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ABSTRACT This volume (and volume 2 of this report) are products of the knowledge development effort implemented under the mandate of the Youth Employment and Demonstration Projects Act of 1977 (YEDPA). This report on assessment of the Job Corps presents a large array of studies ranging from rigorous impact and benefit-cost evaluations to survey of nutrition in centers. It is intended to be a compendium of most of what has been learned about the Job Corps in the 1970s, particularly since the youth initiatives were launched in 1977. The key elements in this report are the six-month follow-up study of Job Corps enrollees and a benefit-cost analysis based on these findings. There are several major findings of the study: (1) Job Corps apparently produces benefits to society in terms of increased earnings of participants, lowered transfer payments, and reduced crime, which exceed its costs; (2) older youth stay longer and tend to make significant employment and earnings gains while younger participants benefit from socialization and gain maturity; (3) the self-paced individualized approach of Job Corps seems to work in education and vocational training; and (4) it may take as long as five years of operation for centers to stabilize and participant benefits to be seen. (KC)

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# YOUTH KNOWLEDGE-DEVELOPMENT REPORT

PROGRAM EVALUATIONS  
Assessments of Job Corps Performance and Impacts.  
Volume I

ED203060

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May 1980

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Youth Knowledge Development Report 3.2

ASSESSMENTS OF THE JOB CORPS  
PERFORMANCE AND IMPACTS  
VOLUME I

April 1980

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OVERVIEW

Job Corps has been labelled the "cornerstone" of youth employment and training efforts because it offers, in a residential setting, the most comprehensive, intensive and expensive services of any youth program, because it is targeted to those young persons with severest needs, because in over 15 years of operation it has served more than 600,000 young people, and because it is a program with a track record of proven success.

Job Corps is also a cornerstone of knowledge development efforts for several reasons:

First, Job Corps offers a complete treatment approach with corpsmembers receiving allowances, education, basic life skills training, vocational training, world-of-work experience, health care, residential support, work experience, counseling, recreation and more. Given the intensity of treatment, Job Corps constitutes a test of the most fundamental notion whether it is possible to redirect human lives and to make a difference over the long-term with comprehensive remedial assistance. The vast majority of CETA youth dollars, for instance, go for wages and salaries in work experience rather than for significant human resource development activities, so lifetime changes should not be expected for participants. Because Job Corps is relatively intensive and expensive, the benefits must be significant to justify the costs. Other less intensive programs may produce positive changes, but the marginal impacts cannot be discerned because our social science measurement tools are inexact. For instance, if the tools of measurement for social status changes have a margin of error of 5 percent, then a short-duration activity which produces positive but slight increments may not have measurable effects whereas Job Corps would be expected to produce more readily observable changes substantially exceeding the margins of error in measurement. The authorizing legislation for Job Corps, in fact, mandates benefit-cost analyses to determine whether the investment is justified. Put in another way, Job Corps is the most comprehensive of human resource investment programs for the disadvantaged. If it does not work, then there must be doubts about less comprehensive efforts.

Second, Job Corps is an excellent social laboratory in exploring ways to aid disadvantaged youth. It offers a complete range of services under standardized criteria in a multitude of settings to a relatively homogeneous, disadvantaged clientele. It is a nationally directed program. Hence, it is easier to try out various mixes of services and delivery approaches in Job Corps than in the decentralized CETA prime sponsor system. The program

and its approaches have stabilized after 15 years of operations so that learning curve and startup effects are minimized. There is a comprehensive recordkeeping system which provides information which is unavailable elsewhere and the size of the participant cohort permits detailed assessments of impacts.

Third, the Job Corps was the forerunner of many of the approaches now being adopted or considered for youth policies for the 1980s. Its program is self-paced, open-entry, open-exit, with multiple options and tracking of youth through a sequence of activities based upon individual ability. It provides benchmarks for achievement within Job Corps and resumes for subsequent entrance to the labor market. Education is linked to vocational training which is linked to work experience. There are multiple steps so that advanced youth can go as far as college; in other words, there is a self-contained system which can move participants upward as rapidly as possible. The Job Corps experience, therefore, suggests how these features will or can work for economically disadvantaged youth under other CETA programs.

These two volumes on Assessments of the Job Corps Performance and Impacts present a massive array of studies ranging from rigorous impact and benefit-cost evaluations to surveys of nutrition in centers. In other words, this is a compendium of most of what has been learned about Job Corps in the 1970s but particularly since the youth initiatives were launched in 1977.

There are several major findings:

First, Job Corps apparently produces benefits to society in terms of increased earnings of participants, lowered transfer payments, and reduced crime, which exceed the costs. Human resource investments have a measurable impact and, apparently, a positive rate of return.

Second, the experience suggests that older youth who are more mature stay longer and tend to make significant employment and earnings gains subsequently while younger participants benefit from socialization and greater maturity.

Third, the self-paced individualized approach of Job Corps seems to work in education and vocational training. It is far from a perfect mechanism, but there is apparently much more choice and much less slippage in the realization of and progression through opportunities within Job Corps than outside.

Fourth, even though the characteristics of Job Corps participants have not changed significantly since the 1960s and continue to be extremely disadvantaged, there is a vast range in ability and motivation. A sorting occurs within Job Corps in terms of who initially applies, who stays and who advances. Where full opportunities are available for everyone, and where extra efforts are made for those with greatest difficulties, this sorting is helpful to the disadvantaged youth offering youth with commitment a chance to prove themselves.

Fifth, there is a delicate balance in Job Corps. The more elements in the treatment package, the more likely that the totality will impact on needs. For instance, health problems are less likely to impede progress of Corpsmembers than of participants of programs that do not offer comprehensive health care. However, with multiple components, it is also harder to make all the pieces function harmoniously. Job Corps experience suggests that it may take as long as five years of operation for centers to stabilize, i.e., that there is a long learning curve.

The Job Corps experience summarized in this volume is not all positive; there is much in the program which needs improvement. But the evidence is hopeful, suggesting that comprehensive services can help the most disadvantaged youth, and that the directions we are moving in youth policies for the 1980s make sense.

These volumes are products for the "knowledge development" effort implemented under the mandate of the Youth Employment and Demonstration Projects Act of 1977. The knowledge development effort consists of hundreds of separate research, evaluation and demonstration activities which will result in literally thousands of written products. The activities have been structured from the outset so that each is self-standing but also interrelated with a host of other activities. The framework is presented in A Knowledge Development Plan for the Youth Employment and Demonstration Projects Act of 1977, A Knowledge Development Plan for the Youth Initiatives Fiscal 1979 and Completing the Youth Agenda: A Plan for Knowledge Development, Dissemination and Application in Fiscal 1980.

Information is available or will be coming available from the various knowledge development activities to help resolve an almost limitless array of issues, but answers to policy questions will usually require integration and synthesis from a number of separate products, which, in turn, will depend on knowledge and availability of these products. A major shortcoming of past research, evaluation and demonstration activity has been the failure to organize and disseminate the products adequately to assure the full exploitation of the findings. The magnitude and structure of the youth knowledge development effort puts a premium on organization and dissemination.

As part of its knowledge development mandate, therefore, the Office of Youth Programs of the Department of Labor will organize, publish and disseminate the written products of all major research, evaluation and demonstration activities supported directly by or mounted in conjunction with the knowledge development effort. Some of the same products may also be published and disseminated through other channels, but they will be included in the structured series of Youth Knowledge Development Reports in order to facilitate access and integration.

The Youth Knowledge Development Reports, of which this is one, are divided into twelve broad categories:

1. Knowledge Development Framework: The products in this category are concerned with the structure of knowledge development activities, the assessment methodologies which are employed, validation of measurement instruments, the translation of knowledge into policy, and the strategy for disseminating findings.

2. Research on Youth Employment and Employability Development: The products in this category represent analysis of existing data, presentation of findings from new data sources, special studies on dimensions of youth labor market problems and policy analyses.

3. Program Evaluations: The products in this category include impact, process and benefit-cost evaluations of youth programs including the Summer Youth Employment Program, Job Corps, the Young Adult Conservation Corps, Youth Employment and Training Programs, Youth Community Conservation and Improvement Projects, and the Targeted Jobs Tax Credit.

4. Service and Participant Mix: The evaluations and demonstrations summarized in this category concern the matching of different types of youth with different service combinations. This involves experiments with work vs. work plus remediation vs. straight remediation as treatment options. It also includes attempts to mix disadvantaged and more affluent participants, as well as youth with older workers.

5. Education and Training Approaches: The products in this category present the findings of structured experiments to test the impact and effectiveness of various education and vocational training approaches including specific education methodologies for the disadvantaged, alternative education approaches and advanced career training.

6. Pre-Employment and Transition Services: The products in this category present the findings of structured experiments to test the impact and effectiveness of school-to-work transition activities, vocational exploration, job-search assistance and other efforts to better prepare youth for labor market success.

7. Youth Work Experience: The products in this category address the organization of work activities, their output, productive roles for youth and the impacts of various employment approaches.

8. Implementation Issues: This category includes cross-cutting analyses of the practical lessons concerning "how-to-do-it." Issues such as learning curves, replication processes and programmatic "batting averages" will be addressed under this category, as well as the comparative advantages of alternative delivery agents.

9. Design and Organizational Alternatives: The products in this category represent assessments of demonstrations of alternative program and delivery arrangements such as consolidation, year-round preparation for summer programming, the use of incentives and multi-year tracking of individuals.

10. Special Needs Groups: The products in this category present findings on the special problems of and adaptations needed for significant segments including minorities, young mothers, troubled youth, Indochinese refugees and the handicapped.

11. Innovative Approaches: The products in this category present the findings of those activities designed to explore new approaches. The subjects covered include the Youth Incentive Entitlement Pilot Projects, private sector initiatives, the national youth service experiment, and energy initiatives in weatherization, low-head hydroelectric dam restoration, windpower and the like.

12. Institutional Linkages: The products in this category will include studies of institutional arrangements and linkages as well as assessments of demonstration activities to encourage such linkages with education, volunteer groups, drug abuse agencies and the like.

In each of these knowledge development categories, there will be a range of discrete demonstration, research and evaluation activities, focused on different policy, program and analytical issues. For instance, all experimental demonstration projects have both process and impact evaluations, frequently undertaken by different evaluation agents. Findings will be published as they become available so that there will usually be a series

of reports as evidence accumulates. To organize these products, each publication is classified in one of the twelve broad knowledge development categories, described in terms of the more specific issue, activity or cluster of activities to which it is addressed, with an identifier of the product and what it represents relative to other products in the demonstration. Hence, the multiple products under a knowledge development activity are closely interrelated and the activities in each broad cluster have significant interconnections.

The key elements in these two volumes are the 6-month follow-up study of Job Corps enrollees and a benefit-cost analysis based on these findings. The uncertainty is whether the positive short-term effects will continue or will be eroded over time. The Lasting Impacts of Job Corps Participation, also in the "program evaluations" category, provides the results of the followup of Corpsmembers one year after the survey in this volume. It provides encouraging evidence that the overall gains do not erode.

The Job Corps approach might be contrasted with the work experience approach undertaken under the supported work demonstration with a similar client group and evaluated by parallel methodologies. Enhanced Work Experience - The Supported Work Approach for Youth in the "youth work experience" category provides an interesting contrast to the findings in these volumes. Likewise, Alternative Education Models--Preliminary Findings of the Job Corps Educational Improvement Effort in the "education and training approaches" category is related to the studies of education in Job Corps contained in these volumes. Employment and Training for Indochinese Youth in the "special needs group" category indicates the role of Job Corps in serving this significant segment of the disadvantaged youth population.

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TABLE OF CONTENT

PROGRAM EVALUATIONS:  
ASSESSMENT OF THE JOB CORPS  
PERFORMANCE AND IMPACTS  
VOLUME 1

	AGE
Overview.....	i
Introduction .....	1
A Preliminary Analysis of the Job Corps Advanced Career Training Program in Colleges and Post Second- ary Vocational Institutions .....	47
Considerations in Cost-Benefit Analysis of Job Corps .....	109
Evaluation of the Economic Impact of the Job Corps Program: First Follow-Up Report .....	130
An Examination of Job Corps Participation .....	329
The Noneconomic Impacts of the Job Corps .....	407
A Comparative Evaluation of the Benefits and Costs of the Job Corps After Seven Months of Postprogram Follow-Up .....	584

## INTRODUCTION

Job Corps provides comprehensive services including vocational skills training, basic education, health care and residential support for young people who are poor, out of school and out of work. In contrast to shorter-term and less costly approaches which serve youth with less severe needs, or seek to provide stopgap or transitional assistance, the aim of Job Corps is to permanently break the cycle of poverty by improving the life-time earning prospects of youth most in need.

As part of a broad-ranging series of youth employment and training initiatives, the Carter Administration and Congress are doubling Job Corps to 44,000 enrollment opportunities or "slots". At the same time, there is a commitment to further improving the program, testing old approaches and trying out new ones in order to make Job Corps better as well as bigger.

This report analyzes the performance of Job Corps in fiscal 1978, the success of the expansion effort, as well as the needs and measures to improve program components. It synthesizes a broad range of recently completed studies of Job Corps operations and impacts. These studies are referenced in this report and are available separately from the Office of Youth Programs of the Department of Labor.

## PERFORMANCE IN FISCAL 1978

Job Corps maintained its record of performance in fiscal 1978. The program continued to serve an extremely disadvantaged population. Retention rates further improved. Placement rates remained stable. Real annual costs rose only modestly.

1. Serving Youth Most In Need. Job Corps' mission is "to assist young persons who need and can benefit from an unusually intensive program," and it has traditionally served the most disadvantaged youth, including, in fiscal 1978, 70 percent minorities, 87 percent high school dropouts, and almost 100 percent poor. There has been very little change over the years in the clientele. Job Corps, thus, remains the primary remedial treatment mechanism for economically disadvantaged youth. For instance, among the 1.1 million participants under Title I CETA in fiscal 1977, only 24,700 economically disadvantaged young persons with less than a high school education were served in classroom training and 7,100 in on-the-job training, compared to the 35,200 in Job Corps.

2. Retention. The economic and noneconomic benefits of the Job Corps experience are directly related to the duration of stay.

### Fiscal 1978 Terminees

<u>Months in Job Corps</u>	<u>Employment Rate</u>	<u>Starting Wage</u>
0 - 3	61.1	\$2.85
4 - 6	65.6	3.06
7 - 9	72.6	3.16
10 - 12	77.3	3.34
13 - 15	79.2	3.39
Over 15	79.5	3.47

Administrative measures have, therefore, been taken to increase the length of stay. The Department of Labor performance monitoring system places heavy emphasis on retention. The allowance formula gives incentives for Corpsmembers to stay longer. The result has been continuing improvement.

	<u>1968</u>	<u>1973</u>	<u>1978</u>
Average Weekly Termination	3.9%	4.3%	3.8%
Average Length of Stay in Months	5.5	5.6	5.7

CHARACTERISTICS OF  
JOB CORPS ENROLLEES

<u>Income</u>	<u>Fiscal 1968</u>	<u>Fiscal 1978</u>
Average Family Income	\$3,300	\$4,800
Percentage from families on Public Assistance	27	33
<u>Education</u>		
Percentage high school dropouts	88	87
Percent less than 6th grade reading achievement	67	50
<u>Race</u>		
White	30	30
Black	58	55
Spanish-Speaking	8	10
American Indian	2	2
Other Nonwhite	1	2
<u>Age of Entry</u>		
16 or Under	30	24
17	27	26
18 - 21	43	50
<u>Sex</u>		
Male	72	71
Female	28	29

3. Placement. The Job Corps has achieved high rates of positive termination and placement. In fiscal 1978, post-program status data were available on 32,340 of the 44,921 terminees. Among these, 2,268 were ill, confined, or females with family responsibilities. Of the 30,072 who were available for placement, 20,465 or 68 percent entered employment, 6,083 or 20 percent entered education or training programs, and 1,372 or 5 percent entered the Armed Forces.

- 4 -

15

TABLE II

JOB CORPS PLACEMENT (FY 1974-FY 1977)Definitions:

Available for Placement: Total number of Job Corps Placement and Assistance Records, Forms MA 6-78 received, less the number who reentered the program; the number who cannot be located to determine status; and the number who are ill, confined, or females with full-time family responsibilities.

Placement Rate: The percentage of those available for placement who are placed in employment, in school or another training program, or in the military service.

	<u>FY 1974</u>	<u>FY 1975</u>	<u>FY 1976</u>	<u>FY 1977</u>	<u>FY 1978</u>
<u>TOTAL AVAILABLE</u>	34,803	32,520	31,523	31,973	30,072
<u>TOTAL PLACED</u>	32,589	29,336	28,946	29,605	27,920
<u>PERCENTAGE</u>	93.6%	90.2%	91.8%	92.6%	92.8%
<u>EMPLOYED AND WAGES PER HOUR</u>					
<u>TOTAL</u>	23,947	20,408	19,857	20,324	20,465
<u>PERCENTAGE</u>	68.8%	62.7%	63.0%	63.6%	68.1%
<u>WAGE PER HOUR</u>	\$2.26	\$2.44	\$2.57	\$2.83	\$3.10
<u>SCHOOL</u>					
<u>TOTAL</u>	6,530	6,846	7,283	7,291	6,083
<u>PERCENTAGE</u>	18.7%	21.0%	23.1%	22.8%	20.2%
<u>ARMED FORCES</u>					
<u>TOTAL</u>	2,112	2,082	1,806	1,990	1,372
<u>PERCENTAGE</u>	6.0%	6.4%	5.7%	6.2%	4.6%

NOTE: Placement assistance is extended to all former enrollees, regardless of length of stay in the program, and the foregoing reports cover all former corpsmembers regardless of length of stay. Since placement ratios and wage rates increase with length of stay, the record for program completers is even better than shown above.

4. Cost Performance. The unit costs for the Job Corps operations rose slightly in real terms in fiscal 1978. Total Job Corps program outlays per corpsmember year (excluding the capital costs related to expansion and to previously deferred health and safety improvements in existing centers), were \$10,253 in fiscal 1978 compared to \$7,970 in fiscal 1972 and \$8,312 in fiscal 1968. In constant dollars, the total Corpsmember year cost in 1978 was a third below that in 1968.

The law now permits the Secretary of Labor to increase center operating costs to offset inflation. In the 1970's, outlays were reduced by postponing all expenditures which could be delayed, for instance, outlays for educational materials or recreation equipment. In 1978, there was a reversal of the long-term down-trend in real costs, to some extent to meet these previously postponed needs. As a planning estimate, it is projected that the annualized unit costs excluding capital will be maintained at \$10,500 in 1978 dollars with adjustments for inflation.

JOB CORPS COSTS  
1966 - 1978

	<u>Applied Funding Excluding Capital</u>	<u>Applied Funding Excluding Capital (1978 \$)</u>	<u>Corps- member Years</u>	<u>Applied Funding Excluding Capital Per Corpsmember Year</u>	<u>Applied Funding Excluding Capital Per Corpsmember Year (1978 \$)</u>
FY 1966	\$189.9	\$376.0	18,146	\$10,465	\$20,723
1968	303.8	561.6	36,549	8,312	15,364
1970	166.6	275.8	19,195	8,679	14,369
1972	179.8	276.2	22,560	7,970	12,242
1974	163.7	213.4	18,954	8,637	11,260
1976	174.3	196.7	20,213	8,623	9,732
1978	234.7	234.7	22,891	10,253	10,253

## IMPACT ASSESSMENTS

Major evaluations have been completed in the last year documenting in a rigorous fashion both the economic and noneconomic impacts of Job Corps:

1. Employment and Earnings Impacts. The labor market experiences of a large sample of 1977 enrollees and a control group of nonparticipants were compared during a followup period averaging 7 months after termination. (Evaluation of the Economic Impact of the Job Corps Program. Mathematica Policy Research. Office of Youth Programs Report Number 7. February 1979). Impacts on labor force participation, employment, hours of work and wages were measured. The evidence indicates that there is a readjustment period of several months during which Corpsmembers have a less favorable experience than control group members, but that by the 7-month point, the favorable employment and earnings impacts of Job Corps predominate.

At the 7 month point, Job Corps terminees had a labor force participation rate of 82 percent, four percentage points above the comparison group; 27 percent were employed full-time as contrasted with 24 percent of controls; weekly earnings were \$49 compared to \$45. The gains were even more significant for completers. Among male completers, the labor force participation rate was 10 percentage points higher than for controls; 14 percent more were employed full-time; most critically, earnings per week were \$23 higher.

2. Reducing Criminal Activity and Dependency. Job Corps significantly reduces youth crime and juvenile delinquency. The participants, who are selected because of their severe needs, are a high risk group. Among male enrollees, 45 percent report previous arrests with nearly three in ten having convictions and one in six with a prison or jail record. A fifth of females report previous arrests and a tenth have convictions. (An Examination of Job Corps Participation. Mathematica Policy Research. Office of Youth Programs Report Number 8. February 1977). Yet these youth do well in the Job Corps setting. A recent study has shown that previous offenders improve more than other Corpsmembers in gaining job seeking skills and job development, in altering nutrition and

SUMMARY OF MAIN FINDINGS FOR OVERALL IMPACTS OF JOB CORPS

Variable <sup>b/</sup>	(1) Estimated Sample Mean For All Enrollees	(2) Estimated Sample Mean For All in the Absence of Job Corps	(3) Estimated Differential For All Enrollees (1) - (2)	(4) Estimated Percentage Impact For All Enrollees (3) ÷ (2) x 100
A. Civilian labor supply in week prior to interview				
• In labor force	0.816	0.778	0.038	5%
• Employed	0.451	0.439	0.012	3%
• Employed full time	0.270	0.236	0.034	14%
• Hours	14.85	13.53	1.32	10%
• Earnings	\$49.04	\$44.66	\$4.38	10%
B. In military during week prior to interview	0.052	0.033	0.019	58%
C. Education and training in week prior to interview				
• In high school <sup>c/</sup>	0.043	0.083	-0.040	-48%
• In college <sup>c/</sup>	0.027	0.017	0.010	59%
• Have high school diploma or GED	0.207	0.151	0.056	37%
• In training program <sup>c/</sup>	0.049	0.030	0.019	63%
D. Number of moves in six-month period				
• For job opportunity <sup>d/</sup>	0.208	0.024	0.184	767%
• For education or training <sup>d/</sup>	0.071	0.012	0.059	492%
• All moves outside city <sup>d/</sup>	0.362	0.089	0.273	307%
E. Percent of time having serious health problems	0.042	0.050	-0.008	-16%
F. Percent of time receiving public assistance				
• Cash welfare	0.035	0.056	-0.021	-38%
• Food Stamps	0.213	0.253	-0.040	-16%
• Public housing	0.103	0.149	-0.046	-31%
G. Percent of time receiving other transfers				
• Unemployment Insurance	0.003	0.010	-0.007	-70%
• Workers' Compensation	0.001	0.002	-0.001	-50%
H. Participation in drug/alcohol treatment program per six-month period	0.015	0.028	-0.013	-46%
I. Number of arrests per six-month period	0.113	0.176	-0.063	-36%

Source: Evaluation of the Economic Impact of the Job Corps Program: First Follow-up Report. Mathematica Policy Research. Office of Youth Programs Report Number 7. February 1979.

health habits, and in setting long-term goals. Female ex-offenders, in particular, benefit significantly. (The Non-economic Impacts of Job Corps, Abt Associates. Office of Youth Programs Report Number 9. February 1979).

Among all Job Corps enrollees, there is a significant reduction in crime both during the period of enrollment and upon termination. The arrest rate over 6 months of enrollment is one-fifth that experienced in the 6 months prior to enrollment. The number of arrests per hundred Corpsmembers in the 7 months after termination is three-fifths that of a control group. In fact, the estimated savings in victimization, court and corrections costs equal about one-half the total cost of Job Corps. (A Comparative Evaluation of the Benefits and Costs of the Job Corps After Seven Months of Postprogram Followup. Mathematica Policy Research. Office of Youth Programs Report Number 10. February 1979).

Job Corps reduces dependency. In the 7 months after termination, the percent of time on welfare is reduced by two-fifths. The receipt of food stamps, public housing benefits, unemployment and workers compensation all decline. The resulting savings are quite significant, amounting to roughly \$250 per Corpsmember in the 7 months following termination. Projected into the future with the assumption of a fade-out of 14 percent each year and discounted at 5 percent, the reductions per Corpsmember have a present value of \$1130. In other words, reductions in transfer payments offset a substantial part of the cost of the program.

3. Other Impacts. There are other positive impacts from the Job Corps experience. Educational attainment and achievement are improved. Seven months after termination, participants are two-fifths more likely to have a high school diploma or GED than nonparticipants - the results of Job Corps education programs. The proportions enrolled in college and training programs are three-fifths higher.

Another very significant impact is on mobility. Since many Corpsmembers previously lived in poverty areas, relocation can be a key to their future. The Job Corps is frequently the first experience away from home. In the 7 months after termination, participants were seven times as likely to have moved in search of job opportunities.

There are attitudinal changes underlying these more visible impacts. Youth who remain in centers more than 90 days improve in job seeking skills, subsequent job satisfaction, attitudes toward authority, self-esteem, nutrition behavior family relations and use of leisure time. (The Noneconomic Impacts of the Job Corps, Abt Associates. Office of Youth Programs Report Number 9. February 1979).

4. Benefit-Cost Estimates. The substantial impacts of Job Corps are the result of substantial investments per enrollee. A basic policy issue is whether the benefits to participants and society are worth the cost.

One technique for addressing this issue is benefit/cost analysis which seeks to quantify impacts in dollars and cents terms, to project them into the future, and to compare their present value with direct and foregone costs. If the present value of benefits exceeds costs, or the benefit/cost ratio is greater than 1.0, the social investment is profitable.

There is a long history of benefit/cost analyses of Job Corps leaving a great deal of uncertainty about the rate of return on the Job Corps investment, but even more, about the feasibility of the benefit/cost methodology. Benefit/cost estimates from different data sources and even from the same ones have varied markedly depending on assumptions. The methods of measuring net impacts have had serious deficiencies. There are inherent uncertainties in projecting benefits into the future, and necessary assumptions about the most appropriate discount rates for translating the projected benefits into current values. Many impacts are difficult to quantify and price. In other words, the uncertainties tend to undermine the precision which the benefit/cost technique seeks to bring to the analysis of program effectiveness. (Considerations In Cost-Benefit Analysis of Job Corps, Office of Youth Programs Report Number 4, January 1979).

Recognizing these uncertainties, benefit/cost analysis may be useful in assessing in a general way whether the program impacts justify the costs. The comprehensive impact evaluation of Job Corps includes benefit/cost estimates based on varying assumptions using the experience after 7 months of post-program follow-up:

Estimated Benefit/  
Cost Ratio

- |   |      |
|---|------|
| 1. Net benefits assumed to fade out at 14 percent per year; discount rate of 3 percent. | 1.15 |
| 2. Net benefits assumed to fade out at 14 percent; discount rate of 5 percent.          | 1.05 |
| 3. Net benefits assumed to fade out at 14 per year; discount rate of 10 percent.        | .88  |
| 4. Net benefits assumed not to fade out; discount rate of 10 percent.                   | 3.12 |

It is the conclusion of the analysis given this range of possible benefit/cost estimates that Job Corps is a profitable public investment.

"The principal issue is whether the investment in Job Corps is economically efficient - specifically, does society have more goods and services at its disposal because of the investment in Job Corps, or would it be better off if the resources devoted to the program were used for alternative purposes? The results of this analysis suggest that public investment in Job Corps is efficient. Our benchmark estimate is that the present value of benefits exceeds costs by \$251 per corpsmember or by approximately 5 percent of costs."

(A Comparative Evaluation of the Benefits and Costs of the Job Corps After Seven Months of Postprogram Follow-Up). Mathematica Policy Research, Office of Youth Programs Report Number 10. February 1979).

## EXPANSION

In doubling Job Corps to 44,000 slots, there were several basic goals. A primary aim was to move as rapidly as feasible, recognizing the difficulties of acquiring centers, preparing them for occupancy, and phasing-up enrollments at a reasonable pace. Prior to expansion, the geographic distribution of centers did not match the distribution of poor youth, so the additional capacity was sought in areas which were underrepresented. Expansion offered the possibility of achieving greater diversity and balance in the types of centers and in center contractors. Finally, every effort was made to secure and prepare facilities in the most economical manner. The record in achieving these goals is as follows:

### 1. Timing of Expansion

It was initially planned that Job Corps would expand to 35,000 on-board-strength by the end of fiscal 1978, and to 44,000 by the middle of fiscal 1979.

The rate of expansion of center capacity has been slower than anticipated. The necessary sites were identified by the end of fiscal 1978, but there were delays in acquisition in several cases. Even more critical were the lags in construction and rehabilitation in order to prepare the centers for occupancy. Finally, the fiscal 1979 Job Corps budget did not provide adequate funds to maintain the on-board-strength initially projected, and full resources will be utilized to achieve the present goal of 30,300 Corpsmember years in fiscal 1979 and 42,000 in fiscal 1980. This projection is based on an on-board-strength of 30,000 by the mid-point of fiscal 1979 and 36,000 by the end, with full expansion completed in mid fiscal 1980.

End-of-Quarter  
Expansion Timetable

Accomplished	<u>Center Slots Acquired</u>	<u>Available Center Capacity</u>	<u>On-Board Strength</u>
<u>1977</u>			
I	20,700	20,700	19,453
II	23,275	20,961	20,916
III	25,850	21,555	21,088
IV	28,245	22,225	21,625
<u>1978</u>			
I	31,000	22,455	21,997
II	33,000	24,407	23,394
III	35,000	24,918	24,868
IV	37,000	26,409	25,510
<u>Projected 1979</u>			
I	40,000	27,000	24,795
II	42,000	33,050	30,400
III	44,000	37,150	34,800
IV	44,000	40,200	36,000
<u>1980</u>			
I	44,000	44,000	42,000
II	44,000	44,000	44,000

There were three planned approaches: First, expansion of the capacity of existing centers; second, establishment of off-center programs with little or no capital costs; and third, acquisition and rehabilitation of new facilities. It was recognized that many centers could readily absorb small increases in capacity with relatively small capital outlays. Forty-seven centers were expanded adding a total of 3,150 slots. However, two centers were reduced in size because of serious problems with facilities. The net expansion was 2,400.

In order to provide a wider range of opportunities for Corpsmembers the Job Corps established an Advanced Career Training Program in College and an Industry Work Experience Program. By the end of the expansion these off-center programs will contain over 2,800 slots, and they accounted for 1423 on-board-strength at the end of fiscal 1978.

By far the biggest portion of the Job Corps expansion, however, was through the acquisition of new facilities. Over 100 locations were identified and surveyed to find the 50 sites which would provide the best facilities and locations for Job Corps and would be acceptable to community leadership.

## 2. Geographic Distribution

The best single measure of need for Job Corps is the number of 16-21 year-olds living in poverty. Prior to the expansion, there was a significant mismatch between the distribution of Job Corps centers and of poor youth. The New England region had no centers while the Northwest and Rocky Mountain regions, which each had approximately the same proportions of the nation's poor youth, together contained a fifth of all slots. Expansion was, therefore, targeted for areas with an underrepresentation relative to need. There was significant success in balancing need and capacity.

DISTRIBUTION OF NEED AND CAPACITY

<u>Region</u>	<u>Percent of Poor Youth Age 16-21 (1975 Census Data)</u>	<u>Percent of Capacity Before Expansion</u>	<u>Percent of Capacity After Expansion</u>
I (Boston)	3.6	0	3.6
II (New York)	8.4	4.3	7.6
III (Philadelphia)	9.1	9.5	12.0
IV (Atlanta)	24.1	20.3	22.3
V (Chicago)	17.2	11.8	10.8
VI (Dallas)	15.4	21.8	15.4
VII (Kansas City)	4.7	3.4	4.4
VIII (Denver)	3.1	11.4	7.1
IX (San Francisco)	11.3	7.5	9.4
X (Seattle)	3.1	9.6	6.4

### 3. Mix and Balance of Enrollment Opportunities.

The expansion provided an opportunity to alter the mix and balance of centers. An immediate issue was center size. There were several arguments for larger centers. The effort to secure and develop four 250 enrollee centers is roughly four times that of one 1000 enrollee center. Federal administrative burdens for large centers are commensurately lighter. There are economies in rehabilitation and pre-activation. Large centers offer greater possibilities for advanced training. There are some economies of scale in operation, at least up to the 250-300 enrollee level. On the other hand, there are a number of arguments for smaller centers. In many ways, they are easier to manage and operate. Greater diversity and geographic distribution are possible with more centers. Employment and earnings gains of participants in large centers appear to be somewhat less than for participants in small and medium sized centers according to the recent 7-month followup. While different sizes are appropriate in different circumstances, it is believed that on balance the most effective scale of operation is between 250 and 750. Half of the additional centers are, therefore, in the 251-500 capacity range. Overall, centers with 251-750 enrollees increased from a third to over half of total center capacity.

Center Size	Number		Percent of Total Center Capacity	
	Before Expansion	After Expansion	Before Expansion	After Expansion
0 - 250	40	56	36	29
251 - 500	13	38	21	34
501 - 750	4	12	12	18
751 +	4	4	32	18

There are two fundamental types of Job Corps centers:

(1) Contract centers operated by for-profit corporations, nonprofit organizations and State and local governmental agencies; and (2) Civilian Conservation Centers administered by the Departments of Agriculture and Interior in national parks and forests and on other public lands. The conservation centers tend to be smaller, with an average enrollment capacity of 220 in fiscal 1978 compared to 530 for contract centers. Traditionally, the conservation centers have worked with less educated youth, almost totally males. Union operated programs were concentrated in these centers and there was an emphasis on useful work experience on public lands. These distinctions have been reduced somewhat with the coeding of some CCCs, the extension of union programs to contract centers, and more balanced assignment policies. Because the newly implemented Young Adult Conservation Corps met many conservation needs, and because Agriculture and Interior were under tight staff ceilings, the number of conservation centers was expanded only modestly; CCCs accounted for a fourth of all slots at the beginning of the expansion but will account for only a sixth at the end.

Another goal in the expansion was to increase coeducational capacity in order to meet the mandate that as rapidly as feasible, 50 percent of enrollment be female. Of the new centers funded, all will be coeducational. It is estimated that there will be capacity for a 40 percent female share at the end of the expansion.

A final goal was to provide for increased services to handicapped youth. A center in each region has been designated for special emphasis efforts for the handicapped. In rehabilitating all new centers, accessibility for the handicapped has been considered.

4. Diversifying Center Operators. The operation of a Job Corps center is a substantial enterprise requiring a great deal of expertise. The Civilian Conservation Centers are operated by Federal staff under direction of the Departments of Agriculture and Interior. The remaining centers are operated under contract with the Department of Labor by profitmaking firms, governmental agencies and community based organizations. There are carefully developed procedures for selecting these contractors either through an open competition, a more narrow choice among minority-owned, 8a firms, or sole source arrangements with nonprofit groups or government agencies of demonstrated effectiveness. Within these categories, selection is governed by detailed rules to assure objectivity and fairness in the award of contracts. Operators had to be selected for each new center. Moreover, existing center contracts are ordinarily rebid every 2 years.

Prior to expansion, the majority of contract centers were operated by five major corporations which had become involved in Job Corps in the 1960s. Public schools, universities, State departments of education, and nonprofit agencies operated most of the rest. In the expansion to date, there has been a redistribution away from centers operated by departments of education, schools and universities and there has been a proliferation of for-profit contractors including one 8a. In the not-for-profit group, there were identified and contracted as of January 15, 1979, three Indian-operated centers, two run by community based groups, two by unions, and two by prime sponsors. Arrangements for an additional Indian center and three centers operated by national community based groups are in the advanced stages under sole source contracting; this will significantly increase the share of not-for-profits.

Percent of Contract Centers

	<u>Before Expansion</u>	<u>As of January 15, 1979</u>
Departments of Education, Schools and Universities	24%	17%
Five Major Corporations	58	58
Other for Profit	3	11
Other Not-for-Profit	15	14
Indian Groups	3	5
Community Based Organizations	6	3
Unions	6	3
Prime Sponsors	0	3

5. Minimizing Job Corps Expansion Costs. Costs have been a concern throughout the expansion. A factor in the initial decision to develop a significant number of off-center slots was the savings in expenditures for acquisition and rehabilitation. Expansion of existing capacity was also seen as an economical measure. Purchase and preparation of new centers was recognized as an expensive undertaking. Based on the experience of the original buildup of Job Corps in 1965-1967 the capital costs (excluding equipment), were originally projected in 1977 at about \$4,000 per slot. With the inflation of construction and property costs, new center expansion has cost \$109 million or \$6,227 per slot. Equipment for new capacity has averaged \$2,000 per slot as originally projected or a total of \$34 million. Finally, preactivation costs associated with maintaining a center (paying utilities, security costs and the like) and its staff during preparation for opening and during the necessarily gradual phase-up in operations have averaged a little under \$2000 per slot as originally projected, or \$33 million overall.

Total nonrecurring expansion costs are thus projected to be \$176 million for 22,000 slots (including off-center programs, expansion in existing centers, and new center development). With an expenditure of \$8,100 per slot, it is critical that the expanded operations continue for a number of years in order to amortize the investment.

## IMPROVING JOB CORPS COMPONENTS

Job Corps is the most complex of all Federal employment and training programs because it is so comprehensive in its treatment. Years of experimentation and development have yielded a set of procedures and approaches which, on the average, work quite well. Yet there is room for improvement. Belt-tightening in previous years which led to many necessary economies also produced some cutbacks in essential services. The expansion of Federal employment and training opportunities for youth provides opportunities for useful linkages as well as alternatives for youth who might be served by Job Corps. Labor market changes have created needs for new vocational skills while making others obsolete. New training and education methods have been developed in the last decade which might be applied in Job Corps. Youth of today are different in some ways than those in the mid-1960's, and some changes in Job Corps approaches may be required. In order to identify problem areas and needs for change, there has been a massive effort to assess every aspect of Job Corps performance, to initiate corrective actions where the answers are clear-cut and experimental programs to learn what will work better.

1. Recruiting and Screening. The Job Corps is targeted for the 14- through 21-year-old youth who "is economically disadvantaged or is a member of a family which is economically disadvantaged, and who requires additional education, training or intensive counseling and related assistance in order to secure and hold meaningful employment, participate successfully in regular school work, qualify for other suitable training programs or satisfy Armed Forces requirements." Recruiting mechanisms are needed to make eligible youth aware of Job Corps opportunities, while the screening system is to assure that applicants need and can benefit from the extensive services offered.

The program characteristics data indicate that the recruiting and screening mechanisms produce the type of enrollees for whom the program is intended. On the average, an extremely disadvantaged group is served. Detailed information from enrollee surveys confirms

program data. In the 6 months prior to enrollment, a fourth of Job Corps members were living alone or with relatives other than their parents and less than half were living with two parents. Their earnings in the previous 6 months averaged only \$711. More than nine of ten were from families below the poverty level for the last 6 months. Three-fifths of their families were receiving some public assistance. A youth who is living alone and unemployed is, by definition, economically disadvantaged, and it would be possible for "transitorily" poor youth to qualify for assistance and to need it. However, the survey of enrollees indicates that three of five recruits were in poor families at age 15; in other words, most were trapped in a cycle of poverty.

The employability of enrollees is extremely limited. They average 9.8 grades of education compared to 12.2 for the U.S. population; only 13 percent have completed high school. Nearly a fourth have applied for and been rejected by the Armed Forces. A third have never held a job of 20 hours work per week for more than one month. In the 6 months prior to enrollment, only 64 percent held any job. Much of this employment was in work experience and training programs, in which 30 percent previously participated. Nearly two-fifths reported having been arrested previously and a fourth convicted. (An Examination of Job Corps Participation. Mathematica Policy Research. Office of Youth Programs Report Number 8. February 1979)

While there is no doubt that most enrollees are in the intended client group of Job Corps, it is uncertain whether some could be better served by alternative means, and whether equitable and efficient procedures could be introduced to make this determination. There are two contradictory concerns over recruiting and screening procedures:

- (1) There is legitimate concern over "red tape" and paperwork. To increase recruiting through CETA, it would make sense to simplify procedures and make them compatible with those used elsewhere;
- (2) On the assumption that greater selectivity could reduce dropout rates, it could be argued that the procedures should be made more selective.

Both these concerns must be considered in the reexamination and pilot testing of recruiting and screening procedures, a process which is currently underway.

The need for active recruitment and outreach will increase with the size of Job Corps. Recruiting efforts have consistently produced enrollments to fill the 22,000 slots averaged in the 1970's, but it is uncertain what success there will be in meeting expanded enrollment requirements. At any point in time, there are approximately 350,000 youth age 16 through 21 who are poor, out of school, not a high school graduate and not employed. There are approximately one half a million dropouts who are not employed who meet the economically disadvantaged criteria (for which the income standard is somewhat higher than the poverty level). Over the course of a year, there is a flow into and out of this category, so the number eligible for Job Corps at some point is more than half a million. It is unknown, however, what proportion of these youth would be willing to enter Job Corps and could benefit from its comprehensive services. Job Corps has previously operated at the 44,000 level, at a point in time when the military was recruiting many more economically disadvantaged youth, when unemployment was extremely low, when females represented a smaller proportion of enrollment, and when turnover was higher requiring more recruiting annually. Theoretically, the 44,000 slot level would appear to be reasonable. To date, the backlog of applicants has grown since the expansion was begun.

	<u>OBS</u>	<u>Backlog</u>
First Quarter 1977	21,625	7,031
First Quarter 1978	25,510	6,932
First Quarter 1979	24,795	10,139

The problems are more likely to be selective than general. There are likely to be some difficulties in regions which do not have extensive experience recruiting for Job Corps which now have centers to be filled. There is a need to increase recruiting of women and poor white youth. Whites make up more than half of poor

youth age 14 to 21 but less than a third of Job Corps enrollees. Likewise, females represent 55 percent of the poor age 14 to 21, but only 29 percent of enrollees, down from 31 percent in fiscal 1977 even though coeducational capacity expanded. The female backlog in the fourth quarter of 1978 per slot filled by females was 18 percent, whereas for males the backlog was 24 percent of slots filled by males. In the next 2 years, as enrollment opportunities for females increase targeted outreach efforts will be necessary.

It does not appear that current efforts have a major impact on recruitment. Among all enrollees, 63 percent report first having heard of Job Corps from friends and relatives. Only 17 percent heard first from the Employment Service, 11 percent from advertisements or articles and the remainder from schools, probation officers, and other sources. Since the Employment Service is the primary intake mechanism, half of the enrollees receive most of their information from this source yet two-fifths still receive most of their information from friends and relatives. On the other hand, there is little evidence of "deceptive advertising" which is a danger when recruitment is emphasized. Nine of ten enrollees rate job training and education in Job Corps as "about the same" or "better than" expected and only relative to allowances and food are expectations not met.

Two potential sources of referrals are the CETA prime sponsors and the Armed Forces recruiting network. New policies were developed and implemented to require referrals to Job Corps under the Youth Community Conservation and Improvement Projects (YCCIP) and Youth Employment and Training Programs (YETP). If necessary, referral targets could be placed on each prime sponsor since each year thousands of Job Corps eligible youth are nonpositively terminated from other CETA programs. There is also an agreement with the Department of Defense to utilize Armed Forces Examining and Entrance Stations as a recruiting source. These arrangements are currently being implemented on a pilot basis for four centers.

The low level of pay and allowances has been an impediment to recruiting. The Job Corps enrollee initially receives only \$30 monthly. In contrast, a residential enrollee in the Young Adult Conservation Corps receives \$116 a week in gross wages and pays \$21 a week for room and board leaving \$380 monthly before taxes. Many youth who need Job Corps services could be expected to prefer cash in the pocket to the possible longer-term benefits of education and training. Implementation of the Congressionally mandated increase in pay and allowances when funds are available should improve the attractiveness of Job Corps.

2. Vocational Training. Vocational training is the heart of Job Corps. A wide range of courses are available at a variety of skill levels. These use two basic methods of training. Contract centers generally provide shop-type or "mock-up" instruction either on-center or at local vocational schools. Training provided at Civilian Conservation Centers, especially that performed by construction trade unions, is "hands on" with actual construction being done. All Job Corps vocational programs are "open entry-open exit." The types of training are determined from supply and demand analyses.

Labor unions play an important role in Job Corps training, with union-operated courses accounting for about 17 percent of all Job Corps vocational slots. Initially, union programs were offered only at conservation centers but they have now been expanded to contract centers. Their share of total slots will be maintained during the expansion. Unions now conducting training at Job Corps centers include the following:

- AFL-CIO Appalachian Council
- International Union of Bricklayers and Allied Trades (AFL-CIO)
- Brotherhood of Railway, Airline and Steamship Clerks, Freight Handlers, Express and Station Employees (AFL-CIO) (B.R.A.C.)
- International Brotherhood of Painters and Allied Trades
- International Union of Operating Engineers

- Operative Plasterers and Cement Masons International Association of the U.S. and Canada (AFL-CIO)
- United Brotherhood of Carpenters and Joiners of America (AFL-CIO)
- United Auto Workers

In addition, the National Home Builders Association will have over 1,200 slots to train Corpsmembers for jobs (mostly nonunion) in home building industries.

Job Corps vocational programs cost \$34.5 million in FY 1977 or \$1,680 per Corpsmember year of service. This included the cost of vocational supplies and equipment, vocational instructors, and the entire cost of union contracts. It also included the cost of supervisors and materials for work projects performed by Corpsmembers as part of their vocational training. Adjusted for inflation, the real cost of training in 1977 was a fifth less than a decade before.

There is a wide variation in the post-program experience of trainees in different clusters. The following conclusions emerge from analysis of data for fiscal 1977 terminations:

- o Only one of seven Corpsmembers who enters vocational training ends up completing and being placed upon termination in a job in the same cluster. On the other hand, three-fifths of completers who are placed end up with a job training match.
- o The job placement rate for male completers (67.5 percent) is much higher than that for female completers (55.6 percent). This is true for almost every vocational cluster. However, female completers who are placed tend to have a higher percentage of job-training matches than their male counterparts (65.5 percent versus 60.3 percent).
- o Two-thirds of all female completers are from "traditional" occupations -- the clerical/sales and health occupations clusters.

- o When males and females are trained and placed in "nontraditional" jobs, they tend to receive higher wages than those trained in "traditional" skill areas.
- o For males, the highest percentages of eventual placements in training related jobs are in the industrial production, clerical and sales, and health occupations. For females, they are in the forestry, health, industrial production and transportation clusters.
- o Civilian Conservation Centers completers have a higher probability of training related placement than male completers at other centers. This can be ascribed to the (mostly union) construction programs at CCCs.
- o Male completers from the four largest centers do relatively poorly in terms of completion rates, placement, and placement in training related jobs.

Cluster Number	Cluster Name	Percentage of Vocational Trainees who chose this Cluster	Percentage of Trainees in Cluster who Completed	Percentage of Completers in Clusters who are Placed in Jobs	Percentage of Completers who are Placed in Training Related Jobs	Percentage of all Trainees in Cluster Who Complete and are Placed in Training Related Jobs	Average Hourly Wages of Completers Placed in Training Related Jobs
1	Subprofessional	1.1%	41.3%	48.3%	19.3%	8.0%	\$3.19
2	Clerical & Sales	15.0	35.4	58.2	39.6	14.0	3.21
3	Service Occupations	7.3	32.4	62.0	31.3	10.1	2.81
4	Forestry, Farming and Gardening	1.4	50.2	72.2	43.1	21.6	3.31
5	Food Service	10.4	38.5	61.4	38.0	14.6	--
6	Automotive and Machine Repair	14.7	29.0	63.8	31.0	9.0	2.87
7	Construction Trades	27.1	36.7	70.2	46.2	17.0	4.02
8	Electrical/Appliance Repair	1.4	38.2	68.9	23.0	8.8	2.71
9	Industrial Production	11.1	41.4	67.2	42.4	17.6	3.48
10	Transportation	1.0	31.5	66.7	33.3	10.5	3.16
11	Health Occupations	9.5	42.7	57.1	39.5	16.9	2.5
	Average	--	36.7%	64.1%	39.4%	14.5%	\$3.40
<b>Male</b>							
1		0.6%	62.5%	53.8%	22.5%	14.1%	\$3.35
2		4.5	38.0	67.5	47.0	17.9	3.99
3		9.2	31.9	63.1	32.2	10.3	2.84
4		1.7	49.3	71.7	42.9	21.1	3.28
5		11.1	40.0	64.0	38.8	15.5	--
6		19.8	29.1	64.3	31.4	9.1	2.88
7		36.4	37.1	70.2	46.4	17.2	4.01
8		1.8	39.3	68.9	23.0	9.0	2.71
9		12.8	41.8	69.7	45.3	18.9	3.52
10		1.0	28.6	70.3	32.8	9.4	3.38
11		1.1	42.4	61.2	43.7	18.5	2.81
	Average	--	36.5%	67.5%	40.7%	14.9%	\$3.57
<b>Female</b>							
1		2.5%	29.1%	41.5%	15.4%	4.5%	\$2.91
2		43.1	34.7	55.9	37.8	13.1	2.98
3		2.3	37.4	53.2	23.4	8.8	2.47
4		0.6	56.1	75.0	43.8	24.6	3.45
5		8.5	33.5	51.0	34.7	21.6	--
6		1.3	27.6	43.8	15.6	4.3	3.67
7		3.2	24.4	63.8	37.7	9.2	4.81
8		0.3	20.8	40.0	0.0	0.0	--
9		6.6	39.2	53.7	27.3	10.7	3.17
10		0.8	40.8	58.6	34.5	14.1	2.69
11		30.8	42.7	56.8	39.1	16.7	2.57
	Average	--	37.3%	55.6%	36.3%	13.5%	\$2.92

Several steps are being taken to improve vocational programs. First, Job Corps and outside vocational materials were reviewed and evaluated in order to identify those of greatest potential in Job Corps. (Evaluation Study of Job Corps Vocational Training Curricula. Jane Melton, Office of Youth Programs Report Number 18. February 1979.) Second, a variety of new vocational programs are being introduced, with an emphasis on more advanced training. Sophisticated training in auto mechanics, body and fender repair was introduced at the Clearfield, Utah Job Corps center under the direction of the United Auto Workers. One year of supplemental training will be provided to 200 qualified Corpsmembers annually from around the country, with intense placement efforts to assume higher paying jobs in the automobile industry. An advanced program has been developed with Control Data Corporation to train Corpsmembers as customer engineers and computer operators. Agreements are being negotiated with the Department of Energy for training Corpsmembers at Oak Ridge, Tennessee in energy related occupations, the United States Travel Service to train for jobs in the hospitality industry, with the Department of Health, Education and Welfare to train for jobs in neighborhood health centers, with the Department of Commerce for training in advanced maritime skills, and with the Environmental Protection Agency for training related to environmental jobs in water and sewage treatment. In each case, there are direct linkages to jobs. Vocational courses are being developed in surveying, solar energy, commercial boat repair and paraprofessional treatment of the handicapped. Finally, under an agreement with the Department of Defense, Job Corps will provide career readiness training for youth who want to enter the military but lack the necessary skills or abilities. In fiscal 1979, four pilot projects are being implemented to develop course materials and approaches. Third, there will be a concentrated effort in fiscal 1979 to identify several of the less effective training clusters and to organize center-to-center technical assistance so that the more successful approaches can be replicated.

3. Education. Most Corpsmembers have failed in or been failed by the traditional education system. In 1978, only an eighth of enrollees were high school graduates, the same as in 1968. The tested median achievement level in reading was below the sixth grade level in 1978.

The Job Corps provides comprehensive education opportunities. An individualized approach allows each student to be placed by ability and to move at his or her own pace. The basic education program consists of a standard set of materials graded for skill level, with a unit system of instruction and progression. The student/teacher ratio is 15.1 or less in three-fifths of centers. When students progress to roughly the 7th grade achievement level, they are usually placed in the General Equivalency Degree program (GED). The GED program is also a standardized package of self-paced units. After progressing through these materials, students take the GED test, usually administered outside Job Corps centers by State designated agencies. Finally, a new Advanced Career Training Program in Colleges and Post Secondary Vocational Institutions, was initiated in the second semester of the 1977-1978 school year. This component provides the full range of Job Corps services and support for Corpsmembers who continue their education and training in designated colleges and vocational schools.

Almost all enrollees who entered Job Corps without a high school diploma are enrolled in the basic reading and math programs. A third of Corpsmembers enter the GED and a tenth receive a GED certificate. Five percent of enrollees are in the residential college and vocational school program.

The costs of Job Corps center education programs are \$506 per Corpsmember year. Adjusted for the cost of living, expenditures have declined by 46 percent between 1967 and 1977. The new Advanced Career Training program includes the full range of Job Corps support, and it is not possible to separate education costs alone. However, service-year costs are substantially lower for ACT than for regular center operations.

The effectiveness of Job Corps center educational programs has not been measured since 1974, when national requirements for educational gains testing were abandoned. The evidence up to this point suggested an effective and improving program, with Corpsmembers bettering regular school learning rates and certainly their own previous rates of gain. The greatest gains were those made by youth with the lowest achievement levels. Participants who stayed longer averaged less gain per month than those with shorter stay.

Monthly Gains Per Man Month of Training

	<u>1968</u>	<u>1972</u>	<u>1974</u>
Reading	1.3	1.6	2.1
Arithmetic	1.7	1.8	2.5

Corpsmembers and staff are quite positive about the current education program. Three fifths of former participants rate the program as good and three-tenths as fair. Most students feel Job Corps is providing an education that they cannot secure elsewhere, that the classes are more interesting than those in regular schools, and that students are given adequate individual attention. Not surprisingly, student attitudes are correlated with teacher attitudes, with the presence of supplementary materials, and with the student/teacher ratio. Job Corps teachers rate the education program positively, also responding to lower student/teacher ratios and the availability of supplementary materials. Most Job Corps centers supplement the standardized basic education program. (An Assessment of Center Educational Programs in Job Corps. Barry Argento, Arlene Malech and Danielle Shultz, Office of Youth Programs. Report Number 12, February 1979).

The new Advanced Career Training Program in Colleges has not been operating long enough to determine its ultimate success, but the preliminary experience has been positive. A significantly larger proportion of Corpsmembers want to go on to college than have enrolled after Job Corps termination. ACT provides them the opportunity. The early ACT enrollees have done reasonably well as measured by retention rates, grade point averages and social adjustment. Advanced educational opportunities seem to increase interest in GED completion on center.

There are measurable post-program impacts of Job Corps education efforts. Job Corps terminees are two-fifths more likely than comparable nonenrollees to have a high school diploma or a GED seven months after termination. They are three-fifths more likely to be enrolled in college. Since less than three percent of terminees have traditionally entered college, the ACT program which will account for 5 percent of Job Corps slots should further improve the advanced education impacts.

Several measures are being taken to improve the educational offerings in Job Corps. In fiscal 1978, a new reading program was developed which is being pilot tested in several existing centers. The new program consists of more current and topical reading materials better reflecting concerns of Job Corps students. A new GED program has been developed and will be implemented in all centers. Finally, an Education Improvement Effort is being undertaken in selected Job Corps centers in fiscal 1979 and 1980 to test the effectiveness of alternative basic education and GED curricula and approaches. Based upon a survey of the status of education in Job Corps, a review of existing program models, and continuing consultation with the Office of Education in the Department of Health, Education and Welfare, models were carefully selected, including computer assisted learning methods emphasizing increased use of student interns, two separate GED programs, an alternative approach which can lead to a regular high school diploma, and another program which emphasizes basic life skills as a way to learn mathematics and reading. All systems, including the new reading program, will be tested relative to those already in place in Job Corps, under a careful research design which should yield evidence of use not only to Job Corps, but to other institutions involved in the education of economically disadvantaged youth.

3. World-of-Work Program. The current world-of-work program was instituted in Job Corps centers in 1975. Its purpose is to provide Corpsmembers with the jobseeking and jobholding skills, labor market information and attitudes which will help them succeed on the job. The program supplements more extensive education and vocational training offerings at centers. The core program consists of between 40 and 60 hours of classroom work including filmstrips and discussions. In some centers, there is a more extensive program concerned with basic life skills. An assessment by experts in world-of-work instruction suggests that the limited scope and duration of the program, as well as the lack of performance benchmarks constrains the impact.

(Job Corps World of Work Curricula Needs Assessment and Recommendations for Curriculum Modification. Jane Melton and Joseph Wrobel. Office of Youth Programs. Report Number 13. February 1979).

There is evidence that this dimension of Job Corps needs to be improved. The study of the noneconomic impacts of Job Corps does not provide evidence of improvements in knowledge of the world of work. A test to measure skills needed in looking and applying for work found that both completers and dropouts gained less over the period of enrollment than a control group of "no-shows." Apparently, experience in the labor market is more useful than classroom instruction in improving jobseeking skills. Tests to measure awareness of employer expectations and another to measure confidence in job skills revealed, again, that Job Corps enrollees lost some ground relative to controls. Job Corps completers did better than controls on tests measuring work relevant attitudes, work ethic, subsequent job satisfaction, and positiveness about the future. In other words, it appears that Job Corps has a greater effect in maturing youth for labor market participation than in providing knowledge about how to find or hold jobs or information about what to expect at the worksite. (The Noneconomic Impacts of the Job Corps Abt Associates, Office of Youth Programs Report Number 9. February 1979).

The potential and actual contribution of the world of work program is essentially untested. It is unclear what emphasis should be given to "life skills" as opposed to more narrowly defined "job skills" or the extent that a special world of work program is needed to supplement vocational training and education.

To provide more understanding, two new world-of-work approaches are being implemented and tested relative to the existing program. These will both be more intensive and will help to identify the potential of world-of-work training.

#### Job Corps Allowances and Support

The Job Corps pays monthly living allowances to Corpsmembers from which they are expected to provide personal items as well as entertainment costs. A readjustment allowance is also provided upon termination based upon satisfactory performance in Job Corps. These allowances were established by the original Job Corps legislation which set a maximum for living allowances of \$35 per month for the first six months and \$50 thereafter. The readjustment allowance could not exceed \$50 for each month of participation. These legislated allowances were unchanged for nearly 15 years during which the cost of living more than doubled.

