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Jennie Hay Woo

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by Jennie Hay Woo

In the future, California and other fast-growing states will not receive their fair share of campus-based financial aid. The money is allocated on the basis of a formula using a base guarantee, which effectively locks funding allocations into a 1985 distribution patterns. States such as California which face enormous increases of needy students will be at a distinct disadvantage if the formula is not changed.

The federal campus-based financial aid programs, along with the Pell Grant Program constitute the basic support at the federal level for low-income students to attend college. In 1990 almost $1.2 billion was allocated to students across the United States through campus-based programs. These programs are unusual because they do not allocate funds directly to the eligible students. Instead, funds are allocated to campuses where they are disbursed to students in accordance with federal rules. The money is allocated to schools by the federal government on the basis of a standard formula. On close examination, this formula is insensitive to demographic changes. In effect, it preserves the status quo in funding allocations. Institutions, and in turn states, that will undergo dramatic increases in college enrollment could find themselves at a disadvantage in funding for these programs.

California stands out as a magnification of the distortions in the allocation of campus-based funds. California has the largest college-age population in the country (in 1990 one out of every nine people aged 18 through 24 lived in California). It is also one of the fastest growing of all the states. The effect on California's institutions of higher learning will be profound. If California maintains its current higher education enrollment rate of 62 percent, its colleges and universities will absorb enormous numbers of new students in the next ten to fifteen years. Examining projections of future high school graduates reveals the growth of California's prospective student population. Figure One shows the twelve states with the largest numbers of high school graduates for academic year 1987-88 and their projected number of graduates in the year 2003-04. In 1987-88, California had 270,000 graduates—38 percent more than the second largest state, New York. By 2003-04, California will have 410,000 high school graduates, nearly double the number of the next largest state, Texas. California will experience a 52 percent increase in high school graduates over this time span. By contrast, New York, as well as many northeastern and mid-western states, will have at least five percent fewer high school graduates.

Aside from sheer numbers, California's potential college enrollees also have another characteristic that represents a magnification of

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other fast-growing states. This is its ethnic composition. In 1985, California's total population aged 20 to 24 (roughly undergraduate age) was 43 percent minority, with 35 percent Black and Hispanic youth. By 2005, California's college-age population will be nearly two-thirds minority, and half will be Black or Hispanic, according to the state's Department of Finance (1988). The Center for Continuing Study of the California Economy (1982) projects California's total population to be at least 32 percent Black and Hispanic by 2000, while that of the United States to be only 21 percent Black and Hispanic.

These ethnic changes have broad implications for the financing of higher education because minorities tend to be from low-income backgrounds and rely more heavily on financial aid to attend college. Work by Hansen and Stampen (1987) and Stampen and Fenske (1988) provide evidence that the cutbacks in financial aid in the late 1970's, particularly grants to the lowest income applicants, are partly responsible for the reductions in minority enrollment nationwide. Minority enrollment in California is already alarmingly low. In 1986, California's higher education enrollment was 18 percent Black and Hispanic, compared to a college-age population that was roughly 35 percent Black and Hispanic. It will require a great deal of effort just to maintain current minority participation levels, let alone absorb the increases in population.

The major implications of these trends for financial aid in states such as California are substantial. Funds will have to grow at a fast pace just to maintain the current ratio of enrollment to population. The type of aid will have to be geared towards large numbers of low-income applicants, many of them minorities, who may be better served by grants and work-study, than by loans. The financial aid system will have to be flexible enough to respond to great changes caused by rapid growth. New institutions will need to be created, new branches of universities founded, and levels of aid increased.

