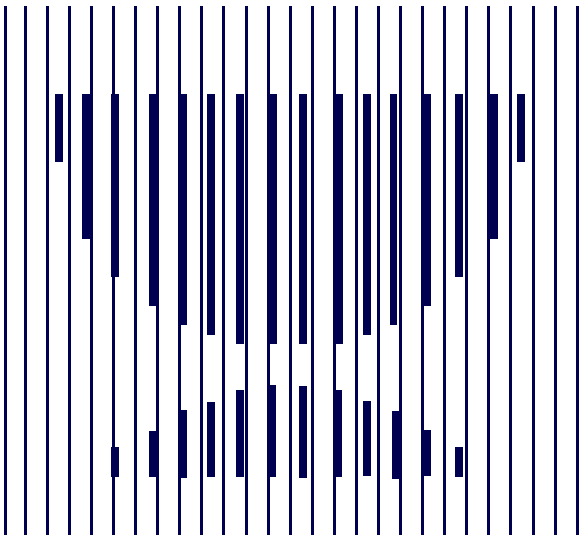
CBO MEMORANDUM

ISSUES IN DESIGNING A FEDERAL PROGRAM OF INCOME-CONTINGENT STUDENT LOANS

January 1994



CONGRESSIONAL BUDGET OFFICE

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CONGRESSIONAL BUDGET OFFICE
SECOND AND D STREETS, S.W.
WASHINGTON, D.C. 20515

In response to Congressional requests to analyze proposed federal programs that would provide income-contingent loans (ICLs) to postsecondary students, this Congressional Budget Office (CBO) memorandum examines the fundamental issues in designing such programs. It identifies the key parameters that define an ICL program, discusses the relationships among them, and explores other issues that bear on how an ICL program could be fashioned. The analysis was performed by Jay Noell and Constance Rhind of CBO's Health and Human Resources Division under the direction of Nancy Gordon and Bruce Vavrichek. In accordance with CBO's mandate to provide objective and impartial analysis, this memorandum contains no recommendations.

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INTRODUCTION

Although economist Milton Friedman proposed using income-contingent loans to finance postsecondary education almost 40 years ago, many analysts continue to be concerned about the practicality of such loans.[1] Being able to "borrow" from future earnings to finance a college education, which would in turn increase those earnings, has obvious appeal. But gaining popular support for a viable loan program in which repayment is linked to the borrower's future income has proved difficult. Such a loan program needs to have attractive terms for borrowers who require financial assistance to enroll in college, while avoiding negative and costly consequences for postsecondary institutions or for lenders, such as the federal government.

Several postsecondary schools have tried to run income-contingent loan (ICL) programs, but they have either discontinued them or restricted eligibility mostly to students choosing public-sector careers.[2] In 1986, the federal government initiated a demonstration ICL program at 10 postsecondary institutions. The project was hampered from the beginning by various restrictions, however, and never achieved much support from students, the colleges, or policymakers. The 1992 amendments to the Higher Education Act terminated this project.

In the Omnibus Budget Reconciliation Act of 1993, however, the Congress instructed the Department of Education to create an income-contingent repayment option as part of a new direct student loan program.[3] This option should allow students more flexibility in repaying their loans, even though many of the terms of the loans remain the same as in the guaranteed Federal Stafford Loan Program for students. Using an income-contingent repayment schedule, borrowers in the new program will have up to 25 years to repay their loans instead of the usual 10 years. In addition, the Congress said that any students who default on their federal direct student loans in the future can be required to repay their loans on the basis of an income-contingent repayment plan.

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1. Milton Friedman, "The Role of Government in Education," in Robert A. Solo, ed., *Economics and the Public Interest* (New Brunswick, N.J.: Rutgers University Press, 1955).

2. D. Bruce Johnstone, *New Patterns for College Lending: Income Contingent Loans* (New York: Columbia University Press, 1972); and Robert D. Reischauer, "HELP: A Student Loan Program for the Twenty-First Century," in Lawrence E. Gladieux, ed., *Radical Reform or Incremental Change: Student Loan Policy Alternatives for the Federal Government* (New York: College Entrance Examination Board, 1989).

3. The Congress also required the Department of Education to develop an "income-sensitive" repayment option for its existing guaranteed student loans. In addition, the Congress has directed that a small number of borrowers who default on their guaranteed student loans be required to repay their loans according to an income-contingent repayment plan.

Many analysts believe that the income-contingent repayment option created by the Congress will be useful but that it does not address the broader possibilities inherent in income-contingent loans. In particular, ICLs could allow borrowers to receive much larger loans but tailor their repayments to their incomes. Today's guaranteed student loans typically require uniform repayments over a period of up to 10 years. These repayments can constitute a relatively large share of a borrower's income shortly after leaving school--when many of the borrowers who are going to default do so--although over time the relative burden of repayment generally declines as the borrower's income increases because of inflation and experience in the labor force.

As a preliminary effort to increase understanding of the larger role that ICLs could play in financing postsecondary education, this memorandum discusses some of the possibilities and constraints in designing a federal income-contingent loan program. It lays out the four basic parameters necessary to specify an income-contingent loan program. It then considers who should be responsible for repaying these loans and whether the repayment terms of an ICL would tend to change the behavior of borrowers. The memorandum also explores several other essential considerations in setting the terms of an ICL, such as the definition of income and the administrative burdens entailed in delivering and servicing the loans.

