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ABSTRACT

Issues are discussed relating to student financial aid and aid policies in higher education. A review of the economic outlook for higher education in the near future is given, with attention to enrollment trends, rising costs, and age distribution for faculty for 1972 and projected for 1990. Competition for students is discussed. The current debate over whether the economic burden on families is increasing is discussed in detail, illustrated by data on students costs in a number of institutions. Pricing and eligibility policies and formulas are discussed and charted. Elements of the discussion are student expense budgets, expected parental contribution, and public versus private sectors. It is noted that the current system of student financial aid has two important characteristics to consider: (1) it is a thoroughly developed, pervasive, and well-functioning system of price discrimination: and (2) the system's outcome depends on two forces: those establishing prices and those establishing policy for adjusting them, which in higher education are often separate groups. It is concluded that the present system has these results: it helps eliminate the tuition gap: and the expected family contribution as a percentage of family income is at a maximum for the family that just fails to qualify for aid. Several problems are foreseen in the future of the current system: sensitivity to student costs, and competitive pricing: loss of financial privacy of families of applicants for aid: efforts to depart from the need-based system to attract students: and a need for fairness in treatment of independent students. (MSE)

PRICING AND FINANCIAL AID IN AMERICAN HIGHER EDUCATION: SOME INTERACTIONS

BY

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The views expressed in this paper are the responsibility of the author alone.

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-- KMD

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I. INTRODUCTION

In both scholarly circles and public forums financial aid has recently been the focus of substantial attention. The purpose of this paper is to contribute to the ongoing deliberations. Following this introduction, the paper is divided into five additional sections. The next section is a brief review of the setting within American higher education in which those deliberations are taking place. Section three presents some initial considerations pertaining to financial aid in an era of excess capacity, and the following section focuses primarily on the debate over the burden families face in financing higher education. The fifth section contains an approach to the interaction of pricing and financial aid which is, I believe, partially new, and the final section presents a few concluding thoughts about the provision of financial aid in the coming period.

II. A BRIEF REVIEW OF THE ECONOMIC OUTLOOK FOR AMERICAN HIGHER EDUCATION[1]

Following an era of widespread prosperity, the American higher educational enterprise has entered upon hard times. These hard times have not fallen evenhandedly on the entire sector, and some of its elements are, even now, enjoying relative prosperity, but the general level of discomfort and worry are high.

A central ingredient of the current difficulty is the outlook for enrollment. For roughly twenty-five years following the end of World War II, a dynamic spirit associated largely with expanding enrollment was one of American higher education's main characteristics. In the first half of the 1970s, the boom began to lose its momentum, and even though aggregate degree-credit enrollment grew at an annual average during those years of over 360,000 students, there was, simultaneously, a spreading sense of malaise reflecting, quite realistically, that some institutions had already suffered declines in enrollment and that, in time, others were also expected to do so. Throughout the 1970s some institutions have continued to prosper, but the specter of excess capacity has been very much of a presence.

Although in a larger sense it is excellent that births have achieved a rate roughly consistent with zero growth in the long run, this development is one of the main causes of higher education's current difficulties. Table 1 illustrates the underlying demography; one can view these numbers with great confidence because they rely hardly at all upon estimates of fertility which are inevitably somewhat speculative. What the numbers show quite starkly is how much smaller the

age-groups associated with traditional college attendance will be in their troughs of the 1990s compared with their peaks in either the late 1970s or early 1980s.

TABLE 1*

PEAKS AND TROUGHS FOR PARTICULAR AGE-GROUPS
IN THE PERIOD 1978-2000
(size in millions)

Age-Group	Peak		Trough		Percent decline from Peak to Trough
	Year	Size	Year	Size	
18	1979	4.29	1992	3.17	25
18-21	1979	17.16	1994	12.97	24
18-24	1981	29.51	1996	22.86	23

*U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 704, "Projections of the Population of the United States: 1977 to 2050," (Washington: U.S. Government Printing Office, 1977), various pages.

These shrinking bases of population point towards but do not, in themselves, guarantee that aggregate enrollment will decline. Whether such a decline materializes depends upon the rates at which various groups participate in higher education. Conceivably participation could increase enough to offset the decline in the traditional college-age population, and in fact, for some groups -- minorities, women, and older students -- rates of participation have increased noticeably in recent years.[2] However, among other groups -- male 18-21-year-olds and young people from families with relatively high incomes -- rates of partdicipation have declined.[3]

Predominantly these changes reflect altered opportunities for employment, and they make it clear that rates of participation are hardly likely to move uniformly. Therefore it seems unlikely that increasing rates will fully compensate for the decline in the college-age population. Higher education's enrollment seems all but certain to decline in the period to come, and the decline could be substantial. The task facing admissions officers struggling to fill freshman classes during most of the rest of the century will be challenging to say the least.

The outlook for enrollment helps to explain why higher education is entering a very difficult period. An alternative way of viewing the impending era is to focus on finances. It is in the nature of things that higher education operates continually in an atmosphere of financial stringency, but in the 1970s the strain has been more than routinely severe, and the outlook is for the situation to deteriorate before it improves.

One way to view the financial strain is to note that higher education is severely pressed to achieve as high a rate of growth in revenue as in costs. The shortage of students is a major problem because it implies a shortage of one major element of revenue, and the problem is not restricted to the private sector. Though not as tuition-dependent as private institutions, public institutions are essentially as enrollment-dependent because of the firm link between their enrollment and their appropriations.

Several factors pertaining to cost contribute to an unfortunate outlook for higher education's finances. One of the most basic is that higher education is comparable to a handicraft industry in the sense

that it has strictly limited opportunities for increased productivity. In a modern economy a handicraft-like sector is almost certain to operate at a disadvantage relative to those sectors which do typically experience improving productivity; forces are at work to make the handicraft-like sectors relatively smaller and their products and services relatively more expensive.

A corollary is that there will be frequent efforts within higher education to economize. Certainly such efforts were widespread during the first half of the 1970s.[4] Maintenance of the physical plant is typically the favorite first area in which to attempt to economize, but, just as typically, the efforts extend to faculty salaries.

The possibility of economizing on faculty salaries in the period ahead is one of the central dilemmas facing higher education. Howard Bowen has recently completed an extensive study of compensation in higher education.[5] One of his central conclusions is that the level of faculty salaries was quite good in the late 1960s but that it has subsequently been deteriorating relative to compensation for other groups at the rate of about one to two percent per year. According to Professor Bowen, if the trend continues, the effect over a decade would be "substantial" and over two decades it would be "catastrophic."[6]

One obviously related matter worth mentioning is the outlook for the age distribution of the faculty. As it happens, the major factor enabling institutions to raise average compensation relatively slowly -- an excess supply of PhDs -- also, in conjunction with the tenure system, implies that the average age of the faculty will rise. Forecasting the age distribution is hardly an exact science, but a few numbers may at least suggest the likely direction of events. Table 2 presents the

actual distribution in 1972 and two forecasts of the distribution in 1990, one by the Carnegie Commission and one derived from Allan Cartter's work.[7] Both forecasts suggest that a major change is on the horizon; the anticipated change is somewhat larger in the Carnegie Commission's format. In 1972, 42 percent of the faculty were forty or younger. Looking to 1990, Cartter's format makes this percentage twenty-nine, and the Carnegie Commission's makes it thirteen. Whichever forecast proves more accurate -- and it is worth noting that both predate the recently passed increase in the mandatory retirement age -- administrators will find the realities of the wage bills implied by these distributions harsh even if faculty members' real incomes continue to fall behind at roughly the rate estimated by Professor Bowen for the period since the late 1960s.

The preceding comments are hardly exhaustive, but hopefully they have communicated some sense of the outlook for higher education in the aggregate. In summary, the sector can anticipate some very unpleasant times. The population base of those of traditional college-age will decline between roughly the beginning of the 1980s and the middle of the 1990s by over twenty percent. Although rates of participation have been increasing for some groups, they have been decreasing for others, and on balance, it seems likely that aggregate enrollment will actually fall.

Declining enrollment is only one among many factors which imply financial difficulties for higher education in the coming years. More generally, the sector has a persistent tendency for costs to grow faster than revenues. The fact that higher education does not participate in increases in productivity puts it at a disadvantage relative to the

TABLE 2*

AGE DISTRIBUTION OF FACULTY,
ACTUAL FOR 1972, FORECASTS FOR 1990
(percent)

(1)	(2)	Forecasts for 1990 (3)	(4)
Age-Group	Actual 1972	Carnegie Commission	Derived from Cartter's Series
30 and under	7.2	1.0	6.1
31-35	17.8	2.8	10.5
36-40	17.1	8.7	12.5
41-45	16.3	18.8	14.6
46-50	14.0	24.5	15.6
51-55	11.7	21.1	14.9
56-60	8.3	14.2	13.2
61-65	5.6	8.8	8.7
over 65	2.0		3.9

*Allan M. Cartter, Ph.D.'s and the Academic Labor Market (New York and other cities: McGraw-Hill Book Company, 1976), pp. 173 and 182.
The Carnegie Commission on Higher Education, Priorities for Action: Final Report of the Carnegie Commission on Higher Education (New York and other cities: McGraw-Hill Book Company, 1973), p. 119.

many sectors in a modern economy which do. As a result, there are inevitably efforts to economize, and such efforts usually mean attempts to slow down the rate of growth in faculty salaries. The current environment in which PhDs are in excess supply makes the existing faculty especially vulnerable to the forces of the market, and because of a gradual process of "tenuring-in" -- really a reduction in mobility and in the availability of new positions -- the average age of the faculty seems destined to rise substantially. Bright young people have frequently been regarded as essential contributors to the intellectual

vitality of the entire enterprise, but during a large portion of the remainder of the twentieth century very few may have much opportunity -- and eventually, therefore, much inclination -- to embark upon academic careers.

It is in this general environment that developments regarding financial aid will be proceeding in the period to come. Obviously, although higher education's future appears troubled in some important ways, the actual outcome is uncertain and depends upon a variety of decisions yet to be made. Some of the most potentially influential decisions concern the future course of financial aid policy.

III. FINANCIAL AID IN AN ERA OF EXCESS CAPACITY: SOME INTRODUCTORY CONSIDERATIONS

When it established the National Defense Student Loan program in the late 1950s, Congress was attempting to increase the supply of specialized manpower, but by the mid-1960s the central goal of federal financial aid policy had become to expand opportunity for individuals. In the period to come the pursuit of this goal will, as a by-product, be especially beneficial to many of America's colleges and universities.

It would be pleasant to be able to pursue the goal of improving access without confronting the tensions associated with rivalry for students, but, though pleasant, the prospect is unrealistic. The strategy of financial aid is to make money available to students so that they can attend college, and colleges need both students and money. Therefore the way in which the money is distributed and spent will inevitably be a matter of substantial controversy because, for individual institutions, a great deal depends on these details.

A particularly thorny aspect of the rivalry for students is the competition between the public and private sectors. Table 3 shows how the balance has changed during this century. As late as 1950 the two sectors had roughly the same enrollment, but twenty-five years later the ratio of public- to private-sector enrollment was roughly three to one. The existence of two sectors has generally been regarded as a source of strength for the system as a whole, but there is now some prospect that the impending decline in enrollments will come disproportionately from the private sector so that the public-private ratio will become even larger. The question frequently asked is how much

this ratio can grow before the system is no longer meaningfully dual. Obviously the restrictions governing the distribution and spending of financial aid will have substantial impact on the ratio.

TABLE 3*

PERCENTAGE OF ALL DEGREE-CREDIT ENROLLMENT IN PUBLIC INSTITUTIONS, SELECTED YEARS

Year	Percentage
1899-1900	38.2
1909-10	46.9
1919-20	52.8
1929-30	48.4
1939-40	53.3
1949-50	51.0
1959-60	57.0
1969-70	71.6
1974-75	75.8
1975-76	76.3

*W. Vance Grant and C. George Lind, Digest of Education Statistics, 1976 Edition (Washington: U.S. Government Printing Office, 1977), pp. 7 and 87.

A striking example of the interaction between financial aid and the public-private rivalry is the half-cost rule which partially governs the distribution of aid in the BEOG program.[1] Since that program is routinely described as the "foundation" upon which all other federal financial aid is built -- the major path to access -- it is a cruel fact that the half-cost limitation has the effect of reducing the level of awards below what they would be in its absence for the poorest students attending the lowest cost institutions. The rule exists because it has enjoyed strenuous endorsement from elements within the private sector which are especially sensitive to competition from the public sector. In this instance, therefore, the method of aiding the private sector

has been to restrict certain poor students' opportunities to obtain higher education.

Another aspect of the interaction between financial aid and the competition for students concerns non-need-based aid. The system of awarding aid primarily on the basis of some measure of need has become rather firmly established in the past twenty-five years. Now, however, that system is undergoing some degree of erosion, and the central question is how far this erosion will go.[2] The temptations to deviate from the system in the presence of excess capacity are obvious, and it will take a great deal of institutional self-discipline to resist them.

IV. THE BURDEN OF PAYING FOR HIGHER EDUCATION

One of the central propositions about higher educational finance is that the amount students pay does not cover the full costs of operating the institutions. In that sense all students are subsidized. However, there are two broad kinds of subsidy. The one applies to all students and takes the form of charges below average per student expenditure. The second applies to some students only and routinely has the effect of reducing the stated level of charges by some amount determined separately for each student; this second kind of subsidy is known as financial aid. The central political issue regarding direct charges for education is the balance which should be struck between these two categories of subsidy.

The way in which this issue is ultimately resolved for institutions in the public sector is highly sensitive for two main reasons. First, that resolution will determine how the costs of public higher education are shared by the users and society as a whole. Second, it will have a substantial influence on the degree to which many institutions in the private sector will be able to raise tuitions to the levels consistent with survival without simply, as the phrase goes, "pricing themselves out of the market."

As these debates proceed, what is at issue for individual families is the charges which their children will incur in obtaining higher education. The main thrust of federal financial aid policy in recent years -- in fact and certainly as it is widely perceived -- has been to assist in the financing of higher education for students whose families are in the lower portions of the income distribution. While these efforts have been

proceeding, middle-income families -- the concept is inevitably imprecise, but let us say families with incomes currently in the range of $15,000 - 25,000 -- have been especially sensitive to the strain of living through an era of rapid inflation. They have expressed frustration over many issues, but the cost of college has been prominent on the list.

The message has gotten through to Congress which has been making efforts in recent months to respond. None of the legislation intended to reduce the net costs of college incurred by middle-income families has yet become law, and no doubt there will be additional maneuvers and detours ahead. But there has been some serious action. On 1 June 1978, the House passed a tuition tax credit bill, and a similar bill has been reported in the Senate. Moreover, in each chamber there has been a bill reported which would expand various features of the existing federal student aid programs.[1]

A major feature of the debates over the "plight of the middle class" has centered on efforts to determine whether, in fact, the burden of paying for college has been increasing for middle-income families. Unfortunately, what emerges from reviewing the major studies and pronouncements on this subject is that the answer is unclear. It is important to provide a sense of the contradictory information which anyone trying to explore this subject confronts.

Some material either says directly or strongly implies that the burden of attending college has been increasing. On 8 February 1978, President Carter said:

> Today the cost of sending a son or daughter to college is an increasingly serious burden on America's low- and middle-income families....

> Increasingly, middle-income families, not just the lower-income families, are being stretched to their financial limits by...[the] new and growing costs of a university or college education.[2]

In a book published in 1977, Larry Leslie wrote: "[T]he costs of college attendance have risen sharply, exceeding increases in the annual rate of inflation."[3] And Jacob Stampen of the American Association of State Colleges and Universities has written: "[T]uitions have increased faster than inflation.... [S]pendable family income frequently has lagged behind inflation...."[4] Moreover, the Library of Congress recently did a study indicating that, when taxes are taken into account, the increase in charges for higher education grew quite a bit faster between 1967 and 1976 than did after-tax income.[5]

The other side of the story is presented most authoritatively by the Carnegie Council on Policy Studies in Higher Education and the Congressional Budget Office. The summary statement from the Carnegie Council is the following:

> ...tuition costs have risen more or less parallel with the rise in per capita disposable personal income (1970-71 to 1975-76). The total cost of tuition and board and room, however, has risen less rapidly than personal income...and thus the real burden on families and students has gone down, not up, as is often said to be the case.[6]

In a document published in January 1978, the Congressional Budget Office (CBO) drew this conclusion:

> These data on family income, college fees and student aid do not support the claim that during the period 1967-1976 the financial burden of college expenses has increased for middle- and upper middle-income families in general.[7]

In May the CBO published another document focusing on federal financial aid, and the conclusion was very similar:

> ...the relative level of college costs has remained essentially constant rather than increasing during recent years. Though the costs of college attendance have risen faster

than the cost of living (as measured by the Consumer Price Index [CPI]), this increase in costs has been offset by an even larger increase in family incomes. As a result, student costs for both the public and private sectors of higher education have declined slightly as a proportion of family income....

* * * * *

In sum, there is no evidence to indicate that the financial burden of sending children to college has been increasing. This should not be taken to mean, however, that the burden of sending a child to college is not significant. While the situation appears no worse than it was a decade ago, neither is it appreciably better. Therefore, to the extent to which college costs were a burden in the 1960s, they still present a financial strain. And there are certainly many middle-income families--especially families with students in expensive schools, families with more than one child in school and families in which the head of the household is the student--that find it difficult to pay the costs of postsecondary education.[8]

Also in May, Congressman William Ford, Chairman of the House's Subcommittee on Postsecondary Education, pursued the subject further with CBO, inquiring in a letter whether "family discretionary income available for postsecondary education may be shrinking relative to increased college costs."[9] The CBO studied the question and, in a letter of response from the Deputy Director, essentially confirmed its earlier conclusions, the principal statements being the following:

On an after-tax basis, the incomes of families with 18 to 24 year-old dependents who were enrolled in college grew at about the same rate as college costs during the 1967-1976 period.

* * * * *

The after-tax incomes of all families with 18 to 24 year-old dependents grew slightly less rapidly than college costs between 1967 and 1976.

* * * * *

On balance, these trends in costs and family incomes do not show that the cost of financing postsecondary education relative to income is increasing among middle-income families.[10]

Now is not the time to try to unravel the empirical complexities of the matter. What we do know is that some information indicates that the burden of paying for college has been increasing while other information suggests that it has not. Just as important to recognize, however, is that the various studies are based upon broad statistical aggregates involving series which, in some cases, have wide dispersion. Thus there are going to be many families whose particular experiences deviate appreciably from the averages, whatever they may be, and the experiences of those families for whom the broad aggregates do not adequately tell the story become an important political fact of life. In this regard, there are two clusters of additional information especially worth noting.

The first concerns parental willingness to pay for higher education. Two important studies conducted in the 1970s, one based on information collected in 1972 and 1973 and the other based on data from 1976-77, suggest that parental attitudes changed dramatically between the two periods.[11] In the earlier study James Nelson found that parents were generally contributing what the methodology of the College Scholarship Service was expecting of them at the institutions their children were actually attending. His central conclusion follows:

> Parents are coping with the college cost situation a lot better than has been widely believed. In fact, most parents contribute toward their children's education as much as or more than the amount expected to be necessary by the College Scholarship Service's need analysis system.[12]

The findings of the later study were dramatically different. The study goes into great detail so that a brief summary cannot do justice to all the material presented. For current purposes, however, it is

sufficient to take the following statement as the thrust of the relevant results:

> The study found substantial variations between what is expected and what is offered by parents. The mean amount offered was $422; the mean expected contribution according to the consensus methodology was $762 and that expected by the BEOG methodology $1,293. As income increased, the percentage of families who were willing to contribute what was expected decreased and the dollar-value difference between expectation and offer increased. Among families with incomes of less than $6,000 between 3 percent (consensus methodology) and 13 percent (BEOG methodology) offered less than expected and the mean difference between willingness and offer was just over $500 (both methodologies). Among families with incomes in excess of $30,000 between 93 percent (consensus methodology) and 98 percent (BEOG) offered less than expected with the mean difference between $3,800 and $4,100.[13]

Why has such a change in parental attitudes apparently taken place? Many answers could be given, including the possibility that there were some problems of methodology which, if corrected, might at least partially alter the observed results. But leaving this latter point aside and taking the results at face value, we are left with an important consideration for policy. Could it be that some of the success achieved in spreading the word that financial aid is available and that the federal government is especially concerned with the plight of lower-income families has, as a by-product, partially weakened the determination to pay large college bills on the part of those who are generally excluded from federal grant programs? No one knows for sure, but it seems important to recognize this aspect of the "plight of the middle class": as a political reality, we may be near the currently tolerable limit of treating people differently with respect to the net price of going to college.

