

March 30, 1998

Honorable Pete V. Domenici
Chairman
Committee on the Budget
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

At your request, the Congressional Budget Office has prepared the attached analysis of how the profitability of Federal Family Education loans changes under alternative formulas for determining the yield that lenders earn on such loans. Consistent with CBO's mandate to provide impartial analysis, the attachment makes no recommendations.

If you have questions or desire further information, please let me know. Your staff may wish to call Robin Seiler of CBO's Special Analysis Division.

Sincerely,

June E. O'Neill

Honorable Pete V. Domenici
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cc: Honorable Frank Lautenberg
Ranking Minority Member

Honorable John R. Kasich
Chairman
House Committee on the Budget

Honorable John M. Spratt, Jr.
Ranking Minority Member

Honorable James M. Jeffords
Chairman
Senate Committee on Labor and
Human Resources

Honorable Edward M. Kennedy
Ranking Minority Member

Honorable William F. Goodling
Chairman
House Committee on Education and
the Workforce

Honorable William L. Clay
Ranking Member

Attachment

The Profitability of Federally Guaranteed Student Loans

Introduction and Summary

The formula for determining the yield that lenders earn on Federal Family Education Loans (FFELs) is scheduled to change on July 1, 1998. The Congressional Budget Office (CBO) has analyzed how the profitability of FFELs will change under the new formula and under an alternative proposed by the Administration. CBO's analysis also examined two other variables that affect profitability: the borrower's indebtedness and the lender's means of financing federally guaranteed student loans. This attachment provides background information on the FFEL program and summarizes the methodology and results of CBO's analysis. It also compares the analysis with a recent study by the Department of the Treasury and discusses the rate of return that commercial banks and other for-profit lenders require on federally guaranteed student loans.

CBO's analysis indicates that the new formula will render it unprofitable for private, for-profit lenders to make new FFELs to the average borrower attending two- and four-year schools. Portfolio lenders--those who hold loans through repayment--could expect to earn positive returns on loans to students attending graduate or professional schools, but those returns would be unattractively low. CBO also concludes that although portfolio lenders could expect to earn positive returns by making FFELs under the alternative formula proposed by the Administration, those returns would also be unattractively low for all loans with the possible exception of loans to students attending graduate or professional schools.

CBO's analysis indicates as well that under a single, fixed interest rate formula setting the yield that lenders earn on FFELs, for-profit lenders can increase their returns by doing business with schools whose students borrow large amounts and by securitizing the loans. Thus, changing the current formula to reduce lender yields on FFELs may lower the returns earned by some lenders, but it will allow other lenders to earn high returns. It may also mean that the industry will make fewer loans to some types of students.

Background

Through the FFEL Program, the federal government provides subsidies to commercial and nonprofit lenders to induce them to make loans to finance postsecondary education. The program supports student lending in three ways: it provides a guarantee of 98 percent of the principal amount of eligible loans, it sets the interest rate that lenders earn on the loans, and it establishes a ceiling on the interest rate that students pay. When the interest rate earned by lenders exceeds the rate paid by students, the government makes special-allowance payments to lenders to make up the difference. On so-called subsidized loans, the government also pays all interest during the time the borrowers are in school, during a grace period after they graduate, and during authorized deferment periods. On so-called unsubsidized loans, borrowers are responsible for interest payments, but they may be deferred until loan repayment begins. The amounts of money that students may borrow are subject to annual and lifetime limits. Loans typically have a maturity of 10 years. Outstanding FFELs

totaled \$99.0 billion at the end of fiscal year 1997. CBO projects that in fiscal year 1998, new guaranteed loans will total \$19.7 billion.

Interest rates earned by lenders are currently tied to the yields on 91-day Treasury bills, or T-bills. On federally guaranteed student loans made between July 1, 1994, and June 30, 1998, the interest rate earned by lenders is the bond-equivalent yield (BEY) on T-bills plus a certain percentage-point additive: 2.5 percentage points when borrowers are in school or are in the grace period, or if they defer repayment; and 3.1 percentage points when borrowers are repaying their loans. The rate earned by lenders is determined quarterly on the basis of the average yield on T-bills auctioned during the quarter. The loan rate paid by students is reset annually, and the maximum interest rate is 8.25 percent.