BASIC PARAMETERS OF INCOME-CONTINGENT LOANS

Developing a proposal for an income-contingent loan program would require addressing a range of topics, but policymakers could create the core of an ICL program by specifying four parameters: the loan amount, the length of the repayment period, the fraction of income that must be used to pay back the loan, and the interest rate the borrower is charged.[4]

The role of these four parameters in shaping an ICL is clear through a comparison with a conventional loan. A typical conventional loan has a stipulated loan amount, a fixed period of repayment, a constant repayment amount, and a specified interest rate. An example would be a $100,000 mortgage for 30 years at an 8 percent interest rate, which would require a fixed monthly repayment amount of about $734. For conventional loans, a set

4. For other discussions of the basic elements of ICLs, see Alan B. Krueger and William G. Bowen, "Income-Contingent College Loans," *Journal of Economic Perspectives*, vol. 7 (Summer 1993), pp. 193-201; and Karl Shell and others, "The Educational Opportunity Bank: An Economic Analysis of a Contingent Repayment Loan Program for Higher Education," *National Tax Journal*, vol. 21 (March 1968), pp. 2-45.

formula determines the repayment amount for a specified period of repayment (such as 30 years), loan amount, and interest rate.[5]

With ICLs, repayment amounts are not fixed but vary with the annual incomes of borrowers. As a result, if the expected amount of the loan is to be repaid, at least one of the other terms of the loan--its repayment period, loan amount, or interest rate--must be modified, and a new parameter must be defined. The new parameter is the portion of the borrower's future annual income that must be used to repay the loan--that is, the payback rate.[6]

Proposals for ICL programs handle these four parameters in various ways. One common way, for example, is to allow the period (term) of repayment to vary; this type of ICL is sometimes called a variable-term loan.[7] Under one version of such a loan, borrowers agree to repay the amounts of their loans at a specified interest rate using some agreed-upon fraction of their future incomes. The length of time borrowers repay would thus vary according to their future income profiles. Under many proposals for ICL programs, most borrowers would not be expected to use the maximum time allowed to repay their loans fully.

In a financially stable ICL program, the four parameters are interdependent: the choice of one affects the possible choices of the others. A financially stable ICL program is one in which, collectively, borrowers repay an expected proportion of the amount they borrow. The expected proportion can be defined in several ways. For example, borrowers may be expected to repay the entire amount they borrow (in net present-value terms, which means that the values of future repayments are discounted by an appropriate rate of interest so that they are measured in the same annual units as the amounts borrowed). An ICL program in which borrowers repaid the entire sum they owed would be self-sustaining. Alternatively, borrowers may be expected to repay more than the amount they borrow, which would constitute a profit-making ICL program. Or borrowers may be expected to repay less than they borrow, which would create an ICL program that required a subsidy from the lender or some other external source, such as the federal government.

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5. The formula--where n represents the number of years of the loan and i stands for the interest rate--is:

$$\textit{Monthly payment} = \textit{Loan amount} / \frac{1 - [1 + i]^{-n}}{i}$$

6. The payback rate relative to income is not always a fixed amount; it may vary with other features of the loan or characteristics of the borrower. Such factors are discussed later.

7. See, for example, Stephen P. Dresch and Robert D. Goldberg, "Variable Term Loans for Higher Education--Analytics and Empirics," *Annals of Economic and Social Measurement*, vol. 1 (January 1972), pp. 59-92.

The interdependencies of the parameters defining an income-contingent loan show up in several ways. One trade-off occurs between the period of time needed to repay the loan and the amount borrowed when, for example, borrowers must repay their loans at a stipulated interest rate using some fixed proportion of their incomes. The longer borrowers have to repay loans, the larger the loans that they can repay. Conversely, the larger their loans, the longer the time they will generally need to repay them.

A similar trade-off exists between the amount borrowed and the payback rate required to repay the loan (based on typical income profiles), given a fixed interest rate and repayment period. The larger the loans that borrowers receive, the greater their payback rate must be in order to repay their loans fully in the specified period. Conversely, the higher the payback rate borrowers agree to, the greater the amounts they can borrow and fully repay.

Another trade-off occurs between the payback rate and the length of the repayment period (assuming typical income profiles and a specified interest rate). The higher the payback rate borrowers agree to, the shorter the period of time they will need to repay their loans. Or conversely, the longer the period over which borrowers agree to repay, the lower the payback rate can be.

The interest rate on an income-contingent loan affects the three trade-offs described above. The higher the interest rate, the more restrictive the other terms must be. For example, given an ICL with a maximum repayment period of 25 years, with a higher interest rate, borrowers wanting larger loan amounts must accept relatively higher payback rates in order to repay their loans. (Similar results occur when any of the three other terms change. For example, allowing the amount borrowed to grow, while holding the interest rate constant, would restrict the range of possible trade-offs between the necessary repayment period and the payback rate.)

Borrowers' expected incomes also play a central role in shaping the terms of an ICL program. An income-contingent loan program may be financially stable under some distributions of income profiles among borrowers, but not under other distributions. In this sense, income-contingent loans differ significantly from conventional loans. In the latter case, although lenders realize that the incomes of their borrowers are critical (and indeed, lenders manage the risk of default partly by assessing the creditworthiness of borrowers in terms of their income), borrowers bear the legal risk of inadequate income to repay their loans. With ICLs, however, by definition the lender legally shares the risk of borrowers' having inadequate income. Changes over the repayment period in either the timing or amount of income received by borrowers could significantly alter the amounts they must repay according to

the terms of their loans. These changes would affect not only borrowers but also lenders--or, in the case of the federal government, taxpayers--who could end up losing money, even if all borrowers made all the repayments required of them by the ICL program.

Because the four terms that make up the core of an ICL can be set in various ways, ICL programs can take a wide range of shapes. As an illustration, Boxes 1, 2, and 3 present three examples of different types of proposed ICL programs.

WHO WOULD BE RESPONSIBLE FOR REPAYING AN ICL?

The choices that federal policymakers make in setting the terms of an income-contingent loan program would be critical in determining who would bear the responsibility for repaying the loans. This issue involves the types and amounts of subsidies, if any, that should be provided to borrowers. Two questions arise in this context. The first is whether policymakers intend for the ICL program to be self-sustaining or to depend in part on federal subsidies. The second is whether some borrowers should subsidize other borrowers.

Should ICLs Be Federally Subsidized?

The federal government could subsidize students who receive income-contingent loans in several ways. In the Federal Stafford Loan Program, for example, the government provides financially needy students with subsidies by setting the interest rate on their loans below what the private loan market would charge them; paying the interest on their loans while they are in school (and for other specified periods); repaying their loans in cases of default, death, or disability; and providing administrative services and oversight to keep the program operating. In an ICL program, the federal government could choose to provide similar subsidies by charging below-market interest rates, paying in-school interest for borrowers, paying off loans for those who fail to repay by the end of the specified period, and funding the administrative costs of the program.[8]

Discussions about providing federal subsidies through ICLs touch on four debates. The most general debate concerns whether to provide subsidies in any form to foster enrollment in postsecondary education. Some people believe that subsidies for college are appropriate because a college-educated

8. The federal government could also vary the kinds and amounts of subsidies given to different borrowers depending on characteristics of borrowers or of their loans.