The second cluster of additional information concerns the influence that some of the most readily available and concrete information has

upon perceptions about the costs of attending college. Their investigations of college costs in the aggregate led those at the CBO to conclude that between 1967 and 1976, those costs increased in current dollars about 75 percent: 74.2 percent in the public, and 76.7 percent in the private sector.[14]

As a statistical proposition this statement is, no doubt, correct, but it must also be viewed in context. For one thing, there are roughly 3000 American institutions of higher education, and their tuitions range from approximately zero to over $5,000.[15] In the private sector alone tuition and required fees (TRF) for 1978-79 will be extremely varied: at 25 percent of the four-year institutions it will be below $1,941; at 50 percent, between $1,941 and $3,232; and at the most expensive 25 percent, above $3,490.[16] Inevitably a one-parameter description of the course of college costs over a decade, while arithmetically correct, is going to conceal much that has been happening.

When one attempts to explore the distinction between the overall averages and general perceptions of what has been happening, it quickly becomes clear that charges at some institutions seem to have an especially high profile. Moreover, the charges that are especially visible happen to have grown much faster than the CBO's average. Table 4 indicates how TRF, total expense budgets, and total charges for TRF, room, and board have been growing for the members of the Consortium on Financing Higher Education (COFHE). For twenty of these twenty-six institutions the growth of total charges exceeds CBO's average figure for private institutions of 76.7 percent, and for five of the six for which the growth was below 76.7 percent, it was above 74 percent. The figures for the expense budgets indicate a somewhat less extreme result

TABLE 4*

RATES OF GROWTH OF TUITION AND REQUIRED FEES (TRF), OF TOTAL CHARGES FOR TRF, ROOM AND BOARD, AND OF EXPENSE BUDGETS, COFHE INSTITUTIONS, PARTICULAR PERIODS BETWEEN 1967-68 AND 1978-79

(1)	(2)	(3)	(4)	(5)	(6)
Institution	Percentage Increase for 1967-68 through 1976-77 in			Average Annual Rate of Growth in TRF (in percent)	
	TRF	Total Expense Budgets	Total Charges for TRF, Room, and Board	1967-68 through 1976-77	1976-77 through 1978-79
Amherst	102	83	89	8.1	7.8
Brown	114	97	104	8.8	9.6
Bryn Mawr	119	87	94	9.1	9.6
Carleton	90	57	75	7.4	6.3
Columbia	106	103	108	8.4	8.4
Cornell	111	86	98	8.7	8.6
Dartmouth	104	123	102	8.2	7.8
Duke	102	84	85	8.1	10.2
Harvard	105	97	106	8.3	8.8
Johns Hopkins	78	96	88	6.6	6.1
M.I.T.	110	110	116	8.6	8.4
Mt. Holyoke	82	72	74	6.9	11.8
Northwestern	106	78	116	8.4	9.7
Pomona	116	96	-	8.9	8.0
Princeton	121	98	102	9.2	8.9
Smith	81	71	73	6.8	13.2
Swarthmore	77	68	80	6.6	10.5
Stanford	142	87	112	10.3	9.5
Trinity	87	76	76	7.2	10.3
U. Penn	110	101	98	8.6	8.5
U. Chicago	73	64	64	6.3	8.4
U. Rochester	87	73	83	7.2	4.9
Vanderbilt	104	74	105	8.2	8.2
Washington	94	70	[illegible]	7.6	8.5
Williams	93	77	[illegible]	7.6	10.2
Yale	126	102	[illegible]	9.5	8.2

*Richard G. Warga, Student Expense Budgets of American Colleges and Universities for the 1967-68 Academic Year (Princeton and Berkeley: Educational Testing Service, 1967), various pages.

Elizabeth W. Suchar, Stephen H. Ivens and Edmund C. Jacobson, Student Expenses at Postsecondary Institutions 1976-77 (New York: College Entrance Examination Board, 1976), various pages.

Elizabeth W. Suchar, Stephen H. Ivens and Edmund C. Jacobson, Student Expenses at Postsecondary Institutions 1978-79 (New York: College Entrance Examination Board, 1978), various pages.

The basic data for calculating the percentages in column 4 were gathered directly from the institutions.

vis-à-vis the CBO average, but expense budgets happen to be less publicly visible than TRF or actual total charges. Based on all these numbers -- but especially on the more visible series -- the COFHE institutions are clearly not "average."

Charges at the COFHE institutions have grown extremely rapidly in the past decade, and charges at these and similar institutions happen to be highly noticeable. The text of a letter which recently appeared in The New York Times illustrates these points well:

> Since The Times finds it so "difficult" to document the tuition pinch on middle-class college students (Editorial March 28), let me provide a few facts:
>
> Tuition at Boston University has increased 141 percent in the last seven years, a far cry from your 75 percent during the 1967-76 decade.
>
> Tuition, room and board at Yale will be $7,500 next September, more than half the entire take-home pay of your $15,000 middle-income family.
>
> The yield among applicants accepted by Ivy League colleges in the $15,000 to $50,000 income range is 10 percent lower than the yield of other income levels, either higher or lower.
>
> And finally, Henry Rosovsky, dean of the faculty at Harvard University, admits very simply: "I know of no easy solution...middle-income students are squeezed."
>
> Obviously, the problem is not in documenting the middle-income tuition squeeze but in finding ways to solve it. Instead of stubbornly fighting all forms of tuition relief, The Times would do well to push for one of the two plans now under consideration in Congress.[17]

Despite what the averages show, information like that which this letter presents cannot be easily or profitably ignored in the debates over financial aid and pricing policy. No matter how "right" it is, the notion that college costs grew by approximately 75 percent between 1967-68 and 1976-77 has the quality of abstraction and, in any event, is in conflict with information from other sources which, in its own way, is just as "right." The notion that TRF at Stanford was $1,770 in 1967-68, $2,610 in 1972-73, and will be $5,130 in 1978-79 is quite

concrete, has a way of being well known at least at some level, and is simply one more factor to be taken into account as the efforts to find a fair and workable resolution to the realistic strains of paying for college continue.

V. PRICING AND ELIGIBILITY FOR FINANCIAL AID

In this section I propose to try to provide some additional information about the system of pricing in higher education. That system is complicated, and the complications lead to two main results. First, the system is not widely understood. Second, its essential feature -- price discrimination in the service of social equity -- has tended to be camouflaged. To some extent the camouflage has been wearing thin in recent years, and this development is probably at least partially responsible for the intensity of feeling expressed on various sides of the issue of the burden of paying for college.

Several of the special features and complexities of the general system of pricing in higher education are worth mentioning at the outset. First, and perhaps most basic, is the tenuousness of the notion that a price exists at all for the services of a college or university as the concept of price is generally understood. Typically, some fraction of students pay what is presented as the price whereas the others pay less; how much less usually depends upon the student's family's financial circumstances. Thus what is regarded as the price -- TRF or TRF plus room and board -- is simply one of the many prices in effect but it has this special characteristic: it is the highest price paid.

This aspect of pricing -- price discrimination -- is not unique to higher education. Many other suppliers practice it, too, the airlines providing a prime example. But price discrimination in higher education operates with as finely graduated a set of distinctions among individuals as exist in any of the routine economic transactions of everyday life other than an auction.

A second characteristic of pricing in higher education is that, in implementing differential prices, the system focuses not on the revenue that is collected but on the revenue that is not collected. The process is to arrive at what the student actually pays indirectly in three steps -- identify the full price, identify the grant, and perform the subtraction -- rather than directly in one -- identify the net price. At first glance this point might seem small, but as things actually work out, it plays a surprisingly large role in camouflaging how, in fact, the system works.

Third, there is some complexity regarding what price becomes relevant for the various parties to the transaction. In the absence of financial aid, the price paid by the student and the price received by the institution are identical. When there is aid, that equality exists in some cases but not in others. It exists if the aid is the type generally referred to as "unfunded." However, if a grant is supported by income from endowment or by a third party -- for example, an agency of government -- then there is a discrepancy between what the student pays and what the institution receives.

A fourth introductory point is that some of what is called financial aid is net-price-altering (NPA) to the student, and some is not (non-NPA). The three broad categories of aid are grant, work-study, and loan. For the student, grants are unambiguously NPA, and work-study is unambiguously non-NPA, though certain work-study jobs can, in themselves, have great educational benefits. Loans tend to be more complicated. When made at market rates of interest, they are no more NPA than is a mortgage for the purchaser of a home or a commercial loan for the purchaser of an automobile. However, to the extent that loans are made at subsidized

rates of interest -- which they are in both the National Direct Student Loan (NDSL) program and, to a lesser extent, in the Guaranteed Student Loan (GSL) program -- then they contain a grant component amounting to the present value of the subsidy. In that sense certain educational loans are also NPA.[1]

Those introductory points having been made, the aim of what follows is to study the distinction between who does and does not qualify for aid and the interaction between that distinction and the expected parental contribution (EPC). This discussion is carried on primarily within the framework of the College Scholarship Service's system of need analysis -- what has recently become the Consensus Methodology (CM) -- although the proposed approach is equally applicable to other systems. At the outset it is useful to recall the fundamental assumption of the CSS system:

> The underlying assumption of the CSS need analysis system is that parents have an obligation to finance the education of their children to the extent that they are able.[2]

Who qualifies for aid? To an important extent the answer is: that depends. Of course it depends on the income of the family in question, but it depends almost as importantly upon which institution the student attends. There are three general cases: a family income so low that the student is eligible everywhere, one so high that he or she is eligible nowhere, and a family income between those extremes with the student qualifying at some institutions and not qualifying at others.

An analytical device I would like to introduce to explore the distinction between those conditions in which eligibility does and does not exist is the aid eligibility frontier (AEF).[3] In the first instance it is defined for one institution, in income-time space, as the boundary

between two regions, the one representing eligibility and the other, ineligibility for aid.

Figure 1 presents the hypothetical AEF for an institution. The interpretation is the following: point P corresponds to a level of income and an academic year. The level of income is that from which the EPC is precisely equal to the total expense budget in the indicated academic year. The incomes denoted on the vertical axis lag begind the academic years to which they correspond on the horizontal axis to reflect the reality that a family's income in, for example, 1967 is the basis for its parental contribution in 1968-69. All of the points which have been connected to form the AEF have the same interpretation as P. Thus the AEF separates the space into two regions, A and B. Any family characterized by a point in A qualifies for aid, and any family characterized by a point in B does not qualify at the specified institution. The aid eligibility frontier is the boundary between the two regions, and this characteristic explains its title.

In addition to separating the space into regions A and B, the AEF accomplishes something else. It locates, for each year, the income below which the EPC depends upon the level of income and above which it does not. Y_{67} is that income for 1968-69; for 1973-74 it is Y_{72}. From Figure 1 and the CSS' rules for determining the EPC for those who qualify for aid, therefore, one can derive Figure 2, the hypothetical expected parental contribution-income relationship (EPC-IR) for the pair of years 1968-69 and 1973-74 on the assumption that the CSS' rules for determining the EPCs were the same for the two years in question. The EPC as a function of income was ABC in 1968-69 and ABDE in 1973-74.

FIGURE 1

HYPOTHETICAL AID ELIGIBILITY FRONTIER
(AEF) FOR AN INSTITUTION

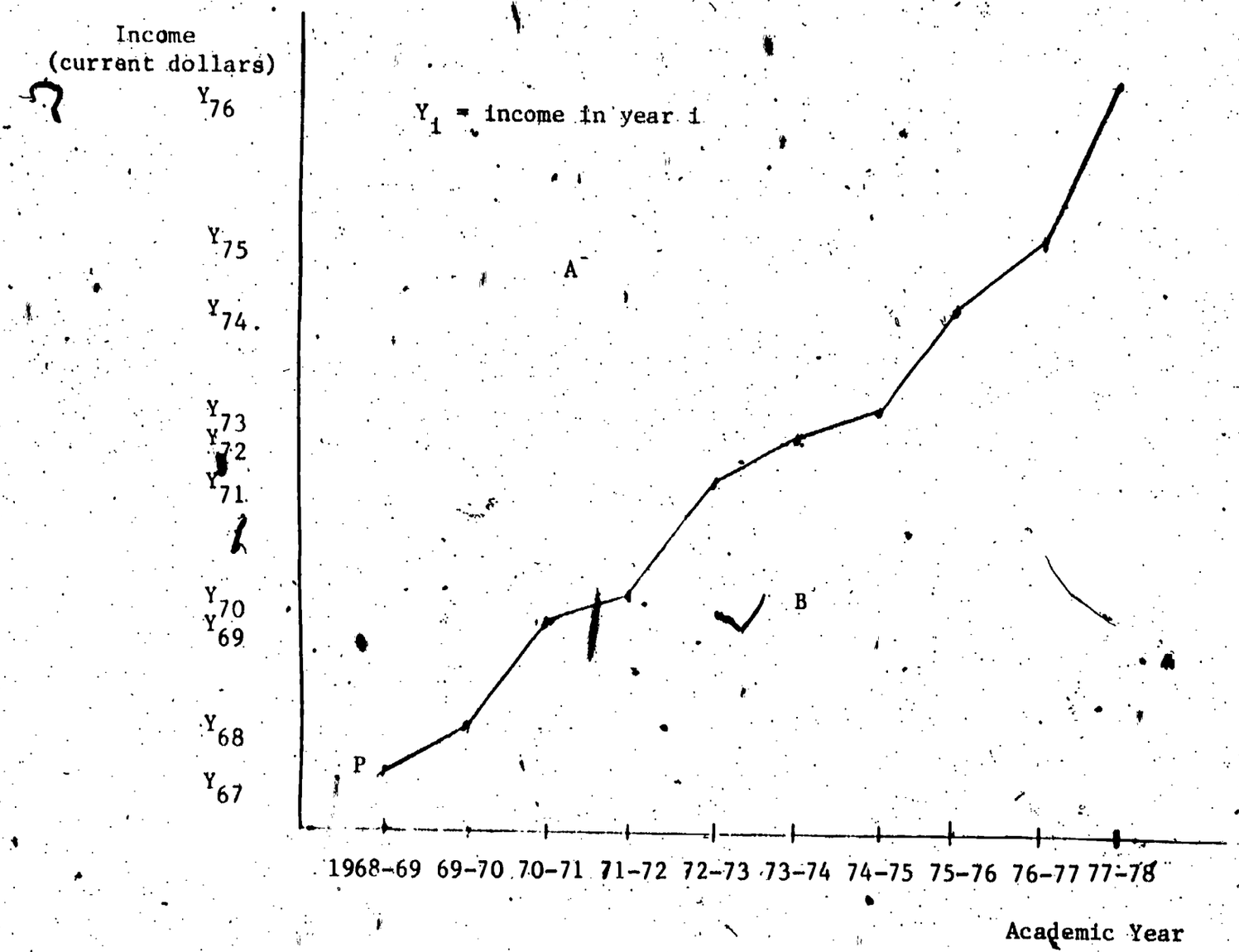
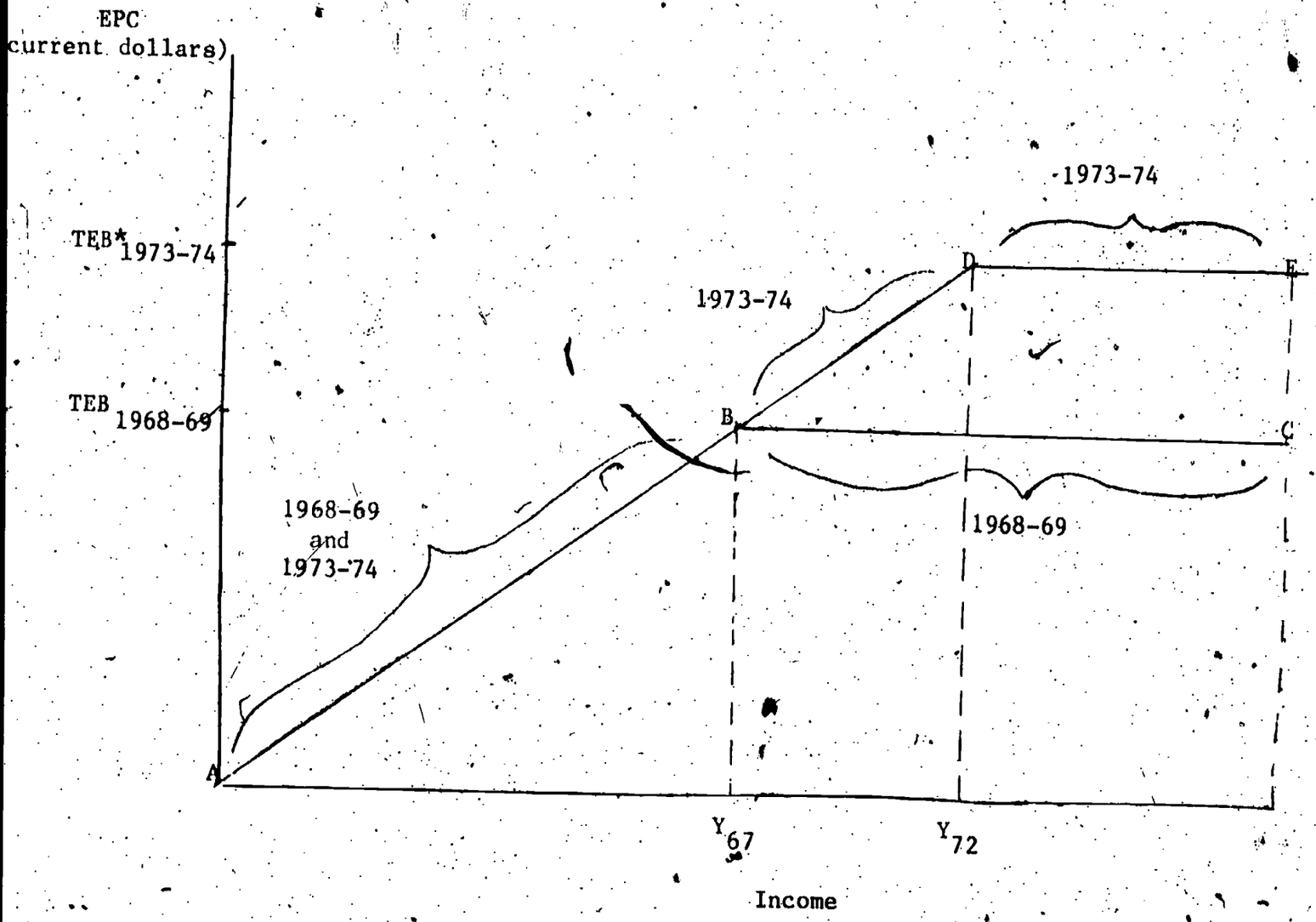


FIGURE 2

HYPOTHETICAL EXPECTED PARENTAL CONTIRUBION-INCOME RELATIONSHIP (EPC-IR) FOR 1968-69 AND 1973-74, CSS RULES ASSUMED THE SAME FOR THE TWO YEARS

