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EQUITY AND EFFICIENCY IN THE BASIC GRANTS PROGRAM: THE CASE OF THE "PRIOR-YEAR" PROPOSAL

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ABSTRACT

This report describes a research project addressing a rather difficult equity and efficiency issue in the Basic Educational Opportunity Grants (BEOG) program: the optimal year on which to base the family income component of the student financial aid applicant's eligibility analysis. Some members of the financial aid community have argued that a "prior-year" approach, which would use income information that is earlier (older) than that currently used could have benefits ranging from more timely and cohesive packaging of students' aid awards to less seasonal scheduling of labor and machines in the BEOG processing system. Others have argued that using older income information would less accurately reflect the applicants' current financial situations.

The study reported here focused on the latter argument. It contrasted eligibility calculations produced under the standard system with those produced under a hypothetical prior-year system, using successive-year income data from a large, random sample of relatively recent eligible and ineligible Basic Grant applicants. In keeping with the most likely formulas for an eventual prior-year system, only income data were changed.

The results suggest that: (a) there are substantial year-to-year income fluctuations among both dependent and independent BEOG applicants, creating parallel fluctuations in calculated ability to pay; and (b) these fluctuations are large enough that a move to a prior-year system would cause changes in eligibility status (i.e., a change from eligible to ineligible status or vice versa) for 13% of the dependent sample and 15% of the independent sample. Although some caution must be taken in generalizing from this analysis, the results suggest that a prior-year system could produce less accurately targeted awards for many needy applicants.

EQUITY AND EFFICIENCY IN THE BASIC GRANTS PROGRAM: THE CASE OF THE "PRIOR-YEAR" PROPOSAL

James C. Hearn

The Basic Educational Opportunity Grants (BEOG) program is by far the largest federal financial aid program for postsecondary students, with appropriations of well over two billion dollars in FY 1980.[1] The purpose of the program, which presently provides aid to over two million students, is to help undergraduates meet the costs of postsecondary education. Although many students also receive other forms of aid, such as loans and work-study, the Basic Grant serves as the fundamental element of their aid packages. The BEOG program is thus the government's primary policy vehicle for obtaining its goal of equal access to postsecondary education for students from all income levels. Because of the recent widening of BEOG eligibility levels to include middle- as well as lower-income students, the greater funding levels in this and other financial aid programs, and the growing open-access, low-cost community college system, the BEOG program appears to be developing into the foundation of an effective postsecondary education entitlement for American high school graduates.

Eligibility in the program is based largely on financial need, as determined by analyzing applicant-reported family income and asset data according to eligibility formulas developed by the Department of Education and reviewed annually by Congress. Each applicant is assigned an Eligibility Index (EI) used to determine the BEOG award. The EI can be defined as the contribution to postsecondary expenses that may be reasonably expected of an applicant and his or her family for the academic year. An applicant's potential grant amount decreases as the EI rises. Each academic year, Congress specifies an EI level above which applicants are ineligible for a Basic Grant.[2] Controversy over the optimal 12-month period ("base-year") from which to draw the income data for the EI formula prompted the study described in this research report.

Alternative Definitions of Base-Year

Eligibility has always been based on federal income tax data from the calendar year immediately preceding the academic year for which one is applying for aid (the award year). Under this system, therefore, applications cannot be filed before the January immediately preceding the award year. Applicants desiring aid during the 1980-81 academic year, for example, supplied income data from the 1979 federal tax return—or not before January 1980. Recently, members of the financial aid community have proposed using data from *two* years prior (a "prior-year" system) to alleviate some of the timing problems caused by the current BEOG processing and delivery system.[3]

The research reported upon here is part of a larger 1978-79 research project supported by Federal funds from the Department of Health, Education, and Welfare under contract HEW 100-77-0101. The author expresses his appreciation to several people who aided the conceptualization and completion of the research project reported upon here: Joe Vignone and Lucy Medford of the U.S. Office of Education; Gwen Burnett, Mark Heffron, Joe Henry, Keith Jepsen, and Richard Sawyer of the American College Testing Program; John Schneider of the Westinghouse Learning Corporation; and Robert Bryla and Leon Burmeister of the University of Iowa. The views expressed in the manuscript, and any errors it may contain, are those of the author alone, and the content of this publication does not necessarily reflect the endorsement of the Department of Education.