BOX 1.
THE STRUCTURE OF AN INCOME-CONTINGENT LOAN,
EXAMPLE 1: INCOME-DEPENDENT EDUCATION
ASSISTANCE ACT OF 1993

This proposal to establish an income-contingent loan program sets the key terms as follows:

- o Maximum Number of Years of Repayment: 25

- o Limits on the Amount Borrowed:

  Annual limits

First-year student	$6,500
Second-year student	$7,000
Other undergraduate	$10,000
Graduate	$18,500
except for	
Medical	$30,000
and	
Allied health	$22,500

  Cumulative limits

  Age 35 or under: $100,000 (except for medical and allied health students, who may borrow $148,870 and $120,270, respectively).

  Over age 35: $100,000 minus [(age minus 35 years) * 0.05 * $100,000] (except for medical and allied health students, who may borrow higher amounts).

- o Interest Rate and Conditions: 91-day Treasury bill rate plus 2 percentage points, capped at 9 percent. Interest accumulates while the borrower is in school. If the loan is repaid within 12 years, the interest rate is 1 percentage point higher.

- o Payback Rates (for those filing with the Internal Revenue Service):

  Individual returns: an amount necessary to repay the loan in 12 years times a "progressivity factor" that rises with income or 20 percent of the excess of (a modified) adjusted gross income over the sum of the standard deduction and exemption amount allowed by the U.S. tax code, whichever is lower.

  Joint returns: an amount necessary to repay the loan(s) in 12 years times a "progressivity factor" that rises with income or 20 percent of the excess of (a modified) adjusted gross income over the sum of the standard deduction and twice the exemption amount allowed by the U.S. tax code, whichever is lower.

This loan would be repaid through the Internal Revenue Service.

SOURCE: H.R. 2073, introduced by Congressman Thomas Petri on May 11, 1993.

BOX 2.
THE STRUCTURE OF AN INCOME-CONTINGENT LOAN,
EXAMPLE 2: EDUCATIONAL OPPORTUNITY BANK
INCOME-CONTINGENT LOAN

This option, which is one of a number considered for a possible "educational opportunity bank," sets the key terms as follows:

- Maximum Number of Years of Repayment: 40
- Limits on the Amount Borrowed: Costs of attendance (tuition and fees, room and board, and miscellaneous expenses) for full-time undergraduates.
- Interest Rate: Not explicitly stated, but would amount to 6 percent unless a borrower wanted to opt out of the program, in which case it would be 8 percent.
- Payback Rate: The fraction of income required for repayment is set in terms of a tax rate per $1,000 borrowed; the average rate is estimated to be about 0.4 percent for each $1,000 borrowed for the cohort entering college in 1980.

The terms of this loan would be set to make every yearly cohort of borrowers self-financing. Thus, terms would depend on participation, amounts borrowed, estimated future income growth, and other factors.

Married women who fully participate in the labor force (defined in terms of a minimum earned income test) would have to repay their loan based on their own earnings, while those who do not participate fully would have to repay on the basis of their family's income.

SOURCE: Karl Shell and others, "The Educational Opportunity Bank: An Economic Analysis of a Contingent Repayment Loan Program for Higher Education," *National Tax Journal*, vol. 21 (March 1968), pp. 2-45.

BOX 3.
THE STRUCTURE OF AN INCOME-CONTINGENT LOAN,
EXAMPLE 3: SILBER INCOME-CONTINGENT LOAN

This proposal to establish an income-contingent loan program, which author John Silber calls a Tuition Advance Fund, sets the key terms as follows:

- Maximum Number of Years of Repayment: Unspecified, but repayment ends after 150 percent of the (nominal) amount borrowed is repaid.

- Limits on the Amount Borrowed: Up to three-quarters of undergraduate tuition for as many as four years.

- Interest Rate: Implicit, depending on how quickly the loan obligation is paid off.

- Payback Rates (for those filing with the Internal Revenue Service):

  Individual returns: unspecified sliding scale of 2 percent to 6 percent of adjusted gross income; individuals may deduct $15,000 from their base income in computing amount due.

  Joint returns: when there is one borrower, unspecified sliding scale of, effectively, 1 percent to 3 percent of adjusted gross income; joint filers may deduct $15,000 from their base income in computing amount due, except that married couples with one earner may deduct $20,000.

The Internal Revenue Service would be responsible for loan collection.

SOURCE: John Silber, *Straight Shooting: What's Wrong with America and How to Fix It* (New York: Harper and Row, 1989).

population benefits society collectively (for example, through its informed citizenship). Other people believe that no subsidies to encourage college enrollment are warranted, either because college education produces few public or social benefits or because the private benefits (higher earnings) are so great.

If policymakers believe that subsidies for college enrollment are warranted, the second debate focuses on whether to provide them through grants or loans. The argument for grants, which do not have to be repaid, is that they are more effective in promoting enrollment because they actually lower the cost of attendance, not just meet so-called cash flow needs as loans do. The argument for loans is that they are more cost-effective because, for the same amount of subsidy, loans result in larger amounts of money going to more students to meet their immediate costs of attendance than grants do.

Assuming that at least part of the subsidies should come through loans, the third debate concerns whether conventional or income-contingent loans are the better way to provide them. The arguments for conventional loans are that they involve known and fixed obligations for students and that students are less likely to borrow too much with them. The case for income-contingent loans is that they allow students to borrow more, but share with society the risk of a poor financial return on a college education by allowing lower repayments when borrowers' incomes are lower.

The last debate focuses on pragmatic issues, based on the assumption that some students need access to more funds than they now have to pay for college. Analysts on one side contend that an ICL program must receive subsidies to allow the terms of the loan to be acceptable to students. Without subsidies, they argue, students would find the conditions for taking the loans onerous and would not be willing to use them. Other analysts counter that ICLs provide greater flexibility than current student loans, so subsidies would not be necessary to make them more appealing to students. They note that students have shown great willingness to use minimally subsidized federal loans in the past (such as Supplemental Loans for Students), and they argue that students would be willing to use unsubsidized ICLs as well.

Should Some Borrowers Subsidize Other Borrowers?

