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Staff Paper Series

STAFF PAPER P72-19 JUNE 1972

BENEFIT-COST ANALYSIS OF INCOME MAINTENANCE PROPOSALS

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Staff Paper P72-19 June 1972

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Staff papers are published without formal review within the Department of Agricultural and Applied Economics.

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Benefit-cost analysis has been used most often to investigate the comparative efficiency of alternative public projects. However, the benefit-cost technique can be adapted to compare proposals that have both efficiency and equity objectives. 1/ This paper illustrates the use of benefit-cost analysis in evaluating several recent income maintenance proposals and suggests a modification that will help to lessen the conflict between objectives that is inherent to all income maintenance plans.

1/ For differing views on the use of benefit-cost analysis in evaluating programs that combine efficiency and equity objectives, see the following: A. Maass, "Benefit-Cost Analysis: Its Relevance to Public Investment Decisions," Quarterly Journal of Economics, 80 (May 1966), pp. 208-226; R. H. Haveman, "Benefit-Cost Analysis: Its Relevance to Public Investment Decisions: Comment," Quarterly Journal of Economics, 81 (November 1967), pp. 695-702; S. A. Marglin, "Objectives of Water Resource Development: A General Statement," in Design of Water Resource Systems, ed. by A. Maass et al. (Cambridge: Harvard University Press, 1962), pp. 62-87; B. A. Weisbrod, "Income Redistribution Effects and Benefit-Cost Analysis," in Problems in Public Expenditure Analysis, ed. by S. B. Chase (Washington: The Brookings Institution, 1968), pp. 177-213; R. J. Kalter and T. H. Stevens, "Resource Investments, Impact Distribution, and Evaluation Concepts," American Journal of Agricultural Economics, 53 (May 1971), pp. 206-216; A. M. Freeman, "Income Distribution and Planning for Public Investment," American Economic Review, 57 (June 1967), pp. 495-508; and R. A. Musgrave, "Cost-Benefit Analysis and the Theory of Public Finance," Journal of Economic Literature, 7 (September 1969), pp. 803-805.

Income Maintenance Proposals

In 1970 there were an estimated 25.5 million poor who had an aggregate deficit of $11.4 billion between their earnings from all sources and the poverty income threshold. The public assistance system was approaching complete collapse in the late 1960's as welfare rolls increased rapidly. From 1960 to 1970, the number of recipients in the four major public assistance programs increased from 5.9 to 10.2 million. The resulting fiscal crunch on local and state governments was especially dramatic in the major metropolitan areas. Moreover, there was increasing dissatisfaction with the inequities of public assistance between states and between categories of the poor (the latter particularly because of the exclusion of the working poor).

A series of proposals have been made to reform the welfare transfer payment system. Most of these programs involve some variation of a non-categorical income maintenance plan. A pure non-categorical income maintenance program would make family income the only criteria for program participation, with the primary objective being to reduce the poverty deficit.

One solution to poverty is simply to provide the poor with sufficient income to raise them to a socially defined minimum acceptable income level (the poverty threshold). To minimize program cost, the poor could be raised to their poverty threshold income and any additional earnings taxed away through an offsetting reduction in benefits (in essence, a 100-

percent tax on additional earnings). This Minimum Cost-Total Eradication proposal would remove all of poverty, but it would create incentive problems. 2/ To encourage employment, most income maintenance proposals reduce the grant by less than $1 for every $1 of additional earnings. For example, the Heineman Commission proposal calls for a basic grant of $750 for adults and $450 for children with a reduction in benefits equal to 50 percent of other income. The Family Assistance Plan (FAP) provides a basic grant of $500 for adults and $300 for children with a 50 percent tax on earnings in excess of $720 per year.

Comparison of the Minimum Cost-Total Eradication proposal, the Heineman Commission proposal, and the Family Assistance Plan is instructive. The three proposals are illustrated graphically in figures 1, 2, and 3. A good income maintenance program may be defined as one that:

2/ The Minimum-Cost-Total Eradication proposal is seriously advanced by almost no one due to the disadvantage of the 100 percent tax rate. It does represent the approach taken until recently in public assistance payments. Very high marginal tax rates enable a maximum of program coverage for minimal program cost. Past public assistance programs have not been as concerned with maintaining work incentives as with providing basic income support to the destitute. This approach was modified in 1967 by the amendment to the Social Security Act in which marginal tax rates faced by AFDC recipients were reduced to zero for the first $360 of earned income and 66 2/3 percent for the rest of earned income. Deductions from taxable income for work related expenses were also allowed.

In 1968 President Johnson appointed a Commission on Income Maintenance Programs. This commission, headed by Ben W. Heineman,