[1]The grants have recently been renamed "Pell Grants" to honor Rhode Island Senator Claiborne Pell, who was highly instrumental in the development of the BEOG Program. For details of the history and current orientations of the BEOG Program, see U.S. Department of Health, Education, and Welfare (1977a).

[2]The relationship between EI level and actual grant amount is generally rather straightforward, but in some cases grants are limited by the cost of the school attended. For further discussions of the relationships between EI, expected family contribution, and actual award level, see U.S. Department of Health, Education, and Welfare (1978).

[3]"Prior-year" system is an imprecise term, but accepted in the student aid administration community; thus, it is the descriptive term used in this manuscript. The prior-year approach (i.e., the use of older income data) represents one of several proposed solutions to the problems in the BEOG system and the student financial aid system in general. Other proposals have included an increased reliance on estimated future income data. For discussion of such proposals and their implications, see U.S. Department of Health, Education, and Welfare (1977b); Finn (1978); and Carnegie Commission on Higher Education (1973).

In concept, all parties involved could benefit from a BEOG eligibility analysis system using income data from two years prior. Applicants could file as early as September or October for the following academic year, and not have to wait until January or later when newer income data became available. Campus financial aid officers would be able to construct more timely and coherent aid packages. Budgeting would be easier and more accurate, and beginning some BEOG application processing in the fall would smooth out the highly seasonal scheduling of labor and machines in the processing system. Overall BEOG program efficiency, in a strict sense of the word, would doubtlessly improve.

A prior-year system might, however, adversely affect the equity of the computed Eligibility Index. Those applicants whose financial situations fluctuate widely over a two-year period could suffer or profit significantly from less accurate eligibility calculations. Sizable fluctuations for significant numbers of applicants would weaken the close link between applicants' financial circumstances and their eligibility for BEOG aid. Such a result would be contrary to the legislated purpose of the Basic Grant award system: to tie the amount of the awards as closely as possible to the demonstrated financial need of the student for the forthcoming academic year (U.S. Department of Health, Education, and Welfare, 1977a). If using prior-year income information significantly underallocated BEOG funds to some prospective students, and thus discouraged them from going on to college, the negative social consequences of the system would be substantial. If using such information significantly *overallocated* funds to certain other students, this would be not only a waste of taxpayer money but also an unfair and unintended windfall to students with improved financial circumstances.

Previous Research

The results of previous research on family income changes do not alleviate these serious concerns about a prior-year system. Bowman (1978) studied differences between prior-year and standard base-year incomes. He found that, in a sample of dependent aid applicants using the College Scholarship Service in the 1974-75 processing year, 55% showed differences greater than $1,500 between prior-year and standard base-year adjusted parental incomes, and only 16% showed differences less than $500. These patterns significantly influenced projected parental contributions toward students' postsecondary education costs. In over half the cases the introduction of prior-year data changed the parental contribution by $250 or more.

The Bowman results highlight the need for sensitivity to inflation factors in any prior-year system. These results also indicate that inflation is not the only source of substantial changes in income: a switch from employment to unemployment or vice versa, job changes, inheritance, capital gain or loss declarations, and year-to-year changes in the economic fortunes of one's business or farm are only some of the factors that can produce significant income instability over time. Under a prior-year approach, therefore, a system for processing applicant appeals regarding their assigned EIs would be heavily used. The current BEOG "supplemental processing system," which allows students with major financial changes over the past year to *estimate* their income for the current year, would likely have to be expanded for increased volume and modified for the lengthened estimation periods.

The results of a recent study by The American College Testing Program (ACT) reinforce these conclusions. ACT, under contract to the Office of Education, studied BEOG applicants who applied for both the 1976-77 academic year and the 1977-78 academic year (ACT, 1978). This research revealed that most reported family incomes changed significantly from one year to the next; second year income was within +5% of first year income for only 23% of the sample. This occurred even though the percent change was a predictable +3.2% and the median percent change was +1% for the total sample. Among individuals, the maximum changes were +4,294% and -2,068%. The dollar range in individual income changes was from -$34,010 to +$30,913. As expected, the income changes among independent (self-supporting) applicants were smaller than those for dependent applicants, but still influential for award levels. The major conclusion of the ACT study was that, while the *average* percentage and dollar changes in income were small (and predictable from national income and inflation statistics), changes in income and ability to pay at the individual level varied widely.

