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Reducing Federal Student Loan Costs: The Options Are Narrowing

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Reducing Federal Student Loan Costs: The Options Are Narrowing

SUMMARY

The student loan subsidy is part of federal aid to higher education. Economically, it is designed to correct underinvestment in education attributable to market failures that may arise either from a capital market imperfection or an undervaluation by students of the contribution their education makes to society. The subsidy is worthwhile when it corrects these failures, generates successful educational investment and, therefore, increases social benefits. If budget savings must be found in the loan program, it makes economic sense to eliminate spending that does not increase social benefits. This occurs when there is waste in the delivery system, when loans are given to students who do not benefit from the education, and when federal loans substitute for other resources students would have used in pursuing their education.

Past program changes eliminated most waste in the delivery systems. Interest margin reductions and increases in lender fees, charges and risk sharing probably eliminated most excess lender profits. Changes in risk sharing and reimbursements forced administrative efficiencies at guaranty agencies as well. Because legislated fees and charges offer no assurance of continuing efficiency under all economic conditions, instituting an auction system for the right to originate loans and bid contracts for guarantee servicing might be considered. Loan volume must be reduced if more savings are sought, forcing difficult policy choices. Two groups may be singled out. (1) Those with high default rates have a high proportion of students for whom further educational investment is not profitable for either the students or society. They are identified as students who have yet to demonstrate a likelihood of success: those in their first year of postsecondary work. (2) Groups with low default rates have a high share of students for whom federal loans are not needed to induce them to further their education. These are identified as graduate and professional students, who have demonstrated success and would pursue education without federal loans.

Reducing the student subsidy can eliminate many loans in the high-risk (but not the low-risk) group. The high-risk group also contains many whose education will be successful if they receive loans but whose education is curtailed without them. Imposing risk-sharing on schools by levying a fee for every dollar of defaults imposed by their students would minimize eliminating successful students in the high-risk group because schools would have an incentive to assess the likely success of students who will require loans. Eliminating waste of low-risk loans will probably require more direct rationing.

A change in delivery systems from guaranteed to direct loans or the reverse does not lower program costs unless the rules differ. The direct loan income contingent repayment plan (ICR) is a rule that appears to raise costs. Were ICR removed, the costs would not differ for FFEL and direct loans. Current limited use of ICR implies only marginally higher direct loan costs. Should ICR use increase, costs will rise accordingly.

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Reducing Federal Student Loan Costs: The Options Are Narrowing

Overview

Federally backed student loans for postsecondary education are made by the private sector under the auspices of the Federal Family Education Loan (FFEL) program and by the federal government under the auspices of the Direct Loan (DL) program. Regardless of delivery system, the central characteristic of the loans is the federal subsidy: federal acceptance of principal losses; and federal payment of interest while students are in school.¹ This report responds to congressional inquiries concerning options for reducing the cost of the federal student loan program.

Program costs conceivably could be reduced in four ways: eliminate more-than-competitive (excess) returns to private lenders; eliminate excess administrative costs; raise the price (reduce the subsidy) to induce students to reduce their demand for loans; and ration directly by denying loans to particular classes of students.

Shifting the student loan program from FFEL to DL or vice versa is sometimes put forth as a fifth "option." The analysis in this report begins where a 1993 CRS report, *Federal Family Education Loans: Reduced Costs, Direct Lending, and National Income*, ended.² That report concluded that the cost of FFEL and DL programs is the same, absent excess profitability in the FFEL system or differential administrative costs or program rules. In other words, to the extent that any differential costs are found to exist in what are essentially two delivery systems for one program, those costs can be eliminated through either of the first two cost-reduction options, or by identifying a program rule that is different for DL or FFEL and standardizing that rule. Thus, the conclusion stands that program costs cannot be reduced simply by substituting

¹ Stafford "subsidized" loans constitute the largest part of the loan programs and are the focus of this report. Other loans may not pay in-school interest, but all retain the principal guarantee. Readers desiring to learn the institutional details of these programs should read U.S. Library of Congress. Congressional Research Service. *The Federal Family Education Loan Programs*. CRS Report 94-810 EPW, by Margot A. Schenet; and *The Federal Direct Student Loan Program*. CRS Report 95-110 EPW, by Margot A. Schenet.

² U.S. Library of Congress. Congressional Research Service. *Federal Family Education Loans: Reduced Costs, Direct Lending, and National Income*. CRS Report 93-247 E, by Barbara Miles and Dennis Zimmerman.

direct loans made by the federal government for guaranteed loans made by the private sector, or vice versa.³

This report concludes that excess returns to private lenders appear to have been largely eliminated for loans made beginning in 1995. Although excess administrative costs are more difficult to evaluate, the use of competitively bid servicing contracts by FFEL guaranty agencies and the success of existing FFEL-oriented loan servicing organizations in winning competitively bid DL servicing contracts suggest that any further administrative savings are unlikely to be substantial. Thus, these two options are unlikely to produce significant new savings.

The options for further significant reduction of program costs are thus narrowed to two, both of which would restrict the volume of loans:

- (1) raise the price (reduce the subsidy) to students to induce them to reduce their demand for loans; and
- (2) maintain the price of loans but deny (ration) loans to particular classes of students.

The economic rationale of the student loan program is to correct market failures that cause students to invest too little in their education. Subsidizing students' financing costs induces them to increase their investment. This means scarce savings are taken from other sectors of the economy to produce increased educational output, a larger national product, and social benefits for the nation. If loans are to be restricted, the efficiency of federal spending can be increased by first finding those loans that do not increase educational output and social benefits.

Two groups may be singled out: (1) those with high default rates have a high proportion of students for whom further educational investment is not profitable for either the students or society. They are identified as students who have yet to demonstrate a likelihood of success: those in their first year of postsecondary work. (2) Groups with low default rates have a high share of students for whom federal loans are not needed to induce them to further their education. These are identified as graduate and professional students, who have demonstrated academic success and would pursue education without federal loans.

This report focuses on the relative strengths and weaknesses of the alternative methods for reducing student loan costs for these two groups. Because the low-risk group, graduate and professional students, are unlikely to

³ The income-contingent repayment option for DLs is such a difference in program rules. It increases effective defaults and, thus, DL program cost relative to FFEL program costs. The current size of the DL program and the share of DL students choosing the income-contingent repayment option keep these cost differences from being substantial. Estimates of these costs are provided in the rationing section of this report.

curtail their borrowing due to price changes, their loans would probably have to be rationed to increase the efficiency of the loan program. The high-risk group is sensitive to price changes so that reducing the subsidy would be effective in reducing loan volume. Care must be exercised, however, to avoid eliminating loans for the great majority of students in the high-risk group who will be successful. Raising prices by imposing risk sharing on schools might be an efficient strategy for this group. It would give schools an incentive to assess the likelihood of success of their students who will require loans.

Higher education programs are seen to advance a variety of goals. Congress and the Administration may ultimately decide that federal student loan program costs need not be reduced or, indeed, that the programs and consequent costs should be expanded. However, if a decision is made to further reduce program costs, it seems clear that difficult policy choices will have to be made. Examples of cost-cutting effects are intended to illustrate this point. Dollar figures should not be taken as estimates of budget savings.

Eliminating Waste

The cost of the student loan program to the federal government is the difference between program outlays and program revenue. FFEL program loans require outlays from the federal government for: (1) interest payments to lenders on behalf of students in school or during payment deferment periods; (2) defaults; (3) certain administrative costs incurred both within the Department of Education (ED) and by various guaranty agencies on ED's behalf; and (4) "special allowance" payments for interest to lenders whenever the floating "market rate" rises above the rate paid by the borrower. Offsetting revenues and cost sharing come from: (1) origination fees paid by borrowers; (2) loan and rebate fees paid by lenders; (3) a capital offset fee paid by the Student Loan Marketing Association (Sallie Mae); and (4) risk sharing with banks and with state and nonprofit guaranty agencies, including full or partial reimbursement of claims paid when a default is later collected or rehabilitated.