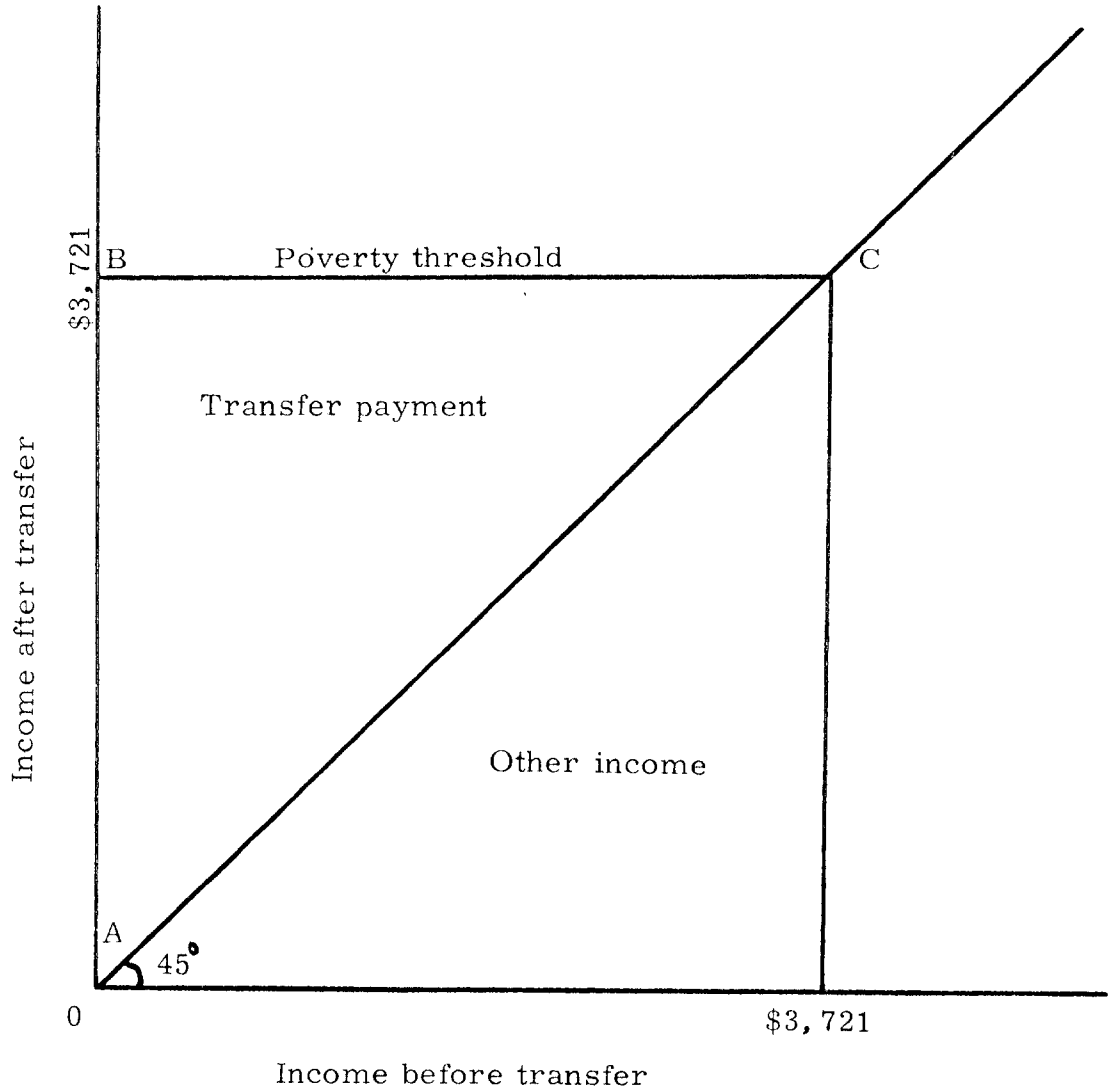

Figure 1. Minimum Cost-Total Eradication Proposal (family of four)

