ACT RESEARCH REPORT

No. 43

43

May 1971

TOWARD MORE EQUITABLE DISTRIBUTION OF COLLEGE STUDENT AID FUNDS: PROBLEMS IN ASSESSING STUDENT FINANCIAL NEED

M. D. Orwig

PUBLISHED BY THE RESEARCH AND DEVELOPMENT DIVISION

THE AMERICAN COLLEGE TESTING PROGRAM

P. O. BOX 168, IOWA CITY, IOWA 52240

ABSTRACT

This paper presents a broad overview of the assessment of student financial need. After tracing the development of the concept of financial need as it relates to student aid and the various procedures that have been used to determine financial need, the issues related to need assessment are examined. First, research on the problems involved in collection of financial information is reviewed in an attempt to identify the most reliable items and procedures. Although the use of financial information that is related to the federal income tax system appears to produce the most reliable results, the lead time between application for financial aid and matriculation to college and the collection of asset information represent unresolved problems. Second, the procedures used to analyze individual financial need are reviewed, pointing out the steps involved in the development of a need analysis model, the data used to construct the standards against which the financial situations of individual families are evaluated, and the differences in the analysis of income and assets that exist. The final section discusses current problems in need assessment. They include the relationship of need assessment to available aggregate financial aid, the appropriate living standard to be incorporated into the need analysis model, the different effects of "absolute" and "relative" financial need, and the effects of changing economic conditions on the ability of parents to pay for higher education and the consequent financial need of students.

TOWARD MORE EQUITABLE DISTRIBUTION OF COLLEGE STUDENT AID FUNDS: PROBLEMS IN ASSESSING STUDENT FINANCIAL NEED

M. D. Orwig

Much is written recently of the financial plight of higher education. Rising cost per student, increasing enrollment, and a leveling of federal, state, and private support have all combined to assert considerable financial pressure on colleges and universities throughout the country. One result of these pressures has been rapidly increasing tuition at both public and private institutions.

Many proposals have been advanced to help parents and students and the colleges themselves pay for the rising cost of higher education (Orwig, 1971). Although the proposals have ranged from free public education for all (Wattenbarger, 1971; Chambers, 1968) to full-cost tuition for those who can afford it (Friedman, 1962, 1968; Hansen & Weisbrod, 1971; Roose, 1970; Clurman, 1969), perhaps the most common element of most proposals for aid to higher education is that at least a portion of the aid be granted to students on the basis of their financial need. The proposals of the Carnegie Commission (1968, 1970), the "Rivlin Report" (U.S. Department of Health, Education, and Welfare, 1968), Bowen (1968, 1969), the 1970 and 1971 proposals of the Nixon Administration, Hansen & Weisbrod (1971), and others (Kerr, 1968, 1969; Rivlin & Weiss, 1969; Bolton, 1968) all have as at least one aspect of their proposals for financing higher education a financial-need-based student aid program. Yet seldom do any of these proposals deal with the question of how student financial need should be evaluated, what should be considered, and what, in fact, is the basis for financial need.

It is the purpose of this paper, therefore, to examine the concept of student financial need. After reviewing the history and development of need-based financial aid and the evaluation of student financial need, the concept of need analysis will be examined in terms of the variables considered and the models used to assess financial need. Finally, the paper will explore present problems in need analysis pointing to the implications of alternative conceptions to students and parents, institutions of higher education, and funding agencies.

The origin of student financial aid was traced by Rudolph to the earliest forms of American higher education (1965):

> From the beginning the American college was cloaked with public purpose. . . . The college was expected to give more than it received—not more than it received from the society it served, but more than it received from the particular young men who were being prepared to do society's work [p. 177].

Hence, by charging students less, in the form of tuition and fees, than it cost to educate them, financial aid has historically been granted to all students. Even in the beginning, however, the need for financial aid was implicitly recognized as a deterrent to college matriculation, and, as a consequence, special consideration was provided to selected poor students by waiving all their tuition (Rudolph, 1965; Brubacher & Rudy, 1958). The rationale for waiving tuition for poor students, however, derived from an attempt to counteract claims that college was only for the rich rather than from any systematic attempt to eliminate the financial barriers to college attendance (Rudolph, 1965; Nash, 1968). Indeed, financial aid to students has served a wide variety of purposes over the years, from rewarding intelligence, academic performance, service to the country, physical appearance and beauty, and athletic prowess to attracting students to critical skill areas, from different geographic areas, and to military service (West, 1963, pp. 75-81). Although financial need was implicitly considered in such programs as the part-time jobs provided by the Federal Emergency Relief Administration and the National Youth Administration during the depression of the 1930s and although many of the students who benefited from college scholarships, the GI Bills of the two World Wars, and other aid programs would probably not have been able to attend college without this assistance (Rivlin, 1961, pp. 63-70), the systematic consideration of student financial need did not evolve until the 1950s. It was only during the fifties that the concept of financial need was defined, formalized, and evaluated as a criterion for receiving financial aid.