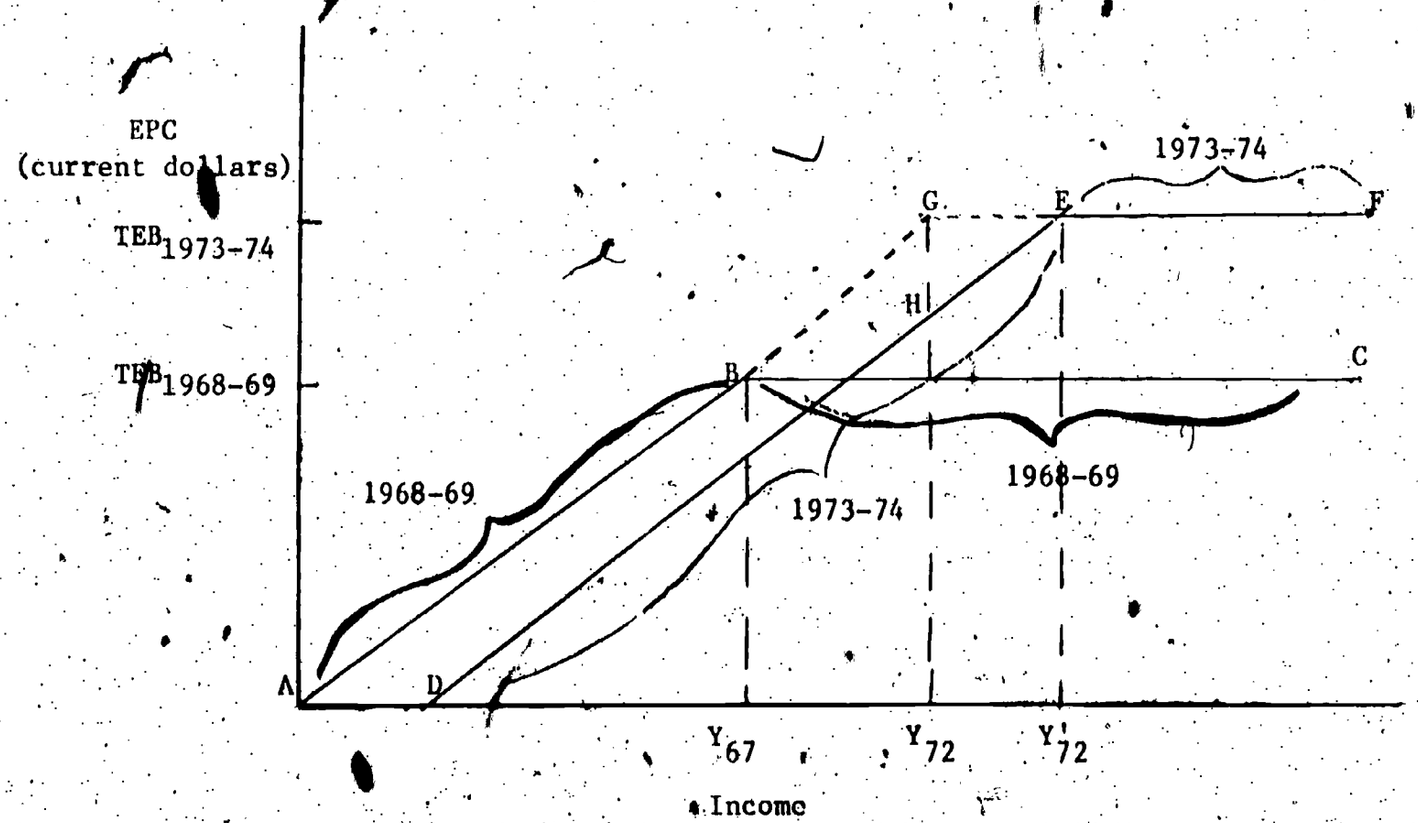


*TEB_i = total expense budget in year i

Had the rules for determining the EPC for those eligible to receive aid not been the same for the two years, then a different diagram would be needed to depict the hypothetical EPC-IRs. Suppose, in particular, that the rules had changed in only this one way: a shift in the entire line relating income to EPC everywhere $X to the right. Figure 3 shows that, in these circumstances, ABC is the hypothetical EPC-IR for 1968-69, and DHEF is the one for 1973-74. Had the change not taken place ABGEF would have been the EPC-IR for 1973-74. The indicated change in the rules has the effect of easing the standards for aid. After the change, Y'_{72} rather than Y_{72} corresponds to a point on the AEF, and incomes between Y_{72} and Y'_{72} now qualify for aid whereas before the change they did not. For a family with income Y_{72} the change implies a reduction of GH dollars in the EPC.

FIGURE 3

HYPOTHETICAL EPC-IRs FOR 1968-69 AND 1972-73, CSS RULES ASSUMED DIFFERENT FOR THE TWO YEARS*



* The exact change in CSS rules is explained in the text.

Some AEFs based on actual data have been calculated. Four of them refer not to specific institutions but, respectively, to the 99th, 95th, 90th, and 85th percentiles of the distribution of expense budgets for 1968-69 through 1977-78. Seven other AEFs -- five for 1968-69 through 1977-78 and two for 1972-73 through 1977-78 -- are averages for clusters of institutions in which the members of each cluster seem to have some important common attributes in the context of the questions being asked about pricing. The definition of the seven groups, along with any important general comments about them, follow.

1. Ivy Group. There are eight institutions.

2. Most Selective Non-Ivy Institutions (MSNI). This group consists of ten private institutions, not members of the Ivy Group, which had the lowest ratios of offers of admission to applicants on the basis of information published in 1977 and referring to the class which entered in September 1976.[4] This index is not a faultless measure of selectivity, but for the purpose for which it is being used, it is satisfactory.

3. Residential Four-Year Private Institutions (RESPRI). This category consists of the universe of private institutions for which CSS publishes data annually in its compendium of expenses at postsecondary institutions. The series starts with 1972-73, the first year for which data are readily available.

4. Private Institutions Dependent on In-State Students (PRIVDIS). This category consists of 105 private institutions that are highly dependent on the in-state market. The group was constructed as follows: a list was made of all states in which the state university was a member of the American Association

of Universities. The private institutions in those states were then ranked on the basis of the proportion of their freshmen coming from within the state.[5] Those institutions for which the ratio was eighty percent or over were then selected for membership in the PRIVDIS group. Defined in this way, this group was thought to contain institutions for which competition with the public sector is especially troublesome.

5. Most Selective State Universities (MSSU). This group consists of the ten state universities having the lowest ratio of offers of admission to applicants. The thought is that, other things being equal, their charges would tend to be on the high side of the range for public institutions.

6. Least Selective State Universities (LSSU). These are the ten state universities having the highest ratios of offers of admission to applicants, and the initial hypothesis is that these institutions would tend to have relatively low charges.

7. Public Two-Year Colleges (PUB2). The members of this group are, for each year, the two-year public institutions in the nation. As with the RESPRI group, the first year for which the aggregate expense budget for this group is readily available is 1972-73.

Table 5 presents the expense budgets for the four indicated percentiles of the spectrum, and Table 6 contains the expense budgets for the seven groups of actual institutions just identified.[6] Each of the elements in Table 6 is a simple -- unweighted -- average of the individual institutions' expense budgets in the relevant year. For all categories but one, the budgets reflect the assumption that the student lives at the institution; for the public two-year colleges the budgets include a living allowance based upon the assumption that the student is a commuter.

TABLE 5*

STUDENT EXPENSE BUDGETS AT VARIOUS PERCENTILES OF THE FULL POPULATION OF EXPENSE BUDGETS, 1968-69 THROUGH 1977-78 (current dollars)

(1)	(2)	(3)	(4)	(5)
	Percentiles			
Academic Year	99th	95th	90th	85th
1968-69	4000	3530	3300	3100
1969-70	4240	3800	3550	3330
1970-71	4406	3950	3600	3375
1971-72	4670	4150	3766	3520
1972-73	4875	4350	3920	3650
1973-74	5199	4580	4120	3900
1974-75	5400	4783	4314	4050
1975-76	5706	4900	4320	3970
1976-77	6460	5450	4810	4430
1977-78	6970	5800	5174	4800

* See text for sources.

The next step is to map each of the points in Tables 5 and 6 into a corresponding income. In particular, the level of income sought is that which, by the procedures of the CSS for the relevant years, implies an EPC equal to the indicated expense budget. To be explicit, consider the expense budget for MSNI in 1968-69, $3,681. The question is: what level of income in 1967 implied an EPC of $3681?

Now some assumptions and choices need to be made. There is no one-to-one correspondence between income and EPC. Anyone familiar with the CSS' methodology knows that certain other factors come into play: the family size, the assets of the parents, how many children are

TABLE 6*

STUDENT EXPENSE BUDGETS,
VARIOUS CATEGORIES OF INSTITUTIONS,
1968-69 THROUGH 1977-78
(current dollars)

(1) Academic Year	(2) Ivy	(3) Most Selective Non-Ivy (MSNI)	(4) Residential Four-Year Private (RESPRI)	(5) Private Institutions Dependent on In-State Students (PRIVDIS)	(6) Most Selective State Universities (MSSU)	(7) Least Selective State Universities (LSSU)	(8) Public Two-Year Colleges (PUB2)
		CATEGORIES					
1968-69	3766	3681	--	2491	1907	1771	--
1969-70	4001	3913	--	2598	1996	1829	--
1970-71	4281	4189	--	2715	2136	1897	--
1971-72	4722	4437	--	2914	2271	1980	--
1972-73	5042	4662	3280	3027	2388	2110	1635
1973-74	5228	4980	3693	3140	2561	2269	1665
1974-75	5657	5240	4039	3474	2690	2353	1922
1975-76	6377	5658	4391	3587	2710	2496	2058
1976-77	7046	6189	4568	3940	3032	2733	2233
1977-78	7456	6676	4811	4240	3229	2802	2314

* See text for sources.

simultaneously in college, to name several. It is not practical, for now, to do more than make some assumptions that will represent one fairly general case. Anyone so inclined can vary the assumptions and observe how they affect the results.

The principal assumptions are four: first, there are no special circumstances like extraordinary medical expenses; second, there is one child in college; third, the family has two parents and two children; and fourth, assets are just large enough so that the family's discretionary net worth is precisely equal to the permissible allowances from total income. This fourth assumption is sometimes described as the neutrality assumption regarding assets. Under it, adjusted available income is assumed equal to total income.

On this basis it is possible to make a one-to-one transformation between each number in Tables 5 and 6 and a corresponding income.[7] That transformation makes it possible to construct the AEFs, and they are presented for the four fractiles in Figure 4 and for the seven actual groups in Figure 5.[8]

The small numbers presented along the paths of most of the AEFs are the estimated percentiles of the income distribution represented by the nearby point.[9] Simply to keep Figure 5 from becoming too crowded, some percentiles have not been entered; in such cases nearby values make it relatively easy to estimate those omitted. What each percentile indicates is the proportion of American family incomes which were above and below the AEF. For example, in 1977-78, 93.4 percent of family incomes were estimated to have been below -- and 6.6 percent, above -- the level of income at which the assumed family would just qualify -- or just fail to qualify -- for aid at the MSNI.

FIGURE 4

AID ELIGIBILITY FRONTIERS FOR FOUR GROUPS DEFINED BY PERCENTILES OF THE DISTRIBUTION OF EXPENSE BUDGETS, WITH PERCENTILES OF THE INCOME DISTRIBUTION, 1968-69 THROUGH 1977-78

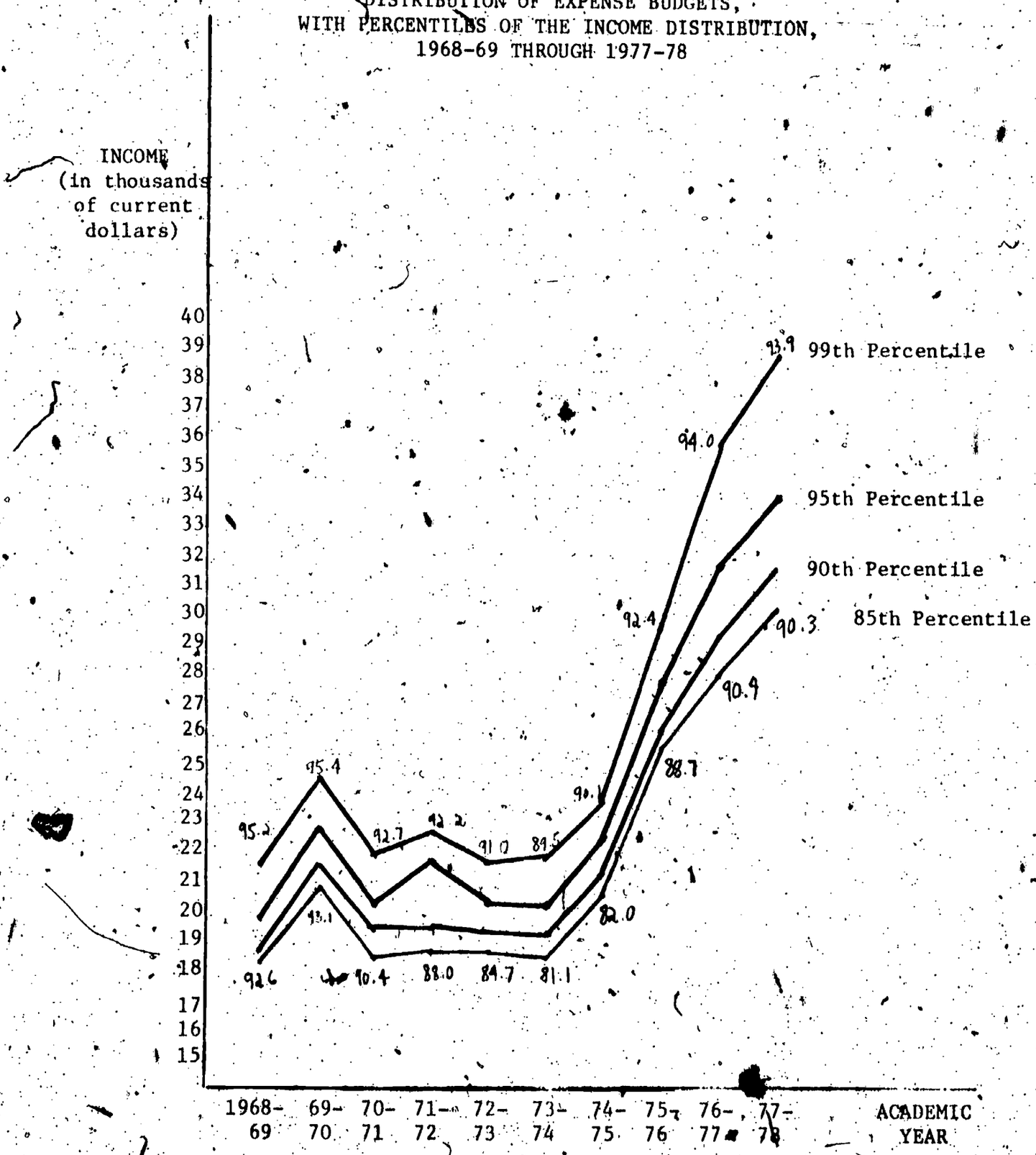
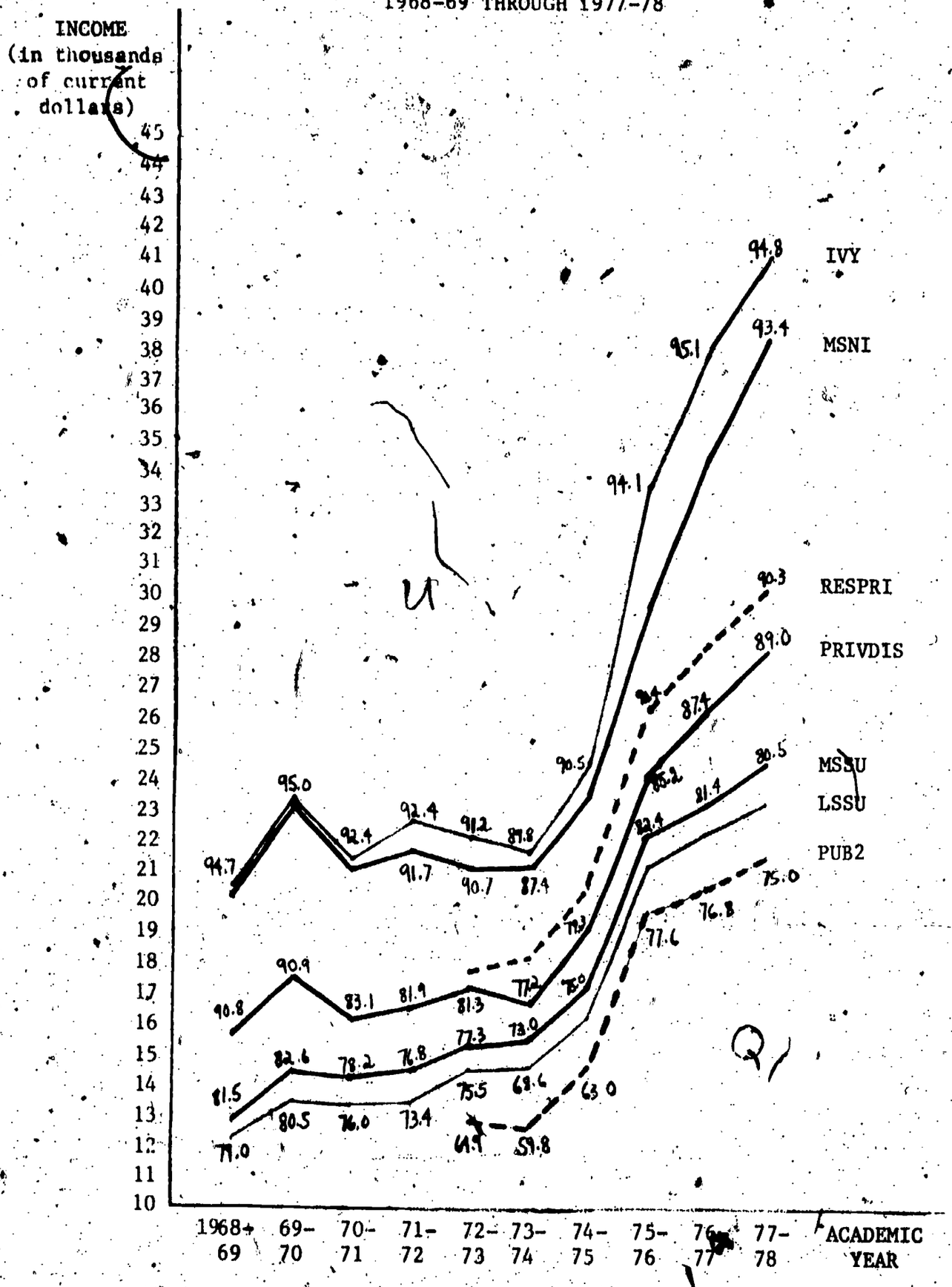


FIGURE 5

AID ELIGIBILITY FRONTIERS FOR SEVEN GROUPS OF INSTITUTIONS, WITH PERCENTILES OF THE INCOME DISTRIBUTION, 1968-69 THROUGH 1977-78



Several conclusions emerge from those AEFs which have been developed. First, they go a long way towards showing why simply referring to some family as being eligible or ineligible in the abstract is not very helpful. It is true that some incomes -- those in region U of Figure 5 -- would have disqualified the specified family everywhere, even at the most expensive institutions. It is also true that incomes in region Q would have qualified the specified family everywhere, even at the least costly institutions. However, for all the incomes between regions U and Q, the situation is less clear-cut; they would have qualified the specified family at some institutions and disqualified it at others.

Another conclusion concerns how uniformly high the percentiles are. Perhaps, when one thinks about it, it is not so surprising that only in the neighborhood of 5 percent of the incomes in the country are judged high enough to enable the specified family to pay the full charges at the expensive private institutions. But what is really striking are the percentiles associated with various elements of the public sector. The numbers suggest that, not only in the state universities, but even in the community colleges, a very large proportion of the population would not be deemed able to afford the stated fees but instead, would have some amount of measured need. To be sure, the measured need would be less -- the AEFs would be uniformly lower -- if the BEOG rather than the CSS standards had been used, and it is the BEOG standard which is the one more frequently actually applied in the setting of the community college. Even with the AEFs based on the BEOG formula, however, the percentiles for the public sector still appear remarkably high; the point is illustrated in Figure Appendix B-1.