The studies of income fluctuations among aid applicants and their families described above present a clear picture that is supplemented by numerous studies in the more general economics literature. In particular, Ruggles and Ruggles (1977); McCall (1973); and Kohen, Parnes, and Shea (1975) have presented relevant, consistent findings on income stability among large, representative samples of American adults. These results are broadly outlined as follows. Individual income fluctuations are a significant feature of American economic life. In absolute dollar terms, the largest income changes take place among upper middle- and higher-income Americans. In general, however, the changes represent rather minor percentage deviations from the basic income levels of these individuals, whose year-to-year occupational and economic outlook is relatively secure, strong, and predictable. The earnings of lower middle-income and lower-income workers and black workers show the greatest fluctuations in percentage terms, apparently because those workers' incomes are much more sensitive to how the national economy is faring at any given time.[4]

Purpose of the Study

The findings outlined above imply that, under a prior-year system, yearly income fluctuations for middle- and lower-income adult Americans may be large enough to produce, in many cases, eligibility estimates and individual Basic Grant allocations significantly different from those produced under the present system. Nevertheless, because BEOG eligibility formulas were not actually used, these findings only suggest that conclusion; they do not confirm it. Researchers in higher education finance have not previously addressed the critical financial implications of yearly income fluctuations for BEOG program policy.

The results of the research reported herein offer some preliminary answers to this question: *What would less accurate awards from a prior-year BEOG system cost students?* The costs *could* be less than the benefits derived from such a system, benefits such as smoother processing, more coherent aid packaging, and more accurate governmental and institutional budget forecasting. These benefits are not considered here, however. Instead, this study addresses how the proposed change in base-year may adversely affect some needy students' eligibility for BEOG awards while benefiting certain less needy students. The study compares standard base-year Eligibility Indexes with hypothetical prior-year Eligibility Indexes for a large sample of BEOG applicants in order to determine the existence and magnitude of such effects.

Research Design

The students in the study were drawn from all those who applied for Basic Grants nationwide in the application years 1976-77 and 1977-78.[5] Both eligible and ineligible applicants were included. Inclusion criteria were that the student maintained the same dependency status over the two years, received an Eligibility Index (EI) on his or her last transaction with the BEOG processing system, and did not have a BEOG Supplemental Form as the last transaction in either year. These criteria screened from the sample some "unusual" applicants whose grant levels would likely not be based on two-year-old data under an operating prior-year system. The results reported here are for applicants processed normally through the BEOG system existing at the time.

A computer search for certain last digits in Social Security numbers generated a random sample of 20,103 applicants meeting these criteria.[6] This procedure produced data for 13,117 dependent and 6,986 independent applicants. These sample sizes are adequate for generalizing the results of the study to the total BEOG applicant population.

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[4]Findings of higher percentage (i.e., proportional) fluctuation among lower-income workers cannot be dismissed as simply a statistical artifact. Given dollar changes from lower incomes represent larger percentages than the same changes from higher incomes. Proportional change statistics, unlike absolute change statistics, are sensitive to the fact that a drop of, say, $2,000 in income has a greater effect on a poor family than on a rich one. Because they provide important indicators of the relative predictability of income from year to year, proportional change statistics are just as valuable in the analysis of financial stability as absolute change statistics.

[5]The findings reported in this manuscript represent one part of the findings from a larger study undertaken for the Office of Education. The complete details of the sample and findings of that larger study are reported in Hearn et al. (1979).

[6]Unlike some other digits in the Social Security number, the last two are randomly distributed.

To calculate the hypothetical prior-year EIs, 1975 taxable and nontaxable income data from 1976-77 applications were entered into the 1977-78 BEOG system EI calculations, instead of the 1976 income data actually used in 1977-78 processing. Also, 1977-78 nonfinancial and asset data (e.g., parents' household size and net worth) were used, since these would be available at the time the student completed the application form under either the present or prior-year system. Such an approach closely approximates the reality of a prior-year system in action.