The development began in the Northeast through a loose consortium of private colleges that desired, through cooperative agreement, to voluntarily limit the amount of financial aid that would be used to recruit academically talented students to the campus. To do this they developed a procedure, later called need analysis, that would enable them to determine a reasonable contribution from the student and his family and limiting the scholarship offered to the student to the amount of his financial need, i.e., the difference between the family contribution and the cost of attending an institution. By voluntarily using the same need analysis procedure, colleges were able to minimize financial competition as a means to attract students to their campus. Although previous to this individual colleges were probably implicitly if not explicitly evaluating the financial need of applicants, this represents the first inter-college use of a systematic financial need analysis procedure.

But the transition to need-based student aid did not come easy. For years colleges and students were accustomed to scholarships being a reward for accomplishment. It mattered not whether the student was poor or rich, the scholarship was awarded for what he had accomplished and as an incentive to even greater accomplishment. Witness, for example, the opinion of the American Federation of Teachers (West, 1956):

> The American Federation of Teachers is opposed to any means test in selecting qualified youth for higher education. Such a test violates fundamental democratic principles and is educationally unsound. If a student of ample means is awarded a scholarship he may return the amount he received as a gift. But the selection of men and women of ability for scholarship grants should be based solely on their capacity to profit themselves and their fellow men through further study and should not involve any consideration of their financial status [p. 122].

The problem then as today, however, is that income and measures of ability are highly correlated so that financial aid rewarded without regard to financial need resulted in a concentration of aid funds among students from higher income families

(West, 1963, pp. 53-62), and tended to perpetuate the income inequalities existing in the society (Denison, 1970).

Two developments combined to increase the use of financial need as a primary criterion for awarding aid to students: (1) the introduction, by the College Entrance Examination Board, of the College Scholarship Service; and (2) the evolving social acceptance, as manifested in federal student aid programs, of the desirability of universal post-secondary education and equality of educational opportunity. The College Scholarship Service (CSS) was formed in 1954 to formalize, centralize the administration, and broaden the use of need analysis procedures that were being used cooperatively by a relatively few colleges. CSS actively encouraged the use of need analysis in awarding financial aid, and even though the use of CSS was voluntary, membership in CSS increased from approximately 90 colleges and universities in 1954 to approximately 950 by 1968[1] (West, 1956; College Entrance Examination Board, 1969). In 1961 the participants in CSS adopted a statement of "Financial Aid Principles" which, among other things, specified that "the primary purpose of a college's financial aid program should be to provide financial assistance to students who, without such aid, would be unable to attend college," and "that the amount of aid offered a student by a college and by other sources should not exceed the amount he needs" (College Entrance Examination Board, 1970, p.I-3).

Although CSS did much to encourage the distribution of financial aid on the basis of student financial need, the growth of federal student aid programs was also an important factor. The National Defense Student Loan Program (NDSL) passed in 1958 as part of the National Defense Education Act required that participating institutions (U.S. Office of Education, 1968b)

> shall grant loans only to students who are in need of the loan to pursue a course of study at the institution; and that such a determination shall include consideration of: (1) the income, assets, and resources of the applicant; (2) the income, assets, and resources of the applicant's family; and (3) the costs reasonably necessary for the student's attendance at the institution.

The use of financial need analysis was given further impetus in 1965 with the passage of the Higher Education Act and its two student aid programs: the Educational Opportunity Grants Program (EOG) and the College Work-Study Program (CWS). The guidelines for both of these programs, when contrasted with the rather general requirements for need analysis for the NDSL Program, required a more rigorous procedure for determining financial need. In a booklet published by the U.S. Office of Education (U.S. Office of Education, 1968a), it was pointed out that

> even though the academic qualifications of students selected to receive funds under the federal programs are not rigorous, the financial need qualifications definitely are. Successful administration of these programs by colleges, particularly the Educational Opportunity Grants Program, will require the college to identify young men and women of exceptional financial need, to determine the amount of assistance they need to continue their education beyond high school, and to offer a package of financial assistance adequate to meet each student's needs [p. 2].

The move toward standardized need analysis was also encouraged by the determination of financial need which was required for the EOG Program. Both the NDSL and, eventually, the CWS Programs[2] based student eligibility on a concept of "relative financial need." Financial need for the same person varied from one institution to another in that it was equal to the difference between the family contribution and the cost of attending an institution. For the EOG Program, however, student eligibility was determined solely on the basis of the contribution expected from the family without regard to the cost of the institution. Referred to as "absolute financial need," the guidelines for this program required the institution to make a specific determination of the dollar contribution that would be expected from the family because the size of the award—varying from $200 to $1,000—for which a student was eligible was a direct function of the family contribution.

[1] Membership in CSS costs $100 per year and many colleges use CSS without being members. It was estimated that in 1968 CSS was used as the primary need analysis method at 76% of the private and 36% of the public institutions, or at a total of approximately 1,100 institutions (Orwig, 1970).

[2] In the first year of this program, student eligibility was based on "absolute financial need." But when the program was transferred from the Office of Economic Opportunity to the Office of Education in 1965, eligibility was broadened and based on a student's financial need relative to the institution he chose to attend (Nash, 1968).