This general observation about the location of the AEF for the community colleges goes hand in hand with an important finding which Lawrence Gladieux presented in 1975 concerning the participation of those institutions in the campus-based programs:

> The two-year colleges' relative participation in these "campus based" (or institutionally administered) programs appears disproportionately low.... Even after considering the lower costs of attendance at two-year colleges, preliminary estimates indicate that 20 to 25 percent of all student financial need for full-time students in higher education is in two-year institutions.... [T]he explanation [for the low rate of participation] seems to rest with the community colleges themselves. Many two-year institutions simply do not apply for one or more of the programs.... Because of their long tradition of low student charges, some community colleges may tend to think that student aid is not their concern, but rather something for higher priced four-year institutions to worry about. But their students do have substantial needs and in too many cases are effectively denied potential opportunities for federal assistance simply because of the institution's failure to apply for an allotment of funds.[10]

Certainly Gladieux's findings and those presented for the AEF of the community colleges reinforce each other and prompt one to give serious thought to the question of how much remains to be done to transform the hopes for equal access into reality. It is still true, after all, that less than half of an age-group gets to college at all, and those who do not go are disproportionately from poor families.

In following the course of each AEF, it becomes clear that the percentiles change over time. Three factors interact to bring about those changes: the general level of income, the level of institutional charges, and the standards by which EPC is derived from a given income. Other things being equal, an increase in the level of charges increases the aid-eligible population, as does an easing of the standards for calculating the EPC. Other things being equal, an increase in the general level of income decreases the aid-eligible population, as does a tightening of the standards for calculating the EPC.

Regarding the observed changes in the percentiles, two points should be made. The first is that there is a great deal of stability in the percentiles along many of the AEFs; the major interacting forces have moved in such a way to achieve this outcome. Thus, throughout the period, 5 to 10 percent of the incomes have been judged sufficient for the specified family to pay the full charges in the Ivy institutions. For a broad spectrum of state universities the corresponding range is roughly 18 to 23 percent.

The other point, however, is that there has been some interesting variation in the percentiles for all groups, though it has been more pronounced for some than for others. The variation is particularly worth noting for the community colleges, the private colleges depending heavily on in-state students, and the broad category of private residential four-year institutions. The exact cause of variation cannot be read directly from the AEF; it must be explained from independent information. For example, it is well known that the effective CSS standards were substantially liberalized for the 1975-76 academic year, and this development goes a long way towards explaining the large increases in the percentiles between 1974-75 and 1975-76.

Enough has been said to suggest some of the uses of AEFs; it is worth remembering that they have been calculated for just a few groups of institutions. It would be relatively easy to derive additional AEFs, either for individual institutions or for differently defined groups in which public policy makers, administrators, members of governing boards, or others might have some interest.

In itself, the AEF is a useful device for exploring the boundary between aid-eligible and aid-ineligible populations. It is less directly

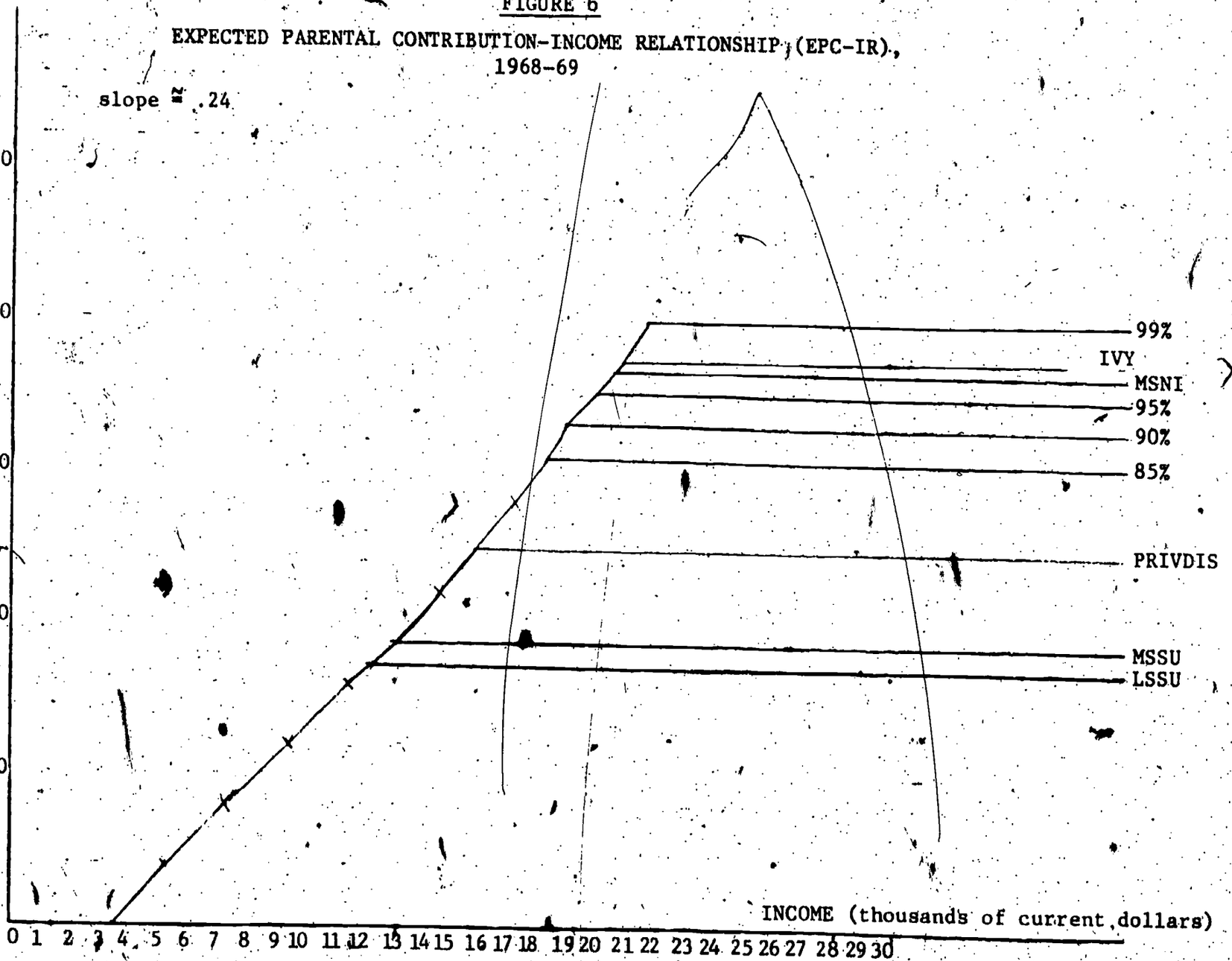
useful itself for studying the important connection between income and the EPC, but it is the principal device for deriving the expected parental contribution-income relationship, the EPC-IR.[11]

Figures 6 through 15 depict the EPC-IRs for 1968-69 through 1977-78 for all of the categories for which an AEF has been constructed.[12,13] Regarding the diagrams, one can spend a great deal of time inspecting them and, in so doing, learning about the relationships that have existed over roughly the past decade between income and the direct charges which families have been expected to incur in sending their children to college. A few of the more important conclusions that emerge from these EPC-IRs follow.

First, the figures reinforce our understanding that there is a substantial asymmetry in the way important features of the pricing system operate on the upward-sloping as opposed to the flat portions of any of the EPC-IRs. Of course the former correspond to aid-eligibility and the latter to aid-ineligibility. The important point is that on the upward-sloping portion, the EPC increases as a percentage of income as income increases. By clear contrast, on the flat portions, the EPC decreases as a percentage of income as income increases. Therefore it turns out that EPC as a percentage of before-tax income is highest precisely at that income representing, for any of the groups of institutions depicted, the boundary between the regions of eligibility and ineligibility. Under the conditions specified, the family which just fails to qualify for aid at the institution its child attends is indeed paying a higher percentage of its before tax income for the costs of college than is expected of any other family with a son or daughter at the same institution. If this point is what is meant by the burden on middle-income families, it is quite realistic.

FIGURE 6

EXPECTED PARENTAL CONTRIBUTION-INCOME RELATIONSHIP (EPC-IR), 1968-69



*The meaning of the Xs on Figures 6-15 is explained in footnote 13.