The \$30 monthly Corpsmembers receive on entrance is the same as the \$30 a month in addition to food, housing and clothing which members of the Civilian Conservation Corps received 45 years earlier. It is one-third of the weekly pay of YACC residential enrollees who also receive room and board. Furthermore, the \$979 in personal and readjustment allowances paid per Corpsmember year is substantially less than the \$1500 per Corpsmember year estimated value of work output by Job Corps enrollees. Not surprisingly, then, low pay is the major complaint of Corpsmembers. More than half of Corpsmembers rate the allowances as "not good."

The failure to increase allowances may have several consequences. First, Job Corps is a less attractive short term financial option for prospective enrollees than other employment and training programs; some youth who could benefit more from Job Corps might be attracted to other programs. In the aggregate, the recruiting pool is reduced. Second, low allowances may lead to dissatisfaction, dropping out, and hence, the need to increase recruiting. An attempt to study this retention impact did not yield clear evidence of any effects on retention. (Synopsis of the Findings of the Pay and Allowance Experiment. Office of Youth Programs Report Number 15. February 1979). Third, Job Corpsmembers do not have the resources to meet personal needs. They must either supplement allowances with contributions from their families or they must find other sources.

In the 1978 reauthorization of CETA, Congress raised Corpsmember allowance maximums. The new entry allowance was not to exceed \$60 a month and the longer-term allowance was not to exceed \$100 a month. The readjustment allowance maximum was also raised to \$100 per month of participation.

Following reauthorization, a committee was formed within Job Corps to make recommendations on a new pay and allowance structure. This committee was composed of representatives from the national and regional Job Corps staffs, recruitment agencies, center staff, the U.S. Departments of Agriculture and Interior, and the Army Finance Center (which operates the Job Corps allowance system through interagency agreement).

The Committee had to balance a variety of concerns. Providing entering Corpsmembers with the maximum allowance (i.e., \$60 a month) would enhance recruitment, but would reduce the possibility of incentives for continued stay in the program. The more youth paid the maximum, the greater the cost. The Committee recommendations to balance these concerns were as follows:

### Living Allowances

0-2 months: \$40 per month  
3-6 months: \$60 per month  
Over 6 months: \$80 per month

Within these constraints, the center director would have the authority to delay increases, as well as the power to increase the allowance to \$100 a month for outstanding Corpsmembers with over six months enrollment.

### Readjustment Allowances

3-6 months: \$75 per month accrual  
7-9 months: \$75 per month accrued for first 6 months  
\$100 per month for the 7-9 months  
Over 9 months: \$100 per month accrual for each month in the program.

(New Policy Concerning Job Corps Pay and Allowances. Job Corps Allowances Committee. Office of Youth Programs Report Number 14. February 1979.)

The recommended policy is currently being reviewed within Job Corps and the Department. Implementation is dependent upon the availability of funds.

6. Health Care. Comprehensive health services are provided at each center through a coordinated health program with medical, dental, mental health, health education, and environmental health components. Each center has an on-center dispensary and infirmary and off-center affiliations for emergency room care, hospitalization, specialist care, and optometric services where not available on centers. The small centers are required to have a health staff that includes at least one nurse or medical technician (medic), as well as a part-time physician, dentist, and mental health professional. In large centers, the staff may also include full time physicians and dentists, nurses and/or physician's assistants, a laboratory technician, an x-ray technician, a pharmacist, and a dental hygienist.

Every Corpsmember receives a cursory medical and dental examination for obvious signs of disease within 24 hours of arrival at a Job Corps center, followed within 2 weeks by a comprehensive medical examination. All Corpsmembers receive immunizations in accordance with Job Corps requirements. Medical problems are identified and treated on an outpatient basis with specialty referrals and hospitalization as necessary. Chronic medical problems that do not preclude program participation (e.g., well-controlled diabetes or epilepsy) are managed on-center. Where problems are too complicated, too long-term, or too costly, Corpsmembers are given medical terminations with planned referrals for

follow-up care in the home community.

Dental disease is the most common health problem among entering Corpsmembers. A program for delivering routine dental care that emphasizes preventive dentistry and oral self-care has been implemented. Within 90 to 120 days after arrival on-center, Corpsmembers receive an American Dental Association Class II examination to determine their dental needs and the urgency of their treatment. To the extent possible, the necessary services are subsequently provided either on center or off.

The Job Corps mental health program emphasizes prevention of mental and emotional illness. Each center's mental health professional conducts staff training, provides consultation to center staff including administrators, counselors, and residential advisers on general mental health issues, and assists in the planning of a psychologically sound environment for both Corpsmembers and staff members. As the need arises, consultation is also provided on special problem areas such as drug misuse and disruptive sexual behavior.

Finally, the Health Education program provides at least 20 hours of instruction including courses in first aid, personal hygiene, venereal diseases, nutrition and family planning.

During fiscal 1977, the services averaged per participant were as follows:

Comprehensive medical examinations	.93
Dental examinations	.51
Physician visits	1.61
Visits to nurses or medics	15.34
Dentist visits	1.54
Visits dental hygienist or Assistant	.78
On center infirmary days	.90
Off-center hospital days	.13

There is evidence of positive impacts from these efforts. Four-fifths of terminees rate the care received positively. Enrollees are provided ten times as many medical visits that they would receive outside Job Corps. For one in seven enrollees, previously undiagnosed conditions are discovered such as visual difficulty, venereal disease or other problems. In the first seven months out of Job Corps, the incidence of health problems is a sixth less for ex-Corpsmembers than for controls.

During FY 1977, the total center costs directly associated with the health program were \$7.1 million or about \$345 per Corpsmember year of service. From FY 1974 to FY 1977, Job Corps health costs rose 8% whereas the total health care expenditures for the Nation rose 45%. During this period, Job Corps health services utilization in terms of visits to physicians, mental health professionals, and nurses did not decrease and visits to dentists increased 15%.

7. Food and Nutrition. Job Corps centers are required to provide Corpsmembers with meals "which shall be nutritionally well-balanced, of good quality, and sufficient in quantity." The regulations further require that meals be prepared and served in a sanitary manner, and that dining areas be "pleasant, sanitary, and well-maintained." In addition to providing meals to Corpsmembers, centers are required to provide Corpsmembers with a course in nutrition as part of the health education curriculum.

Center food service facilities are subject to quarterly environmental quality reviews through periodic State and local health inspections, annual Job Corps regional office review, and ad hoc inspections by the Federal project manager assigned to the center. However, Corpsmembers satisfaction with center food service is extremely low. More than half characterize the food at Job Corps Centers as "not good" when they are on center, and more than a third remember it unfavorably seven months after termination.

A comprehensive study of nutrition in Job Corps concluded that "all Job Corps centers visited provide a variety of attractive and palatable foods sufficient in quality," although "excessive amounts of carbohydrates (specifically starches) are served, contributing to consumption of an unbalanced diet, overweight and nutrient deficiencies, and unnecessary food waste." Although the centers served a variety of foods which would make a nutritionally well-balanced diet possible, the study found that only one-third of the Corpsmembers selected balanced meals, two-thirds selected mostly meat and high starch foods. The study concluded that center menus should be adjusted to reduce the amount of starch foods served and that more training in nutrition was needed for Corpsmembers. (Report on the Job Corps Nutrition Survey. Office of Youth Programs Report Number 16. February 1979)

Obesity is a common problem at Job Corps centers, and several centers have instituted weight control programs. (An Evaluation of a Pilot Weight Control Program: Tongue Point Job Corps Center, Astoria, Oregon.) Dorothy Culjat. Office Of Youth Programs Report Number 17. February 1979.

There is some evidence that Job Corps has a positive impact on nutrition behavior and knowledge for participants who stay more than 90 days.

Overall, then, it appears nutritionally sound food is provided which frequently does not meet the tastes of young people, much is wasted, and positive eating habits are not always followed although they are probably better than outside Job Corps.

In FY 1977, the food for one Corpsmember for one year cost \$578 on the average, one-third less than in 1967 adjusted for the rising cost of a market basket of food. The school lunch program provides supplementary resources at most centers. Increased food expenditures are not the only answer, but it is clear that food expenditures must be increased and improvements made.

## Residential Living

There was a concerted effort during fiscal 1977 and 1978 to improve the quality of life in Job Corps Centers by making long delayed repairs, mostly to meet health and safety regulations. There was a total commitment of \$37 million. Most of the work has been completed. Two-thirds of the funds went for the repair or replacement of existing buildings. Upgrading of electrical systems and installation of fire alarms accounted for another tenth. Repair of heating, sewage and ventilation systems as well as insulation accounted for a seventh. The remainder was expended for grounds maintenance and improvement, painting, window recaulking, and architectural and engineering work.

The enabling legislation for Job Corps requires that as part of the residential program "each Job Corps center shall provide enrollees with an intensive, well organized, and fully supervised program of . . . recreational activities. . ." All centers have on-center facilities or have access to nearby athletic facilities. Most centers conduct intramural sports programs. And many centers compete in intercenter leagues as well as competing against local community high schools, junior colleges and other amateur opponents. Job Corps offers a variety of other leisure time activities such as arts and crafts, music, swimming, dances and the like, geared to the ages and interests of Corpsmembers. A national arts competition was held in fiscal 1978 with the products on display throughout the country. Centers also offer offcenter activities such as trips to sporting and musical events, amusement parks, etc. The Job Corps also operates a movie service. During FY 1978, 104 full-run and popular reissue movies (such as "Mahogany" and "American Graffiti") were circulated among Job Corps centers. There is also a national live entertainment program which provides six different entertainment units to each center annually. Finally, Job Corps has entered into a contract with the National Football League Players Association to have present and former professional athletes visit Job Corps centers to conduct sports workshops. By the beginning of January 1979, 27 such visits with 8 to 10 athletes each had been made. Thirty more such visits will occur in the first 4 months of 1979. Center expenditures for recreation and entertainment amounted to \$83 per Corpsmember year. This represented a decline in real terms of 57 percent over the last decade.

Overall, the Corpsmembers ratings of center life are quite high:

	<u>Good</u>	<u>OK</u>	<u>Not Good</u>
Recreational Facilities	42	44	14
Social Life	35	51	14
Way you get along with other Corpsmembers	52	42	6
Living quarters	35	49	16
Where the centers are located	29	36	35

An Examination of Job Corps Participation. Mathematica Policy  
Research Inc. Office of Youth Programs Report Number 8, February 1979

9. Placement Services. The depressed earnings of enrollees the first few months after termination reflect the inherent difficulties of reentry into the labor market but also inadequacies in placement assistance. Nearly three-fifths of terminees report no contact with Job Corps placement personnel or any job placement agencies recommended by Job Corps in the 7 months after leaving the program. Among the two-fifths reporting a contact, only two-fifths indicate that they were placed as a result of this contact. Among completers, the frequency of contacts is almost three-fourths higher than among noncompleters. Likewise, the percent with a contact who obtain a position as a result is 45 percent for completers compared to 35 percent for dropouts.

	<u>Percent of Total Terminees who Report Contact with Placement Agencies</u>	<u>Percent Having Contact who Obtain a Position As a Result</u>
Employment Service	48	43
Job Corps center personnel	28	49
Gate House	10	39
Union	5	59
WICS and JACS	7	8
Other	3	52

(Evaluation of the Economic Impacts of the Job Corps Program: First Follow-Up Report. Mathematica Policy Research, Inc. Office of Youth Programs Report Number 7. February 1979.

The reports of contacts with placement agencies may be somewhat clouded by definitional uncertainties on the part of respondents, but three-fourths of all terminees also indicate that they need additional placement assistance. Placement support is not functioning effectively.

There are also some questions about the placement reporting system. Job status data, when reported, are accurate according to a validation survey conducted in fiscal 1978. However, there has been an increase in the proportion of terminees for whom status records are not available. They represented 14 percent of terminees in fiscal 1977 but 28 percent in fiscal 1978. The seven-month followup of terminees found that 67 percent of 1977 terminees were currently employed, in the military, in school or training programs compared with the 93 percent reported on a cumulative basis among those for whom placement status information was available. It is possible that terminees could have found jobs, been reported as employed, and subsequently become unemployed. The proportion with nonpositive status may be greater among those for whom records are not available. The placement records and recordkeeping system of Job Corps require some scrutiny and the reported placement rates must be accepted only with the understanding that they apply to percentages of terminees for whom records are available and only for the point in time at which the record is submitted.

More critical, however, is the meaning of the word "placement." Most enrollees claim they find their jobs without help, although the placement reports indicate that two-thirds who find work are, in fact, placed by Job Corps-related agencies. The truth is probably in-between. In many cases, it appears that positive status is recorded, and the contact agency takes the credit. It is disquieting that a maximum \$250 per enrollee reimbursement is paid for recruitment, screening and placement, and yet only 18 percent of the terminees themselves report a job as a result of Job Corps placement efforts.

Some of the program innovations in the last year may improve the situation. The Industry Work Experience Program is designed as a transition mechanism to lead directly to jobs. Greater involvement of prime sponsors and community based organizations may help. The more even distribution of centers and locations closer to labor markets may facilitate direct linkages. However, the existing procedures must be examined from top to bottom and there must be some experimentation with alternative placement approaches such as vouchers and expanded pre-termination placement efforts.

## ACHIEVING THE GOALS OF EXPANSION AND ENRICHMENT

In December 1977, the Office of Youth Programs published A Planning Charter for the Job Corps which outlined the expansion and improvement strategy. Eight principal goals were specified. These provide a scorecard for assessing administrative performance:

1. To secure new facilities as rapidly as feasible. The expansion goal outlined in the Charter was to secure needed facilities by the end of fiscal 1978 and to obtain 44,000 enrollment by the middle of fiscal 1979. At the end of fiscal 1978, 37,000 slots had been acquired and the remainder had been identified and were under negotiation. By mid-fiscal 1979, however, enrollment is projected to be only 30,400, with 44,000 enrollment not reached until the middle of fiscal 1980, a slippage of one year. A more rapid phaseup could not be achieved within the available budget. There have also been significant delays in construction and rehabilitation in order to prepare sites for occupancy. The buildup in activitated centers has been kept at a reasonable pace (no more than 50 enrollees arrive weekly in any new center) in order to avoid the problems experienced in the 1960's when more rapid phaseup was attempted. The present schedule, while falling short of original targets, makes more sense programmatically and is unavoidable because of budget levels.

2. To improve the quality of existing Job Corps center operations. Substantial and critically needed improvements have been made in existing facilities. All components of center operations have been assessed. New reading and GED programs are being introduced. Vocational materials were analyzed and supplemented, new training clusters are being implemented to provide more advanced training opportunities. A large-scale experimental effort has been initiated to carefully test educational approaches and world of work programs. The two major complaints of Corpsmembers--food and pay--can be resolved with added resources.

3. To experiment with new approaches. The Advanced Career Training Program in Colleges and Vocational Schools has been fully implemented and early evidence suggests its success as a supplement to traditional center operations. The Industry Work Experience Program has been initiated, although few slots have yet been filled. The military careers program is being implemented on a pilot basis in four centers. An Educational Improvement Effort which will experiment with alternate education approaches is currently being implemented. Demonstration programs for women with children are operating in four centers.

4. To improve recruiting mechanisms. Job Corps has been more closely linked to other CETA youth programs by requirements for referral in the regulations and grant packages for these programs. Preliminary studies of the recruiting and referral systems have been completed and more comprehensive studies are planned. Public service announcements and other recruiting approaches have been developed. The backlog of applicants has increased. The major challenges are to simplify intake procedures and to develop recruiting in areas and among client groups (particularly women) where there has not been adequate coverage.

5. To maintain or improve placement effectiveness. Little has yet been done to improve placement efforts. While placement rates have continued at high levels, the detailed impact studies reveal a relatively low level of placement support activity in the first several months after termination; this must be improved. There clearly need to be more direct linkage between vocational training and job location efforts. Placement must be the major area of concern in the coming year once expansion is completed.

6. To integrate Job Corps more completely into the employment, training and education systems. Job Corps has been linked to the CETA system through referral requirements under other youth programs, arrangements for joint usage of facilities, and the opening of two demonstration centers which will be operated by prime sponsors. Six centers will also be operated by national community based organizations or by Indian groups, in order to link with their employment and training activities. The labor union programs have maintained their share of all training and unions have been used for recruitment as well. The Industry Work Experience Program will provide direct linkages to employers in the private and public sectors, and includes inter-agency arrangements with a variety of Federal departments for work experience slots. The Advanced Career Training Program utilizes existing education facilities, while the Education Improvement Effort undertaken jointly with the Office of Education seeks to carefully test educational strategies.

7. To increase community awareness and acceptance. An alumni association of former Job Corps enrollees has been established, although a national network has not yet developed. Materials and films have been prepared to promote greater understanding and acceptance of the Job Corps. Community relations work has been extensive

so that only a few acceptable sites were lost because of the lack of community acceptance.

8. To increase monitoring and evaluation. All aspects of Job Corps performance and impact have been or are being examined, and a wide array of demonstration programs implemented.

In summary, Job Corps has made substantial progress in fulfilling the missions outlined in its Planning Charter. Existing programs are being improved and new ones tested. Greater integration of Job Corps with other efforts has been achieved. The facility acquisition aspect of expansion has been completed and phaseup is well underway, albeit on a slower schedule than initially anticipated. Evaluation and demonstration activity has occurred on a massive scale providing important information on every aspect of performance. The major challenge, besides following through on these initiatives, is to improve placement methods in order to shorten the time between termination and gainful employment, as well as to improve the job training match.

The future looks promising. Job Corps is presently an effective mechanism for helping our most disadvantaged youth improve their employability. The program can and will become more effective as expansion and enrichment are completed. Job Corps will continue to be the cornerstone of our Nation's youth employment policy.

SUPPLEMENTARY ANALYSES OF  
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1. A Preliminary Analysis of the Job Corps Advanced Career Training Program in Colleges and Post Secondary Vocational Institutions. Josie Gomez and Robert Taggart. Office of Youth Programs Report Number 5. November 1978.
2. Considerations In Cost-Benefit Analysis of Job Corps. Robert Taggart. Office of Youth Programs Report Number 4. January 1979.
3. Evaluation of the Economic Impact of the Job Corps Program: First Follow-Up Report. Mathematica Policy Research, Inc. Office of Youth Programs Report Number 7. February 1979.
4. An Examination of Job Corps Participation. Mathematica Policy Research, Inc. Office of Youth Programs Report Number 8. February 1979.
5. The Noneconomic Impacts of the Job Corps. Abt Associates. Office of Youth Programs Report Number 9. February 1979.
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9. Job Corps World of Work Curriculum Needs Assessment and Recommendations for Curriculum Modification. Jane Melton and Joseph Wrobel. Office of Youth Programs Report Number 13. February 1979.
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11. Synopsis of the Findings of the Pay and Allowance Experiment. Office of Youth Programs Report Number 15. February 1979.

12. Report on the Job Corps Nutrition Survey. Office of Youth Programs Report Number 16. February 1979.
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A PRELIMINARY ANALYSIS  
OF THE JOB CORPS ADVANCED  
CAREER TRAINING PROGRAM  
IN COLLEGES AND POST SECONDARY  
VOCATIONAL INSTITUTIONS

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## CONTENTS

Overview	49
ACT - The Issues and Potentials	51
Assessment Design	56
Program Implementation	58
ACT Participants and the Universe of Need	62
Corpsmember Perceptions of ACT	67
Success in the College Programs	69
Center Impacts	73
Acceptance by Institutes of Higher Learning	77
The Costs	79
A Summary of Early Findings	81
Appendix 1. Field Memorandum No. 90-78	85
Appendix 2. A Synopsis of Regional Implementation Experience	94
Appendix 3. Center Corpsmember Questionnaire Results	103
Appendix 4. ACT Participant Questionnaire Results	105
Appendix 5. Evaluation of Pilot Accelerated College GED Program	107

## OVERVIEW

The doubling of Job Corps to 44,000 slots during fiscal 1978 and 1979 provided the opportunity and resources to introduce a range of new approaches which had promise of supplementing and improving Job Corps performance. One of the new components was the Advanced Career Training Program in Colleges and Post Secondary Vocational Institutions (ACT). This component provides the full range of Job Corps services and support for Corpsmembers who continue their training and education in designated colleges and vocational schools. ACT was introduced in the second semester of the 1977-1978 school year. By October 30, 1978, there were 1,381 Corpsmembers in ACT, representing 5 percent of total Job Corps enrollment.

This preliminary evaluation explores the feasibility of the approach and seeks to determine ways ACT can be improved over time. No conclusions are possible this early in the life of the program, but there are some suggestive findings to date:

- A significant minority of the Corpsmembers want to go on to college and advanced training -- a larger proportion then would have the opportunity without the assistance provided by ACT.
- It appears that the intended scale of ACT, with 2,271 slots out of a 44,000 Job Corps program, is feasible, both in terms of locating attractive education and training opportunities, and finding Corpsmembers who might benefit from this approach.
- The early enrollees have done reasonably well in college as measured by retention rates, grade point averages, and social adjustment.
- ACT may have some positive impacts on the overall program, for instance, encouraging GED completion; the negative effects, if any, are not yet apparent.
- From a cost perspective, ACT makes sense although it remains to be determined whether its impacts on participants are the same as other more traditional approaches for dealing with similar Corpsmembers.

- The initial guidelines developed for ACT have worked well, but there may be need for some refinement, particularly in the areas of eligibility requirements, course selections, cost limits, and requirements for year round participation.

Robert Taggart  
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Office of Youth Programs

## ACT - The Issues and Potentials

A new programmatic component -- Advanced Career Training (ACT) at Colleges and Post-Secondary Vocational Institutions was added to Job Corps as an integral part of its fiscal 1978-1979 expansion effort from 22,000 to 44,000 slots.

The ACT program provides the full range of Job Corps support up to the two years of allowable enrollment for Corpsmembers who continue their training and education in colleges and vocational schools which have developed programs with Job Corps. As of October 30, 1978, 1,380 Corpsmembers were enrolled in ACT, with 2,271 slots planned by the end of the expansion.

The rationale for the ACT program is straightforward. While Job Corps centers considered in the aggregate provide a range of occupational offerings, the variety at any particular center is necessarily limited. Advanced training is not economically feasible at most centers because there are not enough advanced students with interest in a particular area of training to achieve economies of scale. Likewise, education activities are oriented to bringing enrollees up to the high school equivalency level from the 6th grade achievement level averaged upon entrance. More advanced education is rarely feasible on center since only a minority of enrollees are interested, capable or stay long enough to take advantage of such offerings.

Yet this minority who want to and are able to advance further in training and education should not be ignored. They are the ones most likely to make a "quantum leap" in employability if an advanced career training activity were provided closely linked to the assistance provided in Job Corps centers. Roughly a tenth of Corpsmembers achieve a GED during their stay. Others who enter with a diploma are able to bring achievement up to the level of their attainment. Likewise, many Corpsmembers master their basic training quickly, demonstrate their competence, and are ready for advanced skills which offer greater possibility of upward mobility. Without help, these youths may never make the connection in the labor market or in the educational arena which will permit them to realize their potential.

Some advanced training and education components are being created within Job Corps centers. For instance, a UAW auto mechanics program in Utah will draw from basic auto mechanics trainees throughout the country. However, this is only possible because auto mechanics courses are widespread in Job Corps, providing a stock of potential candidates for advanced training in this area. Where the desired training is more selective, or where advanced education is needed, it makes more sense to rely on existing institutions outside Job Corps.

Junior and community colleges as well as technical schools have grown rapidly in recent years. All around the country they offer a range of technical training courses. Increasingly, they have focused on remedial education and vocational offerings for high school graduates with low achievement, and sometimes also for high school non-completers. Institutional growth in many cases has exceeded demand, as the college age population has levelled off, so that there is much underutilized training capacity. Rather than building more capacity in Job Corps, with attendant capital expenses, it makes sense to try to use this existing outside capacity wherever feasible.

The potential benefits of the Job Corps - college linkage are as follows:

1. Specialized courses can be arranged to better match the interests of advanced Corpsmembers.
2. Further education and credentials can improve employment and earnings. ACT offers Corpsmembers a chance to determine whether they can go on further to secure a college degree and enter new career tracks.
3. Disadvantaged Job Corps youth will be gradually transitioned from the relative isolation and concentrated remediation provided by many Job Corps centers into supported participation in "mainstream" institutions where they will be fully integrated with nondisadvantaged youth.
4. Provision of options may encourage Corpsmembers to continue long enough so that significant skills can be acquired. Some Corpsmembers leave Job Corps because they feel opportunities are limited or they have exhausted the opportunities which exist.

5. Provision of new options may increase enrollment among those eligible for and needing services. Some economically disadvantaged youth needing the type of comprehensive services provided by Job Corps may be discouraged from enrolling because of lack of advanced training opportunities.
6. For those with higher aspirations, the ACT program should provide an incentive for GED participation and completion, stimulating interest in the educational program within Job Corps.
7. By avoiding capital costs, buying into existing programs, and focusing on more advanced Corpsmembers Act should be less expensive than regular Job Corps operations.
8. The program should benefit participating institutions by helping them to fully utilize capacity, providing experience in dealing with economically disadvantaged youth, and promoting a better socioeconomic mix within these institutions.

Balancing these potential benefits are several potential drawbacks:

1. Corpsmembers may not be able to "make it" in college. If their failure rate is high, the program may have negative rather than positive impacts on employability compared to traditional center programs which have documented positive impacts on completers.
2. The college option may attract some youth to Job Corps who do not really need the full services the Job Corps provides. To the extent that new entrants are those who would have made it on their own, or are ready without any remediation, the program's effectiveness is reduced.
3. If enrollees simply mark time in the Job Corps centers until they go on to the advanced components, this will be a waste for them as well as a negative influence on center operations.

4. Where more advantaged youth are taken out of centers to participate in ACT, there could be a negative impact on center operations as a result of the loss of peer models and leaders.
5. Unless the ACT offerings are closely tied to an employability development approach, they might result in youth investing time and effort with little impact of future employment and earnings.

In the design and implementation of ACT, steps were taken to realize the potential benefits and to overcome the potential shortcomings. The following basic guidelines for the program were established at the outset (Field Memorandum No. 90-78, Attachment 1):

1. All enrollees have to be in Job Corps for at least 90 days in order to avoid the "revolving door" approach of recruiting youth directly into ACT who do not require remediation and who would be likely to pursue education and training on their own.
2. Each participating Corpsmember is to receive counseling and an employability development plan indicating how the coursework will fit into future career plans. As far as possible, there are to be linkages between training received at Job Corps centers and the offerings in the ACT program. Where possible, academic credit is to be arranged for Job Corps experiences.
3. Participants in the program are to receive full Job Corps benefits, including counseling, in order to help them to stay on and complete education or specialized training.
4. Advanced career training slots are limited to \$5,000 per Corpsmember year as opposed to the legislative \$6,900 operating cost limit at Job Corps center. This more restrictive limit is based on the assumption that economies can be realized, especially since more advanced Corpsmembers are being served.

5. Dropouts from the program are to have the option of reentry into centers. Placement services are to be provided to all participating youth to promote a smooth transition into the labor market. In other words, there is an emphasis on assuring that youth who do not make it will be provided other opportunities.

## Assessment Design

While these design features were intended to maximize benefits and overcome shortcomings, they were based on "best guesses" about what would work. The balance of benefits and costs for ACT were completely unknown, since the approach was new to Job Corps except for a few isolated college placements. For this reason, ACT has been introduced as a demonstration program, with careful and continuing scrutiny of the impacts and processes in order to make improvements in an ongoing way as well as to judge overall effectiveness.

The experience to date is too limited to judge the impacts on participants or the long-term effects on centers or Job Corps operations overall. Most enrollees in August 1978 had been enrolled only half a year. However, their experience is suggestive of whether Corpsmembers can acclimate to the college environment. The negotiated contracts yield a good picture of costs. In implementation, some alternative approaches have evolved and some areas for improvement have been identified.

This preliminary assessment is based on the following sources:

1. Each of the ten Department of Labor regions was surveyed to gather descriptive information on the status of the program and the implementation process (Attachment 2).
2. Three regions (Philadelphia, III; Dallas, VI; and Denver, VIII) where the program was introduced more rapidly and which provide a good geographic mix were selected for in-depth assessments.
3. In these regions, key Job Corps staff were interviewed. A range of detailed data was gathered on the ACT program and its participants.
4. Five centers in these regions were visited to determine impacts and procedures at the center level. Additionally, a sample of Corpsmembers at each of the centers was interviewed to determine their perceptions of the program. (Attachment 3).
5. ACT participants in these three regions were interviewed to determine their perceptions of the program. (Attachment 4).

6. Four participating colleges were visited to determine the views of administrators and faculty and to assess first hand the arrangements which had developed.

The information gathered by this process is analyzed as follows:

1. Program implementation issues and the variations among regions are assessed.
2. The characteristics of enrollees and the potential universe of need are discussed based on available data.
3. Corpsmembers' perceptions and knowledge of the program are analyzed; both those of Corpsmembers still in centers and those of ACT participants.
4. The realized and likely future successes of participants are assessed from available performance records, the participant survey, and interviews with personnel at the regional, center, and college levels.
5. The impacts on centers are assessed including the effects on retention, participation in GED programs, and the draw on the pool of eligible Corpsmembers.
6. The acceptance of the program by institutions of higher learning is briefly described.
7. The cost of the program is analyzed in detail.

The findings are, then, summarized. While this analysis is clearly a preliminary effort, it provides a picture of the ACT program, it yields some clues concerning its likely success, and it suggests issues which need to be addressed.

## Program Implementation

Prior to the implementation of ACT, all Associate Regional Administrators (ARA's) for Job Corps were issued instructions by the national office of Job Corps outlining in a general way their responsibilities concerning the new program. Expansion efforts were being planned at this time and the regions were relatively free to determine the emphasis they would give to ACT as opposed to more traditional center expansion. The variability was quite significant:

First, the pace of implementation and the scale of the effort differed significantly from region to region. To some extent, this was related to the pressure for the location of new Job Corps centers. The center expansion goal for regions varied widely based upon analysis of needs, and the workload of site location frequently left little time for developing new programs. However, the regional variability in emphasis on ACT also reflected basically different views about the capacity of Job Corps youth to succeed in college, and about the wisdom of this new approach. For example, at the end of the expansion, Region VIII will have 14 college and junior college slots for every hundred center slots while six regions will have 4 or less per 100. (Table 1). Likewise, Region VIII moved much faster than any other Region to implement the ACT component. As of August 30, 1978, it had 9 ACT slots for every hundred occupied center slots; four other regions had less than one for every hundred.

Second, as the capsule descriptions of operations and concerns in each region indicate (Attachment 2), there were two basically different approaches to implementation. Some of the regions relied primarily on center staff and contractors to implement the program while other regional offices took the lead and, in some cases, made almost all arrangements.

Third, there was a diversity of views about the amount of support needed by Job Corpsmembers, and the best ways to provide for their needs in the college setting. In some cases, separate "centers within colleges" were envisioned with high support and attendant isolation. In other cases, individual placements were envisioned with little more than the usual support provided by the institution. This reflected the view of some regional officials that Corpsmembers would continue to need a protected environment, while others believed they they should be "mainstreamed" as rapidly as possible.

TABLE 1. IMPLEMENTATION OF ACT

	ACT Participants 10/30/78	Center Enrollment 10/30/78	ACT as Percent of Center Enrollment	Center Employment at End of Expansion	ACT Planned at End of Expansion	ACT as Percent of Center Enrollment
Region I (Boston)	0	0	0	1600	0	0
Region II (New York)	7	1037	.7	3109	125	4.0
Region III (Philadelphia)	45	2526	1.8	5127	235	4.6
Region IV (Atlanta)	71	5765	1.2	9264	304	3.3
Region V (Chicago)	184	2251	8.2	4320	400	9.3
Region VI (Dallas)	303	5068	6.0	6295	487	7.7
Region VII (Kansas City)	53	872	6.1	1841	115	6.2
Region VIII (Denver)	251	2739	9.2	2740	385	14.1
Region IX (San Francisco)	67	1699	3.9	3975	145	3.6
Region X (Seattle)	19	2092	.9	2611	75	2.8
Extension Centers	-	115	0	400	0	0
TOTAL	1000	24,164	4.1	41,282	2271	5.5

Fourth, the regions which were less positive about ACT felt that it would draw off qualified candidates from centers and undermine center operations. Those more positively disposed felt it would serve as a motivation device and would increase overall duration of stay.

Fifth, the \$5,000 cost limit was widely perceived as a constraint to implementation. Center and regional staff all reported difficulties identifying residential facilities that fell within the financial limits. It was particularly hard to find colleges providing academic training, and room and board to students during normal school breaks. However, the regions giving greater emphasis to the program (and thus under pressure to find more slots) felt this to be less of a burden and were able to find an adequate number of colleges willing to participate.

Sixth, Federal Procurement Regulations hindered timely execution of contractual agreements with private colleges. Private colleges more often charge rates and provide the type of services and facilities required under Job Corps established policy guidelines. However, contractual agreements with private institutions require the approval of the Federal Review Board. This situation was remedied when the Board approved a blanket sole source authority waiver so as to facilitate contracting with such institutions.

Seventh, the 90-day waiting period was a target of complaint. It was instituted to insure that the college program would not become a separate effort with its own entry track, rather than an integral part of the Job Corps program, and to provide time for enrollees to show center staff that they have both the ability and motivation to benefit from the ACT program. Regional officials and center staff unanimously agreed that the 90-day requirement precluded them from bringing into the program very capable Corpsmembers with less than 3 months participation. It was also clear, however, that some regions wanted to recruit youth directly into ACT, and that the requirements had the intended effect of precluding this practice.

In summary, decisionmakers in the decentralized regional structure of Job Corps had differences of opinion about actual and potential effectiveness of ACT. These differences of opinion were understandable since there was no experience base to resolve uncertainties. As experience increases with the program, the regional variance should decline. At the same time, the diversity is useful in providing evidence concerning some important questions. For instance, the most

realistic ratio of ACT to traditional center opportunities might be assessed by comparing the experience in regions with more intensive programs to the experience where ACT participants are a smaller proportion of the Corpsmember population.

d

SECRET

## ACT Participants and the Universe of Need

ACT is by design an "advanced" program, so it is not surprising that participants to date have been "creamed" from the Corpsmember population. Median achievement scores at entrance (as measured by the MJSI and RJSI tests) are significantly higher for ACT participants than other Corpsmembers. (Table 2). This pattern prevails for every center in the three regions evaluated in detail, but there is substantial variation in the degree of screening. One measure of selectivity is the differential between median scores for all Corpsmembers in a center and the median for ACT participants for the center. On the math scale, the differential in entrance medians was a fifth in the case of the Charleston and El Paso centers, a third in the case of Clearfield and Weber Basin, and three-fifths in the case of Gary. On the reading scale, there was no difference in the case of El Paso, a fifth for Charleston, and a fourth for Clearfield, a third in Weber Basin and nearly half in Gary. In other words, it appears that Gary was very much more selective than El Paso and Charleston in screening ACT participants from all Corpsmembers, while Clearfield and Weber Basin were in between. Charleston had a more advantaged clientele to draw from. However, Gary's ACT participants are the most advantaged as measured by entry scores. In contrast, El Paso's students entered Job Corps with an achievement level far below that of ACT participants from other centers.

The demographic characteristics of enrollees also reflect a selection process. The median age is about 1 year higher than for other Corpsmembers. Females, whites and Hispanics are overrepresented. For instance, where women represented 27 percent of Corpsmembers surveyed in the five centers in Regions III, VI, and VIII, they constituted 45 percent of ACT participants from these centers.

The information obtained from the questionnaires administered to college program students shows that one-half were high school graduates and the rest had acquired a GED certificate. The fraction of college program students with a high school diploma appears to be larger than expected since only a seventh of Corpsmembers enter with a diploma. With rapid implementation to coincide with the second semester of the 1977-1978 academic year, DOL regions and Job Corps centers

Table 2. Corpsmembers Characteristics by Center

	Center	Median Score		Median Age	Median Yrs. of School	Sample No.	Race/Ethnic Groups				Sex		Average Length of Stay in JC
		HJSI	RJSI				Black %	White %	Hispanic %	Other %	Male %	Fem. %	
Region III	Charleston	56.0	16.5	19.0	9.5	49	73.5	14.0	2.0	2.0	14.3	77.6	10.8
Region VI	El Paso Gary	44.0	13.0	18.5	8.5	54	1.9	3.7	94.6	0.0	53.7	46.3	6.4
		46.5	13.5	19.0	10.0	222	75.2	9.5	11.7	3.6	83.3	16.7	11.2
Region VIII	Clearfield Weber Basin	50.0	14.0	19.0	10.0	133	59.4	15.8	16.5	9.0	74.0	25.6	9.6
		36.0	16.0	18.5	10.0	38	26.3	66.0	2.6	5.2	100.0	0.0	6.8
Weighted Average							59.1	10.8	20.4	4.6	72.5	27.5	

Job Corps College Students by Center

	Center	Median Score		Median Age	Median Yrs. of School	Sample No.	Race/Ethnic Groups				Sex		Average Length of Stay in JC
		HJSI	RJSI				Black %	White %	Hispanic %	Other %	Male %	Fem. %	
Region III	Charleston	68.5	19.5	19.5	11.0	40	62.5	35.0	0.0	0.0	30.0	70.0	9.1
Region VI	El Paso Gary	54.0	13.0	19.5	8.0	52	0.0	0.0	100.0	0.0	48.1	51.9	13.7
		75.0	19.8	19.8	10.5	34	55.9	26.5	17.6	0.0	58.9	44.2	11.7
Region VIII	Clearfield Weber Basin	67.0	17.5	19.5	10.5	94	40.4	40.4	12.8	5.3	62.8	36.2	12.5
		48.5	21.5	19.5	10.5	13	15.4	76.9	7.7	0.0	100.0	0.0	8.5
Weighted Average							36.0	30.5	30.5	2.1	55.4	44.7	

had limited time to organize the program and to identify a pool of eligible Corpsmembers. A number of other very important tasks had to be accomplished during this period such as identifying and negotiating with colleges, arranging for residential facilities, and transportation. The desire to have a full quota contingent identified to implement the program at the beginning of the second semester necessitated immediate screening within the existing Corpsmember pool, and use of the diploma as a credential.

While the 90-day waiting period was in effect from the beginning of ACT, it was not strictly observed by all centers. The pressures to enroll students in the college program in January forced exceptions to the 90-day period. The data show that in the five centers visited, a third of the initial students had been in Job Corps less than 90 days. This was apparently not the result of purposefully recruiting youth with college potential, but rather picking among more capable entrants to go to ACT after their abilities had been determined. Having discovered such a practice soon after the college program's implementation, the national office of Job Corps issued instructions tightening the college program enrollment practices and requiring strict adherence to the 90-day mandate.

There is enormous variability in the emphasis given to ACT by different centers, reflecting the previously mentioned variability among regions in their interest in the program, the feasibility of administrative arrangements as well as the interests of center staffs and contractors. (Table 3). There is little relationship between the median achievement scores or attainment of enrollees in centers and the proportion of Corpsmembers in the ACT program.

El Paso in Region VI had an ACT contingent which represented almost a fifth of its center enrollment whereas the Gary center in the same Region had an ACT enrollment representing only 3%. Yet the pool of potential candidates was much greater at Gary where the entering median grade attainment was 1.5 years higher than at El Paso and where both the reading and math achievement medians were substantially higher. The Clearfield center in Region VIII has given greater emphasis to the program than any other large center, with its ACT contingent representing nearly a fifth of enrollees. Yet Clearfield Corpsmembers have

Table 3.

Enrollment in ACT by Region and Center  
as of August 31, 1978

<u>Region/ Center</u>	<u>Total on Board Strength Not Including ACT</u>	<u>Total ACT Enrollment</u>	<u>ACT Enrollment As Percent of Center Enrollment</u>
<u>Region II</u>			
Glenmont	274	7	2.6%
<u>Region III</u>			
Charleston	299	47	15.7%
<u>Region IV</u>			
Breckinridge	2,619	38	1.5%
Whitney Young	280	18	6.4%
Crystal Springs	237	19	8.0%
<u>Region V</u>			
Blackwell	199	3	1.5%
Golconda	258	9	3.5%
Cleveland	499	26	5.2%
Atterbury	785	133	16.9%
Cincinnati	181	20	11.0%
Detroit	327	40	12.2%
<u>Region VI</u>			
Albuquerque	412	29	7.0%
Guchrie	678	68	10.0%
McKinney	686	45	6.5%
Gary	2,279	68	3.0%
Tulsa	137	30	21.9%
El Paso	319	56	17.6%
<u>Region VII</u>			
Pine Ridge	181	5	2.8%
Mingo	184	10	5.4%
Elcelsior Springs	487	44	9.0%
<u>Region VIII</u>			
Anaconda	262	23	8.8%
Boxelder	212	12	5.7%
Trappet Creek	232	6	2.6%
Collbran	188	21	11.2%
Weber Baein	240	14	5.8%
Clearfield	1,389	277	19.9%
Kicking Horse	191	10	5.2%
<u>Region IX</u>			
Hawaii	272	20	7.4%
Phoenix	391	21	5.4%
San Jose	387	26	6.7%
<u>Region X</u>			
Tongue Point	412	8	1.9%
Pottland	227	8	3.5%

attainment and achievement levels which are just about average for Job Corps. In other words, the success of Clearfield students might suggest what would occur if the college program were triple the scale it is eventually intended to achieve nationwide relative to the regular center population. The El Paso experience will suggest the potential such as a large scale program might have for centers serving Corpsmembers with educational preparation below the Job Corps average.

## CORPSMEMBERS PERCEPTIONS OF ACT

Perceptions of participating and non-participating Corpsmembers are a critical element in assessing the effectiveness of ACT. Five months after the college program was officially launched, three-fourths of Corpsmembers in sample centers where ACT was operational had heard about the program. One-half of those students were informed by their counselor; a very few heard about the program from their center director; and the remainder, from other Corpsmembers. Almost half of center Corpsmembers saw themselves as eligible for the college program and three-fifths expressed an interest. Corpsmembers recognized the value of education. Seven of ten said they would like to earn a junior college degree and three-fifths expressed an interest in achieving a four-year degree. Half felt that the job they wanted required completion of junior college.

The opportunity to complete junior college may increase interest in Job Corps center educational programs. Three-fourths of responding Corpsmembers who did not have a diploma claimed they would work towards a GED so that they might eventually enter ACT. And three-fifths of Corpsmembers claimed they would stay in Job Corps in order to enter the program.

The realism of these aims and their impact must, of course, be questioned. Few persons are likely to respond that advanced education is not worthwhile, and because youth are favorably disposed to ACT does not mean it will change their behavior. Likewise, ACT opportunities are available for only a small minority of center Corpsmembers who express an interest. It is safe to say, however, that the proportion of youth who would like to participate substantially exceeds the proportion who can realistically benefit and the proportion who will be served. Likewise, the presence of ACT has the potential for positive impact on the interest in education at participating centers.

The effects on Job Corps enrollment and college attendance are uncertain. Only three Corpsmembers in ten had heard of the college program before they got to the center. Given the newness of ACT, most had probably entered before it had begun. Nearly two-fifths of Corpsmembers claimed they could get a junior college education on their own, although a recent follow-up survey indicated that less than four percent of former Corpsmembers were enrolled six months after leaving Job Corps.

ACT participants were generally positive about the program. Two-thirds viewed it as a way to get the job they wanted, four-fifths felt it would help them achieve their career goals, and for nine

of ten, ACT was seen as part of an employability development plan. On the other hand, less than three in ten were enrolled in a specific vocational skills program in ACT. They tended to be more interested in general credentials and education. Nine of ten participants wanted to stay more than one year. The same proportion wanted to earn an Associate of Arts degree. Four of five wanted to complete college. While 37 percent of ACT participants felt they might have completed junior college without assistance from Job Corps, 63 percent believe the completion would not have been possible without the program.

In summary, it appears that the ACT program provides an opportunity which would otherwise not be available to pursue an advanced education and in some cases specific vocational training, and to advance towards future employment goals. Like most students, Corpsmembers view an education and the resultant credential as a way to get ahead, without linking this to specific vocational skills. There is widespread interest among Corpsmembers to pursue more education, but only a minority feel they could do so without the help provided by ACT. The experience of past Corpsmembers suggests that only a few would realize their educational objectives without assistance.

## SUCCESS IN THE COLLEGE PROGRAM

Can the economically disadvantaged youth who enroll in Job Corps succeed in college? How much help do they need? Are they receiving it? These are perhaps the most basic programmatic questions.

The most valid indicator of student commitment and capability is the report card. The grade point average for the sample of ACT participants in their first semester was 3.3 on a scale of 1 to 5 where "1" represents a failing grade and "5" represents the maximum grade obtainable. This GPA speaks well for the ACT program concept and its participants, given the combined GPA of 3.7 for the total student enrollment in the schools sampled using the same 1 to 5 scale.

The experience is too limited to suggest how many ACT students will complete their program and earn a degree. However, among the 750 enrollees to date in the three target regions, 263 have either dropped out of or have been terminated from ACT. The termination rate is less than for Job Corps enrollees with 90 days or more in centers. On the other hand, it will probably be higher than for all other students who enter college. According to a follow-up of the class of 1972, approximately 60 percent of young persons who enter Associate of Arts programs complete two years, (though for all persons who start courses in junior and community colleges, the proportion completing two years is even lower). It does not appear that Job Corps students will do as well as other Associate of Arts candidates. It is likely that the dropout rate among students who have gotten over early adjustment problems will be low, and an improvement can be expected overall as experience is gained with ACT. There is wide variation among regions in the dropout rate to date (Table 4).

Corpsmembers who stayed seemed to adapt quite well to college life. Nearly all made friends. Five-sixths liked the college environment. Most found the classes interesting and almost all felt they could hold their own with other students. Perhaps most critically, nine of ten indicated parental support and interest in their ACT participation. The major complaint, not surprisingly, was financial. Nine-tenths of the students sampled claimed to be underfinanced in college. Since all of their living and educational expenses were covered by Job Corps, students were referring to out-of-pocket expenses covered by allowances. While these incidentals are important to a student on campus, their occasional inability to purchase them has not affected their interests or attitudes toward the college program. In fact, the majority of students in the college program recognized that they would not have been able to realize their career dreams or afford the training provided them without the aid of the Job Corps program.

Table 4. TOTAL ACT ENROLLMENTS AND DROPOUTS  
January 1978 - August 1978

Region & center	Total ACT Participant	Number dropped/terminated	Percent dropped/terminated
III 1/			
Total	45	5	11.1
Charleston	45	5	11.1
VI 1/			
Total	346	114	32.9
Albuquerque	40	17	42.5
El Paso	57	5	8.8
Gary	87	33	37.9
Guthrie	87	26	29.8
McKinney	33	5	15.2
Tulsa	42	28	66.7
VIII 2/			
Total	359	144	40.1
Gaconda	34	13	38.2
Boxelder	26	21	80.8
Clearfield	226	67	29.6
Collbran	25	12	48.0
Kicking Horse	15	12	80.0
Trapper Creek	17	14	82.3
Weber Basin	16	5	31.3

1/ Data represents College input Jan. through July 1978.

2/ Data represents College input Jan. through Mid-Aug., 1978.

The only major incident to date has been at Lamar College, Colorado, where friction developed between predominately black ACT participants and some members of the predominately white student body. The program was swiftly terminated to avoid more serious problems and the participants shifted to other components.

As noted previously, the "selectivity" for ACT participation varied markedly from region to region and from center to center. How well are students doing who came from the centers and regions with more intensive programs where ACT reached deeper into the pool of eligibles? This question will suggest something about the feasible scale of the program relative to Job Corps center enrollment.

Comparisons can be made between participants in Region VIII and those in Region VI and III which had less intensive programs. The information obtained from the questionnaires administered to college program students in Region VIII shows that 42 percent were high school graduates, compared to 47 percent and 46 percent in Regions III and VI, respectively. Conversely, the percentage who had completed a GED program was higher for Region VIII than Regions III or VI (48 percent vs. 45 and 36 percent respectively).

Close to 60 percent of Region VIII students sampled related the college experience to preparation for a job. This compared with 50 percent and 57 percent for Regions III and VI, respectively. The proportion of students interested in completing a four year college program was 64 percent in Region III, 88 percent in Region VI, and 70 percent in Region VIII.

The ACT program surveys indicated that the level of confidence with regard to on-campus performance and outlook for the future was higher for Region VIII corpsmembers than for those from the other two regions surveyed. For example, data for Region VIII showed a higher ratio of students establishing new friendships and looking forward to meeting new friends. Moreover, the fraction of students viewing classes as interesting was larger for Region VIII than for the other two regions. In addition, data for Region VIII indicated that students were enjoying the campus experience far more than students from the other two regions. Region VIII students also indicated a higher degree of instructor interest in their progress as opposed to instructors in schools in the two other regions.

Perhaps most critically, the GPA for the sample of Corpsmember students from the three regions studied was:

Region III: 2.86

VI: 3.51

VIII: 3.50

On the less positive side, the dropout rate was higher in Region VIII than in Region III and VI. But Clearfield, with one of the most intensive programs, had a dropout rate (30 percent) below Gary (38 percent) where the screening was much more rigorous. El Paso, which had the least advanced ACT participants, experienced the lowest college dropout rate. Early evidence would, therefore, suggest that the scale of the program and the degree of selectivity have not been determinant factors in the success of participants from around the country. A longer-run follow-up will be needed to determine the types of Corpsmembers who can benefit most from ACT.

## CENTER IMPACTS

The ACT program might have several impacts on center operations. It clearly is intended to provide an additional option for more qualified Corpsmembers. Unless the flow into ACT is matched by an increased flow into the Job Corps of more qualified or higher potential recruits, the average ability level of center Corpsmembers (as measured by educational characteristics) can be expected to decline. This will, of course, be more prevalent in the phase-up stage when larger numbers are drawn out of centers, relying on the stock rather than the flow to provide participants for ACT.

One way to assess the prevalence of more advanced youth is in terms of the percentage of Corpsmembers in a center who entered with a high school diploma, along with the percentage who acquired a GED by the point of termination. Certainly, this is the pool from which the ACT program draws. The size of the ACT program relative to this total varies significantly from center to center, and in several cases a very significant percentage of eligibles are being tapped (Table 5). For instance, in El Paso, more than half the eligibles have been drawn off into the program and at Clearfield almost two-thirds. If any negative effects were to be encountered from the withdrawal of the leadership cohort, they should be visible in these cases. Examination of the weekly termination rate data for these two centers, incident reports, and conversations with center staffs do not reveal any noticeable deterioration in performance in those centers and there are, in fact, some positive developments noted by the center directors.

There are some indications of possible positive effects. For instance, the ACT program might be expected to have some magnet effect, keeping those youths with higher education propensities longer in the centers. The Corpsmember survey suggested the possibility, since three-fifths of youths in five surveyed centers indicated they would remain in Job Corps in order to participate. The retention effects are not yet obvious. The average of the 30-day dropout rates for centers in Regions III, VI, and VIII with college programs rose from 19.2 in the first half of Fiscal Year 1977 to 21.6 in the first year of 1978, an increase of one percentage point more than in the other seven regions. This pattern might reflect increased retention, in the sense that a portion of Corpsmembers with more than 90 days tenure (which is necessary for entering into the ACT program) were drawn into ACT where they might be expected to stay longer, reducing the 90-day and over termines and thereby increasing the proportion of termines who had been enrolled less than 30 days. The average duration of stay should only gradually increase for terminating Corpsmembers. The impact would not be felt yet since only a third of ACT participants have as yet terminated.

Perhaps a more accurate indicator is the average of weekly termination rates. For El Paso, Clearfield, Collbran, Guthrie, Tulsa, Boxelder and Anaconda -- those centers with more intensive programs relative to the universe of need -- the average of weekly termination rates for January 1978 - August 1978 was the same as in January - August 1977, although it declined in four of the six cases and rose in at least one of the others for reasons clearly unrelated to ACT. For Job Corps as a whole, the weekly termination rate was constant. Enrollees in ACT are not counted in the on-board-strength or as terminations in calculating the weekly termination rate, so that impacts on center enrollees should be observable in these data net of the effect those transferring to ACT would have had on terminations. In other words, there is no evidence of a negative effect and some indications of a modest positive effect.

Early experience suggests that ACT participants will stay longer in Job Corps as a result of the program. Their average duration of stay in the Job Corps at entry into ACT was in excess of nine months, which is the average for youth who stay over 90 days. In other words, any time they spend in ACT probably increases the average duration of those who remained more than 90 days. Through August, a third of participants had dropped out of ACT so the average enrollment in the Job Corps for participants is likely to end up being in excess of one and a half years. As these long-time participants begin to terminate, the impact on length of stay should become apparent.

The incentive effects might also be felt on GED enrollments and completions. Five centers with significant numbers of enrollees in ACT were surveyed to determine GED enrollments and completions in fiscal 1977 and fiscal 1978. These included Clearfield, Atterbury, Guthrie, Gary and El Paso. There was a decline rather than increase in GED enrollments compared to average on-board-strength. The ratio fell from 56 to 51 percent. On the other hand, GED completions as a percent of on-board-strength rose from 19 to 23 percent. This tentatively suggests that the college option may encourage some GED participants to complete, but probably has little effect on whether or not youth at the centers enroll in a GED. This makes sense since enrollment is frequently automatic, and those who do not enroll are usually those who are not educationally qualified and would not be very interested in ACT.

Has the availability of the college option attracted a different type of youth into the Job Corps? Prior to the college program's implementation, field staff were apprised by the national office of Job Corps that there would be no change in the eligibility requirements as a result of the college program. In other words, field staff were not granted license to actively recruit high school graduates for enrollment directly into the college program. High school graduates are not excluded by law or regulations. Basically the emphasis is on economically disadvantaged youth who are not enrolled in school and who have severe handicaps to employment whether or not they have a diploma. In fiscal 1977, 15.0 percent of enrollees were high school graduates, but in the first three quarters of fiscal 1978 the percentage dropped to 13.0 percent. The percentage of enrollees who entered with a high school diploma dropped from 13.3 percent in the centers with college programs in Regions III, VI and VIII in the first half of fiscal 1977 to 12.1 percent in the first half of fiscal 1978. Apparently in the expansion, or with the introduction of other youth programs, it has proved difficult to recruit high school graduates. A sample of recruitment and screening personnel in these regions was interviewed to determine whether their recruitment and screening efforts had been refocused. All indicated that they now presented information about the ACT program in recruiting efforts. Recruiters in Region III seemed inclined to more actively seek youth with high school diplomas, and planned to launch an active campaign to recruit high school graduates into Job Corps in the near future. In fact, this thrust is already reflected in Corps-member student data acquired from the Charleston center. Of the total number of students in the Charleston college program, 60 percent were high school graduates.

In Region VIII, which is largely an import region, there was less emphasis on graduates, and in Region VI this did not seem to be a major focus. In fact, the recruiter and screener for Job Corps in Austin indicated that initially some attempt had been made to recruit youth specifically for the college program but that high school youth in that area generally lacked interest in joining Job Corps.

Since a trend upward in high school graduate recruiting cannot yet be perceived, it is impossible to determine the more critical issue -- whether additional youth with diplomas meet eligibility requirements and really need help.

Table 5. ACT PARTICIPANTS RELATIVE TO THE POTENTIAL UNIVERSE

<u>Region</u>	1977 Terminees Who Had Acquired a GED or Who Entered With a High School Diploma	ACT Participants as of August 30, 1978	ACT Participants as Proportion of Annual Potential of Center
<u>Region III</u>			
Charleston	373	47	13%
<u>Region VI</u>			
Albuquerque	336	29	9%
Guthrie	603	68	11%
McKinney	610	65	7%
Gary	1460	68	5%
Tulsa	127	30	24%
El Paso	102	56	55%
<u>Region VIII</u>			
Clearfield	432	277	64%
Collbran	86	21	41%
Weber Basin	154	14	9%
Anaconda	203	23	11%
Boxelder	84	12	14%
Kicking Horse	274	10	4%
Trapper Creek	69	6	9%

## Acceptance by Institutions of Higher Learning

ACT has been well accepted by participating institutions. Not surprisingly, the program has been most popular with schools that have experienced a drop in enrollments and needed the registrants. Sometimes the high enrollment of Corpsmembers in a single school considerably improved the financial stability of the institution. On the other hand, college officials felt that although the Job Corps educational funds helped to stabilize their financial status, much was demanded from the schools for the price paid per student. For instance, the requirement imposed by the national office that classes be held during normal school breaks proved difficult to arrange. In the view of college officials, too many staff services were needed by the few students who remained on campus as a result of this ruling. Moreover, according to these officials, there was a high risk that (1) students would tire of such a demanding routine and drop out of school and (2) students would isolate themselves as a group due to the several occasions they remained together on campus.

During the initial stages of the college program's implementation, as schools were approached by Job Corps' staff, school officials were wary of the program's impact on their school and the campus population in general. At times the requirements of the program and the Corpsmembers' initial needs created an aura of complexity. However, after the initial stages, college officials looked positively at the program's presence and its possible effect on their schools. They registered concern for Corpsmembers and made sure that tutoring was available as well as counseling. In some cases, if the students did not contact the counselor on a routine basis, the counselor would take the initiative and follow-up on them. Counselors at the schools participating in the college program, in most instances, felt that they should reinforce career aspirations as the need arose and thus build on the guidance that had already been provided at the centers.

College officials together with regional and/or center staff, are working towards better coordination with regard to the type of courses selected by Corpsmember students. Region VIII, for example, initially encountered problems due to courses selected by students which required the purchase of expensive equipment. Guidelines in this area have been established to avoid this type of confusion in the future.