Recognizing that many institutions that desired to participate in the EOG and CWS Programs were not using a standardized procedure to evaluate the financial need of their aid applicants, the Office of Education authorized two simple procedures that institutions could use for financial need analysis: the Alternate Income Method and the Income Tax Method (U.S. Office of Education, 1968a). The Alternate Income Method consisted of a table that showed the contribution that could be provided by different sized families at different income levels. The Income Tax Method based expected family contribution on the amount of federal income tax paid by the family. This latter procedure derived from a study by Crawford who noted the similarity in taxes paid and the contribution expected by CSS from families in the middle-income range and suggested that, with appropriate adjustments for low- and high-income families, the income tax paid might be used as a base to reflect contribution expected from the family by CSS (Crawford, 1962).[3] Although both the Alternate Income and Income Tax Methods enabled a simpler determination of financial need, a desire that ranked high among financial aid officers (Orwig, 1970), both of them required that the actual need analysis be performed by the financial aid officer himself and neither of them considered unusual circumstances that affect the individual family unit or the economy, such as the number of children in the family, extraordinary expenses faced by the family, changes in the cost of living, changes in the federal income tax, etc.

With the introduction of federal programs for student aid that were based in part on financial need, many publicly supported colleges and universities that had previously possessed insufficient institutional funds for student aid began to establish financial aid offices and to develop college programs. These publicly supported institutions with low tuition and modest college costs had traditionally served the less affluent sector of college youth. To help them equitably distribute their federal aid funds, these colleges and universities desired more than a centralized service. To assess need they wanted an instrument that was reliable for their applicants yet sufficiently simple for use by students from low-income families so that the instrument itself would not pose a barrier to student financial aid and hence educational opportunity. In the mid-1960s several colleges and universities prevailed upon The American College Testing Program (ACT) to develop such a service, and in 1967 ACT introduced a centralized student need analysis service which institutions could use to analyze the financial need of their aid applicants. Although somewhat different in approach than CSS, the ACT system was similar in that it processed and computed the financial need of individual students who were applying for aid and sent a need analysis report to the institutions designated by the student. A major purpose in the introduction of the ACT system was to accommodate the desire of aid officers for a simplified need analysis system that, unlike the Alternate Income and Income Tax Methods, systematically considered the unusual circumstances of individual families, freed the aid officer from the necessity of computing financial need, and was based on a conceptual framework and actual data that reflected the abilities of families to pay for college rather than the vagaries of the Federal Income Tax System (The American College Testing Program, 1970a). A major thrust of the ACT system has been to simplify the need analysis process (Orwig & Jones, 1970), and by 1970 ACT was used as the primary need analysis system at over 400 institutions and was accepted by more than 1,800.

It was estimated that in 1968 a standardized need analysis procedure (i.e., either ACT, CSS, the Alternate Income Method, or the Income Tax Method) was used to distribute financial aid funds at more than 1,600 institutions of higher education and that an additional 240 institutions evaluated student financial need with procedures unique to their own institution when making aid awards (Orwig, 1970). Presumably this total has increased so that it is probable that financial need is today a primary criterion for financial aid at the vast preponderance of colleges and universities in this country. In addition, 19 states award aid to students based on their financial need (Boyd, 1969). This is not to imply, however, that all aid to students is based on financial need because, as

[3] Although for a few years the National Merit Scholarship Corporation used the adjusted income tax system suggested by Crawford (West, 1963, p. 115), the qualifications and adjustments to the federal income tax suggested by Crawford were dropped in the Income Tax Method authorized by the Office of Education with the result that the contribution expected from the same family differed considerably under the Alternate Income and Income Tax Methods (Orwig, 1970, pp. 1-13).

Boyd has pointed out, there is a whole range of aid programs that provides assistance to certain categories of students, such as veterans, children of disabled parents, dental students, medical students, widows and children of deceased or disabled veterans, etc., without systematically evaluating financial need (Boyd, 1969, p. 4). Rather, it is to suggest that most aid granted to students through institutions of higher education or state scholarship programs is based on the demonstrated financial need of the student and his family.

How Is Financial Need Determined?

At the most basic level financial need analysis consists of collecting the appropriate income, asset, and background information from the student and his family, determining the resources required to support the family, and from the remaining available income and assets determining what amount or proportion can be provided to meet the costs of higher education. Although each of these steps can be discussed separately, they are obviously interrelated. In order to analyze a family's financial situation, it is necessary to know what information must be collected to make the analysis. On the other hand, however, if the instrument used to collect the financial information does not result in comparable information reported by each family, efforts to provide a standardized financial need analysis for each family will be subverted. This section of the report, therefore, examines the issues involved in the collection of financial information from the family and the analysis of that information after it is collected.

Collecting Financial Information

Both income and asset information are collected from parents to determine the resources they have to support the family and the monetary contribution they can make to the college expenses of their children. Yet both of these categories of financial data pose unique problems to their systematic and standardized collection from parents and students. Income can mean many things. It can be income before taxes, income after taxes, income before business and/or farm production expenses; it can be taxable income or nontaxable income; it can be an estimate of income for the current year or the next year; or it can be reported as income for the last tax year. Similarly, assets are subject to ambiguity in interpretation resulting in problems in reporting. Ferber (1966) points out, for example, that "definitions of savings, and of saving, vary in scope and complexity. No single definition is adequate for all purposes [p. 1]." Savings might include both checking and savings accounts; it might include only savings accounts; it might include government bonds; and some definitions of savings would include investments in stocks and bonds. The problem, then, is to use concepts of income and asset categories that are easily and generally understood, that have a common definition, and that are likely, as a consequence, to yield comparable information from the reports of different family units.

