore, the benefits offered to borrowers once they enter repayment vary primarily because of the many private lenders who offer FFELs. For example, many lenders rebate back to borrowers some of the fees that were deducted from the loan amount at the time it was disbursed. Many also offer discounts on the interest rate after a number of on-time payments.

Changes to the terms for borrowers can have different effects on the government's cost in the two programs. The difference arises in part from the different roles the government plays in the two programs. In the Direct Loan program, the government is the lender, whereas in the FFEL program, it is not. Consequently, changing borrowers' interest rate from the current variable rate rules to the fixed rate rules due to take effect after June 2006 has different effects on the government's cost in the two programs. In the FFEL program, the government's cost increases for both student and parent loans because the average supplemental payment is expected to increase (see the government paid supplement column of Table 3 and compare panels 1 and 2 and panels 3 and 4). In the Direct Loan program, the government's cost decreases for both student and parent loans because the amount borrowers pay is expected to be higher under fixed rates than under variable rates (see the borrower paid interest rate column of Table 4 and compare panels 1 and 2 and panels 3 and 4). Although the middle value of variable borrower rates (TB+2.3=7.06 percent) is higher than the fixed borrower rate (6.8 percent), the average value (6.39 percent) is lower because of the variability of interest rates and its interaction with the cap on borrower interest rates.

Table 1.

Statutory Formulas for Calculating Borrowers' and Lenders' Interest Rates on Student and Parent Loans Issued After January 1, 2000

Conditions	Formula
	Student Loans
Variable Rate Rules in Effect until June 30, 2006	
Borrower rate on both FFEL and Direct Loans effective July 1 of each year	
In repayment	TB+2.3 percentage points, but no more than 8.25 percent
In school, grace, or deferment	TB+1.7 percentage points, but no more than 8.25 percent (For means-tested, or subsidized, loans, the government pays that interest on behalf of the borrower)
Lender yield determined quarterly	
In repayment	CP+2.34 percentage points, but no less than the borrower rate
In school, grace, or deferment	CP+1.74 percentage points, but no less than borrower rate
Fixed Rate Rules in Effect after June 30, 2006	
Borrower rate on both FFEL and Direct Loans at all times	6.8 percent
Lender yield determined quarterly	Same as under variable rate rules
	Parent Loans
Variable Rate Rules in Effect until June 30, 2006	
Borrower rate on both FFEL and direct loans effective July 1 of each year at all times	TB+3.1 percentage points, but no more than 9 percent
Lender yield determined quarterly	
Borrower rate is less than 9 percent	Same as borrower rate
Borrower rate at 9 percent	CP+2.64 percentage points, but no less than borrower rate (9 percent)
Fixed Rate Rules in Effect after June 30, 2006	
Borrower rate on both FFEL and direct loans at all times	7.9 percent
Lender yield determined quarterly	
CP-June+2.64 percentage points is less than 9 percent	Same as borrower rate (7.9 percent)
CP-June+2.64 percentage points is greater than or equal to 9 percent	CP+2.64 percentage points, but no less than borrower rate (7.9 percent)

Source: Congressional Budget Office.

Notes: TB: The bond-equivalent yield (BEY) on 91-day Treasury bills sold at auction during the last week of May of each year.
CP: The quarterly average BEY on three-month commerical paper of financial institutions.
CP-June: The BEY during the last week of June of each year on three-month commercial paper of financial institutions
FFEL = Federal Family Education Loan program.

Table 2.

CBO's Interest Rate Projections for 2008 to 2014

(Quarterly average)

	91-Day Treasury Bill	Three-month Commercial Paper of Financial Institutions
Projection Average	4.76	5.16
Standard Deviation	2.9	3.0
Memorandum:		
Proportion of Cases Greater Than Average Plus:		
3.0 percentage points	0.15	0.16
1.5 percentage points	0.30	0.31
Proportion of Cases Less Than Average Minus:		
1.5 percentage points	0.30	0.31
3.0 percentage points	0.15	0.16

Source: Source: Congressional Budget Office based on its January 2004 baseline economic forecast and associated simulations of the variability of future interest rates.

Note: Rates are expressed on a bond-equivalent-yield basis.

Table 3.