A second issue concerns whether students with ICLs who later receive relatively high returns on their college education--and presumably higher incomes--should subsidize those who end up with relatively low returns (and lower incomes). To do so would require having borrowers with higher incomes repay relatively more than borrowers with lower incomes. The "overpayments"

made by the first group would be used to offset the amounts not repaid by the second.

One argument in favor of having high-income borrowers subsidize low-income ones is that income differences largely reflect variation in the return on a college education.[9] Deciding to pursue a college education is an inherently risky choice. New students could discover a talent for college-level work or find themselves entirely unsuited and drop out. Furthermore, even some people who complete programs and degrees may find the labor market inhospitable to their talents. Because of this diversity in the returns on an investment in college, it makes sense to allocate the costs of the investment proportionately to the returns, according to this line of reasoning. Borrowers receiving relatively more income should be willing to subsidize borrowers who reap relatively few gains because those receiving a high return have benefited so much from having the opportunity to get a college education.[10]

An argument against having higher-income borrowers subsidize lower-income ones is that it could increase the difficulty of setting up a financially stable ICL program. The reason is a process known as adverse selection. Adverse selection would occur if students most likely to earn high incomes--and thus to repay the most on an ICL--were less willing to take on such a loan to begin with, while students most likely to earn low incomes and potentially profit from an ICL were more likely to do so. Requiring people with higher incomes to subsidize people with lower incomes would be likely to foster adverse selection, leaving a disproportionate number of people who expected to have low incomes as borrowers of income-contingent loans. Such borrowers would take longer to repay, and many would not completely repay their loans in the end, resulting in an ICL program that would probably not be self-sustaining.

Resulting Basic Types of Income-Contingent Loans

Jointly considered, the answers to the questions about whether the federal government should subsidize ICLs and whether some borrowers should subsidize others give rise to four basic types of income-contingent loans (see Table 1).

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9. See William Vickrey, "A Proposal for Student Loans," in Selma J. Mushkin, ed., *Economics of Higher Education* (Department of Health, Education, and Welfare, 1962).

10. For those who argue that an income-contingent loan is like an insurance policy for individuals with low earnings after leaving school, the higher amount repaid by high earners is seen as the premium for the insurance.

Individual-Responsibility Loans. The first type of ICL could be called an individual-responsibility loan. In this type of program, each borrower would be responsible for completely repaying his or her loan. Borrowers would receive a subsidy neither from the federal government nor from those with relatively high incomes.

The terms of this type of ICL would have to be relatively constrained. For example, the maximum loan amount would need to be relatively low, and the maximum period of repayment relatively long. If not, borrowers could face punitive payback rates relative to income in order to repay their loans fully.

A special concern with an individual-responsibility loan is that some borrowers would reach the end of their required repayment period without paying off their debt. Such a situation--in effect, a default--would threaten the viability of this type of program because there would be no other sources of funds to make up the shortfall. The possibility of defaulting could be difficult to anticipate since borrowers would have a relatively long period in which to repay. Unlike conventional student loans, where borrowers who default usually do so fairly soon after leaving school, the proportion of borrowers not fully repaying their income-contingent loans in net present-value terms would not be known with certainty until the end (or perhaps near the end) of their specified period of repayment. One potential way to address this concern would be to require borrowers to purchase insurance against nonpayment resulting from low incomes.

TABLE 1. BASIC TYPES OF INCOME-CONTINGENT LOANS

Should Some Borrowers Subsidize Other Borrowers?	Should the Federal Government Subsidize ICLs?	
	No	Yes
No	Individual-Responsibility Loan	Externally Subsidized Loan
Yes	Internally Subsidized Loan	Doubly Subsidized Loan

SOURCE: Congressional Budget Office.

Another issue with an individual-responsibility ICL is how to ensure repayment of the loan if borrowers die or become disabled. In the case of conventional loans made by private lenders (such as for a home mortgage), lenders sometimes require borrowers to buy insurance covering death and disability, with the lender as the beneficiary. A similar requirement could be associated with this type of ICL.

Externally Subsidized Loans. A second type of ICL involves the federal government providing subsidies to students, but borrowers with higher incomes not subsidizing those with lower incomes. This type of externally subsidized ICL could resemble a direct Stafford loan with income-contingent repayments. Federal subsidies to borrowers might consist of paying interest on the loans while borrowers were in school as well as during specified periods of deferment. The government (that is, taxpayers) could also remain responsible for losses through defaults and could pay administrative costs. All borrowers would, however, be responsible for repaying their own debt after leaving school, and they might also be required to buy insurance against low incomes that would not allow them to repay their loans.

Compared with the individual-responsibility type of ICL, terms on an externally subsidized loan could be more generous. If borrowers did not accumulate debt from unpaid interest while they were in school (because the federal government paid the interest costs for them), for example, cumulative loan amounts could be increased with no corresponding increase in payback rates or in the length of time that borrowers would need to repay their loans. The federal government could also provide explicit subsidies by charging borrowers an interest rate lower than the one it must pay for its funds, which would allow loan limits to be raised without changing other terms of the loan.

Internally Subsidized Loans. A third type of income-contingent loan is the internally subsidized model, in which the terms are set so that borrowers who have high incomes during their repayment period share responsibility for repaying the loans of borrowers who have low incomes during that period. This model assumes that, although some borrowers would not earn adequate income to repay their loans, enough other borrowers would receive sufficiently high incomes to subsidize people who could not repay.

Although borrowers would subsidize each other, this type of income-contingent loan program would be designed to pay for itself over the long run. Unlike the case of an externally subsidized ICL, the federal government would provide no subsidies for borrowers. Rather, the total amount lent to a given group of students would be repaid (in net present-value terms) over the period of repayment. Groups of borrowers could, however, be defined in several ways: in terms of those who borrowed in a given year (so that each annual

cohort of borrowers paid for itself) or in terms of a group of cohorts of borrowers (so that borrowers in some cohorts collectively subsidized those in others).

Internally subsidized ICLs would permit borrowers to obtain larger loans than they could with individual-responsibility ICLs. Unlike the latter, whose maximum cumulative loan amount would have to be relatively low so that all borrowers could reasonably expect to repay their loans on time, under an internally subsidized ICL program, all borrowers would not be expected to repay their loans fully. The only requirement for the internally subsidized ICL to be self-financing would be for the group of borrowers (however defined) collectively to repay the total amount it borrowed.