Although the techniques used to collect income information vary considerably—with both actual and estimated income collected and analyzed, both actual and estimated income collected and only estimated income analyzed, actual and estimated income collected and only actual income analyzed, and only actual income information collected and analyzed—information on the validity and reliability of income reported for student financial need analysis is very limited. The evidence which exists suggests that the most reliable source of income information is the income the family earned during the full tax year that is most recent to the time the student's financial need will be assessed. The Illinois State Scholarship Commission (ISSC, 1969), for example, compared the income parents reported to them with the income that the same parents indicated on their federal income tax return and found that fewer than 5% of the cases in the sample (N = 890) had reported income information to the ISSC that might be considered suspicious. A test-retest investigation of the reliability of financial information reported for financial need analysis yielded reliability coefficients for adjusted gross income (i.e., the item used to collect taxable income for the 1969 federal income tax return) of .94 in an identical form study (N = 200) and .96 in a parallel form study (N = 300). Because in the same studies the reliability coefficients for other income (i.e., nontaxable income) were .83 and .70, respectively, it would appear that the use of the most recent tax year income provides a highly reliable source of income information (The American College Testing Program, 1970b, pp. 4-12).

The use of income information from the most recent tax year in financial need analysis is not without its problems, however (U.S. Office of Education, 1968a, p. 7). Because a student typically applies for financial aid in the academic year previous to the time he will use the aid and because an academic year encompasses part of 2 different tax years, the income information from the most recent tax year is usually 1 and sometimes 2 years old at the time the student will be using his financial aid. For example, a student who in January 1970 applied for aid for the academic year beginning in September 1970 would report income earned in 1969 (the most recent tax year). Had he applied in November or December of 1969, he would report 1968 income which, of course, would be 2 years old at the time the student was using his financial aid. For this reason, estimated income was for many years considered the most appropriate source of income information.

But the problems with using estimated income are just the reverse of those associated with the use of the most recent tax years. Depending upon when the application for aid is filed, the student and his parents are required to project what their income will be 1 to 2 years in the future, a process that is difficult for the most sophisticated economist and one which can be affected by many unknown variables. Furthermore, an investigation of estimated income reported by the parents of ACT financial aid applicants revealed a systematic bias, with parents below $5,000 income estimating an increase in income, parents above $5,000 estimating a decline in income, and, in addition, as income increased above $5,000 the average decline in estimated income increased (Orwig & Jones, 1970, pp. 10-14). Hence, it was concluded that the use of estimated income operated to the disadvantage of low-income families and, as a consequence, ACT discontinued collecting estimated income, requesting instead that parents communicate directly with financial aid officers to explain any anticipated change in income or expenses during the year for which the application for financial aid is made (The American College Testing Program, 1970a, pp. V-1).

Nevertheless, many problems in collecting reliable financial information remain unsolved. The relatively long lead time between application, awarding financial aid, and matriculating to college render the process more difficult than it might be if the three steps occurred more or less simultaneously and if they coincided with the calendar year that is used for the federal income tax. Even though estimated income is unreliable, it is not clear that 1 tax year is adequate. Perhaps 2 or 3 tax years should be collected and only the most recent analyzed. Perhaps they should be averaged together and analyzed as one. The problem with this approach, however, is that to collect a lengthy history of financial information increases data processing costs, complicates the reporting procedure, and assumes that parents have the financial records that would enable them to provide the historical information, an assumption which, if incorrect, would tend to reduce reliability. Similarly, the very limited literature on the collection of asset information suggests that the nature of the item used to collect the desired asset information can have dramatic impact on the reliability of the information reported (The American College Testing Program, 1970b, p. 8). Perhaps as research continues, it will eventually be possible to identify a specific set of items for collecting financial information that will each have a stable and predictable reliability. With possible exception of "Adjusted Gross Income" (or its equivalent) and "Federal Income Tax Paid," this does not yet appear possible.

Analyzing the Family's Financial Situation

Based on the information that is collected from the family, the next step is to analyze this information to determine the amount the family (parents and applicant) can provide for college expenses. Simply stated, this process consists of two steps: first, determining the income required to maintain the family at a given standard of living; and second, from any remaining income and from the assets of the family, determining the amount of money the family can be expected to provide for the college expenses of its child.[4] Fundamental to this process is the development of objective criteria, formalized as a need analysis model, that can be applied to all applicants in a standardized manner. These criteria are derived from economic data that reflect the living standards that obtain in the society, and the variables considered in the need analysis model enable each applicant and family to be evaluated against the specified criteria. A result of this procedure, therefore, is that the financial situation of a family is accepted as it is, without regard to how it got that way. Hence, qualitative differences in the spending patterns of families are relevant only insofar as they will affect the ability of a family to provide the contribution expected by the need analysis system. For example, a family that is consuming at a rate above that allowed for in the need analysis model will find it more difficult to provide the contribution expected by the need analysis system than those consuming at a lower rate.