The Student Loan Reform Act of 1993 scheduled a change in the formula that determines the interest rate that borrowers will pay for federally guaranteed student loans that are made beginning on July 1, 1998. Under the new formula, the yield earned by lenders must be based on the BEY of Treasury securities with a maturity comparable to FFELs (about 10 years), as established by the Secretary of Education, plus 1 percentage point. In addition, the rate is to be reset every 12 months. Under prevailing interest rate conditions, the scheduled change in the formula would significantly reduce the interest rate paid by borrowers who received new federally guaranteed student loans, relative to the rate they would pay under the current formula. That outcome would result because the spread between the yields on long-term Treasury securities and the 91-day T-bill is quite narrow by historical standards, and CBO projects that it will remain so for several years. The change in the formula would also reduce the yield earned by lenders, thereby reducing the profitability of such loans. If the current spread between the yields on long-term Treasury securities and 91-day T-bills were close to its long-term average of 135 basis points, the reduction in the rates paid by students and in the yield earned by lenders would be much less.

The Administration recently proposed an alternative new formula that would set the yield earned by lenders at 1.7 percentage points above the BEY on the 91-day T-bill when borrowers were in school, in the grace period, or in a deferment status, and 2.3 percentage points above that yield when borrowers were repaying their loans. A study by the Department of the Treasury published in 1998, *The Financial Viability of the Government-Guaranteed Student Loan Program*, concluded that lenders would earn adequate returns on FFELs under this proposed new formula.

CBO's Analytical Model

CBO has developed a simulation model to assess how the profitability of FFELs is affected by alternative formulas for setting the interest rate that lenders earn on such loans. The model uses data provided by lenders to project the annual cash flows--interest income, interest expense, and other noninterest expenses--associated with originating, financing, and servicing student loans over the life of those assets. The model estimates the after-tax return on equity (ROE) that private, for-profit firms can expect to earn on student loans.

In general, the profits that a lender earns on a portfolio of federally guaranteed student loans are a function of the interest rates on the loans in the portfolio, the average indebtedness per borrower, the lender's means of financing the loans, and the aggregate size of the lender's portfolio. Holding a larger amount of debt per borrower is more profitable because larger loan balances yield more net interest income to cover origination, servicing, and other overhead costs, which are relatively fixed for each borrower. A lender's means of financing affects the amount of equity capital that the lender invests in the student loan business. The less capital that a lender invests, the greater the return on that equity for a given level of net income (net interest income minus noninterest expenses). Larger portfolios are more profitable because lenders can achieve economies of scale in handling large volumes of loans.

CBO's model is designed to evaluate the effects of three variables that affect profitability: the loan interest rate, the borrower's indebtedness, and the lender's means of financing the loans. The model can also be used to analyze the returns on student loans earned by state agencies and nonprofit lenders that are exempt from income taxation and permitted to issue tax-exempt debt. However, CBO's analysis focuses on commercial, for-profit lenders, which finance about 75 percent of FFELs, and in particular on large banks and Sallie Mae (the Student Loan Marketing Association). Those large lenders have achieved economies of scale and hold a major share of the outstanding volume of federally guaranteed student loans. The willingness of large banks and of Sallie Mae to supply funds determines the viability of the guaranteed loan program.

With respect to borrower indebtedness, CBO analyzed the profitability of lending to four hypothetical groups of average borrowers: students attending two-year colleges who have an average indebtedness of \$5,500; students attending two-year colleges who have an average of \$7,500 in debt; students attending four-year colleges who have an average indebtedness of \$12,500; and students attending graduate or professional schools who have an average of \$26,000 in debt. Those levels of indebtedness are close to the national averages for borrowers who graduated from such schools in 1996.