Overall, college officials' perceptions of the college program and its target group are very positive. There have been few major disciplinary problems and in most cases, Corpsmembers exert considerable effort at school. To date, the only rejection of the ACT program has been in Lamar College in Colorado. During the fall 1978 semester, racial friction mounted between predominately black Corpsmembers and white students. The problems mostly centered around a special component using the college to give remedial education, while the participants in the college training had less problem. The former group was withdrawn from the campus. There have been no other major incidents.

The ACT program clearly provides a mechanism for stabilizing institutional support for colleges. In establishing the program, there was some concern with targetting this support as well as finding institutions most comfortable in dealing with Job Corps youth. A special emphasis was placed on enrollments in minority and United Negro College Fund institutions. In August 1978, 5 percent of enrollments were in black and UNCF institutions. This percentage is projected to increase, although such enrollment will be predominately in the South where these colleges are concentrated.

## The Costs

The guidelines for ACT require comprehensive costs to be no more than \$5,000, which is lower than the \$6,900 legislated center operating costs averaged in Job Corps. Cost comparisons are more complex, however, and to get a true sense of the effectiveness of this option, detailed analysis is required. This has been done for a sample of centers with college programs in Regions III, VI and VIII.

The average contracted cost of the college program in these centers for fiscal 1978 was \$4,800, compared with \$6,770 center costs in fiscal 1978 (and an estimated \$7,176 in fiscal 1978 assuming a 6 percent increase in costs). The ACT program thus averaged almost a third less than regular center operations.

Since the implementation of ACT was part of an expansion effort, the slots added in college must be compared to slots added through existing center expansion or acquisition of new centers. The capital or front-end costs for acquiring, improving and preparing new slots are as follows:

Acquisition and rehabilitation	\$5,400
Equipment	\$2,000
Preactivation	<u>\$1,960</u>
Total	\$9,360

These are one-time expenses. Figuring a straight line amortization over 10 years, these front-end costs of center expansion amount to \$911 per slot annually. Such costs are not incurred in the college program where, in most cases, existing facilities are utilized.

There is also an annual outlay for maintenance of existing centers, and for replacement of equipment and materials. Estimates vary but between 1974 and 1976, these averaged roughly 10 percent of center operating costs. In fiscal 1979, this would amount to an estimated \$700 per slot.

Adding these figures to the center operating costs in fiscal 1978 would increase the differential between ACT and center costs to roughly \$3,900, making the ACT costs approximately half of the full costs of operating in expanded centers.

The contracted costs of the ACT program do not, however, reflect the total costs. In some cases, centers provide for administration of the program and the expenses in providing counselling specifically for the program. Travel costs for the college program which are paid by the national office are probably greater than regular center operations. Regional offices in some instances are making a special effort on behalf of the college program, although it is difficult to separate the administrative costs associated with this from the administrative costs associated with other center operations. Presumably, much of the effort is startup and should certainly be no greater than the labor intensive tasks of acquiring and rehabilitating new facilities.

Even if these "hidden" burdens are considered, there is no doubt that ACT represents a very substantial savings over the traditional Job Corps approach. To the extent that the Corpsmembers who participate do as well or better than they would in centers, it is very clearly a cost-effective supplement to service within traditional centers.

Any benefit-cost calculations for the ACT program must also include the costs of enrollment in the Job Corps center for 90 days or more. To say that ACT is cheaper per Corpsmember year than enrollment in a center does not necessarily mean that ACT is a good investment. To determine this, the earnings gains of ACT participants must be compared to the average for the Job Corps, and these incremental benefits must be compared to the extra costs of the longer duration of treatment and the resulting higher investment per individual for ACT. Alternatively, the outcomes might be compared with those for enrollees who stay equally long in Job Corps centers, in which case ACT has a comparative cost savings.

## A Summary of Early Findings

1. The Advanced Career Training Program in Colleges and Post-Secondary Vocational Institutes, aside from minor and reasonable start-up problems, is viewed by both Job Corps staff and students as enriching the regular Job Corps program in several ways. The Corpsmembers view it as an opportunity to specialize in certain occupations for which higher education or advanced vocational skills are necessary. Regional and center staff utilize the college program as another option to improve the career opportunities of Corpsmembers
2. There are, however, wide variations among regions in their perceptions of the proportion of Corpsmembers who can benefit from this approach. Likewise, there are differing views about the positive and negative impacts on center operations. To date, there has not been a great deal of difference between the experience of ACT participants in regions which have heavily emphasized the program and that of participants from regions which have sent a smaller proportion of center Corpsmembers into ACT. The ACT participant/center corpsmember ratio in the region with the most intensive program as of August 31, 1978 exceeded that planned for Job Corps as a whole at the end of the expansion. It does not appear that the 2,271 planned ACT slots out of 44,000 Job Corps enrollments nationwide for fiscal 1980 is too ambitious. However, given the wide variability among centers, cutbacks might be required in some center ACT programs, while the base is broadened so that Corpsmembers from all centers get an equal chance to participate.
3. Most youth now enrolled in the college program feel they would not have been able to go to college without assistance. The record of attendance among previous Job Corps enrollees (less than 4 percent are in post-secondary education 6 months after termination) supports this perception. It appears, then, that ACT provides new opportunities for most of the participants.

4. Participants have done well to date. Their dropout rate is lower than for other Corpsmembers who have gotten past the 90 day period. The school completion rate cannot be projected but the early dropout rate is not markedly higher than for other youth entering participating institutions. ACT participants express a strong interest in continuing beyond the 2-year college program. Grade point averages for the students have been about average for the institutions they are attending. There is evidence of successful integration, in most cases, into the college social life.
5. Over half of the ACT participant sample expressed a career interest along academic lines. While most of these students view a 4-year degree as their ultimate objective and they perceive the degree as a means to achieving life goals, most have generalized occupational goals. Only a fourth of the sample studied view the college program as a means to pursuing any further development of a specific vocational skill.
6. The findings show college program participants to be highly motivated, more educationally advanced than regular Corpsmembers in terms of years of school completed and scores on standardized tests. These findings are not unexpected. The centers are selecting Corpsmembers for ACT on the basis of certain criteria which would predict a student's ability to complete a 2-year college program. Females are receiving emphasis.
7. ACT participants appear to be receiving adequate assistance. Counseling is present and appears of a high caliber in most cases. College program students are receiving encouragement from their families. The major complaint is the inadequacy of the Job Corps allowance, which may be solved if allowances are increased throughout the program. While ACT Corpsmembers appear to be receiving the support and services they need, there are different philosophies about "mainstreaming" vs. "supportive maintenance." The experience to date has been too limited to determine the necessary level of support.

8. Significantly, no adverse impact on other center operations is apparent as yet. It appears that there has been some increased incentive to complete GED programs. It is likely that the average length of stay will increase because those in ACT will continue longer than other Corpsmembers. It is impossible to tell whether Corpsmembers with less than 90 days tenure will stay longer in centers as a result of the college option although three-fifths of enrollees in centers indicated they would. ACT has clearly drawn down the stock of more advanced students in the centers where it has been given priority; however, it is not yet possible to determine the balance of positive motivational effects and any negative impacts from removing the leadership cohort. There are some indications that more high school graduates will be recruited in some regions, but a shift is not yet evident and it is, therefore, impossible to tell whether eligibility criteria will be affected.
9. The administrative guidelines for the program have generally been followed and there is not enough evidence as yet to determine whether they should be changed.

The \$5,000 limit has been a source of complaint, but regions with a positive approach to ACT have found enough slots to mount programs many times the scale of others which have been most vociferous in their complaints. The rapid implementation of the program suggests that the problem has been overcome quantitatively, although the qualitative impacts are difficult to determine.

The 90-day waiting period was not always maintained, but violations were the result of the rapid phase-up and the resulting draw-down on the stock of qualified candidates in existing centers, rather than the recruitment of youth specifically for the program. The limitation is now being observed. The wisdom of the 90-day requirement must depend on a future determination whether youth who go into ACT really need and use the 90-days on center, and whether they could have gone on to college on their own without Job Corps support. Further experience and study is needed to resolve this issue.

- The requirement that ACT classes be held during normal school breaks proved difficult to arrange and could be a detrimental factor. The opinion of the college officials interviewed was that due to continuing enrollment, ACT students would tire of demanding routine or might isolate themselves as a result of the occasions they would be alone on campus. Finally, the college program has increased the overall workload of center staff. The ACT selection process has required the time of staff, teachers, residential advisors and counselors. In addition, some staff have been charged with the responsibility of overseeing the college program in addition to other duties. In a continuing program, the costs of these extra burdens and the staff needed to alleviate them must be covered by ACT.
10. College officials' acceptance of the college program and its target group has been very positive. In most instances, their efforts have been responsible for the smooth transition of Corpsmembers from the center to college. College officials speak highly of the students and, in some instances, indicate that Job Corps students are better prepared for college than other students. There need to be some further adjustments in the program, however, particularly in terms of awarding academic credit for competencies gained in Job Corps or elsewhere and in addressing the issue of services to Corpsmembers during regular school breaks.
  11. The ACT program costs between half and two-thirds of a residential center slot depending on cost assumptions. In part, this is because the Corpsmembers who participate need less supervision and assistance. More important, however, ACT is a way of buying into existing facilities and capabilities. To the extent that youth in the program do as well or better than similar youth remaining in Job Corps centers for the same period of time, and to the extent that regular center operations are maintained or improved where ACT draws off enrollees, there is no doubt that ACT is a cost effective program option for that component of the Job Corps population which can benefit from this approach. Whether the greater investment per individual from this treatment is justified will depend on the future employment experience of ACT participants.

U.S. DEPARTMENT OF LABOR  
Employment and Training Administration  
Washington, D.C. 20213

CLASSIFICATION Job Corps
CORRESPONDENCE SYMBOL TYJP
DATE December 9, 1977

DIRECTIVE: FIELD MEMORANDUM NO. 90-78

TO : ALL REGIONAL ADMINISTRATORS

FROM : LAWRENCE W. ROGERS *L. W. Rogers*  
Acting Administrator  
Field Operations

SUBJECT : Job Corps Advanced Career Training Program at  
Colleges and Post-Secondary Vocational  
Institutions

1. Purpose. To establish initial guidelines for the operation of an experimental and developmental project to provide advanced career training (ACT) opportunities for corpsmembers at colleges and post-secondary vocational schools.

2. Policy Overview. As an integral part of the Job Corps expansion effort, we plan to establish approximately 3,000 new advanced training opportunities to be provided at colleges, community colleges and post-secondary vocational schools. This will allow qualified corpsmembers who have been identified as having potential to participate in such training programs to choose from a much wider variety of training opportunities and to achieve more advanced training levels than are now possible. These training opportunities should lead to better paying jobs with potential for greater upward mobility than has previously been possible.

The program will be carried out as an experimental and developmental effort under provisions of section 413 of Title IV of the Comprehensive Employment and Training Act of 1973 (CETA), as amended, and an evaluation of the effort will be undertaken by the Office of Policy, Evaluation and Research (OPER). The principles on the basis of which the advanced training will be implemented are as follows:

RESCISSIONS	EXPIRATION DATE
	December 31, 1978

DISTRIBUTION L,P

GPO 901.883

ETA 4-148  
Nov. 1975

a. The goal of the program is to provide advanced career opportunities for Job Corps youth. Course offerings should provide training for marketable skills which will enable the students to obtain meaningful jobs in both traditional and non-traditional occupations, and to make possible career placement in expanding para-professional and technical occupations. Examples might be training tailored to achieve the qualifications necessary to obtain jobs in manpower programs, public service agencies, computer technology and energy resource development. Choice of course offerings should, to the greatest extent possible, reflect upcoming labor demand.

b. All corpsmember students must have been enrolled in Job Corps for at least 90 days prior to admission to an advanced career training program. For administrative purposes, they will continue to be attached to the Job Corps center to which they were assigned at the time of entry into school or college. The 90-day enrollment provision applies only to new advanced career training opportunities and does not change policies currently in effect which relate to entrance into regular vocational training programs now carried out at institutions and skill centers not on the Job Corps center.

c. Corpsmember students will continue to receive the type of support services, such as legal assistance and health care, for which all corpsmembers are eligible.

d. Centers will select prospective students from among their regular enrollees. Selection will be based on a program of counseling and career guidance designed to enable each corpsmember to make informed and realistic choices from among the variety of Job Corps training opportunities available, several of which may be at colleges or vocational schools with advanced training programs. The availability of these programs will be taken into account when the employability development plan is developed for each corpsmember.

Factors which must go into selection for this advanced career training program include the corpsmembers' interest in available training; the school or college's entry

requirements; the enrollee's potential capability to meet those requirements and to complete the training; and the enrollee's ability to function independently and responsibly at the school or college, either on initial entry or after a brief period of special orientation, supervision and counseling after admission.

The counseling program should also encompass specific, detailed information about the school or college, including expected behavior, other relevant rules and regulations, living arrangements, and the possible need for relocation to obtain a job after completion, with necessary guidance to assist corpsmembers to adjust to a new environment.

e. Arrangements must be made between colleges or schools and centers to assure that youths who are to enter advanced training programs meet entrance requirements, and to see that colleges or schools receive a copy of ET 6-40, Corpsmember Profile, which will serve as a transcript of record.

f. Every effort should be made to obtain college credit for past experience and training, including that received in Job Corps.

g. Except as noted herein, the same basic policies which apply to all Job Corpsmembers will remain in effect for those who are also advanced students. This includes, for example, length of stay, including provision for extension; allowances; and leave. There will be no modification of eligibility requirements to accommodate those who wish to join Job Corps only for the purpose of entering a college or post-secondary vocational school.

h. Colleges and vocational schools chosen for corpsmember training must be fully accredited. Training programs which include the possibility for achieving two or more levels of competence, at each of which a certificate of attainment is given, are highly desirable. The availability of such services as a learning laboratory, tutoring and counseling, are also important factors to take into account.

i. Colleges participating in this program must provide contract supported courses for corpsmembers during all school breaks lasting more than five days. Such brief periods should be used for tutoring, participating in learning laboratories, or study.

j. The cost per year for a corpsmember slot in colleges and other advanced schools may not exceed \$5000.

k. Colleges and schools will be required to provide an orientation to the school or college and the community for all corpsmember students.

l. Work-study programs are encouraged and colleges should, whenever feasible, develop such programs for corpsmember students.

3. Establishing Job Corps Advanced School Training Slots.

Contracting for these advanced slots will be done by regional offices. All of these slots will represent a net increase in Job Corps capacity. Contractual arrangements, whether they are directly with a college or school or are sub-contracts with existing centers, should be such that youths from all Job Corps centers have an opportunity to apply for available slots. The number of slots should be fixed for any given time period, and every effort must be made to keep the slots filled. Some alternative ways for doing this are:

a. Buying a specific number of college or vocational school enrollments and sending corpsmembers to live in dormitories with other students.

b. Establishing satellite locations of existing centers at a participating college or school, either by contracting for available dormitory facilities or renting nearby housing.

c. Establishing new centers near to or on college premises, which would run standard Job Corps programs and also provide the option for enrollees to become students at the college when they achieve entrance levels.

4. Regional Office Guidelines for Implementing the Job Corps Advanced Career Training Campus Program.

a. Regional offices should see that centers are prepared to refer qualified candidates, both residential and non-residential, to advanced training openings as soon as these are available.

b. Regions are to make contractual arrangements with centers and colleges or other school programs to assure that the following points are covered:

(1) Tuition and Fees. Students will be provided with full tuition and other fees, and required books and supplies, including linens and other necessities if these are not provided by the college.

(2) Housing. Students will be provided with housing, if residential enrollees, and three meals a day. Except in cases where it is impossible to make such arrangements, corpsmember students should live in dormitories or other housing along with other students, not in separate living units. This will make it easier for corpsmembers to be assimilated into the student body.

(3) Medical Care and Legal Services. Students will receive health care and legal assistance equal to that provided other Job Corpsmembers. When student health programs do not meet these requirements, arrangements must be made with health maintenance organizations or other providers in the community. The corpsmember's center of assignment will follow the health procedures outlined in Technical Supplement E to ETH 330 concerning transfers. For purposes of this program, the center should insure, as close as possible to the day of departure for a college or school, that each potential student is not pregnant and does not have a medical or psychiatric condition which may require early termination. Centers must also insure that the initial dental examination is given before the corpsmember leaves the center for an advanced career training program and that extensive dental work is not required, i.e., the corpsmember's dental classification must be priority three or four.

(4) Transportation. Students will be provided with transportation to and from the college or school at government expense, as well as all other transportation for which corpsmembers are eligible.

(5) Allowances. Students will receive the same allowances as other corpsmembers, including clothing allowances apportioned so as to best meet individual need.

(6) Leave. Students will receive annual and emergency leave at the same rate as do other corpsmembers. Corpsmembers may be required to take annual leave at a specific time when all other students are on vacation, e.g., during Christmas holidays. For this experimental project only, the provision that a corpsmember must be in Job Corps for six months before becoming eligible for paid annual leave is waived when the Assistant Regional Administrator for Job Corps deems it necessary.

(7) College Services. Corpsmembers will be treated in the same way as other students by the college and be provided all of the services received by other students. To the maximum extent feasible, those referred to college programs should have the same privileges and responsibilities as other students and should not require special supervision. Corpsmembers will, however, be provided with extra tutoring and counseling as needed. These services will be provided as part of the regular school or college program. Corpsmembers enrolled as students should not be assigned in a block to one counselor or tutor, but be assigned as are other students, with the provision that special help will be provided by the assigned counselor or tutor as needed.

(8) Work-Study Programs. Every effort should be made to involve students in work-study programs.

(9) Experiential Credit. Corpsmember records should be evaluated by the college to determine if they qualify for experiential credit.

(10) Job Corps Coordinators. Colleges and other off-center advanced training schools should identify a staff person as Job Corps coordinator. The suggested ratio of corpsmember students to coordinator staff time is 80:1 (one quarter time for 20 students, etc.). The coordinator's functions would include:

(a) Assistance in day-by-day communication with the center with which each corpsmember student is affiliated, in regard to such matters as emergency leave, travel, allowances, class attendance, etc.

(b) Coordination with project managers regarding such matters as AWOL, arrests, terminations, major health problems, reports to the Office of Workers' Compensation, etc.

(c) Issuance of cash or tokens for laundry and transportation to and from classes, if necessary.

(11) Dropouts. If corpsmembers are not successful in the college or other advanced program, they will be given the opportunity to return to the center of assignment to complete a vocational skills training, industry work experience, or other training program.

(12) Absences. Colleges and other schools should be required to report to the center of assignment when any corpsmember has been absent without authorization for 24 consecutive hours. Schools are to encourage corpsmembers to attend classes, but an occasional cut need not be reported.

(13) Length of Stay. When students are unable to complete a training program because their maximum length of stay is exhausted, regions should encourage colleges and schools to make every effort to provide other types of financial assistance and to assist enrollees to obtain part-time work when termination is required prior to completion of the advanced training program.

(14) Terminations. In the case of serious illness or injury which interferes with school training or requires extensive hospitalization or medical expense beyond that

usually provided by Job Corps, the regional office will proceed with medical termination, and arrange for transportation to the youth's home. (Notification will be made to the Office of Workers' Compensation Programs, as described in ETH 330, TS-E, in all instances of possible training-related injuries or illnesses, regardless of the possible need for medical termination.)

In the event a disciplinary termination of a corpsmember student is recommended, he or she will be returned to the center of assignment for a review board hearing or sent home on administrative leave if the youth's behavior would cause serious disruption at the center. Provisions of Job Corps' regulations, CFR 97a.97 apply.

(15) Placement. Colleges should provide placement assistance to corpsmembers.

(16) Administrative Support Services. Centers with which students are affiliated are to maintain enrollee records, payroll accounts, and provide other administrative support services. This will include reporting requirements with separate on-board strength reports for those attending institutions and those in the regular Job Corps program.

5. Action Required. Regional offices are to:

a. For purposes of coordination, technical assistance, and evaluation, send to the Director of Job Corps, Attention: TYJP:

(1) A copy of each college and school contract or sub-contract as soon as it is negotiated.

(2) The names of regional office and center contact persons for the ACT college and school program, no later than January 10, 1978.

(3) The name, address, and telephone number of the designated Job Corps coordinator at each college and school, as soon as he or she is appointed.

b. Contact colleges and schools in the regions to determine what training programs are available which would be suitable for advanced training for corpsmembers.

c. Make every effort to obtain a waiver of higher tuition rates for out-of-State residents.

d. Develop statements of work which conform to the policy and implementation guidelines of this FM.

e. Contract or arrange for center sub-contracts. Contracts may be negotiated without formal advertising for any service to be rendered by any university, college or other educational institution, in accord with Federal Procurement Regulations, section § 1-3.205.

f. Develop specific position descriptions for the college and school Job Corps coordinators and see that they receive training as necessary.

7. Inquiries. Questions should be directed to Leon Schertler, 8-376-7163.

APPENDIX 2. A Synopsis of Regional Implementation Experience through October 1978

Region I

The Westover Job Corps Center's future college input is unknown at this time. The newness of the Center precludes any immediate college input until the center builds up its pool of potential college candidates.

Region II

The Region was allocated 125 college slots by the national office of Job Corps and, presently, has 100 Corpsmembers enrolled in college.

Region II contracted with the following schools for the 1978-1979 academic year: Southern Vermont College in Bennington, Vt. for 20 Corpsmembers; Rider College in Lawrenceville, New Jersey for 30 Corpsmembers; Union College for 20 Corpsmembers; Trenton State, New Jersey for 10 Corpsmembers, and Sullivan County Community College for 20 Corpsmembers.

Region II implemented its college program by utilizing a field liaison person to identify schools interested in participating in the ACT program. For example, through the State system, the liaison circulated copies of FM. 90-78 outlining the ACT program guidelines. Interested parties then contacted the regional office for further information. Negotiations were handled by the region. In this case, the involvement of centers was peripheral.

Region III

The Region was allocated 300 slots for FY 1978 and currently has 79 Corpsmembers enrolled in the college program. The Charleston Job Corps Center has 20 Corpsmembers enrolled at West Virginia State and 21 at West Virginia Technical School. The region recently contracted with Brandywine College to place 25 Corpsmembers in the school's academic program. Seventeen Corpsmembers are presently enrolled at the college for the fall semester. The Susquehanna Job Corps Center has been designated by the Department to support the ACT program in cooperation with Brandywine College. This Center is, therefore, serving as the Center of Record for the 17 Corpsmembers currently enrolled at the college and for others to follow. Clinch Valley College in Virginia submitted a proposal to place 10 Corpsmembers from the Flatwoods Job Corps Center. Finally, the Baltimore Y-ACT program was launched August 8, 1978. The program is to serve 200 Corpsmembers in the ACT and work

experience components. There are 21 Corpsmembers currently enrolled in the college program.

According to the college program coordinator, centers select only those students who have been enrolled in Job Corps for at least 90 days prior to admission to the college program, demonstrate motivation and a generally good attitude.

In establishing contractual arrangements with colleges and post-secondary vocational institutions, regional staff utilized the State college directory to identify colleges within their geographic area and financial constraints. These colleges were invited to submit proposals based on criteria and time frames provided by the regional office. As a rule, regional staff only dealt with college officials such as the college president, and vice president of academic affairs. Follow-up discussions were, most often, conducted in person.

According to staff, the lack of authority to contract on a sole source basis was the principal cause of delay in establishing advanced training opportunities. Contracts with private colleges were contingent upon approval by the Procurement Review Board. The region's college program rapidly expanded once field offices were granted a blanket waiver to go sole source with private institutions.

Contractual agreements with academic institutions include costs for tuition, supplies, dormitory facilities, food and incidentals such as laundry. The center picks up costs for transportation, medical and legal services, clothing and subsistence allowances.

#### Region IV

The region was allocated 140 college slots and 96 Corpsmembers are currently enrolled in the college program.

The Atlanta Job Corps Center has 10 students enrolled in the college program in the following institutions: West Georgia Tech (6 Corpsmembers) and DeKalb Community College (4 Corpsmembers).

The Breckenridge Job Corps Center in Kentucky has 38 students enrolled in the college prep program at Owensboro Business College. A total of 50 college slots were allocated to the center by the regional office.

The Whitney M. Young Job Corps Center has 31 students enrolled in the college program under contracts with the following institutions: Kentucky State University ( 4 Corpsmembers); Watterson College (11 Corpsmembers); Jefferson Community College (5 Corpsmembers). West Kentucky State Vocational Technical School (8 Corpsmembers) and the University of Louisville (3 Corpsmembers).

In sum, the Whitney M. Young Center was allocated 40 college slots by the regional office and currently, has 31 corpsmembers in the college program.

The Mississippi Job Corps Center has 18 Corpsmembers presently enrolled in the college program at the following colleges: Mary Holmes College (3 Corpsmembers) and Copiah Lincoln Junior College (15 Corpsmembers). A total of 50 college slots were allocated to the center by the regional office.

At the outset, center staff were briefed by regional staff on the college program's mission and guidelines. The centers, technically, became responsible for implementing and administering the college program. Regional staff were available for consultation or to provide assistance in the event center staff encountered problems. Regional and center staff still work under such an arrangement

Recruitment efforts, according to staff, were oftentimes plagued by problems. For example, the after-effect of transition from a structured (center) to an unstructured (college) environment was characterized as a problem by center staff. Off-center Corpsmembers continuously sought the reassurance of center coordinators during their initial period in college. Equally problematic, in the region's view, is the potential weakening of the centers' leadership as a result of weeding out the centers' more advantaged Corpsmembers.

#### Region V

The region was allocated 260 college slots, and currently has 208 Corpsmembers enrolled in the college program in the following institutions: Clark College, Indianapolis, Indiana (22 Corpsmembers); Central State University, Wilberforce, Ohio (17 Corpsmembers); Cuyahoga Community College, Cleveland, Ohio (37 Corpsmembers); Wayne State University (36 Corpsmembers); I.V. Technical Institute, Indianapolis (69 Corpsmembers); Oakland City College (18 Corpsmembers); University of Cincinnati (6 Corpsmembers);

and Cincinnati Community College (3 Corpsmembers).

Regular admissions standards are applied to Job Corps enrollees in all of Region V's programs. One school (Wayne State) has developed a special "Orientation Quarter" designed to prepare students for enrollment in a major urban university.

- Students live in dormitories in four of Region V's schools.
- Cuyahoga, Clark College and I.V. Tech. contracted housing and meals to firms mutually acceptable to DOL and the school.
- Counseling and tutoring are provided to Job Corps students through the same system as to regular students. Extra tutoring is available whenever necessary, and is arranged by the coordinator at each school.
- Since the program is fairly new and the students are still adjusting to the more rigorous demands of college study, the region has not emphasized work-study programs at this point. Most schools require that students complete two quarters successfully before embarking on work programs.
- Depending upon the length of the program, Job Corps students will either receive a certificate or an A.A. Degree upon completion.

The coordinators at the various educational institutions are responsible for:

- a. reporting--(attendance, progress, etc.).
- b. disbursement of checks, allowances.
- c. counseling, arranging tutoring, planning course work and dealing with student's personal problems.
- d. preparation of financial materials, e.g., vouchers.
- e. monitoring progress and development.

Initially, regional staff limited the participation of educational institutions in the college program to those previously associated with Job Corps such as colleges involved with the Upward Bound Program. Staff felt that they were not allowed sufficient lead time to solicit indications of interest from other educational institutions within their jurisdiction.

Most of the region's problems have centered on the \$5,000 per student cap, particularly when dealing with vocational-technical schools. For the most part, they have found that housing facilities are not an integral part of such institutions, increasing the likelihood that other more expensive arrangements must be made for such services.

Staff fault lack of follow-up on Corpsmembers as the prime reason for some encounters with law enforcement officials. However, college coordinators, for one, are not required to be on duty around-the-clock. Secondly, guidelines, which provide that college Corpsmembers be afforded treatment similar to that afforded other students, preclude coordinators from actively following-up on Corpsmembers living off center. Moreover, current funding per student precludes the addition of strong follow-up measures, even if desired, because of the cost.

Regional staff claim that few Corpsmembers meet college entry requirements or that many are not interested in the program. So as not to let contracted slots go unutilized, the region has done some recruiting of more advanced youth.

#### Region VI

The total number of college slots allocated to the region is 469. The region has 277 Corpsmembers presently enrolled in college.

The McKinney Job Corps Center has 43 Corpsmembers enrolled at the Grayson County College. McKinney received 69 college slots from the region.

The El Paso Job Corps Center presently has 3 Corpsmembers enrolled at the University of Texas at El Paso and 50 at El Paso Community College. The Center was allocated 43 slots by the Region.

The Gary Job Corps Center in San Marcos has 8 Corpsmembers enrolled at St. Mary's University, 10 at Texas A&I and 39 at Huston-Tillotson College. The total college slots allocated by the Region to this center are 234.

The Albuquerque Job Corps Center reportedly has 13 Corpsmembers enrolled at Eastern New Mexico University, 10 at North Eastern New Mexico Community College at El Rito and 3 at Northern New Mexico Community College at Santa Fe. The center was allocated 44 slots by the region.

The Tulsa Job Corps Center presently has 7 Corpsmembers enrolled at the Tulsa Junior College, 7 at Oklahoma State Tech., 9 at Claremore Junior College and 5 at Bacone College. The center was allocated 43 slots.

At present, the Guthrie Job Corps Center (Oklahoma) has 43 Corpsmembers enrolled at Oklahoma State Tech., 14 at Langston University, 6 at Central State University, 5 at Connors State College and 2 at South Oklahoma City Junior College.

In the main, regional Job Corps staff claim that their only problem in contracting for slots stems from the \$5,000 limitation per student.

#### Region VII

The above region has 105 Corpsmembers presently enrolled in colleges and universities. The total number college slots initially allocated to the Region was approximately 100; this number will be increased. Specifically, the following institutions are participating: Central Missouri State University (20 Corpsmembers); Indian Hill Community College (9 Corpsmembers); Lincoln University (4 Corpsmembers); Central Technical Community College (49 Corpsmembers) and Hutchinson Community College (4 Corpsmembers).

Regional staff is currently in the process of executing two contracts with Penn Valley College in Kansas City and St. Louis Community College for ten Corpsmembers, respectively.

Various approaches were used by the region in implementing the college program. Staff experienced most success with first identifying the colleges most financially advantageous to Job Corps. These colleges were then asked to submit proposals based on materials and information provided them.

According to regional staff, available college slots are, oftentimes, difficult to fill because Corpsmembers apparently find more attractive, schools in Region VIII.

#### Region VIII

This region reportedly has 419 Corpsmembers enrolled in the college program, and was allocated 495 college slots by the national office.

Specifically, Corpsmembers are attending the following colleges:

Weber State College (53 Corpsmembers); University of Southern Colorado (60 Corpsmembers); Lake Region Junior College (33 Corpsmembers); Black Hills State College (20 Corpsmembers); Western Montana College (53 Corpsmembers); Otero Junior College (45 Corpsmembers); Mesa College (8 Corpsmembers); Eastern Montana College (19 Corpsmembers); Trinidad State Junior College (70 Corpsmembers) and Lamar Community College (58 Corpsmembers), where problems have occurred and the number of enrollees has been reduced.

In launching the college program, regional staff worked through their centers to identify colleges able to participate within Job Corps' financial constraints. Those interested were asked to submit proposals. Potential sites were assisted in developing their proposals to ensure that they were consistent with program objectives and guidelines. Each center enrolls Corpsmembers in colleges within their geographic area, unless, of course, Corpsmembers prefer some other college.

### Region IX

The program for this region was launched at the start of the 78-79 academic year. The region was allocated 145 slots by the national office and it currently has 67 Corpsmembers enrolled in the college program.

The San Jose Job Corps Center is providing a non-residential program at Evergreen and San Jose City Colleges to 26 Corpsmembers (10 and 16 Corpsmembers, respectively). The two colleges offer programs of study in liberal arts, preprofessional business, and vocational and technical fields leading to an A.A.

The Phoenix Job Corps Center has contracts with Arizona Western (2 Corpsmembers); Central Arizona (4 Corpsmembers); Eastern Arizona (6 Corpsmembers); Glendale (1 Corpsmember); Mesa (1 Corpsmember); and Maricopa Tech. (3 Corpsmembers).

The Hawaii Job Corps Center contracted with Chaminade University to provide 20 Corpsmembers with training in marketable skills and possible preparation for entry into a B.A. To remain within the \$5,000 per student cap, the Hawaii college program is non-residential, i.e., Corpsmembers either live at home or in some other accommodations off-campus.

According to regional staff, the \$5,000 cap mandated by the national office of Job Corps and the 90-day requirement were largely responsible for delays in launching the college program in that region. Staff found that community colleges without residential facilities were financially advantageous to Job Corps. However, such facilities were of little value to centers seeking to house Corpsmember students. On the other hand, colleges that provided residential facilities were, in most cases, too remote from centers, making it difficult for college coordinators to frequently visit students.

Oftentimes, the 90-day requirement interfered in the timely start-up of a college program. For example, Corpsmembers with college potential were frequently found ineligible to enter the college program because they had not completed the 90-day period on-center. The Phoenix Center, for example, had a difficult time filling its college slots because of the shortage of eligible Corpsmembers. The Director looked into transferring from the Los Angeles Center Corpsmembers with college potential who had already completed the 90-day period. The Los Angeles Center, however, was not receptive to this idea primarily because its enrollment was below the established Corpsmember capacity.

#### Region X

The region was allocated 140 college slots by the national office and currently has 47 Corpsmembers enrolled in college in the following institutions: Edmunds Community College (1 Corpsmember); Eugene Community College (1 Corpsmember); Mount Hood Community College (5 Corpsmembers); Clackamas Community College (1 Corpsmember); Portland Community College (8 Corpsmembers); Beau Mond Beauty College (1 Corpsmember); Clatsop Community College (5 Corpsmembers); Seattle Central Community College (25 Corpsmembers).

Appendix 3

Center Corpsmember Questionnaire

(Clearfield, Weber Basin,  
Charleston, El Paso, Gary  
N = 359)

	Affirmative Responses
(1) Your sex?	
Male	78
Female	22
(2) How old are you?	
16 or younger	11
17	25
18	22
19	18
20	12
21+	12
(3) I have been at this center for 90 days or longer.	67
(4) I have completed the basic education program.	34
(5) I have completed one vocational skills training program.	18
(6) I have heard about the junior college program.	75
(7) My counselor told me about the junior college program.	50
(8) The Center Director told us about the junior college program.	31
(9) Another Corpsmember told me about the junior college program.	48

Affirmative  
Responses

(10)	No one told me about the junior college program.	25
(11)	I am eligible for the junior college program.	50
(12)	I am interested in going to a junior college.	59
(13)	If I get to go, I intend to complete the entire program.	67
(14)	If I get to go, I would like to take additional study in an	
	a. academic program	25
	b. a vocational skills training	39
	c. a course of study other than an academic or vocational skills training program.	36
(15)	If possible, I would like to earn a degree from a junior college.	70
(16)	I hope to complete 4 years of college.	60
(17)	Junior College will help me to achieve my goal.	69
(18)	The job I want requires my completing a junior college program.	50
(19)	My friends here at the center know about the junior college program,	74
(20)	Some of my friends here at the center are waiting to go, but have not been admitted to junior college.	48
(21)	Will you remain in order to be admitted into the junior college program?	60
(22)	Will you work towards obtaining a GED certificate so that you may eventually enter the junior college program?	74
(23)	Did you know about the junior college program when you entered Job Corps?	30
(24)	Can you get a junior college education on your own?	37

Appendix 4

ACT Participant Questionnaire Results

N = 202

	Affirmative Responses
(1) Your sex?	
Male	60
Female	40
(2) How old are you?	
16 or younger	7
17	4
18	17
19	23
20	27
21+	23
(3) I have been at this college (school) for more than 2 weeks.	90
(4) I am a high school graduate.	50
(5) I have a GED.	50
(6) I am taking one or more of the following:	
a. an academic program	62
b. a vocational skills training program	28
c. some other program	10
(7) Working toward an AA degree.	88
(8) Now that I am here, I intend to stay longer than 1 year.	87
(9) I want to complete 4 years of college.	82

Affirmative  
Responses

(10)	Junior College will help me to achieve my goal.	81
(11)	The job I want requires my completing a junior college program.	67
(12)	I have a friend (or friends) enrolled in college.	90
(13)	I hope to meet new friends at this college.	92
(14)	The classes here are dull and boring.	30
(15)	I find I can hold my own with other students.	94
(16)	The classes here are interesting.	95
(17)	The food here is O.K.	66
(18)	The dorms are O.K.	76
(19)	The other students seem O.K.	93
(20)	I enjoy being on this campus	84
(21)	My parents (parent) are/is glad I am here at this college.	92
(22)	College life is really O.K.	94
(23)	My instructors are interested in my progress.	93
(24)	This college program is a part of my employability development plan.	89
(25)	I will stay here as long as I can.	96
(26)	I live on the college campus.	82
(27)	Do you receive enough money?	12
(28)	Would you have completed vocational training or junior college without the aid of the Job Corps College program?	37

## Appendix 5

### EVALUATION OF PILOT ACCELERATED COLLEGE GED PROGRAM REGION VIII

With the approval of the National Office, Region VIII conducted a pilot program for the preparation of students to enter college by offering an accelerated GED program at two colleges within the Region. The two colleges selected for this pilot program were Western Montana, Dillon, Montana, and the Lamar Community College, Lamar, Colorado.

Ninety-nine students, fifty at Lamar and 49 at Western Montana entered the accelerated GED program in September 1978. Of these 99, only 21 will have qualified to enter the standard college program as of the beginning of the winter sessions. Thirty-three have dropped out of both the GED program and Job Corps, and 18 have returned to the Center. Thirty-eight students were removed from the Lamar campus on October 18 because of racial strife and re-enrolled in a GED program at the Clearfield Job Corps Center. All of these students are accounted for in this statistical breakdown and assumed to be part of the pilot program despite their limited time of participation at the college. The remaining 27 are still enrolled in the program and have some chance of entering college in the spring or summer. These results and our analysis of the problems experienced by the corpsmembers are the basis of our conclusion not to continue this program as a part of the Region VIII ACT program. However, our experience with this program has provided us with an opportunity to compare the on-Center program with this venture.

The students participating in the accelerated GED program were neither psychologically ready to face the pressures of an intensified academic program nor were they capable of performing at the required learning level. The students' chances of success would have increased dramatically if they would have been kept in the normal Job Corps Center's GED program and would have been available to receive the counseling and other support services at the Center. These conclusions support the positive aspects of the educational systems at the Center level. Our systems, by offering self-pace learning and individual tutoring as well as needed counseling, are far superior for our enrollees than can be constructed for at the college level. Corpsmembers with less than a high school diploma or GED simply are not mature enough or self-motivated sufficiently to assume the responsibility of college academics.

Job Corps enrollees need a minimum of 90 days at a Job Corps Center prior to entering college life at any level in order to modify the individual's thought patterns, behavior and self discipline so they may learn to live and study in a group living atmosphere. The Job Corps Center experience itself is an asset to any disadvantaged young man or woman who enters a college for advanced career training; however, their chances of success without a high school diploma or GED are minimal. Region VIII does not recommend the continuous or expansion of the pilot program for achieving accelerated GED certificates for our clientele. We do, however, express concern that this pilot program not adversely affect the ACT program as originally designed and implemented which Region VIII strongly supports as a positive addition to the Job Corps program.

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CONSIDERATIONS IN COST-BENEFIT  
ANALYSIS OF JOB CORPS

JANUARY 1979

ROBERT TAGGART  
OFFICE OF YOUTH PROGRAMS

- 109 -

121

## OVERVIEW

Job Corps has significant economic and non-economic impacts for participants. It is an expensive program. An important question is whether the benefits justify the costs.

Recent evidence and analysis suggest that under a number of reasonable assumptions, that the social investment "pays off," with benefits exceeding costs. It is tempting to site this evidence and analysis as proof that the Job Corps works. Yet a review of past and present cost-benefit analyses of the program suggests that the "rate of retention" on the Job Corps investment cannot be calculated with any certainty, and that the cost-benefit technique with its precise estimates of return, obscures as much as it reveals.

Cost-benefit analysis may be used to determine in a general way whether benefits are "in the ballpark" of costs. It is reassuring that this seems to be true for Job Corps. It would be a mistake, however, to use cost-benefit findings alone to justify or critique Job Corps unless the results are so clearly positive or negative that they overwhelm the many uncertainties. Findings to date have not been of this magnitude.

ROBERT TAGGART  
Administrator  
Office of Youth Programs

Contents

Overview	110
Cost Benefit Analysis and the Job Corps	112
Inconsistency of Findings	114
A Moving Target	115
Measuring Net Benefits	117
The Cost Issues	121
The Crystal Ball	122
The Meaning of a Benefit/Cost Ratio	124
A Questionable Payoff	127

## Cost-Benefit Analysis and the Job Corps

Cost-benefit analysis is a tool for allocating scarce resources among competing ends, or, more exactly, for allocating scarce resources among competing means to achieve related ends. This methodology, which seeks to quantify the impacts of programs in dollars and cents terms and to compare their present value with direct and foregone costs, was first applied extensively for the analysis of social programs in the mid-1960s. It was initially perceived and utilized as a way to document the payoff of social investments. However, as part of the critique of Great Society programs at the end of the decade, the generally favorable early analyses and their methodologies were debunked, and a new round of more critical cost-benefit studies emerged. Methodological debates and the about-face in findings cast some doubt on the credibility of the cost-benefit approach and it fell out of favor in the 1970s.

Intellectual fashions are changeable, and there is a chance that cost-benefit analysis will return to vogue. In social welfare programs, retrenchment is again the name of the game. Sophisticated congressional staffs and administrative decisionmakers are seeking evidence concerning the absolute and relative effectiveness of social programs. Cost-benefit analysis, with its "rigorous" and quantifiable answers to questions and comparative effectiveness, will be alluring to those who must make unpleasant budget-cutting decisions.

Conceptually, the cost-benefit approach would appear to make the most sense in assessing social programs with extensive investments per participant. These require greater justification because of the cost. Significant impacts are expected which should exceed measurement uncertainties. Where the impacts are longer term, the direct comparison of short-run outcomes with costs does not provide meaningful estimates of effectiveness, so that

the projection and discounting procedures implicit in cost-benefit analysis provide an attractive way to address the valuation problem. Finally, cost-benefit analysis makes more sense where impacts are measurable in dollar and cents terms.

The Job Corps is a program where all these conditions apply and where cost-benefit analysis would appear to be most appropriate. Job Corps is a comprehensive remediation program for the most economically disadvantaged youth age 16 to 21. In a residential setting, it provides vocational training, basic education, health care, subsistence, clothing, allowances, entertainment and all other supportive services which may be needed. In fiscal 1978, there were an average of 22,000 Job Corps training slots serving over 40,000 youth. The participants were all unemployed and economically disadvantaged, 70 percent were minorities, 85 percent were high school drop-outs, and their reading and math achievement was at less than a sixth grade level. The average expenditure per slot was in excess of \$10,000. This extensive investment is undertaken in the hopes of significantly increasing lifetime employment and earnings. While there are many subsidiary goals, the primary one is employability. Benefits can thus be measured in dollars of increased earnings. It is an obvious and important question to ask whether the stream of increased earnings has a present value large enough to warrant the extensive investment, and a number of cost-benefit studies were undertaken in the 1960s and early 1970s to address this issue. They figured prominently in public debates over the Job Corps.

In all likelihood, cost-benefit analysis will resurface in the next few years. The Job Corps is being doubled in size during 1978 and 1979 to 44,000 slots. The program is a prominent target for budget-cutters. It will receive special scrutiny when the inevitable problems arise which are related to rapid expansion. In addition, analyses have just been completed of the Job Corps' economic and non-economic impacts. The economic impact study, perhaps the most careful and comprehensive of any manpower program evaluation in the 1970s, includes a cost-benefit formulation. The data will provide the grist for many analyses to come.

Anticipating increased interest in cost-benefit analyses of social programs, particularly the Job Corps, it is worthwhile to review the experience to date. Since Job Corps is, in concept, the type of social program most appropriately

assessed by this approach, and since extensive analyses have been completed, the experience is suggestive of the potential of the cost-benefit approach in helping to better understand impacts as well as to allocate scarce resources between and within programs.

### Inconsistency of Findings

The effectiveness of an analytic tool must, in the end, be judged by the consistency and precision of its findings. Cost-benefit analyses of the Job Corps have demonstrated neither consistency nor precision.

The first and still one of the best analyses of Job Corps was by Glen G. Cain. The study calculated benefits based on (1) a 6-month follow-up survey of the wages of 1966 enrollees and "no-shows" who qualified for and were interested in Job Corps but failed to enter and on (2) the experienced education gains of participants translated into estimated lifetime earnings differentials. The benefit/cost ratios based on wage gains ranged from 1.04 to 1.45 depending on the assumptions and concepts while those based on education gains ranged from .60 to 1.89. Within this range, Cain concluded that the "most realistic benefit/cost ratios computed in this study are at least .97 and are more likely to be around 1.22."<sup>1/</sup>

The Research Management Corporation compiled a study based on 18-month follow-up wage data for 1966 participants, using early program terminées as controls for completers. This yielded a range of possible benefit-cost ratios, with a best estimate of .3.<sup>2/</sup> On the other hand, a study by Dave O'Neill also compared completers with dropouts using 12-month follow-up data. It concluded that the benefit/cost ratio was between 1.05 and 1.27 according to different assumptions,<sup>3/</sup> but was certainly a profitable social investment.<sup>3/</sup>

<sup>1/</sup>Glen G. Cain, Benefit/Cost Estimates for Job Corps, (Madison, Wisconsin, Institute for Research on Poverty 1967) P.10.

<sup>2/</sup>Dave M. O'Neill, The Federal Government and Manpower, (Washington, American Enterprise Institute, 1973) P.30.

<sup>3/</sup>Ibid. P. 43.

Another regression analysis using this same data set concluded that there were even more favorable impacts, with benefit/cost ratios ranging from 1.86 for 18 and over nonwhite participants to 3.72 for 18 and over whites.<sup>4/</sup>

An internal study by Job Corps staff used intake and placement data for 1968 to estimate wage gains. Job Corps trainees were compared to Job Corps entrants of the same age to estimate wage gains. Benefit-cost ratios were then calculated under varying assumptions yielding ratios between 3.54 and 5.00.<sup>5/</sup>

The most recent report is based on a 6-month follow-up of 1977 Job Corps participants with a control group drawn from school dropout lists and local employment service files. It includes not just the wage effects but the employment impacts, the estimated value of reductions in crime, drug use and welfare dependency. This method yields a range of benefit/cost ratios with a best estimate of 1.05.<sup>6/</sup> However, the reductions in criminal activity, drug use and dependency account for a lion's share of the benefits. The benefit/cost ratio would be only .53 net of the transfer, crime, and drug use effects.

Clearly, then, the findings are inconsistent. The returns of the Job Corps due to increased earnings may range from .3 to 5.0 depending on the methodology and assumptions. There is no consensus whether Job Corps' net social benefits exceed or are less than costs.

#### A Moving Target

The Job Corps legislation has varied little since the inception of the program. It would appear, then, that cost-benefit analysis should yield insights about the payoff of the residential, comprehensive services approach for disadvantaged youth. Yet there have been some significant developments which would be expected to impact on benefit-cost estimates.

<sup>4/</sup>Stephen Engleman, An Economic Analysis of the Job Corps, (Berkeley, Calif: UCLA, 1973) P. 135.

<sup>5/</sup>"Job Corps Benefit/Cost Study," A&R Reports #11 (Washington, D.C.: Office of Economic Opportunity, 1969) Tables A-1, 2&3.

<sup>6/</sup>Charles Mallor et. al., Evaluation of the Economic Impact of the Job Corps Program: First Follow-Up Report (Princeton, New Jersey, Mathematica Inc., August 1978) P. 154.

First, there has been a steep learning curve. When Job Corps was first introduced, it was the "cadillac" of programs -- everything imaginable was provided to participants and any idea which held promise was put into action. Over time, the bad ideas were identified and eliminated. Concern over costs led to a legislatively imposed ceiling resulting in significant belt-tightening. From fiscal year 1967 to 1976, the per man-year Job Corps cost measured in constant dollars was cut in half. The job placement rate held firm even though the unemployment rate for 16- to 21-year olds in the civilian labor market rose by half. Over the same time, the positive termination rate--including placement, return to schools, and entry into the Armed Forces--rose despite the much smaller number of Armed Forces inductees and the reduced number of jobs available.

Besides the learning curve effects, there were other major developments. Job Corps enrollment was 42,032 in fiscal 1967, declining to 20,840 in fiscal 1970 and staying at roughly this level through fiscal 1977. While the drastic retrenchment at the beginning of the 1970s was not the model of efficient decisionmaking, many of the worst centers were closed in the process. Given the skilled labor pool build up at the high point in the 1960's, contractors could pick and choose in order to get more effective center staffs. Likewise, to the extent youth are selected with some consideration of their likelihood of benefitting, the marginal recruits at the 41,000 accession level in 1971 might be better able to benefit than the marginal recruits at the 74,000 accession level in fiscal 1968.

The latest study of Job Corps focused on the experience of fiscal 1977 participants. The program which will be in place by the end of the current expansion will be substantially different from that in 1977. First, there will be a whole set of new centers and center staffs, so that the learning curve will again be encountered, although hopefully it will be less steep than in the 1960s. Second, the program will be recruiting a much larger proportion of the universe of need so that the marginal enrollee should change somewhat. Third, substantial funds were invested to upgrade existing facilities and the new centers will likely be better facilities on the average. This may have some impact on performance. Fourth, new components have been added to the program such as an advanced career training program in colleges, a military careers training component,

and an industry work experience program. All of these should alter the Job Corps' overall performance.

The benefits and costs of Job Corps might also be expected to vary with economic conditions. In a tight labor market, foregone earnings of participants are probably greater, and the gains to youth who do not enter may be significant during the period of nonenrollment. To the extent that Job Corps impacts mostly on improving the attractiveness and skills of participants, they should be able to gain rapidly over time after initial reentry into a tight labor market. However, to the extent placement is related more to market leverage (for instance, the power of union training programs to place graduates in the trades), one would expect the relative benefits to be greater in a slack labor market, since most evidence suggests that market power pays off more in downturns than upturns. The 1968 labor market was substantially different than that today.

Most of the cost-benefit analyses of Job Corps are based on the 6-, 12-, and 18-month followups of 1966 participants. The results reflect the performance of the program before its stabilization, with participants terminating into a tight labor market. The most recent study will reflect experience under the type of program which existed from 1973 to 1977, but will not necessarily serve as a basis for projecting experience in 1978 and beyond. Any analyses of social program performance must consider learning curve effects, changes in the composition of the program and in the setting in which they operate. However, since cost-benefit assessments tend to project into the future and to translate diverse information into point estimates, the obligation to consider these factors explicitly is much greater. Yet cost-benefit analyses of Job Corps have typically ignored these all important real-life factors.

#### Measuring Net Benefits

The accuracy of cost-benefit analysis rests on the ability to measure net short-term benefits and costs, to project these into the future and to discount them to the present. Analysis can only be as accurate as the measures of net benefits and costs, as well as the projection and discounting assumptions. A single benefit-cost ratio, or even a set of such ratios, gives an impression of precision which in almost all cases exaggerates measurement accuracies.

The problems of assessing net economic benefits are well illustrated by Job Corps evaluations. Control groups are a major difficulty. In comparing adults, age, employment status, income, occupation, educational attainment, and marital status usually provide the basis for a good match. The "winners" and "losers" have usually sorted out by the mid-twenties. For youth, whose future is yet to be written, these variables have less explanative power. Among economically disadvantaged minority youth, for instance, there are some who will make it and some who will not, and this may be related to motivation, raw intelligence, family background, chance or a number of other factors. Put in another way, the basic demographic data explain only a small portion of the variance in future labor market success. Likewise, correlations which explain variance on the average may not be as good at the margin. For instance, earnings may be correlated with educational attainment, but this does not mean that the same differential which exists between 11th grade dropouts and high school graduates can be translated proportionally to predict differences between persons with 11.2 and 11.5 grade levels.

The differences which may exist between control and experimental groups are also likely to increase with time. For instance, most youth experience unemployment at one time or another. Most begin their careers in "youth" jobs. Most start by earning the minimum wage or less. Yet there is substantial variance by the mid-twenties. Controlling for labor market status variables at age 16 to 21 hardly controls for or is necessarily predictive of the future.

The cost-benefit analyses have tried different approaches for control group selection, and all have been flawed. The Cain analysis used "no-shows." However, subsequent studies revealed that a substantial proportion of the no shows did not enter because they found jobs in the interim. The job finders are obviously not comparable to those who had no option but the Corps. The RMC, O'Neill and Engleman studies all used early dropouts as controls for completers on the assumption that the dropouts would not have been in long enough to be affected by the Job Corps offerings. The program could, however, have a negative effect by removing youth from the labor market and reinforcing the stigma of failure. The dropout process might sort the winners from losers. Alternatively, the upwardly mobile participants might leave quickly to find other opportunities. Completers and dropouts cannot, then, be considered comparable. Use of entrance wages and employment experience as control for status at termination

is misdirected to the extent that youth choose to remain idle while waiting for entry into the program.

Perhaps the most sophisticated effort to establish a meaningful control group was in the most recent study of Job Corps. The controls were drawn from areas where limited Job Corps recruiting had occurred. The sample was stratified on the basis of nationwide enrollment probabilities. In assessing impacts, there were complex regression equations to standardize any differences between participants and controls. However, the fact still remains that within any eligible cohort, there may be differences between those who choose to go into Job Corps and those who do not. For instance, a young dropout whose father is a pipefitter might justifiably believe he can get into the trade without going into Job Corps. A young lady with a steady boyfriend might also choose to stay home, and might also be expected to have a higher probability of marriage or childbirth than an otherwise similar female who would choose to enter. These differences could account for substantial differences between the long-run experiences of participants and controls.

Even if the control group issue could be overcome, there are serious questions about the valuation of non-economic benefits. The Job Corps may have elements of a "consumption good." Like college, it may give the disadvantaged a chance to get away from home, to broaden horizons and to mature. The follow-up studies of 1966 and 1977 Job Corps participants found that an overwhelming majority gave positive assessments of the Job Corps experience, the facilities, counseling and training. In the earlier study, two-thirds felt better prepared for marriage and child raising. A majority felt they learned more about the importance of school, of keeping oneself in shape, of staying out of trouble and of getting along with family. An overwhelming majority of relatives, friends, and employers perceived the Corpsmembers had changed for the better, becoming less trouble-prone, better able to get along with people, and more likely to make plans for the future. The more recent study found that Job Corpsmembers staying more than three months improved in job seeking skills, job satisfaction, attitude toward authority, self-esteem, nutrition behavior, family relations, criminal justice system involvement and use of leisure time. Enrollees had ten times as many medical visits as they would have received on the outside. Entry examinations revealed untreated conditions in one of seven enrollees.

Some of these benefits can be quantified. The most recent cost-benefit analysis prices the substantial crime reductions. Attitudes towards family and self-esteem may be subsequently reflected in reduced transfer payments. Many behavioral changes will be reflected in increased earnings. But certainly, few would claim the benefits of a comprehensive experience such as college or the Job Corps are strictly those of preparation for employment.

Also, there are possibilities of long-run payoffs which may not be reflected in the immediate post-program period. Health problems which are untreated may not emerge as impediments until adulthood. Increased maturity may have future benefits. For instance, the Armed Forces have found that Job Corps graduates are a fifth more likely to complete their first term than comparable nonparticipants. Concomitantly, they are also more likely to benefit over their lifetime from veterans benefits which for the most part require completion of enlistment for eligibility. A simple thing like a driver's license resulting from drivers education courses provided in most centers may increase future earnings by allowing access to a wider variety of jobs; the courses can also reduce automobile insurance rates. In other words, all benefits cannot be quantified and some may have quantifiable impacts only over the long-run. No one knows the weight which should be given to these benefits in comparison to measurable economic impacts, the degree of double counting nor the extent of delayed effects.

There are also questions about the weight which should be given to quantifiable impacts. For instance, are the dollars saved in crime reduction equivalent to an equal number of dollars of increased earnings? It is possible that Job Corps is not as cost-effective as other interventions in raising earnings, but is more effective in reducing or preventing crime. Even taking earnings, one might ask whether an increase in wages is equivalent to an equal dollar increase from greater employment stability or labor force participation. Is a larger employment gain for a few equivalent to a smaller gain for a larger number? Do they have the same long-term implications? The benefit estimates assume that all these impacts are equal, dollar for dollar.

Complicating benefit estimates is the issue of displacement. If participants are upgraded in skills, and move into positions that would otherwise be vacant, they reduce competition for lower level jobs and no one suffers. If they exhibit greater stability of employment, reducing voluntary turnover and frictional unemployment, presumably, also, no one suffers. If, on the other hand, Job Corps merely secures positions which would have gone to like youth, then the net benefit to those in need is reduced even though

Corpsmembers may have wage gains relative to controls. Alternatively, Job Corps may succeed in getting disadvantaged youth onto better tracks, although nondisadvantaged youth or adults may suffer some displacement. A classic example is the union-run training components of Job Corps which are selective and costly but also have high wage rates at placement, in part because of the leverage of the unions. Have participants benefitted from training, creaming, market leverage or some combination? Who are the losers, if any? Likewise, Job Corps pays the Employment Service and other agencies for the placement of terminees. Does this buy available jobs or the better available jobs for participants at the expense of like nonparticipants?

### The Cost Issues

Costs are easier to estimate than benefits, but there are also complications. Because Job Corps offers a full range of support, there are public expenditures for housing, health care, clothes and the like which would have been incurred in the absence of the program. The usual approach is to subtract these from costs. Yet Job Corps enrollees are presumably selected because they need and can benefit from the full range of services provided in the Job Corps setting. Presumably also, the effects of these arrangements are reflected in benefits. To count them on the benefit but not the cost side would yield a biased estimate. On the other hand, in comparing Job Corps to other programs, one might also want to assess the redistribution implicit in such costs. The Young Adult Conservation Corps residential program provides housing, health care and meals. The population is not economically disadvantaged like the Job Corps. It would not be the same to subtract these costs in estimating YACC costs and benefits, since they reflect a lesser degree of redistribution. Cost-benefit ratios do not take these redistributions into account.