Typically, the criteria in the need analysis model used to evaluate the income of the families of aid applicants are derived from data published by the Bureau of Labor Statistics (BLS) in the U.S. Department of Labor. BLS developed and periodically updates (U.S. Department of Agriculture, June 1970) three budgets that indicate the resources required for an urban family of four persons to support itself at a low, moderate, and high standard of living (BLS, 1968b). All three of the budgets assume the maintenance of health and social well-being of family members, and participation in community activities. They differ, however, by varying the manner of living and the quantity and quality of various goods. The lower standard, for example, presumes that the family lives in rental housing without air conditioning, performs more services for itself, and makes greater use of free recreation facilities in the community. The lower standard requires 34% of family consumption for a nutritionally adequate diet as contrasted with 29% at the moderate level. Compared with the higher and moderate level, the lower budget provides for larger quantities of foods that have a high nutritional return for cost—potatoes, dry beans and peas, and flour and cereal—and smaller quantities of meat, poultry, and fruits and vegetables other than potatoes. Housing in the lower budget is assumed at the lower third of contract rents with the incidence of home ownership increasing in the higher budgets. The BLS low standard is above the poverty level (Orshansky, 1965), yet at a low standard when compared to other U.S. families.

Schedules published by BLS (1968a) make it possible to adjust these budgets to reflect the families of aid applicants and to define a procedure for making adjustments for different size families (The American College Testing Program, 1970b; Bowman, 1970; Bowman & Weiss, 1969). By combining these adjusted budgets with data adopted from a variety of other sources (U.S. Department of Labor, 1964; U.S. Department of Agriculture, 1962, 1965, 1967, 1970), it is possible to develop standards or norms for evaluating the income of the families of financial aid applicants.

In addition to income, the assets of the family are also considered in determining financial need. Although ACT and CSS employ different procedures to evaluate assets—with ACT taxing assets directly (The American College Testing Program, 1968, 1970a) and CSS considering assets as an income supplement (Bowman & Weiss, 1968, 1970; College Entrance Examination Board, 1970)—both provide allowances against assets in recognition of the many purposes assets serve. Thus, debts, one-half the net value of the farm or business, a retirement allowance, and an allowance for emergencies are all deducted from assets before any remaining assets are taxed for an educational contribution.

The consideration of assets in need analysis is occasionally questioned because unlike income certain assets of the family, such as real estate or

---

[4] Assets may be treated as an income supplement and then taxed (Bowman & Weiss, 1968, 1970) or they may be taxed directly (The American College Testing Program, 1968, 1970a).

home equity, do not produce cash. Thus, it is argued that they do not contribute to the ability of the family to pay for college. Few would argue, however, that assets do not contribute to the wealth of the family and that given equal income for similar families the family with substantial assets is financially better off than the family with no assets. Hence, if aid is to be equitably distributed to students with the greatest financial need, the need analysis model must consider the families' entire financial situation which includes both income and assets.

In addition to the standard or typical family situations that are analyzed, there is a variety of atypical situations to which the need analysis model should be sensitive. Examples include the additional living expenses that accrue when there are two working parents or when there is only one parent and small children, Social Security payments made to the child but used to support the family, students who are not supported by their parents, debts that exceed assets, the evaluation of income from farmers and self-employed businessmen, families with more than one child in college, and high concentration of family assets in the name of the student. Other examples would include unusual circumstances that might occur to the family in a given year that would affect their ability to pay for college, such as extraordinary medical expenses, severe damage to the house or business, theft of personal property, etc. Each of these situations, and others like it, represent extraordinary circumstances that are not reflected in the BLS budgets; yet they affect the ability of the family to make an educational contribution. Hence, to accurately determine financial need in these situations, special procedures must be defined and incorporated into the need analysis model so that the appropriate adjustments can be made.

How Much Can Parents Contribute?

The interplay of available student aid funds and financial need analysis has been a source of confusion and problems throughout the history of need analysis. The problems arise when aid funds are insufficient to meet the need of students attending higher education, and they become more severe as the gap between available aid and financial need increases. A simple example will illustrate this point. Assume two students with need of $1,000 and $500 to attend a low-cost public institution and available aid of $500. Should all the aid be granted to the student with the greatest need? Should it be divided equally between the two? If $500 will not enable the student with $1,000 need to attend college, should the full amount be awarded to the student with the least need? This example is easily rendered more complex by introducing special aid programs with unique objectives, consideration of more expensive private colleges, or spreading it over 3 years with a drastic increase in the cost of living, a corresponding adjustment in financial need and no increase in the available aid.

Questioning the concept of relative financial need, with need varying with the cost of attending an institution, West (1963) pointed out that

> need analysis may spread the funds among those in the higher socioeconomic groups who want to attend more prestigious institutions. It is ironic to discover, comparing the financial need of students from high and low socioeconomic classes, that students of high socioeconomic status frequently have greater "financial need" than students of low socioeconomic status, because they select more expensive colleges. As a corollary, it is possible that the flow of talented students to prestigious institutions widens the differences among institutions [p. 90].