Results

Eligibility Index Changes among Dependent Applicants.

The data reported in Table 1 permit the study of the EI changes overall and in different income ranks since applicant data are divided into family income ranks for 1975 Adjusted Gross Income,[7] with each rank subgroup containing approximately 10% of the total sample.[8] These data reveal quite substantial changes in the EIs of dependents under a switch from the standard 1977-78 system to a prior-year system. Changes in EI of more than 250 occurred for 40.3% of the sample, and EI changes of more than 1,000 occurred for 11.2% of the sample. Middle- and higher-income applicants were influenced somewhat more than lower-income applicants by an unadjusted prior-year system.[9] For example, in the three highest income ranks approximately 13% experienced EI losses of over 1,000, and approximately 41% experienced EI losses of over 250. Comparable figures for the three lowest income ranks were 4% and 11% respectively.

One might argue, based on these data, that a prior-year system would affect most dramatically the EI of those applicants who are generally *ineligible under both the standard and prior-year systems*—those whose income levels are consistently too high for eligibility. In order to study changes in eligibility *status* under a change in the base-year for BEOG income data, information was gathered on how many dependent applicants would move from eligible to ineligible and vice versa, while holding constant all factors in the operating system except actual income for 1976 and 1975.[10]

In the analysis reported in Table 2, the 1977-78 eligibility cutoff level of 1,200 was maintained and the prior-year and standard EIs of dependent individuals were compared. A change in eligibility status was observed for 13% of the dependent sample under a change to a prior-year system. As might be expected in an inflationary growth period, there was a greater tendency for people to move from ineligible to eligible than from eligible to ineligible. Nevertheless, 5% of the eligible applicants would have suffered in the change moving from eligible to ineligible.[11]

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[7]A legitimate argument may be made that ranked income categories in the study should have been based on 1976 income instead of 1975 income to inform policymakers more directly as to how higher and lower income students, as defined by the *present* standard system, are affected by the prior-year approach. It was decided, however, that in the case of dependent applicants the two approaches are roughly equivalent in results and, in the case of independent applicants, the classification by 1975 income provides additional information on past labor market participation that is quite valuable in fully understanding the results.

[8]The numbers of students in a rank do not precisely equal 10% in each case because of categorization procedures for students with equal family incomes on the borderlines between ranks. Each rank contains between 8 and 12% of the total dependent sample.

[9]The reader should note that the terms "lower," "higher," and "middle" income ranks are used in this report only in a sample-specific sense. In other words, they refer to a student's family income in relation to that of the other applicants in the sample. Thus, "middle" and "upper" incomes in this sample do not precisely correspond to "middle" and "upper" incomes in the larger society.

[10]One potential concern in generalizing from these results is that since personal income tends, in general, to increase from year to year due to inflation and productivity gains, the EIs under a prior-year system will tend to be lower than those under a standard system, and a higher percentage of the population will be eligible, assuming (as we do here) no other changes in the eligibility analysis formula. There obviously are a number of policy options for meeting such concerns, and these would undoubtedly be considered in the future should further study of prior-year proposals be undertaken. These considerations involve policy determinations outside the scope of the current research, however. Our preferred approach here was to attempt to isolate the relationship between the independent variable (income) and dependent variable (EI) of most interest by avoiding any other adjustments to the existing 1977-78 system.

[11]This 5% estimate for newly ineligible dependent students may be translated into well over 100,000 students experiencing this problem nationwide if a prior-year system were adopted in 1980-81.

TABLE 1

Summary Table for Estimated EI Changes among Dependent Applicants under a Prior-Year System, by Ranked Income Class

(N = 13,117)