Sources of Lenders' Interest Income on Student and Parent Loans, by Interest Rate Conditions, Academic Year 2009-2010

(Average annual percentage)

Interest Rate Conditions for Lenders	Percentage of Scenarios	Borrower Paid Interest Rate	Government Paid Supplement	Lenders' Interest Income		
				Total	Target[a]	Increment
Variable Rate Student Loans[b]						
No Increment[c]	74	6.51	1.82	8.33	8.33	0
Positive Increment[d]	26	6.08	0	6.08	5.17	0.91
Average	100	6.39	1.34	7.74	7.5	0.24
Fixed Rate Student Loans[e]						
No Increment[c]	59	6.8	2.7	9.5	9.5	0
Positive Increment[d]	41	6.8	0	6.8	4.64	2.16
Average	100	6.8	1.59	8.39	7.5	0.89
Variable Rate Parent Loans[b]						
No Increment[c]	28	9	2.34	11.34	11.34	0
Positive Increment[d]	39	6.82	0	6.82	5.79	1.03
Negative Increment[f]	33	6.08	0	6.08	7.19	-1.11
Average	100	7.18	0.65	7.83	7.8	0.03
Fixed Rate Parent Loans[e]						
No Increment[c]	32	7.9	3.08	10.98	10.98	0
Positive Increment[d]	52	7.9	0	7.9	5.46	2.44
Negative Increment[g]	16	7.9	0	7.9	9	-1.1
Average	100	7.9	0.98	8.88	7.8	1.08

Source: Congressional Budget Office based on its January 2004 baseline economic forecast and simulations of the variability of future interest rates.

a. For student loans, CP + 2.34, which is the target lender yield used to calculate government payments in the student loan program. For parent loans, the target yield is CP + 2.64.

b. The program rules that apply to loans issued between January 1, 2000, and June 30, 2006.

c. While the borrower rate is below the target lender yield, the government makes up the shortfall.

d. Because the borrower rate is above the target lender yield, the lender receives an increment above it.

e The program rules that apply to student loans issued on July 1, 2006, and afterwards.

f. The borrower rate is below the target lender yield, but because the borrower rate at the beginning of the year was below 9 percent, the government does not make up the shortfall.

g. The borrower rate of 7.9 percent is below the target lender yield, but because the target at the beginning of the year was below 9 percent, the government does not make up the shortfall.

Table 4.

Lenders' Interest Income on FFEL Loans, by Type of Borrower, Method of Setting Borrower Rates, and Interest Rate Environment, 2009-2010

(Average annual percentage)

Alternative Interest Rate Environments	Borrower Paid Interest Rate	Government Paid Supplement	Lenders' Interest Income		
			Total	Target[a]	Increment
		Variable Rate Student Loans[b]			
Low[c]	4.85	0.95	5.8	5.5	0.3
Average[d]	6.39	1.34	7.74	7.5	0.24
High[e]	7.46	2.19	9.64	9.5	0.14
		Fixed Rate Student Loans[f]			
Low[c]	6.8	0.67	7.47	5.5	1.97
Average[d]	6.8	1.59	8.39	7.5	0.89
High[e]	6.8	3.00	9.8	9.5	0.3
		Variable Rate Parent Loans[b]			
Low[c]	5.64	0.20	5.84	5.8	0.04
Average[d]	7.18	0.65	7.83	7.8	0.03
High[e]	8.23	1.58	9.81	9.8	0.01
		Fixed Rate Parent Loans[f]			
Low[c]	7.9	0.33	8.23	5.8	2.43
Average[d]	7.9	0.98	8.88	7.8	1.08
High[e]	7.9	2.19	10.09	9.8	0.29

Source: Congressional Budget Office based on its January 2004 baseline economic forecast and simulations of the variability of future interest rates.

Note: FFEL = Federal Family Education Loan program.

a. For student loans, CP + 2.34, which is the target lender yield used to calculate government payments in the student loan program. For parent loans, the target yield is CP + 2.64.

b. The program rules that apply to loans issued between January 1, 2000, and June 30, 2006.

c. A downward shift in interest rates represented by subtracting 2 percentage points from each of the scenarios in CBO's projections.

d. CBO's simulations around baseline projections.

e. An upward shift in interest rates represented by adding 2 percentage points to each of the scenarios in CBO's projections.

f. The program rules that apply to student loans issued on July 1, 2006, and afterwards.