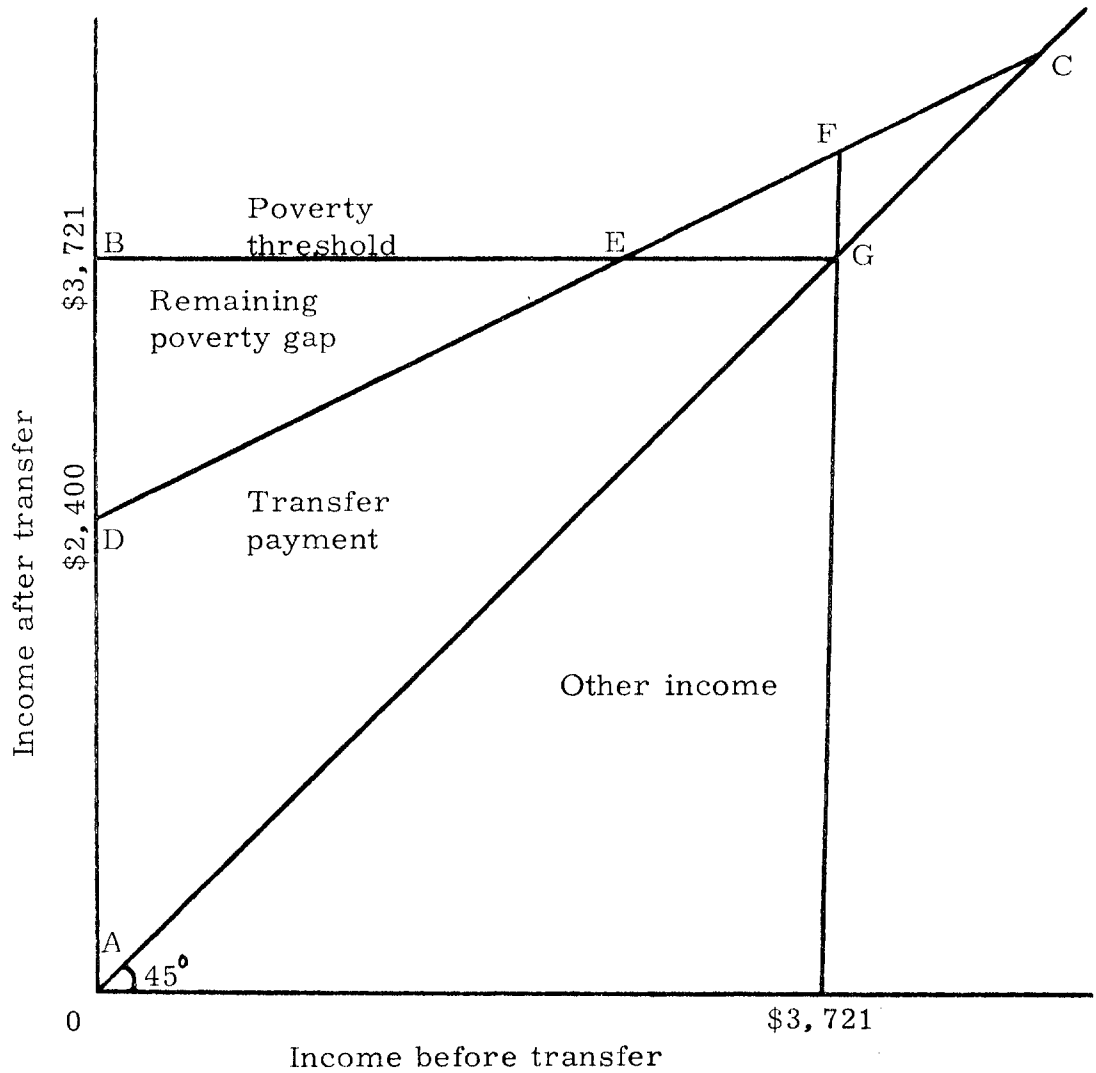

Figure 2. Heineman Commission Proposal (family of four)

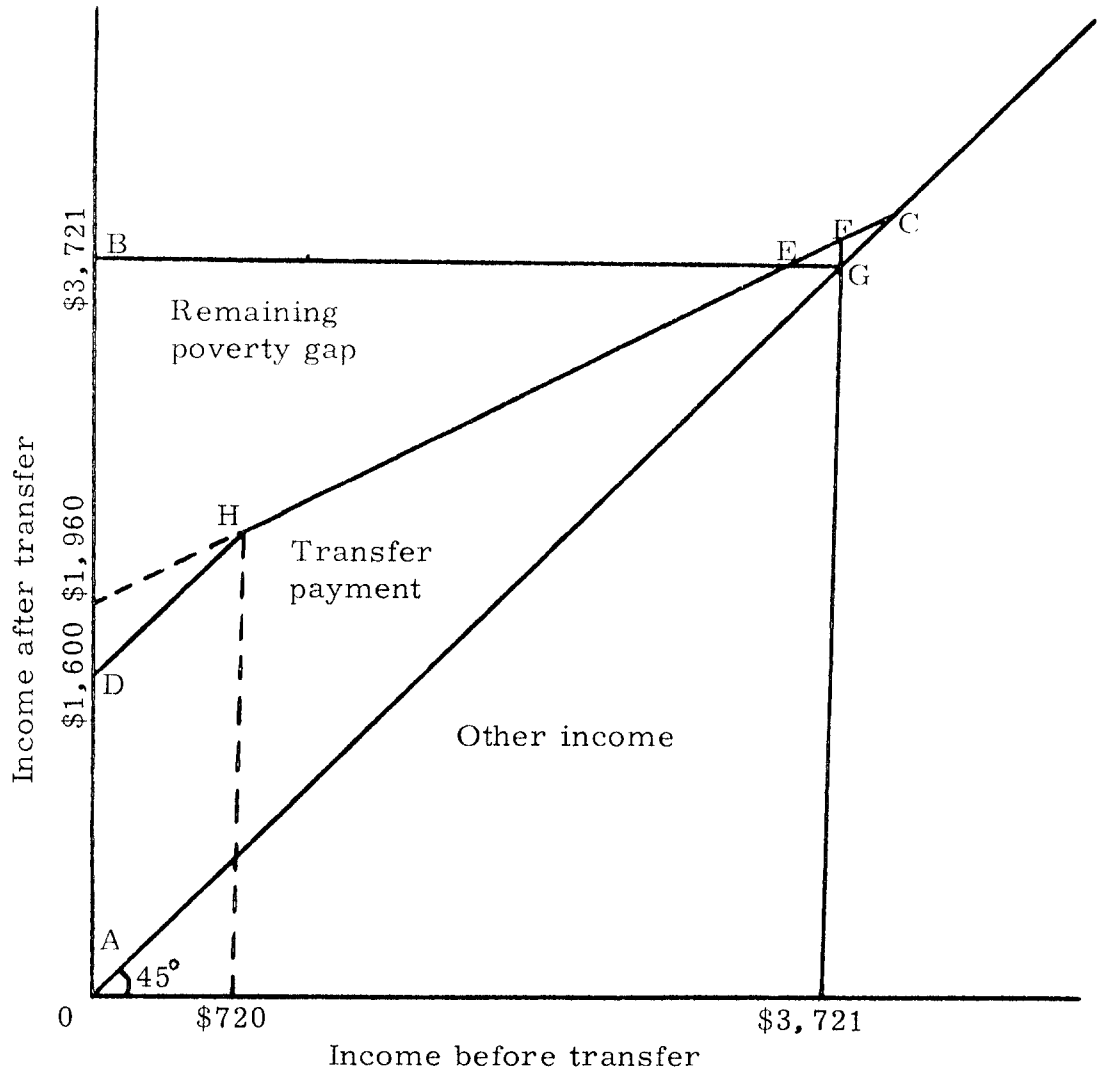

Figure 3. Family Assistance Plan (family of four)