Direct loans (DL) require outlays from the federal government for: (1) loan principal; (2) interest costs for borrowing the money for the loan principal; and (3) administrative costs of origination and servicing, and interest foregone during in-school and deferment periods. DL income comes from origination fees paid by borrowers and repayment of principal and interest, net of defaults.

Reducing costs means either reducing these program outlays or raising these program revenues. For the FFEL delivery system, the options most commonly turned to are eliminating outlays for excess lender interest payments and excess administrative costs because their elimination does not require raising the price or reducing the volume of loans to students. The potential of these "painless" cuts, however, now appears limited.

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Excess Lender Returns

Student loans enjoy cost advantages over other types of lending: they are mostly protected from default risk by the government guarantee; and they are significantly protected from interest rate risk, particularly for banks and other institutions that rely on short-term deposits. Previous comparisons of risk-adjusted spreads (earnings minus costs) for different types of financial investments led to the conclusion that, as of 1993, lenders were receiving greater-than-competitive returns from student loans.⁴ The earnings advantage on student loans -- at least for lenders with large portfolios of such loans -- varied considerably from year to year, but appeared to be on the order of 0.7% from 1989 to 1993. The cost to the federal government for its interest payments was, therefore, higher than necessary, and savings could be obtained by eliminating those excess profits.

Subsequently, several program changes have reduced gross returns to lenders and loan profitability. Previously the loan interest rate was set at 3.25 percentage points above the bond-equivalent yield of the 91-day Treasury bill through 1992, and 3.1 percentage points in 1993 and 1994. It is now 2.5 percentage points above the bond-equivalent yield while the student is in school and the government is paying interest on the student's behalf (for the Stafford Subsidized program). When the student has left school and is repaying the loan, the loan is repriced at 3.1 percentage points above the Treasury bill.

While the gross return on the loans has been lowered during the in-school period, the cost of the loans to lenders has been raised. First, a 0.5% fee is now levied on lenders at origination. Second, lenders are required to share default costs by accepting 98%, rather than 100%, reimbursement. Risk-sharing increases bank lender costs in two ways, as out-of-pocket losses and as higher bank regulatory capital requirements. Third, lenders are now faced with increased prepayment costs because of competition from loan consolidation into the new direct loan program operated by ED. This cost is heightened because of the one-way nature of consolidations: that is, FFEL program loans can be consolidated into direct loans, but direct loans may not be consolidated into FFELs. Fourth, lenders are now required to rebate 1.05 percentage points annually on all new consolidation loans held.

The cost each of these changes imposed on lenders is reflected in table 1, which estimates the current risk-adjusted spread for student loans made in the 1996-97 school year. The estimating methods and simplifying assumptions are discussed in Appendix A.

⁴ See Miles and Zimmerman (1993). Risk-adjusted spreads are calculated by subtracting from the gross loan price: the cost of funds matched for maturity with the loan; the costs of servicing the loan; and the costs assigned to the various interest rate and credit risks that vary by type of loan. The adjustments require simplifying assumptions on which analysts will differ. Nonetheless, the technique offers general orders of magnitude.

Due mainly to the low cost of retail deposits at banks, loans are still very profitable during the in-school (and deferment) period, at 1.94 percentage points. Once the student leaves school and goes into repayment, however, the lender return drops to 1.02 percentage points. This occurs despite the upward repricing of the loan in repayment because the primary lenders (banks) generally sell the loans, just before they enter repayment, to large secondary market investors that have higher costs of funds than banks. These costs are not fully offset by scale advantages in servicing. Loans that have entered repayment also have higher costs due to the risks of prepayment.

Table 1. Risk-Adjusted Spreads For FFEL Student Loans 1996-97 Academic Year			
	<u>In-School & Deferment</u>	<u>In Repayment</u>	<u>In Con- solidation</u>
Student Loan Interest Rate	7.68	8.25	9.00
Effective Rate	--	--	8.20
Less Costs:			
Matched Funds	5.10	5.55	5.55
Origination/Holding Fee	.17	--	1.05
Servicing	.35	1.00	.50
Default Risk	.00	.08	.08
Prepayment Risk	.12	.60	.00
Risk-Adjusted Spreads	1.94	1.02	1.02
Student Loans (over-the-life)		1.25	
Adjustable Rate Mortgages		1.25	
Ginnie Maes		1.20	
Source: Calculations by CRS. For details, see Appendix A.			

— assumes further
closed reality

← ? ?

If a student's loans in repayment are consolidated into a single loan, the returns are virtually the same. This occurs despite the benefits that accrue to lenders from: rounding up the blended interest rate on loans being consolidated to the next whole percentage point (in this case, raising it from 8.25% to 9.0%); a decline in servicing costs that results from spreading those costs over a larger loan amount; and the virtual elimination of further prepayment risk.

Part of the increase in return that would normally be expected from these benefits is taken by the government requirement that 1.05 percentage points be rebated annually by loan holders. Another part is taken by increased competition among lenders which has begun to produce significant savings for

students (as opposed to the government). Secondary market lenders are offering a variety of rate reductions to entice students to consolidate with them. For example, students who will allow direct withdrawal from bank accounts can expect an immediate 0.25 percentage point reduction on the interest rate they pay, and students with good repayment records after 48 months can expect up to a 2.0 percentage point reduction for the remaining life of the consolidated loan. Thus, the allowed consolidation interest rate (9.0%) shown in table 1, has been competed down to an effective rate of 8.2%, about the same rate as for unconsolidated loans in repayment.⁵

The resulting risk-adjusted weighted spread averages about 1.25 percentage points over a typical loan account term of 3 in-school years and 8 repayment years. This is lower than previously estimated for 1992 and 1993 loan years (prior to rule changes) and is about comparable to the spread obtainable on investments that share some characteristics with student loans. Adjustable rate mortgages, for example, also are secured (by a home, or by insurance which is sometimes federal), are somewhat protected from interest rate risk, and are highly liquid. These mortgages have been producing risk-adjusted yields of about 1.25 percentage points. Furthermore, mortgage-related securities, which are fully guaranteed by the government ("ginnie maes"), as of last June were yielding about 1.2 percentage points.⁶

The spread estimates for student loans are for current interest rates only. Interest rate risk is not completely eliminated for these loans. When interest rates rise, private lender costs of funds tend to rise relative to the government borrowing rates that determine the student loan rates, so that lender returns decline. Thus, the attempt to adjust lender returns by setting the interest rate margin will return competitive profits under some financial conditions, excess profits under others, and less than competitive profits under still others. An auction procedure that would allow a market-determined margin is more likely to result in efficient allocations of the federal government's guarantee.

These estimates are based upon assumptions that may prove inaccurate. The agreement of some larger lenders to certain fee increases proposed in the last budget cycle suggests excess returns may still exist. This agreement was predicated, however, on the condition that competition from the direct lending program be capped at 10% of volume. That cap would reduce prepayment risks and compensate lenders for the fee increases.

⁵ These estimates apply only to loans made in 1996, and to consolidation loans which will be made up of loans originated in 1996.

⁶ The adjustable rate mortgages example ignores the use of "teaser" rates. Adjustable mortgages commonly carry interest rates that are 2.0% to 2.5% over the relevant index and matched costs of funds, servicing costs of about 0.25%, default risks of 0.25%, and prepayment risks of about 0.75%. As of June, 1996, ginnie maes were returning net interest of about 1.80%. Servicing costs are about 0.2%, default is zero, and prepayment costs are about 0.4%.

Administrative Costs

Most administrative costs are borne by lenders and guaranty agencies. Lenders finance their administrative costs from the interest income on the loans. That lenders are earning competitive returns suggests that they face competitive pressures to ensure efficiency in their administrative (loan servicing) operations. Large budget savings are unlikely to arise from the lender share of administrative costs.