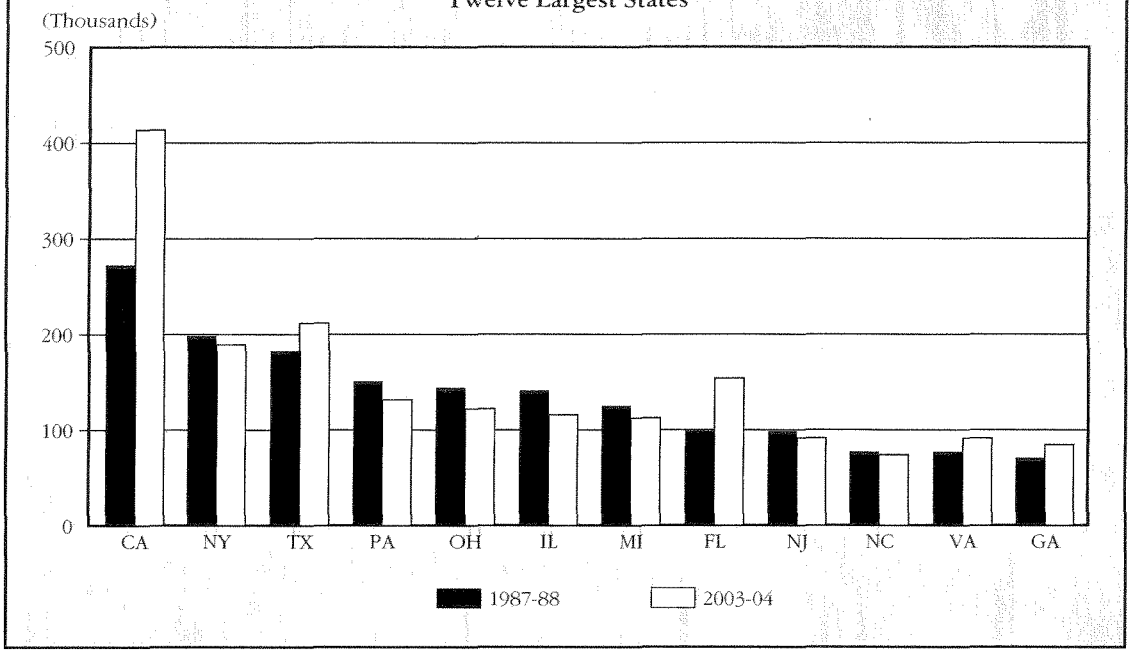
In this light, this article will examine three federal financial aid programs that are designated in Title IV of the Higher Education Act of 1965: the Supplemental Educational Opportunity Grant (SEOG), College Work-Study (CWS), and Perkins Loan (collectively referred to as the federal campus-based programs). It will examine whether states such as California are getting an equitable share of campus-based funds and what the future prospects are for it and other fast growing states.

The States' Relative Share

The Current Share of Campus-Based Funds

The federal money for the campus-based programs is allocated by the Department of Education on the basis of information that every participating institution must provide. This information is used in a legislatively-mandated formula that determines the ultimate allocation that each institution receives for each program. The most salient feature of the formula is that it bases an institution's allocation principally on what it received and used in 1985. This is known as the base guarantee. Any money that is left after this allocation to all participat-

FIGURE 1
1987-88 & 2003-04 High School Graduates
Twelve Largest States



ing institutions is distributed partly on the basis of a calculated estimate of "aggregate student need" and partly among all institutions on a pro rata basis.

For the campus-based programs, as with most federal programs, there are not enough funds to meet the demand. Students virtually never receive as much aid as the need analysis system indicates is necessary, and institutions are unable to receive the full amount of funds requested. There is always a shortfall that is met by some combination of financial aid from other sources (state or local), family contributions, and student earnings or borrowing. The shortage of funds makes the question of fairness in distribution more acute.

Because the system is predicated on meeting needs, the fairest allocation would be one where each institution, and therefore each state, received the same percentage of its need. The Department of Education acknowledges this by calculating a "fair share" allocation for each state that is a constant percentage of each state's need figure. However, the fair share allocation is employed in allocating less than ten percent of total funds; over 90 percent of the funds are allocated on the basis of the base guarantee. This article will examine the states' relative share by comparing how much each state is actually allocated through the current formula, with how much they would have been allocated if all of the funds were instead distributed on the "fair share" basis.

Table One shows the financial need, "fair share," and the actual funding allocation of all three campus-based programs for all the states. It also shows the ratio of funding allocation to the fair share amount. The financial need is determined from information supplied by every institution which applies. The "fair share" is a constant percentage of that need for each institution. In 1990-91 it was five percent of need for the SEOG, seven percent for CWS, and two percent for the Perkins Loan Program.

According to Table One, states that receive funding much greater than their fair share, due to the base guarantee, are mostly smaller states such as Alaska and Hawaii. The largest states in this group are Massachusetts, Wisconsin, Washington and New Jersey. The states that receive less than their fair share, because of small base guarantees are New York, Pennsylvania, Illinois, Ohio, and Indiana. Several large states receive funding almost equal to their fair share probably because of large base guarantees and fair share increases (there were no such increases for the Perkins program for the 1990-91 year). These states are California, Florida and Texas. This picture may change in the future, since base guarantees are only very weakly based on demographic change.

Projections of Future Allocations

The implications of demographic changes for future campus-based funding are explored in a set of projections. The funding allocations for one campus-based program, SEOG, are projected to 2010 for all the states. These funding allocations are for "fair share" allocations—amounts that are a fixed percentage of need and would be allocated if there were no base guarantee. The projections are done on the basis of population projections for 18-to-24-year-olds done by the Bureau of the Census. The allocation projections are then compared to the base guarantee allocations. If the base guarantee were to remain in effect, allocations would not differ by much in future years, so these figures can be considered projections as well.