Because all borrowers would not be expected to repay their loans fully, some would have to repay more than their loan amounts (in net present-value terms). One way to accomplish that would be to charge borrowers a higher interest rate, as private lenders do in many conventional loans. Although not usually looked at this way, in many conventional loans, people who repay their loans in effect subsidize people who do not.[11] Defaulters are implicitly subsidized through the interest rate, which lenders set to reflect (in part) the risk of nonrepayment among people to whom they lend. In an internally subsidized ICL, the interest rate would have to be set above, for example, the rate that would be necessary in an individual-responsibility ICL in order to achieve the same rate of return on the total amount lent. The exact interest rate would depend on the proportion of money borrowed that would not be repaid. Estimating that share could be difficult, however.

An alternative way to have borrowers with high incomes subsidize those with low incomes would be to require all borrowers to continue paying for their loans for a stipulated minimum period. Without this feature, borrowers earning higher incomes would repay their loan obligations and exit the program before reaching the maximum length of repayment. Those with insufficient incomes to repay their loans would stay in the program the maximum length of time.

Yet another way to ensure cross-subsidizing would be to require borrowers who repay their loans before a specified period of time to pay an "exit fee," or surcharge. The surcharge would be used to subsidize the loans of people who never exit from the program and thus fail to repay fully.

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11. Some conventional loan programs require borrowers to purchase insurance against nonpayment and would not be included in this discussion.

The effect of requiring all borrowers to make payments for a given period of time or to pay an early-exit fee would be that borrowers would pay a different implied interest rate on their loans depending on their income profile. Borrowers with high incomes would pay higher implicit interest rates, thus indirectly subsidizing borrowers without enough income to repay their loans in the allotted time--who, in effect, would have lower (or even negative) rates of interest on their loans.[12]

Setting a minimum repayment period for all borrowers or an appropriate early-exit fee would require estimating the proportion of total funds that would not be repaid. Having the exit surcharge vary with the length of time spent repaying would require estimating how long it would take borrowers to repay their loans as well.

The cross-subsidies in an internally subsidized ICL program raise the concern about adverse selection discussed earlier. Requiring some borrowers to subsidize others could affect the kinds of borrowers who enter the program, which could undermine the financial stability of this type of ICL.

Doubly Subsidized Loans. The last type of ICL, a doubly subsidized loan, includes both internal and external subsidies. Limited only by the amount of subsidy available, this type of ICL could be the most generous of the four to borrowers in terms of the cumulative amount they could borrow, their payback rate relative to income, the length of their repayment period, and the interest rate they were charged. To finance these terms, borrowers with high incomes during the required repayment period would repay more than those with low incomes, and the federal government would provide all borrowers--or perhaps just those with relatively low incomes--with additional subsidies, possibly in the same ways as in the Federal Stafford Loan Program.

A doubly subsidized ICL would require a trade-off between the amount of subsidy from the federal government and the amount provided by high-income borrowers. For any given set of loan terms, the larger the subsidy provided by some borrowers, the smaller the subsidy that the federal government would need to pay to ensure that the program balanced its accounts at the budgeted rate of return. Requiring borrowers with higher incomes to repay relatively more of their loans than those with lower incomes, however, again raises the issue of whether such borrowers would enter the program or attempt to alter their behavior to affect their incomes.

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12. See Robert W. Hartman, "Equity Implications of State Tuition Policy and Student Loans," in Theodore W. Schultz, ed., *Investment in Education* (Chicago: University of Chicago Press, 1972).

WOULD BORROWERS ALTER THEIR BEHAVIOR IN RESPONSE TO THE TERMS OF AN ICL?

In designing an income-contingent loan program, policymakers need to be alert to the possibility that, in response to the incentives implicit in the terms of the loan, borrowers would change their behavior in ways that would affect their ability or willingness to repay. Income-contingent loans could alter the behavior of borrowers in two fundamental ways. First, ICLs could provide the means for additional students to enroll in college. (This response is one of the motivations for having ICLs.) But second, the loans would set up incentives that could change who borrows and what they do after they leave school--specifically, their participation in the labor force, the kind of work they perform, the amount they earn, and how they report their income.[13]

Although some advocates argue that one of the reasons for having ICLs is to reduce the pressure on students to choose jobs in which they will earn enough money to repay their loans, significant changes in the behavior of borrowers could also affect the financial stability of an ICL program. If the projected income profiles of borrowers were wrong--either because the behavior of borrowers changed in response to the terms of the loan, or for any other reason--the costs of an ICL program would be different than expected. For example, a program that was not expected to require subsidies from the federal government could need large subsidies to remain viable if the projected incomes of borrowers were not realized during the repayment period.

The proportion of a borrower's income that would be used to pay back the loan could have effects similar to taxes, which are known to change people's behavior. The question with respect to an ICL program is how the payback rate and associated terms of the loan would affect the income received and reported by borrowers.

Three possible behavioral responses by borrowers are of greatest concern. The first involves adverse selection. As described earlier, adverse selection would occur if people most likely to earn high incomes--and thus to repay the most on an ICL--were less willing to take on an ICL to begin with, while those most likely to earn low incomes and potentially profit from an ICL were more willing to do so. A key issue is the extent to which borrowers are able to forecast their future income profiles accurately. Researchers have found that a significant fraction of high earners <u>are</u> able to predict their future earnings. Using such characteristics of students as family socioeconomic status, race, sex, religion, and achievement test scores, one study was able to identify

13. See Robert W. Hartman, "Financing the Opportunity to Enter the `Educated Labor Market'," in Margaret S. Gordon, ed., *Higher Education and the Labor Market* (New York: McGraw-Hill, 1974).

40 percent of those at or above the 90th percentile in the earnings distribution. The authors counsel that highly successful students are even better than researchers at predicting their own incomes because of their self-knowledge (for example, of their own motivations).[14] This suggests that adverse selection of borrowers is an important concern in designing an ICL program.

A second possible behavioral effect of the terms of an ICL concerns the borrower's decision to work. Having to repay an income-contingent loan in effect raises the marginal tax rate that a worker faces. Increases in marginal tax rates reduce the after-tax reward from work, which in some cases may reduce participation in the labor force.