Earnings foregone by participants are typically added to costs. Yet with the massive unemployment rates among economically disadvantaged youth, it is likely that others in need would step forward to take advantage of the basically unskilled jobs which would have been filled by Corpsmembers. There is very definitely a vacuum effect because the participants are removed from competition in the labor market. Some portion of the foregone earnings is really a benefit rather than a cost to society because it reduces unemployment among nonparticipants.

Capital costs have also been ignored in most studies. By the time these were undertaken in the late 1960s, expansion had already occurred, and only maintenance expenditures were being undertaken. In the 1970s, Job Corps facilities were allowed to deteriorate to the point where many centers were plagued by health and safety violations. Annual expenditures were inadequate to maintain the base, so that in 1978 and 1979, \$35 million had to be spent merely to restore existing centers to reasonable standards. In the expansion in 1978 and 1979, capital costs were again encountered in purchasing facilities, rehabilitating them to adapt to Job Corps needs, providing materials and equipment, and gradually staffing up for operation. Acquisition and rehabilitation averaged \$5400 per new slot, equipment \$2000 and preactivation \$2000. These front-end expenditures must in some way be amortized over the use life of the new centers. Consideration of this factor would raise costs and reduce the benefit-cost ratios.

In the broader sense, costs must also be assessed in terms of the alternative uses of the same resources. When schools were overflowing, every trained teacher could find a job, and salaries were rising rapidly, Job Corps had to bid away scarce resources. With excess teachers and declining school enrollments, there are fewer alternative uses of the resources utilized in Job Corps. Presumably, the wages and salaries should fall to reflect supply and demand conditions, but adjustment is a gradual process. It would appear, then, that the real cost reflected in Job Corps expenditures might have declined somewhat in recent years.

### The Crystal Ball

The fundamental uncertainty in judging a future-oriented program such as Job Corps is projecting what the future will hold. The various 1960s analyses were based on follow-up data for 1966 participants. Six months after termination, completers earned 18 cents more an hour than dropouts. At 12 months the differential was only 13 cents. In the 18-month followup, however, the differential was up to 33 cents. The more recent study of the Job Corps economic impact found that for the first several months after termination, Corpsmembers were substantially worse off than controls; employment and earnings subsequently increased relatively as well as absolutely up to the sixth month when earnings were higher for Corpsmembers. The time period of followup obviously makes a difference, although it is unclear what is the most dependable base for making projections. Will earnings continue to grow relatively and absolutely? Will the 12-month follow-up yield a greater, lesser or equal increment? No one

To estimate costs and benefits from whatever set of data is available, some assumption must be made about the narrowing or widening of differentials. In the most recent study of Job Corps, it was assumed that net effects decay by 14 percent a year. This assumption was based on some previous longitudinal analyses of MDTA which themselves are suspect because of non-comparability of experimentals and controls. Under this decay assumption, the benefit cost ratio of Job Corps, assuming a 5 percent discount rate, is 1.05. If there were no fade-out in the differential, the benefit/cost ratio would be 3.13. Some effects could be expected to deteriorate, such as increases in labor force participation related to the more rapid maturation of youth in the Job Corps environment. Other effects from increased military enlistment completion, GED attainment, advanced education, mobility and the like would be expected to have an increased payoff with time. Given the sensitivity to assumptions about the future and the lack of any basis for making projections, any ratio must be viewed with healthy skepticism.

There are also uncertainties about appropriate discount rates on future returns. A substantial body of literature on the subject still leaves questions about the most appropriate rate. The recent Job Corps study projects a benefit/cost ratio of 1.15 at a 3 percent discount rate, 1.05 at 5 percent, and .88 assuming a 10 percent rate. Obviously, the discount assumption makes the difference between a very positive and quite negative assessment about the payoff of the investment.

Is the private sector rate of return the most appropriate discount factor? This rate reflects the supply and demand for funds, both of which are affected by uncertainties about the future and inflationary expectations among other things. Presumably, inflation should not be an issue here since wages will rise with the CPI and differentials will also grow. If an investment involves little or no risk, the rate of return expected can be less than for a high risk venture. It is uncertain whether, on the average, Job Corps is a high risk or low risk venture. More basically, however, one might question the meaning

of this discounting approach. The prime rate has risen substantially since the mid-1960's. If, as was apparently the case, placement rates and wage gains rose and costs declined in real terms, the program could be considered less effective by cost-benefit analysis to the extent that tight money or the bidding away of resources for consumption in the expectation of future inflation had raised the prime rate. One could be forgiven for believing that a program delivering more for less is an improvement whatever the benefit/cost ratio may say. For certain worthwhile goals such as central city or farm area economic development, or housing rehabilitation for the elderly, the government provides funds at below market rates. The nation invests in railroads or the post office even though the rate of return is slight. The private sector invests in some industries such as steel which have traditionally had lower rates of return than other industries such as aerospace. Should we reduce investments in education and training whenever interest rates rise? Can we consider lower rates of return as reasonable for socially useful ends?

#### The Meaning of A Benefit/Cost Ratio

Presuming that benefits and costs could be accurately measured, projected, discounted and compared, the most basic question still remains unanswered: "What is a reasonable benefit/cost ratio?" Is an effort unwarranted if it only helps one or two in ten participants and if their future stream of extra earnings does not amortize the costs for all ten? Some may consider success of a small number worth the expense. Society will spend millions of dollars to rescue a trapped miner or to merely exhume his body, but it demands cost efficiency in salvaging individuals trapped by their social and economic handicaps. In considering alternative capital investments, the only criterion is profit, but the effects on individuals are not so simple. An expenditure on college bound youths from upper income families might yield a higher return than an equal amount for Job Corps clients, but the needs of the latter group are certainly greater. Alternatively, some critics assert that if a benefit-cost ratio is less than one, an income transfer is preferable. Yet it is doubtful that a cash payment of the roughly \$5000 spent in Job Corps per participant would be of any long or even short-term benefit to

the average 16- or 17-year-old Corpsmember with a fifth or sixth grade education. The problem of the disadvantaged youth is not just current but future welfare, and it is more one of earnings than income.

Cost-benefit analysis is usually considered as a tool for comparing alternatives; even if the meaning of any absolute ratio is uncertain, the relative ratios for like programs presumably indicate relative performance. Presumably they can answer whether Job Corps is more cost-effective than other manpower programs. Yet by law, Job Corps is to serve only those youth for whom other opportunities are not available as well as those who need and will benefit most from comprehensive residential treatment. While the screening and selection system is far from perfect, it would be incorrect to compare Corpsmembers directly with participants in other programs, even when controlling for some broad demographic characteristics. In fact, there is no alternative large-scale vocational training and education program for such a disadvantaged group. CETA programs serve poor youth, but predominately by offering short-term work experience, with training usually reserved for those who are older. Whatever success CETA may be having with the younger group has not been determined. Moreover, it is unclear whether or how CETA would serve 40,000 additional youths currently in Job Corps each year. Work experience is an alternative, but since almost all the benefits are immediate, then any uncertainties in the projection and discounting assumptions used in cost-benefit analysis would be manifested in differences between the estimated rates of return of Job Corps and work experience. Society might also prefer to train for the future rather than to simply keep youth busy for the present. All this is moot, however, since there are no cost-benefit studies of any reliability concerning alternatives for serving the same youth.

Some proponents of cost-benefit analysis have argued that its value is much greater in intraprogram than in interprogram decisions. There are a lot of issues which might be addressed through this approach. Center sizes vary from a little over a hundred Corpsmembers to several thousand. There has been a long debate about the most cost-effective center size. Job Corps serves youth age 16 through 21. There are those who argue that attention should be focused on more mature youth who will stay longer and will have less trouble finding training-related jobs upon

termination. Union operated training programs in Job Corps cost more but also have significantly higher placement rates and wage levels at placement. Are these a better investment than regular vocational training and should they be expanded?

There have been attempts to address such intraprogram issues, and these have been just as unrewarding as attempts to estimate the overall rate of return. The problem is that to calculate benefit-cost ratios for subcomponents or subgroups, it is necessary to have either more detailed data or to use generalized assumptions which may not be equally realistic for these components or groups. For instance, in a 1969 study, Software Systems, Inc. attempted to use entry, termination and center cost data to compare the cost-effectiveness of Job Corps and various centers in serving youth of different ages and races.<sup>7</sup> The benefit-cost ratio in serving 16- and 17-year-olds, for instance, was calculated by measuring the percentages in various termination categories and comparing these to the proportions for 18- and 19-year-olds, controlling for some other variables. Yet to really assess the benefits, it would be necessary to have a control group of 16- and 17-year-olds and another for 18- and 19-year-olds. Immediate termination data may have to be projected in different ways for the two groups. Likewise, outcomes may not have the same meaning. A training-related placement does not mean much for a 16-year-old if training is in building maintenance. The 16-year-old's subsequent employment may be a bridge job or a career ladder, with different future implications. In looking at how well different types of centers serve different age groups, similar questions arise. Conservation centers were originally to serve the least educationally prepared Corpsmembers, including many 16- and 17-year-olds. If the better or older Corpsmembers are "creamed" into the larger centers, the comparisons of outcomes are spurious; even controlling for age may merely show that young persons do better when they are around more older persons rather than reflecting

7/Software Systems, Inc., A Job Corps Study of Relative Cost Benefits, (Washington, D.C.: Software Systems, Inc., 1969).

differences in center performance. In other words, it is no simpler and, indeed, frequently much more complex to compare subgroups and components through benefit-cost analysis than to calculate benefit-cost ratios for total programs.

#### A Questionable Payoff

The Job Corps program, with its extensive investment in the most disadvantaged individuals, its aim of significantly increasing lifetime employment and earnings, and its relatively careful analyses of impacts and outcomes, is the ideal subject of benefit-cost analysis. A diverse array of benefit-cost studies have been completed. Their payoff has been disappointing. Experience has demonstrated the very serious limitations of this analytical approach:

- o Benefit-cost estimates from different data sources and even from the same ones range across the map; it remains uncertain whether benefits significantly exceed, roughly equal or are less than costs.
- o The analyses are aimed at a moving target. Given the lags in follow-up data and analysis, the results frequently come available when the program being assessed or the conditions in which it operates have changed drastically.
- o Control group selection methodologies have varied widely; in all cases, there are noticeable differences between participants and controls, and it is uncertain whether statistical adjustments based on correlations which explain only a small part of variance in outcomes can correct for the differences.
- o There is evidence of many positive outcomes from Job Corps which may not translate directly into earnings increases. It is difficult to put price tags on such things as reductions in crime but certainly these can be important factors.

- o It remains uncertain whether the economic impact should be judged primarily in terms of wage increases or increased stability of employment, as well as the extent this is the result of placement or individual enhancement. Where placement efforts are the primary factor, there are greater displacement effects and fewer vacuum effects.
- o The projection of earnings and employment is largely an exercise in assumptions since we know next to nothing about longitudinal patterns and since the problems of control group variance become more serious the longer the period of comparison. There are some serious issues on the cost side including the treatment of foregone earnings, transfers and capital expenditures.
- o Benefit-cost analysis has added little if anything to intraprogram decisions. The assumptions become so critical and the necessary specification so great that the outcomes of such efforts have always been debatable.
- o There are no alternative programs as comprehensive and targeted as the Job Corps, raising questions about the meaning of any benefit-cost ratio. Job Corps has perhaps a greater redistribution impact than any other major employment and training program. Income transfers are not a reasonable alternative for the clients served by Job Corps.

The problems benefit-cost analysis has encountered in its application to the Job Corps are not unique. There is copious literature documenting issues such as projection and discounting assumptions, benefit estimation, control group selection, cost accounting and the like. Most analysts would agree that the benefit-cost approach has limitations, that the methodologies need refinement, and that this can be only one tool of policymaking. While all this may be true, it skirts the really fundamental issues whether benefit-cost analysis has improved our understanding and whether it has aided in deciding between programs and in making decisions within programs. If benefit-cost analysis were turned

on itself, the payoff might well be questioned. A null hypothesis for benefits might be posed as follows: "Nothing has been learned from this approach which was not readily apparent from the base data;" alternatively "program and budgeting decisions have not been improved by benefit-cost analysis." The Job Corps experience provides little evidence to discount these null hypotheses. On the other hand, there are very real costs, both in terms of the time spent in idle debate over benefit-cost assumptions and in terms of the consequences when decisionmakers have used the results despite the overwhelming uncertainties.

It is frequently asserted that ineffective programs are difficult to eliminate because of vested interests. The same is true in the intellectual realm. It is time that we asked whether the benefits of cost-benefit analysis really outweigh the costs. In the case of the application of this methodology for the assessment of Job Corps, the answer would unquestionably be no.

EVALUATION OF THE ECONOMIC IMPACT  
OF THE JOB CORPS PROGRAM: FIRST  
FOLLOW-UP REPORT

FEBRUARY 1979

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## OVERVIEW

This Evaluation of the Economic Impact of the Job Corps Program: First Follow-Up Report compares the experiences of Job Corps participants in the early months after they left the program in 1977 with the experience of a comparable group of disadvantaged youth not in the Job Corps. It yields evidence of a variety of impacts.

After a readjustment period, Job Corps members had weekly earnings ten percent above controls 7 months after termination, resulting mostly from increases in full-time employment. The greatest gainers were those who completed the program. The completers, both men and women, had weekly earning gains almost half again those of their comparison group counterparts.

Job Corps participants were substantially more likely to have attained a GED or high school diploma or to have gone on to college, and to have entered military service. They had greater mobility and better health. They had reduced participation in welfare and other public benefit programs, substantially fewer arrests, and reduced drug and alcohol abuse.

Under a variety of reasonable assumptions, it appears that the dollar value of these benefits exceeds the cost and that the program is a profitable investment for society.

The study assesses corpsmembers perceptions as well as estimating impacts. Seven months after leaving Job Corps, the great majority (77 percent) of the participants expressed overall satisfaction with the program, rating it more favorable than they did when still in the program (when 67 percent said they were "very satisfied" or "fairly satisfied"). Some 90 percent gave "good" or "OK" ratings to the training and education services they received. While in the program, half said the food and the pay were "not good" and the most critical comments focused on the lack of placement assistance. Nearly 60 percent of terminees said that they did not get placement aid from the Job Corps or agencies the Job Corps sent them to, and three-quarters said they could have used more help in finding a job.

This study was conducted by Mathematica Policy Research under the direction of the Office of Program Evaluation in the Office of Policy, Evaluation and Research in the Employment and Training Administration. The evaluation design and techniques are highly sophisticated, but the findings apply only to a follow-up period averaging 7 months after termination. A follow-up one year later will help to determine the critical issue whether benefits decay, are maintained or grow.

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	OVERVIEW . . . . .	131
	ACKNOWLEDGMENTS . . . . .	140
	EXECUTIVE SUMMARY . . . . .	142
I	INTRODUCTION . . . . .	145
	A. OUTLINE OF THE REPORT . . . . .	146
	B. SOME CAUTIONARY NOTES . . . . .	149
II	THE JOB CORPS PROGRAM IN 1977 . . . . .	151
	A. INSTITUTIONAL SETTING . . . . .	152
	B. YOUTHS IN JOB CORPS . . . . .	154
	C. TYPES OF SERVICES PROVIDED AT CENTERS . . . . .	155
	1. Education . . . . .	155
	2. Vocational Skills Training . . . . .	156
	3. Health Care and Education . . . . .	157
	4. Residential Living . . . . .	157
	5. Counseling and Other Ancillary Services . . . . .	158
	D. SIZE OF JOB CORPS . . . . .	158
	E. CURRENT TRENDS . . . . .	159
	1. Center Improvements . . . . .	160
	2. Special Target Groups . . . . .	160
	3. Innovative Programs for Education and Vocational Training . . . . .	162
	4. Coordinating Activities with Other Agencies . . . . .	163
III	OVERVIEW OF EVALUATION DESIGN . . . . .	164
	A. POLICY AND RESEARCH ISSUES . . . . .	164
	1. Analysis of Participants' Benefits . . . . .	166
	2. Comparative Evaluation of Benefits and Costs . . . . .	172
	3. Analysis of Participant Satisfaction . . . . .	174
	B. EVALUATION DESIGN . . . . .	175
	1. Comparison-Group Methodology . . . . .	175
	2. Sample Selection . . . . .	178
	3. Data Collection . . . . .	181
IV	ANALYTICAL APPROACH TO ESTIMATING THE ECONOMIC IMPACTS OF JOB CORPS . . . . .	183
	A. ALTERNATIVE ECONOMETRIC METHODS . . . . .	184
	1. Before-After Comparisons . . . . .	184
	2. Simple Comparisons between the Job Corps and Comparison Samples . . . . .	185
	3. Simple Regression Adjustments Used for Most of the Estimates . . . . .	187
	4. Complex Regression Adjustments . . . . .	192

Chapter

B.	DISAGGREGATIONS USED IN THE ANALYSIS . . . . .	195
1.	Age, Race-Ethnicity, Sex, Marital Status, and Presence of Children . . . . .	195
2.	Time Period . . . . .	196
3.	Obtaining Estimates that are Representative of All Enrollees in Job Corps . . . . .	197
V	ANALYSIS OF EFFECTS ON CORPSMEMBERS . . . . .	200
A.	FINDINGS FOR LABOR MARKET ACTIVITIES . . . . .	200
1.	Impacts for the Week Before the First Follow-up Interview . . . . .	201
2.	Impacts for the Initial Months after Leaving Job Corps . . . . .	214
3.	Impacts on Employment and Earnings During the Program . . . . .	224
4.	Differences in Impacts Among Corpsmembers and Centers . . . . .	224
5.	Potential for Future Gains in Employment and Earnings . . . . .	227
B.	IMPACTS OF INVESTMENTS IN HUMAN CAPITAL . . . . .	229
1.	Education and Training . . . . .	229
2.	Other Human Capital Effects . . . . .	233
C.	DEPENDENCE ON PUBLIC TRANSFER PROGRAMS . . . . .	235
D.	DRUG USE AND CRIMINAL BEHAVIOR . . . . .	235
E.	CONCLUSIONS . . . . .	238
VI	COMPARATIVE EVALUATION OF BENEFITS AND COSTS . . . . .	243
A.	BENEFIT COMPONENTS . . . . .	247
1.	Output Produced by Corpsmembers . . . . .	248
2.	Reduced Dependence on Transfer Programs . . . . .	257
3.	Reduced Criminal Activity . . . . .	261
4.	Reduced Drug and Alcohol Use . . . . .	265
5.	Use of Alternative Training and Educational Programs . . . . .	267
6.	Other Benefits . . . . .	268
B.	COSTS . . . . .	270
1.	Program Operating Expenditures . . . . .	270
2.	Opportunity Cost of Corpsmember Labor . . . . .	272
3.	Nonbudgeted Costs Other than for Corpsmember Labor . . . . .	272
C.	OVERALL FINDINGS FOR NET PRESENT VALUE . . . . .	273
D.	CONCLUSIONS . . . . .	283
VII	CORPSMEMBERS' SATISFACTION WITH THE PROGRAM . . . . .	286
A.	IN-PROGRAM SERVICES . . . . .	287
1.	Ratings of Job Corps: Overall and by Type of Service . . . . .	288
2.	Ratings of Job Corps: By Subgroups . . . . .	291

Chapter

	3. Increases in Satisfaction Between the Baseline and Follow-Up Interviews . . . . .	296
	4. Helpfulness of Job Corps Training for Obtaining Employment . . . . .	298
B.	LENGTH OF STAY AND PROGRAM COMPLETION . . . . .	303
C.	POSTPROGRAM SERVICES . . . . .	307
	1. Placement Services . . . . .	308
	2. Postprogram Services Other Than Placement . . .	315
D.	CONCLUSIONS . . . . .	320
VIII	CONCLUSIONS . . . . .	324

LIST OF TABLES

Table

V.1	ESTIMATES OF EMPLOYMENT AND RELATED EFFECTS IN WEEK PRIOR TO INTERVIEW: MALES . . . . .	202
V.2	ESTIMATES OF EMPLOYMENT AND RELATED EFFECTS IN WEEK PRIOR TO INTERVIEW: FEMALES WITHOUT CHILDREN . . . . .	204
V.3	ESTIMATES OF EMPLOYMENT AND RELATED EFFECTS IN WEEK PRIOR TO INTERVIEW: FEMALES WITH CHILDREN . . . . .	206
V.4	ESTIMATES OF EMPLOYMENT AND RELATED EFFECTS FOR CIVILIANS AVERAGED OVER THE ENTIRE FOLLOW-UP PERIOD . . . . .	215
V.5	ESTIMATES OF DIFFERENCES IN LABOR MARKET EFFECTS AMONG CORPSMEMBERS: MALES . . . . .	225
V.6	ESTIMATES OF DIFFERENCES IN LABOR MARKET EFFECTS AMONG CORPSMEMBERS AND CENTERS: FEMALES WITHOUT CHILDREN . . . . .	226
V.7	ESTIMATES OF EDUCATION AND TRAINING EFFECTS IN WEEK PRIOR TO INTERVIEW . . . . .	228
V.8	ESTIMATES OF EDUCATION AND TRAINING EFFECTS AVERAGED OVER THE ENTIRE FOLLOW-UP PERIOD . . . . .	230
V.9	ESTIMATES OF MOBILITY AND HEALTH EFFECTS AVERAGED OVER THE ENTIRE FOLLOW-UP PERIOD . . . . .	234
V.10	ESTIMATES OF WELFARE DEPENDENCE EFFECTS AVERAGED OVER THE ENTIRE FOLLOW-UP PERIOD . . . . .	236
V.11	ESTIMATES OF EFFECTS ON ANTISOCIAL BEHAVIOR AVERAGED OVER THE ENTIRE FOLLOW-UP PERIOD . . . . .	237
V.12	SUMMARY OF MAIN FINDINGS FOR OVERALL IMPACTS OF JOB CORPS . . . . .	241
VI.1	COMPONENTS OF BENEFIT-COST ANALYSIS . . . . .	246
VI.2	BENEFITS FROM INCREASED OUTPUT BY CORPSMEMBERS . . . . .	256
VI.3	BENEFITS FROM REDUCED TRANSFER PAYMENTS . . . . .	258
VI.4	BENEFITS FROM REDUCED ADMINISTRATIVE COSTS OF TRANSFER PROGRAMS . . . . .	259
VI.5	BENEFITS FROM REDUCED PERSONAL INJURY AND PROPERTY DAMAGE . . . . .	263
VI.6	REDUCED CRIMINAL JUSTICE SYSTEM COSTS . . . . .	264
VI.7	VALUE OF REDUCED AMOUNT OF STOLEN PROPERTY . . . . .	266
VI.B	BENEFITS FROM REDUCED UTILIZATION OF ALTERNATIVE TRAINING AND EDUCATIONAL PROGRAMS . . . . .	269

Table

VI.9	SUMMARY OF COSTS PER CORPSMEMBER, BY ANALYTICAL PERSPECTIVE . . . . .	271
VI.10	NET PRESENT VALUES PER CORPSMEMBER FOR JOB CORPS UNDER THE BENCHMARK ASSUMPTIONS . . . . .	275
VI.11	NET PRESENT VALUE PER CORPSMEMBER UNDER ALTERNATIVE ASSUMPTIONS . . . . .	277
VII.1	CORPSMEMBERS' RATINGS OF JOB CORPS: BY TYPE OF SERVICE . . . . .	289
VII.2	CORPSMEMBERS' RATINGS OF JOB CORPS: BY SUBGROUPS . . . . .	293
VII.3	INCREASES IN CORPSMEMBERS' RATINGS OF JOB CORPS: BY SUBGROUP . . . . .	297
VII.4	CORPSMEMBERS REPORTING THAT TRAINING HELPED IN OBTAINING JOB: BY PROGRAM COMPLETION STATUS AND ASPECTS OF TRAINING THAT HELPED . . . . .	300
VII.5	JOB CORPS TRAINING OR WORK EXPERIENCE HELPED CORPSMEMBER OBTAIN A JOB: BY SUBGROUP . . . . .	302
VII.6	LENGTH OF STAY AND PROGRAM COMPLETION: BY SUBGROUP . . . . .	306
VII.7	CORPSMEMBERS RECEIVING PLACEMENT SERVICES: BY SUBGROUP . . . . .	310
VII.8	CORPSMEMBERS' REPORTS OF SUCCESSFUL PLACEMENT: BY SUBGROUP . . . . .	311
VII.9	CORPSMEMBERS' RATINGS OF PLACEMENT SERVICES RECEIVED: BY SUBGROUP . . . . .	313
VII.10	CORPSMEMBERS NEEDING MORE HELP IN FINDING A JOB: BY SUBGROUP . . . . .	314
VII.11	CORPSMEMBERS RECEIVING TRANSITIONAL AID OTHER THAN PLACEMENT: BY SUBGROUP . . . . .	316
VII.12	CORPSMEMBERS NEEDING MORE TRANSITIONAL AID OTHER THAN PLACEMENT: BY SUBGROUP . . . . .	318

LIST OF FIGURES

Figures

V.1	ESTIMATES OF TIME PATHS OF INCREASES IN LABOR FORCE PARTICIPATION FOR MALES. . . . .	217
V.2	ESTIMATES OF TIME PATHS OF INCREASES IN EMPLOYMENT FOR MALES. . . . .	218
V.3	ESTIMATES OF TIME PATHS OF EARNINGS GAINS FOR MALES. . . . .	219
V.4	ESTIMATES OF TIME PATHS OF INCREASES IN LABOR FORCE PARTICIPATION FOR FEMALES WITHOUT CHILDREN . . . . .	220
V.5	ESTIMATES OF TIME PATHS OF INCREASES IN EMPLOYMENT FOR FEMALES WITHOUT CHILDREN . . . . .	221
V.6	ESTIMATES OF TIME PATHS OF EARNINGS GAINS FOR FEMALES WITHOUT CHILDREN . . . . .	222

159

TECHNICAL REPORTS

- A. Sample Design and Implementation
- B. Survey Methods and Results
- C. Econometric Models and Methods for the Impact Analysis
- D. Comparative Evaluation of Benefits and Costs
- E. Value of Output in Work Projects
- F. Special Studies of Resource Use at Job Corps Centers
- G. The Experiment with Payments to Survey Respondents

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Charles Mallar  
Project Director

## EXECUTIVE SUMMARY

### FIRST FOLLOW-UP REPORT OF THE EVALUATION OF THE ECONOMIC IMPACT OF THE JOB CORPS PROGRAM

This report presents the first postprogram findings of a study designed to provide the Department of Labor with a comprehensive evaluation of the short-term economic impact of the Job Corps program. The information provided herein is based on the most detailed data yet available to conduct a study of Corpsmembers. Detailed interviews were first conducted in the spring of 1977 with a sample of Corpsmembers then participating in the program and with a comparable group of disadvantaged youths who had not been enrolled in Job Corps. Nine months later, reinterviews were conducted with all the youths in the comparison group and with Corpsmembers who had been out of the program for over five months. The follow-up survey obtained detailed information on the work histories and related activities of over 3,700 youths. This report presents the first empirical analyses of Job Corps from those data.

The most important findings from this report are as follows:

1. During the first two months after they left Job Corps, many Corpsmembers experienced temporarily low employment and earnings as they re-entered the regular labor market. After the first two months out of Job Corps, however, the positive economic impacts began to predominate, especially for program completers. For the week prior to the follow-up survey (an average of seven months after Corpsmembers terminated), the estimated gains in earnings for civilians who had completed the Job Corps program were \$23.24 for males and \$22.52 for females without children. Essentially zero effects were observed for the small number of women who had children living with them.
2. The impact on employment and earnings for youths who did not complete the program (partial completers and early dropouts) are far less certain (small, sometimes negative, and most often statistically insignificant). However, these former Corpsmembers also experienced declines in employment and earnings during the first two months after leaving the program.
3. Program completers also showed positive benefits in the form of increased investments in human capital (more high school diplomas or equivalent degrees, higher attendance in college, more training, increased military service, and greater job mobility); reduced welfare and other transfer dependence (fewer receipts of AFDC, General Assistance, Food Stamps, public housing, Unemployment Insurance, and Workers' Compensation); and reduced antisocial behavior (less abuse of drugs and alcohol and substantially fewer arrests). While not all of these individual effects are statistically significant, several are, and the pattern seems clear for program completers. These other economic impacts are also more questionable for youths who do not complete the program, except for the reductions in arrests for males, which amount to over eight fewer arrests for every 100 Corpsmembers.

4. The first detailed benefit-cost estimates are very favorable for Job Corps. From each of the three perspectives studied--Corpsmembers, non-Corpsmembers (everyone who does not enroll in Job Corps), and society (the sum of Corpsmembers and non-Corpsmembers)--the value of the program benefits is estimated to be greater than the corresponding costs. The findings from the social perspective suggest that public investment in Job Corps is efficient. Our benchmark estimate is that the present value of benefits exceeds costs by \$251 per Corpsmember, or by approximately 5 percent of costs. Because over 40,000 Corpsmembers enrolled in Job Corps during the base year for the evaluation (fiscal year 1977), our benchmark estimate of the total social benefit exceeds \$10 million for that year.
5. We estimate that nearly 50 percent of the social benefits are generated by a reduction in criminal activity among Corpsmembers--particularly burglary and larceny. These benefits from reduced criminal activities include reductions in personal injury, property damage, stolen property, and criminal justice system costs. Another 40 percent of the social benefits are attributed to an increase in the value of the output Corpsmembers produce both while they are in the Job Corps program and after they leave. The social costs consist primarily of the resources used to operate and administer the program.
6. Approximately 40 percent of the benefits to Corpsmembers are accounted for by their increased earnings. The other benefits are primarily the transfers they receive while they are in Job Corps. The largest cost borne by Corpsmembers is the reduction in their transfer income, although the opportunity cost of the time they spend in Job Corps and the reduction in their theft income are also significant costs to them. Non-Corpsmembers receive substantial benefits from the reductions in Corpsmembers' criminal activity and their reduced use of transfer programs. The non-Corpsmember costs are primarily from the operation and administration of the Job Corps program. Of these program expenditures, over 25 percent are for transfers for Corpsmembers.
7. The estimation of the present value of benefits and costs required numerous assumptions and approximations. In particular, because this analysis is based on interview data that covered, on average, only seven postprogram months, we have had to make some speculative assumptions about the rate at which the Job Corps effects fade out over time. We assumed that all effects fade out at approximately 14 percent a year. Another important assumption that was used to obtain the benchmark benefit-cost estimates was that the appropriate discount rate for converting the values of future benefits into current dollars was 5 percent. Assumptions of lower (higher) fade-out and discount rates will make the program appear more (less) attractive. As long as the sum of the fade-out and discount rates is less than 20 percent, we estimate that Job Corps is an efficient social investment.

8. As in the baseline survey, Corpsmembers reported a high level of satisfaction with the overall program seven months after leaving Job Corps. Seventy-seven percent of the Corpsmembers in our sample expressed satisfaction with the overall program at the first follow-up interview. Hispanic youths and Corpsmembers from Job Corps centers operated by public agencies expressed the greatest satisfaction with Job Corps, while American Indian youths and Corpsmembers from centers operated by private firms expressed the lowest satisfaction with the program.
  
9. The in-program services in particular were highly rated by Corpsmembers, who reported that they liked the training and educational components of the program, and that the training and work experience they received in Job Corps helped them obtain jobs after they left the program. However, Corpsmembers' ratings of postprogram placement services were less favorable than for in-program services. Furthermore, 59 percent reported that they had no contact with any Job Corps-related placement agency for the first seven months, on average, after they left Job Corps, and 78 percent said that they could have used more assistance in finding a job.

This report presents detailed discussions of each of these findings. Chapter I introduces the evaluation. Chapters II, III, and IV provide background to the actual evaluation: Chapter II gives an overview of the current Job Corps program; Chapter III provides an overview of the evaluation design; and Chapter IV examines the alternative econometric approaches used to estimate the economic impacts of Job Corps. The actual evaluation is presented in Chapters V through VII: Chapter V measures the economic impacts or benefits of Job Corps on program participants; Chapter VI compares the value of Job Corps' benefits with its costs; and Chapter VII evaluates Corpsmembers' satisfaction both with the overall program and with specific program services. The report closes with some concluding remarks in Chapter VIII.

## I. INTRODUCTION

The Job Corps is a critically important element in combatting the employment problems of disadvantaged youth. The program provides comprehensive services including vocational skills training, basic education, health care and residential support for young people who are poor, out of school and out of work. Its aim is to break the cycle of poverty permanently by improving life-time earnings prospects.<sup>1/</sup>

This is the first follow-up report of a study designed to provide the Employment and Training Administration of the U.S. Department of Labor with a comprehensive evaluation of the short-term economic impact of the Job Corps program. The study consists of three major evaluation components. The first is an estimation of the short-term economic impacts of Job Corps on program participants. The second is a comparative assessment of whether the beneficial impacts of Job Corps--for Corpsmembers, for other members of society, and for society as a whole--outweigh the costs of the program (for each of the groups). The third and final component is an analysis of Corpsmembers' perceptions of and satisfaction with both the overall Job Corps program and specific program services.

The information on which this study is based is drawn primarily from two surveys that collected relevant data from Corpsmembers and from a sample of youths who did not participate in the program but who are similar to Corpsmembers in other respects--the comparison sample. The first survey (the baseline interview) was administered during April through

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<sup>1/</sup>This is the opening paragraph of "The Expansion and Enrichment of the Job Corps: A Report by the Office of Youth Programs of the Department of Labor." In Youth Initiatives, U.S. Department of Labor, Employment and Training Administration, Office of Youth Programs, March 1978.

June 1977 to a cross-section of Corpsmembers residing at centers and to the comparison sample. The second survey (the follow-up interview) was administered approximately nine months later to the same comparison sample and to youths in the Job Corps sample who had been out of the program for at least five months. Questions asked in the two surveys were designed to collect detailed information on the following topics:

- General demographic characteristics
- Socioeconomic background
- Employment and income
- Education and training
- Antisocial behavior
- Corpsmembers' ratings of the program

In addition, information was obtained on where respondents could be reached for future interviews.

#### A. OUTLINE OF THE REPORT

The next three chapters provide a background for the actual evaluation. Chapter II gives an overview of the current Job Corps program, including descriptions of the institutional setting, the individuals who are served by the program, the types of services provided at centers, the size of the program, and the changes that are currently underway. Chapter II focuses particularly on the goal of Job Corps to increase the employability of youths who enter the program with severe employment problems, the comprehensive and individualized services provided at centers, and the recent efforts to expand and enrich the Job Corps program.

Chapter III contains an overview of the evaluation design. The first section of the chapter specifies the policy and research issues that underlie the evaluation. These are discussed in the context of the three main analytical components--impacts on participants, benefit-cost comparisons, and participant opinions about the strengths and weaknesses of the program. The second section describes the evaluation design that was chosen to meet the policy and research objectives. The key to this design was to select a comparison sample that, in lieu of random assignment, permitted valid statistical comparisons to be made with the Job Corps sample. The sample selection and data collection methodologies are also summarized in Chapter III.

Chapter IV examines the alternative econometric approaches that can be used to estimate the economic impacts of Job Corps. The alternative approaches involve both different levels of disaggregation and varying degrees of control for pre-existing differences between the Job Corps and comparison-group samples. This first section of Chapter IV discusses the tradeoffs among different levels of control for pre-existing differences (from simple differences in sample means to complex regression adjustments) and justifies the empirical techniques used for analysis in later chapters. The second section of Chapter IV discusses the alternatives we considered for disaggregations (by Corpsmember characteristics, by time periods, and by program completion status) and justifies the disaggregations actually used in the report.

Chapter V contains the first analytical component of the main evaluation effort--the economic impact of Job Corps on participants. Each of the sections in Chapter V discusses the findings for the program's impact on specific types of postprogram activities, which are as follows:

labor-market activities (e.g., labor-force participation, employment, hours of work, and earnings); investments in human capital (e.g., education, training, work experience, health, mobility, and military service); welfare dependence (e.g., cash welfare, Food Stamps, public housing, Unemployment Insurance, and Workers' Compensation); and anti-social behavior (e.g., drug or alcohol abuse, and criminal activities). While the impacts on these postprogram activities are measured along several dimensions in the chapter, we concentrate primarily on the impact of the overall program, and on the separate impacts for program completers, partial completers, and early dropouts from the program.

The comparative evaluation of Job Corps benefits and costs (the second main component of the evaluation effort) is summarized in Chapter VI. This chapter combines the estimates of postprogram impacts from Chapter V with data on prices to estimate values for in-program, immediate postprogram, and future benefits. A large portion of the chapter is devoted to the methods used to place values on the benefits that are not already measured in current dollar amounts. Program costs are then estimated with the aid of financial data from the Job Corps Financial Reporting System, from individual center staff, and from the U.S. Office of Management and Budget. Benchmark estimates of the program's net present value (i.e. the current worth of all benefits minus the current worth of all costs) are then made from three perspectives--Corpsmember, non-Corpsmember (i.e., all others in society), and society as a whole (i.e., the sum of the first two). We then examine the sensitivity of benchmark estimates to changes in some of the most speculative underlying assumptions.

The final main component of the evaluation effort (Corpsmembers' opinions about the strengths and weaknesses of the program) is presented

in Chapter VII. This chapter examines three topics that indicate the benefits that Corpsmembers perceive to accrue from the program and that affect the postprogram economic impacts. The first is the Corpsmembers' ratings of the overall program and their assessment of specific in-program services. These ratings are analyzed for important subgroups, as well as for the overall Job Corps sample. The second topic examined in Chapter VII is the determinants of both the length of stay in the program and the probability of completing the program. (Program completion is also studied in Chapter V of the report as an important intervening variable in explaining the postprogram impacts of Job Corps.) The final topic is Corpsmembers' evaluation of the postprogram services provided by Job Corps--principally, job-placement assistance.

The report closes with some concluding remarks in Chapter VIII. Seven technical reports documenting specific topics in the report in more detail are also provided as appendices.

#### B. SOME CAUTIONARY NOTES

A number of interesting and important findings are presented in this report. However, some of our findings are necessarily tentative at this point in the evaluation (e.g., the net present value for Job Corps in the benefit-cost analysis), and additional follow-up surveys of the Job Corps and comparison samples will be needed to generate data that will achieve our objective of a comprehensive and more precise evaluation.

The next follow-up survey is scheduled for February and March 1979. This survey will include a larger sample of Corpsmembers than the first follow-up (many more of the Corpsmembers who were interviewed at baseline will be out of the program a long enough time to ensure productive

interviews), and, on average, Corpsmembers in our sample will have longer postprogram experiences (five to twenty-two months, with an average of approximately fifteen months). The data from the second follow-up survey will help us to (1) obtain more precise estimates of the impacts of Job Corps on participants; (2) analyze more fully the causality of these impacts (e.g., which program services are effective) and the relationships among them (e.g., between employment and criminal activities); (3) provide the first reliable information on the controversial issue of the duration of Job Corps benefits; (4) make more complete comparisons with other reference-group programs; and (5) provide better estimates of what the impact of Job Corps would have been in the absence of alternative training programs (in this report we are limited to comparisons to the usual amount of alternative program treatments, rather than to a zero treatment comparison).

Finally, care must be exercised in extrapolating the findings beyond the program and context in which they are studied. For instance, our evaluation is most directly applicable to the Job Corps program in fiscal year 1977. Since that time, there have been changes both in the program (e.g., the general expansion with proportionately more slots--i.e., positions--for women and contract centers) and in the social context of the program (e.g., changing economic conditions and the implementation of many new youth programs developed by the Department of Labor). When extrapolating specific findings, therefore, one must pay careful attention to these changes in the program and its context.

## II. THE JOB CORPS PROGRAM IN 1977<sup>1/</sup>

Job Corps is a major public program that attempts to alleviate the severe employment problems faced by disadvantaged youths in the United States-- especially those who live in poverty areas.<sup>2/</sup> Youth employment problems, while always a serious concern, have recently become more severe because of increases in the teenage population and the persistent downturn in our economy. Currently, four out of every ten black youths (i.e., between the ages of 16 and 21) in the labor market are unemployed. Moreover, recent surveys have shown that in the poverty areas of central cities, fewer than two out of every ten black youths have jobs.

Job Corps' approach is to provide a comprehensive range of services that include "vocational skills training, basic education, health care, and residential support for young people who are poor, out of school and out of work. Its aim is to break the cycle of poverty permanently by improving lifetime earnings prospects."<sup>3/</sup> Job Corps is designed to serve youths who

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<sup>1/</sup>This chapter draws very heavily from three documents prepared recently by the national Job Corps staff: (1) "Job Corps in Brief, FY-77," 1978; (2) "A Planning Charter for the Job Corps," 1978; and (3) "The Expansion and Enrichment of the Job Corps," 1978. The interested reader should refer to these papers for further details. Also, Levitan and Johnson (1975) have summarized the first ten years (1964-74) of Job Corps operations (see Sar A. Levitan and Benjamin H. Johnson, The Job Corps: A Social Experiment That Works, Baltimore: The Johns Hopkins University Press, 1975).

<sup>2/</sup>The term disadvantaged is used throughout this report to refer to the set of youths who have employability problems caused by their socioeconomic background. Thus, it embodies several factors related to age, educational level, income status, race-ethnicity, employment history, previous social behavior, etc., that limit the ability of young men and women to obtain and hold jobs.

<sup>3/</sup>"The Expansion and Enrichment of the Job Corps," U.S. Department of Labor, Employment and Training Administration, 1978, p. 1.

currently live in such debilitating environments that they must be relocated to residential centers to benefit from basic education, vocational training, and ancillary services.<sup>1/</sup> Education and training in a supportive environment are the key elements in the Job Corps' effort to improve the employability of disadvantaged youths, which, in turn, will help them become more productive and responsible citizens.

#### A. INSTITUTIONAL SETTING

The Job Corps program was originally established by the Economic Opportunity Act of 1964. Control of the program was later transferred (1969) from the Office of Economic Opportunity to the Department of Labor (DOL), and Job Corps was eventually incorporated without changes as Title IV of the Comprehensive Employment and Training Act (CETA) of 1973. While there has been a general decentralization and decategorization of the other employment and training programs under CETA, Job Corps is still administered primarily at the federal level. Its incorporation into CETA, however, has resulted in the transfer of direct responsibility for program operations and center contracting to DOL's regional employment and training offices.

There are two basic types of Job Corps centers: those operated by private contractors selected in a competitive bidding process that is conducted by the regional offices, and those located on public lands

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<sup>1/</sup> Some of the Job Corps centers in urban locations added a few non-residential slots (i.e., positions) in the 1970s. However, the nonresidential components of Job Corps were not included in our evaluation and, hence, will not be considered in this report. The nonresidential components were excluded because we decided that it would be more productive to allocate the limited funds available for this project to the residential slots, in that they include approximately 95 percent of all Corpsmembers (see Chapter III for more details).

(predominantly in national parks and forests) and operated by the Department of Agriculture and the Department of the Interior. The former centers are usually referred to as "contract centers," and the latter as "civilian conservation centers" (CCCs). In fiscal year 1977, there were sixty-one centers in operation, located in thirty-two states and Puerto Rico: twenty-seven CCCs; two CCC-type centers operated by the Commonwealth of Puerto Rico; thirty centers operated under contracts with private business firms, nonprofit organizations, and state and local government agencies; and two extension centers for advanced vocational training operated by unions.<sup>1/</sup> Two contract centers had just opened during the year (a new center in Mississippi and a relocated center in New York).<sup>2/</sup>

Recruitment and placement activities are carried out under contracts with employment service offices, various unions, local schools, volunteer agencies such as Women in Community Service, Inc. (WICS) and Joint Action in Community Service, Inc. (JACS), and special private agencies,<sup>3/</sup> in addition to the efforts of individual centers and the regional offices. These

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<sup>1/</sup> One extension center is operated by the Brotherhood of Railway, Airline and Steamship Clerks (BRAC) of the AFL/CIO; the other is operated by Stewards Training and Recreation, Inc., of the Marine Cooks and Stewards Union of the AFL/CIO. In addition, several unions (particularly in construction trades) have contracts to provide training at the other centers (at all CCCs and some of the contract centers).

<sup>2/</sup> Other centers have since opened and more centers are scheduled to open in the near future to enable Job Corps to achieve its expansion goal of doubling the number of slots compared to fiscal year 1976 (see Section E below). The focus of the MPR evaluation of Job Corps and this report is on all centers operating in the continental United States. Chapter III and Technical Reports A and B present more detailed discussions of the sample used in this evaluation.

<sup>3/</sup> Private contracting agencies such as the separate GATE-house (Graduate Aid to Employment for Ex-Corpsmembers) contractors were operating in six large metropolitan areas (Atlanta, Baltimore, Los Angeles, New York, Philadelphia, and Washington, D.C.) where many ex-Corpsmembers reside after they leave the centers.

groups (especially the volunteer agencies and special private agencies) often provide other support services to youths who have recently left Job Corps, to facilitate their transition from center living to a job and regular living arrangements.

#### B. YOUTHS IN JOB CORPS<sup>1/</sup>

Data gathered as part of this evaluation show that the youths served by Job Corps are severely disadvantaged. Prior to enrolling in the program, the Corpsmembers have relatively low levels of educational attainment and employment. In addition, they have relatively high incidences of welfare dependence and brushes with the law. The combined effect of these characteristics limits the ability of these young people to obtain and hold productive jobs.

A review of the socioeconomic characteristics of youths in Job Corps during the spring of 1977 shows that:

- Approximately one-half the Corpsmembers are under age 18 at the time they enroll, and nearly one-quarter are 16 (the statutory age limits are 14 to 21, but, currently, very few youths under age 16 are admitted).
- Approximately 70 percent of the Corpsmembers are male (however, efforts are currently being made to increase female participation to 50 percent of the total enrollment).
- Over 75 percent come from minority backgrounds--59 percent black, 11 percent Hispanic, 5 percent American Indian, and less than 1 percent Asian or Pacific Islander.

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<sup>1/</sup>For a more detailed description of Job Corps participants, see "An Examination of Job Corps Participation," special report of the Evaluation of the Economic Impact of the Job Corps Program on Participants, Mathematica Policy Research, June 1978.

- Between 85 and 90 percent of the Corpsmembers have not completed high school at the time they enroll.
- Almost all Corpsmembers have experienced difficulties in obtaining and holding jobs; moreover, when they do find work, the jobs usually do not pay well. Over one-third of the enrollees have never had a job at which they worked at least twenty hours per week and which lasted for at least one month. In the six months before enrolling in Job Corps, the typical Corpsmember is employed less than one-third of the time and averages fewer than 12.5 hours of work per week at a wage rate (\$2.81) that is slightly above the federal minimum.
- Almost all Corpsmembers have experienced poverty, welfare dependence, or both; in the six months before enrolling in Job Corps, over 90 percent either had incomes that were below the poverty line or were receiving welfare assistance.
- While many (28 percent) have attempted to enlist in the military service, most of them fail to qualify (85 percent of those who attempt).
- Many Corpsmembers have had a brush with the law--at least 38 percent had been arrested at some time before enrolling, and 19 percent had been convicted (about one-half of those Corpsmembers who had been arrested).

#### C. TYPES OF SERVICES PROVIDED AT CENTERS

To help Corpsmembers overcome the problems highlighted above, Job Corps attempts to provide a comprehensive program that is flexible enough to meet the individual needs and problems of these disadvantaged youths. The components of the Job Corps program include remedial education, high school equivalency classes, vocational training, health care and education, residential living, and counseling and other ancillary services, each of which is incorporated into a unified framework tailored to meet the individual needs of each youth.

##### 1. Education

The Job Corps' education program has evolved with the intent of being flexible enough to meet the varied deficiencies in the backgrounds of Corpsmembers and to enable them to proceed at the maximum pace commensurate

with their abilities. The education program includes remedial education (emphasizing reading and mathematics), World of Work (including consumer education, driver education, home and family living, health education, and programs designed for people whose primary language is not English), and General Educational Development (GED) for Corpsmembers who are academically qualified. The GED certificate is recognized by state educational agencies as the equivalent of a high school diploma. The Job Corps encourages and emphasizes the GED program "for those who are academically qualified. In fiscal year 1977, over 4,000 enrollees were awarded the General Education Development Certificate."<sup>1/</sup>

## 2. Vocational Skills Training

Like the education program, the training program at Job Corps centers is designed to meet individual needs and problems and to enable Corpsmembers to advance at the maximum pace commensurate with their abilities. Therefore, all the training programs provide for an open entrance and exit capability and are continually being reviewed and revised in order to keep up with the changing needs of Corpsmembers, as well as with the changing labor market.

There are some notable differences between vocational training programs at CCCs and those at contract centers. The training programs at CCCs are often operated by unions and tend to be of a "hands-on" work-project nature, with actual construction and production taking place.<sup>2/</sup> In contrast, the training programs at contract centers are more often operated by the centers themselves or by individual private subcontractors, and the training tends to be of a classroom-instruction, shop-type, or "mock-up" nature, with

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<sup>1/</sup> Job Corps in Brief, F-77, p. 3.

<sup>2/</sup> Most of the union instructors use curricula approved for the first two years of the union's apprenticeship program.

some work-experience positions available upon the successful completion of the training.

### 3. Health Care and Education

Comprehensive health services are provided to all enrollees, including medical examinations (with follow-up treatments, if necessary), immunization, dental examinations (for all Corpsmembers who stay at least ninety days) and dental treatment, professional help for emotional and other mental-health problems, and instruction in basic hygiene, preventive medicine, and self-care. Health education is also given high priority in Job Corps, with the aim of preparing Corpsmembers "to make responsible decisions regarding health and health-related matters by providing them with relevant, factual information."<sup>1/</sup>

### 4. Residential Living

Residential living is a key component of the Job Corps program and distinguishes it from most other public employment and training programs. The concept behind residential living is that the target population comes from such debilitating environments that they need a new and more supportive environment to derive the intended benefits of the vocational training and education courses. The residential-living program (including meals, health services, dormitory life, entertainment, sports and recreation, center government, center maintenance, and other related activities) is "planned to help new Corpsmembers adapt to center life, motivate and support constructive attitudes and lifestyles, and prepare them to function effectively in the outside world. . . . It involves such complex areas as

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<sup>1/</sup>Job Corps in Brief, FY-77, p. 3.

relationships among racial and ethnic groups, motivation of alienated or discouraged young people, adaptation to unfamiliar group living situations, adult-youth cooperation in an institutional setting, and the role of peer groups in influencing conduct and attitudes. <sup>1/</sup>

#### 5. Counseling and Other Ancillary Services

The centers provide counseling services and residential advisors both to help Corpsmembers plan their educational and vocational curricula and to help motivate Corpsmembers and create a supportive environment. Some of the other support services provided by Job Corps (for example, during recruitment, placement, and the transition to regular life and jobs) were discussed above.

#### D. SIZE OF JOB CORPS

At the start of fiscal year 1970 the Job Corps program was cut back drastically in terms of both financial expenditures and the number of youths served. From then until fiscal year 1977 the budget was held roughly constant in nominal amounts, and the number of youths served stabilized at approximately 21,000 to 22,000 slots (i.e., positions) and 45,000 new enrollees annually. However, over the same time period, inflation greatly eroded the real purchasing power of the budget (held fixed in nominal amounts), and capital equipment was allowed to deteriorate in order to serve the same number of youths within the more restrictive budget.

With the decision in fiscal year 1977 to renovate and expand Job Corps (see the next section), the budget and number of slots in the program were increased. In fiscal year 1977 the budget rose 58 percent in nominal terms, to \$274 million, while the applied funding increased by 23 percent, to \$231 million. The additional expenditures were allocated to the planning

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<sup>1/</sup>Job Corps in Brief, FY-77, pp. 4 and 5.

of expansion, actual expansion, improvements in services, staffing increases, and the repair and replacement of capital equipment that had been allowed to deteriorate during the previous seven years. Similarly, the number of slots in the program rose 7 percent in fiscal year 1977, to 22,225 slots, with the addition of one new center and a small amount of expansion at some existing centers. However, the average length of stay in Job Corps and the proportion of program completers increased during fiscal year 1977 (possibly a result of the improved conditions from additional resources), so that the turnover rate fell, causing the total number of youths enrolled to decline slightly.

#### E. CURRENT TRENDS

The most recent trends in Job Corps are dominated by plans to expand the program. Job Corps began increasing its capacity in fiscal year 1977 in response to a congressional mandate to double the size of the program--from its fiscal year 1977 level of 22,000 slots to 44,000 slots by the end of fiscal year 1978. The national Job Corps staff expects to reach the full capacity enrollment of 44,000 by the middle of fiscal year 1979.

In deciding how best to provide the additional program slots, the program has taken several factors into account. First, positions are being allocated across the country according to the relative needs of the various regions (need is determined from recent data on the incidence of poverty and unemployment among youths). Second, the new slots will be allocated among the two current types of centers, as well as among other new types. The contract centers will receive the bulk of the new slots; the CCCs will receive only about 5 percent of the new growth.

Another 5 percent of the new slots will be devoted to industry work-experience programs, and approximately 15 percent of the new slots will be in the Advanced Career Training program, which allows qualified Corpsmembers to attend junior college or technical school. (For the most part, Corpsmembers in these programs will be assigned, at least for administrative purposes, to a regular contract center or CCC.)

In addition, in conjunction with the general expansion of Job Corps, innovative approaches are being initiated in at least five areas: center improvements; targeting recruitment and more services to groups that have previously been underrepresented in Job Corps; developing new vocational training and education programs; coordinating activities and improving linkages with other programs that can benefit youths; and additional monitoring and evaluative research to improve the program.

#### 1. Center Improvements

As mentioned above, the physical plants at centers had been deteriorating in past years with the restrictive budgets for Job Corps. In fiscal years 1977 and 1978, one-time renovations totaling \$39 million were authorized and completed to bring all centers up to OSHA standards and, generally, to upgrade and modernize center facilities. The national office has also increased the modest resources available for enriching the entertainment, recreational, and avocational programs for Corpsmembers.

#### 2. Special Target Groups

Additional efforts are being undertaken to encourage the enrollment and serve the needs of particular groups that have been previously underrepresented in Job Corps. These special target groups include women, Hispanic and American Indian youths, handicapped individuals, and

ex-offenders. Job Corps has the explicit goal of increasing the participation of young women to 50 percent of the total enrollment in the next two years. The staff plans to achieve this goal by (1) converting previously all-male centers to coeducational status, (2) proportionately increasing the number of female slots at new centers, (3) finding new ways to accommodate young women who are economically disadvantaged and have dependent children,<sup>1/</sup> and (4) redoubling the efforts of WICS and other recruitment agencies to find eligible females.

Job Corps has targeted two other groups of current enrollees for additional representation and to provide them with more comprehensive services--Hispanic and American Indian youths. Job Corps is planning innovative programs for Hispanic youths, such as (1) an education program in which they first learn to read and write at a high enough level in Spanish to be able to benefit from a bilingual program before being introduced to a bilingual program, and (2) a national Spanish-speaking demonstration center both to develop and test the effectiveness of Job Corps techniques used for Hispanic youths and to serve as a model for other bilingual programs. In order to better serve American Indians,

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<sup>1/</sup>One demonstration project has been undertaken at the Atlanta center, in which residential accommodations and child care have been provided for the dependent children of female (solo-parent) Corpsmembers. The results of the program have generally been favorable in terms of in-program outcomes (longer stays, higher completion rates, fewer disciplinary problems, and better morale); however, more evaluative research is needed to determine if the benefits outweigh the added costs. Another demonstration project, in cooperation with WIN, is currently underway at two centers, Atlanta and Cleveland, in which WIN mothers (solo-parents) who meet Job Corps eligibility criteria are being enrolled in nonresidential programs and their children provided with day-care services. Two additional models for enrolling solo-parents are also being planned for Job Corps.

Job Corps is planning to open additional centers operated and/or sponsored by Tribal Councils of American Indians.<sup>1/</sup>

Under the current admissions criteria, handicapped youths and youths who are ex-offenders are sometimes ineligible for Job Corps because the present Job Corps structure cannot always accommodate their special needs. However, Job Corps plans to relax eligibility criteria somewhat within the context of some innovative approaches for handicapped youths and young offenders. In addition to developing suitable facilities for handicapped youths in existing centers and programs, Job Corps is considering building special centers and creating new programs for the handicapped (for both the physically and mentally handicapped). Many of the current Corpsmembers are ex-offenders prior to enrollment;<sup>2/</sup> however, they currently receive no special treatment in any formalized way. In order to develop a program that helps ex-offenders receive the maximum benefits from Job Corps, a special center is now being planned for this target group in the state of Vermont. It is envisioned that this Job Corps center for ex-offenders will provide a formal strategy for the community treatment of eligible ex-offenders within Vermont's correctional system.

### 3. Innovative Programs for Education and Vocational Training

In addition to the projects for special target groups discussed above, Job Corps is planning (1) more slots at junior colleges and

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<sup>1/</sup> These centers would be similar to the Kicking Horse center, which is operated under a contract with the Tribal Council of the Confederated Salish and Kootenai Tribes of the Flathead Indian Reservation.

<sup>2/</sup> See "An Examination of Job Corps Participation," Mathematica Policy Research, June 1978.

technical schools to develop advanced career training; (2) a military training component to educational services, aimed directly at preparing Corpsmembers (especially those who have previously been rejected for military service) to qualify for entrance into the military service; (3) the expansion of current work-experience programs in terms of creating both more slots and possibly a few small centers to be associated with large firms or industries located near those centers; (4) to develop new areas for occupational training, especially in growth industries; and (5) to have demonstration centers operated by community-based organizations, CETA prime sponsors, and labor unions, to assess the effectiveness of these operators relative to other operators of centers.