CBO's model makes a number of assumptions about borrowers and their behavior (see Table 1). According to the model, students begin school in the 1998-1999 school year. Students at four-year colleges and graduate or professional schools attend school for an average of three years; students attending two-year schools are assumed to be in school for an average of two years. Borrowers begin repayment during the year after they leave school. To achieve the assumed levels of indebtedness, borrowers would take out several loans over a number of years. In CBO's analysis, each borrower obtains all of his or her loans from the same bank, which would enable lenders to economize on the costs of servicing the loans. Consistent with historical experience, the assumed average lifetime default rates are 15 percent for borrowers attending four-year schools, 30 percent for borrowers attending two-year schools, and 10 percent for borrowers attending graduate or professional schools. The noninterest expenses that lenders incur to originate, finance, and service student loans, expressed as a percentage of the average balance over the life of loans, vary inversely with the level of borrower indebtedness.

CBO analyzed two alternative means by which lenders finance FFELs. In the first case, a large bank holds student loans in its portfolio through repayment, maintains a capital ratio of 5 percent, and issues debt to raise the remaining funds needed to finance lending. (Federal bank regulators require a bank to maintain a 5 percent capital ratio against its on-balance-sheet assets in order to be classified as well-capitalized.) This is the case analyzed in the Treasury Department's recent study. The capital ratios that banks maintain against their student loan portfolios vary; data from a number of large lenders suggest a range of from 2.5 percent to 6.5 percent.

In the second case analyzed by CBO, a large bank is assumed to hold student loans in its portfolio while borrowers are in school. When borrowers begin repayment, the student loans are securitized, either by the bank itself or after the bank sells them to Sallie Mae. Securitization is the process of selling debt securities to investors, with groups of relatively homogeneous loans serving as collateral for the debt. Since the enactment of the Investment Company Act of 1992, which permitted the securitization of student loans, the volume of securitized loans has grown rapidly, rising from less than \$1 billion in 1993 to \$8.9 billion in 1997. About \$15 billion in student loans are expected to be securitized in 1998.

CBO assumed in this second case that the bank maintains a capital ratio of 4 percent on student loans while borrowers are in school. Lenders that securitize student loans tend to maintain lower capital ratios against loans retained on their balance sheets than do lenders that do not securitize. When the loans are securitized, the bank or Sallie Mae transfers them to a trust and invests a small amount of cash, typically 25 basis points of the loan principal, to establish a reserve fund and ensure adequate liquidity. The trust finances the loans by issuing asset-backed securities; it uses interest income from the loans to pay interest on the securities and cover noninterest expenses. The lender receives the difference between the trust's annual income and expenses, plus the residual balance of the reserve fund after the securities are repaid.

Under Financial Accounting Standard (FAS) 125, when the student loans are securitized, the lender must record as income the gain from the sale, which is equal to the estimated present value of the expected cash flows from the trust. The gain becomes an asset on the lender's balance sheet that is amortized over the life of the securitized loans and against which the lender must maintain capital. In its model, CBO assumed that the capital a bank or Sallie Mae maintains against the gain on securitized student loans is equal to 1.5 percent of the principal amount of the loans. When the cash investment in the trust is included, the lender's total capital investment is assumed to be 1.75 percent of the loans.

Securitizing any type of loan affects a lender's expected after-tax ROE in two ways. On the one hand, securitization involves issuing more debt, often at a higher interest rate, which tends to reduce expected returns. On the other hand, a lower capital investment tends to increase expected returns. In most cases, the second effect outweighs the first, so that securitization increases a lender's expected ROE. However, if significant variation occurs in the year-to-year income on the loans, the increase in expected returns will be offset to some degree by a greater risk of earning a low or negative return in any year. That difference in risk should be quite small for FFELs, however,

because they carry a federal guarantee of 98 percent of the principal and CBO's analysis assumed that lenders take no interest rate risk in financing the assets. Therefore, CBO's estimates of the expected after-tax ROEs from the two approaches to financing FFELs are comparable.

With respect to the interest rate on FFELs, CBO analyzed three alternatives: the formula that applies to loans made through June 30, 1998; the new formula scheduled to become effective on loans originated after that date; and the formula recently proposed by the Administration. For each interest rate formula, the analysis used CBO's January 1998 forecast of interest rates.