1. Removes a large part of the poverty gap;

2. Minimizes payments to the non-poor and payments that raise the income of the poor above the poverty threshold; and

3. Maintains incentives for the poor to retain and seek employment.

Few persons seriously advocate the Minimum Cost-Total Eradication plan because it fails to maintain work incentives. The Heineman Commission and FAP proposals do provide work incentives, but neither plan closes all of the poverty gap and both make payments to the non-poor. 3/ The

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issued its report in November 1969 in which it advocated the proposal described in figure 2. Meanwhile, President Nixon upstaged the commission with his speech of August 11, 1969, in which he proposed the Family Assistance Plan described in figure 3. This proposal evolved from the pre-inaugural Nixon Task Force on Public Welfare, the Ryan-Lyday bill, and the Moynihan Urban Affairs Council. The Task Force merely provided some cost estimates for a reform of the public assistance system that had been proposed by the Advisory Council on Public Welfare in June 1966. The Ryan bill of May 1968 broke decisively with this reform approach by introducing an income maintenance proposal. This rejection of incremental reform was also reflected in the Family Assistance Plan. See G. Y. Steiner, The State of Welfare, (Washington: The Brookings Institution, 1971), pp. 110-121.

3/ It should be noted that the Heineman Commission proposal covers both families and unrelated individuals, while the FAP proposal is still a categorical program because it includes only poor families with children (under 21 if in school, otherwise under 18). This characteristic of the proposal does not affect our analysis; however the FAP proposal will have no impact on poor unrelated individuals, whose aggregate movement out of poverty has been unaffected by economic growth, anti-poverty programs, and improvements in transfer programs over the past decade. From 1960 to 1970 the number of poor in families declined 41 percent while the number of poor unrelated individuals increased by 2 percent. Failure to help this group move out of poverty primarily reflects the inadequacy of categorical transfer programs for the aged. The aged over 64 comprise 54 percent of the poor unrelated individuals. See

unfilled protion of the poverty deficit is represented by BDE in figure 2 and BDHE in figure 3. In both figures, payments to the poor in excess of the poverty threshold are represented by EFG and payments to the non-poor by CFG.

Evaluation of Three Proposals

The benefit-cost ratio technique can be adapted to help resolve conflicts between the objectives of income maintenance programs. In this analysis, benefits are defined as all income transferred to the poor in a given year. The calculation of benefits excludes income transferred to the non-poor and that part of income transferred to the poor that raises their total income above the poverty threshold. Costs are defined as the value of the reduced labor supply resulting from the program plus the total income transfer in a given year. Thus, the benefit-cost ratio will always be less than one. This ratio is only a device for calculating a measurement with which proposals can be compared and has no absolute meaning. In particular, it does not imply that a dollar's worth of resources will result in less than a dollar's worth of output.

The most difficult problem is to estimate the expected reduction in the labor supply. It is possible to make an estimate of the labor supply effect of various income maintenance proposals based on the results of a

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U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 77, "Poverty Increases by 1.2 million in 1970," (Washington: U.S. Government Printing Office, May 7, 1971), pp. 2 and 4.

study financed by the Heineman Commission. In this study, Green and Tella estimated that an income maintenance proposal with a $1,500 basic grant and a 50 percent tax rate would result in a reduced labor supply valued at approximately $1.2 billion in 1964. 4/ If aged persons in male-headed families and female-headed families are excluded, the value of the output loss is reduced to $690 million.

Our estimates of the labor supply effect of the Minimum Cost-Total Eradication proposal, the Heineman Commission proposal, and the FAP proposal are presented in table 1. To estimate the labor supply reduction of the Heineman Commission and the FAP proposals, a constant

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4/ C. Green and A. Tella, "Effect of Non-employment Income and Wage Rates on the Work Incentives of the Poor," The Review of Economics and Statistics, 51 (November 1969), pp. 399-408. The study estimated a family labor supply reduction of 11.5 percent for persons in non-aged male-headed families.

Preliminary results from the New Jersey income maintenance experiment indicate that their experimental group worked 12 percent fewer hours than their control group. However, for the experimental group receiving income maintenance payments, total earnings were not significantly lower because workers in the experimental group were able to obtain a higher hourly wage than workers in the control group. Apparently, transfer payments are an investment enabling recipients to spend more time in job search, and the wage differential may indicate the return to increased job search. Sixty percent of the difference between the experimental group and the control group in number of hours worked by the family was due to the employment behavior of the wife and other family workers. Secondary workers may be moving into and out of the labor force to help attain a minimum family income goal. This minimum income goal may shift upward over time, thereby reducing the long-run labor supply reduction of secondary workers. See U.S. Office of Economic Opportunity, Further Preliminary Results of the New Jersey Graduated Work Incentive Experiment, OEO Pamphlet 3400-4 (May 1971), pp. 20-22.