1975 Adjusted Gross Income Rank	Median EI Changes: EI Chg.	Median EI Changes: % Chg.	% with EI Gains Greater Than 250	% with EI Losses Greater Than 250	% with EI Changes Greater Than 250	% with EI Gains Greater Than 1,000	% with EI Losses Greater Than 1,000	% with EI Changes Greater Than 1,000
10th ($0 or less)	+0	+0.0	4.2	7.8	12.0	0.5	2.2	2.7
9th ($1 to $1,874)	+0	+0.0	4.8	10.2	15.0	1.0	2.7	3.7
8th ($1,875 to $4,603)	+0	+0.0	7.7	15.3	23.0	0.8	5.7	6.5
7th ($4,604 to $6,648)	+0	+0.0	8.8	21.2	30.0	2.0	5.2	7.2
6th ($6,649 to $8,587)	-4	-1.9	12.3	25.2	37.5	2.1	6.7	8.8
5th ($8,588 to $10,556)	-60	-12.0	15.3	29.5	44.8	2.3	6.6	8.9
4th ($10,557 to $12,762)	-98	-12.8	17.6	35.8	53.4	2.5	9.3	11.8
3rd ($12,763 to $15,216)	-127	-10.7	20.7	40.2	60.9	4.3	11.1	15.4
2nd ($15,217 to $18,794)	-162	-9.0	26.5	44.1	70.6	7.5	14.5	22.0
1st ($18,795 or more)	-37	-1.6	36.7	38.9	75.6	18.3	15.2	33.5
% in Category Overall			14.5	25.8	40.3	3.7	7.5	11.2

Notes. This table summarizes shifts in EI levels when 1976-77 application income data (i.e., 1975 income data) are used instead of later (1977-78 application, 1976 income) data.

The percentages in the "Overall" row at the bottom are for the entire population of 13,117 applicants. Since the income rank subgroups are of different sizes, the averages of the percentages in the columns do not produce the overall percentages.

Approximately 10% of the sample is included in each income rank.

TABLE 2

Changes in Eligibility Status of Dependent Students Due to a Move to a Prior-Year System
(N = 13,117)

		Eligibility Status under a Prior-Year System		
		Eligible$_p$ (EI$_p \leq$ 1,200)	Ineligible$_p$ (EI$_p >$ 1,200)	
Actual Eligibility Status under Standard 1977-78 System	Eligible$_s$ (EI$_s \leq$ 1,200)	a 9,051 (95%/69%)	b 461 (5%/4%)	9,512 (73%)
	Ineligible$_s$ (EI$_s >$ 1,200)	c 1,194 (33%/9%)	d 2,411 (67%/18%)	3,605 (27%)
		10,245 (78%)	2,872 (22%)	13,117 (100%)

Notes. The subscripts $_s$ and $_p$ denote the standard and prior-year systems respectively. For example, EI$_s$ denotes the standard system Eligibility Index, and Eligible$_p$ denotes eligibility under the prior-year system.

Contained in each cell are the numbers of students making that kind of switch. For example, cell a reveals that 9,051 students who were eligible in the standard system remained eligible under a prior-year system. The percentages in the individual cells are in the form (row percent/sample percent). Percentages in the margins are percentages of the total sample. Percentages are rounded.

The data in cells a, b, and c of Table 2 (that is, the cells with federal funding implications) were next examined as separate samples to test further the hypothesis that the prior-year approach would have only minor effects on the eligible or near-eligible BEOG applicants. The data indicate that this hypothesis must be rejected, since for each of these groups, there were substantial changes in EI levels for sizable proportions of applicants. Notably, in the Eligible$_s$/Eligible$_p$ group (cell a), 22.0% showed EI changes of over 250. Overall, these findings clearly reveal that the significant influence of a change to a prior-year approach extends into the solidly lower- and lower middle-income groups which comprised the eligible and near-eligible BEOG dependant-recipient pool in 1977-78.

Eligibility Index Changes among Independent Applicants.

The independent applicant data in Table 3 present a pattern somewhat different from that for dependents. Most important, a higher percentage of independents (17.8%) than dependents (11.2%) showed absolute changes of 1,000 or more in their calculated EIs under a change to a prior-year system, and a higher percentage had gains of over 1,000 in their EIs (9.5%, independent; 3.7%, dependent). In keeping with this pattern is that, of all the 20 independent and dependent ranked income subgroups, the income subgroup most affected by a change to a prior-year system appears to be the independent subgroup with the highest initial incomes (1975 adjusted gross incomes of $7,915 or more). In that subgroup, 43% showed EI changes of over 1,000 and 80.1% showed EI changes of over 250.