The remaining administrative costs in the guaranteed loan program are incurred primarily by 37 active nonprofit and state-supported guaranty agencies. Guaranty agencies carry out important functions that in other programs would be considered direct federal functions. Specifically, they certify borrower and institutional eligibility, approve originations and disbursements, perform various customer assistance functions for students and schools, work to prevent defaults, track and report borrower status, provide debt counselling materials, perform compliance audits of schools and lenders, take back defaulted loans and advance payments for insured losses on defaults, and follow up on collections. These and other related tasks are all part of servicing the federal government's guarantee for the loans. Even though the guaranty agencies are not federal agencies, what they do with respect to the student loan program makes them analogous to the field offices of the Federal Housing Administration (FHA) in federally insured home mortgage lending.

Administrative costs for the guaranty agencies in FY1995 totaled \$672 million (operating costs and collection costs).⁷ This amount of money has led some to believe that savings would be produced by eliminating the guaranty agencies. But the guarantee servicing operations have to be performed by somebody -- eliminating the agencies would not eliminate the need to pay for the functions they perform. The only way to tell if potential cost savings are available is to put the functions up for competitive bid and see if some other organizations think they can do the job more efficiently. In this regard, the guaranty agencies have demonstrated at least their experience, and probably also relatively efficient operations, by being part of winning consortia in bids for performing administrative functions for the DL program. This suggests that cost savings from the guaranty agency share of administrative costs may not be substantial.

The recent consolidations in the industry also provide a clue that availability of any cost savings in this area may be declining. Changes in program rules, including risk-sharing and payment timing, have forced certain economies of scale. Some smaller agencies have had relatively high cost operations on a per loan basis. To survive, they have either merged or contracted out parts of their work to servicing subsidiaries of other guarantors. As of 1997, most guarantors use collection agencies for part of their default

⁷ Guaranty agency data supplied by the Department of Education.

collection efforts, and at least 16 outsource their information systems and other services.⁸

It is often asserted that if the federal government abolished the agencies and serviced the guarantee directly, as does the FHA for home mortgages, an immediate budget gain would result from acquisition of the agencies' \$1.8 billion insurance reserves that have been accumulated to cover the expected value of all sources of agency losses and expenses. In general, the reserves represent fees and allowances received up-front, when loans are guaranteed. That fee income must then be amortized over the expected service life of loans. Thus, any federal gain from taking the reserves would occur only once and the gain would dissipate over time as the federal government assumes responsibility for the losses and expenses. Only if guaranty agency reserves exceed the expected value of their expenses and losses would the federal government experience any budget gain.

In summary, if the returns on FFEL program loans are now reasonably competitive and administrative functions are mostly operated efficiently, major savings from either source seem unlikely. Further, since there is nothing inherent in the FFEL and DL delivery systems to produce cost savings from substituting either for the other, cost-reducing options are narrowed to price adjustments and rationing.

The Pricing Option -- Subsidy Reduction

The major economic objection to reducing loan volume by raising the cost of the loans to students relates to the market failures that motivate the program. The "capital market failure" occurs because students are unable to obtain loans by pledging future earnings as collateral; the high cost or lack of alternative financing causes them to invest less in their education than would be profitable for them, and thus, less than is socially desirable. The "external benefits failure" occurs when students do not properly value the benefits their education provides to society; that students cannot capture the entire benefit for themselves in higher earnings causes them to invest less than the socially desirable amount.

The object of a price increase should be to make the program more efficient by eliminating (or at least reducing) loans for those students who provide no social benefits as a result of their loans. Some students are so unlikely to benefit from increased spending on their education that additional investment increases neither educational output nor social benefits. For example, students may enroll in schools which prepare them for jobs that do not exist. Or, schools may enroll students who are simply not prepared to benefit from the education to obtain jobs that are available. Other students' demand for education is not sensitive to financing costs. Either they or their families are financially well off

⁸ USA Group and National Council of Higher Education Loan Programs (NCHELP).

and use the student loan program only for arbitrage purposes; or they are so well prepared that their expected returns make the student loan subsidy inconsequential to their investment decision. These students are likely to enroll despite the increased cost were their federal loans eliminated. Thus, the loans again produce no social benefits that would not have occurred anyway. Put differently, neither of these two groups of students faces a market failure. The problem is identifying these two categories of students.

This report proceeds on the assumption that these two categories of students can be roughly identified on the basis of default rates. Defaults can be used as evidence that neither educational output nor social benefits have increased. For example, relatively high default rates identify groups containing a higher proportion of students who do not benefit sufficiently from their education to justify the public investment. Relatively low default rates identify students who as a group are sufficiently low risk that they can be expected to have alternative means of financing their education, and thus would have provided their social benefits without the public subsidy.

This default approach tends to equate social benefits with labor market returns. Some social benefits may well show up in other ways. Many argue, however, that most social benefits that show up in non labor market ways are generated primarily from investment in elementary and secondary education, whereas postsecondary education benefits are primarily private and accrue to the individual rather than to society. Regardless of which perspective is more accurate, no method exists to measure these nonmarket benefits. In any case, whatever nonmarket benefits do exist may well vary among default groups in roughly the same way as labor market returns.⁹

The Direct Approach -- Raising Student Share of Interest Costs

Methods for raising the price of loans fall into two categories. The first category pursues the direct route by increasing the share of the interest cost charged to students. The most obvious way to do this is to require students to pay some or all of the in-school interest cost. This approach has been implemented with respect to the Stafford "unsubsidized" program, and has been proposed (but not implemented) for the subsidized program.

The direct approach raises concerns that a uniformly higher price will eliminate loans disproportionately for those students most affected by the capital market failure.¹⁰ But the direct approach also has a few advantages.

⁹ The evidence on the external benefits of higher education is nonquantitative and mixed. See Larry L. Leslie and Paul T. Brinkman, *The Economic Value of Higher Education*, New York: Macmillan Publishing Company, 1988.

¹⁰ It is not certain that higher prices (interest rates) necessarily reduce the riskiness of a loan pool. "... those who are willing to pay high interest rates may, on average, be worse risks; they are willing to borrow at high interest rates because they perceive their probability of repaying the loan to be low. As the interest rate rises, the average
(continued...)

First, if it is possible to identify those students who produce social benefits, the price increase can be structured to lessen the adverse effect on them. For example, should market failures be inversely related to a student's wealth or income, interest rate or fee increases or other subsidy reductions could be applied selectively as a function of family or student income, thereby minimizing the impact on this group of students.

Second, the direct approach presumably would raise the interest rate for all students regardless of delivery system (FFEL or DL). Thus, students have no way of escaping the consequences of the higher price on their quantity of desired loans by switching delivery systems, a problem that arises with the indirect approach discussed below.

The Indirect Approach

The second category pursues the indirect route by increasing the cost to nonstudent participants in the student loan industry. Recent legislation has taken this approach because of the desire to eliminate excess returns and administrative waste. The major advantage of this route has been thought to be that students are unaffected by it, that the fees and charges are paid strictly by the nonstudent participants in the system. But the potential effect of indirect options is only less obvious than a straightforward reduction of the student's subsidy; the ultimate effect over time is still a reduction of the student subsidy. The nonstudent participants react to increased costs by shifting them, to the extent they can, to students. The disadvantage to this route is that nonstudent participants are unlikely to raise prices in a way that maximizes social benefits.

The legislation enacted in 1993 reduced the subsidy through lenders, schools, guaranty agencies, and government sponsored enterprises (Sallie Mae). The changes didn't obviously reduce loan volume (i.e., affect students) for a variety of reasons, treated below. To the extent that excess returns and waste were eliminated, however, future attempts along the same lines are likely to result in unambiguous loan reduction. Many of the loans eliminated, however, may be loans that increase social benefits rather than those that do not.

