

ESTIMATING THE FEDERAL COSTS AND
DISTRIBUTIONAL EFFECTS OF PELL GRANTS

Staff Working Paper
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This study was prepared at the request of Congressman Augustus F. Hawkins, Chairman of the Committee on Education and Labor, and Congressman Patrick Williams, Chairman of the Subcommittee on Postsecondary Education, U.S. House of Representatives. It was written by Maureen McLaughlin of the Human Resources and Community Development Division under the supervision of Nancy M. Gordon and Bruce Vavrichek. Questions regarding this analysis may be addressed to Maureen McLaughlin (226-2672).

INTRODUCTION

The Pell Grant program is a federally funded program designed to provide grants to needy postsecondary students. This staff working paper describes the simulation model that the Congressional Budget Office (CBO) uses to estimate the distributional effects and the federal costs of this program.^{1/} CBO uses the model to estimate the amount that students and their families would be expected to contribute to educational costs under the current program and under a wide variety of proposed alternatives. Based on families' expected contributions and the eligibility rules of the program, the model simulates participation and estimates the amount of federal support necessary to fund the program fully.

Detailed income, asset, demographic, and school data for individual students and their families are necessary to examine the Pell Grant program, because it requires that students with lower family incomes contribute less to their educational costs than students with higher incomes. Similarly, larger families and families containing more students are expected to contribute less for each student's education. Students attending low-cost institutions are eligible for less aid than similar students at more expensive institutions.

Data on all postsecondary students would be ideal to analyze proposals that would substantially expand the existing program, as well as options for incremental changes. Because no recent data on all students exist, however, the CBO uses the next best source--information on financial aid applicants.^{2/}

This staff working paper contains four sections that describe:

- o The rules determining eligibility and the size of awards under the Pell Grant program;
- o The data base used in the model;

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1. In addition to examining the Pell Grant program and other proposed programs, the CBO model can estimate the effects of different need-analysis systems.
 2. The Center for Education Statistics is now conducting a new survey (National Postsecondary Student Aid Survey) that includes detailed data on incomes and assets for all students, rather than just aid applicants. When these data are available, they will improve our ability to estimate the effects of large changes in existing programs.

- o Adjustments to the data to represent future years, including the size of some specific adjustments for the CBO's most recent estimates; and
- o The CBO's current estimates of the program now authorized for fiscal years 1987 and 1988.

DESCRIPTION OF THE PELL GRANT PROGRAM

The Pell Grant program provides grants to lower-income postsecondary education students. Eligibility for Pell Grants varies according to the size of the expected family contribution (EFC) to educational costs and, to a more limited extent, school costs. A set of formulas, now specified in the Higher Education Act, determine students' awards by using information about family incomes obtained from students' financial aid applications and the costs of attendance provided by postsecondary schools.^{3/} The set of formulas has two main parts: first, determining the expected family contribution to the student's educational costs and, second, determining the level of the award.

The formulas for determining the EFC estimate the portion of the family's income and assets that the program expects the family to contribute to the student's education. These expected contributions vary according to the student's family resources, the number of family members, the number of other postsecondary students in the family, and whether the student depends on parental support or is financially independent. The EFC formulas determine contributions from income and assets separately. Discretionary income--income that is considered to be available for education and other purchases--includes taxable and nontaxable income minus several offsets for necessary expenses, including ones related to family size and to federal, state, and local tax liabilities. Families and independent students are expected to contribute different portions of their discretionary incomes to education. The expected contribution from assets excludes a certain amount of assets from consideration and expects families to contribute a portion of the value of any remaining assets. The asset exclusions and asset assessment rates vary for independent and dependent students.

3. The Higher Education Act does allow some discretion in special circumstances. Whether financial aid officers use this discretion and how is uncertain. The section on CBO's estimates discusses this issue further.

Awards to students are determined by choosing the lowest of the following three calculations:

- o The maximum award minus the EFC;
- o Sixty percent of allowable educational costs; or
- o Educational costs minus the EFC.

Allowable educational costs include tuition and fees and an allowance for nontuition expenses. Starting in fiscal year 1988, this allowance will be tied to the maximum award: for students living with their parents, the allowance would equal the maximum award minus \$600; for all other students, the allowance would equal the maximum award. The authorized maximum award is \$2,100 in fiscal year 1986, \$2,300 in fiscal year 1987, and \$2,500 in fiscal year 1988. Because of the \$2,500 maximum award and the limitation of 60 percent of costs, awards will not vary for school costs above \$4,167 in the 1988-1989 school year.