It is admittedly difficult to make reliable projections of future allocations. These projections assume that there are no relative changes in tuition or living costs between states. They also assume that the income distribution of financial aid applicants will stay constant both between and within states, a rather unlikely possibility. California, for example, expects a large demographic increase in minority students who tend to rely more heavily on financial aid. California, New York, and Texas receive an enormous proportion of new immigrants, who are also more likely to seek financial aid to attend college. Finally, the projections assume no change in the numbers of financial aid applicants for each state except through demographic change. This may be very unrealistic if a state has colleges and universities that draw many students from other states. For example, the young population of Massachusetts is expected to shrink by 13.4 percent but that state draws many students (and thus financial aid applicants) from out-of-state. Also, older age groups may expand their enrollment in higher education.

Nonetheless, those projections were made because demo-

TABLE 1
Campus-Based Fair Share Allocations 1990-91

(In thousands of dollars)

State	Total Need	Total Fair Share	Total Funding	Funding as % of Fair Share
Alabama	317,001	16,445	20,818	126.6%
Alaska	11,142	631	956	151.5
Arizona	308,356	15,653	14,595	93.2
Arkansas	191,049	9,908	10,716	108.2
California	2,192,288	112,343	111,999	99.7
Colorado	374,685	19,268	15,300	79.4
Connecticut	269,113	13,506	14,428	106.8
Delaware	47,648	2,357	2,359	100.1
DC	306,870	15,367	9,438	61.4
Florida	732,028	38,389	35,601	92.7
Georgia	447,212	22,813	21,848	95.8
Hawaii	33,375	1,621	3,527	217.6
Idaho	58,444	2,847	3,880	136.3
Illinois	1,192,576	60,502	49,023	81.0
Indiana	537,849	27,547	23,636	85.8
Iowa	424,602	21,386	17,115	80.0
Kansas	202,114	10,175	11,993	117.9
Kentucky	312,484	15,027	15,705	104.5
Louisiana	437,894	21,802	19,535	89.6
Maine	99,223	4,949	13,885	210.0
Maryland	250,578	12,546	18,325	146.1
Massachusetts	1,061,683	52,944	64,111	121.1
Michigan	816,338	42,305	42,155	99.6
Minnesota	509,885	26,574	27,995	105.3
Mississippi	233,321	11,919	17,230	144.6
Missouri	513,555	25,939	23,434	90.3
Montana	64,934	3,322	4,408	132.7
Nebraska	160,631	8,142	8,393	103.1
Nevada	32,331	1,628	1,982	121.7
New Hampshire	111,516	5,564	9,911	178.1
New Jersey	393,141	20,124	24,688	122.7
New Mexico	116,654	5,983	8,916	149.0
New York	2,653,902	135,453	98,566	72.8
North Carolina	408,269	20,620	28,636	138.9
North Dakota	85,653	4,236	5,677	134.0
Ohio	1,072,168	55,024	46,714	84.9
Oklahoma	312,420	15,698	14,776	94.1
Oregon	273,452	13,541	20,988	155.0
Pennsylvania	1,498,720	76,471	63,812	83.4
Rhode Island	151,882	7,886	10,131	128.5
South Carolina	230,220	12,110	15,665	129.4
South Dakota	87,481	4,362	6,857	157.2
Tennessee	441,659	22,192	21,041	94.8
Texas	1,200,796	62,148	62,447	100.5
Utah	121,609	6,064	7,726	127.4
Vermont	97,019	5,003	9,789	195.7
Virginia	451,804	23,469	23,018	98.1
Washington	374,040	19,267	25,468	132.2
West Virginia	148,232	7,318	9,579	130.9
Wisconsin	456,456	23,723	31,023	130.8
Wyoming	40,801	2,050	1,628	79.4
United States	23,388,845	1,193,498	1,193,495	100.0%

Source: Dept. of Education, March 1990

TABLE 2
Projections of Fair Share SEOG Allocations 1988–2010

(In thousands of dollars)