Lower Lender Interest Margins

The reduction in the lender interest rate margin reduced the excess (above competitive market) profits of lenders and lowered federal interest costs on subsidized Stafford loans during the in-school and 6-month deferment periods. In addition, the interest rate reduction exceeded the excess return available on

¹⁰(...continued)

"riskiness" of those who borrow increases, possibly lowering the bank's profits [raising the government's costs in this application]." In such circumstances, the lender may prefer to maintain interest rates and ration credit. See the discussion in Joseph E. Stiglitz and Andrew Weiss, "Credit Rationing in Markets with Imperfect Information," *American Economic Review*, June 1981, 393-410.

some high-default-risk (low likelihood of social benefit) loans, and lenders should have eliminated these loans. Had these loans been eliminated, federal costs for associated in-school interest and default costs would have been eliminated. There is, of course, no reason to believe that the interest rate reduction would have eliminated low-default-risk loans whose recipients would have attended school anyway (and thus generate few additional social benefits).

Not much savings from the expected reduction in loan volume materialized for three reasons. First, even though the higher cost made lenders unwilling to make some high-cost loans, students could pursue loans under terms of the lender-of-last-resort provision, or depending upon their school, move into the DL program. Second, Stafford subsidized loans made under the lender-of-last-resort provision or DL provide 100% (rather than 98%) federal guarantee, thereby increasing the federal government's default costs on these loans. Third, the act of lowering lender returns actually increased the student subsidy by lowering student borrowing cost (both for subsidized and unsubsidized Stafford loans). Students would have discovered that additional borrowing was a worthwhile investment, increased their loans, and increased federal in-school interest payments and default costs.

Lowering lender interest rates is a reasonable strategy for eliminating excess returns to lenders. It could be done more effectively by requiring lenders to bid at auction for the right to originate loans. This would tend to assure that the government will not be wasting money on more-than-competitive profits as market conditions change. This strategy, however, is probably not particularly effective at increasing the percentage of loans made that produce social benefits. Although interest payments are reduced on every loan, high-default-risk students can respond in ways that increase the quantity of loans and costliness of some loans. At the same time, there is no incentive to eliminate low-default-risk loans that add few social benefits.

Default Penalties for Schools

Default penalties for schools took two forms. First, rules that could result in suspension of schools from eligibility to receive student loans were tightened to disqualify schools with default rates chronically in excess of 25%. Second, states could be required to pay part of the default costs for schools in the state whose default rates exceeded 20%. The former has probably been responsible for a large part of the recent reduction in default rates; that is, it has eliminated high-default-risk loans that probably generated few additional social benefits. The latter has proven difficult to implement.

The institutional cutoff, while helpful, is not the most effective way to promote efficiency. High-default-risk loans are still made to students at schools which are well below the cutoff. These loans are no more likely to produce significant social benefits than those made at schools above the cutoff. Yet, schools do not have to worry about the default risk of students they are admitting unless they perceive a risk of exceeding the 25% cutoff. A more effective approach would impose a fee on schools for every dollar of default their

students impose on the federal government. Schools with significant default rates are likely to face competitive pressures that would prohibit them from shifting the entire default fee to students. To avoid these costs, schools will have an incentive to deny loan access to some high-default-risk students who they think are particularly unlikely to benefit sufficiently from the education. Alternatively, they could deny loans for areas of study with limited earnings potential.

This "loss of access" would engender understandable objection but is not altogether a bad thing. Schools are in a better position than other participants in the student loan market to evaluate individual potential. Thus, imposing a fee on schools imparts an incentive for efficiency in the use of federal loan dollars that is much greater than the existing cutoff and is likely to produce a pool of loans with lower default rates and higher social benefits.

Risk Sharing by Guaranty Agencies

Guaranty agencies were primarily affected by increased risk sharing with the federal government in the form of lowered reimbursement rates for defaults and a higher federal share of those defaulted loan dollars the agencies ultimately collect.

Proposals to reduce the federal government's risk sharing by increasing that of the guaranty agencies could be effective at reducing federal government costs under certain conditions. To the extent the guaranty agencies are earning excess returns that show up as high-cost administrative practices (e.g. high salaries, excessive reserves), they have some room to finance increased risk sharing by moving toward efficient administration.

To the extent the agencies are operated efficiently, on the other hand, the increased risk sharing would require additional funding. In some cases where the agency currently pays the guarantee fee for their students, the agency could eliminate this service, thereby shifting the cost of the risk sharing and inducing high-default-risk students to reduce loan volume. Alternatively, state agencies could bear this cost with increased appropriations, thereby shifting the costs from the federal to the state-local taxpayer. This latter alternative, however, has become exceedingly unlikely: after years of controversy over whether guaranty agencies could be required to remit excess reserves to the federal government, the Higher Education Act was amended in 1993 to clarify that all reserve funds (including state appropriations) are considered the property of the U.S. government.¹¹

¹¹ P.L. 103-66 also authorized ED to require return of all a guaranty agency's reserves if it were determined that this was in the best interests of either the guaranty or the direct loan program.

Fee on Sallie Mae Holdings

The annual fee of 0.30% levied on the stock of loans Sallie Mae has purchased from commercial lenders after August 10, 1993, potentially has the same effect as if the fee had been levied on the commercial lenders. Sallie Mae attempts to avoid (pass through) the fee by lowering the price it pays for the loans made by commercial lenders. In effect, this raises the cost of funds to lenders, reduces the volume of loans lenders are willing to make at any given administered interest rate, and should reduce federal interest and default costs.¹² As is true in the case of increased fees on lenders, there is no incentive to eliminate loans to low-default-risk students who would attend school without the federal loan. The latter loans are unnecessary because they do not increase social benefits.

The potential for reducing volume is ameliorated by two factors. First, Sallie Mae may use its borrowing advantage over other potential student loan lenders to absorb more of the fee rather than lower its price, with less impact on student loan volume. Second, even if no competition existed and the fee was passed through to lenders, the lender-of-last-resort provision and the DL alternative would still moderate the expected decrease in loan volume, interest costs, and default costs.

In summary, this array of indirect changes to reduce the subsidy to the student loan program has acted to squeeze excess profits and administrative waste from the system. The changes have presumably reduced loan volume below what it otherwise would have been by eliminating some high-default-risk student loans that probably generated few social benefits. But there is little or no reason to believe that these changes have eliminated low-default-risk loans that fail to increase social benefits.

New attempts to save money by imposing fees (taxes) on and reducing payments (subsidies) to nonstudent participants, as was proposed in the 1996 budget resolution but not adopted, have the potential to increase the cost and restrict the quantity of FFELs to students. However, the current structure of the student loan program, particularly the DL and lender-of-last-resort provisions, compromises this effort because it insulates the student from lender decisions not to make loans due to cost considerations.

¹² Should Sallie Mae's pending privatization be ratified by its shareholders, the new corporation will avoid the fee but presumably also will incur higher borrowing costs. The primary rationale for a GSE fee is to compensate the government for the use of the special corporate charter, thereby eliminating an artificial institutional subsidy.

The Rationing Option

Rather than using the price mechanism to restrict loan volume, access to loans could be rationed or denied for some categories of students while maintaining the current subsidy. Policymakers have considered removing vocational/technical schools from the program, but this has generally been rejected as too sweeping an approach that would hinder access to education that may well result in increased social benefits. The removal of any school with a persistently high default rate became the accepted alternative. Even this alternative has required some exceptions in cases where alternative policy objectives are valued more than any cost reductions.¹³

There are other ways to ration loans. For example, certain programs of study could be acceptable for loan support while others are not. The decision could be based upon knowledge of gainful employment in those fields (e.g., computer engineering) or some notion of the national interest (e.g., teachers in remote and poor areas of the country). Alternatively, the decision could be based upon demonstrated ability of students to benefit from their education (e.g. a minimum acceptable grade point in high school). Such criteria, however, do not allow for phenomena such as the not uncommon "late bloomer" or the unforeseeable "new industry." And fine-tuning efforts are likely to involve a high degree of federal government rule making, inflexibility, bad guesses, and administrative cost.