FIGURE 7

EPC-IR for 1969-70

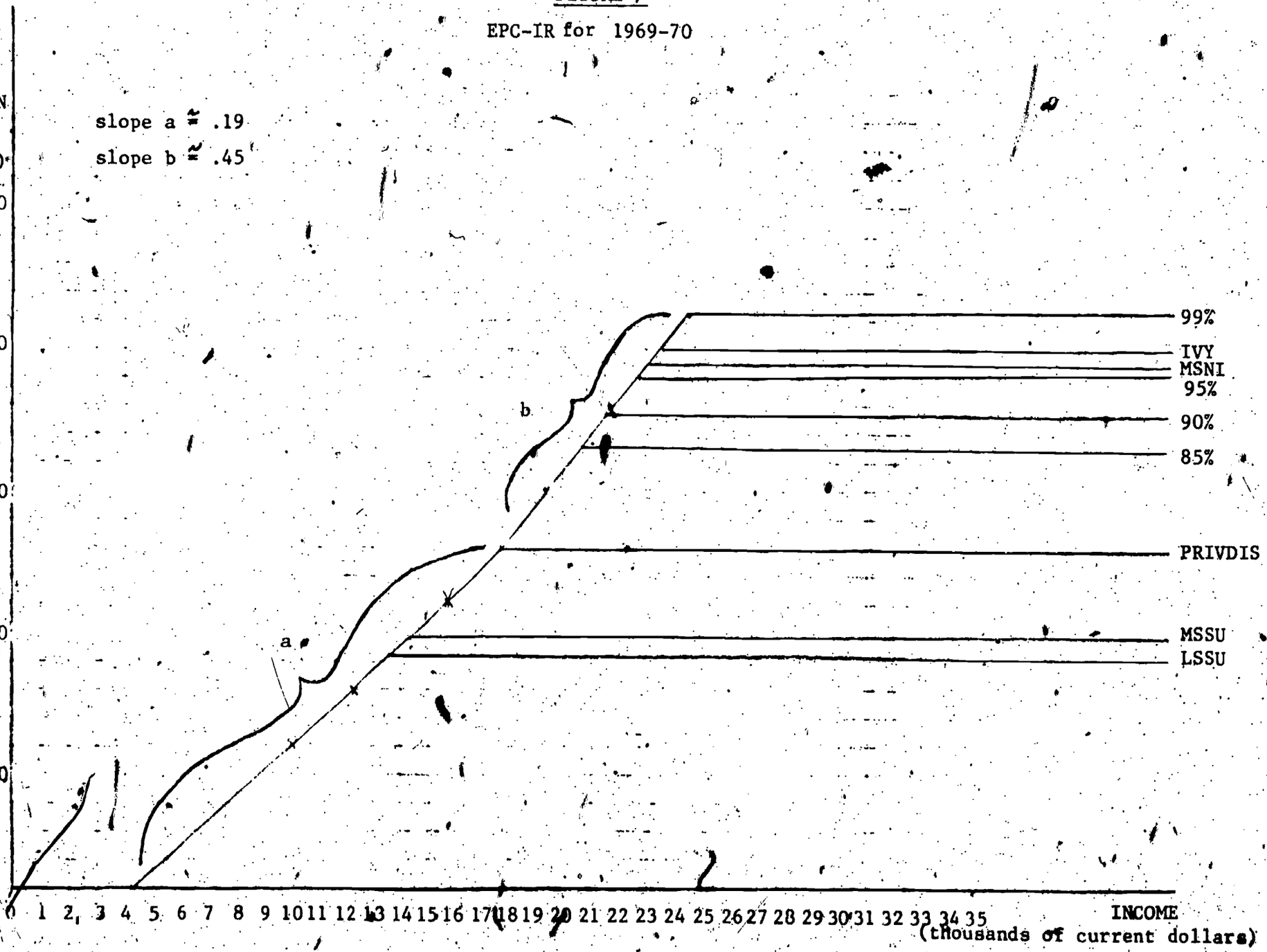


FIGURE 8

EPC-IR for 1970-71

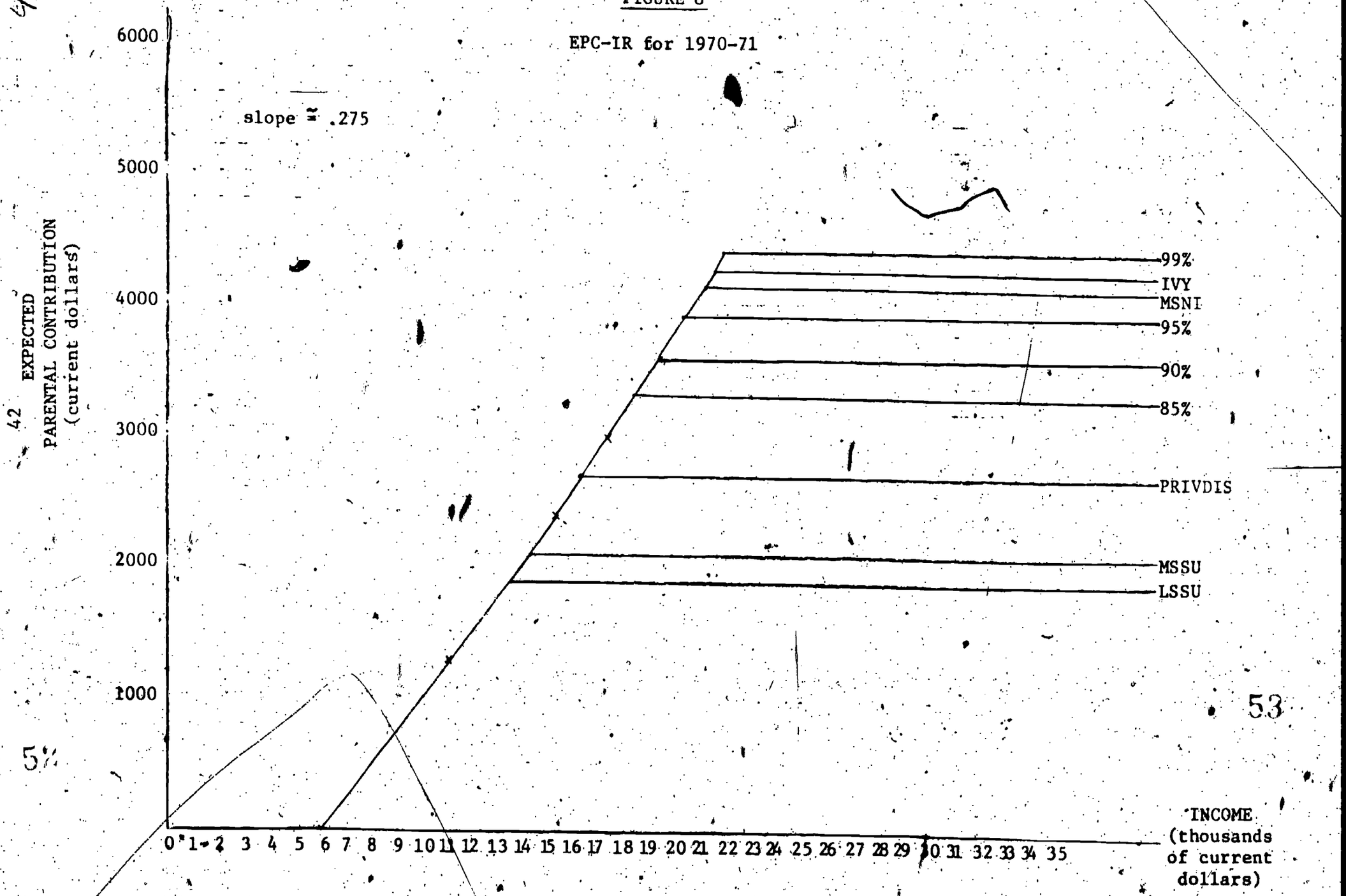


FIGURE 9

EPG-IR for 1971-72

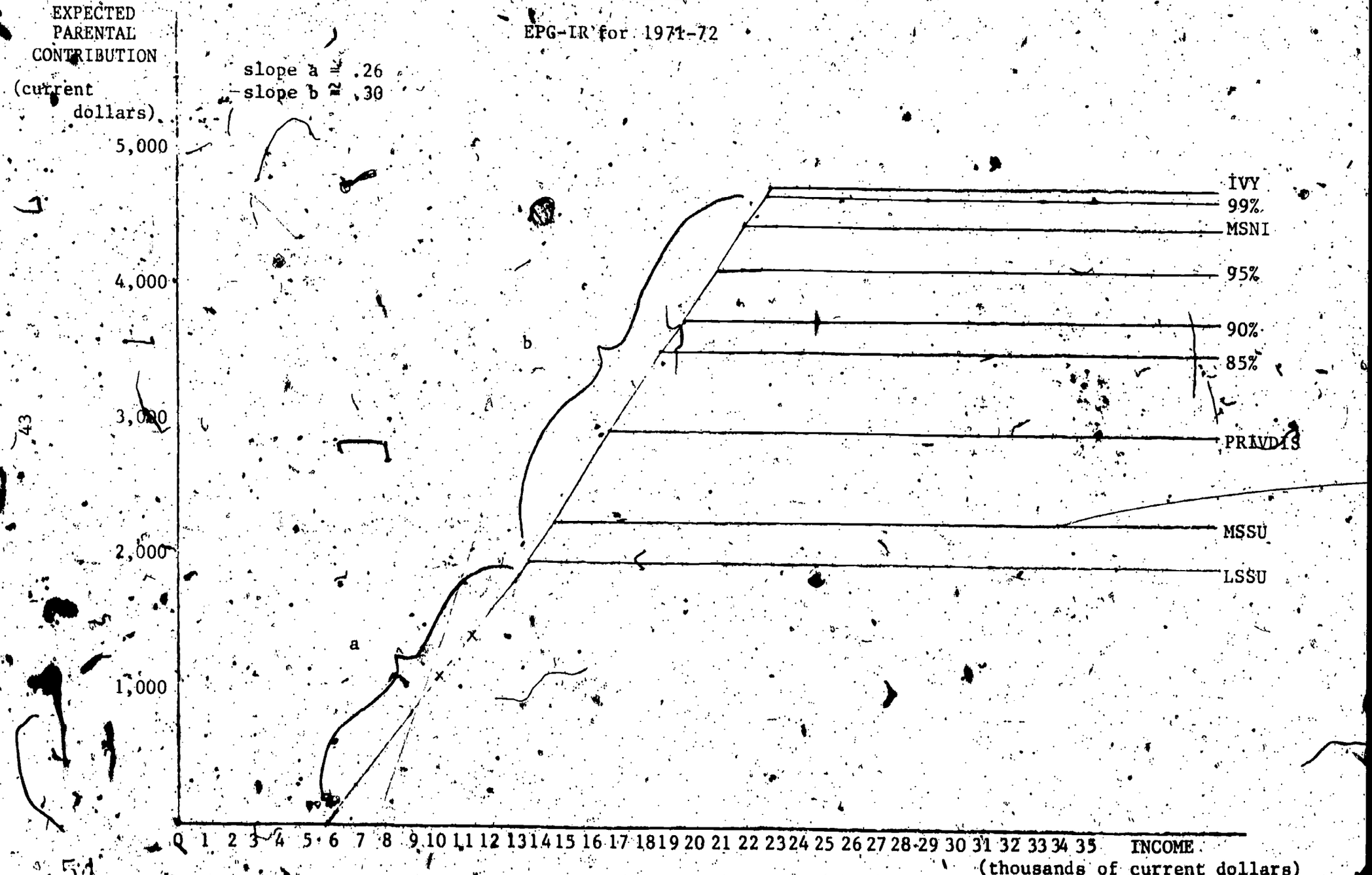


FIGURE 10

EPC-IR for 1972-73

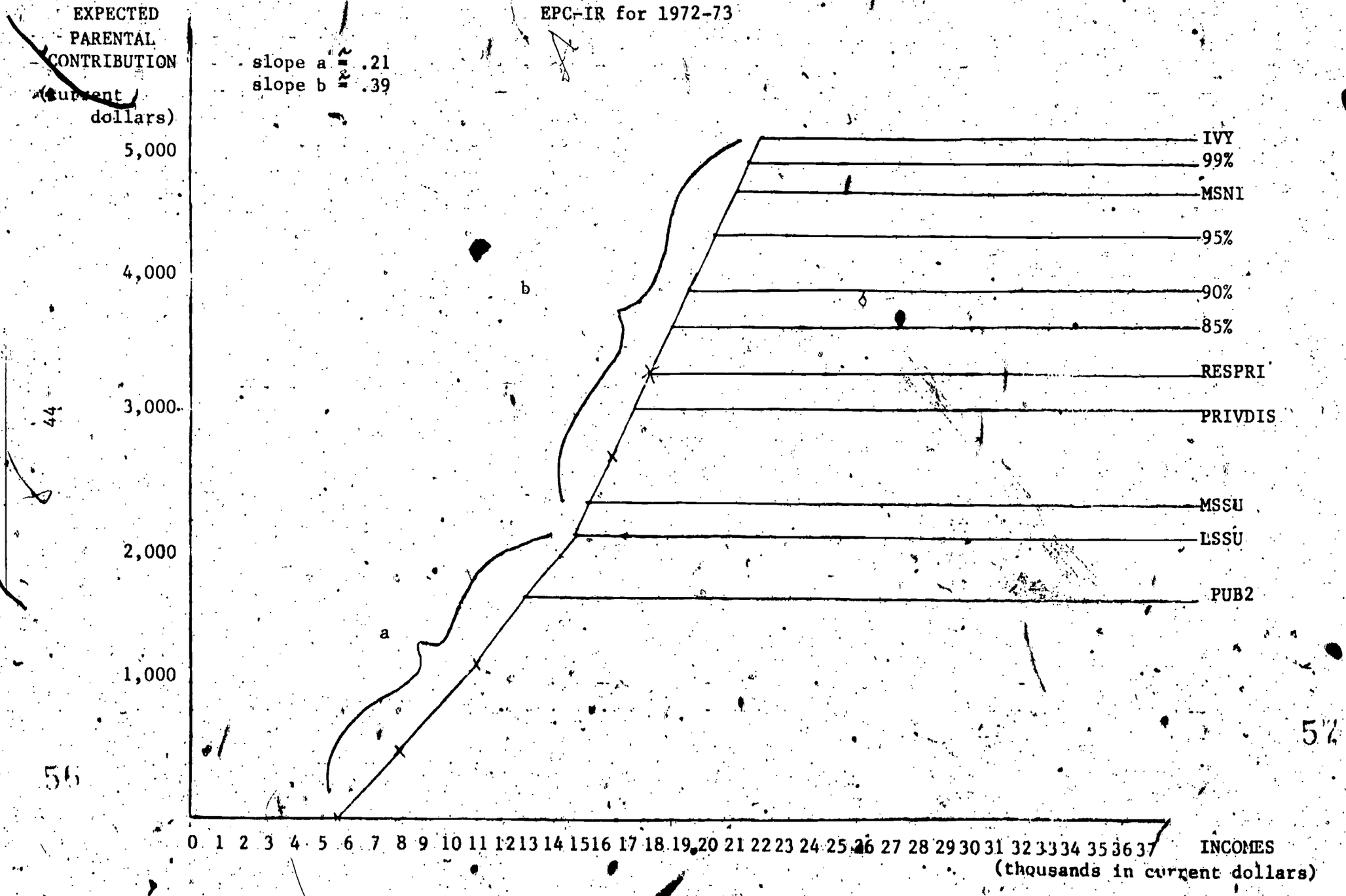


FIGURE 11

EPC-IR for 1973-74

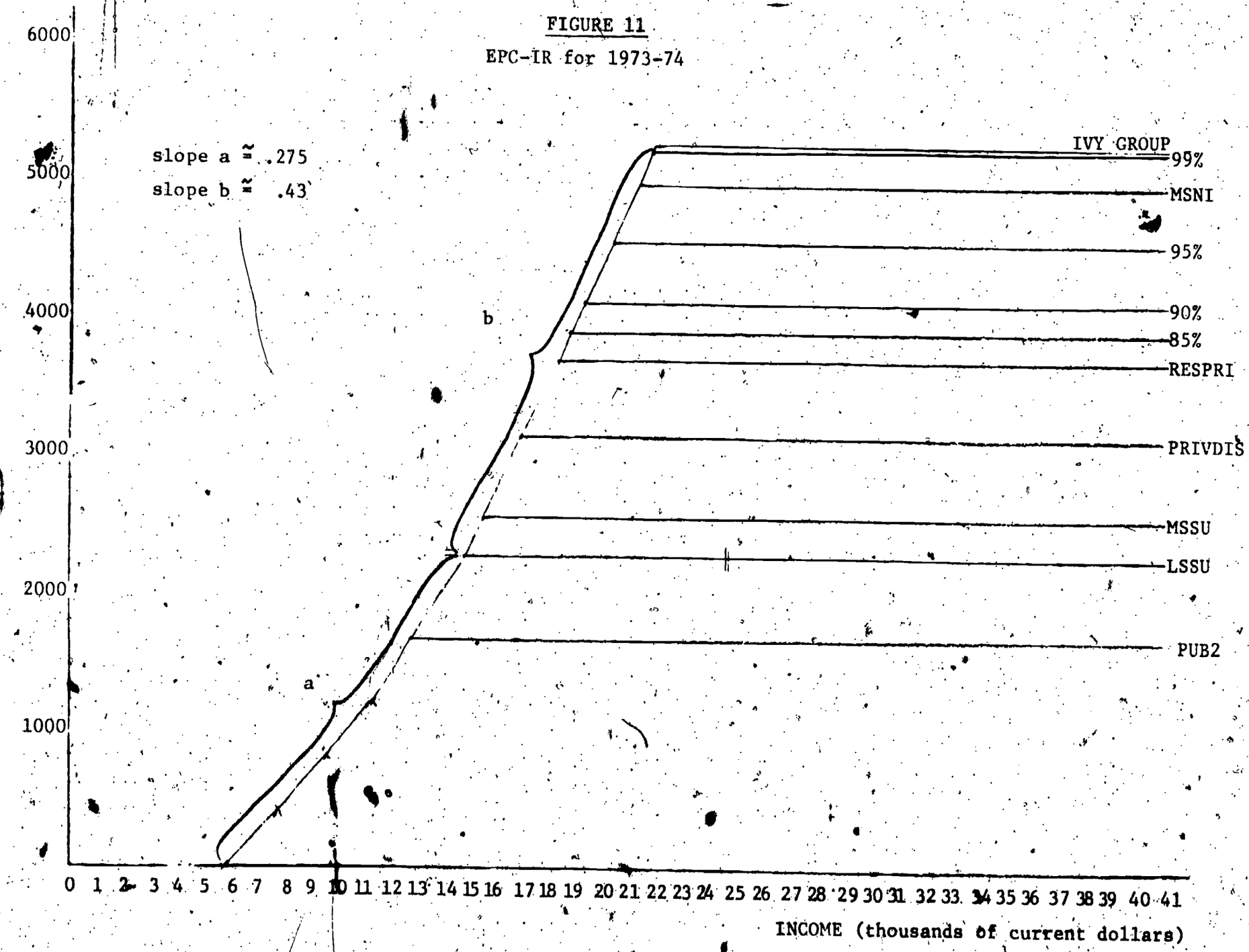


FIGURE 12

EPC-IR for 1974-75

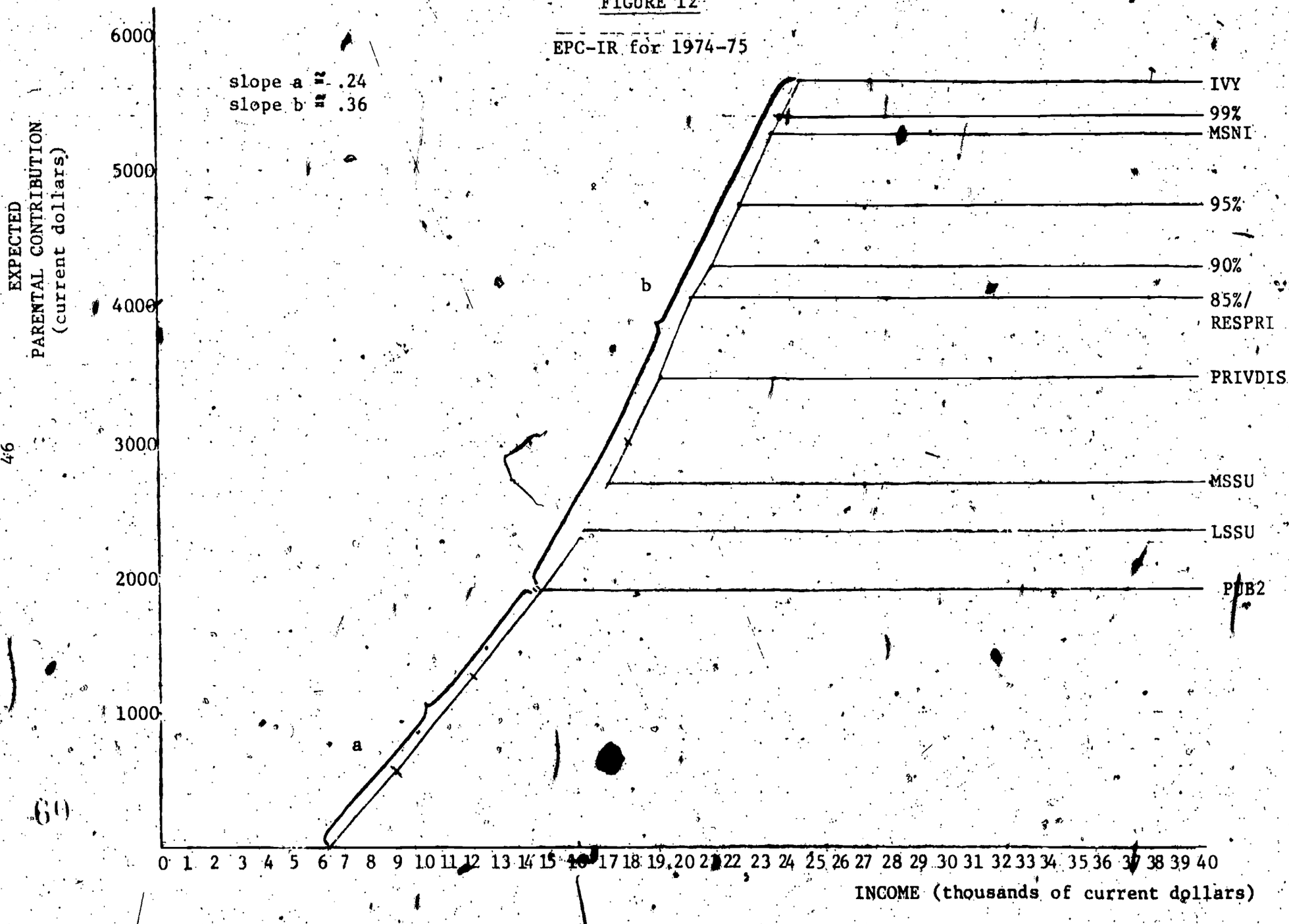


FIGURE 13.

EPC-IR for 1975-76

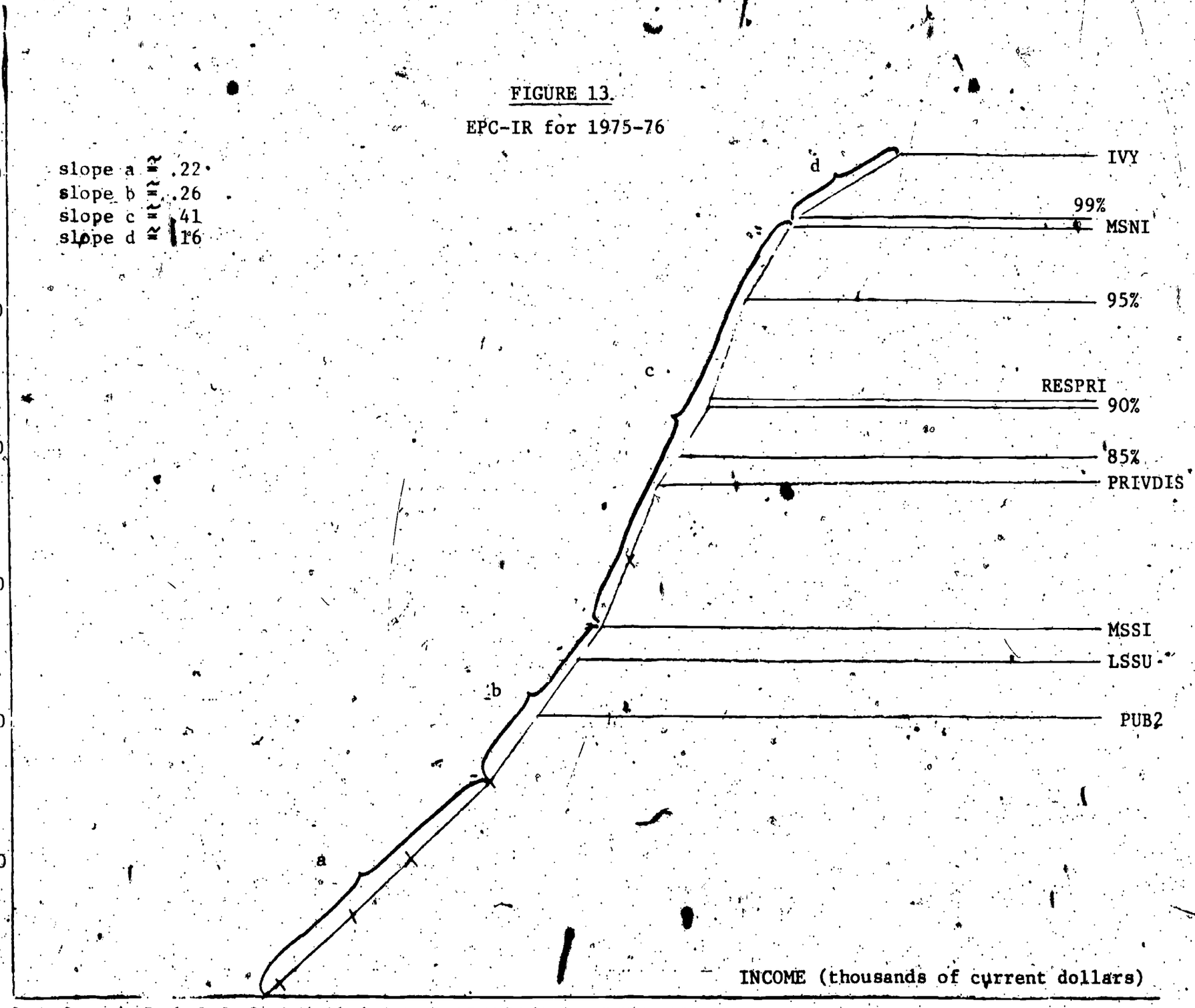


FIGURE 14

EPC-IR for 1976-77

slope a ≅ .16
slope b ≅ .28

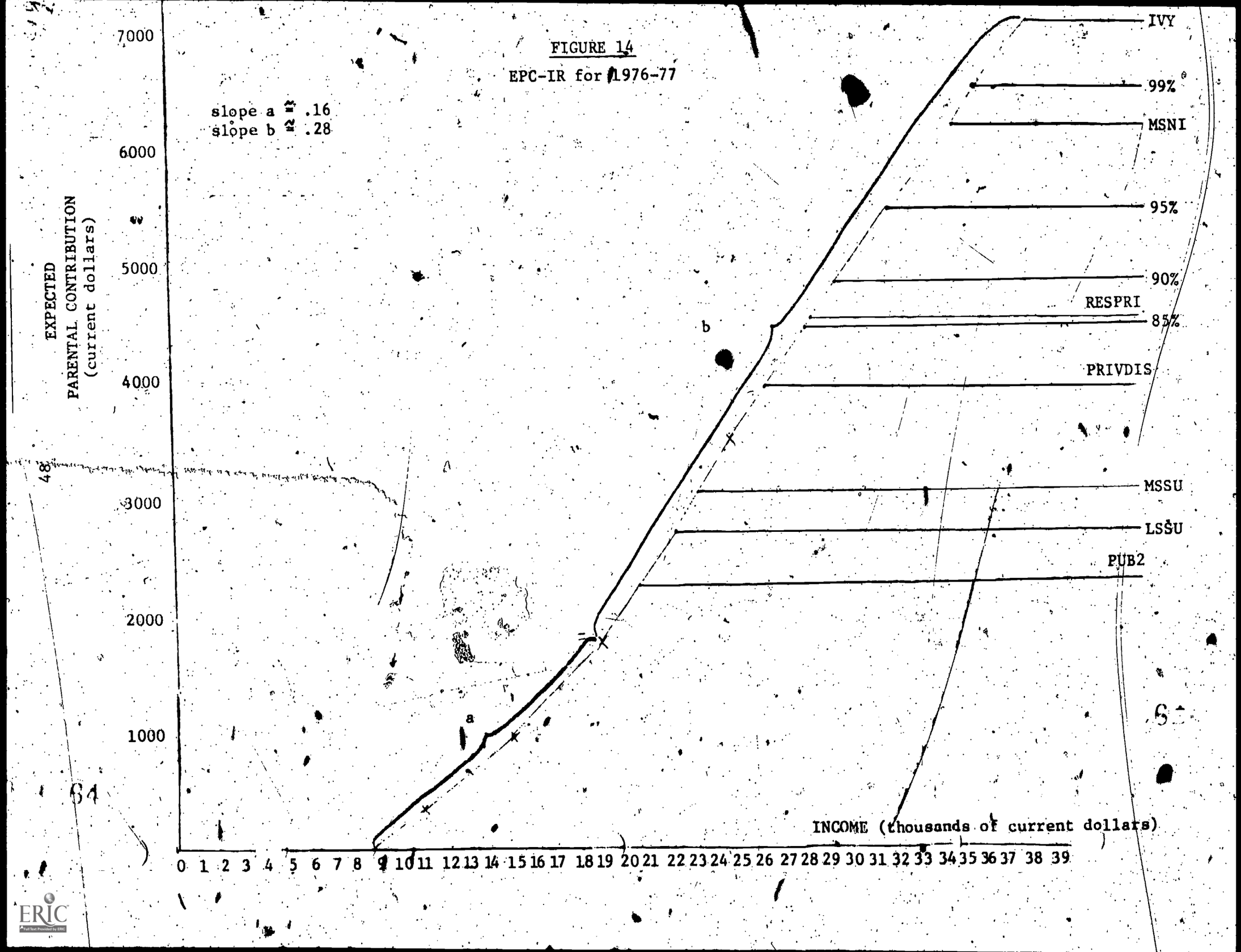
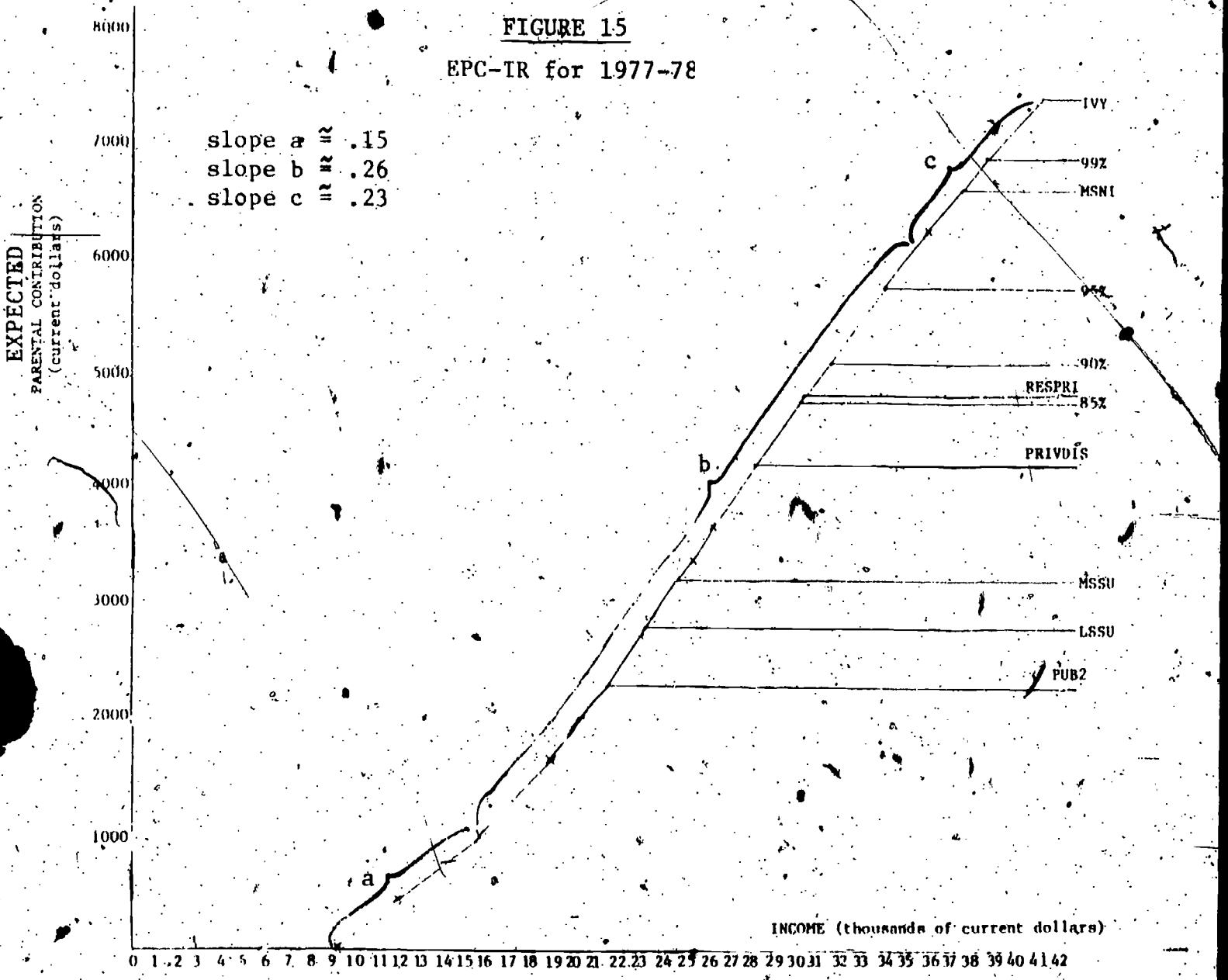