State	% Change in Pop. 88-2010	88 SEOG Fair Share	SEOG FS Change by Change	88 SEOG Base Guarantee
Alabama	0.9 %	5,556	5,605	6,400
Alaska	6.5	169	179	192
Arizona	28.8	4,858	6,258	5,446
Arkansas	−6.6	2,743	2,561	2,677
California	26.7	32,981	41,793	39,903
Colorado	2.0	4,864	4,959	4,905
Connecticut	−10.1	4,901	4,403	5,664
Delaware	5.3	914	963	966
DC	0.0	4,400	4,400	2,801
Florida	15.5	12,716	14,682	11,941
Georgia	17.9	6,918	8,156	6,463
Hawaii	30.5	411	537	1,300
Idaho	−1.0	692	685	1,322
Illinois	−7.2	21,363	19,824	17,639
Indiana	−6.3	9,520	8,919	8,267
Iowa	−21.0	7,103	5,612	5,674
Kansas	3.1	3,622	3,732	4,061
Kentucky	−12.1	5,781	5,084	4,302
Louisiana	−17.1	5,967	4,949	4,842
Maine	1.5	1,876	1,905	5,777
Maryland	4.6	4,634	4,847	6,598
Massachusetts	−13.4	19,314	16,728	22,574
Michigan	−6.6	12,719	11,875	15,052
Minnesota	−1.3	9,411	9,289	10,968
Mississippi	−6.6	4,623	4,319	5,381
Missouri	−0.6	8,773	8,724	7,123
Montana	−17.3	774	640	1,097
Nebraska	−11.2	2,427	2,155	2,729
Nevada	42.1	306	434	647
New Hampshire	17.9	2,437	2,873	3,690
New Jersey	−10.1	8,649	7,774	9,019
New Mexico	9.8	1,545	1,696	2,692
New York	−17.1	53,082	44,007	31,795
North Carolina	8.7	1,369	1,488	9,727
North Dakota	−17.8	20,927	17,201	2,327
Ohio	−10.2	20,927	18,792	15,515
Oklahoma	−19.1	3,510	2,838	4,428
Oregon	10.1	3,786	4,170	8,175
Pennsylvania	−13.3	32,502	38,179	23,492
Rhode Island	−5.4	3,543	3,353	3,918
South Carolina	5.4	4,646	4,896	4,840
South Dakota	−4.0	1,861	1,787	2,463
Tennessee	4.3	6,355	6,628	6,863
Texas	2.2	18,550	18,952	20,061
Utah	27.2	978	1,243	2,484
Vermont	0.0	2,596	2,596	4,123
Virginia	8.2	7,975	8,628	7,393
Washington	19.1	5,023	5,984	9,968
West Virginia	−30.2	2,557	1,785	3,030
Wisconsin	−8.9	8,539	7,781	12,949
Wyoming	−17.6	523	431	569
United States	1.0 %	408,415	412,566	408,415

Applicants '86: from FISAP data, Dept. of Education, 1986-87.
Population 18-24 yrs: Projected State Population by Age and Sex, Series C, U.S. Bureau of the Census, Population Division, Population Projection Branch.
SEOG Allocations: U.S. Dept. of Education, 1988-89.

graphic changes alone are significant enough to cause major shifts in the need for financial aid. The campus-based formula, with its base guarantees, is not sensitive to these shifts.

The projections are shown in Table Two. It is apparent that fast growing states such as Arizona, Florida, Georgia, and California will outgrow their base guarantee. Other fast-growing states, however, have such large base guarantees that they will not reach that level by 2010 with their fair share. These states however (Hawaii, Oregon, New Hampshire, Utah and Washington) have small populations. Another group of states such as Louisiana, New York, Iowa, Montana, and Oklahoma are expected to decrease in population, and while they do not get their fair share now, their fair share will decrease anyway. Several states, among them Massachusetts, New Jersey and West Virginia have very large base guarantees. Their shrinking populations will probably cause the gap between base guarantee and fair share to widen.

Overall, institutions in the fast growing states led by California would lose if the base guarantee remained in effect because their fair share would exceed their base guarantee. Institutions in states with decreasing populations (New York, Pennsylvania, Ohio, and Illinois) also lose with the base guarantee because their current base guarantees are very low to begin with. Michigan, Massachusetts, and New Jersey institutions would gain if the base guarantees remained because they have large base guarantees, and their populations of young people are expected to shrink or in the case of Texas, to grow quite slowly.

Future Financial Aid Need in California

To capture more accurately the likely demographic changes that might occur in the fast-growing states, another SEOG projection was done for California only. California was used because it is both a reflection and a magnification of the demographic trends that the fast-growing states of the South and West will face in the next twenty years. California has very good data for making these projections. It has detailed projections of high school graduates by ethnicity from the California Department of Finance (1990). The Student Expenses and Resources Survey or SEARS (California Student Aid Commission, 1989) has a breakdown of financial aid applicants by ethnicity, income category, and dependent/independent status. With these two sources, projections of aid applicants by ethnicity and income could be made for the year 2010 that reflected both the large increase in minorities (especially Hispanic, and Asian) and their likely concentrations in the lower income categories. The projections made the following assumptions:

1) There would be no future change in the tuition figures from which need is calculated.

2) All monetary figures were done in 1989 dollars, to control for inflation. Expected family contribution, cost of living, cost of supplies, and incomes were assumed to stay constant in real terms.

3) The SEOG appropriation, Pell amounts, and SSIG were assumed to be the same as in the 1990-91 award year.