#### 4. Coordinating Activities with Other Agencies

As mentioned above, program linkages are currently being strengthened with other agencies that deal with the employment and social problems of youths. The programs most prominently considered include WIN, the military service, community-based organizations, CETA prime sponsors, and labor unions. Job Corps also has plans for utilizing each of these groups and the recently formed Job Corps Alumni Association (JCAA) for the additional recruitment needed to complete the expansion.

### III. OVERVIEW OF EVALUATION DESIGN

The Job Corps program has survived over a dozen years of changing attitudes toward social problems and has emerged as the cornerstone of the current effort to train and employ disadvantaged youths. However, surprisingly little is known about the magnitude of most of its economic impacts.<sup>1/</sup> Of immediate concern are the following: Does the program provide economic benefits to participants and society? What are the magnitudes of the benefits? Do some Corpsmembers benefit more than others? Do some variants of the program work better than others? Does the total dollar value of benefits outweigh the costs?

In order to design an evaluation to answer the above questions, we constructed a detailed list of policy and research issues from the hypothesized effects of Job Corps. (These issues are described in the next section of this chapter.) We then used the policy and research issues as a guide to develop an evaluation design. (Our design is summarized in the second section of this chapter.)

#### A. POLICY AND RESEARCH ISSUES

The objective of our evaluation is to provide the Department of Labor with a comprehensive assessment of the short-term economic

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<sup>1/</sup> Aside from program data, only the survey conducted by Louis Harris and Associates between 1966 and 1969 has provided economic data on a reasonable-size sample of former Corpsmembers (i.e., with reasonable statistical precision). For a comparison group, however, both program data and the Harris (1969) survey are limited to either early dropouts or "no shows" (i.e., youths who signed up for Job Corps and were admitted but never attended). Furthermore, the Harris data are obviously outdated given the subsequent changes in both Job Corps and youth labor markets. (See Louis Harris and Associates, A Survey of Ex-Job Corpsmen, New York: Harris Associates. April 1969.)

impact of the Job Corps program. To meet this objective, we must focus on concrete policy and research issues. The issues addressed are as follows:

1. The extent to which the Job Corps program provides early economic benefits to its participants in terms of gains in employment, earnings, and other related measures of economic well-being
2. The extent to which participation in Job Corps influences subsequent decisions to enter school, training or work-experience programs, or the military service
3. The extent to which the Job Corps program affects participants' receipt of transfer payments
4. The extent to which participation in Job Corps reduces various forms of antisocial behavior, particularly criminal activities and drug abuse
5. The effects of the program by type of participant (age, race, sex, prior educational level), by duration of participation in the program, and by type of center (size, location, operator)
6. The extent to which program benefits (both during and after program participation) outweigh program costs
7. The satisfaction of Job Corps participants with their program experience, and their assessment of the strengths and weaknesses of the program

The first five items on this research agenda show the range of potential benefits to participants. The magnitudes of economic impact will be measured by comparing the postprogram behavior and economic status of Corpsmembers with what they would have been had the youths not participated in Job Corps. Item 6 requires valuing program benefits and comparing them to the costs. This benefit-cost comparison (or set of comparisons, as we describe in Chapter VI) is achieved by aggregating estimates of the dollar values of postprogram benefits with similar measures of in-program benefits, and comparing the total dollar value

of program benefits to the total dollar value of program costs. Thus, the benefit-cost research builds upon the impact analysis by assigning dollar values to the program benefits.<sup>1/</sup> Item 7 on the research agenda focuses on Corpsmembers' perceptions of the program impacts, as well as on their own assessments of their program experiences.

Each of these topics--participant benefits, benefit-cost comparisons, and participant opinions--has special implications for the evaluation design. Therefore, as an introduction to the evaluation design, we will provide a more detailed description of each topic.

### 1. Analysis of Participants' Benefits

The theory of economic choice underlies many studies of employment and training programs. This theory suggests that individuals choose among competing demands on their time according to the wage rates they can receive, other prices, and sources of nonemployment income that are available. A person's wage rate is hypothesized to depend on his or her productivity, which increases with education and vocational training. By providing education and vocational training, Job Corps should increase participants' productivity, wage rates, and economic motivation to work.<sup>2/</sup> However, labor-market impediments such as the minimum wage may cause an

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<sup>1/</sup>A benefit-cost analysis has the advantage of providing a summary measure that can be used to judge the worth of the program. In addition to providing inputs into the benefit-cost calculations, however, the impact analysis shows program effects that cannot readily be valued in dollar amounts, and allows readers to make their own judgments about the value of various program benefits.

<sup>2/</sup>The effect of an increase in wage rates on economic motivation to work is not completely unambiguous, because higher wages may afford some individuals the opportunity to spend more time in activities other than work. However, most studies of youth labor supply have found work effort to be positively associated with wage rates.

excess supply of labor in the markets for disadvantaged youths, so that another effect of Job Corps might be to increase the employability of Corpsmembers (because they have increased productivity) without affecting their short-term wage rate.

The effects of Job Corps on several important postprogram activities are studied in Chapter V. These activities can be categorized into four broad areas. The first includes labor-market activities, such as labor-force status, employment, hours worked, wage rates, and earnings. Improvement in this area is considered the primary objective of Job Corps. The second area includes additional training and education. Improvement in this area is an important short-term objective because it is expected to increase employment and earnings in the long-run. The third area is welfare dependence, and the final area is antisocial behavior. The anticipated changes in these last two areas are related to the changes in employment and earnings (and in training and educational activities). As better opportunities arise in the labor market (and scholastically), we expect a decline in welfare dependence and antisocial behavior. The hypothesized effects of Job Corps in each of the four areas are discussed briefly below.

Labor Market Activities. The primary hypothesis is that, other things being equal, young adults who obtain Job Corps training will become more productive and, hence, will receive more employment, higher wage rates, and higher earnings than those who do not.<sup>1/</sup> The increased

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<sup>1/</sup>Each of the hypotheses developed in this section is based on the difference between the postprogram behavior of Corpsmembers and what their behavior would have been in the absence of any Job Corps treatment. For ease of presentation, the discussion sometimes assumes that there are no underlying differences between the Corpsmember and comparison groups, so that the impacts of Job Corps can be characterized by direct contrasts

productivity is expected to lead to improved employability (as measured by increases in labor-force participation, employment, hours worked per week, and the proportion of weeks worked), as well as to higher wage rates and higher earnings. This hypothesis is based on previous research on the effects of training and education on labor-market activities. In addition to the short-term impacts after leaving Job Corps, there may be subsequent reinforcing effects. For example, regular employment often provides on-the-job training and a record of worker reliability that is, in turn, rewarded with even higher wage rates and earnings in the future. In contrast, the impacts of Job Corps could fade out over time as the influence of the program becomes less significant the farther removed former Corpsmembers are from the program in time.

Investments in Human Capital. Economists define "investments in human capital" as any activities in the current time period that cause increases in future earnings potential. In this evaluation we will consider five types of investments in human capital: (1) training and work experience, (2) education, (3) mobility, (4) health, and (5) military service.

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between the behavior of Corpsmembers and that of comparison-group members. Of course, the statistical techniques used (see Chapter IV) will attempt to compensate for any underlying differences between the Corpsmember and comparison groups. In addition, all the hypotheses discussed herein are weakened when allowances are made for the alternative training and education programs available to youths. In the empirical sections of this report we measure Job Corps' impacts relative to what Corpsmembers' activities would have been had they not participated in Job Corps. In the absence of Job Corps, many Corpsmembers would not have obtained zero treatment but, instead, would have received some amount of alternative training and education that they now forego in favor of participating in Job Corps.

Training, work-experience, and education programs are important placement alternatives to employment for Job Corps terminees, especially for younger Corpsmembers. Most of the younger terminees could still profit from additional training, work experience, and schooling after they leave Job Corps, and, moreover, job placements are often difficult for them to obtain. Therefore, both the impact and benefit-cost analyses must take account of any postprogram increases in such investments in human capital. While increased employment and higher earnings continue to be the long-run goals of both the program and participant, the training, work-experience, and education programs are important short-term, intervening factors that may lead to higher employment and earnings in the future.

We hypothesize that former Corpsmembers have higher probabilities of participating in training, work-experience, and education programs than comparison-group members. However, to the extent that Job Corps succeeds in improving immediate postprogram labor-market opportunities (thereby increasing the opportunity cost of time spent in such programs), this hypothesis is weakened. In any case, it is expected that former Corpsmembers will participate in higher-level programs than youths in the comparison group and will be more likely to complete any given level (i.e., more likely to obtain advanced degrees or certificates).

An additional hypothesis that falls into the category of investments in human capital is that participation in Job Corps increases geographic mobility. This is supported by the fact that the Job Corps program provides services that help terminees relocate to areas where employment opportunities exist. We also expect that the additional income from earnings, as well as

the health education and treatments provided by Job Corps, will lead to the improved health status of former Corpsmembers relative to youths in the comparison group.

The expected effect of Job Corps on enrollment in the military is somewhat ambiguous. It is not clear whether former Corpsmembers should be more or less likely to enlist in the military. They may be more likely to enlist for the investments in human capital associated with military service (e.g., for the vocational-training aspects and broadened experiences), or they may be less likely to enlist because of the increased opportunity cost of their time (i.e., better job opportunities in the civilian labor force). However, we hypothesize that Job Corps trainees who take the Armed Forces Qualifying Test are more likely than comparison-group members to pass the test. In addition, military service is an explicit placement target for some Corpsmembers, and GED training in Job Corps should increase the opportunity and rewards for enlisting (e.g., the U.S. Marine Corps sometimes recognizes the GED certificate as a high school diploma in deciding eligibility for an enlistment bonus).<sup>1/</sup>

Welfare Dependence. A set of hypotheses that are closely related to labor-market activities concerns the effects of Job Corps participation on welfare dependence. Of course, Corpsmembers have reduced receipts from welfare while they are at the centers. In addition, because of increased earnings after leaving Job Corps, former Corpsmembers are expected to receive

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<sup>1/</sup>The new working relationship between Job Corps and the military, which was initiated by the signing of a memorandum of understanding by the Department of Labor and the Department of Defense on January 13, 1978, should facilitate the enlistment of Job Corps trainees into the military service.

fewer transfers--including AFDC, General Assistance, Food Stamps, public housing, Unemployment Insurance, and Workers' Compensation--than comparison-group members during the postprogram period. However, this is not entirely unambiguous, because this effect of Job Corps may be attenuated if participants become more knowledgeable about transfer programs and, consequently, increase their participation in them. This could be a possible outcome for a program such as Food Stamps, which has relatively generous eligibility rules and for which current participation is low relative to the size of the eligible population. In addition, those Corpsmembers who obtain additional training or education in the postprogram period may require a temporary increase in their transfer payments. Nevertheless, on balance, the amount of transfer payments received by Corpsmembers is expected to be lower than that received by the comparison group in the postprogram period, as well as during the program.

Antisocial Behavior. Corpsmembers are expected to reduce drug and alcohol abuse and have lower probabilities of engaging in criminal behavior. While the Corpsmembers are at the centers, both of these responses should be very large because their activities are restricted, their behavior is closely monitored, and their material needs are provided; consequently, they have few opportunities and less reason to engage in drug abuse or crimes. After Corpsmembers leave the program, these reductions in antisocial behavior are expected to continue, but probably at a smaller rate. The postprogram reductions in antisocial behavior stem from the entire Job Corps effort to promote more regular life-styles and employment--from counseling and center living to the vocational training and educational services. Training

and education are important because, to the extent that Job Corps is successful in increasing the employability (i.e., labor-market productivity) and the educational abilities of Corpsmembers, legitimate activities become increasingly more attractive relative to illegitimate activities.

Differences in Benefits Among Corpsmembers and Centers. The effectiveness of Job Corps can be expected to vary by the type of participant, as well as by variations in the program. Several characteristics of Corpsmembers are considered in the impact analysis, including sex, age, and racial or ethnic heritage. Basic Job Corps treatments include education and vocational skills training. Two measures of the amount of these treatments received are length of stay in Job Corps and program phases completed. As described in Chapter II, some of the other aspects of treatments are common to all Job Corps centers. However, the differences among centers may stem from center administration (CCC or contract center), operator (public or private), size (small, medium, or large), location (city or noncity), and sexual composition (coed or noncoed). Each of these participant and center variables is examined for differences in program effects (see Chapter V).

## 2. Comparative Evaluation of Benefits and Costs

The purpose of the research outlined in the previous section is to evaluate the impact of Job Corps on the economic behavior and status of participants. In contrast, the purpose of the comparative evaluation of benefits and costs is to determine whether program benefits outweigh costs. The analysis, which is presented in Chapter VI, builds upon the results for participant benefits and compares the dollar values of benefits and costs. The key elements of this analysis are summarized below. (For a more complete examination, see Chapter VI and Technical Report D.)

Components of the Benefit-Cost Analysis. The benefit components that enter into this analysis are essentially those that were discussed in the previous section--increased labor output, additional investments in human capital, reduced receipt of welfare, and less antisocial behavior. However, their use in this analysis requires some important modifications. The first is that the present dollar value of all program effects must be estimated. For labor output, the dollar value is measured by the program's effects on earnings. For other benefit components, outside data are needed in order to estimate the appropriate values.

The second modification needed is to extend the time period for which the effects are estimated. Data limitations necessitate restricting the direct analysis of postprogram participant benefits in Chapter VI to the effects observed only in the short-run. This translates into effects that are observed, on average, within the first seven months after termination from Job Corps. Projecting beyond the period of observation entails drawing inferences either from the time pattern of effects observed in the short-run or from independent estimates in other studies. In either of these ways, the present value of future benefits from the program can be estimated. Only a longer period of postprogram observation can yield adequate statistical precision for estimates of the impacts of Job Corps throughout the lives of participants.

The in-program effects of Job Corps must also be valued for categories that are similar to the postprogram analysis. This requires gathering additional information from each sample member and undertaking special studies to value the products and services produced by Corpsmembers in work-experience and training projects. Chapter VI aggregates the net

present value of benefits estimated for three time periods--in-program, short-term postprogram, and long-term postprogram.

The cost components are not nearly as numerous nor as conceptually difficult as the benefit components. Almost all costs can be categorized as either program-operating costs or opportunity costs of participants' labor. Virtually all are incurred during the in-program period.

Distributional Effects. Thus far, we have discussed the benefits of the program as if they totally accrue to one group; we have been vague about who bears the costs. However, the focus of a benefit-cost analysis should be on the economic welfare of society as a whole. This perspective can be viewed by asking the following question: Has the totality of goods and services available for the economic welfare of society been increased by undertaking the program? Redistributive aspects are usually ignored, and only benefits and costs that involve the use of actual resources are included. Another way to view the social perspective focuses explicitly on the distributional effects. Program benefits and costs are valued and aggregated for Corpsmembers, and then the same calculations are made for everyone else in society. Because these two groups constitute all members of society, benefits and costs to society can be obtained from the sums for the two groups.

### 3. Analysis of Participant Satisfaction

The purpose behind analyzing Corpsmembers' satisfaction with Job Corps is to obtain their assessment of the program, both overall and for specific components.<sup>1/</sup> Chapter VII begins with an analysis of Corpsmembers'

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<sup>1/</sup>The legislation for the Comprehensive Employment and Training Act of 1973 [Section 413(a)] also mandates "obtaining the opinions of participants about the strengths and weaknesses of the program."

ratings of center services, both while they were in the program and after they had been out of the program for some time. Section B of Chapter VII examines the factors that affect both the length of stay in Job Corps and the probability of completing the program. The last section of Chapter VII covers the ratings of postprogram services.

Corpsmembers' assessments in these areas should provide supportive evidence for the impact and benefit-cost findings in earlier chapters. In examining participant ratings, we have disaggregated the results according to the characteristics of Corpsmembers, the centers they attended, and the services they received. The objective of this disaggregation is to detect differences among groups and to explain the variation in responses.

## B. EVALUATION DESIGN

The previous section discussed all of the objectives in an evaluation of the economic impact of Job Corps. It should be clear from the discussion that in order to address all of the relevant policy and research issues, the study design must be comprehensive. This section summarizes the evaluation design we developed to meet the objectives of the study.

### 1. Comparison-Group Methodology

During the design phase of this study, much effort was devoted to selecting an appropriate comparison group. Operational considerations prohibited the random assignment of potential Job Corps enrollees to nonparticipant status. Therefore, considerable effort had to be devoted to developing a suitable group of nonparticipants with which to compare Corpsmember behavior, so that the hypothesized impacts of the program could be tested and the magnitude of the effects of the program could be estimated.

Within the constraint against randomization and the budget limitations for the evaluation, we had to develop a sample design that would both minimize bias and maximize efficiency in estimating the effects of Job Corps. We had to take into account two important factors: (1) that Job Corps was geographically clustered (in terms of the home areas from which Corpsmembers came and in terms of where the centers were located), and (2) that the Corpsmembers would already be enrolled. The most efficient procedure called for sequential matching--first obtaining appropriate sites and then finding appropriate youths within sites. Finally, we included in the baseline questionnaire detailed information concerning the Corpsmembers' socioeconomic backgrounds, so that the comparability of the Corpsmember and comparison groups could be tested and any differences controlled for in the statistical techniques.

The first step was to eliminate program sites in order to reduce the probability of self-selection biases (e.g., more highly motivated youths enrolling in Job Corps). These were defined as geographical areas that are saturated by Job Corps participation (i.e., high proportions of eligible youths entering the program from the site or a location proximate to a center). The nonsaturated areas were then assigned selection probabilities in proportion to their similarities to the home areas of Corpsmembers, based primarily on the poverty and racial composition of the areas as determined from Census data.<sup>1/</sup>

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<sup>1/</sup> Socioeconomic characteristics of the home areas of recent Job Corps participants were used to select the locations of the comparison-group sites. The Primary Sampling Units (PSUs) were five-digit zip-code areas in urban locations (Standard Metropolitan Statistical Areas) and three-digit zip-code areas in rural locations. Data from the 1970 Census on population density, geographic location, percent of poverty families, mean family income, housing quality, percent of young (16 to 21) adults, percent of Hispanic youths, percent

Once the control sites were chosen, youths living in these areas were assigned selection probabilities in proportion to their similarity to Job Corps participants (actual participants and not just Job Corps eligibles), based on their poverty, age, race, and educational status. Names of youths were obtained from school dropout lists and from local employment service offices. Together, these two sources provided an adequate sampling list from the universe of youths who participate in Job Corps. School dropout lists identified young recent dropouts similar to approximately 70 percent of the Corpsmembers, and the active files at local employment services provided older youths who had been out of school for a longer time similar to the other 30 percent of Corpsmembers. A sample of youths was then chosen to be included in the comparison group, with females oversampled relative to their proportion in Job Corps to increase the efficiency of estimates computed separately by sex.<sup>1/</sup>

This quasi-experimental design seems appropriate for our evaluation and should lead to reasonably precise estimates of the economic impact of the

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of black youths, and youth unemployment rates in the PSUs were used to assign selection probabilities. Regression analysis was used to determine which of these variables would best predict the home regions of Corpsmembers. For both three-digit and five-digit zip codes, the best predictor was the percent of families in the region that had incomes below the poverty level and were headed by someone younger than 65 years of age. The second best predictor was the percent of minority youths in the region. The percent of poverty families by itself explained nearly 30 percent of the variances in the proportion of Job Corps enrollments by zip-code regions. Probabilities of selection were then assigned to all of the nonsaturated zip-code areas in the United States, proportional to their similarity to the home areas of Job Corps participants, as measured by the percent of poverty families. Proportional stratifications by race and region of the country were also maintained (see Technical Reports A and B for more details).

<sup>1/</sup>The target for the male/female ratio was 50/50 in the comparison group, as opposed to the 70/30 split for the Job Corps sample.

program--especially if an appropriate statistical technique is used, as developed in Chapter IV. The assumptions needed for unbiased and efficient estimates of the program treatment effects seem plausible provided that appropriate statistical techniques are used (see Chapter IV).<sup>1/</sup> There is no overlap between the Job Corps and comparison-group samples, and the Corpsmember sample should differ from the comparison group primarily in terms of access both to information about Job Corps and to Job Corps centers.<sup>2/</sup>

## 2. Sample Selection

The sample selection procedures were based on the necessity to balance the evaluation, operational, and cost considerations.<sup>3/</sup> For the Job Corps sample, the strategy we chose was to select a random sample of participants in the program at a point in time. For analytical purposes, an enrollment-based sample would have had more appeal, but would have been

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<sup>1/</sup> "Unbiased," as used here, means that, on average, the estimator should yield a value close to the "true" one. In other words, any biases are both likely to be small and unlikely to affect the substantive findings of our evaluation. Of course, all estimates are biased to some extent because all statistical models are only approximations to reality. "Efficiency" is defined to mean that the estimator has a smaller variance than any other with the same (or smaller) amount of bias and using the same data.

<sup>2/</sup> The comparison-group methodology is further explained and assessed in Technical Reports A and C. See also the "Interim Report of the Evaluation of the Economic Impact of the Job Corps Program," Mathematica Policy Research, August 1978.

<sup>3/</sup> The sample design is chosen to minimize the cost of obtaining the desired level of statistical precision for estimates of Job Corps effects (see Technical Reports A, B, and C).

much more expensive, would have yielded many early dropouts, and would have greatly delayed the research findings. To obtain an area probability sample, we used standard procedures to randomly select approximately one-third of the Corpsmembers in the program during April 1977. Each Corpsmember then at a center had an equal probability of being selected (approximately one-third).<sup>1/</sup> For the baseline survey, 5,297 Corpsmembers were selected, and 5,133 of those were interviewed (completed interviews) during April and May of 1977. The follow-up sample included everyone from the original sample who had been out of Job Corps for at least five months (2,887 youths), and 2,419 interviews were completed. The survey response rates for the Job Corps samples were 97 percent at baseline and 84 percent at the first follow-up (see Technical Report B for more details).

Note that Corpsmembers who drop out of the program early are less likely than program completers to be at a center at any point in time; hence, they will be underrepresented in a point-in-time survey such as ours.<sup>2/</sup>

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<sup>1/</sup> There were only two exclusions from the sampling frame--youths or centers outside the continental United States, and nonresident Corpsmembers. Justifications for these sample exclusions are presented below.

<sup>2/</sup> The fundamental difference between "enrollees" and "participants" is that Corpsmembers who stay in the program a longer time (i.e., program completers) will be overrepresented in participant samples compared to all enrollees. Among Job Corps enrollees, a high proportion (approximately 40 percent) leave the program within ninety days. These early dropouts are replaced continuously by new Corpsmembers, so that a sample of participants at a point in time has a higher proportion of completers than found among enrollees. For the MPR valuation of Job Corps, a high proportion of program completers is desirable because the impact of the program on early dropouts is probably negligible. The overrepresentation of program completers will be partially offset with data from the first follow-up survey, because all of the early dropouts will have been out of Job Corps long enough (at least five months) to be interviewed, whereas many of the program completers will have been out only a short time or will still have been enrolled in Job Corps. In Chapter IV we explain how the observations are reweighted to obtain unbiased estimates for enrollees.

There are proportionally more program completers in our sample of Corpsmembers than in a representative sample of all enrollees. For all enrollees in fiscal year 1977, approximately 40 percent will be classified as early dropouts (terminated during their first ninety days), 30 percent will be classified as having completed only a portion of the program, and 30 percent will be classified as having completed a full program; the corresponding percentages for our first follow-up sample are 11, 40, and 49, respectively. To obtain estimates that are applicable to an average enrollee will necessitate reweighting the data (see Chapter IV and Technical Report C).

Two exclusions were made from the Job Corps sampling frame--Corpsmembers in centers or from regions outside of the continental United States, and those not residing at centers. This was done for two reasons: (1) those two groups represent only a small proportion of Corpsmembers (less than 1 percent and approximately 5 percent, respectively); and (2) their backgrounds and program treatment seem systematically different from the main group, which would probably require separate analyses (which would necessarily be imprecise) and would reduce the precision of estimates for the main group.

The previous section covered many of the issues of the comparison sample design. As was described, a sequential matching procedure was followed: first, areas were selected that were similar to those where Corpsmembers lived but which were relatively treatment-free; second, Job Corps-eligible youths were selected within each region. The final sample design consisted of fifteen sites with 100 youths in each, or a total of 1,500 youths.

To match the Job Corps population, 70 percent of the comparison sample were chosen to be young, recent dropouts, and 30 percent were chosen to be older youths who had been out of school for a longer time. From these groups, 2,116 eligible youths were identified and 1,496 were interviewed at baseline (June 1977). From this original group of 1,496 interviewees, all but two were eligible (two deaths) and 1,321 were reinterviewed for the first follow-up survey (February 1978). The survey response rates for the comparison-group samples were 71 percent at baseline (many of the nonrespondents had moved outside the survey sites) and 88 percent at the first follow-up (see Technical Report B for more details).

### 3. Data Collection

All three research topics require in-depth data on each sample member that must be obtained from interviews. Alternative interviewing strategies were examined to identify the method that would best minimize response errors, cost, and analytical difficulties. We adopted a strategy that consisted of administering two sets of in-person interviews. The first set was administered to Corpsmembers at centers and to the comparison sample in their homes. The purpose of the first interview was to collect baseline data on the pre-enrollment period for the Job Corps sample and similar data for the same period for the comparison sample. The timing of these interviews represents a compromise between minimizing the length of the recall period and maximizing the length of the observation period.

The first follow-up interviews were administered approximately nine months after the baseline. The entire comparison sample and a subset of the Job Corps sample were reinterviewed. The subset of the Job Corps

group included all members of the original sample who had terminated from the program at least five months prior to the second interview. This criterion ensured an adequate period of postprogram observation within the constraints of the overall budget and the time permitted for the evaluation.<sup>1/</sup>

As noted above, the comparative evaluation of benefits and costs requires additional data. Data on program costs were provided by the national Job Corps office. These cost data were supplemented with information from Job Corps centers (on center expenditures that were not included in Job Corps' financial data) and the U.S. Office of Management and Budget (on federal administrative costs that were not included in the Job Corps' financial data). In addition, special studies were made of a random selection of Job Corps work projects to value the products and services provided.<sup>2/</sup> Finally, dollar values for many of the benefits had to be imputed from secondary data sources.<sup>3/</sup>

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<sup>1/</sup>This survey process is described further in Technical Reports B, C, and G.

<sup>2/</sup>This work is described further in Technical Reports D, E, and F.

<sup>3/</sup>See Chapter V and Technical Report D for more details.

#### IV. ANALYTICAL APPROACH TO ESTIMATING THE ECONOMIC IMPACTS OF JOB CORPS

Before presenting the main findings on economic impacts, we must first discuss the econometric techniques and disaggregations used in estimating the effects of Job Corps. By necessity, this chapter strikes some compromise between the desirability of fully documenting the appropriateness of the techniques used and, at the same time, making this report readily accessible and comprehensible to a wide audience of people interested in public policies for disadvantaged youths. On the one hand, the more technically inclined readers will want to review the more detailed arguments presented in Technical Report C. On the other hand, readers who are less interested in econometrics may wish to skim this chapter and proceed more quickly to the discussion in Chapter V on the findings for the effects of the program on Corpsmembers.

Several econometric approaches can be used to estimate the economic impacts of Job Corps. The alternative approaches involve (1) varying degrees of control for pre-existing differences between the Job Corps and comparison-group samples and (2) different levels of disaggregation. The possible methods of controlling for pre-existing differences range from (1) simply using the differences in sample means observed during the postprogram period (i.e., no control variables) to (2) simple regression adjustments for pre-enrollment differences in the variables of interest, and to (3) complex regression adjustments for a wide range of possible pre-enrollment differences and changes between the Job Corps and comparison-group samples over time. The tradeoffs among these approaches

and the justification for the method we emphasize are outlined in the first section of this chapter.

Disaggregations of the estimates primarily involve issues related to differences in the impacts of Job Corps by (1) characteristics of Corps-members (e.g., whether the analysis should be performed separately by sex), (2) time period covered (e.g., whether to treat each month's data as a separate observation and estimate the time path of impacts versus aggregating the data over a longer time period), and (3) category of completion (e.g., to obtain reweighted estimates that are representative of all Job Corps enrollees). The second section of this chapter discusses the alternatives we considered and justifies the levels of disaggregation used in the empirical work for this report.

#### A. ALTERNATIVE ECONOMETRIC METHODS

Several possible econometric methods have been used in applications with comparison groups. In this section we describe the primary methods we considered and briefly discuss their appropriateness for our samples. Each method involves varying degrees of control for pre-existing differences between the Job Corps and comparison-group samples, and each entails different computational costs. The econometric techniques used must have both reasonable statistical properties and manageable costs.

##### 1. Before-After Comparisons

Postprogram minus pre-enrollment differences in participant behavior have often been used to estimate the impacts of employment and training programs. Using this type of comparison to evaluate Job Corps was explicitly

rejected because the young age of Corpsmembers places them in a period in their life-cycle where their economic behavior and status would be changing rapidly over time regardless of the impacts of Job Corps. The importance and wisdom of the decision to reject simple before-after comparisons can easily be illustrated with the following example. Males in the Job Corps sample were earning approximately \$35.56 more during the week prior to the follow-up survey than during a typical week in the pre-enrollment period (\$63.10 - \$27.54). However, over the same time period (and using the same data sources), weekly earnings for the comparison group increased by \$25.02 (\$52.26 - \$27.24). Given the evidence from the comparison group, it seems likely that a large proportion of the pre- to postprogram period increase in earnings for former Corpsmembers would have occurred even if they had not entered the program.

## 2. Simple Comparisons between the Job Corps and Comparison Samples

The basic problem with basing impact estimates on simple differences in sample means between the Job Corps and comparison-group samples is the lack of randomization in sample assignments. With random assignments to program and comparison groups and with everyone having equal probabilities of being selected for either group, a difference in sample means approach would be appropriate (i.e., the approach would yield unbiased estimates, although probably less efficient estimates than the regression approaches discussed below). The sample for this evaluation of Job Corps was carefully designed to minimize any biases or inefficiencies usually caused by the lack of randomization (see Chapter III and Technical Reports A, B, and C).

In addition, the findings from the "Interim Report" generally support the validity of the comparison group and lend confidence to its use in statistical analysis.<sup>1/</sup>

By using a difference in sample means estimator for the above example, we estimate the impact on earnings in the week prior to the follow-up interview to be \$10.84 (\$63.10 - \$52.26) for our sample of male Corpsmembers (which overrepresents program completers). This estimate seems to be quite adequate for the full sample of males and is basically unchanged even for complex regression specifications (see below). However, the difference in sample means approach becomes more tenuous when estimates are computed for some subgroups of Corpsmembers that differ substantially from our overall sample of Corpsmembers. For example, estimates must be made separately by category of termination from Job Corps so that we can obtain estimates that are representative of all Corpsmembers and not give too much weight to program completers (see below). In Chapter VII we show how Corpsmembers who complete the program differ in some systematic ways from those who do not (e.g., Corpsmembers who are Hispanic and have a high school diploma are more likely to be program completers). Therefore, impact estimates based on separate differences in sample means between the overall comparison group and Corpsmembers from each category of completion may yield biased estimates.

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<sup>1/</sup>The evidence for the validity of the comparison groups is especially convincing when estimates are computed separately for three groups: (1) males, (2) females who have no children living with them, and (3) females who have children living with them. For more details, see "Interim Report of the Evaluation of the Economic Impact of the Job Corps Program," Mathematica Policy Research, September 1977, and Technical Report C.

### 3. Simple Regression Adjustments Used for Most of the Estimates

A straightforward extension of the difference in sample means approach leads to a regression model that adjusts for pre-enrollment differences in the variables of interest, allows for a time trend (aging effect), is easy to understand, and is relatively inexpensive for computations with large numbers of observations. The basic procedure is to use the pre-enrollment to postprogram change in sample mean differences between the Job Corps and comparison groups as an estimator of Job Corps effects. In the earnings example for males the postprogram difference is \$10.84; that is, the male youths in the Corpsmember sample were earning an average of \$10.84 more than male youths in the comparison group during the week prior to the interview. However, these Corpsmembers were earning \$0.30 per week more than the comparison sample before going into Job Corps (\$27.54-\$27.24), which needs to be netted out. The pre-enrollment to postprogram change in sample mean differences yields an estimated impact of \$10.54 on participants' earnings in the week prior to the interview ( $\$10.84 - \$0.30$ ).<sup>1/</sup>

Not surprisingly, the pre- to postprogram change estimate turns out to be very close to the overall difference in sample means between the Job Corps and comparison groups for males (\$10.54 versus \$10.84) because the pre-enrollment differences are minimal (only \$0.30). However, the change estimate diverges greatly from the simple pre- to postprogram difference in sample means (\$10.54 versus \$35.56), which ignores the substantial time trend (aging) effect of \$25.02 that likely would have

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<sup>1/</sup>The pre-enrollment difference is subtracted from the postprogram difference because youths in the comparison sample earned less than Job Corps participants (\$0.30 per week less) during pre-enrollment.

occurred regardless--and did in fact occur for the comparison group (see above).

For most types of behavior in which we are interested, estimates based on the pre- to postprogram changes in the difference in sample means will be very close to a simple difference in sample means at postprogram (especially for the overall sample). However, these estimates tend to be very different from the inappropriate before-after comparisons that ignore the substantial changes in labor supply and related variables over time for youths as they grow older.<sup>1/</sup>

For a more formal illustration of when the change procedure is appropriate and how it works, assume the following model:

1. The sample mean for some dependent variable (Y) of interest (e.g., earnings per week) is equal to  $\mu$  for the Job Corps group during the pre-enrollment time period, 0. With an error term of  $\epsilon_{0j}$  for individual observations in the pre-enrollment period, this can be written as

$$Y_{0j} = \mu + \epsilon_{0j} \text{ for } j=1, \dots, J,$$

where J is the number of youths in the Job Corps sample.

2. The pre-enrollment sample mean for the comparison group differs from that of the Job Corps group by  $\alpha$ , which can be written as

$$Y_{0c} = \mu + \alpha + \epsilon_{0c} \text{ for } c=1, \dots, C,$$

where C is the number of youths in the comparison sample.

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<sup>1/</sup>For overall estimates, the change in differences in sample means is almost identical to the difference in sample means at postprogram, especially for Job Corps and comparison subgroups of males, females without children, and females with children, because the pre-enrollment differences are close to zero for these subgroups.

3. There is a time trend (aging effect) of  $\gamma$  and a Job Corps impact of  $\delta$  for the postprogram period. With an error term of  $\epsilon_{1i}$  for individual observations in the postprogram time period, 1, the equations for the Job Corps and comparison groups become, respectively,

$$Y_{1j} = \mu + \gamma + \delta + \epsilon_{1j} \text{ for } j=1, \dots, J,$$

$$Y_{1c} = \mu + \alpha + \gamma + \epsilon_{1c} \text{ for } c=1, \dots, C.$$

The estimator for the Job Corps effect is

$$(\bar{Y}_{1J} - \bar{Y}_{1C}) - (\bar{Y}_{0J} - \bar{Y}_{0C}) = \delta + \text{random error term},$$

or, equivalently,

$$(\bar{Y}_{1J} - \bar{Y}_{0J}) - (\bar{Y}_{1C} - \bar{Y}_{0C}) = \delta + \text{random error term.}^{1/}$$

It is apparent that this estimator is unbiased under the assumptions of the model, which allow for (1) some initial (fixed) differences between the Job Corps and comparison-group samples and (2) a time trend (aging effect).

The change estimates, standard errors, and t-statistics can easily be obtained from a regression of postprogram minus pre-enrollment values of the dependent variable on (1) a constant term and (2) a Job Corps dummy variable. To illustrate how this works, we can rewrite the above equations for pre-enrollment and postprogram, respectively, as

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<sup>1/</sup>The change estimator can alternatively be viewed as the difference between the Job Corps and comparison groups in changes from pre-enrollment to postprogram.

$$Y_{0i} = \mu + (1-JC_i) \alpha + \epsilon_{0i} \text{ for } i=1, \dots, n \text{ (number of observations),}$$

$$Y_{1i} = \mu + (1-JC_i) \alpha + \gamma + \delta JC + \epsilon_{1i} \text{ for } i=1, \dots, n,$$

where JC equals 1 if the youth is a former Corpsmember, and 0 otherwise.

Subtracting  $Y_{0i}$  from  $Y_{1i}$  yields

$$Y_{1i} - Y_{0i} = \gamma + \delta JC_i + \epsilon_{1i} + \epsilon_{0i} \text{ for } i=1, \dots, n.$$

A regression of  $Y_1 - Y_0$  on a constant and JC produces the unbiased estimate of the Job Corps effect (i.e., the estimated coefficient for JC equals the estimate of the Job Corps effect derived above as a change in difference between sample means), as well as its standard error and the t-statistic. The estimates of Job Corps impacts in this simple regression framework are adjusted for individual differences in the values of the dependent variable at pre-enrollment, but assume the time trends (aging effects) are identical.

The above procedures are easily generalized (see Technical Report C) to derive simple regression estimators that yield unbiased and efficient estimates (under the assumptions of this simplified model) for subgroups of Corpsmembers and variants of Job Corps treatments. One of the most important generalizations must be made for completion status, so that separate estimates can be obtained for program completers, partial completers, and early dropouts.<sup>1/</sup> These separate estimates are needed to reweight the observations in order to obtain estimates that are representative

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<sup>1/</sup> Another important generalization of the basic procedure (developed in Technical Report C) must be made for females, in which case we need to control for the presence of children. The presence of children may affect the impact of Job Corps on female participants, as well as affect their unusual behavior in the absence of Job Corps.

of all Corpsmembers, because (1) our sample has a disproportionately large number of completers and (2) sizable differences in Job Corps effects are found by completion status (see Chapter V).

The procedure used to obtain separate estimates for each completion category adjusts for pre-existing differences among the groups (i.e., program completer, partial completer, early dropout, and comparison). However, it assumes that the growth over time for the dependent variables of interest (e.g., earnings) would have been the same for all groups in the absence of Job Corps. To obtain an estimate of the Job Corps impact for a particular completion category, the generalized change procedure uses the pre- to postprogram change in the difference in sample means between the Corpsmembers in that completion category and the comparison group (which does control for pre-existing differences between the two groups).

As an example, consider the impact of Job Corps on weekly earnings for program completers. During the week prior to the follow-up interview, program completers earned an average of \$21.27 more than youths in the comparison sample (\$74.16-\$52.89). However, during the pre-enrollment period, program completers earned an average of \$1.98 per week less than comparison-group members (\$25.97-\$27.95). Therefore, the estimated impact of Job Corps on the weekly earnings for program completers in the week prior to the first follow-up interview is \$23.25 ( $\$21.27 + \$1.98$ ).<sup>1/</sup>

The change estimators have good statistical properties under reasonable assumptions, and generally yield estimates that are similar to those obtained

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<sup>1/</sup> The pre-enrollment difference is added to the postprogram difference because youths in the comparison group earned more than program completers during pre-enrollment.

from more complex specifications (see below). The change estimators control for pre-existing differences between participants and the comparison group by netting out pre-enrollment differences in the dependent variables of interest (i.e., the most important explanatory variable, even in the complex regressions). These change estimators are also both inexpensive to compute and easy to interpret. Therefore, the impact estimates presented in the next two chapters (V and VI) are based primarily on these procedures (however, exceptions are noted).<sup>1/</sup>

#### 4. Complex Regression Adjustments

More refined procedures for multiple regressions have been estimated (see Technical Report C), and they support the robustness of the empirical findings presented in the next two chapters, which are based on the simple change specification developed above. Basically, the refined procedures involve treating the lagged value of the dependent variable as a separate explanatory variable and adding other variables that are hypothesized to explain the behavior being examined. The resulting more complex specifications adjust for (1) differences between the underlying postprogram and pre-enrollment equations and (2) systematic differences in the time trend (aging) effects between the Job Corps groups (e.g., by completion status) and the comparison sample.

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<sup>1/</sup> We are continuing to test more elaborate specifications to obtain more refined estimates and, more important, to ensure that the findings are not sensitive to reasonable changes in the underlying assumptions. Estimates for groups in which there are small numbers of observations (e.g., early dropouts and females without children) generally have large standard errors and, hence, will tend to be more sensitive to the econometric specifications.

The regression equation for an overall Job Corps effect becomes (similar to the above notation):

$$Y_{1i} = \beta_0 + \beta_1 Y_{0i} + \beta_2 JC + \beta_3 X_i + u_i,$$

where  $\beta_2$  is now the Job Corps effect;  $X_i$  is a vector of explanatory variables (such as age, race-ethnicity, seasonality, pre-enrollment health, and other exogenous explanatory variables) with coefficients  $\beta_3$ , and  $u_i$  is a random error term. The estimated Job Corps effect ( $\beta_2$ ) is now net of differences in the values of these explanatory variables (the X's), as well as differences in the values of the dependent variable at pre-enrollment (Y). This more elaborate specification yields similar results to the simple regression estimates discussed above, for two reasons: (1) the lagged dependent variable completely dominates all other explanatory variables, and (2) the multiple correlation between the Job Corps variable and the other explanatory variables tends to be very low (i.e., the implementation of the sample design was very successful).<sup>1/</sup>

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<sup>1/</sup> The correlation between Job Corps variables and other explanatory variables increases when separate estimates are obtained by completion status (see Technical Report C), thereby increasing the variability of estimates, especially for early dropouts. (In addition, the number of observations is small for early dropouts, as noted above.) The more elaborate procedures will generally yield better estimates than those from the simpler change specifications in two cases: (1) if enrollment in the Job Corps (versus the comparison sample) is correlated with errors in the dependent variables at pre-enrollment (e.g., if transitory reductions in earnings are more prevalent in the pre-enrollment experiences of Corpsmembers); and (2) if the initial differences between the Job Corps and comparison group are changing over time (from differential changes in the underlying independent variables, the X's, or their coefficients, the  $\beta$ 's). Neither of these two conditions seems to hold either for our full sample or for the subgroups that are of interest (see Technical Report C).

Even when we control for unobserved differences that affect both Job Corps status (JC) and the dependent variable of interest (i.e., correlations between  $u$  and JC in the above equation, so that JC becomes endogenous), we obtain similar estimates to the simple change specification (see Technical Report C). With a variety of complex (and computationally costly) specifications, we obtained virtually the same Job Corps effects on earnings for the three completion categories as with the simple change specification. For Job Corps overall, the simple change specification also yields approximately the same findings as complex regressions, with slightly lower earnings gains for males and slightly higher earnings gains for females in most cases.

These findings may seem surprising because, despite our efforts to ensure that the comparison sample differs from the Job Corps sample only in terms of random access to information about Job Corps and proximity to Job Corps centers, program completers could have higher growth potential for labor-market activities than either noncompleters or members of the comparison group (e.g., more motivation and higher innate abilities). This higher growth potential would, in turn, be attributed to a Job Corps effect for program completers (upward bias) in the simple change specification, because it is not controlled for (i.e., no adjustments are made for these variables). As can be inferred from the findings in Chapter VII on who completes the program, however, there are equally strong reasons to believe that program completers have lower growth potential for labor-market activities than either noncompleters or members of the comparison group (downward bias in the simple estimates for program completers). Corpsmembers who have lower opportunity costs to staying in the program

(because, for example, they have lower labor-market potential for uncontrolled reasons) stay in Job Corps longer and are more likely to complete the program. On the whole, controlling for pre-enrollment differences in the dependent variables of interest (by using the changes from pre-enrollment to postprogram in sample differences) seems to be a reliable empirical approach, and more complex regressions would contribute little to the findings (and require much additional computational expense).

## B. DISAGGREGATIONS USED IN THE ANALYSIS

In addition to choosing an econometric methodology for the empirical work, we had to decide among possible disaggregations of Job Corps impacts. In this section we discuss potential disaggregations by characteristics of Corpsmembers, by time period covered, and by category of completion (to obtain estimates that are representative of all Job Corps enrollees). In discussing each of these types of potential disaggregations, we will also justify the procedures actually followed.

### 1. Age, Race-Ethnicity, Sex, Marital Status, and Presence of Children

Before undertaking the main impact analysis, some straightforward labor-supply equations, with hours and earnings as dependent variables, were estimated for various subgroups to test (with Chow tests) the necessity for performing separate analyses.<sup>1/</sup> The results showed that youths could be pooled together for estimation purposes across age, race-ethnicity, and

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<sup>1/</sup>See Technical Report C for more details.

marital-status subgroupings. These preliminary regressions also showed (not surprisingly) that separate estimates should be computed for three subgroups: (1) males, (2) females who have no children present, and (3) females who have children living with them. Perhaps the most surprising finding is that marital status was not crucial in the labor-supply relationships for females. However, the presence of children did make a substantial difference. One plausible reason that marital status did not seem to affect the labor-supply decisions of young women is because most of the single females lived with their parents, other relatives, or friends, which may have had some familial types of effects on their behavior that were similar to being married (e.g., alternative sources of income within the family unit).

The "Interim Report" also showed that most differences between the Corpsmember and comparison-group samples disappeared when results were analyzed separately for males, childless females, and females with children present. In keeping with these findings, we computed the impact estimates separately for males, childless females, and females with children present.

## 2. Time Period

Estimates are presented for three types of time periods: (1) for the week prior to the interview; (2) for values of the variables averaged over the entire postprogram observation period (which differed in length among individual Corpsmembers);<sup>1/</sup> and (2) for pooled time periods that include data for each

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<sup>1/</sup> The postprogram follow-up period averaged seven months but differed among individual Corpsmembers. When the fractional months at the beginning and end of the follow-up period are taken out, an average of six full months of data are available.

month on each individual as a separate observation. The data for the week before the interview should provide accurate estimates of the effects of Job Corps at a point seven months (on average) after Corpsmembers leave the program. The data covering the last week should have the lowest survey response errors, because recall errors should be much lower than for the rest of the time period between the baseline and follow-up interviews.

The aggregate (averaged) data for the entire postprogram period provides a convenient summary of what has happened to Corpsmembers since they left the centers, and the averaging should help net out some of the response errors. Disaggregating the data by month, while very expensive to construct and use, provides a graphic picture of the time path of the effects for former Corpsmembers. Together, the estimates for these three different time dimensions yield comprehensive information on the short-term economic impacts of Job Corps on participants.

### 3. Obtaining Estimates that are Representative of All Enrollees in Job Corps

As discussed in Chapter III, our sample design overrepresents program completers because youths who stay in Job Corps for a long period of time have a higher probability of being at centers at any point in time (i.e., when the sample was drawn). There is not a perfect correlation between length of stay and program completion, however, because given the individualized and self-paced nature of Job Corps instruction, some youths can complete the program faster than others. In fiscal year 1977 the proportions of all Job Corps enrollees who became program completers, partial completers, and early dropouts were approximately 30, 30, and 40 percent, respectively. A partial completer is defined as a Corpsmember

who stays in the program for at least ninety days, but who does not complete the program; early dropouts are defined as youths who terminate from Job Corps before the end of their first ninety days at a center. In contrast, the proportions of program completers, partial completers, and early dropouts for our sample are approximately 49, 40, and 11 percent, respectively. Therefore, in order to obtain impact estimates that are applicable to the average Job Corps enrollee, we can use this knowledge of the "correct" proportions by completion status to reweight the observations. Estimates were computed separately for program completers, partial completers, and early dropouts, and were then added together with weights of 0.30, 0.30, and 0.40, respectively.

This reweighting procedure should provide accurate estimates. However, there are some potential biases with our first follow-up sample that work in opposite directions. Even though we obtain similar estimates of effects by completion status after controlling for all sorts of exogenous variables (in addition to adjusting for pre-enrollment differences in the dependent variables of interest), the estimated impacts for completers may be biased upwards because nearly one-half of the baseline sample of Corpsmembers were still in the program at the cutoff date for the first follow-up survey. Therefore, the first follow-up sample of completers probably has too many youths who have high innate abilities and who complete the Job Corps program quickly (as opposed to youths who move through the program more slowly and are more likely to still be in Job Corps at the cutoff date). Similarly, the first follow-up sample may have too few completers from the youngest age cohort because younger Corpsmembers will have entered the

program a shorter time ago, on average, than older Corpsmembers. In contrast, there may be some downward bias for Corpsmembers because they will have been out of Job Corps a shorter time than noncompleters on average and, hence, are closer to the time when employment and earnings were low from re-entering the labor market (see Chapter V). This downward bias for completers is likely to be especially strong when data are averaged over the entire postprogram time period, because the postprogram period for completers will contain disproportionately fewer months beyond the initial transition period than the postprogram period for noncompleters.

## V. ANALYSIS OF EFFECTS ON CORPSMEMBERS

One of the primary goals of Job Corps is to help participants improve their lifetime economic prospects. In this chapter we present findings on how successful Job Corps is in meeting this goal for the first few months after Corpsmembers leave the program. More specifically, we provide evidence on whether Job Corps is having the desired impacts of (1) increasing employment and earnings; (2) improving future labor-market opportunities through additional education, training, and work experience, as well as improving job mobility, health, and the opportunities for entering the military service; (3) reducing dependence on cash welfare, in-kind welfare transfers (e.g., Food Stamps and subsidized housing), and other cash transfers (e.g., Unemployment Insurance and Workers' Compensation) from public programs; and (4) reducing antisocial behavior, such as drug and alcohol abuse and criminal activities. The estimates of these desired impacts are broken down further by duration of stay in Job Corps (according to program completion categories) and by differences in the characteristics of both Corpsmembers and centers. Furthermore, we present graphic estimates of the time path of impacts from the point at which Corpsmembers leave the program until eight months later. Detailed findings are presented for each of the four areas of desired impacts listed above in Sections A through D, respectively.

### A. FINDINGS FOR LABOR MARKET ACTIVITIES

In general, we found large and statistically significant increases in employment and earnings for program completers, and erratic effects for

early dropouts and partial completers (often negative but usually statistically insignificant). The positive effects showed up most prominently in the data covering the week before the follow-up interview but became greatly attenuated, and even negative, when they were averaged over the entire postprogram period. The estimates by the length of time out of the program show that this is caused by the temporarily low earnings as Corpsmembers re-enter the labor market during the first few months after leaving Job Corps, which cancel out the positive impacts observed for the time period just prior to the follow-up interview.

#### 1. Impacts for the Week Before the First Follow-up Interview

Tables V.1 through V.3 summarize the findings for the week prior to the follow-up interview (an average of seven months after the participant sample left Job Corps). As discussed in Chapter IV, separate estimates need to be computed for three subgroups--(1) males, (2) females who have no children present, and (3) females who have their children living with them--because of significant differences in effects among these subgroups. The separate estimates are presented in Tables V.1, V.2, and V.3 for males, females without children, and females with children, respectively.

For all measures of work activities (i.e., labor-force participation, looking for work, employment, military service, earnings, and hours), there are positive, large, and statistically significant effects for male program completers. For the civilian measures of work activities, males who completed the Job Corps program were more likely to be in the labor force by almost 10 percentage points, and they had an increase in employment of

TABLE V. 1

ESTIMATES OF EMPLOYMENT AND RELATED EFFECTS IN WEEK PRIOR TO INTERVIEW: MALES<sup>a/</sup>

Variable	Unweighted Sample Mean For Corpsmembers At Follow-Up	Unweighted Average Job Corps Effect For Sample	Average Job Corps Effect For Program Completers	Average Job Corps Effect For Partial Completers	Average Job Corps Effect For Early Dropouts	Average Job Corps Effect For All Enrollees	Average Job Corps Effect For Enrollees With Noncompleters Assumed To Be Zero
A. FROM BLS QUESTIONS FOR LAST WEEK <sup>b/</sup>							
Civilians in labor force	0.988	0.058	0.097	0.028	0.007	0.040	0.029
In labor force or military	0.898	0.061	0.100	0.031	-0.002	0.038	0.030
Active, including military <sup>c/</sup>	0.656	0.070	0.124	0.025	-0.004	0.043	0.037
• Employment, civilians	0.546	0.064	0.132	0.016	-0.035	0.030	0.040
• In military	0.091	0.045	0.079	0.018	-0.013	0.024	0.024
• In training or work- experience program, civilians <sup>c/</sup>	0.044	0.020	0.025	0.013	0.029	0.023	0.007
• In school, civilians <sup>c/</sup>	0.110	-0.012	-0.017	-0.012	0.009	-0.005	-0.005
Earnings per week, civilians	\$62.46	10.54	23.25	1.65	-8.57	3.43	6.98
Earnings per week, including military	\$69.31	12.38	26.69	2.53	-13.66	3.30	8.01
• Civilian employment	\$56.70	6.14	15.74	0.03	-11.04	0.00	4.71
• Military	\$12.61	6.24	10.95	2.50	-1.82	3.30	3.30
Employed full-time, civilians	0.342	0.074	0.143	0.025	-0.025	0.040	0.043
Employed full-time, including military	0.403	0.101	0.183	0.037	-0.031	0.054	0.055
Hours per week on civilian jobs	18.33	3.04	5.65	1.31	-1.25	1.59	1.70
Hours per week if employed in civilian job	33.29	2.86	3.03	3.43	-0.14	1.08	0.91
Hourly wage rate for civilian employment	\$3.47	-0.86	-0.13	-1.74	-0.70	-0.84	-0.04

(continued)

TABLE V.1 (Continued)

Variable	Unweighted Sample Mean For Corpsmembers At Follow-Up	Unweighted Average Job Corps Effect For Sample	Average Job Corps Effect For Program Completers	Average Job Corps Effect For Partial Completers	Average Job Corps Effect For Early Dropouts	Average Job Corps Effect For All Enrollees	Average Job Corps Effect For Enrollees With Noncompleters Assumed To Be Zero
<b>D. FROM TIME LINE INFORMATION ON WORK HISTORIES AND RELATED VARIABLES</b>							
Employment or looking for work, civilians	0.785	0.029	0.080	-0.007	-0.047	0.003	0.024
Employment or looking for work, including military	0.804	0.040	0.094	-0.005	-0.037	0.032	0.028
Looking for work, civilians	0.364	0.027	-0.005	0.060	0.036	0.031	-0.001
Active, including military <sup>a/</sup>	0.628	0.073	0.138	0.011	0.015	0.052	0.041
• Employment, civilians	0.503	0.019	0.111	-0.053	-0.084	-0.016	0.033
• In military	0.091	0.045	0.079	0.010	-0.013	0.024	0.024
• In training or work- experience program, civilians <sup>b/</sup>	0.044	0.056	0.076	0.044	0.108	0.079	0.223
• In school, civilians <sup>c/</sup>	0.110	-0.012	-0.017	-0.012	0.009	-0.005	-0.005
Civilians in union job <sup>c/</sup>	0.095	0.015	0.046	-0.012	-0.014	0.005	0.014
Civilians in PSE job <sup>c/</sup>	0.063	0.023	0.026	0.019	0.026	0.024	0.008

<sup>a/</sup> The estimates of Job Corps effects are adjusted for pre-enrollment differences in the variables between the Job Corps and comparison samples, except where noted (for more details see Section IV.3).

<sup>b/</sup> The information on training, work-experience, and school programs comes from the time-line data on work histories and related activities. The information on military service was verified with official records.

<sup>c/</sup> Appropriate baseline measures were not available for these variables, and the estimates are simple Job Corps minus comparison group means at postprogram.

TABLE V.2

ESTIMATES OF EMPLOYMENT AND RELATED EFFECTS IN WEEK PRIOR TO INTERVIEW: FEMALES WITHOUT CHILDREN<sup>a/</sup>

Variable	Unweighted Sample Mean For Corpsmembers At Follow-up	Unweighted Average Job Corps Effect For Sample	Average Job Corps Effect For Program Completers	Average Job Corps Effect For Partial Completers	Average Job Corps Effect For Early Dropouts	Average Job Corps Effect For All Enrollees	Average Job Corps Effect For Enrollees With Noncompleters Assumed To Be Zero
A. FROM BLS QUESTIONS FOR LAST WEEK <sup>b/</sup>							
Civilians in labor force	0.768	0.118	0.202	0.033	-0.051	0.050	0.061
In labor force or military	0.773	0.129	0.216	0.039	-0.051	0.056	0.065
Active, including military <sup>c/</sup>	0.517	-0.001	0.058	-0.071	-0.082	-0.039	0.015
• Employment, civilians	0.398	0.030	0.086	-0.029	-0.080	-0.015	0.026
• In military	0.024	0.018	0.024	0.009	-0.006	0.008	0.007
• In training or work- experience program, civilians <sup>c/</sup>	0.032	-0.008	-0.010	-0.020	0.030	0.003	-0.003
• In school, civilians <sup>c/</sup>	0.146	-0.080	-0.067	-0.111	-0.030	-0.066	-0.020
Earnings per week, civilians	\$38.30	13.72	22.52	3.51	1.12	8.26	6.76
Earnings per week, including military	\$40.53	14.99	23.38	5.48	-0.34	8.52	7.01
• Civilian employment	\$37.29	12.49	20.05	4.23	0.49	7.47	6.01
• Military	\$3.33	2.50	3.33	1.25	-0.83	1.05	1.00
Employed full-time, civilians	0.229	0.048	0.073	0.017	0.023	0.036	0.022
Employed full-time, including military	0.246	0.064	0.093	0.029	0.021	0.045	0.028
Hours per week on civilian jobs	12.83	2.97	4.76	1.23	-0.96	1.41	1.43
Hours per week if employed in civilian job	32.57	4.89	2.87	9.08	4.01	5.19	0.86
Hourly wage rate for civilian employment	\$2.96	0.16	0.45	-0.45	0.69	0.29	0.14

(continued)

219

TABLE V.2 (Continued)

Variable	Unweighted Sample Mean For Corpsmembers At Follow-Up	Unweighted Average Job Corps Effect For Sample	Average Job Corps Effect For Program Completers	Average Job Corps Effect For Partial Completers	Average Job Corps Effect For Early Dropouts	Average Job Corps Effect For All Enrollees	Average Job Corps Effect For Enrollees With Noncompleters Assumed To Be Zero
<b>B. FROM TIME LINE INFORMATION ON WORK HISTORIES AND RELATED VARIABLES</b>							
Employment or looking for work, civilians	0.704	0.119	0.193	0.047	-0.039	0.056	0.058
Employment or looking for work, including military	0.711	0.129	0.207	0.050	-0.033	0.064	0.062
Looking for work, civilians	0.384	0.183	0.205	0.182	0.062	0.141	0.061
Active, including military <sup>c/</sup>	0.506	0.020	0.076	-0.050	-0.051	-0.012	0.023
• Employment, civilians	0.374	-0.041	0.011	-0.110	-0.082	-0.063	0.003
• In military	0.024	0.018	0.024	0.018	-0.013	0.008	0.007
• In training or work- experience program, civilians <sup>c/</sup>	0.032	-0.009	-0.021	-0.001	0.027	0.004	-0.006
• In school, civilians <sup>c/</sup>	0.146	-0.080	-0.067	-0.111	-0.030	-0.066	-0.020
Civilians in union job <sup>c/</sup>	0.079	0.052	0.061	0.058	-0.027	0.025	0.018
Civilians in PSE job <sup>c/</sup>	0.037	0.004	0.017	-0.011	-0.011	0.001	0.005

<sup>a/</sup> The estimates of Job Corps effects are adjusted for pre-enrollment differences in the variables between the Job Corps and comparison samples, except where noted (for more details see Section IV.3).