The impact of increased marginal tax rates on income because of the ICL payback rate would probably be greatest on two groups of borrowers: married women and people with high incomes. A general concern exists about the consequences of ICLs for women, who usually earn less than men with similar levels of education but who borrow about the same amount. Their lower earnings suggest that fewer women might fully repay their loans even without behavioral changes induced by increased marginal taxes. If that were to happen, men would end up subsidizing them. In addition, research has found that married women are responsive to changes in the marginal tax rate on joint income, which raises the possibility that relatively more married women would choose not to work, or would work fewer hours, because of an ICL.[15] This finding also raises questions about the impact of married women's choices on the participation of their husbands in the labor force and the extent to which husbands would repay their own loans if they also had to contribute to repaying their wives' ICLs.

People with high incomes also seem to be especially sensitive to changes in marginal tax rates on reported income. If the addition of an ICL payback rate were to alter the behavior of such individuals (for example, by causing them to work fewer hours), it could reduce the extent to which relatively high-income borrowers would repay more than they borrowed (and even affect the amount of federal, state, and local taxes they would pay). Fewer funds would then be available to subsidize those who earned relatively low incomes.

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14. See Krueger and Bowen, "Income-Contingent College Loans."

15. The effect of the ICL payback rate on the behavior of married women would vary depending on whether individual or joint (family) income was used in calculating repayments due (see page 21).

A third concern with respect to an ICL's repayment terms involves the phenomenon known as moral hazard.[16] This occurs when insurance policies established to remedy unlikely negative events make them more likely to happen. In effect, ICLs would provide insurance against having loan payments constitute a relatively high share of income after attending postsecondary school. The moral hazard is that ICLs could foster relatively lower incomes among borrowers, who would know that they were protected from default on their student loans because their repayment amounts would be contingent on their incomes. Some advocates of ICLs argue, however, that it is an advantage of ICLs that they allow borrowers to enter and stay in lower-paying jobs, many of which are in the public sector, without having to worry as much about being able to repay their student loans.

The relative importance of these three concerns depends on the terms of an ICL. Since all income-contingent loans involve a payback rate, all three concerns are relevant to a degree. But generally, the greater the extent to which an ICL relies on cross-subsidies from higher-income borrowers to lower-income ones--as in the internally subsidized and doubly subsidized models--the more likely borrowers are to change their behavior. This follows because such ICLs would impose a larger burden and responsibility on higher-income borrowers, who thus would have more to gain by altering their behavior. In addition, the larger the external subsidies to an ICL program (such as from the federal government), the less likely borrowers would be to change their behavior after leaving school. This result would occur because external subsidies would allow loan terms less onerous to borrowers and would thus be less likely to provoke changes in behavior to avoid them.

The availability of other sources of funding for postsecondary schooling would also affect the degree of adverse selection in the loan program. For example, if other loans with conventional terms continued to be available, an ICL program would be more likely to attract students who expected to receive relatively low incomes and less likely to appeal to those who would earn relatively high incomes (other things being similar). But other sources of funds for college would also be relevant, including money from parents (and other relatives), earnings from work, and even educational awards received through the new federal program of national service.

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16. See Robert W. Hartman, *Credit for College: Public Policy for Student Loans* (New York: McGraw-Hill, 1971).

WHAT OTHER FACTORS WOULD AFFECT THE TERMS OF AN ICL?

Specifying the terms of an income-contingent loan involves a number of other critical decisions. These decisions--about the cumulative loan amount, the length of the repayment period, the payback rate relative to income, and the interest rate charged to borrowers--would have consequences for the trade-offs that exist among an ICL's terms. Altering one term usually would require adjusting one or more other terms if the ICL program were to remain financially stable. The administrative burden placed on borrowers and lenders also might be a factor in how successfully the program operated.

Cumulative Loan Amount

Determining the maximum cumulative loan amount--as opposed to the annual loan limit--means addressing a number of concerns. These concerns apply to any student loan program, not just those with income-contingent repayment plans. Moreover, since an ICL program would probably be only one part of a larger system of student aid, attention must be paid to the amount of other aid (especially grants) available to borrowers.

In setting both the cumulative and annual loan limits, perhaps the most important consideration involves how much money student borrowers would need to meet the costs of attending college. (Costs include tuition and fees, room and board, and ancillary expenses such as books and transportation.) Annual costs of attendance vary by type of institution--with private, nonprofit colleges being most expensive, followed by career colleges (for-profit proprietary schools offering vocational and business programs) and public institutions (including both four-year and two-year colleges). Because of these differences, policymakers would need to decide how much of each type of cost should be covered by an ICL, both annually and cumulatively. They might also set different loan limits for undergraduate and graduate students, and possibly for students in different types of programs. ICLs could also be restricted to students attending school full time and continuing to make satisfactory progress.

Some proponents of ICLs argue that the cumulative loan limit should be high enough to ensure students' ability to enroll in the school of their choice. But setting the limit too high could have other consequences. For instance, if students were able to finance their entire education through income-contingent loans, they might find that their parents were less willing to help them pay for college. The current system for awarding aid to students under 24 years of age who have never been financially independent of their parents (so-called

dependent students) in effect requires parents to make a contribution toward meeting their child's cost of attending school as a condition for receiving aid. If sufficient funds were available (from either a conventional or income-contingent loan program) for students to pay for college without a required contribution from their parents, parents might feel less compelled to offer financial support.

Another unintended consequence of setting high cumulative loan limits is that the availability of large loans could allow postsecondary institutions to increase their prices and encourage would-be students to borrow the amounts needed to enroll. Some analysts argue that the expanded availability of student loans in the late 1970s and early 1980s helped spur the rising costs of attendance at many colleges. Both price increases by schools and reductions in support by parents would undercut a main goal of an ICL program--to facilitate financing a college education.

Large amounts of borrowing by older students could also be problematic--either for the students or for the financial viability of the ICL program. Because "lifelong learning" is being widely encouraged in our society, a substantial number of older students could become interested in borrowing. Older students would probably spend a shorter period in the work force after their schooling and thus would have less opportunity to repay their loans. Stricter repayment conditions for older students (such as higher repayment rates) could make loan repayment difficult for them, but applying the usual repayment conditions could result in substantial unpaid loans. The solution might need to be reduced loan limits for these students.