Overall, the data suggest that the independent applicants with higher initial incomes tended to show dramatic gains in their EIs under a prior-year system, and therefore would be expected to contribute appreciably more to their college expenses.

TABLE 3

Summary Table for Estimated EI Changes among Independent Applicants under a Prior-Year System, by Ranked Income Class

(N = 6986)

1975 Adjusted Gross Income Rank	Median EI Changes: EI Chg.	Median EI Changes: % Chg.	% with EI Gains Greater Than 250	% with EI Losses Greater Than 250	% with EI Changes Greater Than 250	% with EI Gains Greater Than 1,000	% with EI Losses Greater Than 1,000	% with EI Changes Greater Than 1,000
10th ($0 or less)	+0	+0.0	8.3	9.0	17.3	2.9	3.8	6.7
9th ($0)	+0	+0.0	8.2	10.7	18.9	2.5	4.2	6.7
8th ($0 to $1)	+0	+0.0	9.2	9.9	19.1	3.8	4.2	8.0
7th ($2 to $776)	+0	+0.0	8.9	22.8	31.7	1.7	11.5	13.2
6th ($777 to $1,688)	+0	+0.0	16.7	26.4	43.1	3.3	12.4	15.7
5th ($1,689 to $2,735)	+0	+0.0	29.5	21.4	50.9	8.6	10.3	18.9
4th ($2,736 to $4,127)	+0	+0.0	24.8	20.7	45.5	14.3	8.5	22.8
3rd ($4,128 to $5,669)	+0	+0.0	22.7	23.6	46.3	10.4	11.8	22.2
2nd ($5,670 to $7,914)	+56	+16.3	37.5	22.4	59.9	14.6	9.7	24.3
1st ($7,915 or more)	+547	+165.1	60.5	19.6	80.1	34.4	8.6	43.0
% in Category Overall			22.1	18.3	40.4	9.5	8.3	17.8

Notes. This table summarizes shifts in EI levels when 1976-77 application income data (i.e., 1975 income data) are used instead of later (1977-78 application, 1976 income) data.

The percentages in the "Overall" row at the bottom are for the entire population of 6,986 applicants. Since the income rank subgroups are of different sizes, the averages of the percentages in the columns do not produce the overall percentages.

Approximately 10% of the sample is included in each income rank.

The effects of such a policy change on lower- and middle-income independent applicants[12] would be somewhat less dramatic and would be more balanced between gains and losses, though the effect on individuals could still be sizable.

One facet of the present BEOG system—the length of time it takes the standard BEOG application to reflect the situation of an independent student who was employed full-time before enrolling—is relevant to the pattern of results found here. Such an independent's first BEOG application is based on income from a period prior to college enrollment, often a full year of full-time employment. In the next year, the applicant submits income information for a year that comprised full-time work up until the time of enrollment (in the fall, usually). Only in the third academic year does the application finally reflect income from an entire year as a full-time student. In the first two school years, the independent student's base-year income is likely to be, at worst, appreciably higher than his or her academic year income; and, at best, a questionable indicator of his or her actual financial standing in the academic year.[13]

Under a prior-year system, this problem would be exacerbated, as the data here clearly show. Formerly employed independent students would provide even older income data than before. The period when the eligibility calculations would be based on income data from an actual academic year would become the fourth (and often the final) year of enrollment, instead of the third year. Undoubtedly, many of the independent students in the upper income subgroups of the present study were reporting pre-enrollment income on their 1976-77 BEOG applications. Such applicants would suffer unusually difficult consequences in a move to a prior-year system unless they received some special consideration.

As with the dependent sample, the independent data were examined further to obtain information regarding the effects of a prior-year system on eligibility status. Table 4 presents the results of this further analysis. The total percentage eligible was 84% under both the standard system and the prior-year system, but the prior-year system prompted a change in eligibility status for 15% of the independent sample. These changes were in both directions: not only was there a sizable number of applicants moving from eligible to ineligible (see discussion above), but there was also a striking number of newly declared eligible. Nearly one-half of the originally ineligible independent applicants became eligible under a prior-year system. This suggests that there were many independent applicants who had rising incomes, perhaps due to spouses entering full-time employment.