4) Number and income distribution of aid applicants were assumed to change only due to ethnic shifts and demographic projections.

5) The Department of Finance projections were of high school graduates up to 2006 and the SEARS distribution for financial aid applicants did not include community colleges or proprietary schools. This makes the Department of Finance population somewhat lower, and the SEARS sample somewhat higher in average income than the campus-based aid applicants. These differences were partially controlled for by using only the relationships between ethnic groups in those samples rather than between ethnicity and other variables.

The projections of fair share for the state of California for the year 2010 are shown in Table Three. The need projections as described above were in turn used to estimate fair share by taking the state's share of total SEOG allocations as determined by its share of total national SEOG need. Since California was projected to have 13.5 percent of the total national SEOG need, it was projected to get 13.5 percent of the SEOG allocations. If all the assumptions are reasonable, then Table Three shows California's estimated fair share would rise from $41 million to almost $62 million by 2010. California's base guarantee in 1990 was $40 million, and its actual allocation was $45 million due to some pro rata and fair share increases. If the appropriations do not increase, as is likely in the current budget climate, the base guarantee will determine most of the allocations, and California will receive significantly less than its fair share by the end of two more decades. This projection is quite different from the less sophisticated estimate of Table Two, and shows California to be an extreme version of the other states. It would indicate that the fair share could be 150 percent of the base guarantee for California, while it could be 138 percent for New York, 123 percent for Florida, and only 94 percent for Texas. Given how large California is, this represents an enormous shortfall in student aid funds.

How Campus-Based Funds Are Allocated

The federal campus-based funds are allocated to eligible institutions according to a formula that was most recently updated in the 1986 Amendments to the Higher Education Act of 1965. It consists of three parts.

TABLE 3
California Projections of SEOG Fair Share Allocations

(In thousands of dollars)

Year	Base Guarantee	Total Need	Fair Share
1990-91	40,655	663,455	41,952
2010	—	975,409	61,678

Source: Cal. State Dept. of Finance, 1990 and Cal. Student Aid Commission, 1989

The Base Guarantee

The first and by far the most important part of the formula, is the base guarantee. Each eligible institution is first allocated 100 percent of what it received and used in fiscal year 1985. New institutions would receive the greater of $5,000 or 90 percent of what a comparable institution received.

If the Congressional appropriations for the program in a given year are not enough to cover the 1985 funding levels, allocations are proportionately reduced for existing institutions. New institutions that participated only after 1985 would not receive any allocations.

The formula is biased toward maintaining 1985 funding levels. Institutions that have been founded since then, or joined the program after 1985, are at a disadvantage. Also, institutions that have expanded significantly since then are discriminated against, because they cannot get greater allocations than what they received in 1985.

"It will require a great deal of effort just to maintain current minority participation levels, let alone absorb the increases in population."

Actually, the 1985 levels are themselves biased toward an even older level. At their inception, the campus-based program funds were allocated between states on the basis of a formula using demographic characteristics. The states, however, used regional review panels to distribute the funds among institutions. This meant that the process in execution favored the schools that had high "grantsmanship" ability (U.S. Department of Health, Education, and Welfare, 1977). Sandler (1981) investigated the SEOG state allotment formula that preceded the 1980 reforms. By comparing state allotments with state financial need, he found inequities in the distribution of funds between states. The 1980 Reauthorization of the Higher Education Act attempted to make the process more objective by relying exclusively on formulae. A Panel of Experts was convened in 1979 to examine these questions. It recommended that a conditional guarantee (or hold harmless) provision be included to prevent "any major dislocation of funds for students or institutions" (U.S. Department of Health, Education, and Welfare, 1979). However, this was seen as a temporary measure. The panel recommended that there be a gradual shift to a formula that was entirely based on fair share calculations. It was felt that this would be more objective and more equitable.

This proposed shift never occurred. From 1980 to 1985, the formula allocated money according to a 1980 base year. In 1985 the formula was amended and the base year was updated to 1985. However, since the 1985 allocations were based on 1980 levels, the allocations did not change significantly. The only difference was that any pro rata and fair share increases given to institutions in fiscal year 1985 would now be considered part of the base guarantee. Institutions that had expanded from 1980 to 1985 could only receive the maximum of what they had spent previously, and no more. Institutions that had contracted in size received less because they spent less. Thus the formula captures any reductions in spending between 1980 and 1985 through the base guarantee, but it does not capture any expansion. In effect, the levels and the distribution have been mostly frozen since 1980.

Pro Rata and Fair Share Increases

Any money left over after the base guarantee has been fulfilled is divided into two parts. Twenty-five percent is allocated proportionately in exactly the same ratio as the base guarantee. This is called the pro rata increase. It thus increases the base guarantee allocation but does not change the distribution in any way.