Proposed Criteria: "Success" and "Opportunity"

Two approaches illustrate the potential for loan rationing. The first would eliminate loans to students whose success appears unlikely. Even though these students in theory may be confronted with a capital market imperfection, to the extent they do not succeed, additional spending on their education provides little or no additional human capital and social benefits. This approach would continue the current practice of "wasting" loans made to low-default-risk students who would invest in their education to the same extent without the federal loan, and is termed the "success" criterion.

The second approach would reverse this priority. That is, it would eliminate loans to students whose demand for education is insensitive to financing costs such that their investment remains the same even in the absence of the federal loans. Although these students in theory may also confront a market imperfection (external benefits), they will produce essentially the same

¹³ A recent General Accounting Office report noted that 22 of 104 historically black colleges and universities have default rates such that their students could lose eligibility for further loans. Yet because of the public policy interest in maintaining these schools due to their continuing role in helping disadvantaged students overcome the effects of deficient primary and secondary education, they are currently exempt from the default rate cutoffs. See *Student Loans: Default Rates at Historically Black Colleges and Universities*, GAO/HEHS-97-33, January 21, 1997.

social benefits without the loans. This approach would continue the current practice of "wasting" loans made to high-default-risk students who are unable to benefit from further postsecondary education, and is termed the "opportunity" criterion.

Using either criterion requires identifying those students for whom loans are least likely to be productive in increasing social benefits. For this purpose, students can be sorted and classified according to the years of postsecondary schooling completed before entering repayment. Presumably, the students who fail to increase social benefits because they themselves do not benefit from their chosen schooling are those who spend the least amount of time pursuing their training. Likewise, the students who fail to increase social benefits because they are able to demonstrate a high ability to benefit from their chosen schooling are those who spend the most amount of time pursuing their training.

There are obvious drawbacks to this time-in-school proxy for measuring efficiency of the loan program. Some highly successful students, for example, attend schools that have only a one-year program. Other students may extend their education for many years without ever achieving a degree or completion certificate. Nonetheless, the default data arrayed on table 2 tend to support the time classification proxy for loan benefits. Implementation of rationing strategies might require some fine tuning. For example, rather than completely eliminating loans for first-year students (some of whom are in only a one-year program), the percentage of tuition that can be financed with a student loan could be limited.

The net default rates in table 2 are the present value of net loan losses (loan principal defaulted minus collections) experienced over the life of loans by students who entered repayment in 1989, divided by loan principal. See Appendix B for a complete discussion of the data and estimation methods.¹⁴

¹⁴ Note that these lifetime default rates are lower than the Department of Education's lifetime default rates. This probably is attributable to two factors. First, ED values foregone interest earnings at an interest rate that exceeds the discount rate. Foregone interest earnings wash out of the default rates in table 2 because the interest rate and discount rate are assumed to be identical. Second, our estimates assume a higher share of lifetime defaults occurs within the first 5 years of repayment, which leads to a relatively small upward adjustment in the 5-year default rates from which the rates in table 2 are derived.

Table 2. Student Loan Net Default Rates by Years of School Attended before Entering Repayment (Percent of Loan Dollars Defaulted)					
	<u>Graduate & Professional</u>	<u>3-4-5</u>	<u>Two or less, more than 1</u>	<u>One or less</u>	<u>Total</u>
\$ default rate	3.6	6.4	7.9	16.8	9.9
Source: See appendix B.					

As expected, default rates are highest for those students who do not progress beyond the first year of postsecondary education and decline as the years of schooling completed increase. The lifetime dollar default rate of students who do not move beyond the first year is a little more than twice as high (16.8%) as the default rate (7.9%) of students who make it into their second year before stopping, and more than four times higher than the default rate (3.6%) of graduate and professional students.

Since we do not know *a priori* who will progress beyond the first year, the policy decision for the "success" criterion would deny loans until students have completed their first year. At this point, students have demonstrated that they are far more likely to benefit sufficiently from their education to make public subsidy of their investment worthwhile. The likely reduction in default losses in the student loan program would be significant, and would free up resources for either educational or other purposes.

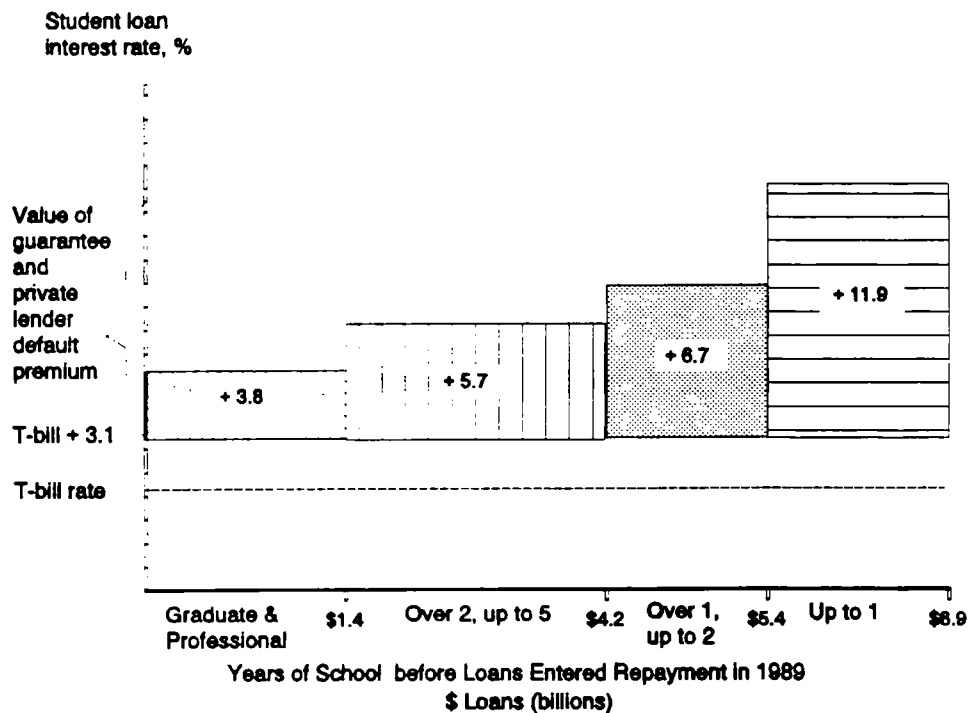
The reduction in default losses is likely to come at the cost of foregoing benefits to successful students caught up in the denied group. For example, this criterion could result in denying the crucial first step to disadvantaged, academically able students who may be unable to raise the funds needed to get through the first year, or for whom other sources of federal aid are insufficient. If such students must delay or even forego postsecondary education because of the unavailability of federally-backed student loans for all first-year students, they will lose future income opportunities, and the nation will lose the associated social benefit. This is an inevitable side effect of rationing policies based upon broad classes of students.

The magnitude of these losses of social benefits would in some measure be dependent upon the interest rate students must pay to obtain a loan from the private sector. Figure 1 compares the additional interest a private lender would have to charge students to earn the same risk-adjusted return on loans made without a federal guarantee. The calculation assumes the federal government would continue to pay the Stafford interest rate on the loan while the student

is in school.¹⁵ The blocks above the T-bill plus 3.1 line represent premiums lenders would have to charge when the student enters repayment. In effect, this is the value of the federal guarantee to the student, and its value varies greatly according to student years in school.