Bowman points out that prior to 1964 CSS related its need analysis system to the availability of funds so that when changes were made in the need analysis system, they were made in a manner that would not increase the aggregate financial need of CSS filers. Because there was no thought of a large-scale increase in financial aid resources, the problem was to divide existing resources among applicants in the fairest way possible. "The result was that the pie remained the same but was sliced in a different manner" (Bowman, 1970, p. 4). More recently, however, CSS has taken a different posture on this problem. Pointing to the two dichotomous roles that can be played by a need analysis system—as an objective measure of ability to pay for higher education or as a rationing device for available financial aid funds—Bowman (1970) indicates that

> since 1964, CSS has attempted to restate the need analysis system and base the levels of expectation in relation to current economic concepts and the best available evidence on parental ability to pay for higher education [p. 10].

In a similar manner the ACT need analysis system has been adjusted to reflect changes in the ability of families to pay for higher education without regard to increases or decreases in the availability of student aid funds (The American College Testing Program, 1969, pp. 10-16; 1970b, pp. 13-30).

Even though need analysis systems are based on broad economic criteria that reflect the expenses for maintaining the family, it is possible that the systems will not produce equivalent amounts of expected contribution (Orwig, 1970). Similarly, when aggregate aid is less than aggregate need or when as a result of an adjustment in a need analysis system aggregate need changes but aggregate aid remains the same, the distribution of aid to colleges and students is affected (Doermann, 1970). The former problem arises from lack of consensus about the living standard to be applied in evaluating financial need. One need analysis system might use the BLS low budget to evaluate families, and another system might use both the low and moderate BLS budgets to evaluate families. A probable result of these different approaches is that the former system would probably expect a greater contribution from higher-income families than would the latter. Other things being equal, the low budget based system would tend to channel more funds to lower-income students than would the system based on the moderate budget and, on the other hand, the low budget system would tend to provide less aid to students attending the more expensive private institutions.

Which system would be correct or more accurately reflect the ability of families to pay for college? The answer to this question is not clear because it depends upon the answer to a more fundamental question: To what extent should families be asked to sacrifice to pay for college? Should families be allowed expenses that would enable them to live at the poverty level, at a low standard of living, at a moderate standard of living, or at a high standard of living? Should families be evaluated in terms of their own living standard with allowed expenses increasing as the standard of living increases? Although fundamental to the determination of individual financial need and the amount of funds required to meet aggregate financial need in a need-based aid program, questions such as these have not been asked and consequently have not been answered. A system based on the low BLS budget implicitly assumes a greater sacrifice than would one based on the moderate budget or one based on varying budgets. Proceeding from different assumptions, the two systems would tend to end up with different expectations from the parents, and they would tend to allocate different proportions of funds to different socioeconomic populations.

If financial aid programs are to effectively serve the purposes they are established to accomplish, it is necessary to recognize the interplay between financial need analysis and the aid program. As a minimum this requires an understanding that the determination of financial need will be influenced by the degree of sacrifice that is expected of parents as they help to pay for the college expenses of their children. If in evaluating financial need, allowance is made to maintain the family at a low standard, individual and aggregate financial need will be different than if allowance is made to maintain the family at a moderate or high standard of living. Second, it must be recognized that if aid funds are inadequate to meet financial need, it is possible that a need-based student aid program designed to equalize educational opportunity will not accomplish its objectives or that it may have corollary effects. With absolute financial need as the criterion, less aid and perhaps fewer students will go to private colleges. Relative need, on the other hand, may provide more aid to private institutions but to fewer students assuming that funds are limited. Finally, just as changing economic conditions will affect the purchasing power of a dollar, it will also affect the ability of the family to pay for college. The financial need of a family with $6,000 income today is greater than the financial need of the same family with the same income 5 years ago. It follows, therefore, that state and federal aid programs would recognize the dynamic relationship that exists between a changing economy and the need for student aid funds, and that they would be increased accordingly. Sadly, this has not been the case, and the result is the financial crisis facing students and institutions of higher education.

References

The American College Testing Program. *Handbook for financial aid officers.* Iowa City, Iowa: Author, 1968.

The American College Testing Program. *1969 revisions in expected family contribution for the ACT Student Need Analysis Service.* Iowa City, Iowa: Author, 1969.

The American College Testing Program. *ACT handbook for financial aid officers.* Iowa City, Iowa: Author, 1970. (a)

The American College Testing Program. *1970 revisions in the ACT Student Need Analysis Service.* Iowa City, Iowa: Author, 1970. (b)

Bolton, R. E. Burdens and bargains in higher education. *The Public Interest,* Spring 1968, No. 11, 123-126.

Bowen, H. R. *The finance of higher education.* Berkeley: Carnegie Commission on Higher Education, 1968.

Bowen, H. R. Tuition and student loans in the finance of higher education. In *The economics and financing of higher education in the United States.* Washington, D.C.: U.S. Government Printing Office, 1969.

Bowman, J. L. *Some thoughts and reflections regarding parental ability to pay for higher education.* New York: College Scholarship Service, 1970.