Table 1. Estimated Value of Labor Supply Reduction for Various Income Maintenance Proposals (in millions of dollars)

Basic grant for a family of four a/	Males under age 65	Male and female heads of families and unrelated individuals
$1,500 b/	690	1,200
$1,960 (FAP) c/	900	1,570
$2,400 (Heineman Commission)	1,100	1,920
Minimum Cost-Total Eradication d/	6,270 e/	8,130

a/ All of the proposals except the Minimum Cost-Total Eradication proposal incl ude a 50 percent tax rate.

b/ Estimates from C. Green and A. Tella, "Effect of Nonemployment Income and Wage Rates on the Work Incentives of the Poor", The Review of Economics and Statistics, 51 (November 1969), pp. 407-408.

c/ The basic grant is $1,960 if the provision to allow $720 per year for employment costs is ignored. The resulting benefit-cost ratio is not very sensitive to this adjustment. If the lower bound of the labor supply reduction is estimated by treating this proposal as having a basic grant of $1,600 with a 50 percent tax rate, ignoring the zero tax rate on the first $720, the benefit-cost ratio is increased by only 0.05. This does not change the ranking of the various proposals, and the first assumption appears to be more realistic.

d/ It is assumed that all of the poor cease employment after implementation of the program. Those earning more than poverty incomes who opt to cease work and take the grant are not included. No discount is made for those who prefer work to leisure at a zero wage rate.

e/ Also includes female unrelated individuals under age 65.

disincentive effect to scale is assumed. The assumption is that doubling the basic grant of an income maintenance proposal while retaining the same tax rate will double the value of production lost through a reduction in the labor supply. One further adjustment is necessary to obtain an estimate for the FAP proposal. The first $720 earned annually by FAP recipients is not taxed because $60 per month is allowed for working expenses. If this provision is ignored, the FAP proposal is reduced to a proposal with a basic grant of $1,960 and a proportionate tax of 50 percent on all wage earnings. The value of the labor supply reduction then can be approximated from the Green-Tella estimates. This procedure will slightly overstate the labor supply reduction due to the lack of disincentive effect of the FAP proposal for the first $720 of earnings.

The Minimum Cost-Total Eradication proposal can be viewed as a subsidy that encourages a reduced labor supply. For each dollar's worth of reduced earnings, the 100-percent tax rate results in a transfer of a dollar to the poor recipient. If it is assumed that all of the poor prefer leisure to work at a zero or negative wage rate, the economically rational response is for all of the poor to cease wage employment. Wage earnings for the poor in 1969 were estimated to be $8.1 billion. 5/

5/ All families in poverty received $10.6 billion in income in 1969; 52 percent, or $5.5 billion, of this amount was from earnings. In 1969, one-fifth of the poor (4,851,000 persons) were unrelated individuals. The poverty income threshold for a single individual in 1969 was $1,834. Thus, the total income necessary to lift all unrelated individuals to the

Depending upon their evaluation of work, leisure, and income, some of those only a little above the poverty threshold might opt to take the grant and cease work. However, some of the poor would undoubtedly prefer work even at a zero or negative wage rate. We assume that the underestimation of labor supply reduction resulting from not taking into account the near-poor who cease employment because of the program would be approximately offset by the overestimation resulting from the assumption that all of the poor would cease work and take the grant.

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poverty threshold was $8.9 billion. The mean income deficit for unrelated individuals was $777, or $3.8 billion in total. Therefore, the income of poor unrelated individuals from all sources was $5.1 billion. If 52 percent of this income was derived from labor earnings, as is true for all family income, then the labor earnings of poor unrelated individuals were $2.6 billion. Consequently, the total labor earnings of the poor in 1969 were $8.1 billion.

In 1969, families headed by females earned 33 percent of their total income of $1.2 billion from labor. There were 980,000 heads of male households over age 65. If it is assumed that these individuals earned only one-third less than the average income for families with male heads, then the value of their per capita labor income was $911. In 1967, 27 percent of all males over 65 participated in the labor force. The total value of the labor supply of male family heads 65 and over, assuming that 27 percent worked, was $242 million. It is assumed that unrelated individuals over 65 can also earn $911 in per capita income. Fifty-five percent of the unrelated individuals are 65 and over. In 1967, 17 percent of all over 65 worked. If 17 percent of the 2.66 million over 65 earned the group mean wage earnings of $911, then unrelated individuals over 65 earned $417 million. Summing the wage earnings of female family heads and the two aged categories gives $1.86 billion.

The data for these calculations were taken from the U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 76 (December 1970), pp. 6, 10, 18, 52, and 82. The rates of participation in the labor force of the aged were taken from J. A. Pechman, H. J. Aaron, and M. K. Taussig, Social Security: Perspectives for Reform (Washington: The Brookings Institution, 1968), p. 9.

Under the Minimum Cost-Total Eradication proposal, no payments are made to the non-poor and none of the poor receive payments that raise their total income above the poverty threshold. Under the Heineman Commission and FAP proposals, there is some leakage to the non-poor. Payments to the non-poor can be estimated by finding the area of CEG (shown in figures 2 and 3) as a proportion of the area that represents total transfer payments. Using integral calculus, the area of CEG is equal to 10 percent of total payments for the Heineman Commission proposal (figure 2). Half of the leakage goes to the non-poor and the other half raises some of the poor above the poverty threshold. If the net transfer of the Heineman program is $5.9 billion, then $597 million will be paid to the non-poor. 6/ In the FAP proposal (figure 3), the

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6/ It is assumed here that all families in poverty have four members. The other necessary assumption is that family incomes are equally distributed from zero to $4,800. Obviously, the family income of the poor would be expected to bunch around the poverty threshold.