<sup>b/</sup> The information on training, work-experience, and school programs comes from the time-line data on work histories and related activities. The information on military service was verified with official records.

<sup>c/</sup> Appropriate baseline measures were not available for these variables, and the estimates are simple Job Corps minus comparison group means at postprogram.

TABLE V. 3

ESTIMATES OF EMPLOYMENT AND RELATED EFFECTS IN WEEK PRIOR TO INTERVIEW: FEMALES WITH CHILDREN<sup>a/</sup>

Variable	Unweighted Sample Mean For Corpsmembers At Follow-Up	Unweighted Average Job Corps Effect For Sample	Average Job Corps Effect For Program Completers	Average Job Corps Effect For Partial Completers	Average Job Corps Effect For Early Dropouts	Average Job Corps Effect For All Enrollees	Average Job Corps Effect For Enrollees With Noncompleters Assumed To Be Zero
A. FROM BLS QUESTIONS FOR LAST WEEK <sup>b/</sup>							
Civilians in labor force	0.59	0.031	0.154	-0.036	-0.247	-0.063	0.046
In labor force or military	0.594	0.032	0.155	-0.035	-0.245	-0.062	0.046
Active, including military <sup>c/</sup>	0.271	-0.070	-0.008	-0.141	-0.068	-0.072	-0.002
• Employment, civilians	0.198	-0.064	-0.029	-0.071	-0.190	-0.106	-0.009
• In military	0.0	0.0	0.0	0.0	0.0	0.0	0.0
• In training or work- experience program, civilians <sup>c/</sup>	0.052	0.012	0.004	-0.016	0.141	0.053	0.001
• In school, civilians <sup>c/</sup>	0.052	-0.081	-0.044	-0.133	0.042	-0.070	-0.013
Earnings per week, civilians	\$18.48	-3.15	-1.09	-6.16	-1.50	-2.78	-0.33
Earnings per week, including military	\$18.48	-4.09	-2.60	-6.39	-2.32	-3.63	-0.78
• Civilian employment	\$18.48	-4.09	-2.60	-6.39	-2.32	-3.63	-0.78
• Military	\$0.00	0.0	0.0	0.0	0.0	0.0	0.0
Employed full-time, civilians	0.094	-0.050	-0.033	-0.045	-0.137	-0.078	-0.010
Employed full-time, including military	0.094	-0.050	-0.034	-0.046	-0.138	-0.079	-0.010
Hours per week on civilian jobs	5.65	-1.35	1.99	-3.49	-7.36	-3.39	0.60
Hours per week if employed in civilian job	25.22	1.08	8.72	-8.05	0.00	0.20	2.62
Hourly wage rate for civilian employment	\$4.42	0.33	-3.21	2.42	0.00	-0.24	-0.96

(continued)

TABLE V.3 (Continued)

Variable	Unweighted Sample Mean For Corpsmembers At Follow-Up	Unweighted Average Effect For Sample	Average Job Corps Effect For Program Completers	Average Job Corps Effect For Partial Completers	Average Job Corps Effect For Early Dropouts	Average Job Corps Effect For All Enrollees	Average Job Corps Effect For Enrollees With Noncompleters Assumed To Be Zero
B. FROM TIME LINE INFORMATION ON WORK HISTORIES AND RELATED VARIABLES							
Employment or looking for work, civilians	0.050	-0.019	0.115	-0.054	-0.499	-0.161	0.034
Employment or looking for work, including military	0.050	-0.015	0.123	-0.056	-0.444	-0.158	0.037
Looking for work, civilians	0.354	0.052	0.111	0.089	-0.382	-0.093	0.033
Active, including military <sup>c/</sup>	0.250	-0.091	-0.030	-0.166	-0.068	-0.086	-0.009
• Employment, civilians	0.177	-0.062	0.002	-0.115	-0.143	-0.091	0.001
• In military	0.0	0.0	0.0	0.0	0.0	0.0	0.0
• In training or work-experience program, civilians <sup>c/</sup>	0.052	-0.034	-0.001	-0.139	0.244	0.056	-0.0002
• In school, civilians <sup>c/</sup>	0.052	-0.081	-0.044	-0.133	-0.042	-0.070	-0.013
Civilians in union job <sup>c/</sup>	0.052	0.012	0.027	-0.015	0.051	0.024	0.008
Civilians in PSE job <sup>c/</sup>	0.052	0.012	0.004	0.035	-0.040	-0.004	0.001

<sup>a/</sup> The estimates of Job Corps effects are adjusted for pre-enrollment differences in the variables between the Job Corps and comparison samples, except where noted (for more details see Section IV.3).

<sup>b/</sup> The information on training, work-experience, and school programs comes from the time-line data on work histories and related activities. The information on military service was verified with official records.

<sup>c/</sup> Appropriate baseline measures were not available for these variables, and the estimates are simple Job Corps minus comparison group means at Postprogram.

approximately 13 percentage points and in full-time employment (i.e., working at least thirty-five hours per week) of approximately 14 percentage points. They worked almost six hours more per week, and they earned over \$23 more per week (i.e., an increase of over \$1,200 in annual earnings). Furthermore, their probability of being in the military service was approximately 8 percentage points higher.

All of the large effects shown in Table V.1 for Corpsmen who completed the program are, of course, significantly different from zero at greater than the 99 percent level of statistical confidence. In contrast, the impacts for males who were only partial completers, while still positive, are small and statistically insignificant. The estimated impacts for early dropouts are negative, but are also small and insignificantly different from zero (as with the partial completers). As shown in the last two columns of Table V.1, the average effect for all enrollees is still quite large, especially if the statistically insignificant effects for noncompleters are set equal to 0, as in the final column (e.g., an earnings gain, including that from the military, of \$8.01 per week, or over \$400 per year).<sup>1/</sup> For all Corpsmen, the most precise estimate of overall earnings gains attributable to Job Corps (including military earnings) from our sample (i.e., without assuming zero effects for noncompleters) is \$3.30 during the week before the follow-up survey.

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<sup>1/</sup>The benefit-cost analysis uses our best point estimate, which includes the insignificant effects for noncompleters and yields an estimate of annual earnings gain of \$171.60 for Corpsmen (i.e., \$3.30 times 52). A prior decision was made to use only the best point estimates for the benefit-cost analysis in order not to appear to be arbitrarily (or selectively) excluding results. Because estimates for a wide variety of benefits and costs are included, statistically insignificant estimates of effects near zero should tend to cancel out.

This average weekly earnings gain for all male enrollees is just over \$171 at an annual rate, and is based on reweighting the observations to correct for the fact that our sample overrepresents completers. (Again note that our sample of Corpsmembers contained 49 percent program completers, 40 percent partial completers, and 11 percent early dropouts, as compared to 30, 30, and 40 percent, respectively, for Job Corps as a whole in fiscal year 1977.)<sup>1/</sup>

As discussed earlier (see Section IV.B.3), the differences in estimates that we observe among completion categories seem to be attributable to separate treatment effects and not to differences in the underlying characteristics of youths who select into the different completion statuses. We obtain similar results to those presented in this chapter even when we control (i.e., adjust) for several potential differences

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<sup>1/</sup>As discussed in Chapter IV, 30 percent of all Corpsmembers were program completers, 30 percent were partial completers, and 40 percent were early dropouts in fiscal year 1977. However, our sampling approach overrepresented completers (49 percent full completers, 40 percent partial completers, and 11 percent early dropouts). Therefore, to obtain estimates that are representative of all Corpsmembers, we have to reweight the estimates by completion category as follows:

Average for All Enrollees = 0.30 (Average for Program Completers)  
+ 0.30 (Average for Partial Completers)  
+ 0.40 (Average for Early Dropouts).

Chapter IV presents additional details on the need and justification for this reweighting of observations. In addition, note that the relationship between the unweighted average for our sample and the separate estimates by completion categories is as follows:

Unweighted Average for Sample = 0.49 (Average for Program Completers)  
+ 0.40 (Average for Partial Completers)  
+ 0.11 (Average for Early Dropouts),

which clearly shows how the unweighted average overrepresents Corpsmembers who are completers. Because the estimated impacts of Job Corps are usually larger for completers, the effect of the reweighting to obtain representative enrollee estimates lowers the estimates compared to the unweighted sample mean.

among Corpsmembers (including factors such as pre-enrollment values of the dependent variables, age, race-ethnicity, education, training, previous work history, health, etc.). In Chapter VII we show how completers seem to include both youths with high abilities and those with low labor-market opportunities (lower opportunity costs to staying in the program), which will result in opposite biases when we attempt to estimate the impacts attributable to program completion, as opposed to impacts attributable to underlying differences among completers (upward bias from youths with high innate abilities, and downward bias from youths with low labor-market potential). Our best estimate with the current follow-up data (see Technical Report C for more details) is that the biases are largely offsetting after controlling for pre-enrollment differences (which we do throughout this chapter), so that the impacts we estimate for program completers can be attributed to completion.

With our first follow-up sample, there is some potential for additional biases, and, once again, the effects will work in opposite directions. Even though we obtain similar estimates of effects by completion status after controlling for all types of variables, the estimated impacts for completers may be biased upwards because nearly one-half of the baseline sample of Corpsmembers were still in the program at the cut-off date for the first follow-up survey. Therefore, the first follow-up sample of completers probably has too many youths who have high innate abilities and, hence, complete the Job Corps program quickly (as opposed to youths who move through the program more slowly and, hence,

are more likely to still be in Job Corps at the cut-off date). Similarly, the first follow-up sample may have too few completers from the youngest age cohort because younger Corpsmembers will have entered the program a shorter time ago, on average, than older Corpsmembers. In contrast, there may be some downward bias for completers because they will have been out of Job Corps a shorter time than noncompleters on average and, hence, are closer to the time frame when employment and earnings are low from just re-entering the labor market. This downward bias for completers is likely to be especially strong when data are averaged over the entire postprogram time period, because the postprogram period for completers will contain disproportionately fewer months beyond the initial transition period than the postprogram period for noncompleters. More precise estimates of completion effects can be estimated with data from the next follow-up survey because (1) almost all of the baseline Corpsmember sample will be out of the program and will be able to be interviewed, and (2) the postprogram observation period will be much longer than for the first follow-up survey on average (the expected average is approximately fifteen months--over twice as long).

The labor-market and related effects for females without children (85 percent of the Corpswomen who had been out of the program for an average of seven months) are similar to those for males in the week prior to the first follow-up interview (see Table V.2). For Corpswomen who completed the full program the estimated labor-market impacts are similar to those for male Corpsmembers--of a similarly large magnitude and high statistical significance. The estimated impacts are slightly larger for

labor-force participation and slightly smaller for most other variables. For noncompleters, as compared to males, the impacts for females without children tended to be approximately the same for partial completers and slightly larger for early dropouts. However, these patterns between females and males are not always clear (partly because the estimates for partial completers and early dropouts have large standard errors for both females and males).

The average reweighted effects for all enrollees tended to be larger for childless females than for males, particularly for earnings and hours worked. The larger estimated impacts for the average (reweighted) for all female enrollees (as compared to males) is due primarily to more positive effects for early dropouts. For all female enrollees without children, we observe an average gain in weekly earnings of \$8.52 (approximately \$443 on an annual basis) if all categories of completion are averaged in, and \$7.01 (approximately \$365 on an annual basis) if the insignificant effects for noncompleters are set equal to 0. This compares to \$3.30 and \$8.01, respectively, for males.

There were very few Corpswomen in the sample with children. Only 100 Corpswomen (accounting for less than 5 percent of the entire Corpsmember sample) had children of their own (including stepchildren and foster children) living with them at the time of the first follow-up interview (on average, seven months after leaving Job Corps). The impacts for Corpswomen with children (presented in Table V.3) appear to be very small, and the estimates are not very

precise. All impacts for females with children are not only close to 0 in magnitude, but are also statistically insignificant.<sup>1/</sup>

Two anomalous effects show up in the estimates for labor-market and related impacts in the week prior to the first follow-up interview. First, the effects on activity rates (work, military, training, or school) tend to show reductions for female Corpsmembers. These estimated reductions in overall activity for females are basically small and statistically insignificant, however, and occur primarily because of reductions in high school attendance for former Corpsmembers. These reductions in high school attendance are, in turn, due at least in part to the timing of terminations from Job Corps within our sample (late summer and early fall) and to the GEDs Corpsmembers earned while they were in the program (see Section V.C, below).

Second, the findings for wage rates among male Corpsmembers are somewhat more puzzling. Our estimates suggest that Corpsmen tended to earn slightly less per hour than they would have earned had they not enrolled in Job Corps. In contrast, we find that Corpswomen without children received slightly higher wages. However, the negative wage impacts for males are statistically insignificant (i.e., they easily could be 0 or above); hence, it is not clear what to make of them. On the other hand, the positive wage impacts for females are statistically

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<sup>1/</sup>Because of the small number of observations for females with children and the generally small magnitude and insignificance of estimates of Job Corps impacts for them, we will not discuss their results further in the text. However, we continue to present tabulations of findings for all groups.

significant (i.e., they are likely to be greater than 0). A zero wage rate effect, as observed for Corpsmen, could occur even with increased employability if that employability manifests itself only through hours of work and earnings, and not through wage rates--perhaps because of (1) an excessive supply of youth labor combined with a minimum wage law, or (2) some youths trading off additional hours (and earnings) for slightly lower wage rates.

## 2. Impacts for the Initial Months after Leaving Job Corps

Estimates for the average Job Corps effects on employment and earnings over the entire postprogram period (from the time of termination to the first follow-up interview--an average of six full months<sup>1/</sup>) provide a decidedly different picture. When Corpsmembers' work histories for the entire postprogram observation period are averaged, they show much more negative impacts. As summarized in Table V.4, there were small increases in labor-force participation (looking for work or employed), employment, hours worked, weeks worked, and earnings for males who completed the program. However, Corpsmen who did not complete the program generally showed decreases in each of these measures of labor-market activity. The effects for both completers and noncompleters are significant at approximately the 95 percent level of statistical confidence, except for those associated with earnings. Taken together, the effects for Corpsmen who completed the program and those who did not yield an estimated impact on employment and earnings for the average

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<sup>1/</sup> Although the postprogram period covers an average of seven months, the beginning and end months with partial data are excluded from this analysis.

TABLE V.4

## ESTIMATES OF EMPLOYMENT AND RELATED EFFECTS FOR CIVILIANS

AVERAGED OVER THE ENTIRE FOLLOW-UP PERIOD<sup>a/</sup>

Variable	Unweighted Sample Mean For Corpsmembers At Follow-Up	Unweighted Average Job Corps Effect For Sample	Average Job Corps Effect For Program Completers	Average Job Corps Effect For Partial Completers	Average Job Corps Effect For Early Dropouts	Average Job Corps Effect For All Enrollees
<b>A. MALES</b>						
Percent of time looking for work or employed <sup>b/</sup>	0.819	0.050	0.077	0.035	-0.012	0.029
Percent of time employed	0.487	-0.024	0.053	-0.094	-0.081	-0.045
Earnings per week	\$63.30	-3.34	12.78	-16.10	-22.37	-9.94
Hours per week	18.86	-1.17	1.52	-3.43	-3.90	-2.13
Weeks worked per six months	12.69	-0.62	1.37	-2.44	-2.11	-1.17
<b>B. FEMALES WITHOUT CHILDREN</b>						
Percent of time looking for work or employed <sup>b/</sup>	0.729	0.174	0.209	0.152	0.104	0.150
Percent of time employed	0.358	-0.007	0.018	-0.049	0.012	-0.005
Earnings per week	\$37.29	8.00	14.75	-2.31	10.04	7.75
Hours per week	12.76	0.24	0.78	-1.03	2.42	0.89
Weeks worked per six months	9.33	-0.18	0.48	-1.27	0.31	-0.11
<b>C. FEMALES WITH CHILDREN</b>						
Percent of time looking for work or employed <sup>b/</sup>	N.C.	N.C.	N.C.	N.C.	N.C.	N.C.
Percent of time employed	0.213	-0.037	0.064	-0.099	-0.214	-0.100
Earnings per week	\$20.92	-4.78	4.80	-9.02	-24.89	-11.49
Hours per week	7.70	-1.52	3.21	-4.11	-11.43	-4.84
Weeks worked per six months	5.54	-0.96	1.66	-2.58	-5.83	-2.61

<sup>a/</sup> The estimates of Job Corps effects are adjusted for pre-enrollment differences in the variables between the Job Corps and comparison samples, except where noted (for more details see Section IV.3).

<sup>b/</sup> Appropriate baseline measures were not available for these variables, and the estimates are from regressions of "Looking for Work or Employed" on several sample characteristics.

N.C. = Not calculated

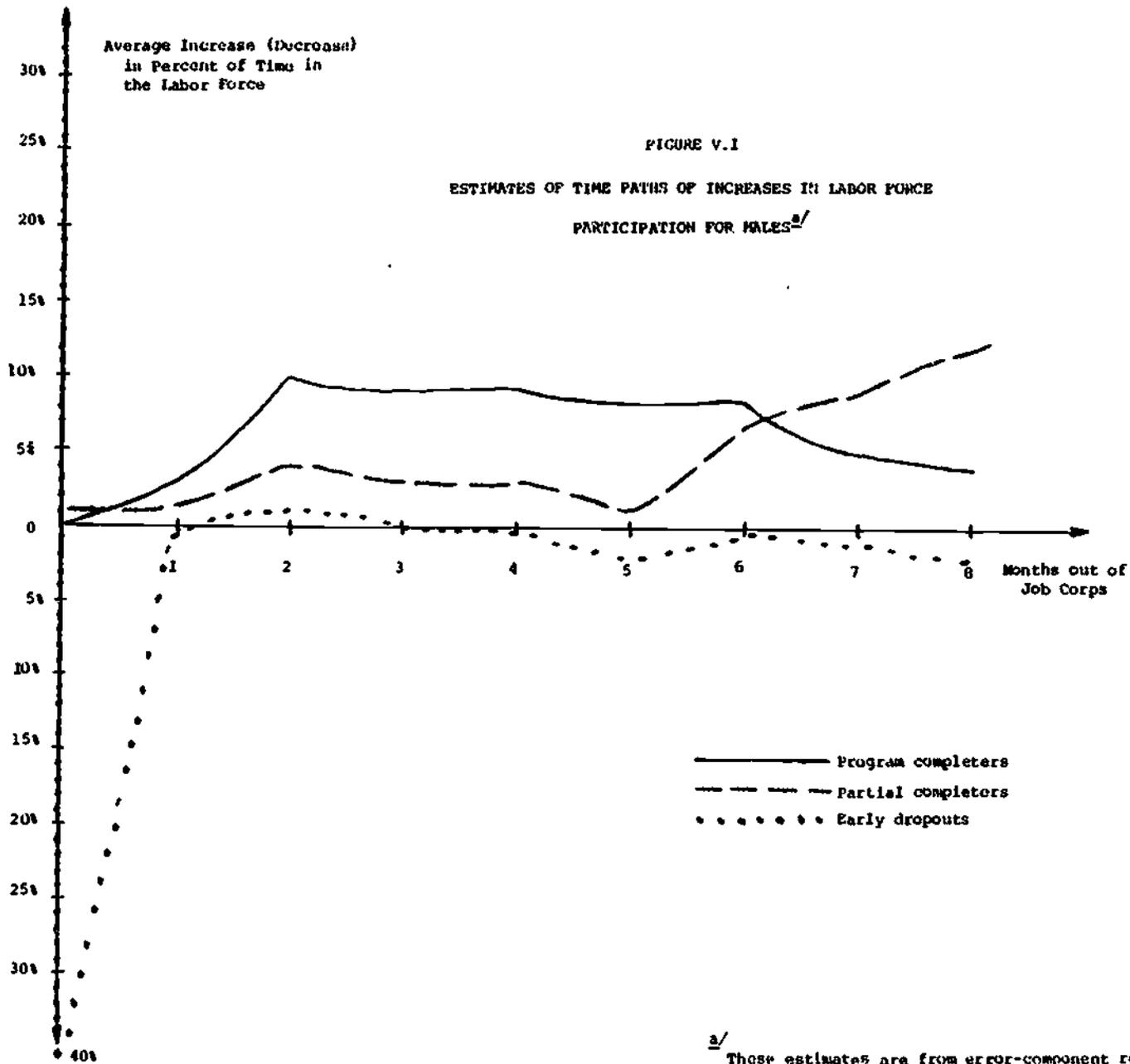
enrollee that is negative and statistically insignificant for the first few months after leaving Job Corps, while the effect on labor-force participation is positive and significant.

The employment and earnings impacts for childless females are more positive but less significant (statistically). The impacts for Corpwomen who completed the program are positive, on average, but are small and, except for labor-force participation and earnings, insignificantly different from 0 for the first six months after leaving Job Corps. However, for females, the effects for early dropouts are similar to those for completers (however, they are less significant in terms of statistical confidence). The estimated impacts for partial completers are negative, but are also insignificantly different from zero. For Corpwomen we found positive but small and statistically insignificant impacts overall for the first few months after they left the program.

At first glance, the findings for the first six months after leaving Job Corps may seem puzzling or even contradictory when contrasted to estimates for the week before the interview.<sup>1/</sup> However, as shown graphically in Figures V.1 to V.6, the findings are quite consistent. When Corpsmembers left the program, they initially experienced a period of unemployment as they re-entered the regular labor market; not until after a few months did the positive impacts of Job Corps begin to show through. Rather than a diminishing of the effects over time, as had been previously suggested (see Harris, A Survey of Ex-Corpsmen), we found a

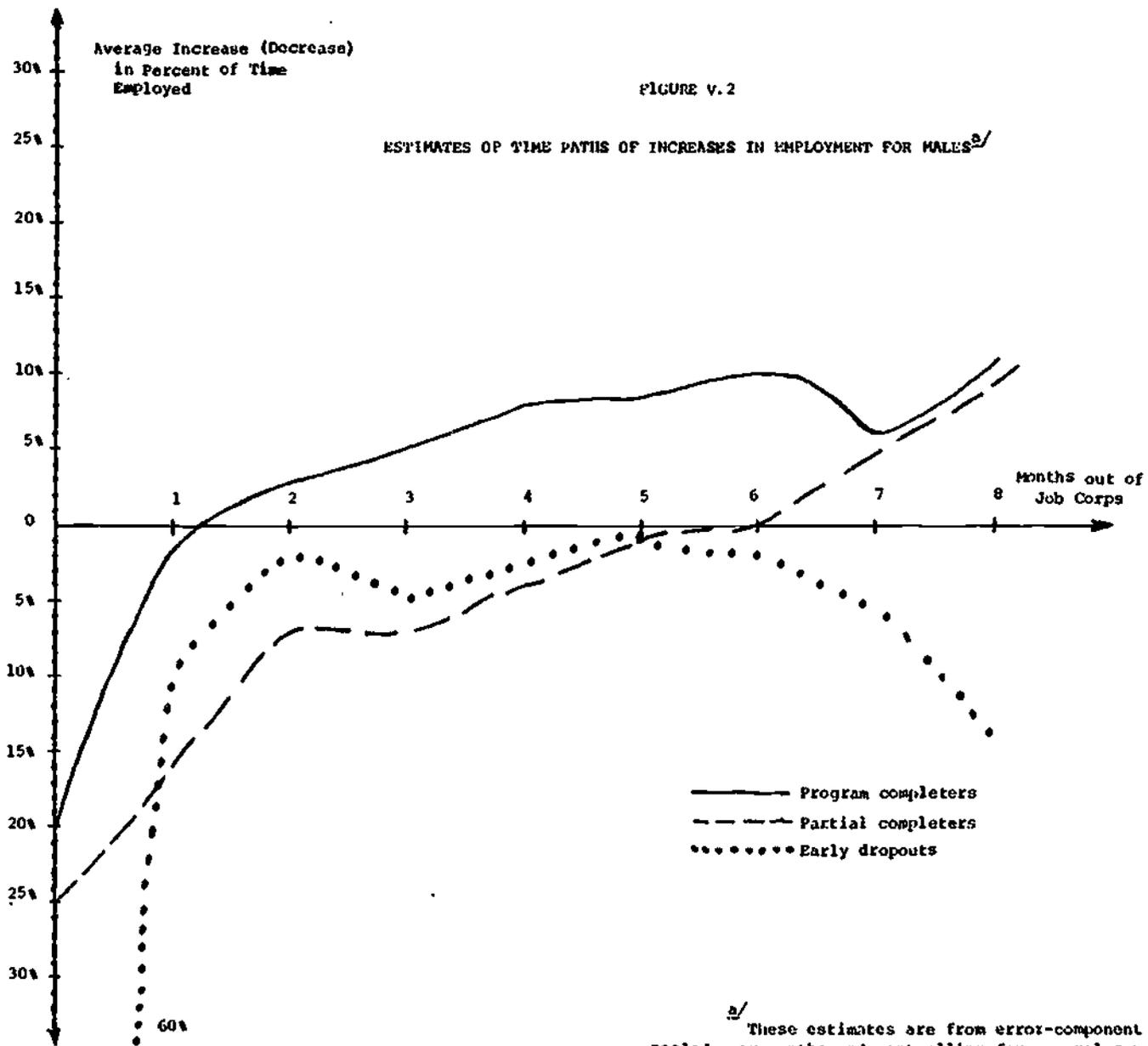
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<sup>1/</sup>A minor factor that may contribute to the observed differences is that, while jobs for the monthly data must have lasted at least two weeks to have been recorded in the interview, all current jobs were recorded. Consequently, the most recent week's data, whether from the baseline survey questions or from the time-line information, contains transitory jobs that are missed for earlier periods.



<sup>a/</sup> These estimates are from error-component regressions with data pooled over months and controlling for several sample characteristics.

218



Average Increase (Decrease)  
in Percent of Time  
Employed

FIGURE V.2

ESTIMATES OF TIME PATHS OF INCREASES IN EMPLOYMENT FOR MALES<sup>a/</sup>

Months out of  
Job Corps

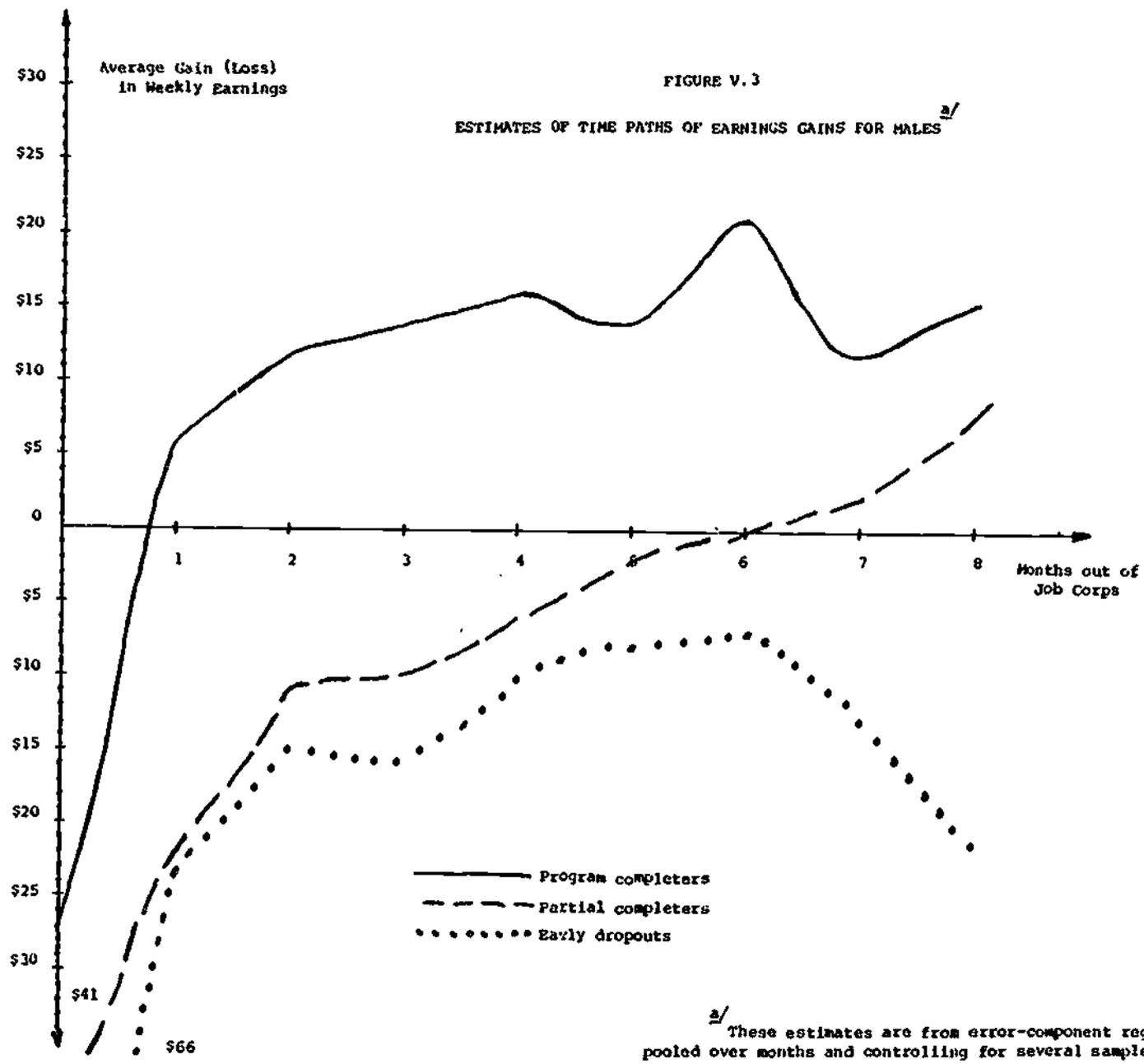
— Program completers  
 - - - Partial completers  
 ..... Early dropouts

<sup>a/</sup> These estimates are from error-component regressions with data pooled over months and controlling for several sample characteristics.

237

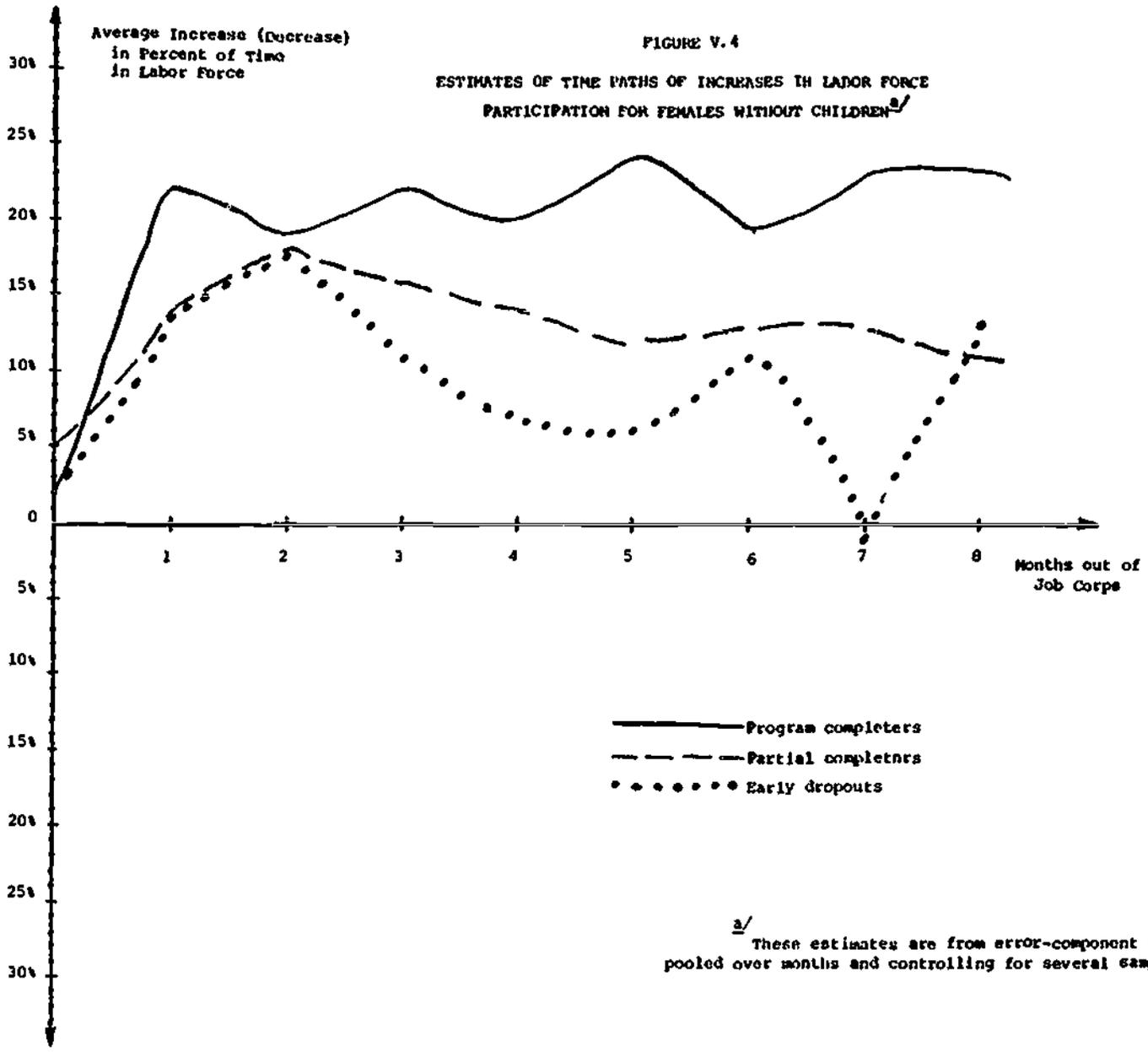
233

- 219 -

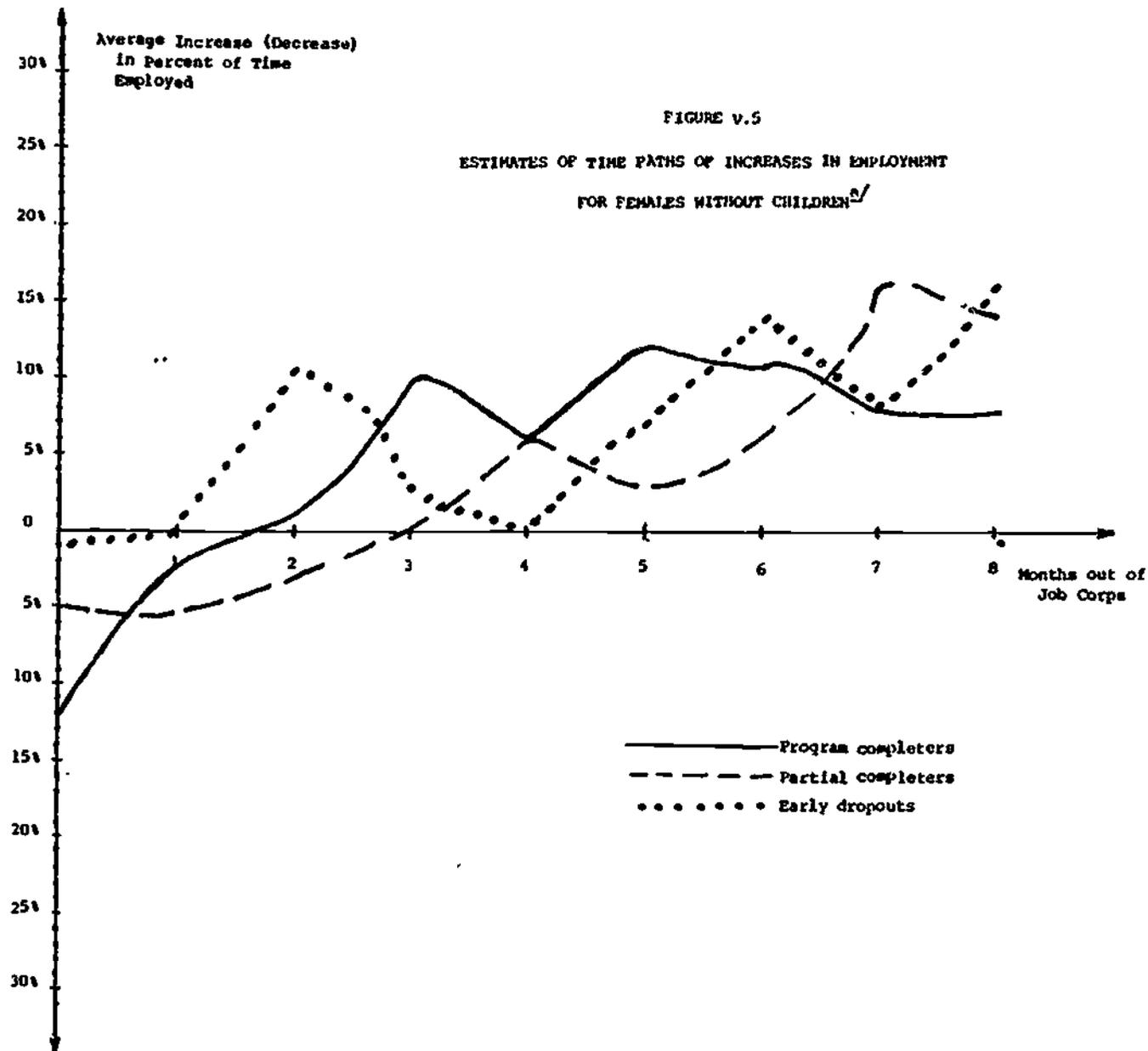


<sup>a/</sup> These estimates are from error-component regressions with data pooled over months and controlling for several sample characteristics.

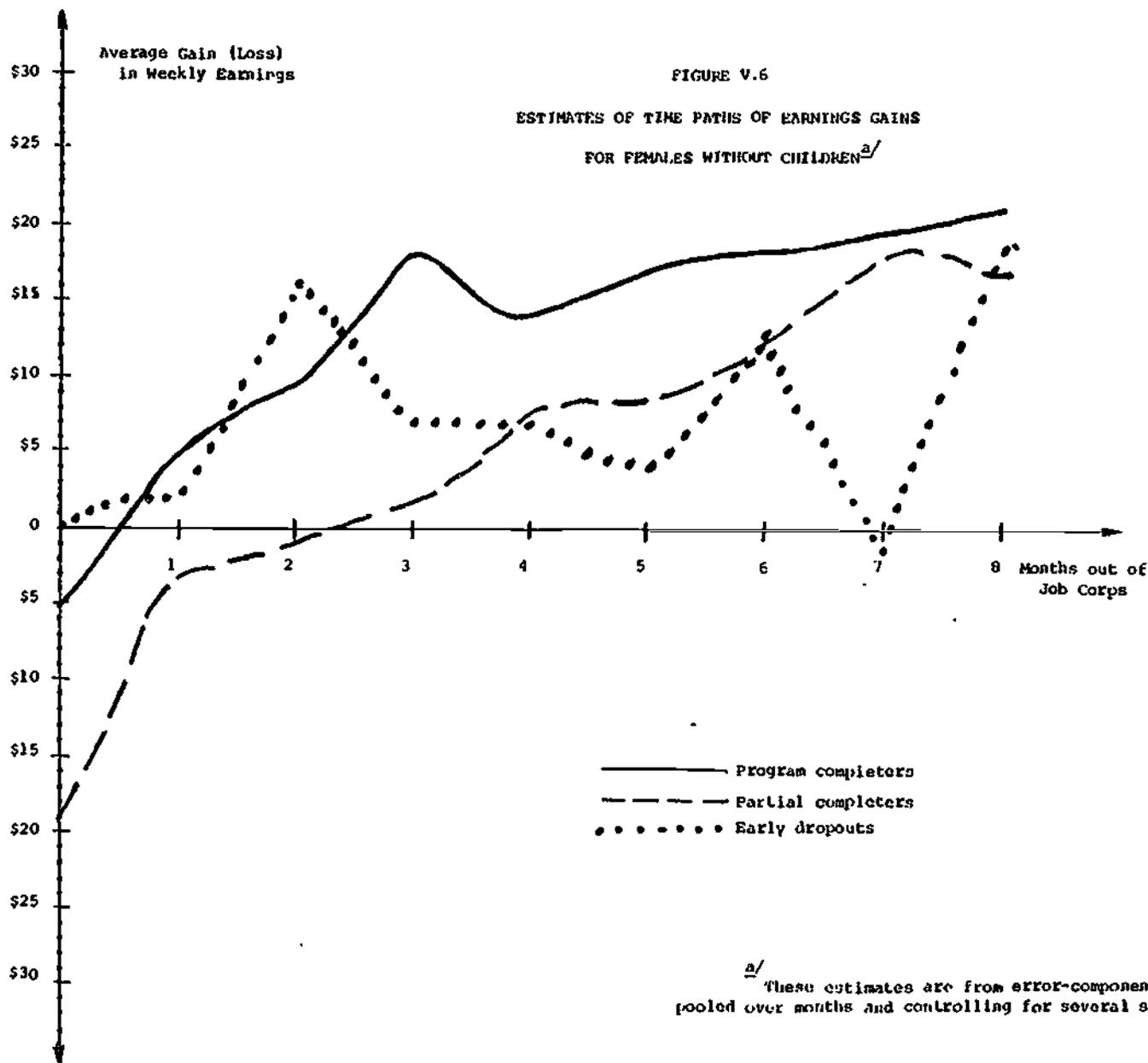
- 220 -



<sup>a/</sup> These estimates are from error-component regressions with data pooled over months and controlling for several sample characteristics.



<sup>2/</sup> These estimates are from error-component regressions with data pooled over months and controlling for several sample characteristics.



<sup>a/</sup> These estimates are from error-component regressions with data pooled over months and controlling for several sample characteristics.

quite remarkable increase in impacts for the short-term period. Only after about six months from the point of termination did the positive impacts of Job Corps begin to predominate. The labor-force participation rates were initially higher for Corpsmembers, but it took a few months for them to find jobs and for the positive impacts on employment and earnings to be observable.

An important question to ask is, what causes this time pattern of first negative and then positive impacts in the short-run? There seem to be two plausible (and reinforcing) explanations. First, as suggested by Corpsmembers (see Chapter VII), there was probably a need for more and better placement and related services in the postprogram period (Corpsmembers' perceptions seem to be borne out by their short-term work histories after leaving Job Corps). Second, the main postprogram impacts on employment and earnings were for program completers who finished a training program and received GEDs (see Section B), and, because these youths had been out of the labor market for up to two years, it may have taken them a few months to catch up to youths in the comparison group who had been in the labor force more regularly.

In order to be more certain about postprogram time patterns and their causality, the youths need to be observed over a longer time period. The number of observations in our current sample becomes too small to use after the eighth month, because only a very few of the Corpsmembers had been out that long--less than 20 percent of the sample. In addition, it appears that the main impacts of Job Corps were just starting to become apparent toward the end of the follow-up time period for the current study. Additional follow-up data will permit us to learn more about the positive impacts of Job Corps on the employment and earnings of participants and about the timing (further growth or decay) of these effects.

### 3. Impacts on Employment and Earnings During the Program

Of course, while Corpsmembers are in the program, they forego some amount of employment and earnings in the regular labor market (see Chapter VI). The earnings foregone by the average participant amounted to \$29.74 per week (the per-participant basis is appropriate for in-program impacts). As discussed further in the benefit-cost analysis, however, Job Corps participants produced output worth an average of approximately \$29.59 per week to society as part of their training in work projects and work-experience programs.<sup>1/</sup>

### 4. Differences in Impacts Among Corpsmembers and Centers

Tables V.5 and V.6 present the findings from regressions of pre- to postprogram changes in earnings and employment on factors representing characteristics of Corpsmembers and features of centers. The subgroup averages shown within each factor are adjusted via regression to net out the independent effects of all the other variables in the table. No differences in the labor-market impacts of the Job Corps program resulted from the alternative features of centers that we have been able to measure thus far in our evaluation. Neither center administration, operator, size, location, nor coed status had any significant effects on the pre- to postprogram changes in employment or earnings for either males or females.

In contrast, the characteristics of Corpsmembers did seem to affect the impacts of the program on their employment and earnings. Caution should be exercised in interpreting these differences in Job Corps impacts among Corpsmembers, however, because the causality of the differences is largely unknown. For example, the larger beneficial impacts

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<sup>1/</sup> This value of program output estimate represents an alternative supplier's price and may be slightly in excess of the demand value. It includes only a small amount of output consumed by Corpsmembers and the value of only a few materials and supplies provided by Job Corps. For more details, see Chapter VI and especially Technical Reports D and E.

TABLE V.5

## ESTIMATES OF DIFFERENCES IN LABOR MARKET EFFECTS

## AMONG CORPSMEMBERS: MALES

Subgroups	Employment: Changes Between Pre-Enrollment and Week Prior to Follow-Up Interview (Overall Change: .141) (Controlling for All Other Factors)	Earnings: Changes Between Pre-Enrollment and Week Prior to Follow-Up Interview (Overall Change: 31.31) (Controlling for All Other Factors)
<b>Corpsmember</b>		
Race-ethnicity		
Black (n = 890) <sup>a/</sup>	.119	26.08
White (n = 350)	.175	44.84
Hispanic (n = 155)	.252	37.61
American Indian (n = 61)	-.023	12.17
(F-value)	(4.118)***	(4.529)***
Age at termination		
16-17 (n = 514)	.087	22.95
18-22 (n = 942)	.170	35.91
(F-value)	(6.574)***	(6.974)***
High school diploma at enrollment		
No (n = 1,295)	.142	30.82
Yes (n = 151)	.132	35.12
(F-value)	(0.042)	(0.338)
<b>Center</b>		
Administration		
CCC (n = 638)	.107	25.21
Contract (n = 816)	.167	36.28
(F-value)	(0.543)	(0.844)
Operator		
Public (n = 894)	.159	32.62
Private (n = 562)	.111	29.11
(F-value)	(1.172)	(0.268)
Size		
Small (n = 760)	.169	36.80
Medium (n = 125)	.169	26.84
Large (n = 571)	.097	24.69
(F-value)	(0.722)	(0.608)
Location		
City (n = 102)	.154	30.90
Noncity (n = 1,354)	.140	31.34
(F-value)	(0.031)	(0.001)
Coed Status		
Coed (n = 682)	.150	31.97
Noncoed (n = 774)	.132	30.76
(F-value)	(0.088)	(0.018)

Total number of observations for employment = 1,456; for earnings = 1,338.

<sup>a/</sup> The sample sizes are for the employment results. There are fewer observations for the earnings results due to missing data, so the sample sizes for subgroups are proportionately smaller.

\*\*\*The adjusted means for these subgroups are significantly different from the overall mean at the 99 percent level of statistical confidence.

TABLE V. 6

ESTIMATES OF DIFFERENCES IN LABOR MARKET EFFECTS AMONG  
CORPSMEMBERS AND CENTERS: FEMALES WITHOUT CHILDREN

<u>Subgroup</u>	Employment: Changes Between Baseline and Week Prior to Follow- Up Interview (Overall Change: .096) (Controlling for All Other Factors)	Earnings: Changes Between Baseline and Week Prior to Follow- Up Interview (Overall Change: 20.55)
<u>Corpsmember</u>		
Race-ethnicity		
Black (n = 301) <sup>a/</sup>	.078	19.90
White (n = 105)	.169	28.46
Hispanic (n = 85)	.111	14.91
American Indian (n = 17)	-.107	10.28
(F-value)	(1.581)	(0.794)
Age at termination		
16-17 (n = 133)	.109	10.40
18-22 (n = 375)	.091	24.20
(F-value)	(0.093)	(3.579) *
High school diploma at enrollment		
No (n = 355)	.053	16.75
Yes (n = 153)	.197	29.06
(F-value)	(6.447) ***	(3.128) *
<u>Center</u>		
Operator		
Public (n = 105)	.160	26.81
Private (n = 403)	.079	18.89
(F-value)	(1.634)	(1.036)
Size		
Small (n = 45)	.139	22.02
Medium (n = 333)	.098	21.58
Large (n = 130)	.076	17.36
(F-value)	(0.177)	(0.152)
Location		
City (n = 164)	.114	25.36
Noncity (n = 344)	.087	18.25
(F-value)	(0.202)	(0.912)
Coed Status		
Coed (n = 354)	.111	21.60
Noncoed (n = 154)	.061	19.39
(F-value)	(0.841)	(0.233)

Total number of observations for employment = 508; for earnings = 472.

<sup>a/</sup>The sample sizes are for the employment results. There are fewer observations for the earnings results due to missing data, so the sample sizes for subgroups are proportionately smaller.

\*The adjusted means for these subgroups are significantly different from the overall mean at the 90 percent level of statistical confidence.

\*\*\*The adjusted means for these subgroups are significantly different from the overall mean at the 99 percent level of statistical confidence.

for Hispanics are partly determined by their higher program completion rates; at the same time, better postprogram experience for a group undoubtedly causes longer participation and more completions.

Among male Corpsmembers (see Table V.5), both race-ethnicity and age at termination influenced their labor-market experience. Hispanics and whites tended to have much larger gains in employment and earnings than did either blacks or American Indians. In addition, those who were at least 18 years of age when they terminated from the program tended to receive greater benefits in terms of employment and earnings.

For females without children (see Table V.6), those who already had a high school diploma received more benefits, as measured by employment and earnings. In addition, Corpswomen who were at least 18 years of age when they left Job Corps tended to have higher earnings. While race-ethnicity differences appear, the subgroup differences for this factor are not significantly different from the overall means for either employment or earnings.

##### 5. Potential for Future Gains in Employment and Earnings

The time paths of impacts in Figures V.1 through V.6 show a great deal of potential for future gains in employment and earnings among Corpsmembers. Other evidence for larger future gains, in addition to improvements in current earnings and employment rates, are shown by the higher incidence of union jobs among current employment (see tables V.1 to V.3), as well as by the Job Corps' impact on high school diplomas or their equivalent (see Table V.7). The potential for gains in future earnings is discussed in more detail in the following section, "Impacts on Investments in Human Capital."

TABLE V.7

ESTIMATES OF EDUCATION AND TRAINING EFFECTS IN WEEK PRIOR TO INTERVIEW<sup>a/</sup>

Variable	Unweighted Sample Mean For Corpsmembers At Follow-Up	Unweighted Average Job Corps Effect For Sample	Average Job Corps Effect For Program Completers	Average Job Corps Effect For Partial Completers	Average Job Corps Effect For Early Dropouts	Average Job Corps Effect For All Enrollees
A. MALES						
In school <sup>b/</sup>	0.108	-0.015	-0.020	-0.015	0.004	-0.009
• High school	0.036	-0.032	-0.046	-0.026	0.001	-0.021
• College	0.026	0.013	0.032	-0.002	-0.007	0.006
• Vocational <sup>c/</sup>	0.011	0.003	-0.004	0.010	0.003	0.003
• Other	0.035	0.002	-0.001	0.004	0.007	0.004
High school diploma or GED	0.195	0.081	0.149	0.025	0.010	0.056
In training program <sup>b/</sup>	0.044	0.020	0.025	0.013	0.029	0.023
B. FEMALES WITHOUT CHILDREN						
In school <sup>b/</sup>	0.145	-0.081	-0.067	-0.116	-0.018	-0.062
• High school	0.026	-0.102	-0.107	-0.102	-0.065	-0.089
• College	0.064	0.038	0.067	0.0001	0.016	0.027
• Vocational <sup>c/</sup>	0.023	-0.001	-0.002	0.003	-0.002	-0.001
• Other	0.032	-0.017	-0.025	-0.018	0.034	0.001
High school diploma or GED	0.410	0.098	0.172	0.003	0.010	0.057
In training program <sup>b/</sup>	0.032	-0.008	-0.010	-0.020	0.030	0.003
C. FEMALES WITH CHILDREN <sup>d/</sup>						
In school <sup>b/</sup>	0.052	-0.081	-0.044	-0.133	0.042	-0.070
High school diploma or GED	0.250	0.043	0.034	0.043	0.081	0.056
In training program <sup>b/</sup>	0.052	0.012	0.004	-0.016	0.141	0.053

<sup>a/</sup> The estimates of Job Corps effects are adjusted for pre-enrollment differences in the variables between the Job Corps and comparison samples, except where noted (for more details see Section IV.3).

<sup>b/</sup> Appropriate baseline measures were not available for these variables, and the estimates are simple Job Corps minus comparison-group means at postprogram.

<sup>c/</sup> Vocational schools are defined to include technical, business, and secretarial schools.

<sup>d/</sup> Females with children attend school very rarely in a one-week period. Consequently, the detailed results for this group are not very meaningful and are not included here.

## B. IMPACTS ON INVESTMENTS IN HUMAN CAPITAL

For the most part, the impacts on investments in human capital are quite positive. Therefore, there appears to be great potential for future gains in earnings. The only possible negative finding is for high school education--fewer former Corpsmembers than youths in the comparison group were enrolled in high school during the postprogram period. However, this high school effect can be attributed, in part, to both the receipt of GEDs while in Job Corps and the fixed entry dates for high school, which effectively excluded Corpsmembers who left Job Corps during the late summer and early fall. Corpsmembers were more likely to be in college and working toward advanced degrees. For other types of investments in human capital, the impacts of Job Corps are uniformly positive. On average, Corpsmembers (1) were more likely to be in a training or work-experience program, (2) had higher job mobility, (3) had improved health, and (4) were more likely to be in the military.

### 1. Education and Training

One effect of Job Corps is to reduce participation in high school education programs. This is shown in Table V.7 for the week prior to the follow-up interview, and in Table V.8 for the entire postprogram period. This effect is most pronounced for childless females, who have a reduced probability of attending high school (approximately 8 percentage points), and is statistically significant for both the week prior to the survey and when averaged over the entire first follow-up period. This reduction, together with the sometimes negative (but small and statistically insignificant) effects on vocational schools and the "other" category of school (e.g., adult education), results in an overall reduction in school attendance

TABLE V.8

ESTIMATES OF EDUCATION AND TRAINING EFFECTS AVERAGED OVER THE ENTIRE FOLLOW-UP PERIOD<sup>a/</sup>

Variable (Percent of Time)	Unweighted Sample Mean For Corpsmembers At Follow-Up	Unweighted Average Job Corps Effect For Sample	Average Job Corps Effect For Program Completers	Average Job Corps Effect For Partial Completers	Average Job Corps Effect For Early Dropouts	Average Job Corps Effect For All Enrollees
<b>A. MALES</b>						
In school	0.099	-0.022	-0.025	-0.021	-0.090	-0.050
• High school	0.058	-0.026	-0.029	-0.024	-0.014	-0.022
• College	0.017	0.010	0.021	0.0005	-0.0005	0.006
• Vocational <sup>b/</sup>	0.016	0.007	0.006	0.009	0.003	0.006
• Other	0.020	-0.002	-0.002	-0.002	-0.002	-0.002
In training program	0.010	0.010	0.017	0.006	-0.005	0.005
<b>B. FEMALES WITHOUT CHILDREN</b>						
In school	0.114	-0.063	-0.051	-0.085	-0.051	-0.061
• High school	0.042	-0.074	-0.078	-0.075	-0.049	-0.066
• College	0.050	0.030	0.050	0.003	0.018	0.023
• Vocational <sup>b/</sup>	0.027	-0.003	0.006	-0.013	-0.015	-0.008
• Other	0.023	-0.020	-0.022	-0.018	-0.014	-0.018
In training program	0.022	-0.002	0.004	-0.011	-0.001	-0.003
<b>C. FEMALES WITH CHILDREN</b>						
In school	0.066	-0.046	-0.017	-0.095	0.011	-0.029
• High school	0.021	-0.058	-0.069	-0.030	-0.080	-0.065
• College	0.016	-0.001	0.006	-0.004	-0.016	-0.006
• Vocational <sup>b/</sup>	0.004	-0.023	-0.019	-0.027	-0.027	-0.025
• Other	0.047	0.021	0.040	-0.022	0.097	0.044
In training program	0.021	-0.011	-0.022	0.007	0.032	0.008

<sup>a/</sup> Appropriate baseline measures were not available for any of the variables in this table, and the estimates are all simple Job Corps minus comparison group means for the postprogram period. All of these variables are measured as the percent of time participating in the program.

<sup>b/</sup> Vocational schools are defined to include technical, business, and secretarial schools.

that is nearly as large in magnitude--except that Corpswomen without children also have a significantly higher probability of attending college (see below). The impacts on attending high school for male Corpsmembers are also negative and statistically significant. However, the magnitude of these negative impacts are much smaller for Corpsmen than for Corpswomen (only about one-third to one-fourth as large, depending on the time period covered).

It is unclear whether the impact on high school attendance should be considered a net benefit or a net cost to participants. To the extent that former Corpsmembers are less likely to return to high school because they obtain GEDs and other educational benefits while in Job Corps, the impact on high school attendance is a net benefit. Table V.7 shows large (and statistically significant) impacts from Job Corps on the probability that youths (both males and females) had a high school diploma or equivalent degree (i.e., either a regular diploma or GED). For program completers, there is a 15 percentage-point increase for males and a 17 percentage-point increase for childless females in the probability that they had a high school diploma or equivalent degree.