The profitability of FFELs depends on how much it costs lenders to pay interest on debt issued to finance the assets and to hedge their basis risk.¹ Most of the debt issued by banks pays interest at the London Interbank Offer Rate (LIBOR), or at other short-term interest rates, rather than at the yield on 91-day T-bills. Large banks borrow at LIBOR plus from 5 to 30 basis points. CBO assumed a borrowing cost of LIBOR plus 5 basis points, as did the Treasury's study. CBO also assumed that a bank enters into interest rate swap agreements in order to hedge the basis risk associated with financing FFELs with debt that pays interest at LIBOR.

Under the current and the Administration's proposed new interest rate formulas, the swap agreements are assumed to result in an effective cost of bank borrowing of 70 basis points above the BEY on the 91-day T-bill. That assumption is consistent with current conditions in the market for interest rate swaps. Although some large banks cannot issue debt at 5 basis points over LIBOR, they can generally borrow in the commercial paper market at rates below LIBOR, and the cost of hedging the resulting basis risk is lower than the cost of hedging the basis risk associated with borrowing at spreads above LIBOR. With respect to securitization, CBO assumed that the average effective yield on asset-backed securities issued by a bank or Sallie Mae is 92 basis points above the BEY on the 91-day T-bill. That yield reflects all the transaction costs associated with issuing such securities, assumes that the issuer fully hedges all basis risk, and is consistent with recent market conditions.

Under the new interest rate formula scheduled to become effective in July 1998, student lenders presumably would continue to raise funds at rates near or closely correlated to LIBOR, but they would incur more basis risk, given that the yield on long-term Treasury securities is not closely correlated with the BEY on 91-day T-bills. CBO assumed, as did the Treasury's study, that the Secretary of Education would set the yield on FFELs equal to the interest rate that the Administration uses for budget scoring under credit reform for loans with a maturity of between 10 years and 20 years. CBO's analysis also assumed that the lender enters into interest rate swap agreements that fully hedge the resulting basis risk and that the swaps result in an effective yield on FFELs of about 170

1. Basis risk is the risk associated with funding an asset whose yield is pegged to one interest rate index with a liability whose yield is pegged to another index. Under the current interest rate formula, banks and other lenders are typically exposed to basis risk on their FFEL portfolios because the yield on federally guaranteed student loans is pegged to the BEY on the 91-day T-bill, whereas the yields on the short-term debt issued by lenders to finance the loans are pegged to other short-term interest rates. A lender can hedge, or shed, at least some of the basis risk on its FFEL portfolio by entering into interest rate swap agreements. For example, a lender funding student loans with debt pegged to the London Interbank Offer Rate (LIBOR) may hedge the resulting basis risk by exchanging, or swapping, the interest income on its student loans for a stream of payments that are also pegged to LIBOR.

basis points above the BEY on 91-day T-bills and an effective cost of funds of 70 basis points above that yield.

Another factor influencing the profitability of FFELs is the ability of borrowers to consolidate multiple student loans into a single loan with a longer maturity. CBO estimated that about 34 percent of the dollar amount of federally guaranteed student loans made to borrowers attending four-year and graduate or professional schools will eventually be consolidated. Until recently, the interest rate for a consolidation loan was a fixed rate equal to the weighted average of the interest rates on loans being consolidated, rounded up to the nearest percent; that figure is currently 9.0 percent. In October 1997, the Emergency Student Loan Consolidation Act changed the interest rate on consolidation loans to a floating rate equal to the lesser of 3.1 percentage points above the BEY on 91-day T-bills or 8.25 percent. Under that provision, which expires in October 1998, the effect of loan consolidation is to reduce the average return earned by lenders. Making a consolidation loan involves fixed costs, and lenders must pay the Department of Education a fee that makes the effective interest rate on a consolidation loan 105 basis points lower than the weighted-average interest rate on the loans it replaces. Originating a consolidation loan may increase the returns of an individual lender if the transaction results in a much larger loan balance for that lender, but CBO's analysis focused on average lender returns. Although CBO's baseline assumes that the Emergency Student Loan Consolidation Act formula for determining the interest rate on consolidation loans will expire as scheduled, CBO's analysis of the profitability of FFELs assumes that the formula will remain in effect.