These data suggest that, for independent applicants, the effects of instituting a prior-year system are not confined to the high income group. In order to examine that possibility further, each of the groups in Table 4 except the $\text{Ineligible}_S/\text{Ineligible}_P$ group were studied in more detail. As with dependents, the hypothesis of minimal prior-year effects on the eligible and near-eligible applicant population must be rejected since each group contained a sizable proportion of applicants with substantial changes in EI. Most importantly, in the $\text{Eligible}_S/\text{Eligible}_P$ group, 25.0% had EI changes of over 250.

Summary and Discussion

The findings indicate that there would be significant changes in eligibility determinations for BEOG if a prior-year system was adopted. The use of prior-year income, instead of the standard base-year income, resulted in substantial EI changes for many individual applicants. Among both dependents and independents, slightly over 40% showed EI changes of over 250 under a hypothetical prior-year system. Although these large changes in EI were most frequent in the higher income ranges, they occurred across the income spectrum and produced significant numbers of changes in eligibility status, both from ineligible to eligible and vice versa. It seems reasonable to conclude that prior-

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[12] The terms "lower" and "middle" income are used here to denote income standing relative to other independent students in the sample.

[13] Independents who formerly worked full-time can use the BEOG Supplemental form on their first transaction in the system, a tactic that would preclude the problem described here. For whatever reason, however, it appears that too few formerly-employed independents use the supplemental system. This pattern of behavior is evidenced in the present study by the substantial numbers of independents with previous incomes of over $6,000. When one recalls that none of these independents utilized the supplemental system (a sample selection criterion) and assumes that most of these high incomes are unlikely to continue while the individual is a full-time undergraduate, one must conclude that many students are not taking full advantage of the supplemental system.

TABLE 4

Changes in Eligibility Status of Independent Students Due to a Move to a Prior-Year System

(N = 6,986)

		Eligibility Status under a Prior-Year System		
		Eligible$_p$ ($EI_p \leq 1{,}200$)	Ineligible$_p$ ($EI_p > 1{,}200$)	
Actual Eligibility Status under Standard 1977-78 System	Eligible$_s$ ($EI_s \leq 1{,}200$)	a 5,351 (91%/77%)	b 522 (9%/7%)	5,873 (84%)
	Ineligible$_s$ ($EI_s > 1{,}200$)	c 543 (49%/8%)	d 570 (51%/8%)	1,113 (16%)
		5,894 (84%)	1,092 (16%)	6,986 (100%)

Notes. The subscripts $_s$ and $_p$ denote the standard and prior-year systems respectively. For example, EI_s denotes the standard system Eligibility Index, and Eligible$_p$ denotes eligibility under the prior-year system.

Contained in each cell are the numbers of students making that kind of switch. For example, cell a reveals that 5,351 students who were eligible in the standard system remained eligible under a prior-year system. The percentages in the individual cells are in the form (row percent/sample percent). Percentages in the margins are percentages of the total sample. Percentages are rounded.

year data produce less accurate Els.[14]

The implications of prior-year data for independents and for dependents are somewhat different. Independent applicants' incomes (and thus their Els) tend to be somewhat less stable than those of dependent applicants' parents, due to more frequent changes in labor market participation. Whereas 17.8% of the independents showed El changes of over 1,000, only 11.2% of the dependents showed such changes. Independents were also more likely to show major *rises* in El under a change to a prior-year system, which would mean lower award levels. Only 3.6% of the dependents had a gain in El over 1,000, whereas 9.5% of the independents showed such a gain. In addition, among all originally eligible applicants, greater proportions of independents than dependents became ineligible under a prior-year system, and among all originally ineligible applicants, greater proportions of independents than dependents became eligible under a prior-year system.

Three concerns urge caution in inferring directly from the results of the present study to a true prior-year system. First, the applicants studied may not precisely reflect present-day BEOG applicants. For example, the specific years chosen for study may have unusual characteristics, and the sample does not include those who were first-time applicants in 1977-78 or those who applied to the program only

[14] A related aspect of the prior-year proposal should be mentioned here as well: unless certain controls were built in, instituting a prior-year system would mean that those with improving financial positions would receive more money, and those with declining financial positions would receive less money. At the time of policy change, students would get a double dose of their current economic fortunes: those getting richer would receive a bonus in a lower El, while those getting poorer would be penalized further by a higher El.

one year. In addition, the Middle-Income Student Assistance Act greatly expands the income ranges of the BEOG applicant pool.