A final consideration in setting a cumulative loan limit, at least for a self-financing ICL, involves the amount of time a borrower spends in school. Unless students received subsidies for the interest on their loans while they were in school, the amounts of the loans would increase on a compound basis during that period. This growth in the outstanding loan balance--called negative amortization--could result in students owing substantially more than they borrowed if they were enrolled for many years. Besides placing an unexpected burden on students, such an outcome could increase the amount of unpaid loans that an external source--the federal government--would become responsible for.

Length of Repayment Period

Several factors bear on the length of time that borrowers would have to repay their loans. As in the case of setting the cumulative amount of debt to be

allowed, the age of the borrower--or the likely number of future years in the labor force--would be a major consideration.

The maximum time that most borrowers spend in the labor force after college is about 45 years. On the one hand, requiring borrowers to repay their loans over this entire period could become a consideration in their choosing whether to get married, have children, purchase a house, help pay the costs of college for their children, or save for retirement. On the other hand, requiring repayment over a shorter period (say, 15 to 20 years) would limit the amount that students could borrow, especially those in graduate and professional programs.

Given the interdependent nature of the terms of an ICL, determining the length of repayment needs to be considered in the context of the other terms. For example, the length of time to repay a loan could be made contingent on the cumulative amount of debt incurred or on the level of education completed. Many borrowers have relatively low cumulative debt and probably could repay in the 10-year period that is standard in the current federal guaranteed loan programs, but those with high debt would probably need more time. Although such adjustments would reduce the simplicity of administering an ICL program, they could provide additional flexibility to certain types of borrowers.

Payback Rate Relative to Income

The payback rate is especially important to the financial stability of an ICL program because its effects would resemble those of an income tax. Research suggests that changes in marginal tax rates on income could affect the behavior of individuals (especially married women and people with high earnings, as discussed earlier) and that a high payback rate could adversely affect the financial stability of an ICL program.

The payback rate necessary to make an ICL program financially stable--assuming no changes in reported income in response to changes in that rate--would depend on several factors. The most basic is the definition of income used. The broader the definition, the lower the payback rates could be. But broadening or narrowing the definition raises a number of issues.

Some advocates of income-contingent loans have argued for using the incremental income earned as a result of postsecondary education as the amount that should be subject to a payback rate.[17] Unfortunately, deter-

17. See Vickrey, "A Proposal for Student Loans."

mining that amount is difficult and subject to considerable uncertainty. Many borrowers might be unwilling to believe statistically based estimates of what share of their income results from their having attended college. Consequently, this approach would probably be unlikely to find acceptance.

The most straightforward way to define an appropriate income base on which to apply a payback rate would be to use existing definitions in the Internal Revenue Code. Doing so would still leave policymakers with a number of choices, however, such as whether to include unearned as well as earned income in the definition of taxable income. (Unearned income includes interest, rents, and profits; earned income comprises wages and salaries.) On the one hand, the philosophy behind using the incremental income attributable to college education would suggest using only earned income. On the other hand, fiscal prudence and a belief that individuals should pay what they are able to afford would suggest using both types of income. Some borrowers have discretion over the kind of income they report, so not including unearned income in the "taxable" base could result in some borrowers' changing their behavior to realize their income as unearned.

Another important issue concerns whether only an individual's income would be considered in calculating loan repayments or, if that person is married, whether the spouse's income would also be considered. Counting both could discourage someone from marrying a person with large ICLs, while not counting a spouse's income could reduce the probability of repayment for a significant fraction of borrowers--especially women who might choose not to work outside the home after marriage.

Yet another issue involves defining a possible floor of income below which there would be no expectation of repayment. Such a floor would set some minimum amount of income for basic needs before requiring student loan repayments. An income cutoff could be set in a fashion similar to that of the poverty thresholds, for example, by taking family size into account. The higher the floor, of course, the less income that would be subject to a payback rate. A floor could also affect the extent of labor force participation by borrowers since it would create an incentive not to earn more than a certain amount of income. An alternative approach to setting a minimum income level would be to allow deductions for such factors as the number of dependents, business expenses, health expenditures, and so on. This approach would, however, add to the administrative complexity of the ICL program.

Concern about adverse selection could also lead policymakers to set a maximum amount of income that would be considered in calculating payback amounts. Setting a maximum income level would assure those earning incomes over the ceiling that not all their gains from college education would be subject

to the ICL payback "tax." Such a ceiling could, however, reduce the amounts repaid or increase the time needed to repay by people with highly variable incomes.

Besides issues concerning the definition of income, several other factors are relevant to setting payback rates. One is whether such rates should be constant or should increase or decline with the level of income. Some policymakers may prefer to have repayment rates rise with total income since discretionary income also increases then, but others may prefer to have rates decline with income to minimize the distortionary effects of payback rates on behavior. The latter concern could be examined in the context of other federal, state, and local income taxes to assess the effects of the various possibilities on the marginal tax rates of borrowers at different income levels, and hence on the likelihood that the behavior of borrowers would change. Broadly speaking, federal taxes are progressive, while state and local taxes are regressive, but substantial variability exists across the country.

A related issue is whether to vary payback rates according to other characteristics of the borrower, such as his or her total amount of debt. Those borrowers who assume more debt could be required to use higher payback rates. An advantage of this approach is that it would create an incentive for students to consider carefully the amount of loans they take out to pay for their education. A disadvantage is that it could discourage some students from borrowing money to continue their education.

Another factor in setting payback rates could be the age of the borrower or the number of years that he or she would be likely to remain in the labor force. An advantage of considering either characteristic would be to allow payback rates to fall proportionately with increases in the expected period of time a borrower would have income with which to repay. A disadvantage is that higher rates associated with increasing age or with reduced time in the labor force could discourage older individuals from taking out loans to refine, renew, or acquire additional skills in postsecondary institutions that could help them in the labor market.

Interest Rate

The interest rate charged to borrowers has a central role in determining the extent to which an ICL would be externally subsidized--and thus the amount of the federal subsidy. The interest rate also would have a primary role in determining the attractiveness of an ICL to borrowers.