An alternative explanation for part of the effects on high school attendance is less positive: some Corpsmembers simply may have left the center too late to enroll for the 1977-78 academic year. Over 20 percent of the sample did not terminate from Job Corps until after September 1 (see Technical Report B).

Neither of the above reasons for lower high school attendance applies to early dropouts from Job Corps. The increase in high school degrees was only about 1 percentage point for both males and females

who were early dropouts (statistically insignificant), and they were all out of Job Corps in time to register for the fall semester. This may explain why the reductions in high school attendance are much smaller and statistically insignificant for early dropouts. (In fact, there is a very slight increase for male Corpsmembers in the week prior to the interview.)

A more encouraging Job Corps effect is the increase in college attendance shown by program completers among both male and childless-female Corpsmembers. Although the size of this effect is modest in absolute terms, it is more impressive both in percentage terms (an approximate 59 percent increase over the number that would have attended college-- see Table V.12) and when viewed in the context of the small proportion of sample members who had a high school diploma and GED and, thus, who were nominally eligible for college (only approximately one-fifth of the sample were eligible for college in this sense, even after including the Job Corps impact on GEDs). Male Corpsmembers were also more likely to be enrolled in training and special work-experience programs (statistically significant) during the week prior to the interview. (Evidence on training and special work-experience impacts for all groups are shown in Tables V.1 to V.3, as well as in Tables V.7 and V.8.) Overall, female Corpsmembers were also slightly more likely to be in a training or special work-experience program during the week prior to the interview. However, this impact for Corpwomen is very small and statistically insignificant. When averaged over the entire postprogram period, attendance in training programs increases for Corpsmen and decreases slightly for Corpwomen, but is statistically significant for neither group.

## 2. Other Human Capital Effects

The impacts of Job Corps on other investments in human capital (see Table V.9) were generally positive. Corpsmembers had greater mobility, better health, and were more likely to have joined the military. Even without counting the moves that coincided with their leaving centers and the program (i.e., moving from a center to a city other than the one in which the Corpsmember resided before entering Job Corps), Corpsmembers were very much more mobile than youths in the comparison sample. The encouraging aspect of these moves is that, except for females with children, they were usually in response to job opportunities or, to a lesser extent, school or training. These effects are significantly different from zero at greater than the 99 percent level of statistical confidence. This pattern of effects was particularly evident for program completers. There was also a strong mobility effect for noncompleters, but they were proportionately less likely to report that the effect was in response to job opportunities or for school or training.

Former Corpsmembers also tended to show small improvements in health status, as shown by reductions in serious health problems. However, this effect is weak and not significantly different from 0. Finally, as noted earlier, Job Corps increases the probability that individuals will enter the military service. While this was also reported above as an employment effect, it also has human-capital implications both because entering the military (i.e., passing the Armed Forces Qualifying Examination) indicates the attainment of a certain level of human-capital development and because participation in the military offers additional human-capital development through training and job-experience benefits. The increases in civilian employment discussed in Section V.A should also produce some longer-run human-capital benefits through job experience.

TABLE V.9

ESTIMATES OF MOBILITY AND HEALTH EFFECTS AVERAGED OVER THE ENTIRE FOLLOW-UP PERIOD

Variable	Unweighted Sample Mean For Corpsmembers At Follow-Up	Unweighted Average Job Corps Effect For Sample	Average Job Corps Effect For Program Completers	Average Job Corps Effect For Partial Completers	Average Job Corps Effect For Early Dropouts	Average Job Corps Effect For All Enrollees
<b>A. MALES</b>						
Number of Moves per Six-Month Period <sup>a/</sup>						
• For job opportunity	0.252	0.222	0.321	0.135	0.136	0.191
• For school or training	0.076	0.065	0.097	0.029	0.062	0.063
• All outside of city	0.355	0.295	0.391	0.214	0.206	0.264
• Outside of city, excluding move coinciding with leaving Job Corps	0.245	0.180	0.223	0.131	0.176	0.177
Serious health problem <sup>b/</sup>	0.027	-0.006	0.001	-0.009	-0.025	-0.012
<b>B. FEMALES WITHOUT CHILDREN</b>						
Number of Moves per Six-Month Period <sup>a/</sup>						
• For job opportunity	0.248	0.246	0.340	0.165	0.109	0.195
• For school or training	0.070	0.053	0.081	0.021	0.049	0.050
• All outside of city	0.514	0.382	0.469	0.314	0.225	0.325
• Outside of city, excluding move coinciding with leaving Job Corps	0.338	0.206	0.230	0.189	0.157	0.189
Serious health problem <sup>b/</sup>	0.045	-0.0003	-0.006	0.007	0.008	0.004
<b>C. FEMALES WITH CHILDREN</b>						
Number of Moves per Six-Month Period <sup>a/</sup>						
• For job opportunity	0.063	0.034	0.057	0.024	-0.020	0.016
• For school or training	0.042	0.031	0.036	0.014	0.084	0.049
• All outside of city	0.240	0.214	0.173	0.319	-0.026	0.137
• Outside of city, excluding move coinciding with leaving Job Corps	0.156	0.116	0.088	0.184	-0.040	0.066
Serious health problem <sup>b/</sup>	0.062	0.004	0.013	0.015	-0.073	-0.021

<sup>a/</sup> Appropriate baseline measures were not available for these variables, so the numbers presented in this table are from regressions of number of moves per six-month period on sample characteristics.

<sup>b/</sup> These estimates of Job Corps effects are adjusted for pre-enrollment differences in serious health problems between the Job Corps and comparison samples (for more details see Section IV.3).

### C. DEPENDENCE ON PUBLIC TRANSFER PROGRAMS

As shown in Table V.10, former Corpsmembers experienced reduced participation in most transfer programs. Overall (i.e., for all enrollees), the percent of time receiving cash welfare, Food Stamps, public housing, Unemployment Insurance, and Workers' Compensation were all reduced in the postprogram period. For males, the only statistically significant reduction was for Unemployment Insurance, and this was concentrated among program completers and partial completers (in part caused by the loss of entitlements while participating in Job Corps). For childless females, the significant reductions were concentrated among program completers for cash welfare, Food Stamps, and public housing. Reductions in the receipt of cash welfare were also noteworthy for females with children who were completers. Naturally, there were also substantial reductions in the receipt of these types of transfer payments while Corpsmembers were in residence at the centers. Not surprisingly, as shown in Chapter VI, these in-program reductions were even larger than the postprogram reductions.

### D. DRUG USE AND CRIMINAL BEHAVIOR

Corpsmembers showed reductions both in drug and alcohol abuse and in criminal behavior in the postprogram period. As summarized in Table V.11, there were small impacts on the probability of entering drug- or alcohol-treatment programs. The small size of the effects is due in part to the low overall use of these treatment programs. The effect for male program completers is noteworthy for both its size and statistical significance.

TABLE V.10

ESTIMATES OF WELFARE DEPENDENCE EFFECTS AVERAGED OVER THE ENTIRE FOLLOW-UP PERIOD<sup>a/</sup>

Variable (Percent of Time Receiving)	Unweighted Sample Mean For Corpsmembers In Follow-Up	Unweighted Average Job Corps Effect For Sample	Average Job Corps Effect For Program Completers	Average Job Corps Effect For Partial Completers	Average Job Corps Effect For Early Dropouts	Average Job Corps Effect For All Enrollees
<b>A. MALES</b>						
Cash welfare <sup>b/</sup>	0.014	-0.006	-0.007	-0.006	0.001	-0.004
Food Stamps	0.192	-0.016	-0.009	-0.022	-0.030	-0.021
Public housing	0.124	-0.021	-0.017	-0.029	-0.007	-0.017
Unemployment Insurance	0.002	-0.010	-0.010	-0.010	-0.005	-0.008
Workers' Compensation	0.002	-0.002	-0.002	-0.002	-0.003	-0.002
<b>B. FEMALES WITHOUT CHILDREN</b>						
Cash welfare <sup>b/</sup>	0.023	-0.072	-0.086	-0.059	-0.042	-0.060
Food Stamps	0.201	-0.055	-0.071	-0.013	-0.139	-0.081
Public housing	0.104	-0.023	-0.055	0.025	-0.014	-0.015
Unemployment Insurance	0.002	-0.004	-0.003	-0.004	-0.006	-0.005
Workers' Compensation	0.001	0.001	0.002	-0.0001	0.0001	0.001
<b>C. FEMALES WITH CHILDREN</b>						
Cash welfare <sup>b/</sup>	0.292	-0.161	-0.344	-0.028	0.146	-0.053
Food Stamps	0.363	-0.054	-0.070	0.0003	-0.194	-0.099
Public housing	0.125	0.014	0.056	0.035	-0.236	-0.067
Unemployment Insurance	0.000	-0.006	-0.006	-0.007	-0.003	-0.005
Workers' Compensation	0.000	-0.0004	-0.0004	-0.0004	-0.0003	-0.0004

<sup>a/</sup> These estimates of Job Corps effects are all adjusted for pre-enrollment differences in the variables between the Job Corps and comparison samples (for more details see Section IV.3). All of the variables are measured as the percent of time receiving the type of assistance.

<sup>b/</sup> Cash welfare includes all of the various forms of aid to Families with Dependent Children (AFDC) and general assistance.

TABLE V.11

ESTIMATES OF EFFECTS ON ANTISOCIAL BEHAVIOR AVERAGED OVER THE ENTIRE FOLLOW-UP PERIOD<sup>a/</sup>

Variable	Unweighted Sample Mean For Corpmembers In Follow-Up	Unweighted Average Job Corps Effect For Sample	Average Job Corps Effect For Program Completers	Average Job Corps Effect For Partial Completers	Average Job Corps Effect For Early Dropouts	Average Job Corps Effect For All Enrollees
<b>A. MALES</b>						
Participation in a drug- or alcohol-treatment program per six-month period	0.011	-0.024	-0.035	-0.017	-0.006	-0.018
Number of arrests per six-month period	0.124	-0.072	-0.064	-0.069	-0.114	-0.086
In jail or prison during the week of the survey <sup>b/</sup>	0.026	-0.006	-0.023	0.007	0.007	-0.002
<b>B. FEMALES WITHOUT CHILDREN</b>						
Participation in a drug- or alcohol-treatment program per six-month period	0.006	-0.004	-0.002	-0.009	0.002	-0.003
Number of arrests per six-month period	0.025	-0.009	-0.007	-0.020	0.022	0.001
In jail or prison during the week of the survey <sup>b/</sup>	0.002	-0.001	-0.003	-0.003	0.018	0.005
<b>C. FEMALES WITH CHILDREN</b>						
Participation in a drug- or alcohol-treatment program per six-month period	0.0	-0.004	0.006	-0.020	0.009	-0.001
Number of arrests per six-month period	0.007	-0.045	-0.078	0.011	-0.111	-0.065
In jail or prison during the week of the survey <sup>b/</sup>	0.0	0.0	0.0	0.0	0.0	0.0

<sup>a/</sup> The estimates of Job Corps effects are adjusted for pre-enrollment differences in the variables between the Job Corps and comparison samples.

<sup>b/</sup> This includes commitments to "reform schools," "detention centers," and similar criminal justice facilities for youths, as well as regular jails and prisons.

Reductions in criminal behavior are evidenced by reductions in the number of postprogram arrests for all crimes (arrests for minor motor-vehicle violations were not counted) and in the reduced probability of being in jail or prison during the week of the survey; however, except for males, the effects tend to be statistically insignificant. The arrest data for males show very large and statistically significant reductions in criminality. There were more than eight fewer arrests for every 100 Corpsmen during the first six months after leaving Job Corps (significant at greater than the 99 percent level of statistical confidence). These arrest data almost certainly greatly underestimate the impacts on crimes, for two reasons: (1) there are typically several crimes associated with each arrest, and (2) the data are from self-reports of arrests, and other studies have shown that self-reports of arrests tend to be much lower than found in court records.

The reductions in crime are continuations of effects observed during the program (see Chapter VI). During the program, however, the reductions in arrests were approximately twice as large. As shown in Chapter VI, these reductions contribute greatly to the social benefits associated with Job Corps participation.

#### E. CONCLUSIONS

The participant benefit hypotheses that were discussed in Section A.1 of Chapter III described the goals for the postprogram economic impacts of the Job Corps program. The empirical analysis summarized in this chapter finds that Job Corps is successful in achieving most of the desired impacts during the short-term postprogram period. The desired impacts are

particularly evident for Corpsmembers who complete the program, which appears to be attributable to program completion and not just to the underlying characteristics of completers. We also find that the beneficial impacts are not deteriorating as rapidly as had been previously suspected, and, in fact, employment and earnings impacts increase rapidly during the first three months that the Corpsmembers are out of the program (after some initial problems for Corpsmembers when they re-enter the labor market upon terminating from Job Corps).

The analysis was performed separately for males, childless females, and females with children. For each of these groups we estimated separate effects by length of stay in the program, as measured by completion status. For all groups of Corpsmembers, the immediate time period after leaving Job Corps represented an adjustment period during which the program impacts appear confusing or even counter to the expected impacts that are subsequently observed. Males and females who are program completers followed this brief period with positive and usually statistically significant responses in all areas--increased employment and earnings, increased investments in human capital, reduced dependence on welfare and other transfer income, reduced drug and alcohol abuse, and reduced criminal behavior. (Exceptions are noted in this chapter.)

The results for noncompleters and females with children are less consistent and rarely significantly different from zero. Early dropouts from the program receive small amounts of program treatments at best, and they are likely to include the least able enrollees as well as over-qualified enrollees who immediately leave Job Corps for better opportunities (see Chapter VII). Females with children have special constraints or opportunities that appear to reduce responses to employment, schooling,

training, or other opportunities. However, so few former Corpsmembers have children living with them that it is difficult to form statistically confident conclusions about them from our sample.

The overall impacts for the Job Corps program in fiscal year 1977 are presented in Table V.12. The primary findings (in terms of magnitude and statistical significance) discussed in this chapter are summarized in this table. The pattern of the averages for all Corpsmembers follows that for program completers--increased employment and earnings (after the immediate postprogram period), increased military service, increased education and training (except for high school), increased mobility (extremely large effects), reductions in health problems, reductions in welfare, reductions in other transfers, reductions in drug and alcohol abuse, and reductions in criminal behavior. As shown in Table V.12, the impacts of Job Corps are especially large in percentage terms.

Beyond the generally positive results, the most noteworthy finding is that these results appear to persist to the end of the seven-month observation period. In fact, if there is any trend after the first few months of postprogram experience, it appears to be toward increased program benefits.<sup>1/</sup> This pattern bears further examination, particularly with a longer observation period.

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<sup>1/</sup> Despite this early evidence of no fade out in Job Corps benefits, our benefit-cost estimates in the next chapter take a conservative approach in the absence of longer-term follow-up data and assume that the benefits fade out rapidly after the first six postprogram months (i.e., a fade-out rate of approximately 14 percent per year).

TABLE V.12

SUMMARY OF MAIN FINDINGS FOR OVERALL IMPACTS OF JOB CORPS<sup>a/</sup>

Variable <sup>b/</sup>	(1) Estimated Sample Mean For All Enrollees	(2) Estimated Sample Mean For All Enrollees in the Absence of Job Corps	(3) Estimated Differential For All Enrollees (1) - (2)	(4) Estimated Percentage Impact For All Enrollees (3) ÷ (2) x 100
A. Civilian labor supply in week prior to interview				
• In labor force	0.816	0.778	0.038	5%
• Employed	0.451	0.439	0.012	3%
• Employed full time	0.270	0.236	0.034	14%
• Hours	14.85	13.53	1.32	10%
• Earnings	\$49.04	\$44.66	\$4.38	10%
B. In military during week prior to interview	0.052	0.033	0.019	58%
C. Education and training in week prior to interview				
• In high school <sup>c/</sup>	0.043	0.083	-0.040	-48%
• In college <sup>c/</sup>	0.027	0.017	0.010	59%
• Have high school diploma or GED	0.207	0.151	0.056	37%
• In training program <sup>c/</sup>	0.049	0.030	0.019	63%
D. Number of moves in six-month period				
• For job opportunity <sup>d/</sup>	0.208	0.024	0.184	76%
• For education or training <sup>d/</sup>	0.071	0.012	0.059	49%
• All moves outside city <sup>d/</sup>	0.362	0.089	0.273	30%
E. Percent of time having serious health problems	0.042	0.050	-0.008	-16%
F. Percent of time receiving public assistance				
• Cash welfare	0.035	0.056	-0.021	-38%
• Food Stamps	0.213	0.253	-0.040	-16%
• Public housing	0.103	0.149	-0.046	-31%
G. Percent of time receiving other transfers				
• Unemployment Insurance	0.003	0.010	-0.007	-70%
• Workers' Compensation	0.001	0.002	-0.001	-50%
H. Participation in drug/alcohol treatment program per six-month period	0.015	0.028	-0.013	-46%
I. Number of arrests per six-month period	0.113	0.176	-0.063	-36%

a/ All of the estimates presented in this table are based on observations that were weighted according to the distributions of sex and program completion categories for Job Corps in fiscal year 1977 (the Primary year that our Job Corps sample members were in the program). Thus, the estimates in this table are representative of (i.e., unbiased for) the average Job Corps impacts from the program in fiscal year 1977. The base for the percentage impacts shown in the fourth column is the estimated sample mean for all enrollees in the absence of Job Corps from the second column.

b/ The estimates of Job Corps effects are adjusted for pre-enrollment differences in the variables between the Job Corps and comparison samples, except where noted (for more details see Section IV.3).

c/ Appropriate baseline measures were not available for these variables, and the estimated impacts presented in this table are simple Job Corps minus comparison-group means at postprogram.

d/ Appropriate baseline measures were not available for these variables, and the estimated impacts presented in this table are from regressions of number of moves per six-month period on sample characteristics.

## VI. COMPARATIVE EVALUATION OF BENEFITS AND COSTS<sup>1/</sup>

An issue that should be addressed in any program evaluation is whether the beneficial effects of the program outweigh the costs. Answering this question is rarely a simple matter, however, and this is especially true in an evaluation of a program such as Job Corps, which has such a wide range of program effects. These effects include the increased employability of Corpsmembers and its related impact on output, welfare dependence, criminal activity, drug and alcohol abuse, and the use of alternative training and educational services. Comparing the beneficial effects of Job Corps to the costs requires not only that the various benefit and cost components be identified and measured, but that a suitable method for placing relative values on these components be developed.

A benefit-cost analysis provides an appropriate framework for addressing this issue. The approach entails assigning a dollar value to each benefit and cost component, and aggregating the components by using standard accounting procedures. By placing the benefits and costs of a program in a common unit of measure (dollars), the economic desirability of the program as a social investment can readily be assessed.

An appropriate procedure in comparing benefits and costs is to calculate the program's "net present value." This term refers to the difference between benefits and costs where all dollar values have been

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<sup>1/</sup> This chapter is a summary of the benefit-cost analysis of Job Corps presented in "A Comparative Evaluation of the Benefits and Costs of the Job Corps After Seven Months of Postprogram Follow-Up" (Technical Report D). The interested reader should refer to that report for a more detailed presentation of the methodology and the findings.

adjusted to present value units.<sup>1/</sup> Dollar values are divided by the number of Corpsmembers, so that all figures reflect the benefit or cost per Corpsmember. The resulting criterion used to judge the program is whether or not the program's net present value per Corpsmember is greater than zero.

The net present value can be calculated for several analytical perspectives. Determining the appropriate perspective will depend on the type of issue being addressed. The basis for most benefit-cost applications is economic efficiency--that is, the welfare of society as a whole, without regard to any distributional aspects.<sup>2/</sup> Because groups within society may disproportionately receive the benefits or incur the costs of a social program, calculating the net present value only from the perspective of society as a whole ignores the relative gains and losses among groups within society. Because these distributional effects of a program have policy relevance, we have made an attempt to address one important aspect of the effect for Job Corps--its impact on the distribution of income between Corpsmembers and non-Corpsmembers (i.e., all other members of society).<sup>3/</sup> This entails making separate estimates of the net present

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<sup>1/</sup>In discounting to present value units, we adjust the value of benefits or costs that accrue in the future to reflect their worth in the current time period.

<sup>2/</sup>This basis assumes that a dollar of benefit or cost to one person is equal to a dollar of benefit or cost to any other person.

<sup>3/</sup>The term non-Corpsmember is used consistently throughout this benefit-cost discussion to refer to all members of society other than those who enroll in Job Corps. It should be pointed out that this term is not meant to refer specifically to that group of non-Corpsmembers interviewed in our study as a comparison group, although those individuals are of course included as a small fraction of the non-Corpsmember group.

value of the program to Corpsmembers and non-Corpsmembers, as well as to society as a whole.<sup>1/</sup>

One analytically useful feature of evaluating Job Corps from these three perspectives--society, Corpsmembers, and non-Corpsmembers--is that the sum of the net present values calculated from the Corpsmember and non-Corpsmember perspectives equals the social net present value--that is, Corpsmember and non-Corpsmembers together include all members of society. Therefore, transfers between these two groups cancel each other out when the net present values are summed, and thus do not appear in the social net present value.<sup>2/</sup> Benefits or costs that accrue to one group and are not offset by corresponding costs or benefits to the other group will not cancel out, and thus will enter into the social net present value calculation.

The relationships among the Corpsmember, non-Corpsmember, and social perspectives for a benefit-cost evaluation of Job Corps are illustrated in Table VI.1. This table lists the principal components of the benefit-cost analysis; suggests whether a component is, on average, a benefit, a cost, or neither from each of the three perspectives; and indicates data sources used to measure and value each of the components.<sup>3/</sup> The redistribu-

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<sup>1/</sup> In general, the net present value of Job Corps participation will be positive for Corpsmembers--assuming they voluntarily enter the program and are not misinformed.

<sup>2/</sup> The value of any resources used in making the transfers, however, is counted as a cost from the social perspective. For example, the administrative expenses incurred in public transfer programs are a social cost.

<sup>3/</sup> Whether the net effect of Job Corps on one component is a benefit or a cost is sometimes problematic (e.g., the utilization of alternative education and training programs could increase or decrease). Table II.1 reflects prior judgments based on previous evidence regarding the impacts.

TABLE VI.1  
COMPONENTS OF BENEFIT-COST ANALYSIS

Component	Perspective <sup>a/</sup>			Data Source <sup>b/</sup>
	S	NC	C	
<b><u>BENEFITS</u></b>				
<b>A. Output Produced by Corpsmembers</b>				
1) Value of in-program output	+	+	=	S
2) Value of increased postprogram output	+	0	+	I,P
3) Increased tax payments of Corpsmembers (postprogram)	0	+	-	I,P
4) Increased utility due to preferences for work over welfare	+	+	+	U
<b>B. Reduced Dependence on Transfer Programs</b>				
1) Reduced transfer payments	0	+	-	I,P
2) Reduced administrative costs for transfer programs	+	+	0	I,P
<b>C. Reduced Criminal Activity</b>				
1) Reduced criminal justice system costs	+	+	0	I,P
2) Reduced personal injury and property damage	+	+	0	I,P
3) Reduced value of stolen property	+	+	-	I,P
4) Reduced psychological costs of crime	+	+	+	U
<b>D. Reduced Drug/Alcohol Use</b>				
1) Reduced drug-treatment costs	+	+	0	I,P
2) Reduced alcoholism-treatment costs	+	+	0	I,P
3) Increased utility from reduced drug/alcohol dependence	+	+	+	U
<b>E. Reduced Utilization of Alternative Services</b>				
1) Reduced use of training and educational programs other than the Job Corps	+	+	0	I,P
2) Reduced net costs of public service employment	+	+	0	I,P
3) Reduced training allowances	0	+	-	I,P
<b>F. Other Benefits</b>				
1) Improved personal well-being of Corpsmembers	+	+	+	U
2) Increased utility from redistribution	+	+	+	U
<b><u>COSTS</u></b>				
<b>A. Program Operating Expenditures</b>				
1) Center operating expenditures, excluding transfers to Corpsmembers	-	-	0	A
2) Transfers to Corpsmembers	0	-	+	A
3) Central administrative costs	-	-	0	A,S
<b>B. Opportunity Cost of Corpsmembers Labor During the Program</b>				
	-	-	-	I,P
<b>C. Unbudgeted Expenditures Other Than Corpsmembers' Labor</b>				
	-	-	0	S,P

<sup>a/</sup>The columns indicate whether the net impact of a particular item is a net benefit (+), a net cost (-), or neither (0). This is done from the social (S) non-Corpsmember (NC), and Corpsmember (C) perspectives in order to indicate both economic efficiency and redistributive effects. In doing this, Corpsmembers are treated as nontaxpayers (except in benefit component I.3 and in cost component II) to simplify the exposition.

<sup>b/</sup>The codes used for data sources are: S = special study; I = interview; P = published data source; A = accounting system data; U = item will not be measured.

tive aspects of Job Corps can be inferred from the table. For example, the reduction in public transfer payments to Corpsmembers is a net loss to them, a net benefit to non-Corpsmembers who no longer make the payments, and, consequently, neither a benefit nor a cost to society as a whole.<sup>1/</sup> The individual benefit-cost components listed in Table VI.1 are the subject of the following section.

Before proceeding, however, it is important to discuss the effects of those items that cannot be valued in our analysis. In any program such as Job Corps, many benefits and costs will be either unobservable, impossible to measure, or both. For example, how can we measure individuals' preferences for work over welfare or the increased social welfare brought about by a reduction in crime? Some proxy measures are available for these intangible benefits and costs, but, in general, they fail to capture the "true" values. One way to interpret our quantitative findings, then, is to note that if measured costs exceed measured benefits, the program can be considered worthwhile only if this difference is made up by an equally large (or larger) excess of unmeasured benefits over unmeasured costs.

#### A. BENEFIT COMPONENTS

There are six major benefit components. All of them are expected to derive, at least in part, from an increase in the long-run employability of Corpsmembers. The increase in the goods and services produced by Corpsmembers is, of course, directly related to their employability. Improved job opportunities should also lead to benefits from reductions in (1) criminal

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<sup>1/</sup>Note, however, that the reduction in the cost of administering these programs is a benefit to non-Corpsmembers, neither a benefit nor a cost to Corpsmembers, and, hence, a net benefit.

activities, (2) drug and alcohol abuse, (3) welfare dependence, and (4) the use of alternative training and educational services. Another component includes the intangible benefits from the improved well-being of Corpsmembers and from income redistribution, which also stem from the increased employability of Corpsmembers. Each of the first five components of benefits is briefly discussed below; they are then aggregated together with the costs, in Section C.

#### 1. Output Produced by Corpsmembers

The increase in goods and services produced by Corpsmembers constitutes a major benefit of the program. For analytical purposes, it is necessary to distinguish between goods and services that Corpsmembers produce while they are enrolled in Job Corps and those that they produce after they leave the program. This distinction is necessary because the production of in-program output is an operational component of Job Corps, and, therefore, the value of this output cannot be observed directly (and, moreover, is often forgotten). The value of postprogram output can be estimated on the basis of wages. However, because the pay allowances that Corpsmembers receive from Job Corps are unrelated to what they produce while participating, the in-program output must be measured with different techniques from postprogram output and treated differently in each of the three benefit-cost perspectives.

In-Program Output. The in-program output produced by Corpsmembers in connection with their vocational training provides benefits to Corpsmembers, to non-Corpsmembers, and to society as a whole.<sup>1/</sup> These outputs include goods

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<sup>1/</sup> For more details regarding the estimated value of in-program output and the techniques used to obtain those estimates, see Technical Reports D and E.

produced in work projects (for instance, the addition built onto a hospital in rural Colorado by Corpsmembers who were receiving on-the-job training in various construction trades) and services provided in work-experience programs (for instance, the nursing assistance provided by Corpsmembers at a county hospital in Guthrie, Oklahoma, as they were gaining job experience). The value of these goods and services was estimated on the basis of twenty-two special studies of randomly chosen work projects and work-experience programs at eleven Job Corps centers.

The recipients of this Corpsmember-produced output may be either the non-Corpsmember community or the Job Corps centers themselves. In the first case (community-serving output), the entire value of the output produced is considered a benefit to non-Corpsmembers.<sup>1/</sup> In the second case (center-serving output), the output will benefit both Corpsmembers and non-Corpsmembers. Corpsmembers benefit from center-serving output because they consume some of the output they produce (e.g., housing services provided in dormitories built or rehabilitated with Corpsmember labor, part of which is included as a capitalized cost in the Job Corps financial data); non-Corpsmembers benefit when the capital stock available to society is increased by Corpsmember labor in center-serving work activities.

The value of the goods and services produced by Corpsmembers in community- and center-serving projects is estimated by the price that alternative suppliers would have charged to provide those goods and services.<sup>2/</sup> After adjustments are made to center-serving

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<sup>1/</sup>Corpsmembers also benefit from the community-serving output as general members of society. However, for the most part, we will use the approximate (and computationally convenient) assumption that only non-Corpsmembers benefit from such output.

<sup>2/</sup>The value of all materials and labor inputs not provided by Job Corps are subtracted from the alternative supplier's price. In many cases, the net price of the Job Corps output was quite close to the alternative supplier's labor cost.

output (to account for the value of output used up by Job Corps and transferred to Corpsmembers), <sup>1/</sup> the net benefits per Corpsmember year of service of in-program output are estimated to be \$1,364 for non-Corpsmembers, \$175 for Corpsmembers, and therefore \$1,539 for society as a whole.

This implies that because the average Corpsmember is in the program approximately half a year (5.9 months in fiscal year 1977), the average social benefit per Corpsmember is \$757 (i.e.,  $5.9 \div 12 \times \$1,538.83 = \$756.59$ ). The benefit per enrolled Corpsmember from the perspective of non-Corpsmembers is \$671, while the benefit seen by the average Corpsmember is \$86.

The price charged by an alternative supplier is a measure of the value of the resources that would be required to produce the in-program output of Corpsmembers. However, this price does not directly measure the value society places on that output. While only imprecise estimates of this demand value can be made, tests presented in Technical Report E suggest that under reasonable assumptions the demand value will be between 103 and 62 percent of the supply-price estimate. Thus, our use of supply price as a measure of the value of in-program output is a reasonably accurate estimate of the demand value (but probably high by a small amount).

Increased Postprogram Output. The increase in the amount of output produced by Corpsmembers after they leave the program is estimated by the increase in earnings. The use of earnings as a measure of output produced is based on the assumption that labor markets function in a competitive

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<sup>1/</sup> For more details regarding this adjustment, see Technical Reports D and E.

manner (earnings is obviously the correct measure from the Corpsmember perspective). In this case, employers will set the total compensation of a worker at a value that reflects the output produced by the worker. The increase in output produced by Corpsmembers is then estimated by using the difference between the earnings of the Corpsmember and the amount they would have earned had they not entered the program.<sup>1/</sup>

Because the interview data used to estimate this earnings difference cover only a seven-month postprogram period, there are substantial problems in estimating what the earnings differential will be over Corpsmembers' lifetimes. The average earnings differential over the first six postprogram months shows that Corpsmembers earned a total of \$143 less than they would have earned otherwise (i.e., had they not entered Job Corps). However, during the last week of the seventh postprogram month, Corpsmembers showed, on average, a \$4.32 per-week gain in earnings.

It appears that Corpsmembers experience some adjustment problems shortly after they terminate from Job Corps, but that they overcome these short-run problems before the end of the first six-month period (see Chapter V). Thus, it would be misleading to extrapolate differences in lifetime earnings on the basis of the average change during the first six-month period as a whole. Consequently, the earnings differential observed an average of seven months after Corpsmembers leave the program will be used as the basis for predicting the differential in lifetime earnings attributable to Job Corps.

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<sup>1/</sup> See the discussion in Chapter IV for details regarding the estimation procedures used for this and the following Job Corps effects.

However, the decision to base the differentials in lifetime earnings on earnings in the last week of the follow-up period resolves only part of the problem. Two additional problems must be addressed. First, the long-run growth of real wage rates (i.e., wages corrected for inflation) must be accounted for.<sup>1/</sup> Second, the magnitude of the Job Corps effect may change over time. Assumptions must be made about these changes in order to estimate future benefits.

Historical evidence shows that over the post-World War II period, wages have grown, on average, at a real (i.e., net of inflation) rate of 2 percent per year. While recent wage growth has been lower (because of poor macroeconomic conditions and changes in the composition of the labor force), the 2 percent estimate is the best available figure to predict long-run growth in real wages (see Technical Report D for more documentation).

Calculating the time pattern of effects is a more difficult problem. In the absence of follow-up data for a longer time period for both Corpsmembers and youths in the comparison group, it is impossible to estimate accurately the earnings effects over Corpsmembers' lifetimes. To circumvent this problem, we will use published findings on other manpower programs. In those studies, it was found that the magnitude of the effect of similar programs on earnings

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<sup>1/</sup>We are interested in the increase in output. If there is a general growth in real wages because labor becomes more productive, it will be necessary to account for this fact in our estimates. For example, if productivity increased by 2 percent a year, this growth will apply both to Corpsmembers' earnings and to what they would have earned in the absence of Job Corps. If both earnings amounts rise by 2 percent, then the difference between them (the Job Corps effect) will also rise by 2 percent.

differentials had declined by one-half after five years.<sup>1/</sup> While the use of this figure is probably somewhat conservative for Job Corps,<sup>2/</sup> it is the best documented estimate available at this date. The figure will be refined in future analyses as longer-run evidence on earnings differentials and other Job Corps effects become available for our sample.

Using these assumptions and a 5 percent per annum rate of discount,<sup>3/</sup> the estimate of the present value of the earnings gain attributed to Job Corps is \$1,224 per Corpsmember. The net increase in postprogram earnings is therefore \$1,224 minus the decline in earnings for the first six months, \$143, for a net increase of \$1,081 per Corpsmember.<sup>4/</sup>

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<sup>1/</sup>A study by Ashenfelter (Orley Ashenfelter, "The Effect of Manpower Training on Earnings," in Research in Labor Economics: Evaluating Manpower Training Programs, edited by Farrell Block, Greenwich, Connecticut: JAI Press, 1977) provides the best evidence available on the future magnitude of the effect. He found that the earnings gains for adult men who had participated in MDTA employment and training programs had declined by approximately 50 percent after five years, while the gains for adult women did not fade out. If we assume a decline for Job Corps similar to the larger magnitude that Ashenfelter found for males, on a continuous basis it would imply a rate of decline of just under 14 percent per year (13.8629 percent). In the absence of better information, Ashenfelter's decay rate for adult males had been adopted. This probably overstates the decay rate for Corpsmembers, both because Corpsmembers are young and because Ashenfelter's estimated decay rate for males is larger than that for females. However, when additional follow-up data become available, better extrapolation will be possible.

<sup>2/</sup>In fact, Chapter V presents evidence that suggests that the Job Corps effects will continue to grow, or at least not decline in the short run.

<sup>3/</sup>This is the discount rate used throughout this study. For a discussion of its selection and use, see Section C of this chapter, and Technical Report D. Section C of this chapter presents estimates of the net present value calculated by using 3 and 10 percent discount rates to illustrate the sensitivity of the analysis to the discount-rate assumption.

<sup>4/</sup>This number includes an imputed value for the income earned by individuals in our sample who entered the military. For the details of the calculation, see Technical Report D.

To derive an estimate of the value of the increased output produced by Corpsmembers, we must adjust the earnings gain to reflect the total compensation paid by employers. This adjustment takes into account the nonwage payments made by employers on behalf of the employees. These include payments for retirement or insurance plans, the employer's share of the Social Security tax, and payments made into Unemployment Insurance and Workers' Compensation funds. The total adjustment is 14.67 percent of gross wages. Thus, the value of the increase in output due to Job Corps is approximately 1.1467 times the net earnings gain, or \$1,239 per Corpsmember.

Changes in Tax Payments. As Corpsmembers' income rises in the future, they will pay more taxes. This increase will be seen as a cost to Corpsmembers and as a benefit to non-Corpsmembers. However, due to foregone earnings by participating in Job Corps, the taxes paid by participants declined while they were in the program, as well as during the first six months after they had left the program. The decline was due to the fact that Corpsmembers did not pay substantial taxes while they were in the program, and because they experienced adjustment problems and thus relatively low earnings during the first six months after they left Job Corps.

To estimate the taxes paid, we used the tax rate estimate for low-income households, which is approximately 23 percent of total income.<sup>1/</sup>

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<sup>1/</sup> This discussion draws on the results of Joseph H. Pechman and Benjamin A. Okner, Who Bears the Tax Burden?, Washington, D.C.: The Brookings Institution, 1966. Their data show that the combined effect of all taxes is equivalent to a proportional tax of approximately 23 percent of income. These data are rather old (1966) and are less accurate for low-income youth populations than others. However, they are the best estimates currently available (see Technical Report D). The Pechman and Okner estimates of tax burden have the unique advantage of incorporating accurate data on income that is not reported to the tax authorities.

The primary taxes paid by individuals in this income range are payroll taxes and sales and excise taxes. Thus, even though they face low tax rates on wages, the total tax burden (as a percentage of income) is not significantly different than the tax burden of most taxpayers (except perhaps for those households at the very extreme ends of the income distribution).

The present value of the net effect of (1) the declines in taxes during and shortly after participation in Job Corps and (2) the tax increase in later periods is a decline of \$46 per Corpsmember in total tax collections at all government levels. The earnings gain (assuming a fade-out rate of 14 percent per year as in the estimates for this report) is insufficient to generate enough taxes to offset (in present value) the decline in tax payments in the early period. Thus, non-Corpsmembers view this change in tax payments as a cost of the program. However, these taxes will not enter into the social benefit-cost calculations because they represent transfers of income. Corpsmembers benefit from the reductions in their tax payments during and shortly after participation.

The three measured benefits directly corresponding to increased output are summarized in Table VI.2. In addition to these benefits, there are also gains to both Corpsmembers and non-Corpsmembers to the extent that individuals prefer work over welfare. Corpsmembers probably gain increased self-esteem from working in regular, unsubsidized jobs. Non-Corpsmembers may prefer that resources be used to provide Corpsmembers with the opportunity to invest in their human capital, rather than used to provide direct transfer payments to Corpsmembers. These changes in well-being are intangible and thus are not measured in this analysis.

TABLE VI.2

## BENEFITS FROM INCREASED OUTPUT BY CORPSMEMBERS

Component	Behavioral Measure	Change in Behavior			Value Par Unit	Total Discounted Value <sup>b/</sup>
		In-Program Changes	Months 1 to 6	Months 7 to 516 <sup>a/</sup>		
In-Program Output	Years In Program	0.4916	0.0	0.0	\$1,538.83/yr.	\$756.59
Increased Postprogram Output	Gross Earnings + Fringe Benefits	N.A. <sup>c/</sup>	-\$164.17	\$2031.15	N.A.	\$1238.81
Increased Tax Payments	Estimated Tax Payments	-\$152.74	-\$ 52.77	\$ 159.40	N.A.	-\$ 46.11

<sup>a/</sup> This assumes an expected working life of 43 years (516 months) at the time the Corpsmembers leave Job Corps.

<sup>b/</sup> Before being added into this column, values for months 7 to 516 are discounted in the time of termination from Job Corps, at an annual rate of 5 percent.

<sup>c/</sup> N.A. means Not Applicable.

They are mentioned here so that the reader will be aware of the biases in using only measured benefits and costs in the evaluation.

## 2. Reduced Dependence on Transfer Programs

The increase in employability attributed to Job Corps should make participants less reliant on transfer programs (i.e., welfare and other income and employment-conditioned programs, such as Unemployment Insurance and Workers' Compensation). This will cause a decline in transfer payments to Corpsmembers, as well as in the level of resources needed to administer the transfer programs. The reductions in payments will be a cost to Corpsmembers but a corresponding savings for non-Corpsmembers. Therefore, these payments are transfers and will net out from the social perspectives. In contrast, the administrative savings are a benefit to non-Corpsmembers for which there is no corresponding cost to Corpsmembers, and, hence, the administrative savings are a benefit to society.

Reduced Transfer Payments. Seven transfer programs were examined as part of the analysis: Aid to Families with Dependent Children, General Assistance, Food Stamps, public housing, Medicaid, Unemployment Insurance, and Workers' Compensation. For all programs except Unemployment Insurance and Workers' Compensation, transfers were estimated on the basis of differences in months receiving the transfers (estimated from interview data) and the average benefit levels of the programs (estimated from published data). Where possible, the estimates accounted for major differences in eligibility criteria that would affect the payment levels. For example, public housing benefits depend on the number of adults and children in the household.

To the extent possible, these factors were taken into account in determining the public-housing subsidy received. For Unemployment Insurance and Workers' Compensation, self-reports of the amount received were used.

TABLE VI.3  
BENEFITS FROM REDUCED TRANSFER PAYMENTS

Component	Behavioral Measure	Change in Behavior <sup>a/</sup>			Value Per Unit	Total Discounted Value <sup>b/</sup>
		In-Program Period	Postprogram Period			
			Months 1 to 6	Months 7 to 516		
<b>Aid to Families with Dependent Children</b>						
Respondent (head of family)	Months Received Transfers	.1114	.0383	.5141	\$239.42/mo	\$124.29
Respondent (other than head of family)	Months Received Transfers	.2221	.0837	1.1236	\$ 76.41/mo	\$ 85.05
<b>General Assistance</b>						
Respondent (head of family)	Months Received Transfers	.0178	.0003	.0040	\$151.90/mo	\$ 3.19
Respondent (other than head of family)	Months Received Transfers	.0355	.1307	1.7545	\$116.05/mo	\$165.59
Food Stamps	Months Received Food Stamps	.4822	.2376	3.1895	\$ 73.65/mo	\$221.80
Public Housing	Public Housing Net Benefit	\$ 5.72	\$ 4.15	\$ 55.65	N.A.	\$ 49.90
Medicaid	Months Received AFDC	.3335	.1220	1.6377	\$ 76.61/mo	\$126.68
Unemployment Insurance/ Worker's Compensation	Amount Received From U.I./W.C.	\$29.30	\$19.26	\$258.54	N.A.	\$234.33
<b>Total Benefits (Present Value)<sup>c/</sup></b>						<b>\$1,010.83</b>

<sup>a/</sup> Reductions in the receipt of transfer payments are shown as positive numbers.

<sup>b/</sup> Before being added to this column, values for months 7 to 516 are discounted to the time of termination from Job Corps at an annual rate of 5 percent.

<sup>c/</sup> This represents a benefit to non-Corpsmembers and a cost to Corpsmembers. Therefore, the net value from the social perspective is zero (see the text for more details).

TABLE VI.4

## BENEFITS FROM REDUCED ADMINISTRATIVE COSTS OF TRANSFER PROGRAMS

Component	Behavioral Variable	Changes in Behavior <sup>a/</sup>		Value Per Unit	Total Discounted Benefit <sup>b/</sup>
		In-Program Period	Postprogram Period Months 1 to 6    Months 7 to 516		
<b>Aid to Families with Dependent Children</b>					
Respondent (head of family)	Months on AFDC	.1114	.0383    0.5141	\$27.64/mo	\$ 14.35
Respondent (other than head of family)	Months on AFDC	.2221	.0837    1.1236	\$ 8.83/mo	\$ 9.83
<b>General Assistance</b>					
Respondent (head of family)	Months on G.A.	.0178	.0003    0.0040	\$17.47/mo	\$ 0.37
Respondent (other than head of family)	Months on G.A.	.0335	.1307    1.7545	\$13.35/mo	\$ 19.05
Food Stamps	Months on Food Stamps	.4822	.2376    3.1895	\$ 9.48/mo	\$ 28.55
Public Housing	Months in Public Housing	.1389	.0954    1.2806	\$12.50/mo	\$ 14.43
Medicaid	Months in AFDC	.3335	.1220    1.6377	\$ 9.49/mo	\$ 15.49
Unemployment Insurance/ Worker's Compensation	Weeks on U.I./W.C.	.1438	.2238    3.0042	\$ 6.96/wk	\$ 17.58
<b>Total Benefits (Present Value)</b>					<u>\$119.65</u>

<sup>a/</sup> Reductions in the receipt of transfer payments are shown as positive numbers.

<sup>b/</sup> Before being added to this column, values for months 7 to 516 are discounted to the time of termination from Job Corps at an annual rate of 5 percent.

Corpsmembers reduced their participation in all seven programs both while they were in Job Corps and during the first six months after they had left the program. To estimate the total savings over the course of their expected work lives, it is necessary to extrapolate the results from the first six months into the future. We use the same basic discount and fade-out assumptions that were used to extrapolate the earnings difference.<sup>1/</sup> Under these assumptions, the present value of the benefits from reductions in transfer payments is \$1,011 per Corpsmember. Breakdowns of the changes in transfer payments by program are shown in Table VI.3.

Concurrent Reductions in Administrative Costs. With the decline in transfers, the amount of resources necessary to administer the programs will also decline. This resource saving will be a benefit to non-Corpsmembers and to society as a whole. The savings are estimated on the basis of the average costs per year of processing a case in each of the programs. Again, some adjustments have been made to allow for the effects of household characteristics on the administrative costs.

The estimated benefits are presented in Table VI.4. We again use the same assumptions for discount and fade-out rates as in the previous section, to predict the effects of Job Corps after the first six months of the postprogram period. The present value of the resource saving is estimated to be \$120 per participant.

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<sup>1/</sup>This set of assumptions (a fade-out rate reducing benefits by 50 percent every five years and a 5 percent discount rate) is used throughout this paper to arrive at the benchmark estimates. Because the fade-out rate was derived from a study of earnings effects, its use for other effects is less certain (more arbitrary).

### 3. Reduced Criminal Activity

Four benefits from the decline in criminal activity among Corpsmembers are the reductions in (1) the personal injury and property damage that accompany victimizations; (2) the fear and anxiety associated with crime; (3) the resources used in the criminal justice system; and (4) the value of stolen property. The resource savings associated with the first three items are benefits entirely to society and to non-Corpsmembers. The reduced value of stolen property will be a benefit to non-Corpsmembers, and part of its value will be viewed as a cost to Corpsmembers who no longer receive as much theft income. The social benefit of a reduction in stolen property is associated with decreases in the costs of fencing, in damage to the stolen property, and in the loss of legal titles.<sup>1/</sup>

Reduced Personal Injury and Property Damage. A principal benefit associated with reduced criminal activity stems from the decrease in victimizations. The benefits that can be measured are the resource savings from reductions in the amount of personal injury and property damage. Using data collected as part of the National Crime Panel Survey program, we have been able to obtain estimates of (1) the average value of property damage from criminal acts, (2) the average value of the medical care needed by victims of personal crimes, (3) the average output lost when victims lose time from work while they are recovering from personal crimes, and (4) the average costs of the administration of insurance needed to compensate victims.<sup>2/</sup>

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<sup>1/</sup> See Technical Report D, pages 84 to 86 and pages 95 to 99, for more details about the treatment of stolen property.

<sup>2/</sup> We would like to thank Wesley G. Skogan for his help in obtaining the necessary estimates from the victimization-incident data that were gathered as part of the National Crime Panel program. Technical Report D presents a detailed breakdown and analysis of the average costs of victimizations by category of crime.

A summary of the benefits from the reduction in these victimization costs is presented in Table VI.5 for several arrest categories. The numbers have been adjusted to reflect the number of incidents per arrest. Thus, the numbers indicate the expected resource savings generated by a reduction of one arrest of the particular type.

The number of arrests among Corpsmembers declined for most arrest types in both the in-program and postprogram periods. If we use our assumptions about the future time pattern of the Job Corps effect, the total savings is estimated to be \$274 per participant. The bulk of this benefit is associated with the substantial reductions in burglary and larceny.

Reduced Fear From Reductions in Crime. The values for property damage and personal injury presented above capture only part of the costs of criminal victimizations. In particular, they fail to capture the psychological benefits individuals derive from reductions in crime. These benefits are undoubtedly important; however, because there is no accurate way to estimate their magnitude, they have not been included in the numerical estimates. Their exclusion will bias our benefit-cost estimates downward, and they must be kept in mind when interpreting the results.

Reduced Criminal Justice System Costs. Another benefit associated with reductions in crime is the resource savings for the criminal justice system. The reductions in savings are commensurate with reductions in apprehending, adjudicating, and incarcerating individuals. Processing individuals through the criminal justice system is quite expensive, as shown by the average costs in Table VI.6. Therefore, even relatively

TABLE VI.5

## BENEFITS FROM REDUCED PERSONAL INJURY AND PROPERTY DAMAGE

Component	Behavior <sup>b/</sup> Variable <sup>c/</sup>	Change in Behavior <sup>a/</sup>			Value Per Unit	Total Discounted Benefit <sup>e/</sup>
		In-Program Period	Postprogram Period			
			Months 1 to 6	Months 7 to 516		
Murder	Number of Arrests	0.0009	0.0000	0.000	\$100,537.61	\$ 90.40
Robbery	Number of Arrests	0.0009	-0.0020	-0.0268	569.18	-11.61
Felonious Assault	Number of Arrests	0.0028	0.0023	0.0309	488.75	13.33
Burglary	Number of Arrests	0.0307	0.0133	0.1785	536.94	92.51
Larceny/Motor Vehicle Theft	Number of Arrests	0.0345	0.0151	0.2027	408.24	79.71
Narcotics <sup>d/</sup>	Number of Arrests	0.0150	0.0014	0.0187	0	0
Other Personal	Number of Arrests	0.0111	0.0127	0.1638	94.09	13.26
Other Miscellaneous <sup>d/</sup>	Number of Arrests	0.0295	0.0379	0.5087	0	0
Unspecified	Number of Arrests	-0.0019	-0.0019	-0.0255	170.79	<u>-3.78</u>
<b>Total Benefits</b>						<b>\$ <u>273.90</u></b>

<sup>a/</sup> Reductions in arrests are shown in positive numbers. Negative changes in behavior (as with the postprogram robbery and unspecified categories) denote increased criminal activity among Co.psmembers.

<sup>b/</sup> See the text for a discussion of arrests as a measure of criminal activity.

<sup>c/</sup> Before being added to this column, values for months 7 to 516 are discounted to the time of termination from Job Corps at an annual rate of 5 percent.

<sup>d/</sup> These categories contain primarily "victimless" crimes. As a result, the value of reduced property damage and personal injury is small, not estimated, and assumed to be zero in deriving total benefits.

TABLE VI.6  
REDUCED CRIMINAL JUSTICE SYSTEM COSTS

Component	Behavioral Variable <sup>b/</sup>	Change in Behavior <sup>a/</sup>			Value Per Unit	Total Discounted Benefit <sup>c/</sup>
		In-Program Period	Postprogram Period			
			Months 1 to 6	Months 7 to 474		
Murder	Number of Arrests	0.0009	0.0000	0.0000	\$24,767/ arrest	\$ 22.29
Robbery	Number of Arrests	0.0009	-0.0020	-0.0268	12,087/ arrest	-246.46
Felonious Assault	Number of Arrests	0.0028	0.0023	0.0309	2,732/ arrest	74.54
Burglary	Number of Arrests	0.0307	0.0133	0.1785	5,895/ arrest	1,015.61
Larceny/Auto Theft	Number of Arrests	0.0345	0.0151	0.2027	2,618/ arrest	511.15
Narcotics	Number of Arrests	0.0150	0.0014	0.0187	2,590/ arrest	77.45
Other Personal	Number of Arrests	0.0111	0.0122	0.1638	756/ arrest	106.58
Other Miscellaneous	Number of Arrests	0.0295	0.0379	0.5007	919/ arrest	379.89
Unspecified	Number of Arrests	-0.0019	-0.0019	-0.0255	2,048/ arrest	-45.31
<b>Total Benefits</b>						<u>\$1,895.74</u>

<sup>a/</sup> Reductions in arrests are shown in positive numbers. Negative changes in behavior (as with the post-program robbery and unspecified categories) denote increased criminal activity among Corpsmembers.

<sup>b/</sup> See the text for a discussion of arrests as a measure of criminal activity.

<sup>c/</sup> Before being added in this column, values for months 7 to 516 are discounted to the time of termination from Job Corps at an annual rate of 5 Percent.

small reductions in crime can yield substantial benefits. Using our benchmark assumptions, the estimated savings to the criminal justice system are \$1,896 per Corpsmember. Again, the largest benefits derive from reductions in burglary and larceny arrests.

Reductions in the Value of Stolen Property. Estimates for the value associated with the reduction in stolen property were obtained in a similar manner to those obtained for the cost reductions in property damage and personal injury.<sup>1/</sup> Table VI.7 shows that the estimated value of reductions in stolen property is \$968 per Corpsmember. This is clearly a benefit to non-Corpsmembers. However, we estimate that the cost to Corpsmembers in terms of foregone theft income is only \$581 because, in general, they will not be able to realize the entire market value of the goods they steal. The difference between the non-Corpsmember benefit and the Corpsmember cost is a net social benefit of \$387.

#### 4. Reduced Drug and Alcohol Use

The principal measurable benefit of the reduction in drug and alcohol use is the decrease in treatment costs. The types of drug-alcohol treatments included in the estimates are heroin detoxification, methadone maintenance, alcohol detoxification, and education and counseling services. The resource savings associated with the reduction in the use of drug-alcohol treatments will be benefits to both non-Corpsmembers and society as a whole. The psychological benefits from reduced drug and alcohol use, while unmeasured in this report, will accrue to both Corpsmembers and non-Corpsmembers.

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<sup>1/</sup> Technical Report D presents a full description of the estimation procedures.

TABLE VI.7

## VALUE OF REDUCED AMOUNT OF STOLEN PROPERTY

Component	Behavioral Measure <sup>b/</sup>	Change in Behavior <sup>a/</sup>		Value Per Unit	Total Discounted Benefit <sup>c/</sup>
		In-Program Period	Postprogram Period Months 1 to 6      Months 7 to 516		
Robbery	Number of Arrests	.0009	-.0020      -.0268	\$ 737.58	\$ -15.04
Burglary	Number of Arrests	.0307	.0133      .1785	3,563.99	614.01
Larceny/Motor Vehicle Theft	Number of Arrests	.0345	.0151      .2027	1,950.51	380.83
Unspecified	Number of Arrests	-.0019	-.0019      -.0255	535.95	<u>-11.86</u>
Total Value					<u>\$ 967.94</u>

<sup>a/</sup> Reductions in arrests are shown in positive numbers. Negative changes in behavior (as with the postprogram robbery and unspecified categories) denote increased criminal activity among Corpsmembers.

<sup>b/</sup> See the text for a discussion of arrests as a measure of criminal activity.

<sup>c/</sup> Before being added to this column, values for months 7 to 516 are discounted to the time of termination from Job Corps at an annual rate of 5 percent.

Reductions in the use of drug- or alcohol-treatment programs among Corpsmembers were observed both during their stay in the program and after they left Job Corps. The estimates of the per-Corpsmember reductions in treatment use are approximately 2 treatments per 100 Corpsmembers (-0.0205) during the in-program period and a reduction of just over 1 treatment per 100 Corpsmembers (-0.0132) during the first six months of postprogram observation.

Savings from the reduced utilization of drug or alcohol treatments among Corpsmembers are estimated by using our benchmark assumptions regarding discount and fade-out rates. While the cost of treatment varies tremendously by type, we estimate that the average cost is approximately \$1,086 per person treated. Using this unit value, the estimated total social benefit (in present value units) is \$175 per Corpsmember.

#### 5. Use of Alternative Training and Educational Programs

Decisions by Corpsmembers to obtain more or less training and schooling generate benefits and costs for both Corpsmembers and non-Corpsmembers. For example, Corpsmembers enroll in high school programs much less frequently than individuals in the comparison group. This is due, in part, to the fact that many Corpsmembers obtained GED degrees while they were in the program, thus eliminating the need to return to high school at a later time. In this case, the resource savings associated with less frequent high school enrollment are benefits to non-Corpsmembers and to society. Of course, there are benefits associated with additional training and education. If follow-up data were available for a longer period of time, the increased earnings measure discussed earlier in this chapter would capture these benefits for both the Corpsmembers and the

individuals in our comparison group. In the absence of such data, we have chosen to examine only changes in the operating costs of education and training programs. Thus, our estimates of the net present value will further be biased downward to the extent that Job Corps induces Corpsmembers to obtain additional education (compared to what they would have obtained in the absence of Job Corps) and thereby increase their earnings even more (e.g., college attendance was higher among Corpsmembers).

The estimates of the present value of the cost savings due to an overall decline in the cost of the utilization of alternative training and educational services by Corpsmembers are shown in Table VI.8. As was mentioned above, the bulk of the savings stems from Corpsmembers' decreased use of high school programs. The sum of these individual components is a cost savings of \$391 per Corpsmember.

#### 6. Other Benefits

In addition to the benefit components discussed above, there are two benefits that cannot be directly measured and valued; however, evidence on them does exist. The first of these benefits is the improved personal well-being of participants beyond what is caused by both increased earnings and the value of Job Corps expenditures on enrollees (for room, board, medical services, etc.). In particular, it is very likely that the value of improved health status and basic education are not fully captured in the short-run (if ever).

The second benefit that cannot be directly measured is the utility that participants and nonparticipants derive from the income redistribution per se that is implicit in the Job Corps program. This also cannot be directly measured. This benefit has important policy implications because the desirability of the program can possibly be founded on equity grounds alone.

TABLE VI.8

## BENEFITS FROM REDUCED UTILIZATION OF ALTERNATIVE TRAINING AND EDUCATIONAL PROGRAMS

Component	Change in Behavior <sup>a/</sup>			Value Per Unit	Total Discounted Benefit <sup>b/</sup>	
	Behavioral Measure	In-Program Period	Postprogram Period			
			Months 1 to 6			Months 7 to 516
Use of Training and Educational Programs other than Job Corps						
High School	Months in High School	.5479	.2098	2.0236	\$187.42/mo. 5521.27	
Vocational education	Months in Voc. Ed.	.0916	-.0047	-.0620	\$ 93.27/mo. 3.09	
College/University	Months in College	.0654	-.0595	-.7987	\$410.06/mo. -232.91	
Unspecified school	Months in School	-.1632	.0230	.3087	\$231.12/mo. 94.31	
CETA and other training Programs	Months in CETA/Other	-.1232	-.0295	-.3959	\$173.33/mo. -33.08	
Public service employment	Months in PSE	.2078	.0428	.5745	\$ 55.90/mo. 37.09	
Training allowances	Training Allowances	\$22.2760	\$4.7372	\$63.5905	N.A. 72.71	
Total social benefit <sup>c/</sup>					\$390.57	

<sup>a/</sup> Reductions in utilization are shown as positive numbers. Negative numbers (as with postprogram vocational education) represent increased utilization of training and educational programs by Corpsmembers.