In theory, first-year students could obtain private funds by paying an additional 11.9 percentage points above the rate on Stafford loans. As a practical matter, most of these loans will never get made and many of the affected students who would have been successful will not invest further in their education. The resulting loss of social benefits may be substantial.¹⁶

Figure 1. Private Lender Interest Premium for Nonguaranteed Loans with Default Experience Matching Loans Entering Repayment in 1989, by Years of School Attended



¹⁵ In accord with the sample data, premiums were computed based on 8.1% on loans even though the current rate is 8.25%. The estimated premium includes an allowance for higher regulatory capital reserves required for nonguaranteed loans. See appendix B for the details.

¹⁶ The actual percentage change in financing cost depends upon the share of the investment being financed with the guaranteed loan.

The policy decision for the "opportunity" criterion would be to deny federally subsidized loans to the most successful students. Table 2 shows that the default rates for graduate and 3-4-5 students, those with the most time in school, are about 20% and 40% of those for first-year students. Graduate students in particular have demonstrated that the risks of investing in their education are relatively low.

Figure 1 shows that the graduate student 3.6% default rate translates into a premium on a private loan of 3.8%. It seems likely that many of these students could obtain loans from the private sector without the federal guarantee.¹⁷ In comparison with the "success" criterion, the "opportunity" criterion sacrifices fewer loans that increase social benefits because these students mostly continue their education without the federal loan. There is, nonetheless, some risk of loss of social benefits resulting from the inability of some students to proceed into graduate education and fully develop their potential.

What Rationing Implies for Cost Reduction

Rationing Stafford subsidized loans will reduce program costs. Table 3 illustrates the relative potential for savings under the alternative rationing scenarios.¹⁸ The first row of table 3 presents the same default rate estimates for the Stafford program that appeared in table 2. The third row contains the dollar value of Stafford loans made in academic year 1992-93 for students according to the years they attended school.

Assuming No Direct Lending Program

Rationing using the "success" criterion would mean denying a guaranteed loan for any student who has not successfully completed one year of postsecondary education. If it is assumed that no DL program exists and that all students obtain an unsecured loan from private lenders to replace the guaranteed loan, the present value of the annual program savings is equal to the

¹⁷ It is interesting to note that private lenders, including Sallie Mae, already offer unsecured loans on top of the guaranteed student loans, at least some of which have income-sensitive repayment options (without negative amortization). Educational capital funds have also been suggested by Human Capital Resources, Inc. These funds would pool student loans that are collateralized by the right to a share of each student's income for up to 15 years after graduation. Legal obstacles concerning bankruptcy protection, indenturing future incomes, and taxes would have to be addressed for the latter.

¹⁸ The Congressional Budget Office is responsible for providing budget estimates to the Congress. Appendix B describes the assumptions made in developing the data set to make these estimates. A careful reading of that appendix will show that, although these estimates incorporate a considerable number of the major cost elements of the student loan program, some of the program's complexities have been simplified or ignored. Any congressional investigation of the policy options discussed here would require more complete data, more programmatic detail, and the incorporation of student and lender behavioral responses to price changes that reflect experience.

volume of loans that would have been made to first-year students times the default rate. This is shown in scenario 1, column 4, as \$523.3 million per year.

It is unrealistic to assume that all of these most-at-risk students will desire to continue their education absent a guarantee. The interest rate of about 20% on unguaranteed loans will make other consumption choices more attractive and reduce disposable income, both of which will cause demand for loans to decrease. For every loan not made, the federal government also saves the in-school interest payment. If half of first-year students are unwilling or not able to obtain private loans (on which the federal government would have paid the Stafford rate for in-school interest), the present value of annual savings increases to \$649.5 million per year; if 75% drop out, savings rise to \$712.6 million per year.¹⁹

Alternatively, the "opportunity" option could be pursued. This means denying loans to those students who have demonstrated they are low default risk, are probably not subjected to a market failure, and could obtain nonguaranteed loans from the private sector with a modest interest rate increase of 3.8 percentage points. If no behavioral response to the higher price of loans occurred, the estimated present value of annual budget savings from denying loans to graduate and professional students would be \$98.9 million as shown in column 1. Should a behavioral response occur, it is likely to be much smaller than for first-year students. If 10% of these students drop out, the estimated present value of annual budget savings rises to \$121.1 million; and if 25% drop out, savings rise to \$154.5 million.

The savings indicated for these two criteria are greater for the "success" criterion. This is only part of the story. The "success" criterion almost certainly eliminates a higher proportion of loans that, had they been made, would have increased social benefits. That is, while roughly 17% of loan dollars would have been wasted (defaulted), 83% of loan dollars would presumably have produced valuable education benefits and an increase in social benefits. Students in this category, however, because they would be faced with more than a doubling of their interest rate expense (or more realistically a cutoff of loan access), would drop out at a high rate. Thus, table 3 illustrates the response with 50% and 75% volume decreases.

¹⁹ These estimates could be further refined. Some of the students who don't take out loans will not be around as 2 and 3-4-5 year students. Some of them would have defaulted on loans taken out for those years. These program savings could also be calculated. This would entail a level of precision beyond the purpose of this report to illustrate the potential of the rationing option. Alternatively, some students (or their parents) may turn to a home equity loan to finance their education, in which case federal revenue would decline as deductible interest payments increase.

Table 3. Hypothetical Annual Program Cost Reduction from
Rationing Loans in Academic Year 1992-93 (\$ millions)

	Years of school attended, including 1992-93			
	<u>Graduate</u>	<u>3-4-5</u>	<u>Two or less, more than 1</u>	<u>One or less</u>
Default rate				
Guaranteed loans	3.6%	6.4%	7.9%	16.8%
Direct loans (ICR)	4.5%	8.0%	9.9%	21.0%
Loan Volume	\$2,746	\$4,243	\$1,549	\$3,115
Scenario 1: No direct lending				
Rationing by the "Success" Criterion				
No volume decrease	--	--	--	\$523.3
50% decrease	--	--	--	\$649.5
75% decrease	--	--	--	\$712.6
Rationing by the "Opportunity" Criterion				
No volume decrease	\$98.9	--	--	--
10% decrease	\$121.1	--	--	--
25% decrease	\$154.5	--	--	--
Scenario 2: Direct lending				
Rationing by the "Success" Criterion				
No volume decrease	--	--	--	\$530.2
50% decrease	--	--	--	\$649.5
75% decrease	--	--	--	\$719.5
Rationing by the "Opportunity" Criterion				
No volume decrease	\$100.2	--	--	--
10% decrease	\$122.4	--	--	--
25% decrease	\$155.8	--	--	--
ICR -- Income contingent repayment plan				
Source: Loan \$ from National Postsecondary Student Aid Study; guaranteed loan default rates, see appendix B; direct loan default rates based on CRS calculations combining guaranteed loan default rates and ED data on direct loan standard and income contingent repayment patterns. Calculations based on 8.1% interest rate that prevailed in 1993.				

In contrast, following the "opportunity" criterion, while it seems to save less money, probably eliminates very few loans that, had they been made, would have increased social benefits. It is likely that the 96% of successful loan dollars denied would be replaced by other resources, including affordable loans from the private sector. Access to education is less likely to be foreclosed for this group

than for first-year students under the "success" criterion. Thus, table 3 illustrates the response with 10% and 25% volume decreases.

Although the dollar savings are lower, the net efficiency gain per dollar of program cost reduction is higher for the "opportunity" criterion than for the "success" criterion. Should larger budget savings be sought, the indicated solution would be to deny loans to the next most successful category of students (upperclassmen).

Assuming a Direct Lending Program

Because the income contingent repayment plan available to students in the DL program has the effect of increasing default costs to the federal government, a separate estimate of savings is made acknowledging the presence of the DL program.²⁰ The Department of Education assumes that the standard repayment plan for DLs will generate the same lifetime default rates as the Stafford subsidized loans. The effective default rate of those DL student borrowers who choose the income contingent repayment (ICR) plan is expected to be higher because their repayment of principal will be delayed and the delayed interest payments are not fully repaid.