Arguments exist for setting the interest rate on federal student loans (conventional as well as income-contingent) at various levels. These levels range from zero to a rate that approaches what the private market would charge if payment based on income could be guaranteed (as, for example, some analysts believe it nearly would be if repayments were collected through the Internal Revenue Service). Advocates of low rates believe more people need to be encouraged to enroll in college. Those suggesting the use of high rates believe greater efficiency in using scarce capital and other limited resources (including college facilities) would be fostered by charging rates that more closely approximate the actual cost of the funds to the economy.

Private lenders charge interest rates that reflect their cost of funds, the risk of nonrepayment among their borrowers, and the cost of administering their loan programs. A federal income-contingent loan program that did not similarly cover these costs would have to be subsidized by the government, implicitly or explicitly.

Since the federal government can borrow funds more cheaply than private lenders can, it could offer student loans at rates lower than those private lenders can afford without needing budgeted federal subsidies. To the extent that the federal government did so, it would be implicitly providing borrowers with a subsidy relative to the charges they would face in the private market. As a consequence, the federal government would also be diverting the capital from areas with higher rates of return than would have occurred if the private market allocated it. Charging borrowers less in interest than the federal government itself has to pay would require an explicitly budgeted subsidy.

To avoid having to pay an explicit subsidy, the federal government would need to charge borrowers an interest rate high enough to cover the costs of operating the program and of losses from nonpayment of loans. Nonpayment of an ICL could stem from inadequate income (possibly as a result of a disability), refusal to pay (possibly through tax avoidance), emigration to certain countries, or death. Designing a financially stable program would require accurately determining the probability of nonpayment from these and other sources so that the costs could be factored into the interest rate that borrowers would have to pay.

Estimating administrative costs could prove challenging. These costs would vary depending on whether ICLs were provided directly (through postsecondary institutions) or indirectly (through private lenders) and on whether the Internal Revenue Service (IRS), the Department of Education, or private agencies serviced the loans. The 1993 changes to the Higher Education Act reduced the federal subsidies that are paid to lenders and guaranty agencies primarily to cover their administrative costs. Some analysts suggest

that administrative costs would be lower for an ICL program originated through postsecondary institutions and serviced by the IRS. Others believe that the administrative costs for an ICL program would be higher because additional communication would be required with borrowers on a regular basis to establish their income and, if necessary, recalculate their monthly payment and inform them of the new amount.

Policymakers might also want to consider other objectives in setting the interest rate of an ICL. For example, rates might be higher if an ICL were to provide internal cross-subsidies for borrowers with low incomes. High rates could, however, foster adverse selection. Interest rates could also be set lower when borrowers are in school and not earning income, but borrowers would still be expected to pay the interest charges or to capitalize the charges into their total debt if they did not pay them until after leaving school. To contain the risk of indebtedness that students would face, some analysts also advocate capping the rate of interest that students would be required to pay but allowing rates below that cap to vary with changes in the economy.

Administrative Burden on the Borrower

A final factor to consider in designing an income-contingent loan program is the administrative burden it would place on the borrower. (The difficulty faced by the lender is reflected in the costs of administration considered above.) Any ICL program would be relatively cumbersome to borrowers compared with a conventional loan program, such as the current federal guaranteed student loan programs, because it would place additional responsibilities on borrowers. Borrowers (or their agents, such as employers) would have to inform their loan servicers of any change in their income so that their monthly payment could be recalculated. A reliable way to collect valid income data would be essential to the financial stability of an ICL program. Yet if such a method were burdensome to borrowers, it could deter them from cooperating with the program.

Analysts have proposed several methods for servicing ICLs after borrowers leave school. One approach would involve the Internal Revenue Service directly. The IRS could service these loans in various ways, but one alternative would place primary responsibility with borrowers for providing current information about their income. For example, when borrowers leave school, postsecondary institutions could notify the IRS of their former students' new status, while borrowers could be made responsible for telling the IRS their new address and current income. The IRS could then calculate borrowers' monthly payments and inform them of their debt and payment amount. Borrowers could be required to make their payments either directly to the Treasury or by having their employers deduct the appropriate amount from

their paychecks and remitting it to the Treasury along with other monies due. Whenever their income changed, borrowers (or possibly employers) would be responsible for informing the IRS. The IRS could send borrowers an annual update of the amount of their remaining debt, and any small discrepancies could be reconciled annually when borrowers filed their tax forms.

A disadvantage of using the IRS to service loans is that it would increase the incentives of borrowers to reduce their cooperation with the tax system. Borrowers--especially the self-employed--would have additional reason to try to hide or possibly shift income.

An alternative way to collect repayments would be to use private collectors. If borrowers were required to provide copies of their initial pay stubs (to establish starting repayment amounts) as well as copies of their annual tax returns, private credit-reporting and bill-collection agencies could individually, or in collaboration, service income-contingent loans. The annual tax return could be used to reconcile small differences in the amount due and to establish repayment amounts for the next year. Private collectors would also be responsible for informing borrowers each year about the status of their debt.

NEXT STEPS IN DESIGNING AN ICL PROGRAM

Policymakers face a complex web of choices in designing a viable, financially stable income-contingent loan program. Assessing whether a proposed ICL program would be financially stable is difficult because of the inter-dependencies among the terms of the loan and because of the uncertainty surrounding the future income profiles of borrowers. Perhaps the best way to analyze proposals for ICL programs is to simulate their effects using data on individuals to mimic the way the program would be expected to operate. The Congressional Budget Office (CBO) is now constructing such a simulation model.

A microsimulation model could help to address a variety of issues. These include what kinds of terms--loan limits, length of repayment, payback rates, and interest rates--an ICL program would need to be stable under a range of assumptions about the future income profiles of borrowers. The model could also assess how external (federal government) subsidies would allow the terms to be modified, and how much more high-income borrowers would have to repay in order to subsidize low-income borrowers to a significant degree. Altering the projected future income profiles in ways that simulate adverse selection could reveal the sensitivity of proposed ICL programs to the behavioral changes they might induce. A microsimulation model could also help to identify the types of borrowers--classified in terms of type of

postsecondary institution attended, family socioeconomic status, dependency status, years of education, occupation, sex, and race or ethnicity--that might benefit from an income-contingent loan program. As more is learned about the possible operation of an ICL program, CBO will issue additional reports.