Bowman, J. L., & Weiss, G. S. *Suggested revisions in CSS needs analysis procedures for the treatment of family assets.* Princeton, N.J.: Educational Testing Service, 1968.

Bowman, J. L., & Weiss, G. S. *Expected contribution toward educational costs: Suggested revisions for 1969-70.* New York: College Scholarship Service, 1969.

Bowman, J. L., & Weiss, G. S. *Measuring the financial strength of family assets.* New York: College Scholarship Service, 1970.

Boyd, J. D. *An examination of state efforts in removing financial barriers to postsecondary education.* Mimeographed. Deerfield, Ill.: Illinois State Scholarship Commission, 1969.

Brubacher, J. S., & Rudy, W. *Higher education in transition.* New York: Harper & Row, 1958.

Bureau of Labor Statistics. *Revised equivalence scales for estimating equivalent incomes or budget costs by family type.* Washington, D.C.: U.S. Department of Labor, 1968. (a)

Bureau of Labor Statistics. *Three standards of living for an urban family of four persons.* Washington, D.C.: U.S. Department of Labor, 1968. (b)

Carnegie Commission on Higher Education. *Quality and equality: New levels of federal responsibility for higher education.* Berkeley: Author, 1968.

Carnegie Commission on Higher Education. *Quality and equality: Revised recommendations new levels of federal responsibility for higher education.* New York: McGraw-Hill, 1970.

Chambers, M. M. *Who pays? Who gains?* Danville, Ill.: Interstate Printers, 1968.

Clurman, M. Does higher education need more money? In *The economics and financing of higher education in the United States.* Washington, D.C.: U.S. Government Printing Office, 1969.

College Entrance Examination Board. *Financing a college education: A guide for counselors.* New York: Author, 1969.

College Entrance Examination Board. *Manual for financial aid officers.* New York: Author, 1970.

Crawford, N. C., Jr. The federal income approach to need analysis. *National ACAC Journal,* Summer 1962, 8, 11-14.

Denison, E. F. An aspect of inequality of opportunity. *Journal of Political Economy,* 1970, **78,** 1195-1202.

Doermann, H. Financial aid for disadvantaged students in private universities. In *Financing equal opportunity in higher education.* New York: College Entrance Examination Board, 1970.

Ferber, R. *The reliability of consumer reports of financial assets and debts.* Urbana, Ill.: University of Illinois, 1966.

Friedman, M. *Capitalism and freedom.* Chicago: University of Chicago Press, 1962.

Friedman, M. The higher schooling in America. *The Public Interest,* Spring 1968, No. 11, 108-112.

Hansen, W. L., & Weisbrod, B. A. A new approach to higher education finance. In M. D. Orwig (Ed.), *Financing higher education: Alternatives for the federal government.* ACT Monograph No. 5. Iowa City, Iowa: The American College Testing Program, 1971.

Illinois State Scholarship Commission. *Income reliability study—1969-70 programs.* Mimeographed. Deerfield, Ill.: Author, 1969.

Kerr, C. The distribution of money and power. *The Public Interest,* Spring 1968, No. 11, 100-104.

Kerr, C. Federal aid to higher education through 1976. In *The economics and financing of higher education in the United States.* Washington, D.C.: U.S. Government Printing Office, 1969.

Nash, G. The history and growth of student financial aid. *National ACAC Journal,* 1968, **13**(3), 11-20.

Orshansky, M. Counting the poor: Another look at the poverty profile. *Social Security Bulletin,* 1965, **28,** 1.

Orwig, M. D. *A survey of financial need analysis methods used in institutions of higher education.* Bloomington, Indiana: Indiana University, 1970.

Orwig, M. D. (Ed.) *Financing higher education: Alternatives for the federal government.* ACT Monograph No. 5. Iowa City, Iowa: The American College Testing Program, 1971.

Orwig, M. D., & Jones, P. K. Can financial need analysis be simplified? *ACT Research Report No. 33.* Iowa City, Iowa: The American College Testing Program, 1970.

Rivlin, A. M. *The role of the federal government in financing higher education.* Washington, D.C.: Brookings Institution, 1961.

Rivlin, A. M., & Weiss, J. H. Social goals and federal support of higher education: The implications of various strategies. In *The economics and financing of higher education in the United States.* Washington, D.C.: U.S. Government Printing Office, 1969.

Roose, K. D. Aid to students or to institutions. *Educational Record,* 1970, **51,** 356-367.

Rudolph, F. *The American college and university.* New York: Vintage Books, 1965.

U.S. Department of Agriculture. *Job-related expenditures and management practices of gainfully employed wives in Georgia.* Home Economics Research Report 15, Washington, D.C.: Author, 1962.

U.S. Department of Agriculture. *Job-related expenditures and management practices of gainfully employed wives in Ohio.* Home Economics Research Report 27, Washington, D.C.: Author, 1965.

U.S. Department of Agriculture. *Job-related expenditures and management practices of gainfully employed wives in North Carolina.* Home Economics Research Report 34, Washington, D.C.: Author, 1967.