FIGURE 15

EPC-TR for 1977-78

slope a ≅ .15
slope b ≅ .26
slope c ≅ .23



Second, the diagrams suggest something about the variability of fortunes and opportunities in the private sector. Charges for the Ivy group were always near the top of the spectrum, but in the late 1960s the average of those charges was below the 99th percentile. By 1977-78, the Ivy average was substantially above the 99th percentile. The PRIVDIS group provides a good comparison. These institutions are much more disciplined by competition in the market. Where this group's charges stood, in terms of percentiles of the distribution, in the late 1960s and in the late 1970s has not been precisely calculated. One can see by inspection, however, that the group's standing vis-à-vis the 85th percentile remained roughly constant over the period. This comparison between the Ivy and PRIVDIS groups suggests how valuable strength in the market is for an educational institution, especially in periods marked by general economic difficulties.

Third, these diagrams provide additional perspective on the magnitude of the changes which CSS introduced during 1974-75 to take effect during 1975-76. Those changes substantially liberalized the EPC, and it is no secret that, simultaneously, they created some hard feelings.

A comparison of Figures 12 and 13 -- the EPC-IRs for 1974-75 and 1975-76 -- suggests the magnitudes involved. The changes had the general effect of moving the upward-sloping portion of the curve substantially to the right while simultaneously flattening it somewhat, especially in the upper regions. Between 1974-75 and 1975-76 the intersection of the EPC-IR with the income axis shifted from $6,163 to $9,375. The intersection is, of course, the level of income for which the EPC is zero. Also, in 1974-75, EPC rose from approximately $2,300 to $5,700 as income rose from roughly $16,000 to around $25,000, implying a rather steep

marginal assessment rate. In 1975-76, by contrast, an income of $16,000 for the specified family called for an EPC of only about $1,200. The EPC did not reach $2,300 until income reached about $20,500, and it did not reach $5,700 until income was around $29,500. Moreover, in 1975-76, the effective marginal assessment rate out of before-tax income for incomes approximately in the range of $30,000 to $34,000 was only about .16.

Clearly, by initiating these changes CSS was doing its part to respond to some of the problems individual families were experiencing in paying for college. The question of who was going to finance the increased aggregate need created in this way was, of course, another matter and was, to a large extent, what the controversy following the publication of the new schedules was all about.[14]

There are two interesting findings regarding pricing in the public sector. First, when total expense budgets are considered, there is not much variation among groups of four-year institutions no matter how the groups are defined; that finding comes from having tried a number of groups other than the two -- MSSU and LSSU -- for which results are actually presented. The small amount of variability in the total budgets is a result of the typically high ratio of living expenses to tuitions for public institutions. For the two groups for which results are presented -- MSSU and LSSU -- those results are what was expected at the outset; the expense budgets are higher for the MSSU than for the LSSU. However, the differences are relatively small and also quite stable over time.

The other point about pricing in the public sector that emerges from work with the EFC-IRs is one also made earlier on the basis of the

AEF: how high the average expense budget is for the community colleges. In focusing upon tuition, one easily gets the impression that, over large regions of the country, these institutions may be attended virtually free. An average expense budget of approximately $2,300 in 1977-78 obviously calls this notion into question. Of course, what the true costs are in a non-residential setting becomes a bit uncertain, and cases can be made for a variety of figures. But to the extent that the expense budget presented is a good measure of the true cost, then it is important to emphasize that the mere existence of community colleges and low tuitions will probably not, in themselves, be enough to lead to substantial progress in improving access.

VI. SOME CONCLUDING THOUGHTS

The analysis in the previous section has been an attempt to place the system of pricing in American higher education in a useful perspective from which to discuss certain important issues of policy.

At the outset it is useful to summarize two central characteristics of the current system. First, it is about as thoroughly developed, pervasive, and well-functioning a system of price discrimination as exists in any ongoing economic endeavor. The term "price discrimination" is unfortunate because the word "discrimination" has such unpleasant and emotion-laden connotations. However, price discrimination is precisely what is happening, and it would not be helpful to our understanding to avoid the phrase.

Second, the system's outcome depends upon the interaction of two sets of forces, those establishing prices and those establishing rules for altering them for some students. For a very wide spectrum of higher education, decisions regarding prices and the basic rules governing the award of financial aid are made by separate groups. Of course a state has the option of making both sets of decisions in this sense: it sets prices in the public sector, and it can simultaneously determine the rules for awarding its own financial aid. In reality, however, there are limits to the degree to which states actually achieve a high level of coordination between pricing and financial aid policy.

As the system of financial aid and pricing is currently operating, what are some of its major results? For one thing, it goes a substantial step in the direction of eliminating the tuition gap.[1] There are some complexities involved in determining how aid is coordinated in the

presence of both the BEOG and the CSS standards, but with that issue put aside, the important point is that as long as one is operating on the sloping portion of the EFC-IR, the expected family contribution is independent of which institution the student attends. To those who are familiar with the workings of the system, this point comes as no news. But to those less well initiated, who have been hearing a great deal about the "tuition gap," the point may be quite surprising indeed. Of course that gap is real enough on the flat portions of the curve.

Second, the major need analysis methodologies lead to this important result: EPC as a percentage of before tax family income rises as income rises over the sloping portion of each EPC-IR and falls as income rises over the flat portion of each EPC-IR. Thus, for any given institution, this percentage is at a maximum for that family which just fails to qualify for aid. If one is looking for a sense in which there is substance to the difficulties of the middle class, here is a very simple and logical one. To alter this general result -- if there were any inclination to do so -- it would be necessary to alter the current methodologies of need analysis. A change in the charges at any institution would not alter the general result, but it would change the level of income at which EPC as a percentage of income reached a maximum for those attending that institution.

As one looks to the future, a number of potential problems for the smooth functioning of the current system are visible on the horizon. One arises largely as a by-product of inflation and creates what one might call an "inflationary-era-supermarket-shopping" syndrome. In more stable times people tend to be less frustrated at the checkout counter than they are in an era of inflation when the unpleasant surprises are frequent. Eventually people in general begin to be highly sensitive to

the prices of the items they select, and they begin to shop very carefully.

This syndrome extends to many facets of everyday life, and pricing of higher education is not immune to it. In the current era, the system is likely to be getting a much more thorough examination than it would in an era of more stable prices. This fact substantially complicates the problems of administering it because price discrimination is inherently a contentious subject. It is just a political fact of life that this system of price discrimination can function much more easily when it is not getting the meticulous scrutiny which it is now receiving and which seems likely to continue.

Another potential difficulty arises because the current system does treat families very differently depending on whether or not they are applying for aid. The degree of intrusiveness that accompanies need-based financial aid is not a trivial political issue, and one wonders how often families select less rather than more expensive institutions to avoid questions they simply prefer not to answer. An issue for the future is to what extent tuitions will continue to rise fast enough to make families ever higher on the income distribution eligible for aid. If and when families with relatively complicated federal income tax returns become eligible, the general system is likely to encounter some strong resistance. Indeed it would be extremely interesting to know what changes have taken place over the last two decades in the length of the federal income tax returns for the more prosperous end of CSS' population of filers.

Still another problem which lies ahead is a clear by-product of the economic environment which American higher education is about to

enter in earnest, one in which the central problem for most institutions will be the existence or threat of excess capacity. To operate as much in unison as it does, the existing system of financial aid requires many institutions to share some broad principles regarding the importance of having aid be predominantly need-based. In the period to come the need-based system will be under great strain as the temptations to deviate from it mount. Already no-need awards are a growing force, and the pressures to expand them will grow before they diminish, despite the federal government's substantial control over the formulas for distributing federal financial aid.

A final prospective area of difficulty in the coming period concerns the independent student. It is no easy task to create language to distinguish equitably between the genuinely independent and those who have only achieved an opportunistic independence of convenience. There are straws in the wind to improve the lot of the independent student. For example, the Middle Income Student Assistance Act, H.R. 11274, as reported to the House, provides that the assessment rate on independent students' assets over $25,000 be reduced from 33.3 percent to 5 percent and that the standard living allowance for a single independent student be raised from $1,100 to $3,400.[2] If the treatment of genuinely independent students actually does improve, that would be excellent. However, should these or similar items become law, it is critical that middle-income parents not conclude, as they may be tempted to, that the real assistance for middle-income families comes from the feasibility of dumping their children abruptly into independence. If any large-scale movement along those lines were to take place, it could become an albatross for student aid even more detrimental than the default problem.

Those are some of the problems, but along with them comes an excellent opportunity: to advance access at a time when colleges and universities have strong reason to be especially receptive to students newly-encouraged to participate in higher education.

For those who govern and administer the system of financial aid, the period to come will not be easy. It will be a time requiring some thoughtfulness, some patience, and some very acute sense of the distinction between what is and what is not politically feasible. Largely what is needed are some concerted efforts to develop an ever-broader consensus on how the costs of higher education should be shared among society, the student, and his or her family.

NOTES

II. A BRIEF REVIEW OF THE ECONOMIC OUTLOOK FOR AMERICAN HIGHER EDUCATION

1. This section of the paper relies heavily on Kenneth M. Deitch, "Some Aspects of the Economics of American Higher Education," unpublished working paper, Sloan Commission on Government and Higher Education, originally distributed November 1977, Revision of January 1978, pp. 34-126. In some instances, portions of this section have been taken verbatim from that paper.

2. Richard Freeman and J. Herbert Hollomon, "The Declining Value of College Going," Change (September 1975), pp. 26-27.

Allan M. Cartter, Ph.D.'s and the Academic Labor Market (New York and other cities: McGraw-Hill Book Co., 1976), p. 42-53.

3. U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 309, "School Enrollment-Social and Economic Characteristics of Students: October 1976" (Advance Report) (Washington: U.S. Government Printing Office, 1977), p. 6.

The Congress of the United States, Congressional Budget Office, Federal Aid to Postsecondary Students: Tax Allowances and Alternative Subsidies (Washington: The Congress of the United States: Congressional Budget Office, 1978), p. 9.

4. Earl F. Cheit, The New Depression in Higher Education -- Two Years Later (Berkeley, California: The Carnegie Foundation for the Advancement of Teaching, 1973), pp. 15-16, 51-52.

Lyle H. Lanier and Charles J. Andersen, A Study of the Financial Condition of Colleges and Universities: 1972-1975 (Washington: American Council on Education, 1975), pp. 51-56.

5. Howard R. Bowen, Academic Compensation: Are Faculty and Staff in American Higher Education Adequately Paid? (New York: Teachers Insurance and Annuity Association, College Retirement Equities Fund, 1978).

6. Ibid., p. 16.

7. The forecast derived from Cartter's work is the average of two of the forecasts he made. See Cartter, Ph.D.'s..., p. 183. The essential assumptions incorporated in the forecast derived from Cartter's work are that the student-faculty ratio will increase during the 1970s and then decline during the 1980s toward 15:1 and that during the 1980s there will be a net annual decline in the faculty of 1.5 percent in response to a relative decline in academic salaries.

III. FINANCIAL AID IN AN ERA OF EXCESS CAPACITY: SOME INTRODUCTORY CONSIDERATIONS

1. Two excellent sources on t[illegible]-cost rule are: Richard J. Ramsden, "The Basic Educat[illegible]pportunity Grant Program One-Half Cost: An Analysis, [illegible]nover, New Hampshire, Consortium on Financing Higher Education, November 6, 1975 (mimeographed) and Robert W. Hartman, "Federal Options for Student Aid," in David W. Breneman and Chester E. Finn, Jr., eds., with the assistance of Susan C. Nelson, Public Policy and Private Higher Education (Washington: The Brookings Institution, 1978), pp. 231-279.

2. Alexander G. Sidar, Jr. and David A. Potter, No Need/Merit Awards: A Survey of Their Use at Four-Year Public and Private Colleges and Universities (New York: College Entrance Examination Board, 1978).

Barry McCarty, "No-Need Scholarships," The College [illegible] Review, No. 607 (Spring 1978), pp. 38-39.

IV. THE BURDEN OF PAYING FOR HIGHER EDUCATION

1. "Status of Legislation," The Chronicle of Higher Education, July 10, 1978, p. 6.

2. Quoted in: 95th Congress, 2nd Session, House of Representatives, Report No. 95-951, "Middle Income Student Assistance Act," March 14, 1978, pp. 2-3.

3. Larry L. Leslie, Higher Education Opportunity: A Decade of Progress (Washington: The American Association for Higher Education, 1977), p. 13.

4. Jacob Stampen, "The Tuition Cap Idea: An Initial Discussion," Draft/AASCU, November 8, 1977 (mimeographed), p. 1.

5. Albert H. Quie, "Quie: Study Shows College Tuition Squeeze Gets Tighter," a news release of May 10, 1978.

6. The Carnegie Council on Policy Studies in Higher Education, The States and Private Higher Education: Problems and Policies in a New Era (San Francisco and other cities: Jossey-Bass Publishers, 1977), p. 18.

7. The Congress of the United States, Congressional Budget Office, Federal Aid to Postsecondary Students..., p. 14.

8. The Congress of the United States, Congressional Budget Office, Federal Assistance for Postsecondary Education: Options for Fiscal Year 1979 (Washington: U.S. Government Printing Office, 1978), pp. 5 and 7.

9. William D. Ford, letter of May 3, 1978 to Alice Rivlin.

10. Robert A. Levine, letter of May 12, 1978 to William D. Ford.

11. The earlier study is: James E. Nelson, "Are Parents Expected to Pay Too Much?" The College Board Review, No. 92 (Summer 1974), pp. 11-15. The more recent study is: James E. Nelson, William D. Van Dusen, Edmund C. Jacobson, The Willingness of Parents to Contribute to Postsecondary Educational Expenses, Prepared by the College Entrance Examination Board Under Contract to The Office of Planning, Budgeting, and Evaluation, Postsecondary Programs Division, United States Office of Education, (no date).

12. Nelson, "Are Parents Expected to Pay Too Much?" p. 11.

13. Nelson, Van Dusen, Jacobson, The Willingness of Parents to Contribute..., p. 1.

14. The Congress of the United States, Congressional Budget Office, Federal Aid to Postsecondary Students..., p. 11 and The Congress of the United States, Congressional Budget Office, Federal Assistance for Postsecondary Education..., p. 8.

15. See Elizabeth W. Suchar, Stephen H. Ivens, Edmund C. Jacobson, Student Expenses at Postsecondary Institutions, 1978-79 (New York: College Entrance Examination Board, 1978).

16. Ibid., p. iv.

17. Letter from Martin J. Silver to the editor, The New York Times, April 17, 1978, p. A22.

V. PRICING AND ELIGIBILITY FOR AID

1. Stephen Dresch has given a lucid explanation of the grant component of loans in a brief paper commenting on the proposal by Congressman Michael Harrington and Boston University President John Silber for an income-contingent lending plan. See Stephen P. Dresch, "A Critique of the Harrington-Silber Tuition Advance Fund," New Haven, Institute for Demographic and Economic Studies, May 15, 1978.

2. College Scholarship Service, CSS Need Analysis: Theory and Computation Procedures for the 1978-79 FAF Including Sample Cases and Tables (New York: College Entrance Examination Board, 1977), p. 9.

3. While I was in the early stages of developing the notion of the aid eligibility frontier, James Nelson and William Van Dusen were very helpful and even prepared a brief paper, "The Question of Affordability," May 19, 1978 (mimeographed), to help put some empirical content to a closely related variant of the general notion for some of the CSS' broad aggregates of institutions.

4. The source for the measure of selectivity used is: Susan F. Watts, editor, The College Handbook (New York: College Entrance Examination Board, 1977).

5. The source for the proportion of in-state freshmen for the various institutions is: Ibid.

6. The underlying data are all contained in the CSS' annual publication of student charges and expense budgets. For each of groups 1, 2, 4, 5, and 6 the individual institutions' expense budgets for each year have been averaged to derive the group's expense budget. The exact membership of these five groups is given in Appendix A. The membership of groups 3 and 7 is, for each year, the respective universe of private four-year residential institutions and of public two-year colleges. The data in columns 4 and 8 of Table 6 -- for groups 3 and 7 -- were supplied directly by James Nelson and William Van Dusen in "The Question of Affordability."

7. Joe Paul Case of the CSS very kindly provided the information which made it possible to derive the incomes from the expense budgets.

8. The AEFs and indeed the expected parental-contribution-income relationships, which are derived from them further on, are all expressed in current dollars. Certainly there would be some benefits in trying to express these various relationships in constant dollars, but in the present context I believe that using current dollars is preferable.