DESCRIPTION OF THE DATA BASE

CBO's model uses the Education Department's sample of Pell Grant applicants and recipients for the 1984-1985 school year--the latest year for which these data are available. ^{4/} The applicant/recipient file includes all people who applied for Pell Grants, both those who applied directly to the Pell Grant program and those who applied through the various organizations that determine students' EFCs and provide the information to colleges (the College Board, for example). In fact, most people who apply for need-based student aid also apply for Pell Grants and, thus, are included in this file. The information reported in the file includes the data that the Department of Education needed in 1984-1985 to determine students' eligibility for Pell Grants and to calculate their awards--including detailed measures of income and assets for students and their families and information about students' choice of schools.

The Department of Education constructed a file containing information on a sample of 150,000 applicants (including almost 80,000 recipients)--about 3 percent of the almost 5 million undergraduate students who had valid Pell Grant applications in 1984-1985. A valid application is one

4. In most years, CBO updates its Pell Grant model based on the latest available data about applicants and recipients. These data generally lag two years behind the current school year.

that contains all the data necessary to determine students' eligibility.^{5/} The Education Department also imputed several pieces of information to each student's record in the 3 percent sample. These data include information on living arrangements, and, for nonrecipients, educational costs and enrollment status.

Information on students' living arrangements--whether students live on campus, at home with their parents, or off campus but not with their parents--is not recorded in the 1984-1985 data base, but was imputed by the Department based on information from the 1979 Study of the Impact of Student Financial Aid Programs (SISFAP). The imputation of students' living situations was based on whether students are dependent or independent of their parents, their year in school, and the type of school they attend.

For virtually all students who receive awards, the data base includes the schools that students actually attend; for applicants who do not receive grants, it includes their first and second choices for schooling. Since most students attend their first-choice school, the Department assumed that all nonrecipients attend their first-choice institution.

Also missing for students who did not receive awards in 1984-1985 is information on total educational costs, because the data base does not report where these students attend school. The Department set total costs at the average cost for the applicant's first-choice school.

Similarly, information about whether students attend school full time or part time is available for Pell Grant recipients but not for other applicants. The Department imputes this information for nonrecipients using the 1979 SISFAP data, based on the student's dependency status, age, and type of school.

ADJUSTMENTS TO REPRESENT FUTURE YEARS

Because the data base represents the 1984-1985 school year and CBO is now estimating costs for the 1987-1988 and 1988-1989 school years, CBO adjusted many initial variables--including the number of applicants, the income, asset, and cost of schooling variables, and income tax liabili-

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5. Another 500,000 applicants either did not provide all the information necessary to determine eligibility or provided inconsistent data. Approximately 70 percent of the valid applicants were eligible for grants, and about 75 percent of the eligible persons, or 2.7 million students, received aid in 1984-1985.

ties--for expected changes since 1984-1985. Because all eligible applicants do not actually receive Pell Grants, CBO also developed a method to determine which eligible persons would participate in future years.

Several years are involved in each Pell Grant estimate. The fiscal year for which CBO is estimating federal costs (the amount of appropriations necessary for full funding) is the year before the school year in which the grants are used, because the Pell Grant program is forward funded. The determination of families' expected contributions uses the families' incomes in the calendar year preceding the fiscal year under consideration because that is the year reported on students' applications, it being the latest year for which complete data are available when students apply for aid. For example, fiscal year 1988 funding will support Pell Grants in the 1988-1989 school year based on students' and families' incomes in calendar year 1987.

Projecting the Number of Applicants

CBO increased the number of Pell Grant applicants to take into account the expansion that occurred between the 1984-1985 and 1985-1986 school years and the expected increase in later years. CBO assumed that almost 5.6 million students would apply for Pell Grants in the 1987-1988 and the 1988-1989 school years (this number includes valid applicants only). According to this assumption, the number of applicants would increase by 12 percent compared with 1984-1985. This projection takes account of the small increase that has been occurring in most recent years, along with an assumed additional increase stemming from the requirement that all GSL applicants must also apply for Pell Grants. Because the number of independent and dependent applicants has been growing at the same rate during the most recent years, CBO assumed that this growth would continue and thus increased the weight of each student in the sample by the same percent.

Using Inflation Factors for Incomes, Assets, and School Costs

CBO adjusted students' incomes, assets, and school costs for changes between the year for which the data were collected or imputed and the estimation year. For past years, CBO used actual changes in indices to inflate variables and, for future years, CBO used its latest economic assumptions. In each case, CBO employed the inflation factor that pertains most closely to the specific variable. For example, CBO adjusted family incomes by the change in personal income per capita and medical expenses by the medical care services component of the Consumer Price Index. For fiscal year 1987 (1986 income), nominal incomes are expected to grow by 4.5 percent, and by an additional 5 percent in fiscal year 1988.