The program cost reductions in scenario 2 of table 3 make several simplifying assumptions. First, the effective default rate for ICR loans is estimated to be 25% higher than for standard DLs and Stafford loans (see table 3, row 2 and appendix B). Second, DLs are assumed to account for 35% of loan volume, and ICRs to account for 15% of DLs.²¹

If the "success" criterion is pursued and it is assumed that all students obtain an unsecured loan from private lenders to replace the guaranteed loan, the present value of the annual program savings is equal to the volume of loans, including ICRs, that would have been made to first-year students times their respective default rates. This is shown in column 4 as \$530.2 million per year. If half of first-year students are unwilling or not able to obtain private loans, the present value of annual savings increases to \$656.4 million per year; if 75% drop out, savings rise to \$719.5 million per year.

If the "opportunity" option is pursued and no behavioral response to the higher price of loans occurred, the estimated present value of annual budget savings from denying loans to graduate and professional students is \$100.2 million. If 10% of these students drop out, the estimated present value of

²⁰ In 34CFR668.17, ED defines the cohort default rate for purposes of institutional eligibility to include not only those loans formally in default, but also those in negative amortization. Estimates of the effect of income-contingent repayments on default costs are based upon data supplied by ED. See appendix B.

²¹ The President's FY1997 budget used 16.5% as the share of DLs using the income-contingent repayment option. The FY1998 budget drops this estimate to 7.0%.

annual budget savings rises to \$122.4 million; and if 25% drop out, savings rise to \$155.8 million.

A comparison of the with-and-without-DL program cost reductions for either the "success" or "opportunity" scenarios illustrates secondarily the point made in the 1993 CRS report that budget savings are minimal from switching between the guaranteed and DL versions of the program. The additional annual program cost imposed by the DL program compared to the FFEL program for the "success" criterion is about \$7 million (compare the three "success" numbers in scenario 1 of table 3 with the three "success" numbers in scenario 2 of table 3). The comparable differential for the "opportunity" criterion is only about \$1 million. This small amount would be eliminated if the ICR provision were standardized across delivery systems. If the policy objective is to reduce student loan program costs, substantial reductions cannot be achieved by increasing the share of loans made by one or the other delivery system. It is necessary to raise the loan price or reduce loan volume.

Direct loan rules could be changed. Enactment of a law that forgives the taxes that would be owed on unpaid loans at the end of the 25-year income-contingent repayment period would increase costs in two ways. First, future tax collections would be reduced. Second, students with relatively low incomes would have an increased incentive to choose income-contingent repayment, thereby increasing effective default rates. If all 35% of DLs chose ICR, cost reductions for the "success" criterion would be about \$40 million more than shown for scenario 2; about \$7 million more than shown for the "opportunity" criterion. If the FFEL program were to be eliminated in favor of the DL program, costs would rise much more so long as ICR remains a DL option. Alternatively, ICR could be eliminated.

Conclusions

If it is desired to save money in the student loan program, four options could be pursued: eliminate more-than-competitive (excess) returns to private lenders; eliminate excess administrative costs; raise the price (reduce the subsidy) to induce students to reduce their demand for loans; and maintain the price of loans but deny (ration) loans to particular classes of students.

The potential of excess lender returns and excess administrative costs may be exhausted as sources of budget savings. This does not, however, mean that the potential of these two factors to increase federal program costs in the future has been curbed. The savings that have been made in these two areas have come about through a system of legislatively determined fees and charges. Changed economic circumstances could cause these excess costs to reappear. Eliminating these costs would then require additional legislative tinkering with the student loan structure.

Adopting a market-based system, in contrast, would operate automatically to maintain competitive returns and minimum administrative costs. This could

be accomplished with two changes: institute an auction system in which potential lenders would bid for the right to make loans; and institute a competitive bidding system for guarantee servicing operations.

Switching from FFEL to DL, or the reverse is not a true cost-reducing option. That is, there is no inherent, uncorrectable cost differential between the two delivery systems. There is, nonetheless, a program rule differential that bears watching. DL program loans repaid by the income-contingent-repayment plan impose higher default costs than FFELs which do not have this plan. However, the current size of the DL program and the share of DL borrowers choosing income-contingent repayment are sufficiently small that the rationing options discussed in this report do not generate substantial savings from eliminating DLs or, more accurately, this particular repayment plan. Thus, reducing program costs from this source does not, at present, appear to have the potential for generating large budget savings. However, should the FFEL program be eliminated and/or a law be adopted forgiving taxes owed on the unpaid loans existing at the end of the 25-year income-contingent repayment period, the program costs attributable to DLs could rise substantially.

That leaves two options: (1) raising the price of the loans to students and allowing the students to adjust their quantity demanded; and (2) maintaining the price of loans and denying loans to particular groups of students.

Generally, it does not matter whether student loan prices are raised directly by increasing their interest rates or fees, or indirectly by increasing nonstudent participant costs. This approach will tend to reduce the demand for loans among those students who will not benefit from their education sufficiently to repay the loan, and therefore are not increasing social benefits. Its disadvantage, however, is that it will not reduce demand for those students who do benefit from their education, but who will pursue that education with or without a federal subsidy. Federal loans to these students also produce no increase in social benefits.

One indirect change that might make a difference in terms of eliminating loans that produce no increase in social benefits is risk sharing for schools. In particular, imposing a fee on schools for every dollar of default costs from their students seems promising. Competitive pressures will prevent most schools from passing all fees forward in higher tuition, forcing them to consider seriously the ability of a student to gain from the education the school provides. Schools could be expected to adopt strategies to minimize their share of default costs, which ought to improve the efficiency of the program and reduce federal costs.

The entitlement nature of the program tends to undermine efficiencies expected from adoption of indirect price increases. In particular, the lender-of-last-resort provision or the DL program, where it is available, enables students to obtain loans who otherwise would be expected to lose access. Direct price increases, so long as they affect both FFEL and DL delivery systems, would not be undermined.

The final option is to maintain the current loan subsidy but to deny loans to particular classes of students. Rationing enables the government to focus necessary cost reductions on those categories of students for whom federal assistance does not produce an increase in social benefits. Two possible criteria could be labeled "success" and "opportunity." The "success" criterion saves the most money but at the risk of denying many loans that would have increased social benefits. The "opportunity" criterion saves less money but also encounters less risk of denying loans that would have increased social benefits. In effect, the net efficiency gain per dollar of program cost reduction is higher for the "opportunity" criterion than for the "success" criterion.

Appendix A

The calculations in table 1 make several simplifying assumptions: the loans will be held by depository originators for 3 in-school years; the loans will enter repayment and will be held by an institution with near-prime borrowing rates; and lenders have a large portfolio of student loans so that certain fixed costs, such as servicing, can be spread across a large investment. The student loan interest rates are based upon the last auction of Treasury bills prior to June 1, 1996, converted to bond-equivalent yield, and raised by the 2.5 and 3.1 percentage point margin, respectively. These are the rates that became effective July 1, 1996, and that hold for the 1996-97 academic year. (Yields and costs for alternative investments are figured on the same time frame.) The consolidated loan rate is the blended rate on in-repayment loans being consolidated, rounded up to the next whole percentage point. If all loans being consolidated are at the current 8.25% rate, the consolidated rate would be 9.00%. However, competition has taken the form of reductions in the rates that students pay, most importantly up to 2.0 percentage points after 4 years of on-time repayment. The weighted average impact of this is to reduce lender-received rates to about 8.20 percentage points.

The cost of funds is the interest and non-interest cost of a matched certificate of deposit plus the cost of required capital backing for both the guaranteed and the nonguaranteed portions of the loan. For depository institutions, the 2% of the loans that is not reimbursable in the event of default must be backed by a capital reserve to the same extent as any completely private loan would be. This risk-sharing adds approximately 0.13 percentage points to the funding cost of the loan for banks and thrifts. Because a special allowance may be paid to lenders quarterly, the matching maturity is considered to be 3 months.