CBO's analysis also did not consider the higher yield that lenders would earn on PLUS loans, which are made to the parents of dependent students. Under the current formula, PLUS loans earn the lesser of 9 percent or the BEY on the one-year Treasury bill plus 3.1 percentage points. Under the formula scheduled to become effective July 1, 1998, the yield on PLUS loans would be the lesser of 9 percent or the BEY on Treasury securities of comparable maturity plus 1 percentage point. CBO estimated that PLUS loans will make up about 9 percent of the dollar volume of all FFELs. About 85 percent of the dollar volume of PLUS loans goes to parents whose dependents attend four-year, graduate, or professional schools. Ignoring the higher yield on those loans reduces somewhat CBO's estimate of expected lender returns on FFELs.

Results of CBO's Analysis

If the current FFEL interest rate formula was maintained in fiscal year 1999, lenders could expect to earn a profit on loans to borrowers with all four assumed average levels of indebtedness (see Table 2). The expected after-tax ROEs of a portfolio lender--a lender that holds loans through repayment--with a 5 percent capital ratio range from 16 percent (for lending to the average student attending a two-year school who borrows \$5,500) to 23 percent (for lending to the average graduate or professional student who borrows \$26,000). For lenders that securitize student loans, the expected profits from student lending are significantly higher, with the expected after-tax ROE ranging from 22 percent to 35 percent.

Under the new interest rate formula scheduled to become effective July 1, 1998, lenders could expect to incur losses on lending to students attending both two- and four-year schools. The expected returns on those loans would be negative because net interest income would be insufficient to cover the noninterest expenses associated with originating and servicing the assets. Although portfolio lenders could expect to earn a profit of 5 percent on lending to students attending graduate or professional schools, that rate of return would be too low to make such lending an attractive prospect.

Under the interest rate formula proposed by the Administration, lenders could expect to earn a profit from lending to students attending four-year and graduate or professional schools. Expected ROEs on such loans would range from 2 percent to 11 percent for portfolio lenders and from 1 percent to 9 percent for lenders that securitized. Portfolio lenders could also expect to earn a profit of between 2 percent and 6 percent on loans to borrowers attending two-year schools. With the possible exception of loans to students attending graduate schools, those expected profit levels would be unattractive.

The results of CBO's analysis are somewhat sensitive to changes in the major assumptions of its model. CBO undertook a sensitivity analysis that used the interest rate formula that will be effective through June 30, 1998, under current law (see Table 3). Recent increases in the ceiling on the annual and lifetime amounts that students can borrow under the FFEL program will increase the average levels of borrowers' indebtedness in the future above the levels assumed in CBO's analysis. Assuming higher levels of indebtedness increases lenders' expected after-tax ROEs, because they earn higher net interest income while incurring essentially the same noninterest expenses. Assuming higher noninterest expenses lowers expected profits. (The costs of servicing FFELs are likely to decline in the future, however, as lenders achieve greater efficiencies in information technology.) Assuming higher interest rates on bank debt lowers expected after-tax ROEs. Assuming that lenders maintain a higher capital ratio also lowers expected ROEs, as the benefit of lower interest expense is more than offset by the cost of making a larger capital investment. Using the Administration's interest rate forecast does not significantly affect the results of CBO's analysis. Sensitivity analyses whose assumptions include the other two interest rate formulas analyzed by CBO produced changes in expected lender returns of the same magnitude as those displayed in Table 3.

Federal policymakers may wish to set the interest rate that lenders earn on FFELs at a level that yields lenders sufficient returns to induce them to make loans to all types of borrowers. CBO's analysis shows, however, that lenders can boost their returns by specializing in lending to borrowers with higher levels of indebtedness, which they can do by restricting the types of schools with which they do business. In addition, large lenders can reduce the cost of financing federally guaranteed student loans by securitizing the assets. Thus, a tension exists between the objectives of ensuring that all borrowers can obtain student loans from private lenders and minimizing the federal cost of ensuring such access.