The Heineman Commission estimated a higher leakage of $1.5 billion to the non-poor based on a poverty threshold of $3,553 for a non-farm family of four. Their estimate was based upon a more thorough analysis of present family incomes and family sizes than our rough estimate. The largest poverty deficits are for the poor with large families; hence this under-estimation based on the assumption of four-person families is not surprising. However, the extent of this bias is surprising and may indicate the need for special attention to the particular requirements of large families in poverty. It may also indicate a high return in long-run poverty reduction to subsidized family planning programs. In 1969 there were 1.1 million families in poverty with four or more children under 18.

break-even point of $3,920 is very close to the weighted average poverty threshold in 1969 for a family of four, which was $3,721. Consequently, leakage to the non-poor is very small, only 0.5 percent of the total transfers under the FAP proposal go to the non-poor. If the addition in net transfers under FAP is $2.5 billion, then payments to the non-poor are only $13.3 million.

The benefit-cost ratio for the three proposals can be calculated from the information summarized in table 2. The ratio is net program costs minus transfers to the non-poor divided by net program cost plus the value of the labor supply reduction. The benefit-cost ratio of the Minimum Cost-Total Eradication proposal is 0.55. This proposal closes all of the poverty gap and makes no payments to the non-poor, but the disincentive effect is so large that it substantially reduces the benefit-cost ratio. The benefit-cost ratio of the FAP proposal is 0.61. Only 0.5 percent of the payments under this proposal would go to the non-poor, but FAP would close only 22 percent of the poverty gap. The Heineman Commission proposal has the most favorable benefit-cost ratio, 0.68. This proposal would close 47 percent of the poverty gap with about 10 percent of the payments going to the non-poor.

This is, of course, only a partial and somewhat crude analysis of the benefits and costs of income maintenance programs. More precise knowledge of the labor supply effects of income maintenance programs is badly needed. And attention should be directed toward measuring some of

Table 2. Comparison of Three Income Maintenance Proposals a/

	Minimum Cost-Total Eradication proposal	Heineman Commission proposal	FAP proposal
Percentage of poverty gap closed	100	47	22
Estimated value of labor supply reduction (bil. dol.)	8.13	1.92	1.57
Estimated payments to the non-poor (mil. dol.) b/	0	597	13.3
Percentage of payments to the non-poor	0	10.1	0.5
Benefit-cost ratio	.55	.68	.61
Net program cost (bil. dol.) c/	11.4	5.9	2.5
Number of beneficiaries (mil.) d/	25.5	36.8	20.0
Method of financing	Not specified	Surtax of approximately 12% e/	Surtax of approximately 2.5% e/

a/ The table is based on the expenditure estimates of the original proposals and data on poverty in 1970 from U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 77 (May 7, 1971).

b/ Also includes payments to the poor raising them above the poverty definition. Exactly one-half of the leakages go to each category.

c/ These program costs only include net increases in transfer payments. No additional expenditures for supportive services, such as day-care centers, were included in these costs. The Heineman Commission proposal assumes that another $1 billion of federal funds would substitute for reduced state and local expenditures, raising total program costs to

Table 2. (Continued)

$7 billion. The FAP proposal also includes some reduced effort by states and local areas, but this reduction of less than $0.5 billion is not included in the $2.5 billion estimate. The estimated total cost of the FAP proposal is $4.4 billion.

d/ The Minimum Cost-Total Eradication proposal pays benefits only to the poor, whereas the other two programs also make payments to the non-poor. For the estimate of program beneficiaries of the Heineman Commission proposal, see the report of the President's Commission on Income Maintenance Programs, Poverty Amid Plenty: The American Paradox (Washington: U.S. Government Printing Office, November 1969), p. 61. The estimate of the coverage of the FAP proposal was made by W. Michael Mahoney, Office of Planning and Evaluation, Department of Health, Education, and Welfare, February 1970.

e/ The Surtax would be put on all personal and corporate income. The FAP proposal would also eliminate the federal contribution to AFDC. The Heineman Commission proposal would not only eliminate the federal contribution to all categorical assistance programs but also eliminate food stamps. See R. J. Lampman, "Transfer Approaches to Distribution Policy," American Economic Review, 60 (May 1970), p. 277. Using $3,000 as the household poverty threshold, Lampman estimated a net increase in payments to the poor of $5.6 billion from the Heineman Commission proposal and $1.8 billion from FAP. Our analysis does not consider the problem of integrating a new program into the present system. If we use Lampman's estimates of leakage to the non-poor and total program costs, and our estimates of labor supply reduction, the benefit-cost ratio is still higher for the Heineman Commission proposal than for the FAP proposal.

the potential benefits of income maintenance programs that are not included here. For example, an income maintenance program would be valuable in supplementing unemployment compensation as an automatic stabilizer of economic fluctuations. Federally financed income maintenance would help relieve the fiscal crisis confronting many state and local governments. Still another benefit would be the dynamic effects of making it possible for the poor to increase their investment in themselves and their children.

The Case for a Regressive Income Maintenance Plan

The principal objectives of an income maintenance program are to reduce the poverty deficit and to maintain the incentive of the poor to work while minimizing or eliminating transfers to the non-poor. There is a modification of the simple constant-rate (proportional) tax feature of the Heineman Commission proposal that offers several advantages in resolving the conflicts between these objectives.