The origination fee of 0.5% is paid by the originating lender at the time of origination. A loan held for 3 years before entering repayment and being sold to a secondary lender implies an average cost of 0.17 percentage points. (A loan expected to be held for a shorter period would be more costly.)

Servicing costs are lower during the in-school period, mainly covering the acceptance of interest payments from the government and mandatory bookkeeping. Fixed fees charged by Sallie Mae for in-school servicing (about \$24 per loan) imply an annual cost of 0.35 percentage points. Servicing costs for the repayment period are considerably higher, and are assumed to be equal to Sallie Mae's reported per loan costs plus a 0.28 percentage point servicer profit margin. Sallie Mae's reported servicing costs have risen slightly in the past few years. This mostly reflects the competitive need to provide better support and smoother transitions into repayment for students who have the alternative of moving their loans into the direct loan program.

Prepayment costs are those incurred when students repay or consolidate loans prior to the lender's original expectation, exposing the lender to the

possibility of lower earnings on reinvestment of the funds, or to loss of otherwise amortized up-front fees paid in connection with the loans. There is considerable reason to believe that prepayment costs have risen, mainly because of the direct loan alternative. In general, there is no reason for a student to repay a loan while in school. The main reason for prepayment prior to the direct program competition was loan consolidation to simplify repayment and lower monthly payments (over longer terms) after the loan became the student's responsibility to repay.

Currently, however, it is possible for a student to consolidate guaranteed loans into the direct program while still in school. Moving one's loans into the DL program provides advantages to the student. First, subsequent direct loans are automatically consolidated and require no further action on the student's part. Second, the direct program holds the option of income-contingent repayment which could dramatically reduce the repayment burden for some borrowers, at least for a time. But consolidation is a one-way action: guaranteed loans may be consolidated into direct loans, but direct loans may not be consolidated as guaranteed loans. This has set off considerable price competition among private lenders to keep loans in the guarantee version of the program rather than losing them to the direct version. For example, some lenders are offering interest rate discounts to borrowers after a 4-year period of faithful repayment. The 0.60 percentage point cost for the in-repayment period reflects this competition. The 0.12 percentage point cost for the in-school period is an arbitrary one-fifth of that amount. Once a loan is consolidated, there is little or no risk of losing the loan account's profitability.

Default costs are nonexistent during the in-school period. It is only when the loan enters borrower repayment that risk arises. About half of the estimated expected default costs on table 1 are due to the risk-sharing now in effect. The rest of the default costs are due to losses lenders have anticipated and reserved against in connection with the 1986 adoption of heightened "due diligence" requirements by ED for monitoring and collecting loans.

Appendix B

This appendix gives the technical explanations underlying the derivation of student default rates for guaranteed loans, the premiums required for equal profitability of nonguaranteed and guaranteed loans, and effective default rates for the income-contingent repayment option of direct loans.

Default rates for guaranteed loans

The purpose of this exercise is to estimate a student default rate. The sample is drawn from guaranty agency loans in repayment or default status in 1993. The data are first selected to include only those loans that entered repayment in 1989. An adjustment is then made to eliminate multiple loans and convert the data to the population of borrowers. Another adjustment is necessary because the 1993 data include all borrowers with loans still in repayment in 1993 and every defaulting 1989-repayment borrower, but exclude any borrower who completely paid off his loans between 1989 and the beginning of 1993, or who died, or entered bankruptcy. Thus, a numerator of defaulting students will be accurate, but the denominator of students entering repayment in 1989 will be understated. The denominator must be adjusted to avoid overstating the default rate.

The population of borrowers entering repayment in 1989 who paid off their loans prior to 1993 (and did not show up in the 1993 data set) was calculated in the following way. The original 1993 data set included all borrowers in repayment who had not yet paid off their loans regardless of when they entered repayment. Thus, the number of borrowers who paid off their loans in 1993 is calculated, regardless of when the borrower entered repayment. The percentage of these borrowers who had been in repayment 4 or fewer years was calculated. It was assumed that this "4-or-fewer-years" percentage is the same as the percentage of borrowers entering repayment in 1989 who paid off their loans by 1993 and therefore did not appear in the 1993 data. The number of borrowers entering repayment in 1989 was then increased to reflect this percentage of paid-off borrowers. A similar adjustment was made for those who died or entered bankruptcy. The same percentages were also used to adjust the population of dollars of loans entering repayment in 1989.

The defaulted loans in the data set represent almost 5 years of default experience for 1989-repayment borrowers (December 1988 through September 1993). According to a study by Davis (1991) that tracked default experience over time, 5% to 7% of defaults occur after 5 years, depending upon how many years the student was in school.²² The dollar default rates in table 2 have been adjusted to reflect these additional defaults.

²² Jerry S. Davis, "Estimating the Future Default Costs to the Federal Government for Outstanding PHEAA-Guaranteed Stafford Loans as of the End of Fiscal Year 1990," Pennsylvania Higher Education Assistance Agency, August, 1991. Appendix Table A-3.

Some loans fall into nonrepaying status due to death and bankruptcy of the borrower. Although the federal government does not consider these loan losses to be part of the default rate, private lenders would nonetheless need to consider such losses when setting their interest rates. The default rate is adjusted to include these death and bankruptcy losses.

The discounted dollar default rates in table 2 calculate the present value of the loan losses net of collections. Default patterns over the life of loans made to each category of students (Davis, 1991) are used to distribute the lifetime dollar defaults from the sample. Experience suggests that 40% of the defaults that occur in each year are collected. Little information is available about the time pattern of these collections. It is assumed that one seventh of the 40% of defaulted loan dollars is collected in each of the 7 years following the default. The discounted default rate is the sum of each year's present value of net loan losses.

Premiums for equal profitability

The discounted dollar default rates provide the basis for determining the premium a lender would require to make a nonguaranteed loan. It is assumed that a lender would expect to earn the same return as on guaranteed loans, and would, therefore, have to be compensated for three costs. First, the federal government would no longer pay the present value of net loan losses (including for death and bankruptcy) to the lender.

Second, the lender must be compensated for the interest income that represents the difference between the program interest rate paid on the guaranteed loan (the safe rate) and the interest rate the lender requires on the unsecured loan. The required interest rate is calculated through an iterative procedure that equates the sum of the loan plus the net defaults with the sum of 3 years of lost interest income differential plus 8 years of fully amortized repayments, all discounted at the safe rate.

Third, the lender would have to hold more equity for the unsecured loans as a matter of banking regulation. This requirement adds approximately one percentage point to the required interest rate on the loan.

Effective default rates for income-contingent direct loans

Differential program costs for guaranteed loan and ICR direct delivery systems are derived as follows. Default rates are assumed to be the same for the two versions of the student loan program where repayment schedules are the same. For the income-contingent repayment (ICR) plan, however, the possibilities exist of never-repaid negative amortization, noncompounded interest beyond a specified level of negative amortization, and ultimate loan forgiveness, all without declaring a formal default. These factors imply higher effective defaults than for other repayment schedules, for the same formal default rate. Department of Education on anticipated principal and interest repayment schedules for both standard and ICR options for the same loan volume show a

present value difference in the streams of income of about 3.1%. To arrive at an appropriate effective default rate for the ICR option, the standard repayment stream was adjusted upward by the present value default rate estimated for the guarantee program (10.9%). The present value of the ICR stream was then computed as a percentage of that amount, implying an effective default rate of 13.6% for the ICR option. This 13.6% default rate represents a 24.7% increase over the 10.9% default rate of the standard repayment option. The direct loan default rates in row 2 of table 3 are calculated as the guaranteed loan default rates times 1.247.

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