Comparison of CBO's and the Department of the Treasury's Analyses

The February 1998 Treasury Department study evaluated the financial viability of the FFEL Program by comparing the after-tax rate of return on assets (ROA) that lenders can expect to earn on federally guaranteed student loans with the minimum ROA that they must earn on such assets. The Treasury's study estimated that lenders require an ROA of 80 to 115 basis points on student loans. The estimate assumed that a large bank lender maintains a capital ratio of between 4 percent and 5 percent against its student loan portfolio and requires an after-tax ROE of between 10 percent and 14 percent.

The Treasury's report and CBO's analysis have a similar conceptual basis, but CBO's analysis used a more refined methodology. CBO estimated lender returns by taking explicit account of the timing of cash flows, whereas the Treasury estimated lender returns on the basis of average cash flows over the life of loans. CBO's analysis also examined the effect of two variables that affect lender profitability but that were not considered by the Treasury: the level of borrower indebtedness and the lender's means of financing the loans. In addition, CBO's analysis estimated the profitability of lending to four groups of new borrowers who enter school in the fall of 1998 over the life of all their loans; the Treasury's study, in contrast, focused on the profitability of the average loan made to students attending school in a single year and considered two school years (1997-1998 and 1998-1999).

CBO's analysis indicates that FFELs will be less profitable than the Treasury's study concluded. The Treasury found that a large portfolio lender could expect to earn a small but unattractively low profit on the average federally guaranteed student loan made to students attending school in the 1998-1999 school year under the new interest rate formula scheduled to go into effect on July 1, 1998. CBO concluded that under the new formula, the only profitable loans would be made by portfolio lenders to borrowers attending graduate or professional schools and the expected profit on those loans would be quite low. The Treasury also found that a portfolio lender could expect to earn an attractive level of profit on the average FFEL made to students attending school in the 1998-1999 school year under the interest rate formula proposed by the Administration. CBO's conclusion is that lenders can expect to earn an after-tax ROE of 9 percent or more only on loans to borrowers attending graduate or professional schools; lenders' returns on loans to borrowers attending two- and four-year schools would be unattractively low.

The differences in the conclusions of the two analyses result in part from differences in the Treasury's and CBO's assumptions about lenders' noninterest expenses. The Treasury assumed that noninterest expenses average about 87 basis points of the average loan balance. CBO assumed that noninterest expenses range from a low of 63 basis points of the average balance of loans to borrowers attending graduate or professional schools, to a high of 161 basis points of the average balance of loans to borrowers attending two-year schools who borrow a low amount of debt (see Table 1). When compared on a net present value basis, however, the differences in the noninterest expenses

assumed by the Treasury and CBO are not as large.² Another, less important difference is that CBO's analysis assumed that lenders earn interest income later over the life of student loans as a result of the accrual of in-school interest on so-called unsubsidized loans, which CBO estimated will account for about 36 percent of all loans made for the 1998-1999 school year. The Treasury's report assumed no such cost.

Required Lender Return on Equity for FFELs

Private, for-profit student lenders will make FFELs if the expected profits from such lending are as great as the expected returns from investing in other assets of comparable risk. To assess what CBO's conclusions imply about how alternative interest rate formulas would affect the supply of FFELs from private lenders, one must make a judgment about the after-tax ROE that such lenders require on federally guaranteed student loans. The issue can be divided into two questions: what is the average after-tax ROE that investors require commercial banks and other for-profit student lenders to earn, and how does the risk of holding FFELs compare with the risk of the average assets that such lenders hold?