9. The Census Bureau supplied the data on the percentiles of the income distribution over the telephone. Three kinds of data were provided for the years 1967 through 1976: the percentage of total family income received by 5 percent gradations of the population, the number of families, and the total income of all families. The following

arithmetic was then performed. The average family income for each of the 5 percent gradations was computed. The resulting adjacent averages were then, themselves, averaged to estimate the boundaries between the 5 percent groups, i.e. the 5th percentile, the 10th percentile, and so on. For all years except 1976 some of the percentiles were known from another source: U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 103, "Money Income in 1975 of Families and Persons in the United States," (Washington: U.S. Government Printing Office, 1977), p. 60. There was close agreement between the boundaries of the quintiles published in this document and those computed, as described above, from the material the Census Bureau provided over the telephone. The incomes corresponding to successive points on the various AEFs and determined on the basis of the data provided by the CSS were then superimposed upon the distributions of income estimated from the Census' data. Finally, linear interpolation was used to estimate the percentiles of the income distribution which are presented in Figures 4 and 5.

It need hardly be emphasized that there are some methodological refinements that could have been introduced into these techniques of estimation and that such refinements would have improved the quality of the estimates somewhat. However, as a practical matter, had more sophisticated methods been used, the changes brought forth in the actual results would, I believe, have been quite small and of little, if any, practical consequence.

10. Lawrence E. Gladieux, Distribution of Federal Student Assistance: The Enigma of the Two-Year Colleges (New York: College Entrance Examination Board, 1975), pp. 1-3.

11. The location of the EPC-IR depends upon which system of need analysis is used. Figures 6 through 15 are based on the CSS' system. The EPC-IRs implied by the BEOG methodology are presented in Appendix B, along with the AEF implied by the BEOG methodology for the community colleges.

12. Michael McPherson has introduced an approach which is, in its broad conception, virtually the same as what I am calling the EPC-IR. In his chapter which I have seen, he has not gone into as much empirical detail as I do in this paper to distinguish between various categories of institutions, but he does make the crucial point that the system of financial aid virtually eliminates the "cost gap" between the public and the private sector for students from families with annual incomes below about $19,000. As a matter of fact, he illustrates that the interaction of the BEOG and CSS systems is such that for students with family incomes in approximately the $6,000-12,000 range, the private institution may well actually be somewhat less expensive than the public one. See Michael S. McPherson, "The Demand for Higher Education," in David W. Breneman and Chester E. Finn, Jr., eds., with the assistance of Susan C. Nelson, Public Policy and Private Higher Education, p. 169.

13. In Figures 6-15, and also in Figures Appendix B-2 through Appendix B-6, the Xs indicate points on the upward-sloping portion of the EPC-IR which have been independently estimated from the relevant schedules relating income and EPC under the CSS methodology. The aim was to shorten the distances over which line segments were linearly interpolated. As it turns out, this extra refinement has had an important impact on the slopes of the lower regions of the EPC-IRs under the CSS methodology.

14. For anyone interested in pursuing the topic of the changes introduced by CSS in 1974-75 and the aftermath, two informative sources are: James E. Nelson, "Measuring Need vs Meeting Need," The College Board Review, No. 94 (Winter 1974-75), pp. 14-17 and Benjamin S. Sandler, "One Cheer for OE," The College Board Review, No. 101 (Fall 1976), pp. 16-19.

VI. SOME CONCLUDING THOUGHTS

1. This point is the main one which Michael McPherson makes very lucidly in: "The Demand for Higher Education," in Breneman and Finn, eds., with the assistance of Nelson, Public Policy..., p. 169.

2. 95th Congress, 2nd Session, House of Representatives, Report No. 95-951, "Middle Income Student Assistance Act," p. 20.

APPENDICES

Appendix A

THE GROUPS

Following are the lists of membership in groups 1, 2, 4, 5, and 6 used to define the aid eligibility frontiers. Groups 3 and 7 are omitted; group 3 includes essentially every private four-year residential institution, and group 7 includes all the community colleges.

1. Ivy Group

Brown
Columbia
Cornell
Dartmouth
Harvard
Princeton
University of Pennsylvania
Yale

2. Most Selective Non-Ivy Institutions (MSNI)

Amherst
Bowdoin
Brandeis
Johns Hopkins
Middlebury
Simmons
Stanford
Vassar
Wesleyan
Williams

4. Private Institutions Dependent on In-State Students (PRIVDIS)

California
Don Bosco
St. John's
Humphreys
La Verne
Point Loma
Loyola Marymount
California Lutheran
Pacific Christian
Azusa Pacific
California Baptist
University of Redlands
Mt. St. Mary's
University of San Francisco
University of Santa Clara
Westmont College

North Carolina
Mount Olive College
Peace College
Louisburg College
Methodist College
Wingate College

Virginia
Ferrum College
Bluefield College

Ohio
Chatfield College
Franklin University
Tiffin University
Ohio Dominican
Defiance
Malone
Ohio Northern
Capitol
Notre Dame College of Ohio
Findlay
Ursuline
Mt. Vernon Nazarene College
Bluffton
College of Mt. St. Joseph on the Ohio
Columbus College of Art and Design
John Carroll University
Otterbein College
Xavier University

Indiana
Indiana Central
Lackyear College
Northwood Institute
Ancilla College
Franklin College of Indiana
Holy Cross Junior College
St. Francis College
Marion College

Iowa
Buena Vista College
Grand View College
Mt. Mercy College
Ottumwa Heights College
Palmer Junior College
Morningside College
Briarcliff College

Kansas
Kansas Newman College
Friends University
Donnelly College

Maryland
Villa Julie College
Baltimore Hebrew College
Loyola College
College of Notre Dame of Maryland

Michigan
Sacred Heart Seminary College
Marygrove College
Detroit College of Business
Cleary College
Shaw College of Detroit
Lawrence Institute of Technology
Nazareth College at Kalamazoo
Madonna College
Alma College
Mercy College of Detroit
Davenport College of Business
Aquinas College
Spring Harbor College
University of Detroit
John Wesley College
Albion College

4. PRIVDIS (continued)

Minnesota
St. Mary's Junior College
Crosier Seminary Junior College
College of St. Benedict
Augsburg College
Golden Valley Lutheran College
College of St. Scholastica
College of St. Thomas
Hamline University

Wisconsin
Silver Lake College
Marion College of Fond du Lac
Concordia College
Wisconsin Conservatory of Music
Alverno College
Viterbo College
Lakeland College

Texas
Houston Baptist University
Dallas Baptist College
Incarnate Word College
Howard Payne University
Southwestern University
University of St. Thomas
Mary Hardin-Baylor College
McMurray College
Austin College
Wayland Baptist College
East Texas Baptist College
Jacksonville College

Pennsylvania
Holy Family College
Mt. Aloysius College
Robert Morris College
La Roche College
Manor Junior College
Our Lady of Angels College
Carlow College
Gannon College
Gwyneod-Mercy College
Villa Marie College
Alvernia College
St. Vincent College
Spring Garden College
Point Park College
Seton Hill College
Keystone College
Mercyhurst College
Washington and Jefferson College
York Junior College of Pennsylvania

5. Most Selective State Universities (MSSU)

SUNY: Binghampton
University of Virginia
University of New Hampshire
University of North Carolina (Chapel Hill)
Rutgers University
SUNY: Albany
SUNY: Buffalo
University of Missouri
University of Vermont
University of Rhode Island

6. Least Selective State Universities (LSSU)

University of Alaska
University of Nebraska
University of North Dakota
University of Arkansas
Louisiana State University
University of New Mexico
University of Tennessee
University of Arizona
Ohio State University
University of Montana

Appendix B

A GRAPHICAL COMPARISON OF THE BEOG AND THE CSS METHODOLOGIES FOR ONE AEF AND FOR THE EPC-IRs

Too late to be incorporated in the main body of the paper except in the brief comment on page 36, but in time to be presented in this appendix, some material has become available illustrating certain points of comparison between the BEOG and the CSS methodologies. The material is presented in graphical form as Figures Appendix B-1 through Appendix B-6.

FIGURE Appendix B-1

AID ELIGIBILITY FRONTIERS, PUBLIC TWO-YEAR COLLEGES, CSS AND BEOG METHODOLOGIES, WITH PERCENTILES OF THE INCOME DISTRIBUTION, 1973-74 THROUGH 1977-78

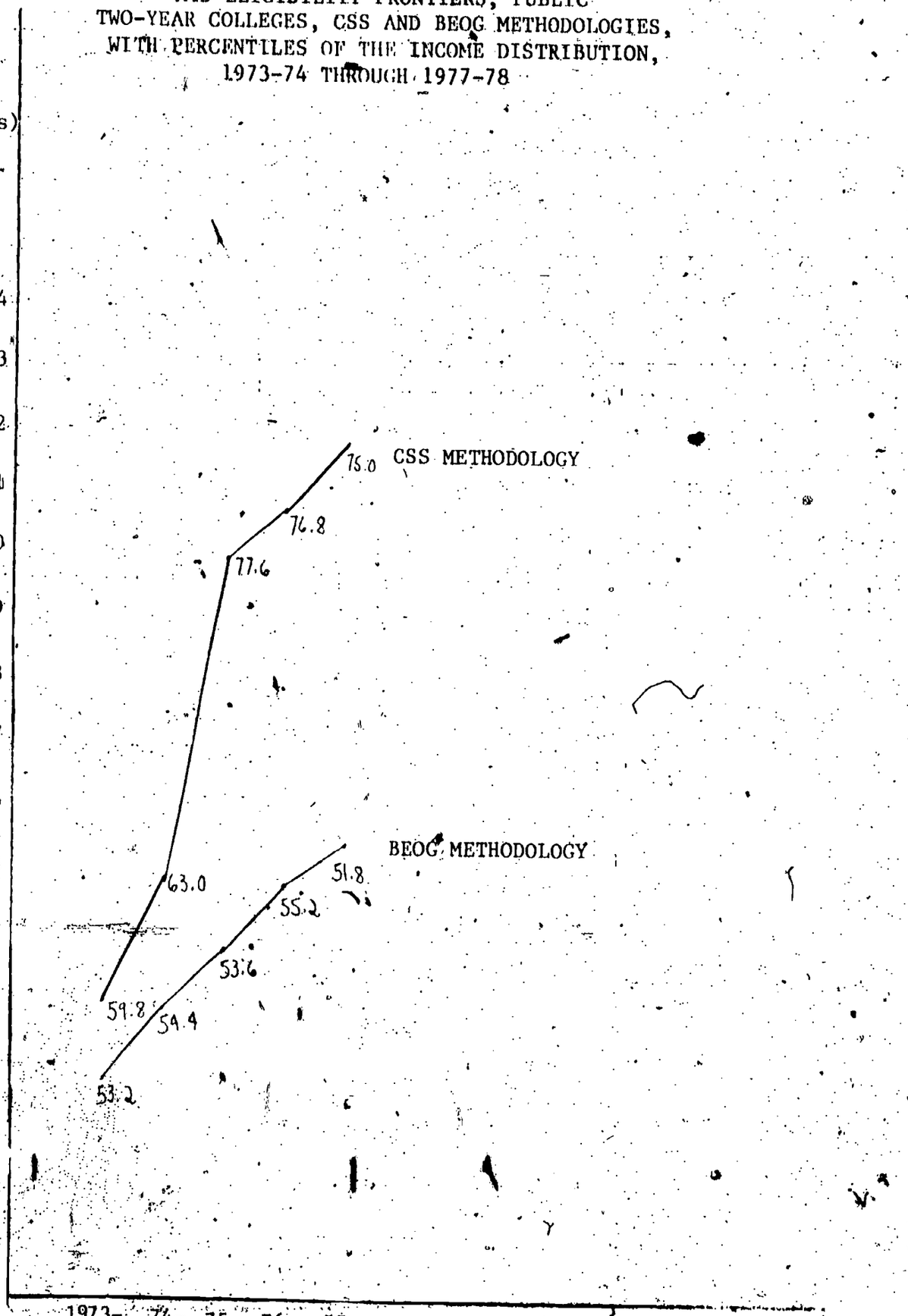
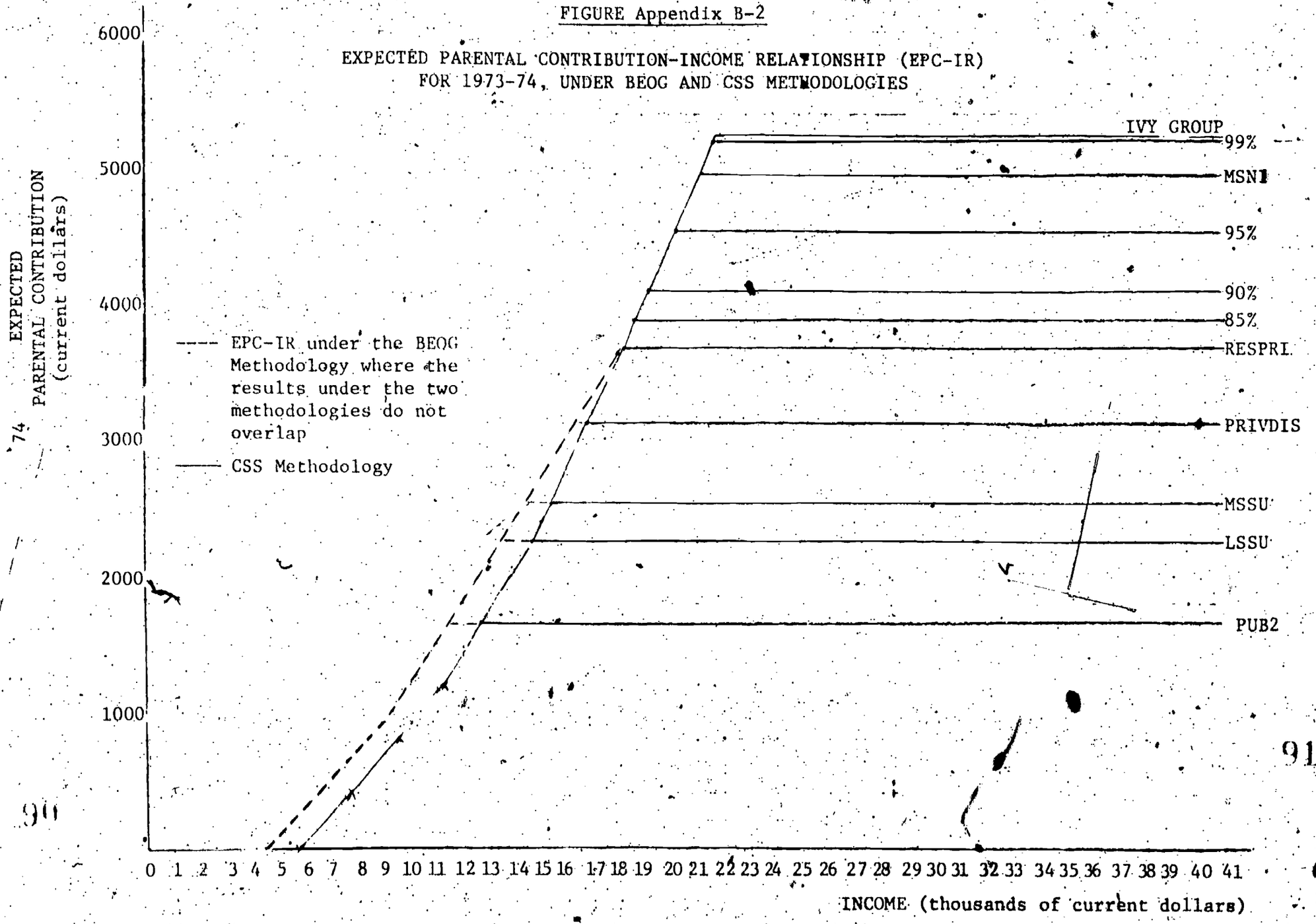