U.S. Department of Agriculture. Spring 1969 cost estimates for BLS budgets. In *Family Economics Review.* Washington, D.C.: Author, June 1970.

U.S. Department of Health, Education, and Welfare. *Toward a long-range plan for federal financial support for higher education.* Washington, D.C.: U.S. Government Printing Office, 1968.

U.S. Department of Labor. *Consumer expenditures and income.* BLS Report 237-38, Washington, D.C.: Author, 1964.

U.S. Department of Labor. *Consumer expenditures and income.* BLS Report 237-93, Washington, D.C.: Author, 1966.

U.S. Office of Education. *Determining awards under federal student aid programs.* Washington, D.C.: U.S. Department of Health, Education, and Welfare, 1968. (a)

U.S. Office of Education. *Terms of agreement with institutions of higher education for capital contribution by the commissioner of education, pursuant to Title II of PL 85-64, as amended, fiscal year ending June 30, 1968.* Washington, D.C.: U.S. Department of Health, Education, and Welfare (OE-1018), 1968. (b)

Wattenbarger, J. L. Student fees and public responsibility. In M.D. Orwig (Ed.), *Financing higher education: Alternatives for the federal government.* ACT Monograph No. 5. Iowa City, Iowa: The American College Testing Program, 1971.

West, E. D. *Background for a national scholarship policy.* Washington, D.C.: American Council on Education, 1956.

West, E. D. *Financial aid to the undergraduate.* Washington, D.C.: American Council on Education, 1963.

ACT Research Reports

This report is Number 43 in a series published by the Research and Development Division of The American College Testing Program. The first 26 research reports have been deposited with the American Documentation Institute, ADI Auxiliary Publications Project, Photoduplication Service, Library of Congress, Washington, D. C. 20540. Photocopies and 35 mm. microfilms are available at cost from ADI; order by ADI Document number. Advance payment is required. Make checks or money orders payable to: Chief, Photoduplication Service, Library of Congress. Beginning with Research Report No. 27, the reports have been deposited with the National Auxiliary Publications Service of the American Society for Information Science (NAPS), c/o CCM Information Sciences, Inc., 22 West 34th Street, New York, New York 10001. Photocopies and 35 mm. microfilms are available at cost from NAPS. Order by NAPS Document number. Advance payment is required. Printed copies may be obtained, if available, from the Research and Development Division, The American College Testing Program.

The reports since January 1969 in this series are listed below. A complete list of the reports can be obtained by writing to the Research and Development Division, The American College Testing Program, P. O. Box 168, Iowa City, Iowa 52240.

No. 28 *A Description of Graduates of Two-Year Colleges,* by L. L. Baird, J. M. Richards, Jr., & L. R. Shevel (NAPS No. 11306; photo, $3.00; microfilm, $1.00)

No. 29 *An Empirical Occupational Classification Derived from a Theory of Personality and Intended for Practice and Research,* by J. L. Holland, D. R. Whitney, N. S. Cole, & J. M. Richards, Jr. (NAPS No. 00505; photo, $3.00; microfilm, $1.00)

No. 30 *Differential Validity in the ACT Tests,* by N. S. Cole (NAPS No. 00722; photo, $3.00; microfilm, $1.00)

No. 31 *Who Is Talented? An Analysis of Achievement,* by C. F. Elton, & L. R. Shevel (NAPS No. 00723; photo, $3.00; microfilm, $1.00)

No. 32 *Patterns of Educational Aspiration,* by L. L. Baird (NAPS No. 00920; photo, $3.00; microfilm, $1.00)

No. 33 *Can Financial Need Analysis Be Simplified?* by M. D. Orwig, & P. K. Jones (NAPS No. 01210; photo, $5.00; microfilm, $3.00)

No. 34 *Research Strategies in Studying College Impact,* by K. A. Feldman (NAPS No. 01211; photo, $5.00; microfilm, $2.00)

No. 35 *An Analysis of Spatial Configuration and Its Application to Research in Higher Education,* by N. S. Cole, & J. W. L. Cole (NAPS No. 01212; photo, $5.00; microfilm, $2.00)

No. 36 *Influence of Financial Need on the Vocational Development of College Students,* by A. R. Vander Well (NAPS No. not available at this time.)

No. 37 *Practices and Outcomes of Vocational-Technical Education in Technical and Community Colleges,* by T. G. Gartland, & J. F. Carmody (NAPS No. not available at this time.)

No. 38 *Bayesian Considerations in Educational Information Systems,* by M. R. Novick (NAPS No. not available at this time.)

No. 39 *Interactive Effects of Achievement Orientation and Teaching Style on Academic Achievement,* by G. Domino (NAPS No. not available at this time.)

No. 40 *An Analysis of the Structure of Vocational Interests,* by N. S. Cole, & G. R. Hanson (NAPS No. not available at this time.)

No. 41 *How Do Community College Transfer and Occupational Students Differ?* by E. J. Brue, H. B. Engen, & E. J. Maxey (NAPS No. not available at this time.)

No. 42 *Applications of Bayesian Methods to the Prediction of Educational Performance,* by M. R. Novick, P. H. Jackson, D. T. Thayer, & N. S. Cole (NAPS No. not available at this time.)