Calculating Federal Income Tax Liabilities

CBO calculated 1986 and 1987 federal income tax liabilities in ways that accounted for changes in the personal income tax system since 1983. It used information from the original file on the number of personal exemptions, itemized deductions, and adjusted gross income (AGI) in 1983, as well as 1986 and 1987 data on marginal tax rates for single people, married couples, and heads-of-households. For 1986, CBO simulated federal income tax liabilities using the number of personal exemptions in 1983; the 1983 itemized deductions, adjusted for inflation; and the 1986 marginal tax rates. For 1987 taxes, it used the same procedure, but adjusted the level of itemized deductions and AGI to account for the effects of the Tax Reform Act of 1986. Using data provided by the Tax Analysis Division, CBO reduced the value of deductions and increased AGI by estimates of the average effect of recent tax changes on deductions and AGI for various income groups.

Determining Participation

In simulations of future years, to determine which eligible people would receive grants, CBO divided the sample into three categories according to the person's status in 1984-1985: recipients, eligible nonrecipients, and ineligible individuals. CBO assumed that recipients and eligible nonrecipients would behave in the same way in future years as in 1984-1985. Recipients would always participate, if eligible, and eligible nonrecipients would not participate, regardless of eligibility. For ineligible individuals, CBO assumed that, if they became eligible under future proposed changes, the same percent would participate as among current eligible applicants--approximately 75 percent.

CBO's CURRENT ESTIMATES

Because Pell Grants is a discretionary program, the Congress may appropriate less than the amount estimated for full funding. In this case, some other action must be taken, because current law requires that all eligible Pell Grant applicants who want to receive aid must do so. The approaches generally followed include borrowing funds from the next year's appropriation, altering parameters to reduce the cost of a fully funded program, and instituting a reduction mechanism that would lower students' actual awards.

The following discussion concerns the amount needed to fund fully the Pell Grant program as authorized for fiscal years 1987 and 1988 by the Higher Education Amendments of 1986. ^{6/} As is true with all estimates of future funding, actual spending may be somewhat higher or somewhat lower than estimated, if actual economic conditions differ from those projected and if students behave differently than assumed. The complete set of changes enacted in 1986 will be in effect for fiscal year 1988, whereas only one change was implemented for 1987.

Fiscal Year 1987 Estimates

Fully funding the program now authorized for fiscal year 1987 will require an estimated \$3.7 billion in budget authority (see Table 1). About 2.9 million students will receive grants; the average award will equal \$1,300. The Higher Education Amendments of 1986 implemented only one change for 1987--a revision in the definition used to determine whether students are considered financially independent or dependent on their parents when determining eligibility for federal student aid.

For purposes of determining student aid eligibility, the revised definition of independence makes it more difficult for some students under age 24 to be considered financially independent of their parents. Compared with previous law, the new definition requires them to be independent for a longer period of time and to demonstrate self support. On the other hand, students at least 24 years old, as well as orphans, veterans, married students, and students with dependents, are now automatically considered to be financially independent. Because independent students' incomes include only their own and that of their spouses, the average income of independent students is lower than the average income of dependent students, which also includes their parents' incomes.

On net, CBO estimates that this change in the definition of independence will reduce slightly the total number of recipients--by less than 50,000--and will lower federal costs in fiscal year 1987 by almost \$100 million compared with the previous definition. (CBO estimates that \$3.8 billion would have been necessary to fund Pell Grants fully in fiscal year 1987, if the definition were unchanged.)

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6. The amount needed to fund Pell Grants fully is not the same as the amount included in the CBO baseline. Because Pell Grants is a discretionary program, the CBO baseline--which estimates the amount needed to fund the same level of real services as provided in the preceding year--equals the most recent appropriation adjusted for the projected increase in prices.

For students who will automatically switch from dependence to independence, CBO calculated their eligibility using only data about the student's income and assets, ignoring information about the parents. While the available data on students' incomes and assets are not exactly in the required form for independent students, most information is included. Thus, this method should enable CBO to estimate the impact of the new definition of this group quite well. An estimated 275,000 applicants will switch from dependence to independence. About 150,000 of these students were recipients under previous law, and an additional 40,000 of them will receive aid under the new definition. Among students whose status will automatically change, the average award for recipients under the new definition will equal an estimated \$1,350 compared with almost \$1,200 for recipients under the previous definition.

TABLE 1. PELL GRANTS: ESTIMATED COSTS, NUMBER OF RECIPIENTS, AND AVERAGE AWARD; COMPARISON OF FISCAL YEARS 1987 AND 1988

	Budget Authority (In billions of dollars)	Number of Recipients (In millions)	Average Award (In dollars)
Full Funding in Fiscal Year 1987	3.7	2.9	1,300
Full Funding in Fiscal Year 1988	4.9	3.1	1,550
Difference: Fiscal Year 1988 minus Fiscal Year 1987	+1.2	+.3	+250
Percentage Difference	+32	+10	+19

SOURCE: Congressional Budget Office estimates assuming full funding.