With respect to the first question, finance theory suggests that the returns that investors require a firm to earn reflect their expectations about the likely future returns from investing in the stock market as a whole and about the relative volatility of future returns on the firm's stock. Disagreements about the returns that investors require student lenders to earn should largely reflect differences in expectations about the market's future returns. The Treasury Department's study posited that large, for-profit lenders that hold federally guaranteed student loans must earn an average after-tax ROE of 10 percent to 14 percent. That essentially assumes that current investors expect the stock market to earn returns in the future similar to the average returns realized by the market since 1970. The student lending industry argues that investors currently expect large banks and Sallie Mae to earn after-tax ROEs of 16 percent to 20 percent. That is, the industry assumes that investors expect the market to earn returns similar to its average returns in the 1990s, which has been a period of extraordinarily high profitability by historical standards. Alternatively, it could be argued that investors should base their expectations about the market's returns on its average returns since the 1920s. Under that scenario, lenders would have to earn an average after-tax ROE of 8 percent to 12 percent. If policymakers select an interest rate formula that allows private lenders to earn after-tax ROEs that are high by historical standards, lenders will earn those returns in less robust economic periods in the future, when the expected returns from the market are lower than they are today.

2. Specifically, the level of noninterest expenses assumed by CBO for loans to borrowers attending two-year schools who have low amounts of debt is equivalent, on a net present value basis using a 10 percent discount rate, to assuming noninterest expenses equal to a constant 146 basis points of the annual loan balance. For loans to borrowers attending two-year schools with high levels of debt, borrowers attending four-year schools, and borrowers attending graduate or professional schools, the corresponding figures are 123 basis points, 95 basis points, and 62 basis points, respectively.

With respect to the second question, there is reason to believe that federally guaranteed student loans pose less risk than the average assets held by banks and other student lenders. A portfolio of loans of one type is riskier than a portfolio of loans of another type if the returns on the first portfolio vary more than the returns on the second. It would be surprising if the returns on federally guaranteed student loans varied nearly as much as the returns on the business and consumer loans that banks make. The federal government guarantees 98 percent of the principal of FFELs, which shelters banks and other lenders from nearly all of the default losses on the loans. In contrast, the default losses that banks incur on business and consumer loans fluctuate with the performance of the national and regional economies. Of course, unusual operating and political risks are associated with federally guaranteed student loans. Failure to service FFELs properly results in denial of default claims. There is also the possibility that the federal government will reduce the profitability of making new FFELs, thereby reducing the value of the investment that lenders have made in systems and personnel. Nonetheless, the operational, regulatory, and political risks associated with federally guaranteed student lending are unlikely to be large enough to offset the very low credit risk of the assets.

To test the hypothesis that federally guaranteed student loans are less risky than other bank assets, CBO compared the volatility of the returns on the stock of Sallie Mae, which specializes in investing in FFELs, with the volatility of the returns on the stocks of a sample of 20 bank student lenders. The sampled banks ranked from the third to the 60th largest investors in FFELs as of September 30, 1996. The returns on Sallie Mae's stock price were only slightly more volatile than the average of the volatilities of the returns on the stocks of the sampled banks, even though Sallie Mae's capital ratio (about 2 percent) is about one-third of the capital ratio of the average bank in the sample (about 6 percent to 7 percent).³ The implication of that finding is that the return on assets that Sallie Mae earns on the student lending business is significantly less volatile than the average bank's ROA.

Also relevant to an assessment of the after-tax ROE that commercial banks require on student loans is the amount of risk they take in financing the assets. The typical bank does not fully hedge the basis risk associated with holding federally guaranteed student loans, whose yields are pegged to the BEY on 91-day T-bills, and issuing short-term debt whose yields are pegged to LIBOR or other short-term interest rate indexes. Most banks hedge only a portion of the basis risk on their consumer loan portfolios, of which their student loan portfolios are a part. Thus, the profits that banks earn on their student loans include compensation to owners for bearing any unhedged basis risk. Both the Treasury's and CBO's analyses assumed that banks fully hedge that risk. The additional cost that the typical bank would incur to hedge fully the basis risk on its student loan portfolios is unknown. If the additional cost of fully hedging the basis risk associated with a portfolio lender's student loan portfolio is 5 basis points a year, CBO's model indicates that the lender should be willing to accept an after-tax ROE on federally guaranteed student loans that is 1 percentage point lower than the ROE it requires on its average assets.