The United States has a progressive personal income tax system. The positive tax schedule, which begins for a family of four at an income of $3,600 in 1971, provides increasing marginal tax rates as income levels rise. This same principle can be applied to an income maintenance system by providing increasing marginal tax rates as income falls below the amount at which positive taxes apply, thereby imposing a regressive rate structure on grant recipients. To illustrate the advantages of a regressive income maintenance plan, consider this question: what is

the optimal income maintenance program if the main objective is to reduce the poverty deficit of $11.4 billion and program outlays must be restricted to, say, $5 billion?

The program strategy is obvious: Create a step-wise variation in marginal tax rates to spend $5 billion entirely on closing the poverty deficit. For example, the marginal tax rate might be 65 percent on earnings from $0 to $1,500; 50 percent on earnings from $1,500 to $2,500; and 35 percent on earnings from $2,500 to $3,650 (see figure 4). This program would concentrate on providing maximun incentive for the poor to seek and retain full-time employment. Tax rates would be highest for the very poor and lowest for those whose earnings are near the poverty threshold. 7/

A system of regressive tax rates would tend to discourage the very poor from accepting part-time, seasonal, or low-paying jobs. But it would offer less disincentive for the acceptance of full-time and better paying jobs. Once an individual enters the labor force, this system of tax rates encourages full-time employment.

A regressive income maintenance program is diametrically

7/ The Seattle experiment of income maintenance programs will include a regressive treatment as proposed here. A declining rate schedule will also facilitate the merging of the negative tax rates with the positive tax schedule. See M. Kurz and R. G. Spiegelman, "The Seattle Experiment: The Combined Effect of Income Maintenance and Manpower Investments," American Economic Review, 61 (May 1971), pp. 22-29.

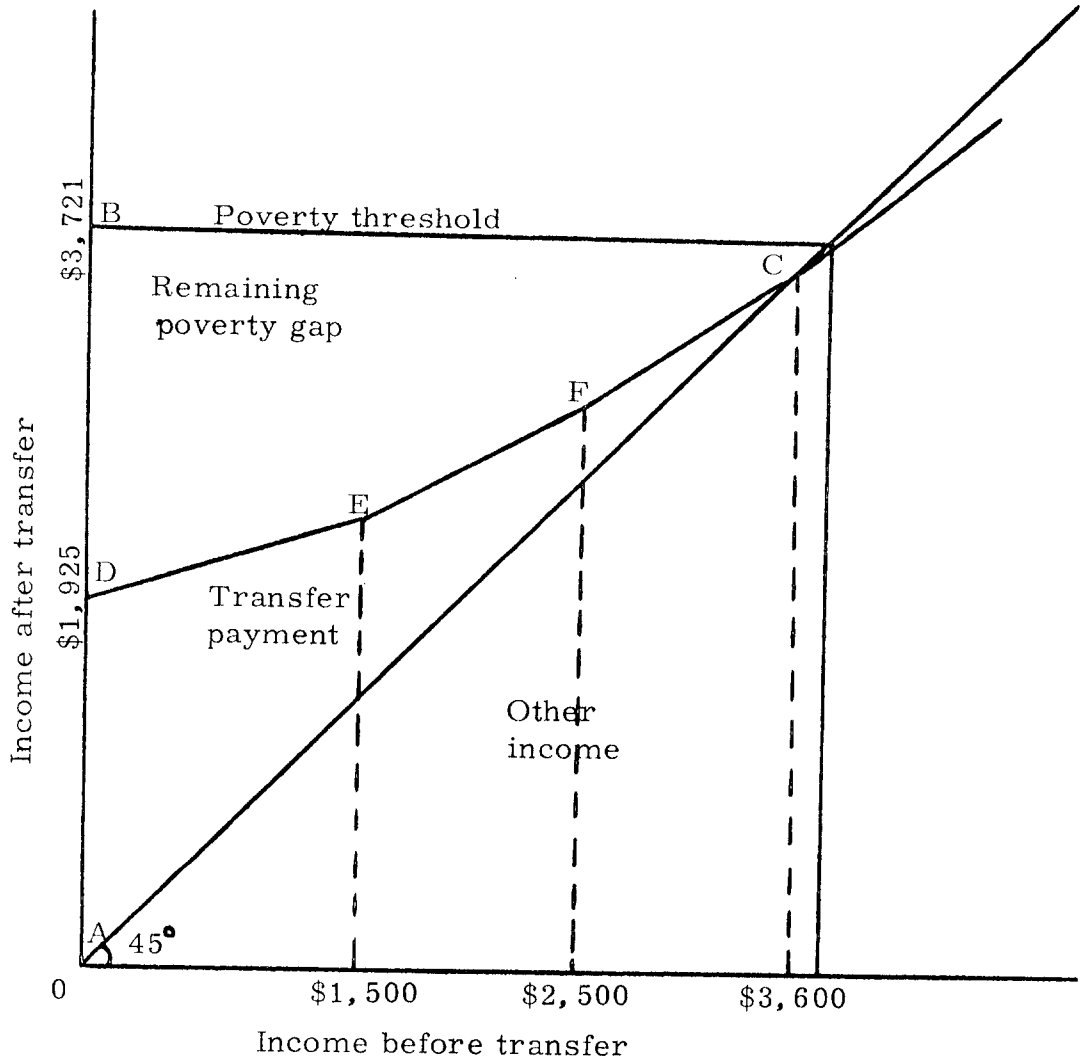

Figure 4. A Regressive Income Maintenance Proposal (family of four)

opposite to the FAP proposal, which includes a progressive rate structure. The FAP proposal sets a zero tax rate on the first $720 of annual earnings and a 50 percent rate on annual earnings in excess of $720. Moreover, when combined with other programs such as food stamps and medical insurance, the administration's welfare package results in extremely high marginal tax rates that increase as the poverty threshold is approached. This occurs because of the attempt to phase out all cash and in-kind assistance programs as individuals move out of poverty.