The other seventy-five percent of any leftover money is allocated according to fair share. It was this calculation of need that was meant to determine all allocations, eventually. Fair share is based on a formula estimation of student need that uses data reported in the annual Fiscal Operations Reports (FISAPs) turned in by institutions. In fact, this is the principal place where data from the FISAP forms is used in the formula aside from the default penalty reduction factor and several general parameters. In these reports, institutions are asked to submit the number of eligible aid applicants by dependent status, undergraduate or graduate status, and income level. "Eligible applicants" are simply regular students who have met citizenship and residency requirements, applied for financial aid, and submitted all information required to do a need analysis. From this matrix of applicants by income, from total revenues from tuition, and fees, and from total enrollment, an aggregate need figure is computed for each institution.Need is defined as the number of eligible students in each income category multiplied by 75 percent of the cost of attendance (25 percent for CWS, and Perkins). From this product is subtracted an expected family contribution amount specific to each income category. This is how much the family is expected to contribute to the student's education. It is derived from averaging the results of student need analysis (currently the Congressional Methodology) done by the College Scholarship Service (CSS) and the American College Testing Program (ACT). The family contribution figures used in the campus-based allocation formula do not, however, take into account other factors besides income, such as number of dependents, assets or other expenses. The resulting estimate of student need is then reduced by calculating an institution's "fair share" of what money is actually allocated. This is its share of the total need of all institutions multiplied by the year's actual allocation. It is usually equal to between 5 and 10 percent of the institution's total need figure. An institution's fair share increase is then a proportion of the leftover money that represents its share of all the need for all institutions that is not met by the base guarantee. This is always only a small fraction of an institution's fair share.

"Students virtually never receive as much aid as the need analysis system indicates is necessary."

The pro rata and fair share increases involve only a tiny fraction of total allocations. In 1990-91 there was no leftover money for the Perkins Loans. For the CWS Program, the leftover money constituted only 3.3 percent of the total and for the SEOG Program it was 10 percent.

The Important Parameters of the Formula

To examine more closely the effects of the various parameters in the formula requires analysis at the institutional level. This is because all aspects of the formula are based purely on institutional characteris-

tics. Not since 1985 has there been any element that was based on state level parameters. Thus the formula does not cause states to directly compete for funds—but rather all institutions nation-wide compete with each other for funds. In any particular state institutions are found that have large base guarantees that exceed their fair share and others that have disproportionately smaller ones. This article examines the case of eleven institutions—all in the state of California where the data was available. They represent a microcosm of the sizes and types of institutions found in the country. Table Four shows the salient parameters that were used in the process of calculating funding allocations for these institutions. The tuition and fees shown in this table, for example, were the figures used in the formula to calculate need, not the actual tuition and fees that students pay. The calculations in this table are done only for the SEOG program. Since the formulae for the other two programs are very similar, the same conclusions would hold. From these figures the most important parameters of the current formula can be seen.

The Base Guarantee

The first, and by far the most important, parameter is the base guarantee. It appears to be quite loosely related to the other characteristics such as number of students, tuition or undergraduate need (SEOG is strictly an undergraduate program). In fact, the size of the base guarantee is probably somewhat related to how aggressive or talented the financial aid office was in that institution before 1978, when campus-based aid was allocated, in part, on the basis of subjective panels. The only other factor is that institutions that were founded or began the program after 1985 might be disproportionately lower because the base guarantee doesn't grow.

The rest of the parameters to be discussed will concern those relating to the calculation of the fair share using the examples in Table Four. If the base guarantee were removed these would become quite crucial.

TABLE 4
Examples of SEOG Formula Awards in California—1990-91

Institution Number	Segment	Tuition and Fees	Undergrad Enrollment	Financial Aid Applicants	Total Ugrad Need	Fair Share	Base Guarantee
1	Public 4-year	2,090	9,700	7,332	12,605,066	566,454	379,333
2	Public 4-year	1,960	29,200	9,271	17,093,383	525,830	1,527,173
3	Public 4-year	458	8,900	1,524	2,531,462	63,980	224,806
4	Public 4-year	606	8,700	2,197	3,703,980	112,210	144,036
5	Public 4-year	687	31,800	7,520	11,913,429	393,468	551,008
6	Public 4-year	0	500	0	0	0	17,820
7	Private 4-year	11,155	18,000	7,271	46,524,085	2,602,081	1,283,200
8	Public 2-year	80	3,500	2,227	5,574,799	219,016	468,625
9	Public 2-year	154	19,100	1,868	3,446,911	147,522	71,345
10	Public 2-year	44	20,600	2,074	3,771,950	166,025	262,670
11	Proprietary	4,495	800	440	2,268,420	129,980	17,506

Source: FISAP and Dept. of Education Data, 1989.

