

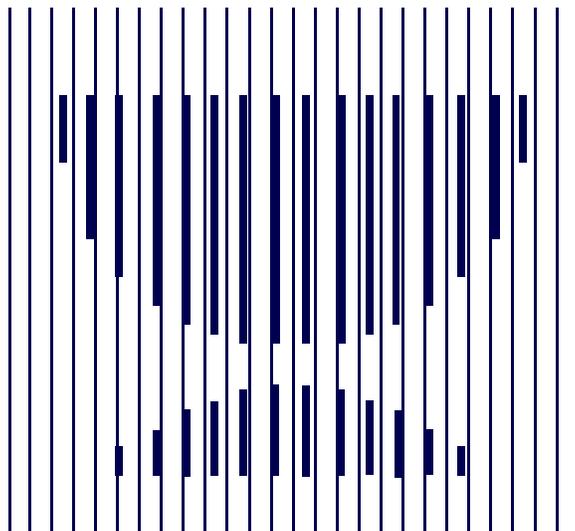


# **CBO MEMORANDUM**

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**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



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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

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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.<sup>1</sup> 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.<sup>2</sup> 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.<sup>3</sup> 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.<sup>4</sup>

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

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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.<sup>5</sup>

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.<sup>6</sup>

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.<sup>7</sup> 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:

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

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.<sup>8</sup>

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

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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.

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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:

- o Maximum Number of Years of Repayment: 40
- o Limits on the Amount Borrowed: Costs of attendance (tuition and fees, room and board, and miscellaneous expenses) for full-time undergraduates.
- o 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.
- o 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.

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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:

- o Maximum Number of Years of Repayment: Unspecified, but repayment ends after 150 percent of the (nominal) amount borrowed is repaid.
- o Limits on the Amount Borrowed: Up to three-quarters of undergraduate tuition for as many as four years.
- o Interest Rate: Implicit, depending on how quickly the loan obligation is paid off.
- o 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.

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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.<sup>9</sup> 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.<sup>10</sup>

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.

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TABLE 1. BASIC TYPES OF INCOME-CONTINGENT LOANS

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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

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SOURCE: Congressional Budget Office.

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