Estimates of the marginal tax rates that would be faced by recipients of FAP, food stamps, and medical insurance indicate that rates are highest for families with gross earnings of from $720 to $4,240, reaching 90 percent for those with earnings of from $3,800 to $3,920 (see table 3). Rates are substantially lower for very low incomes and for incomes above $4,240. Thus, the disincentive to supplement transfer payments with wage earnings is greatest for the working poor whose before transfer income is close to the poverty threshold. A transfer system with progressive tax rates would be expected to encourage part-time rather than full-time employment unless full-time employment pays enough to move the individual above the range of high marginal tax rates.

If the potential reduction in the labor supply of recipients is an important concern in the design of an income maintenance program it makes more sense to impose lower tax rates on the working poor than on the non-working poor. Since the gross earnings of the working poor

Table 3. Marginal Percentage Tax Rates Faced by Recipients of FAP, Food Stamps, and Medical Insurance

Gross earnings	Marginal tax rate a/
$ 0 - $ 720	42
720 - 2,080	74
2,080 - 3,800	76
3,800 - 3,920	90
3,920 - 4,240	61
4,240 - 4,500	29

a/ These rates are for a family of four and include social security taxes and the positive personal income tax schedule. It is assumed that the latter become operative at an income of $3,800 (allowing four exemptions of $700 and a $1,000 standard deduction). This accounts for the difference of 14 percentage points between $2,080 - $3,800 category and the $3,800 - $3,920 category.

Source: D. L. Bowden, G. C. Cain, and L. J. Hausman, "The Family Assistance Plan: An Analysis and Evaluation," (Madison, Wisconsin: Institute for Research on Poverty) unpublished paper, January 1971, p. 12.

will hover around the poverty line, the FAP proposal combined with food stamps and medical insurance has the opposite effect. Even with the elimination of food stamps, the modification of FAP in the welfare reform bill (H. R. 1) passed by the House in May 1971 does not resolve the basic problem of a progressive income maintenance proposal. The House bill attempts to deal with the problem of labor supply reduction by providing a separate program for those considered "capable" of working. However, the bill does not resolve the incentive problem since it provides a tax rate of 66 2/3 percent on income in excess of $720 annually.

A regressive income maintenance proposal would impose high marginal rates on those with very low earnings whose labor supply elasticity is expected to be very low due to age, disability, or in the case of female-headed families, large family size. 8/ Because of the very low labor supply elasticity for this group, the value of the labor supply reduction even with high marginal tax rates will be minimal. Moreover, a regressive income maintenance program would still

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8/ "Sixty-one percent of poor male family heads and 43 percent of poor female family heads worked in 1969. About 90 percent of poor male heads who did not work were either ill or disabled or can be presumed to be retired. About 72 percent of poor female heads who did not work gave family and home responsibilities as their main reason for not working in 1969." U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 76 (December 1970), p. 2. Also see C. L. Schultze et al., Setting National Priorities: The 1972 Budget (Washington: The Brookings Institution, 1971, pp. 180-190.

maintain an incentive for those with very low earnings to seek full-time employment. It also would avoid arbitrary determination of who is capable of working and simplify program administration, thereby reducing administrative costs.

Conclusions

The benefit-cost ratio technique can be used to evaluate more systematically some of the conflicting objectives of income maintenance programs. The results would be expected to be sensitive to estimates of the labor supply reduction effect. Improved data on this effect will be available from the present field experiments of income maintenance programs in New Jersey, Seattle, Gary, North Carolina, and Iowa. 9/ Better estimates of program leakage can be obtained by more detailed examination of family size and present earnings of the poor and eligible non-poor. Our objective was to demonstrate the technique rather than to provide a definitive analysis.

9/ The preliminary results of the New Jersey experiment in income maintenance show no statistically significant differences in labor supply response between categories of recipients whose marginal tax rates were 30, 50, and 70 percent. See H. W. Watts, "Adjusted and Extended Preliminary Results from the Graduated Work Incentive Experiment," Discussion Paper (Madison: University of Wisconsin, Institute for Research on Poverty, June 1970), pp. 25-27.

One of the primary problems in the New Jersey experiment was that program recipients did not completely understand the mechanics of the program, especially the tax rates, even though program details were explained to them. It is not clear that the new Seattle program, with its even more complicated system of tax rates, will be able to overcome this problem of incomplete comprehension. See H. W. Watts, "The Graduated Work Incentive Experiments: Current Progress," American Economic Review, 61 (May 1971), pp. 20-21.

The primary theoretical problem in designing an income maintenance program lies in determining the appropriate trade-off between three conflicting objectives: reduction of the poverty deficit, maintenance of work incentives, and avoidance of transfers to the non-poor. The graphical approach and the benefit-cost ratio technique focus on this problem. This analysis suggests that a regressive income maintenance program is superior to one in which tax rates are progressive (FAP) or proportionate (the Heineman Commission proposal). For a given level of program expenditure, a regressive tax schedule maximizes the amount of the poverty deficit that is closed. Moreover, a regressive income maintenance program would provide lower marginal tax rates for those with incomes near the poverty threshold, thereby encouraging the acceptance of full-time employment by the very poor and discouraging a reduction in work effort by those near the poverty threshold.