Tuition

Tuition is a critical factor, as it is in most financial aid calculations. Institution #7 has fewer financial aid applicants than Institution #2, yet its need is about three times as large due to its tuition. The public 2-year schools (community colleges) have very low tuition, so that even with many poor students, their need is very low. The formula may also cause the tuition to be distorted downwards for some schools. The formula calculates average undergraduate tuition and fees by taking total revenue from undergraduate tuition and fees, and dividing by total enrollment. This is meant to correct for all the different fees faced by students taking different course loads. However, in schools where there is a large difference in the part time/full time ratio for *financial aid applicants* as opposed to *enrolled students,* there could be a distortion. In community colleges there is a large percentage of part-time students but they are more likely to be casual students, taking one or two courses, and not applying for financial aid. However, their large numbers causes the average tuition to be reduced. This smaller tuition amount is then used to calculate need for the financial aid applicants who are more likely to be full-time students who actually must pay the full fee. For example, Institution #4 has 34 percent part time students, Institution #3 has 56 percent part time, and Institution #10 has 78 percent part time. In each of these cases, the effective average tuition used by the formula is significantly below regular full-time tuition that averages $815 at these public 4-year schools and $100 at the community colleges.

"The 1980 Reauthorization of the Higher Education Act attempted to make the process more objective by relying exclusively on formulae."

Living Costs and Other Expenses

The standard living expense used in the need formula is three-fourths of the Pell Grant family size offset for a single independent student. It is used for a nine-month period and works out to the paltry figure of $442 per month. Books and supplies are set arbitrarily at the flat amount of $450. The formula further reduces the cost figure by 25 percent for SEOG, and by 75 percent for CWS and Perkins. Thus, the need figure does not take into account cost differences among institutions, except for tuition. It also doesn't count assets or expenses in its expected family contribution figures. The result is that costs of attendance are almost negated as a factor in determining need. This is true equally for all institutions but it can be considered somewhat inequitable because living costs are not the same in all institutions, and it causes tuition to have disproportionate weight in determining need. These are minor distortions, however.

Applicants by Income Category

This is the heart of need determination. More and poorer applicants generate greater need figures. Institution #2 has 28 percent of its applicants under $12,000 while Institution #1 has only 13 percent, so Institution #2 has higher need per applicant. Institution #10, even with its very low average tuition figure (due to many part-time students) has a higher need than Institution #9 with the same number of applicants, because Institution #10's applicants are poorer. In

general, this parameter is very equitable in that it causes poorer students to show higher need.

The Pell Effect

An institution's need in SEOG is defined as student need minus what that institution receives from the other grant aid programs in Title IV—the Pell and SSIG. A percentage of the SSIG amount is taken off the need figure; in California institutions' case it was only 16 percent for 1989. However, the entire Pell amount is subtracted from the student need to get institutional need. For a school such as Institution #2 this can make a significant difference. Institution #2 has a large amount of Pell money—$861 per undergraduate financial applicant. Institution #1 has only $53 per applicant. That is why the fair share figures for these schools are almost equal, even though Institution #2 has a much higher undergraduate need. While the SEOG is meant to supplement the basic Pell grants, this rule keeps SEOG money from following Pell money.

Formula Simulations

To investigate the major biases of this formula, a series of simulations was conducted. They were designed to show how state allocation would differ, if the formula or its parameters were changed.

Base Guarantee Update

In order to investigate the effects of the base guarantee on funding allocations, an update of the base year was simulated. The formula was modified to use a base guarantee of fiscal year 1986 instead of fiscal year 1985. Thus, institutions were allocated what they received and spent in 1986 instead of in 1985. Leftover amounts were then distributed according to the fair share and pro rata provisions as usual. The total allocation amount was the same for both years. Only the distribution of those funds was affected by the new base guarantee. Of course, new institutions in 1985 became old in 1986 while no newer ones were added. Thus allocations to states with many new institutions were underestimated. The results, aggregated by state, are shown in Table Five. They support the hypothesis that the base guarantee freezes the distribution of allocations, since there is very little difference in allocation amounts between the two years. California receives several hundred thousand dollars more or less in the different programs.

Expected Family Contributions

A simulation was also done using different expected family contribution figures. Since the amounts that families were expected to contribute were rather high at the lower income levels, new amounts were substituted in a modified formula. They were lower for families in the lower income levels. These new amounts were chosen because they were the California average for the applicants to the College Scholarship Service. The results (not shown) revealed virtually no effect. Changes in these smaller parameters apparently have

an inconsequential influence on final state allocation figures, even for the fair share estimates.