FIGURE Appendix B-2

EXPECTED PARENTAL CONTRIBUTION-INCOME RELATIONSHIP (EPC-IR)
FOR 1973-74, UNDER BEOG AND CSS METHODOLOGIES



91

FIGURE Appendix B-3

EFC-IR for 1974-75
UNDER BEOG AND CSS METHODOLOGIES

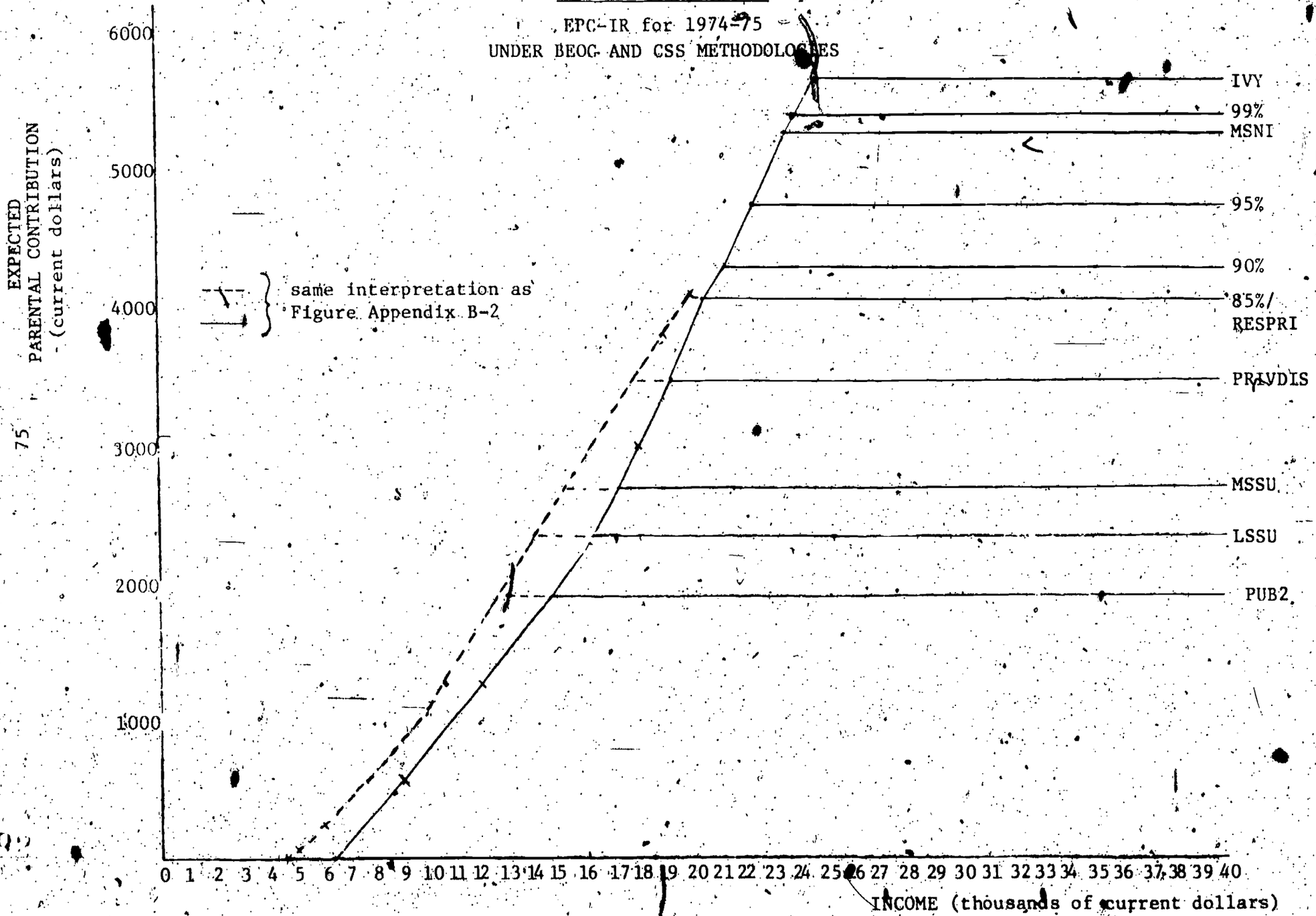


FIGURE Appendix B-4

EPC-IR for 1975-76
UNDER BEOG AND CSS METHODOLOGIES

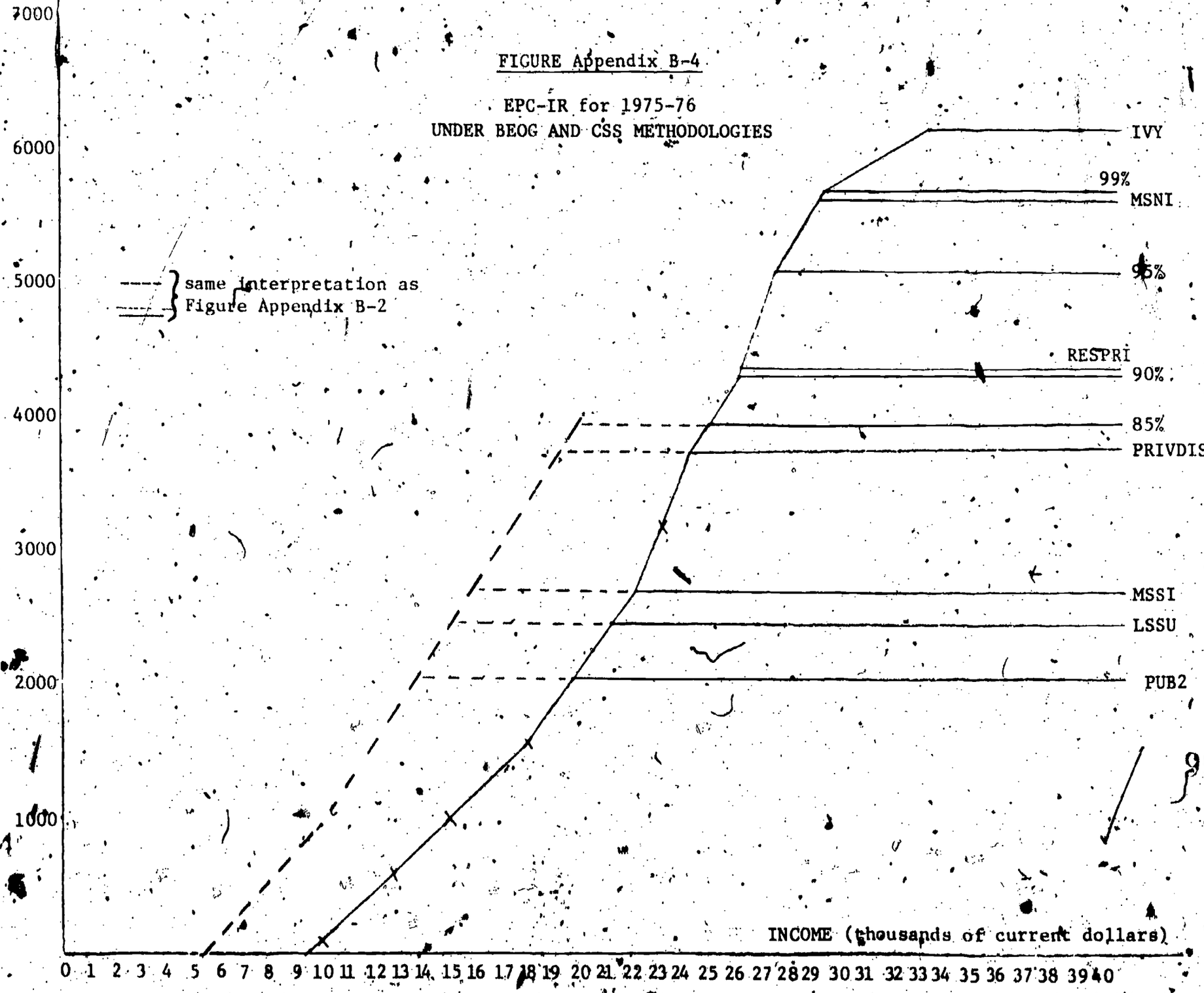


FIGURE Appendix B-5

EPC-IR for 1976-77
UNDER BEOG AND CSS METHODOLOGIES

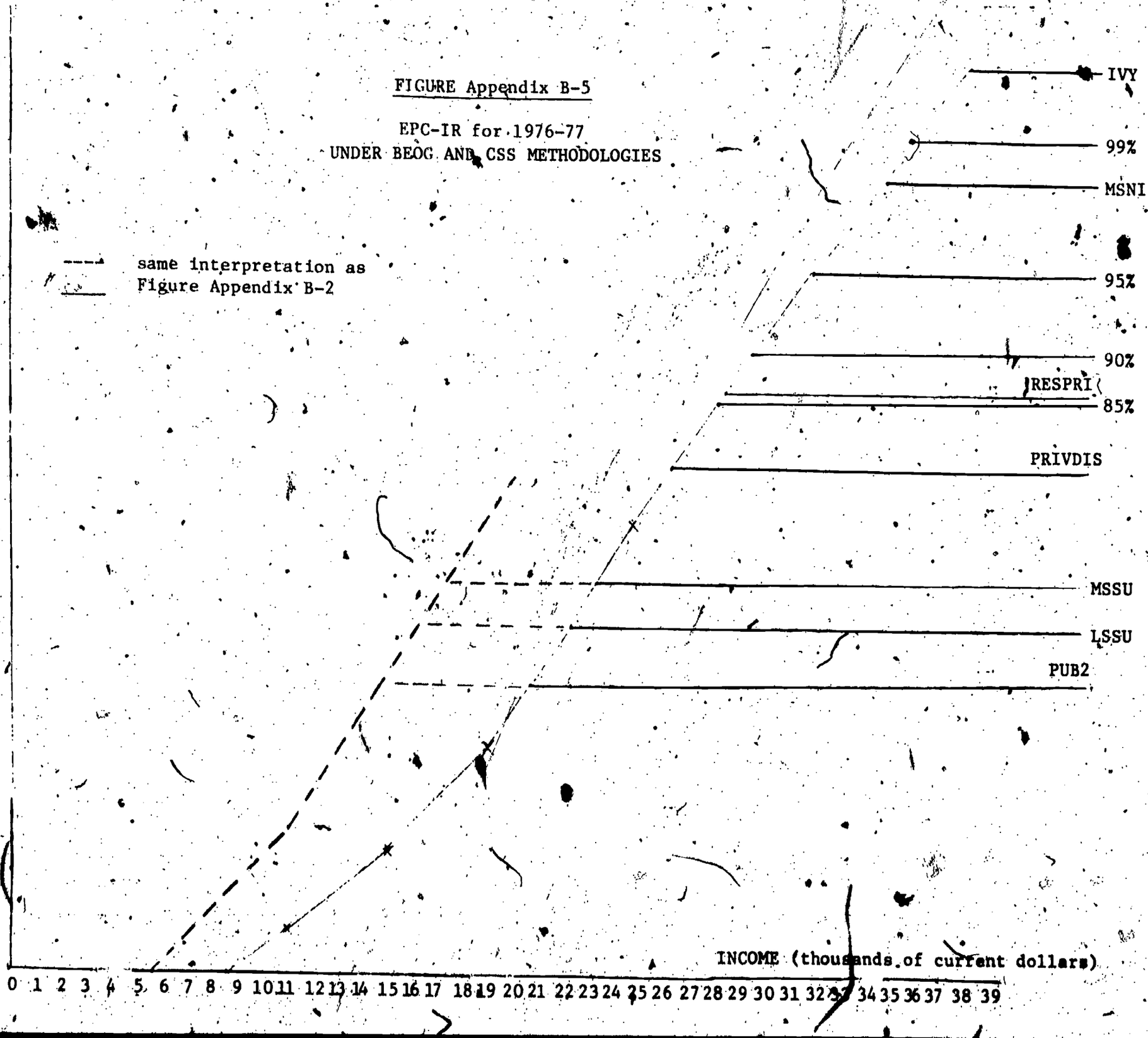
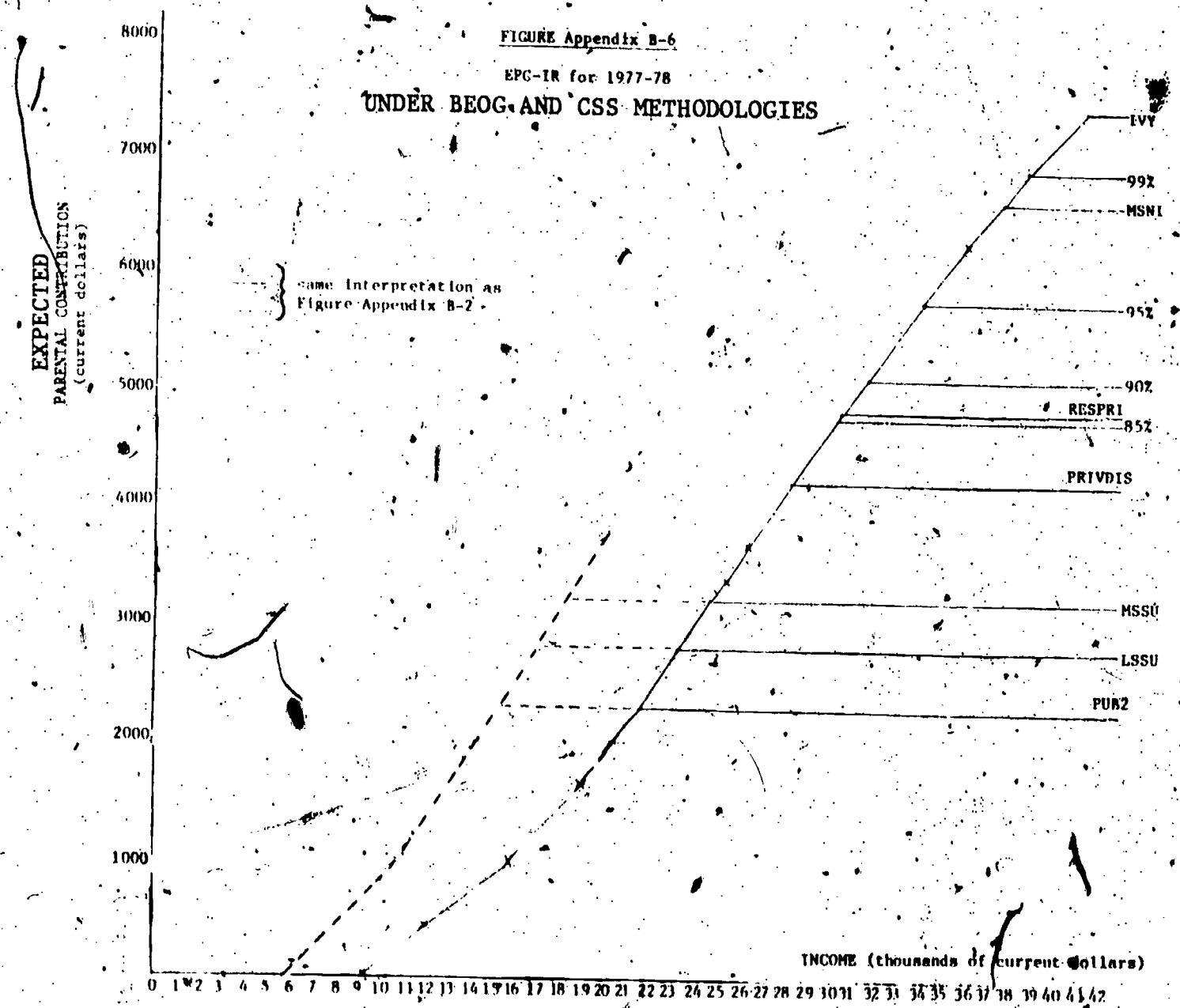


FIGURE Appendix B-6

EPC-IR for 1977-78

UNDER BEOG AND CSS METHODOLOGIES



REFERENCES

REFERENCES

Allen, James B. Student Expense Budgets of Colleges and Universities for the 1972-73 Academic Year. Princeton: College Scholarship Service, 1972.

Allen, James B. and Suchar, Elizabeth W. Student Expenses at Post-secondary Institutions 1973-74. New York: College Entrance Examination Board, 1973.

Bowen, Howard R. Academic Compensation: Are Faculty and Staff in American Higher Education Adequately Paid?. New York: Teachers Insurance and Annuity Association, College Retirement Equities Fund, 1978.

Breneman, David W. and Finn, Chester E. Jr., eds., with the assistance of Nelson, Susan C. Public Policy and Private Higher Education. Washington: The Brookings Institution, 1978.

The Carnegie Commission on Higher Education. Priorities for Action: Final Report of the Carnegie Commission on Higher Education. New York and other cities: McGraw-Hill Book Company, 1973.

The Carnegie Council on Policy Studies in Higher Education. The States and Private Higher Education: Problems and Policies in a New Era. San Francisco and other cities: Jossey-Bass Publishers, 1977.

Cartter, Allan M. Ph.D.'s and the Academic Labor Market. New York and other cities: McGraw-Hill Book Company, 1976.

Cavanaugh, William J. Student Expense Budgets of Colleges and Universities for the 1969-70 Academic Year. Princeton: Educational Testing Service, 1969.

_____. Student Expense Budgets of Colleges and Universities for the 1970-71 Academic Year. Princeton: Educational Testing Service, 1969.

_____. Student Expense Budgets of Colleges and Universities for the 1971-72 Academic Year. Princeton: College Scholarship Service, 1971.

Cheit, Earl F. The New Depression in Higher Education -- Two Years Later. Berkeley, California: The Carnegie Foundation for the Advancement of Teaching, 1973.

College Scholarship Service. CSS Need Analysis: Theory and Computation Procedures [For all years from 1966-67 through 1978-79]. New York: College Entrance Examination Board.

_____. CSS Need Analysis: Theory and Computation Procedures for the 1978-79 FAF Including Sample Cases and Tables. New York: College Entrance Examination Board, 1977.

The Congress of the United States, Congressional Budget Office. Federal Aid to Postsecondary Students: Tax Allowances and Alternative Subsidies. Washington: The Congress of the United States, Congressional Budget Office, 1978.

_____. Federal Assistance for Postsecondary Education: Options for Fiscal Year 1979. Washington: U.S. Government Printing Office, 1978.

Deitch, Kenneth M. "Some Aspects of the Economics of American Higher Education," unpublished working paper, Sloan Commission on Government and Higher Education, November 1977, Revision of January 1978.

Dresch, Stephen P. "A Critique of the Harrington-Silber Tuition Advance Fund." New Haven, Institute for Demographic and Economic Studies, May 15, 1978.

Ford, William D. Letter of May 3, 1978 to Alice Rivlin.

Freeman, Richard and Hollomon, J. Herbert. "The Declining Value of College Going," Change, September 1975.

Gladieux, Lawrence E. Distribution of Federal Student Assistance: The Enigma of the Two-Year Colleges. New York: College Entrance Examination Board, 1975.

Grant, W. Vance and Lind, C. George. Digest of Education Statistics, 1976 Edition. Washington: U.S. Government Printing Office, 1977.

Hartman, Robert W. "Federal Options for Student Aid," in David W. Breneman and Chester E. Finn, Jr., eds., with the assistance of Susan C. Nelson, Public Policy and Private Higher Education. Washington: The Brookings Institution, 1978.

Lanier, Lyle H. and Andersen, Charles J. A Study of the Financial Condition of Colleges and Universities: 1972-1975. Washington: American Council on Education, 1975.

Leslie, Larry L. Higher Education Opportunity: A Decade of Progress. Washington: The American Association for Higher Education, 1977.

Levine, Robert A. Letter of May 12, 1978 to William D. Ford.

McCarty, Barry. "No-Need Scholarships," The College Board Review, No. 607, Spring 1978.

McPherson, Michael S. "The Demand for Higher Education," in David W. Breneman and Chester E. Finn, Jr., eds., with the assistance of Susan C. Nelson, Public Policy and Private Higher Education. Washington: The Brookings Institution, 1978.

Nelson, James E. "Are Parents Expected to Pay Too Much?," The College Board Review, No. 92, Summer 1974.

Nelson, James E. "Measuring Need vs Meeting Need," The College Board Review, No. 94, Winter 1974-75.

Nelson, James and Van Dusen, William. "The Question of Affordability." May 19, 1978 (mimeographed).

Nelson, James E.; Van Dusen, William D.; Jacobson, Edmund C. The Willingness of Parents to Contribute to Postsecondary Educational Expenses. Prepared by the College Entrance Examination Board Under Contract to The Office of Planning, Budgeting, and Evaluation, Postsecondary Programs Division, United States Office of Education, (no date).

95th Congress, 2nd Session, House of Representatives. Report No. 95-951, "Middle Income Student Assistance Act," March 14, 1978.

Office of Education, Department of Health, Education, and Welfare. "Basic Educational Opportunity Grant Program: Expected Family Contribution for Academic Years 1974-76." Federal Register, Vol. 39, No. 128, July 2, 1974.

_____."Basic Educational Opportunity Grant Program: Expected Family Contribution for Academic Year 1975-76." Federal Register, Vol. 40, No. 66, April 4, 1975.

_____."Basic Educational Opportunity Grant Program: Family Contribution Schedules." Federal Register, Vol. 38, No. 111, June 11, 1973.

_____."Basic Educational Opportunity Grant Program: Family Contribution Schedules." Federal Register, Vol. 41, No. 114, June 11, 1976.

_____."Basic Educational Opportunity Grant Program: Family Contribution Schedules." Federal Register, Vol. 42, No. 126, June 30, 1977.

Quie, Albert H. "Quie: Study Shows College Tuition Squeeze Gets Tighter," a news release of May 10, 1978.

Ramsden, Richard J. "The Basic Educational Opportunity Grant Program One-Half Cost: An Analysis." Hanover, New Hampshire: Consortium on Financing Higher Education, November 6, 1975 (mimeographed).

Sandler, Benjamin S. "One Cheer for OE," The College Board Review, No. 101, Fall 1976.

Sidar, Alexander G. Jr. and Potter, David A. No Need/Merit Awards: A Survey of Their Use at Four-Year Public and Private Colleges and Universities. New York: College Entrance Examination Board, 1978.

Silver, Martin J. Letter to the editor, The New York Times, April 17, 1978.

Stampen, Jacob. "The Tuition Cap Idea: An Initial Discussion." Draft/AASCU, November 8, 1977 (mimeographed).

"Status of Legislation," The Chronicle of Higher Education, July 10, 1978.

Suchar, Elizabeth W.; Ivens, Stephen H.; Jacobson, Edmund C. Student Expenses at Postsecondary Institutions, 1975-76. New York: College Entrance Examination Board, 1975.

_____. Student Expenses at Postsecondary Institutions, 1976-77. New York: College Entrance Examination Board, 1976.

_____. Student Expenses at Postsecondary Institutions, 1977-78. New York: College Entrance Examination Board, 1977.

_____. Student Expenses at Postsecondary Institutions, 1978-79. New York: College Entrance Examination Board, 1978.

Suchar, Elizabeth W.; Van Dusen, William D.; Jacobson, Edmund C. Student Expenses at Postsecondary Institutions, 1974-75. New York: College Entrance Examination Board, 1974.

U.S. Bureau of the Census. Current Population Reports, Series P-20, No. 309, "School Enrollment - Social and Economic Characteristics of Students: October 1976" (Advance Report). Washington: U.S. Government Printing Office, 1977.

_____. Current Population Reports, Series P-25, No. 704, "Projections of the Population of the United States: 1977 to 2050." Washington: U.S. Government Printing Office, 1977.

_____. Current Population Reports, Series P-60, No. 103, "Money Income in 1975 of Families and Persons in the United States." Washington: U.S. Government Printing Office, 1977.

_____. Current Population Reports, Series P-60, No. 105, "Consumer Income." Washington: U.S. Government Printing Office, 1977.

Warga, Richard C. Student Expense Budgets of American Colleges and Universities for the 1967-68 Academic Year. Princeton and Berkeley: Educational Testing Service, 1967.

_____. Student Expense Budgets of American Colleges and Universities for the 1968-69 Academic Year. Princeton: Educational Testing Service, 1968.

Watts, Susan F., editor. The College Handbook, Sixteenth Edition. New York: College Entrance Examination Board, 1977.