For students who will face stricter requirements to be classified as independent, the estimation was much more difficult. Only limited information is available to determine how many of them will lose eligibility and no information is available about their families' incomes. CBO assumed that about half of these students who were independent under previous law would be classified as dependent under the changes. CBO then assigned them family incomes, based on an adjusted distribution of the family incomes of current applicants who are dependent. A somewhat greater proportion of the students newly classified as dependent were assumed to be in the lower-income ranges and in the upper-income ranges, with fewer in the middle. This assumption was based on two factors. First, many financial aid officers state that a significant proportion of independent students come from low-income families and that these students would be eligible as dependent, as well as as independent, students. Second, higher-income students have greater incentives to declare themselves to be independent than less-well-to-do students because higher-income students might be ineligible as dependent students.

About 270,000 applicants were estimated to switch from independent to dependent status. Two-thirds of these applicants were recipients under previous law; one-third will receive Pell Grants under the new definition of independence. Among students who will switch to dependent status, CBO estimates that the average award for recipients under the new definition will equal \$1,100 compared with \$1,550 for recipients under the previous definition.

Fiscal Year 1988 Estimates

CBO estimates that fully implementing the reauthorization provisions will increase federal costs to almost \$4.9 billion in fiscal year 1988--an estimated \$1.2 billion above the costs of the program in 1987 (see Table 1). Approximately 3.1 million students will receive Pell Grants; the average award will equal \$1,550. Increases in the average award will account for two-thirds of the increased costs between fiscal years 1987 and 1988; more recipients will account for the remaining one-third.

CBO estimates that dependent students will receive slightly less than one-half of Pell Grant funding in fiscal year 1988 and that independent students will receive slightly more than one-half (see Table 2). An estimated two-thirds of all aid will go to students with incomes below \$10,000; 44 percent of dependent recipients and 85 percent of independent recipients. Full funding of the 1986 changes will lower the percentage of aid going to the lowest income students compared with previous law. Students attending public institutions will receive an estimated 58 percent

of Pell Grant funding in fiscal year 1988; students at private institutions--including nonprofit and proprietary institutions--will receive an estimated 42 percent of all aid. This distribution is similar to the distribution under previous law.

The Higher Education Amendments of 1986 authorized substantially higher maximum awards than currently in effect--for example, \$2,500 in 1988 compared with \$2,100 in 1987--and tied increases in nontuition allowances to the maximum award. CBO estimates that this change will account for approximately \$900 million of the increased costs in fiscal year 1988 (see Table 3). In addition, the 1986 changes reduced average expected family contributions, thereby further expanding eligibility and increasing the federal costs. CBO estimates that this change will account for about \$500 million of the increased federal costs.

TABLE 2. PELL GRANTS: ESTIMATED DISTRIBUTION OF AID BY ADJUSTED GROSS INCOME, FISCAL YEAR 1988 (In percents)

	Budget Authority (In billions of dollars)	Adjusted Gross Income (In thousands of dollars)				
		All Incomes	Less Than \$10	\$10-\$20	\$20-\$30	Greater Than \$30
All Recipients	4.9	100	66	20	10	4
Dependent Recipients	2.3	100	44	29	18	9
Independent Recipients	2.6	100	85	12	3	0

SOURCE: Congressional Budget Office estimates assuming full funding.

Some changes did reduce federal costs somewhat, however, including the new definition of independence, which CBO estimates will lower costs by less than \$100 million (see Table 3). In addition, the Tax Reform Act of 1986 reduced, on average, tax liabilities for Pell Grant recipients, thus cutting federal costs by about \$100 million.

The Higher Education Amendments provide some discretion to financial aid officers to alter the calculation of expected family contributions. CBO did not estimate any costs or savings associated with this discretionary authority because of the substantial divergence of views about its likely effects. Financial aid officers could increase or reduce EFCs. Staff of the National Association of Student Financial Aid Administrators think that their members will be very conservative, because any changes in the calculation would also affect the allocation of institutional student aid. Others think that financial aid officers will reduce EFCs, thereby increasing eligibility and federal costs.

TABLE 3. ESTIMATED EFFECTS ON PELL GRANT FUNDING OF CHANGES ENACTED IN THE 1986 HIGHER EDUCATION AMENDMENTS (In billions of dollars)

Full Funding in Fiscal Year 1987	3.7
CBO Baseline in Fiscal Year 1988 <u>a/</u>	4.0
Full Funding in Fiscal Year 1988	4.9
Effects of Changes in Fiscal Year 1988 <u>b/</u>	
Maximum award and nontuition allowances	+ .9
Determination of expected family contributions	+ .5
Independent student definition	- .1
Tax reform	- .1

SOURCE: Congressional Budget Office estimates assuming full funding.

- a. Assumes that the 1987 Pell Grant appropriation is held constant in real terms in fiscal year 1988.
- b. The effect of each change equals the difference between the fully funded program and full funding without the particular change.