Removal of the Base Guarantee

If the formula for distribution of federal campus-based aid programs remains the same, fast-growing states such as California will most likely receive less than their fair share. The formula allocates money on the basis of how much the institution spent in 1985. Even if this base guarantee were updated, the distribution of money would not change significantly. Removing the base guarantee is the single most effective step in making the allocation of funds more equitable among states and institutions. If the base guarantee were removed, and all money were allocated on the basis of fair share, the formula would then be sensitive to changes in three factors: the number of applicants, the income distribution of those applicants and their consequent ability to contribute to education expenses, and the cost of that education. California, for example, faces a certain increase in applicants, a probable change toward more, lower income applicants, and a possible increase in education costs if public tuition is raised. All these factors will significantly increase California's need. Other states such as Florida and Georgia also face a similar situation although smaller in scale. States such as New York and Pennsylvania are expected to decrease in size but have such low base guarantees that they would still benefit from their removal. However, there are other short-term effects to be considered.

Redistribution Among Segments

The segments within each state that hurt the most from the presence of the base guarantee are those segments that compared to 1985,

TABLE 5
Simulation of Base Guarantee Update
(Thousands of Dollars)

	SEOG Allocation		CWS Allocation		Perkins Allocation	
	Base Guarantee		Base Guarantee		Base Guarantee	
State	FY1985	FY1986	FY1985	FY1986	FY1985	FY1986
California	$ 42,275	$ 42,104	$ 52,701	$ 53,471	$ 20,094	$ 19,152
Florida	$ 13,225	$ 13,299	$ 18,173	$ 18,263	$ 4,805	$ 5,012
Illinois	$ 19,380	$ 19,611	$ 24,556	$ 25,352	$ 8,535	$ 8,555
Indiana	$ 8,813	$ 8,907	$ 11,151	$ 11,433	$ 4,787	$ 4,054
New Jersey	$ 9,634	$ 9,600	$ 12,830	$ 12,227	$ 4,200	$ 4,032
New York	$ 36,155	$ 37,831	$ 51,998	$ 53,254	$ 13,567	$ 16,021
Ohio	$ 17,251	$ 17,669	$ 24,036	$ 24,399	$ 8,047	$ 8,646
Pennsylvania	$ 25,808	$ 26,334	$ 31,801	$ 32,479	$ 9,600	$ 11,228
Texas	$ 21,820	$ 21,859	$ 33,790	$ 33,616	$ 9,260	$ 7,009
United States	$437,972	$437,970	$610,095	$610,081	$185,735	$185,728

Source: U.S. Department of Education, unpublished data, 1986.

have grown in enrollments, have students with higher need, and have raised tuition. For California, and for the nation as a whole, this is most true of the private and proprietary schools. If the base guarantee were removed, in the short term, California would receive in fair share about equal to what it now gets in base guarantee plus the fair share and pro rata increases. However, the public four-year segment would lose $11 million because they have very large base guarantees. The community colleges would lose $8 million because they also had large base guarantees that went into effect when they were at their peak enrollment. Private schools would gain $12 million, principally because their tuition has increased so much. The proprietary schools would stand to gain $8 million because they have increased enrollment, numbers of lower income students, and tuition. This is only in the short term, however. In the longer term, if the base guarantee were removed, the segments with faster growth and higher need would get more funds.

"Removing the base guarantees would allow campus-based funds to be allocated less on the basis of status quo and more on the basis of student financial need."

Major Shifts in Funds

One argument against dropping the base guarantees is that it would lead to precipitous shifts in funds for some institutions. This was considered to be difficult to adjust to, both for administrative reasons and for smooth financial planning of college students and their families. There is some basis to this. If base guarantees were dropped suddenly, there would be a one-time shift of about $35 million in California. This is about one-third of the total amount of campus-based funds for that state. In California, there are several individual institutions that receive over $2 million in excess of their base guarantee. There are very few that receive less than $300,000 of their fair share. This probably holds true throughout the United States. Thus there are institutions that would lose significant amounts of money but few that would gain very large sums. This is partly because it is primarily the large public four-year schools that would experience precipitous declines while many smaller private and proprietary schools would receive small increases if the base guarantee were removed. A more gradual removal of the base guarantee might allow institutions losing funds time to adjust.

In sum, the removal of the base guarantee still remains the simplest and most effective way to make the allocation of campus-based funds more equitable. Some institutions in some states will grow very fast and their need for financial aid will far exceed what they currently receive under the base guarantee. Other institutions will face a reduction in student financial aid need, yet will still receive what they received and spent in 1985. Other minor changes in the formula, while important, don't have nearly the impact that the base guarantee does. Further, some of the distortions are not easy to eliminate without using individual level need data. Removing the base guarantees would allow campus-based funds to be allocated less on the basis of status quo and more on the basis of student financial need. ✦

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