3. As of March 19, 1997, the beta of Sallie Mae's stock was 1.18; the average of the betas of the banks in the sample was 1.08.

In summary, banks do not require the same returns on FFELs that they require overall, since federally guaranteed student loans are less risky than the average bank asset. In addition, banks do not fully hedge the basis risk on their student loan portfolios, whereas CBO assumed that lenders hedge all basis risk. This implies that whatever returns one assumes investors require banks to earn on student loans, those returns must be reduced somewhat when they are compared with CBO's estimates of bank returns on FFELs.

Conclusion

CBO's analysis indicates that a tension exists between the objectives of ensuring that all borrowers can obtain FFELs from private lenders and minimizing the federal cost of ensuring such access. Some analysts have suggested that it may be possible to design a market-based, competitive mechanism for setting the yield lenders earn on FFELs, and that such a mechanism could reconcile the objectives of ensuring access and minimizing federal costs. That idea deserves further research.

TABLE 1. ASSUMPTIONS OF CBO'S ANALYSIS OF THE PROFITABILITY OF FEDERAL FAMILY EDUCATION LOANS TO STUDENTS ENTERING SCHOOL IN THE FALL OF 1998

Type of School/Borrower	Borrower Indebtedness (Dollars)	Years in School	Default Rate (Percent)	Share of Borrowers Who Consolidate (Percent)	Noninterest Expense/ Average Balance (Percent)
Two-Year School					
Low-balance loan	5,500	2	30	0	1.61
High-balance loan	7,500	2	30	0	1.34
Four-Year School	12,500	3	15	34	1.00
Graduate School	26,000	3	10	34	0.63

SOURCE: Congressional Budget Office based on data from student lenders.

TABLE 2. EXPECTED AFTER-TAX RATES OF RETURN ON EQUITY FROM FEDERAL FAMILY EDUCATION LOANS TO STUDENTS ENTERING SCHOOL IN THE FALL OF 1998 (In percent)

Type of School/ Borrower	Current Formula		Scheduled New Formula		Administration's Proposed New Formula	
	Portfolio Lending	Securiti- zation	Portfolio Lending	Securiti- zation	Portfolio Lending	Securiti- zation
Two-Year School						
Low-balance loan	16	22	n.p.	n.p.	2	n.p.
High-balance loan	19	30	n.p.	n.p.	6	n.p.
Four-Year School	18	26	n.p.	n.p.	6	1 ^a
Graduate School	23	35	5	n.p.	11	9 ^a

SOURCE: Congressional Budget Office based on data from student lenders.

NOTE: n.p. = not profitable.

- a. The returns are lower under securitization because the cost of higher interest expenses offsets the benefit of a lower capital investment.

TABLE 3. SENSITIVITY OF THE EXPECTED AFTER-TAX RETURNS ON EQUITY OF STUDENT LENDERS TO CHANGES IN MAJOR ASSUMPTIONS, ASSUMING THE CURRENT INTEREST RATE FORMULA (In percent)

Type of School/ Borrower	Borrower Indebtedness <u>+\$2,500</u>		Noninterest Expense/ Average Balance <u>+20 Basis Points</u>		Bank Funding Cost <u>+20 Basis Points</u>		Bank Capital Ratio <u>+1 Percent</u>	
	Portfolio Lending	Securiti- zation	Portfolio Lending	Securiti- zation	Portfolio Lending	Securiti- zation	Portfolio Lending	Securiti- zation
Two-Year School								
Low-balance loan	6	9	-4	-7	-4	-2	-2	-2
High-balance loan	5	5	-3	-7	-3	-3	-2	-3
Four-Year School	2	3	-3	-6	-3	-2	-2	-2
Graduate School	1	1	-3	-6	-3	-3	-3	-4

SOURCE: Congressional Budget Office based on data from student lenders.

NOTE: The current interest rate formula is the bond-equivalent yield on the 91-day Treasury bill plus an additional 2.5 percent or 3.1 percent, depending on the school status of the borrower.