Second, under any prior-year system, applicants would be recalling or copying income data from an earlier time period than the applicants in the present study, who were recalling or copying only the most recent income data. In other words, the applicants in the present study applied under the current system and, for the purposes of the analysis, their year-to-year data were matched backwards via computerized records. Under a true prior-year system, however, the applicant, rather than the computer, would provide the older income data. If prior-year data are indeed subject to more error, a prior-year system might require more validation than was undertaken for the present research data.

Third, certain changes in eligibility formulas, such as inflation adjustments, would probably be made under a true prior-year system. The calculation of "prior-year EIs" for comparison to the standard EIs, therefore, provides only a tentative view of the implications of using prior-year data.

Nevertheless, the results are significant. Common sense and past research suggested to us before our study began that one-year old data are more accurate predictors of current financial standing than two-year-old data. The study itself reveals this is not a trivial concern: the year-to-year financial changes for the families of the individual applicants studied here are substantial, regardless of whether one examines proportional income changes, dollar income changes, or Eligibility Index changes. Consequently, a switch to a prior-year system would produce quite dramatic changes in actual grant awards to significant numbers of students. Some of the less accurate awards would be in favor of the student but at the expense of the taxpayer. Others would produce financial savings for the government at the extreme risk of discouraging lower-income students from pursuing as much postsecondary education as desired. Without the simultaneous initiation of new procedures to counteract these potentially negative effects, a prior-year system might very well work against the equitable dispersal of federal funds which assure a postsecondary access for disadvantaged students.

REFERENCES

The American College Testing Program. *A study of the changes in total income of Basic Grants applicants from 1976-77 to 1977-78.* Report prepared for the U.S. Office of Education under contract HEW 100-77-0101. Iowa City, Iowa: Author, 1978.

Bowman, J. C. *The impact of time of reporting on comparability of income and contribution estimates.* A report prepared for the Uniform Methodology Subcommittee of the Coalition for Need Analysis. Unpublished mimeo, 1978.

Carnegie Commission on Higher Education. *Who pays, who benefits, who should pay?* New York: McGraw-Hill, 1973.

Finn, C. E. *Scholars, dollars and bureaucrats.* Washington, D.C.: Brookings Institution, 1978.

Hearn, J. C., Burnett, G., Jepsen, K., & Burmeister, L. *Financial stability among Basic Grant applicants: A study of the implications of a prior-year income basis for the BEOG Eligibility Index.* Report prepared for the U.S. Office of Education under contract HEW 100-77-0101. Iowa City, Iowa: The American College Testing Program, 1979.

Kohen, A. I., Parnes, H. S., & Shea, J. R. *Income instability among young and middle-aged men.* In James D. Smith (Ed.), *The personal distribution of income and wealth.* New York: Columbia University Press for the National Bureau of Economic Research, 1975.

McCall, J. J. *Income mobility, racial discrimination, and economic growth.* Lexington, Mass.: Heath, 1973.

Ruggles, N. D., & Ruggles, R. The anatomy of earnings behavior. In F. Thomas Juster (Ed.), *The distribution of economic well-being: Studies in income and wealth* (Vol. 41), the Conference on Research in Income and Wealth. Cambridge, Mass.: Balinger Publishing Company for the National Bureau of Economic Research, 1977.

U.S. Department of Health, Education, and Welfare, Office of Education, Office of Planning, Budgeting, and Evaluation. *Annual evaluation report on programs administered by the U.S. Office of Education, fiscal year, 1977.* Washington, D.C.: Author, 1977a.

U.S. Department of Health, Education, and Welfare. *Recommendations for improved management of the federal student aid programs: A report to the secretary by the Student Financial Assistance Study Group, June, 1977.* Washington, D.C.: Author, 1977b.

U.S. Department of Health, Education, and Welfare. *1978-79 Determination of Eligibility Index, Basic Educational Opportunity Grant Program.* Washington, D.C.: Author, 1978.