<sup>b/</sup> Before being added to this column, values for months 7 to 516 are discounted to the time of termination from Job Corps at an annual rate of 5 percent.

<sup>c/</sup> The value of the training allowances are not included because they represent a transfer item from taxpayers to those receiving training and, hence, are not social costs (i.e., their increases are not a social cost).

## B. COSTS

The breakdown of program costs by category and analytical perspective is shown in Table VI.9. There are three basic cost categories: program operating expenditures; the opportunity cost of Corpsmember labor; and the nonbudgeted costs other than for Corpsmember labor. The total social cost (i.e., excluding all transfers) of Job Corps is estimated to be \$4,987 per Corpsmember, while the cost to non-Corpsmembers is \$5,644 per Corpsmember enrolled. The difference is the value of the transfers provided to Corpsmembers (\$658 per Corpsmember).

### 1. Program Operating Expenditures

The breakdown of program operating expenditures into the three components--center operating expenditures (excluding Corpsmember transfers), Corpsmember transfers, and the central administrative costs--reflects the different nature and sources of Job Corps expenditures. Center operating expenditures are costs to non-Corpsmembers and to society. These expenditures and figures were obtained from the Job Corps Financial Reporting System. The Corpsmember transfers were also obtained from the Job Corps Financial Reporting System, but they are not social costs; instead, they represent a transfer of resources from non-Corpsmembers to Corpsmembers.<sup>1/</sup> Finally, data on the central administrative expenditures were provided by the Office of Management and Budget. These expenditures represent costs to both non-Corpsmembers and society as a whole.

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<sup>1/</sup> These transfers are expenditures for items Corpsmembers would have consumed in the absence of Job Corps (e.g., food, clothing, and housing).

TABLE VI.9

SUMMARY OF COSTS PER CORPSMEMBER, BY ANALYTICAL PERSPECTIVE<sup>a/</sup>

Cost Component	Present Value of Costs by Perspective		
	Social	Non-Corpsmember	Corpsmember
<b>A. Program operating costs</b>			
Center operating expenditures	\$2,702.98	\$2,702.98	\$ 0
Transfers to Corpsmembers	0	1,198.26	-1,198.26 <sup>b/</sup>
Central administrative costs	1,358.77	1,358.7.	0
<b>B. Opportunity cost of Corpsmember labor</b>			
Foregone earnings	878.58	0	878.58
Foregone tax payments	0	152.74	- 152.74
<b>C. Unbudgeted expenditures other than for Corpsmember labor</b>			
Program costs	46.22	46.22	0
Transfers to Corpsmembers	<u>0</u>	<u>185.36</u>	<u>- 185.36<sup>b/</sup></u>
<b>Total costs (present value)</b>	<u>\$4,986.55</u>	<u>\$5,644.33</u>	<u>\$- 657.78<sup>b/</sup></u>

<sup>a/</sup> The cost per Corpsmember is estimated by multiplying the cost per Corpsmember year (as estimated in Technical Report D) by the average length of stay in years for Job Corps during fiscal 1977--0.492 years (5.9 months).

<sup>b/</sup> Because Corpsmembers benefit from transfers, they are presented here as negative costs.

## 2. Opportunity Cost of Corpsmember Labor

Youths who participate in Job Corps forego employment opportunities that otherwise they would have taken. The wages they would have earned in the foregone employment are a cost to them of participating in Job Corps. This "opportunity cost" of Corpsmember labor is not balanced by corresponding benefits to non-Corpsmembers and thus enters into the social benefit-cost calculation as a cost.<sup>1/</sup> An estimate of the opportunity cost of Corpsmember labor is made on the basis of the estimated earnings that Corpsmembers would have received had they not enrolled in the program.

Another way of viewing this cost is that, from society's point of view, the decision to enroll a person in Job Corps implies that the output that person would have produced in the absence of the program must now be foregone. The loss of this output is a net cost to society. The value of this foregone output is measured by the foregone earnings. As was the case in estimating the increase in output produced, the estimate of foregone earnings includes the amount of fringe benefits in order to measure the total value of the output lost.

## 3. Nonbudgeted Costs Other than for Corpsmember Labor

The opportunity cost of Corpsmember labor described above is, of course, an unbudgeted item. In addition, there are several other types of expenditures whose costs do not appear in the Job Corps budget. These expenditures include the following items: surplus goods, for which the centers pay only transportation charges; meal costs reimbursed by

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<sup>1/</sup> However, if labor markets are in disequilibrium (i.e., if disadvantaged youths are unemployed in the labor market), non-Corpsmembers receive benefits from replacing Corpsmembers on jobs; thus, social costs are reduced.

the National School Lunch program; medical supplies and services provided by state and local agencies; and other resources acquired at below-market prices. The use of these resources is a cost to non-Corpsmembers and to society. However, the use of many of these items represents a transfer to Corpsmembers, and, hence, does not enter into the social perspective. The opportunity cost of these resources, which is usually equal to the market price, was estimated on the basis of special studies conducted at thirteen Job Corps centers (see Technical Report F for more details).

### C. OVERALL FINDINGS FOR NET PRESENT VALUE

Once the various effects of Job Corps have been valued, the calculation of the net present value is straightforward. Table VI.10 presents the values of the various benefit and cost components with their associated net present values from the three perspectives.<sup>1/</sup> As can be seen, the program yields net benefits from all three perspectives with our benchmark assumptions. Corpsmembers benefit principally from the program's transfers (shown as negative costs)--primarily room and board--and the increase in their postprogram earnings. Their major costs are foregone earnings while they are in the program, as well as the reductions in their transfer payments that accompany their increase in earnings. For non-Corpsmembers, the net benefit is relatively small. The largest benefit accruing to this group is the reduction in the costs associated with criminal activity; their largest costs are those included in program operating expenditures. From the social perspective, the increase in output (produced both in and out of the program) and the criminal justice system cost savings constitute

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<sup>1/</sup> In those cases where a benefit was unmeasured (e.g., reduced psychological costs of crime) we have included a plus in the appropriate row and column in the table.

the bulk of the benefits, with program operating expenditures representing the largest cost.

The final net present value figures from the three perspectives are presented near the bottom of Table VI.10. As the sum of the present values of all benefits less all costs, these provide summary estimates of program performance (measures that incorporate the various assumptions outlined earlier in this chapter and in Technical Report D). The estimates of the net present values per Corpsmember from all three perspectives are positive. The net present value from the social perspective is \$251 per Corpsmember enrolled, with almost 85 percent of that net benefit (\$212) accruing to Corpsmembers, and the remaining 15 percent (\$39) accruing to non-Corpsmembers.<sup>1/</sup> The estimates for the alternative summary performance measures (the ratios of benefits to costs from all three perspectives) are shown at the bottom of the table, and all of them are, of course, greater than 1 because the net present value is positive.

However, a single estimate for the net present value can be quite error-prone--especially for a short-term evaluation. Even the best estimate is subject to inaccuracies. In addition to sampling error, numerous assumptions must be made in estimating the component benefits and costs (assumptions regarding decay and discount rates, unmeasured benefits and costs, the competitiveness of product and labor markets, and the appropriateness of the methods used to estimate shadow prices and program effects). Each of these assumptions will affect the magnitude of the net present value, and while an attempt has been made to keep the assumptions as

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<sup>1/</sup> Of course, because there are many more non-Corpsmembers than Corpsmembers, the benefit to non-Corpsmembers will, on average, be quite small (much smaller than the \$39 per Corpsmember). However, some non-Corpsmembers (e.g., recipients of the value of output and additional victims of crimes in the absence of Job Corps) will benefit substantially.

TABLE VI.10

NET PRESENT VALUES PER CORPSEMEMBER FOR JOB CORPS UNDER THE BENCHMARK ASSUMPTIONS<sup>a/</sup>

	Social	Non-Corpsmember	Corpsmember
<b>Benefits</b>			
<b>I. Output Produced by Corpsmember</b>			
• In-program output	\$ 756.59	\$ 670.60	\$ 95.99
• Increased out of program output	1,238.81	0	1,238.81
• Increased tax payments on post-program earnings	0	106.63	-106.63
• Preferences for work over welfare	+	+	+
<b>II. Reduced Dependence on Transfer Programs</b>			
• Transfer payments	0	1,010.83	-1,010.83
• Administrative costs	119.65	119.65	0
<b>III. Reduced Criminal Activity</b>			
• Property damage and personal injury	273.90	273.90	0
• Stolen property	387.43	967.94	-580.51
• Justice system costs	1,895.74	1,895.74	0
• Reduced psychological costs	+	+	+
<b>IV. Reduced Drug/Alcohol Use</b>			
• Treatment costs	174.79	174.79	0
• Psychological benefits	+	+	+
<b>V. Utilization of Alternative Education and Training Services</b>			
• Education and training costs	390.57	390.57	0
• Training allowances	0	72.71	-72.71
<b>VI. Other Benefits</b>			
• Improved Corpsmember health status	+	+	+
<b>Costs</b>			
<b>I. Program Operating Costs</b>			
• Center operating expenditures other than for Corpsmember transfers	\$2,702.98	\$2,702.98	0
• Transfers to Corpsmembers	0	1,198.26	\$-1,198.26
• Central administrative costs	1,358.77	1,358.77	0
<b>II. Opportunity Cost of Corpsmember Labor</b>			
• Foregone earnings	878.58	0	878.58
• Foregone tax payments	0	152.74	-152.74
<b>III. Unbudgeted Expenditures other than for Corpsmember Labor</b>			
• Program costs	46.22	46.22	0
• Transfers	0	185.36	-185.36
<b>Net Present Value</b>	<b>\$ 250.93</b>	<b>\$ 39.03</b>	<b>\$ 211.90</b>
<b>Benefit-Cost Ratio</b>	<b>1.0504</b>	<b>1.0070</b>	<b>1.0800<sup>b/</sup></b>

<sup>a/</sup> See the text for a review of these assumptions and their implications for the values presented in this table.

<sup>b/</sup> The numerator of the benefit-cost ratio for Corpsmembers includes all of their benefits listed in this table as either positive benefits or negative costs, and the denominator includes all of their costs listed in this table as either positive costs or negative benefits.

realistic as possible, they still must be regarded as approximations and, in some cases, speculative. Therefore, it is necessary to present not only our benchmark set of assumptions used in estimating the net present value of Job Corps (the ones that the researchers were most comfortable with), but also a set of different assumptions used in making a series of alternative estimates. In this way, the sensitivity of the net present value estimates to changes in various assumptions can be examined.

Table VI.11 presents estimates of the net present value per Corpsmember made under our benchmark and five alternative sets of assumptions. In each case, one specific assumption is changed (with the remaining benchmark assumptions being maintained). Thus, if we were to vary several assumptions simultaneously, the variation in the estimates of the net present value could be even greater than that indicated in Table VI.11.<sup>1/</sup>

The first three sets of alternative assumptions in Table VI.11 concern the rate at which the Job Corps effects fade out over time. The first alternative presented assumes that there are no effects other than those already observed by the end of the first six postprogram months. These estimates indicate that future social benefits (after the first six postprogram months) will have to be worth at least \$3,212 if Job Corps is to be considered an efficient use of resources.<sup>2/</sup> The second alternative assumption is that effects do not fade out at all. In this case, those effects observed during the first six postprogram months are assumed to

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<sup>1/</sup> Only brief summaries of some of the sensitivity tests made on the various assumptions are given here. More details are presented in Chapter V of Technical Report D.

<sup>2/</sup> Note that because the transfers received by Corpsmembers while they are in the program are worth more than their foregone earnings (including the decline in earnings over the first six postprogram months), Corpsmembers will have a positive net present value even if there are no future effects.

TABLE VI.11

NET PRESENT VALUE PER CORPSMEMBER UNDER ALTERNATIVE ASSUMPTIONS<sup>a/</sup>

Alternative Assumptions	Analytical Perspective		
	Social	Non-Corpsmember	Corpsmember
Benchmark assumptions <sup>b/</sup> (discount and fade out = 19 percent)	\$ 250.93 (1.05)	\$ 39.03 (1.01)	\$ 211.90 (1.08)
Effects do not last beyond the first six postprogram months	- 3,211.67 (0.36)	-3,542.18 (0.38)	330.51 (1.25)
Effects do not fade out (or grow) over time (discount = 5 percent)	10,612.40 (3.13)	9,531.79 (2.69)	1,080.61 (1.17)
Earnings and transfer effects do not fade out but other effects do	5,182.85 (2.04)	2,881.48 (1.51)	2,301.37 (1.44)
3 percent discount rate (discount and fade out = 17 percent)	757.39 (1.15)	508.11 (1.09)	249.28 (1.09)
10 percent discount rate (discount and fade out = 24 percent)	- 581.57 (0.88)	- 794.91 (0.86)	213.34 (1.08)

<sup>a/</sup>The numbers in parentheses below the estimates of the net present value are benefit-cost ratios computed as described in Table V.10.

<sup>b/</sup>Benchmark assumptions are as follows: all effects fade out at a rate equal to 50 percent every five years; the discount rate is 5 percent; the expected worklife of a Corpsmember is forty-three years after leaving Job Corps. (For a more complete discussion of these and other assumptions, see Chapter V of Technical Report D.)

remain constant over the Corpsmember's entire worklife. In this case, Job Corps would be an overwhelming success, with measured benefits exceeding measured costs by more than \$10,000 per Corpsmember from a social perspective. The third alternative assumption is that the earnings and corresponding transfer effects do not fade out, while the other effects (reduced criminal activity, drug- and alcohol-treatment use, and education- and training-program use) fade out at the benchmark rate.<sup>1/</sup> In this instance, the social, Corpsmember, and non-Corpsmember net present values again are all positive, with the total social benefits outweighing social costs by more than \$5,000.

The appropriate discount rate to use when evaluating government training and educational programs is always a controversial issue, because while the choice of a discount rate is very important for the evaluation and is well established theoretically, there has never been a completely satisfactory way to estimate discount rates. Imperfections in the markets for capital, the existence of risk and uncertainty, inflation, and the fact that many tax incidence questions are still unresolved have made it impossible to determine a single discount rate appropriate for evaluating government investments. As a result, we have adopted somewhat arbitrarily (see Technical Report D for more documentation) a 5 percent real rate (i.e., net of inflation) as our benchmark. Therefore, we must test the sensitivity of the findings to variations in this assumption.

To test the sensitivity of the findings to the use of the 5 percent discount rate, we also made net present value estimates using 3 and 10

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<sup>1/</sup> This procedure was adopted because there is substantial evidence that criminal activity, drug use, and participation in training and educational programs decline as people grow older. As a result, the magnitudes of reductions in these activities would probably fade out even if the percentage reduction due to Job Corps participation did not fade out.

percent real discount rates. These alternative estimates are presented in the last two rows of Table VI.11. As can be seen, the social net present value changes in the opposite direction from the discount rate. Lower discount rates increase the present value of social benefits, but leave social costs unchanged because all of them are incurred during the initial time period. Thus, using a 3 percent discount rate increases the social net present value by over \$500 per Corpsmember compared to the benchmark estimate. In a similar manner, increasing the discount rate from the 5 percent benchmark rate to 10 percent decreases the social net present value by over \$800.<sup>1/</sup>

It should be pointed out that our treatments of the discount and fade-out rates are analytically identical. In each case, the current value of an effect decreases over time.<sup>2/</sup> The important parameter is thus the sum of these two rates. In this light, the sensitivity tests presented in Table VI.11 can be viewed as testing many combinations of

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<sup>1/</sup> Because Corpsmembers' benefits and costs are spread out more evenly over time, changes in the discount rate will have less effect on their net present value. For example, a decline in the discount rate increases the present value of the earnings gain (a Corpsmember benefit), but also increases the present value of the decline in transfers (a Corpsmember cost). Thus, there is only about a \$35 difference between the Corpsmember net present value calculated using a 3 percent real discount rate and the value calculated using 10 percent, while the difference between the corresponding social estimates is over \$1,300 (because costs are concentrated in the in-program period and benefits occur mostly in the future).

<sup>2/</sup> The value of the effect is its magnitude times its value (e.g., reduction in the number of burglary arrests per Corpsmember times the cost of a burglary arrest). The fade-out rate affects this product by reducing the magnitude of the effect, while the discount rate affects the product by reducing its value in future time periods. The present value will be affected by the sum of these two rates. Thus, if one rate is increased and the other rate is decreased by the same amount, the net present value will not change.

fade-out and discount rates (e.g., the net present value estimates calculated by using a 3 percent discount rate and a 14 percent [approximately] fade-out rate are identical to those calculated for any other fade-out and discount rate combinations that sum to 17 percent). As shown, the different combined rates that were tested range from 5 to 24 percent. As long as the sum of the two rates is less than 20 percent, the social net present value will be positive, and Job Corps will thus represent an efficient investment of resources.

In addition to the assumptions regarding the magnitudes of future effects and the appropriate discount rate, there are several other specific assumptions whose effect on the net present value should be examined.

These include the following assumptions:

- That the marginal savings to the various agencies affected by changes in behavior among Corpsmembers (e.g., AFDC, General Assistance, courts, police and corrections, drug-treatment programs, and Job Corps) are equal to their average cost of operation
- That the estimated magnitudes of the Job Corps effects correctly measure the true effects regardless of the statistical significance attributed to the results
- That the value of the output produced by Corpsmembers in Job Corps is approximately equal to the price an alternative supplier would have charged to produce that output
- That the increase in Corpsmember earnings can be used as a measure of the increase in social output (in particular, there is no displacement of non-Corpsmembers)

These assumptions, like those regarding fade-out and discount rates, are examined in detail in Technical Report D. However, a few points are worth mentioning here. The use of average cost as a measure of marginal cost appears to be a reasonable assumption for evaluating the long-run effects of a program, although it probably causes some upward bias for the value of benefits in the short run.

The use of the estimated Job Corps effects without regard to their statistical significance should not bias our results, but does indicate the imprecision of the findings, especially for individual components (e.g., does Job Corps really reduce murder arrests, or is that result a chance occurrence resulting from our sampling?). However, the estimates used in the benefit-cost analysis are the best (i.e., most accurate) estimates of Job Corps effects that are currently available; they are generally unbiased or conservative, and were obtained from an evaluation designed to yield accurate overall benefit-cost estimates.<sup>1/</sup>

The price alternative suppliers would charge to produce the output produced by Corpsmembers while they are in the program may overestimate the actual social value of that output. This supply price reflects the value of the labor inputs that went into the output rather than its value to recipients. The social-demand value could differ from the supply price because of the displacement of other workers, external benefits or costs, altruism on the part of recipients, the lack of demand for the output, and other features of the market for such output. Estimates of the social value might reasonably be expected to fall between slightly above the supply price to only about 65 percent of the supply price. Using a value that is only slightly above our benchmark estimate will not affect the final estimate of the net present value. However, if we use a lower-bound estimate of 65 percent of the supply value of in-program output, the estimate of the social net present value will be reduced from the benchmark value of \$251 to -\$13 per Corpsmember. This decline in the value of in-program output

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<sup>1/</sup> See Technical Report C for details on the accuracy of the estimates, and Technical Report A for details on the evaluation design.

would affect primarily non-Corpsmembers, for whom the estimate of the net present value per Corpsmember would fall to -\$195. Corpsmembers would have a decline of only \$30 in the net present value under these conditions.<sup>1/</sup>

In order for the postprogram increases in Corpsmember earnings to measure the social value of the increase in Corpsmember-produced output, Corpsmembers must not displace other workers who subsequently become unemployed. If they do, the earnings gain to Corpsmembers will be offset from the social perspective by the earnings declines among the displaced non-Corpsmembers. Thus, the Corpsmember earnings gains would overstate the true increase in social output. Of course, the social opportunity costs of Corpsmember time spent in Job Corps would also be overstated because part of that foregone output would be produced by non-Corpsmembers who would replace the Corpsmembers. Thus, it is likely that dropping our assumption that there is no displacement (or replacement) would have little impact on the overall estimates of the net present value, and it is possible (as discussed in Technical Report D) that the estimate of the net present value for society would rise (if non-Corpsmembers benefit more by replacement than they lose by displacement).

The general conclusion of these sensitivity tests is that as long as the sum of the discount and fade-out rates is less than 20 percent, Job Corps is an efficient use of resources. In addition, non-Corpsmembers will view the program as producing positive net benefits. Under diverse assumptions, the sensitivity tests indicate that Corpsmembers will receive a net benefit of approximately \$200. Finally, if the various benefits that are left

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<sup>1/</sup>See Technical Report E for a detailed discussion of the demand value of the in-program output.

unmeasured (reduced psychological costs of crime, satisfaction from improved Corpsmember health status, preferences for having Corpsmembers lead "more acceptable" life-styles, further long-run earnings increases due to increased Corpsmember use of vocational and college education, etc.) could be added to the measured benefits, the results would probably be even more favorable toward Job Corps.

#### D. CONCLUSIONS

The principal issue analyzed in this chapter is whether the investment in Job Corps is economically efficient--specifically, does society have more goods and services at its disposal because of the investment in Job Corps, or would it be better off if the resources devoted to the program were used for alternative purposes? The results of this analysis suggest that public investment in Job Corps is efficient. Our benchmark estimate is that the present value of benefits exceeds costs by \$251 per Corpsmember, or by approximately 5 percent of costs. Because over 40,000 Corpsmembers enrolled in Job Corps during the base year for the evaluation (fiscal year 1977), our benchmark estimate of the total social benefit exceeds \$10 million for that year.

We estimate that nearly 50 percent of the social benefits are generated by a reduction in criminal activity among Corpsmembers-- particularly burglary and larceny. These benefits from reductions in crime include reductions in personal injury, property damage, stolen property, and criminal justice system costs. Another 40 percent of the social benefits are attributed to an increase in the value of the output Corpsmembers produce both while they are in the Job Corps program and after they leave. The social costs consist primarily of the resources used to operate and administer the program.

The analysis of social benefits and costs abstracts from the fact that members of society share disproportionately in the benefits and costs. The equity effects of the program are very important for a complete analysis of the program. As a result, we also analyzed the benefits and costs of investments in Job Corps from the perspectives of Corpsmembers and of all other members of society (non-Corpsmembers). Our benchmark distributional estimates indicate that the average Corpsmember receives a net benefit of \$212 from participating in Job Corps. We estimate that non-Corpsmembers, as a group, receive benefits worth only slightly more than the costs they incur. For non-Corpsmembers, the net present value of their investment in Job Corps is approximately \$40 per Corpsmember enrolled.

Approximately 40 percent of the benefits to Corpsmembers are accounted for by their increased earnings. The other benefits are primarily the transfers they receive while they are in Job Corps. The largest cost borne by Corpsmembers is the reduction in their transfer income, although the opportunity cost of the time they spend in Job Corps and the reduction in their theft income are also significant costs to them.

Non-Corpsmembers receive substantial benefits from the reductions in Corpsmember criminal activity and their use of transfer programs. The non-Corpsmember costs are primarily from the operation and administration of the program. Of these Job Corps expenditures, over 25 percent are for transfers to Corpsmembers.

The estimation of the present value of benefits and costs required numerous assumptions and approximations. In particular, because this analysis is based on interview data that covered only seven postprogram months on average, we have had to make some speculative assumptions about the rate at which the Job Corps effects fade out over time. We assumed

that all effects fade out at approximately 14 percent a year. Another important assumption that was used to obtain the benchmark benefit-cost estimates was that the appropriate discount rate for converting the values of future benefits into current dollars was 5 percent. Assumptions of lower (higher) fade-out and discount rates will make the program appear more (less) attractive. As long as the sum of the fade-out and discount rates is less than 20 percent, we estimate that Job Corps is an efficient social investment.

## VII. CORPSMEMBERS' SATISFACTION WITH THE PROGRAM

In this chapter we examine three areas of Corpsmembers' satisfaction with Job Corps that indicate the benefits they perceive to accrue from the program and that affect the postprogram economic impacts. In the first section, we analyze Corpsmembers' ratings of in-program services, which measure their opinions about the effectiveness of the program. In the second section we examine the factors that affect Corpsmembers' length of stay at centers and their completion status. The length of stay and completion rates are indicators both of Corpsmembers' satisfaction with the program (their reported preferences) and of the amount of services provided by Job Corps Centers; hence, they are measures of the amount of program treatments that are important intervening variables in explaining postprogram impacts (see Chapter V).

The third section presents findings on Corpsmembers' ratings of job-placement and related postprogram services provided by Job Corps. Adequate postprogram services, both for job placement and for facilitating the transition from structured life at centers to the regular labor market, are essential for a positive short-term economic impact of a residential training program such as Job Corps. Analyzing Corpsmembers' assessments of job-placement and related postprogram services takes on added importance when we recognize that Corpsmembers' earnings were temporarily low upon re-entering the labor market immediately after leaving Job Corps (this is discussed in more detail in Chapter V).

## A. IN-PROGRAM SERVICES

As part of the follow-up interview, we asked the Corpsmember sample to rate the services they received while in the Job Corps program. This series of questions essentially repeated the set that was asked in the baseline interview while Corpsmembers were still residing at centers. These questions and the analysis of Corpsmembers' satisfaction with in-program services were repeated in the follow-up to check on the generally high level of satisfaction expressed at baseline. We wanted to determine whether the baseline responses were adequate indicators of Corpsmembers' satisfaction, in that we were concerned that Corpsmembers might have either felt pressured to give high ratings while they were residing at centers<sup>1/</sup> or had unrealistic expectations about the postprogram benefits (program operators have sometimes been accused of being overzealous in promoting the benefits of their program to participants).

One question on Corpsmembers' satisfaction with in-program services dealt with the overall rating of Job Corps and consisted of four response categories that ranged from "very satisfied" to "not at all satisfied." Former Corpsmembers were then asked to evaluate specific components of services provided at Job Corps centers. In this section we present findings on the ratings given in the follow-up interviews, and then contrast them to the answers to the same questions in the baseline interviews for respondents who completed both interviews.

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<sup>1/</sup>In order to reduce these types of problems, we assured respondents from both surveys (baseline and follow-up) that the information would be strictly confidential, and we conducted interviews in private locations.

In the final part of this section we analyze an indirect measure of Corpsmembers' satisfaction with in-program services that was not available at the time of the baseline interview--namely, whether former Corpsmembers thought that the training they received in Job Corps helped them obtain specific jobs during the postprogram period. Not only is assistance in obtaining employment a useful measure of Corpsmembers' evaluations of in-program services, but it also establishes a direct link between in-program training and postprogram economic impacts. We examine both the overall magnitude of favorable reports and the variables that affect the responses (i.e., Corpsmember and center characteristics).

1. Ratings of Job Corps: Overall and by Type of Service

Table VII.1 shows both Corpsmembers' overall rating of Job Corps and their evaluation of specific Job Corps services. As in the baseline survey,<sup>1/</sup> Corpsmembers reported that they were generally satisfied with the program and the specific services they received while they were at the centers. After being out of the program a short period of time, the youths seemed to view their Job Corps experience even more favorably than they did while they were in the program. If the "very satisfied" rating is combined with the "fairly satisfied" rating to indicate a Corpsmember who was pleased with his or her Job Corps experience, and if the "not too satisfied" rating is combined with the "not at all satisfied"

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<sup>1/</sup> For a more thorough discussion of the baseline findings, see "An Examination of Job Corps Participation," Mathematica Policy Research, June 1978. Even Corpsmembers who did not stay in Job Corps very long gave the program very high ratings. Reweighting the observations to provide estimates that are representative of all Corpsmembers (rather than overrepresenting program completers as our sample does) has no substantive effect on the findings reported in this section.

TABLE VII.1

## CORPSMEMBERS' RATINGS OF JOB CORPS: BY TYPE OF SERVICE

Rating of . . .	Percentage of Follow-Up Sample Reporting					
	Baseline			Follow-Up		
	Good	OK	Not Good	Good	OK	Not Good
<u>Job Training and Education</u>						
Types of training you can choose from	54	34	12	63	26	11
Actual training received	61	32	7	67	24	9
Way you are treated by instructors and teachers	56	37	7	65	28	7
Reading and other education courses	50	42	8	61	30	9
<u>Social Characteristics</u>						
Recreational facilities	40	45	15	53	36	11
Way you get along with other Corpsmembers	50	44	6	64	30	6
Social Life	34	52	14	42	45	13
<u>Residential Accommodations</u>						
Food	10	38	52	18	46	36
Living quarters	33	50	17	43	44	13
Where center is located	26	37	37	36	31	33
Number of times able to go home for a visit	30	34	36	42	27	31
Pay allowance	14	35	51	16	38	46
Medical care <sup>a/</sup>	--	--	--	49	30	21

## OVERALL RATING OF JOB CORPS

	Very Satisfied	Fairly Satisfied	Not Too Satisfied	Not At All Satisfied
Baseline Percentages	25	42	24	9
Follow-Up Percentages	29	48	17	6

Number of Observations - 2,173

<sup>a/</sup> In the baseline survey, Corpsmembers were not asked to rate the medical care they received from Job Corps.

rating to signify a displeased Corpsmember, the overall increase in satisfaction is readily apparent. Sixty-seven percent of our follow-up sample expressed satisfaction with the Job Corps program during the baseline interview (i.e., while they were still at a center). The percent of satisfied Corpsmembers increased to 77 percent after they had been out of the program for an average of seven months (i.e., when the follow-up interviews were administered).

The important point is not necessarily that the ratings of Job Corps increased when we reinterviewed Corpsmembers after they had been out of the program for an average of seven months, but, rather, that the reports of satisfaction did not decline.<sup>1/</sup> It seems clear that a large proportion of Corpsmembers are genuinely satisfied with the program. The favorable responses at baseline thus should not be attributed to either intimidation from still being in the program or unrealistic expectations about postprogram impacts. Similar arguments can be developed for Corpsmembers' evaluations of specific components of the program. In essence, the baseline findings are substantiated by the follow-up data.

In the follow-up interviews, respondents gave higher ratings to all components of the program services at Job Corps centers. As was true in the baseline interviews, the job-training and educational components were given the highest ratings (over 60 percent "good," and generally under 10 percent "not good"). The food served and the pay allowance were still given low ratings by the respondents--however, only 36 percent of

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<sup>1/</sup> There are many possible explanations why Corpsmembers gave higher ratings of Job Corps at follow-up. One plausible argument is that Corpsmembers liked the program overall, and that, after the passage of time, even any specific unpleasant aspect seemed to become assimilated into their general satisfaction with the program.

the follow-up sample of Corpsmembers rated the food as "not good," compared to 52 percent of the sample at baseline. The pay allowance was the only category that did not increase by at least 6 percentage points for the "good" response, but even this category showed an increase at the follow-up interviews (by 2 percentage points). The low rating of the pay allowance does indicate some dissatisfaction with this aspect of the Job Corps program, however, and could indicate a potential problem for the continuation of Job Corps because many new youth programs are being implemented that provide higher pay allowances.

Former Corpsmembers were asked one additional question in the follow-up interview--that is, how they rated the medical care they received while they were at Job Corps centers. The results for this new question are higher than the ratings for other residential services (especially for the "good" category). Nearly one-half of the former Corpsmembers responded "good," and another 30 percent gave an "OK" rating to medical care.

## 2. Ratings of Job Corps: By Subgroups

Factors that are expected to affect how a Corpsmember rates the program include both the demographic characteristics of the Corpsmember and the program treatments he or she received at the center (i.e., the features of the program).<sup>1/</sup> The relevant demographic and treatment factors are sex, race-ethnicity, age at enrollment, administration of the center

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<sup>1/</sup> Because of both the large number of subgroups and center features and the similarity in findings across individual center features, we have condensed this section by not discussing individual center services. Differences among subgroups for center features yield similar findings to the differences for the overall rating of the program.

(i.e., CCC versus contract center), center operator (i.e., public or government versus private), center size, center location (i.e., city versus noncity), and the coeducational status of the center. Multiple regression analysis was used to separate out the individual ratings of Job Corps for each subgroup while holding constant (i.e., netting out) the independent effects of all other factors on the ratings.<sup>1/</sup>

The overall rating of Job Corps consisted of four values that were converted into a single binary (0, 1) variable. If the Corpsmembers reported that they were "very satisfied" or "fairly satisfied" overall with Job Corps, then the variable was assigned a value of 1, indicating satisfaction. However, if they responded that they were "not too satisfied" or "not at all satisfied," then the variable was given a value of 0, indicating dissatisfaction.<sup>2/</sup> The results of the analysis are summarized in Table VII.2 for both the baseline and the follow-up ratings of Corpsmembers.

The findings by subgroups in Table VII.2 and all similar tables in this chapter are determined from multiple regressions. The estimates presented for each subgroup within any factor are net of all the other

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<sup>1/</sup> Note that in order to obtain estimates for a particular center or group of centers, all of the features of that (those) center(s) need to be averaged. For example, for civilian conservation centers, the percentages in Table IV.2 would have to be averaged over CCC, Small Size, Noncity Location, Public Operator, and Noncoed Status (see below).

<sup>2/</sup> There are several possible statistical techniques that could be used to examine the categorical (ordinal-level) data on overall ratings of Job Corps by Corpsmembers. The satisfied versus dissatisfied dichotomy provides a convenient summary measure that both is easy to interpret and captures the essence of the main information provided by these ratings.

TABLE VII.2

## CORPSMEMBERS' RATINGS OF JOB CORPS: BY SUBGROUPS

Subgroup	Percent Who Are Satisfied (Controlling for All Other Factors)	
	Baseline (Overall=67)	Follow-Up (Overall=77)
<u>Corpsmember</u>		
<u>Sex</u>		
Male (n=1,505)	69	78
Female (n=616)	64	74
(F-value)	(2.65)	(1.75)
<u>Race-ethnicity</u>		
Black (n=1,308)	63	78
White (n=472)	75	72
Hispanic (n=257)	75	80
American Indian (n=84)	71	75
(F-value)	(9.77)***	(2.54)*
<u>Age at enrollment</u>		
16-17 (n=1,025)	68	76
18-22 (n=1,096)	67	77
(F-value)	(0.58)	(0.76)
<u>Center</u>		
<u>Administration</u>		
CCC (n=659)	63	73
Contract (n=1,462)	69	78
(F-value)	(1.47)	(1.55)
<u>Operator</u>		
Public (n=1,058)	72	79
Private (n=1,063)	63	74
(F-value)	(20.39)***	(3.68)*
<u>Size<sup>a/</sup></u>		
Small (n=836)	68	77
Medium (n=513)	73	77
Large (n=772)	63	76
(F-value)	(4.63)***	(0.15)
<u>Location</u>		
City (n=302)	70	79
Noncity (n=1,819)	67	76
(F-value)	(0.69)	(0.87)
<u>Coed status</u>		
Coed (n=1,144)	68	75
Noncoed (n=977)	67	79
(F-value)	(0.13)	(1.75)

Total Number of Observations = 2,121

\*The adjusted means for this subgroup are significantly different from the overall mean at the 90 percent level of statistical confidence.

\*\*\*The adjusted means for this subgroup are significantly different from the overall mean at the 99 percent level of statistical confidence.

<sup>a/</sup>Center "Size" is based on the enrollment capacity for resident Corpsmembers in fiscal year 1977; "Small" is defined as 250 or fewer, "Medium" is 251 through 1,000, and "Large" is over 1,000.

factors in the tables (i.e., after separating out the independent effects for all of the other variables). For example, the estimated effect of CCC compared to contract center administration in Corpsmembers' ratings (73 versus 78 percent in the follow-up, as shown in Table VII.2) is net of the estimated effects for all of the other factors included in Table VII.2. The estimates shown for each subgroup (e.g., CCCs) are conditional means and assume the average proportions for the subgroups shown under all other factors. Therefore, the effect shown for CCCs is net of the effect for being a public operator and for all other variables in the table. To obtain the estimated rating for a given set of Corpsmember and center characteristics, we have to average the ratings across all relevant subgroups. For example, the estimated rating for a Corpsmember at follow-up who was male, black, and age 16 at enrollment, and who attended a center that was administered as a CCC, operated by a public agency, small, in a noncity location, and noncoed, is 77 percent ( $1/8 \{78 + 78 + 76 + 73 + 79 + 77 + 76 + 79\} \approx 77$ ).

The percentage of Job Corps respondents who gave a satisfactory rating to their Job Corps experience increased from 67 to 77 percent from the baseline to the follow-up period, respectively, as shown in the top row of Table VII.2. The estimated percentages that were satisfied with Job Corps are presented for each subgroup under a specific factor (controlling for all the other factors shown in Table VII.2). For the male subgroup under the factor labeled "Sex," for example, we estimate that 69 percent were satisfied with Job Corps at baseline, other things being equal (i.e., holding constant the independent effects of all the other characteristics of Corpsmembers and centers that are shown). With the follow-up data, this

percentage increases to 78 percent. For both time periods, the estimated ratings for males are higher than those for females. The F-value for each of the factors shows whether the hypothesis that there are no differences for subgroups within a factor can be rejected with statistical confidence. For the "Sex" factor, an F-value of only 1.75 at follow-up indicates that the estimated ratings for males are not significantly different from those for females at an acceptable level of statistical confidence.

Characteristics of Corpsmembers. As was the case in the Interim Report, only race-ethnicity is statistically significant. At the follow-up, Hispanic youths were the most satisfied, followed by (in descending order of satisfaction) blacks, American Indians, and whites (who were the least satisfied). However, the statistical significance of these race-ethnic differences decreases from the 99 percent level of confidence at baseline to the 90 percent level at follow-up, as the range of satisfaction across race-ethnic groups was considerably narrower at the follow-up period than it was at baseline. This narrowing of the range is due in large part to the fact that proportionately more blacks were satisfied with the program after leaving Job Corps. In fact, of all those specified, white youths were the only subgroup that showed lower satisfaction after leaving the program. No significant differences by sex or by age at enrollment were found at either baseline or follow-up.

Center Features. Here, again, very few differences within subgroups are significant. In addition, the range of values for the subgroups that were significant at the baseline interview narrowed when the program was rated after the Corpsmembers terminated from Job Corps. At follow-up,

differences between operators (i.e., public versus private) had only a 90 percent level of statistical confidence, although publically operated centers were still clearly preferred. The size of the center (by enrollment capacity) was no longer significant at follow-up, and the differences in ratings by size were negligible. At both the baseline and follow-up interviews, no significant differences were found for center administration (CCC versus contract center), center location (city versus noncity), and the coed status of centers. In general, the overall ratings of Job Corps were uniformly high at follow-up, and it is difficult to distinguish differences among subgroups.

### 3. Increases in Satisfaction Between the Baseline and Follow-Up Interviews

As discussed above, more respondents were satisfied with the Job Corps program at the follow-up interview than at the baseline interview. Table VII.3 shows the percentage of respondents who expressed increased satisfaction with the program when the follow-up interviews were administered. Thirty-three percent of the Corpsmembers expressed a higher level of satisfaction at the follow-up interview, based on the scale shown at the bottom of Table VII.1 (most of the others remained the same, and only a very few declined).

Among the Corpsmember characteristics, only the race-ethnicity factor was significant. Blacks (who expressed below-average satisfaction at baseline) had a higher percentage of positive changes than did others in their satisfaction ratings of the Job Corps program. In contrast, whites, who were very satisfied at baseline, showed the smallest percentage of increases. Thus, in that blacks showed the most increases at follow-up and

TABLE VII.3

## INCREASES IN CORPSMEMBERS' RATINGS OF JOB CORPS: BY SUBGROUP

Subgroup	Percentage Expressing More Satisfaction at Follow-Up Than at Baseline (Controlling for All Other Factors) (Overall=33)
<b>Corpsmember</b>	
<b>Sex</b>	
Male (n=1,478)	32
Female (n=611)	34
(F-value)	(0.53)
<b>Race-ethnicity</b>	
Black (n=1,284)	38
White (n=469)	27
Hispanic (n=254)	-
American Indian (n=82)	30
(F-value)	(13.93)***
<b>Age at enrollment</b>	
16-17 (n=1,008)	32
18-22 (n=1,091)	33
(F-value)	(0.56)
<b>Employment status at follow-up</b>	
Employed (n=1,023)	32
Unemployed or not in labor force (n=1,066)	33
(F-value)	(0.20)
<b>Center</b>	
<b>Administration</b>	
CCC (n=648)	37
Contract (n=1,341)	31
(F-value)	(1.64)
<b>Operator</b>	
Public (n=1,039)	31
Private (n=1,050)	35
(F-value)	(1.73)
<b>Size<sup>a/</sup></b>	
Small (n=823)	30
Medium (n=506)	30
Large (n=760)	38
(F-value)	(2.90)*
<b>Location</b>	
City (n=300)	34
Noncity (n=1,789)	33
(F-value)	(0.07)
<b>Coed status</b>	
Coed (n=1,124)	32
Noncoed (n=965)	34
(F-value)	(0.65)

Total Number of Observations = 2,089

\*The adjusted means for this subgroup are significantly different from the overall mean at the 90 percent level of statistical confidence.

\*\*\*The adjusted means for this subgroup are significantly different from the overall mean at the 99 percent level of statistical confidence.

<sup>a/</sup>Center "Size" is based on the enrollment capacity for resident Corpsmembers in fiscal year 1977; "Small" is defined as 250 or fewer, "Medium" is 251 through 1,000, and "Large" is over 1,000.

whites the least, the differences in satisfaction among subgroups are reduced at follow-up.

One additional factor was added to the list of Corpsmember variables in order to control for possible program effects. We hypothesized that employed respondents would express more satisfaction with the program than those who were unemployed or not in the labor force following their participation in Job Corps. We reasoned that current employment might be a positive outcome that former Corpsmembers would associate with the program. Surprisingly, however, employment did not have a significant effect on changes in the level of satisfaction with Job Corps, and the direction of the estimated effect was the opposite of what we had expected: a slightly higher percentage of respondents who were unemployed or not in the labor force expressed a greater amount of satisfaction with the Job Corps program at the follow-up interview.

The only center factor that has a significant effect on changing the satisfaction is the size of the center. Thirty-eight percent of the respondents from large centers reported higher levels of satisfaction with the Job Corps program at the follow-up interview than at baseline. This is 5 percentage points more than the average increase and 8 percentage points more than the increase associated with the other two center sizes. As with the Corpsmember variables, the subgroup that was lowest at baseline (large centers) showed the most increases at follow-up, reducing the differences in satisfaction among subgroups.

#### 4. Helpfulness of Job Corps Training for Obtaining Employment

An indirect measure of former Corpsmembers' satisfaction with in-program

services is whether they felt that the training and work experience they received at centers helped them obtain jobs after they left Job Corps. Furthermore, to the extent that (1) former Corpsmembers reported such effects and (2) their perceptions are correct then a direct link between in-program services and postprogram impacts is established. In this subsection we present and analyze findings for four aspects of the benefits that Corpsmembers perceived to accrue from in-program services: (1) how many former Corpsmembers reported such benefits; (2) which components of their training were most helpful; (3) which Corpsmembers received more (or fewer) in-program services that were helpful in obtaining jobs; and (4) what types of centers were most successful in providing services that Corpsmembers believed were helpful in obtaining employment.

In the follow-up interview, youths were asked detailed questions about all jobs during the postprogram period for which they had been employed two weeks or longer (i.e., the job must have lasted for a minimum of two weeks). Among the questions asked of the Corpsmember sample was, "Did the Job Corps training or work experience you received help you to get the job at (EMPLOYER)?" Corpsmembers who answered "yes" were then asked for the specific aspects of their Job Corps training that they thought were the most helpful in obtaining the particular job.

As shown in Table VII.4, approximately 26 percent of our sample (20 percent of all enrollees) and 35 percent of those who had jobs (26 percent for enrollees) reported that the training or work experience they received in Job Corps helped them obtain a specific job. The percentages for program completers are 41 and 52, respectively. Program completers tended to perceive more of these benefits than noncompleters, and most of those who responded

TABLE VII.4

CORPSMEMBERS REPORTING THAT TRAINING HELPED IN OBTAINING JOB:  
BY PROGRAM COMPLETION STATUS AND ASPECTS OF TRAINING THAT HELPED

	Sample Mean	Average for Program Completers	Average for Partial Completers	Average For Early Dropouts	Average For All Enrollees <sup>a/</sup>
Percentage of Corpsmembers having at least one job lasting two weeks or longer <sup>b/</sup>	75	79	69	75	74
Percentage of Corpsmembers reporting that training helped in obtaining at least one job	26	41	14	8	20
Percentage of Corpsmembers with jobs that report training helped <sup>c/</sup>	35	52	20	10	26
Percentage of those helped reporting . . . <sup>d/</sup>					
• Reading program	19	15	29	25	23
• Getting a GED	19	20	14	13	15
• Occupational skills learned	68	90	96	63	78
• Work experience	77	78	71	75	75
Number of Observations =	2,099	1,019	846	234	2,099

<sup>a/</sup>In fiscal year 1977, 30 percent of all Corpsmembers were program completers, 30 percent were partial completers, and 40 percent were early dropouts. Therefore, the average for all enrollees is obtained by a weighted average of the numbers in columns 2 through 4. Specifically,

$$\text{Average for All Enrollees} = 0.3 \left( \text{Average for Program Completers} \right) + 0.3 \left( \text{Average for Partial Completers} \right) + 0.4 \left( \text{Average for Early Dropouts} \right)$$

See Chapter IV for more details and examples.

<sup>b/</sup>This is a misleading measure of employment across program completion statuses for two reasons: first, program completers had been out of Job Corps for a shorter time on average; and second, youths in the military were not asked these questions. Both these factors led to an understatement of jobs for program completers relative to noncompleters.

<sup>c/</sup>This is the ratio of Corpsmembers reporting that training helped (row 2) to those who had at least one job lasting two weeks or longer (row 1) times 100.

<sup>d/</sup>This is the ratio of Corpsmembers reporting the particular part of the program to those reporting that the training helped (row 2) times 100.

said it was either the occupational skills or work experience, or both, that helped. The much higher benefits reported by program completers (three times higher than by partial completers, and five times higher than by early dropouts) supports the expectation that larger economic impacts accrue to those who complete the Job Corps program (this is what we observed, as discussed in Chapter V). The more frequent citing of occupational skills and work experience, as compared to the educational services, can be attributed, in part, to the emphasis placed on training and work experience in the phrasing of the question.

The 26 percent figure is probably an adequate proportion of those who had jobs to be able to report such direct links to in-program services. It should be noted, moreover, that, for at least three reasons, this is clearly an underestimate of those who believe they received this type of direct benefit from the in-program services. First, Corpsmembers were asked the set of questions only in relation to jobs, and not in relation to alternative type of positions (e.g., training or school). Second, the emphasis on training in the phrasing of the question probably reduced the number of positive responses from Corpsmembers who thought that only the GED or other aspects of the education they received from Job Corps had helped them obtain a job. Finally, this set of questions was not asked of former Corpsmembers who were in the military at the time of the follow-up survey (many of whom had failed the Armed Forces Qualifying Test prior to participating in Job Corps, but who then passed the AFQT after participating in Job Corps).

Interestingly, there are substantial differences among subgroups of Corpsmembers in terms of this rating of in-program services. As shown in Table VII.5, males tended to find the training more helpful in obtaining

TABLE VII.5

JOB CORPS TRAINING OR WORK EXPERIENCE HELPED CORPSMEMBER OBTAIN A JOB: BY SUBGROUP

<u>Subgroup</u>	Percent Who Report that Training Helped in Obtaining at Least One Job (Controlling for All Other Factors) (Overall Mean=26)
<u>Corpsmember</u>	
<u>Sex</u>	
Male (n=1,485)	27
Female (n=614)	23
(F-value)	(2.76)*
<u>Race-ethnicity</u>	
Black (n=1,296)	22
White (n=466)	36
Hispanic (n=255)	31
American Indian (n=82)	17
(F-value)	(11.40)***
<u>Age at enrollment</u>	
16-17 (n=1,019)	23
18-21 (n=1,080)	29
(F-value)	(7.47)***
<u>Center</u>	
<u>Administration</u>	
CCC (n=650)	24
Contract (n=1,449)	27
(F-value)	(0.26)
<u>Operator</u>	
Public (n=1,043)	31
Private (n=1,056)	22
(F-value)	(10.62)***
<u>Size<sup>a/</sup></u>	
Small (n=826)	25
Medium (n=512)	26
Large (n=761)	28
(F-value)	(0.21)
<u>Location</u>	
City (n=302)	28
Noncity (n=1,797)	26
(F-value)	(0.45)
<u>Coed status</u>	
Coed (n=1,134)	27
Noncoed (n=965)	26
(F-value)	(0.45)

Total Number of Observations = 2,099

\*The adjusted means for this subgroup are significantly different from the overall mean at the 90 percent level of statistical confidence.

\*\*\*The adjusted means for this subgroup are significantly different from the overall mean at the 99 percent level of statistical confidence.

<sup>a/</sup>Center "Size" is based on the enrollment capacity for resident Corpsmembers in fiscal year 1977; "Small" is defined as 250 or fewer, "Medium" is 251 through 1,000, and "Large" is over 1,000.

a job than did females (a difference of 4 percentage points and marginally significant). Among race-ethnic groups, whites and Hispanics reported more benefits from training in obtaining jobs than did either blacks or American Indians (statistically significant). American Indian youths are 9 percentage points below the overall mean, and 19 percentage points below that for whites. Finally, youths who were 18 or older at enrollment reported significantly more benefits from Job Corps training in obtaining jobs than did those who were under 18 (a 6 percentage-point difference).

Among types of centers, only "operator" shows a statistically significant effect. Corpsmembers who went to centers operated by public agencies were more likely (9 percentage points) to report that the training was helpful in obtaining a job than those who went to centers operated by private agencies. Center administration, size, location, and coed status show only small and statistically insignificant effects.

#### B. LENGTH OF STAY AND PROGRAM COMPLETION

As well as being used as indicators of Corpsmembers' satisfaction, both the length of stay in Job Corps and the final completion status are important measures of the amount of program treatments received at the centers. These variables can be used as measures of the amount of services Corpsmembers receive while they are in the program, which, in turn, affects the postprogram impacts of Job Corps. Most of the empirical analysis of postprogram effects presented in Chapter V was performed separately by completion status. The separate estimates are needed (1) to reweight the sample to obtain estimates that are representative of the average impacts on all Job Corps enrollees, and (2) because the findings tend to

show that program completers received much larger benefits than noncompleters during the postprogram period. Because program completers seemed to have had much more positive postprogram experiences, it is important to identify both their characteristics (i.e., what type of participant does Job Corps serve better or worse?), and if there were any particular center features that affected the duration of stay and completion status.

For Corpsmembers, any variable that explains differences in training potential and alternative opportunities (e.g., in home work, at school, or in the labor market) should be included as an explanatory variable in the empirical analysis. Higher trainability (training potential) should lead to a greater duration of stay and a greater likelihood of completing the program. Variables that should be positively correlated with training potential (i.e., have a positive affect on completion) include age, education, previous work experience, and the lack of a previous criminal history. In contrast, better alternative opportunities should lead to a reduced length of stay and a lower probability of program completion. The alternative opportunities available to Corpsmembers (i.e., outside of Job Corps) are probably lower (and, hence, have positive effects on length of stay and completion) for females, minorities, the young, those with low educational levels, those with no dependent children, those with poor work histories, and possibly those with no criminal histories (i.e., fewer illegal opportunities make Corpsmembers less likely to engage in criminal activities). The expected signs (i.e., positive or negative) of the effects for age, education, and previous work experience are ambiguous because they are hypothesized to be positively associated with both training potential and alternative opportunities to Job Corps that are available to youths.

We have no theories and few preconceived notions about the direction of the effects of center features, but we suspect that they are important. The list of center variables examined, as in Section A, includes administration, operator, size, location, and coed status.

The results shown in Table VII.6 are much as expected, except that the center features listed have little effect on completion rates. Better measures of program treatments are needed to determine the effect of various center features on in-program benefits. Corpsmembers do stay, on average, approximately fifty-three days longer at contract centers than at conservation centers (statistically significant), but that does not seem to affect the probability of their completing the program. The only other center feature that seems to matter is that Corpsmembers stayed approximately seventeen days longer at noncoed centers (puzzling, but marginally significant)--but that, too, does not seem to affect program completion. Operator, size of center, and location of center have virtually no effects on either the length of time Corpsmembers stay at the centers or their program completion status.

There are some significant effects of Corpsmember characteristics. The largest (and the most statistically significant) differences are by race-ethnicity. Hispanics stayed much longer and were much more likely to complete the program than youths from other race-ethnic groups. Black Corpsmembers stayed slightly longer (three days) but had almost no increased probability of completing the program (less than 1 percentage point) than the average. White youths and American Indians tended to leave Job Corps sooner and, thus, were less likely to complete the program. The effects for American Indians are especially negative (fifty-four fewer

TABLE VII.6

## LENGTH OF STAY AND PROGRAM COMPLETION: BY SUBGROUP

	Length of Stay in Days (Overall=264)	Percent Who Are Program Completers (Overall=48) (Controlling for All Other Factors)	Percent Who Are Completers or Partial Completers (Overall=89)
<b>Corpsmember</b>			
<b>Sex</b>			
Male (n=1,421)	269	46	99
Female (n=605)	253	53	88
(F-value)	(3.09)*	(5.28)**	(0.25)
<b>Race-ethnicity</b>			
Black (n=1,233)	267	48	89
White (n=465)	227	44	88
Hispanic (n=245)	335	65	92
American Indian (n=83)	210	32	84
(F-value)	(25.96)***	(12.62)***	(1.72)
<b>Age at enrollment</b>			
16-17 (n=980)	261	48	89
18-22 (n=1,046)	267	49	88
(F-value)	(0.49)	(0.45)	(0.28)
<b>High school diploma at enrollment</b>			
Yes (n=298)	269	65	93
No (n=1,728)	263	45	88
(F-value)	(0.24)	(33.74)***	(6.41)**
<b>Had child(ren) at enrollment</b>			
Yes (n=164)	231	41	86
No (n=1,862)	267	49	89
(Z-value)	(7.47)***	(3.94)**	(1.50)
<b>Had regular job before enrollment</b>			
Yes (n=1,315)	263	50	89
No (n=711)	265	46	89
(F-value)	(0.03)	(2.91)*	(0.02)
<b>Arrested before enrollment</b>			
Yes (n=262)	237	45	86
No (n=1,764)	268	49	89
(F-value)	(9.65)***	(1.51)	(1.76)
<b>Center<sup>a/</sup></b>			
<b>Administration</b>			
CCC (n=639)	228	51	86
Contract (n=1,387)	281	47	90
(F-value)	(14.11)***	(0.69)	(1.70)
<b>Operator</b>			
Public (n=1,023)	268	50	89
Private (n=1,003)	260	47	89
(F-value)	(0.58)	(1.34)	(0.06)
<b>Coed status</b>			
Coed (n=1,078)	256	48	90
Noncoed (n=948)	273	49	87
(F-value)	(2.85)*	(0.13)	(2.69)

Total Number of Observations = 2,026

\*The adjusted means for this subgroup are significantly different from the overall mean at the 90 percent level of statistical confidence.

\*\*The adjusted means for this subgroup are significantly different from the overall mean at the 95 percent level of statistical confidence.

\*\*\*The adjusted means for this subgroup are significantly different from the overall mean at the 99 percent level of statistical confidence.

<sup>a/</sup>For convenience, size of center and location of center were excluded from the final run. Their effects were almost identically equal to zero and completely insignificant.

days, and 16 percentage points, or one-third, less likely to be a completer than average), which may indicate the need to provide special services to this group.<sup>1/</sup> Compared to Hispanics, American Indians stayed 125 fewer days and were less than half as likely to complete the program.

Females stayed approximately sixteen fewer days than males but were more likely than males (7 percentage points) to complete the program. Having a high school diploma at entry substantially increased the probability of completing the program (20 percentage points). Youths with dependent children did not stay as long (thirty-six days) and were less likely to complete the program (8 percentage points) than those without children, which may indicate the need to provide special services to this group.<sup>2/</sup> Those who had been employed at a regular job sometime before enrolling in Job Corps were slightly more likely to complete the program than those who had not (4 percentage points). Corpsmembers who had been arrested before enrolling stayed in the program thirty-one fewer days, but the resulting negative effect on completion status is not statistically significant. Finally, enrolling when under the age of 18 had no appreciable effect on either the length of stay or completion status.

#### C. POSTPROGRAM SERVICES

Transitional aid early in the postprogram period is very important to Corpsmembers. They typically come from poverty backgrounds and have

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<sup>1/</sup> Job Corps is currently planning to open additional centers operated and/or sponsored by Tribal Councils of American Indians to increase the program's relevance for American Indian youths (see Chapter II for more details).

<sup>2/</sup> Job Corps has introduced demonstration projects at two centers in order to find new ways to accommodate young women who are economically disadvantaged and have dependent children (see Chapter II for more details).

had little or no work experience prior to entering Job Corps.<sup>1/</sup> Moreover, while they are at Job Corps centers, they are away from the regular labor market and live in a structured environment in which the program attends to most of their personal needs. When they leave Job Corps, participants are likely to need both job-placement assistance and other help to adjust to life away from the centers.

Job Corps has recognized these needs, and thus has established contracts with a number of agencies to provide postprogram services. These agencies include service offices, some unions, voluntary organizations such as Women in Community Service, Inc. (WICS) and Joint Action in Community Service, Inc. (JACS), and special private groups known as GATE-house operators (Graduate Aid to Employment for Ex-Corpsmembers).<sup>2/</sup> However, the post-program services are the most disappointing feature of Job Corps, as reported by former Corpsmembers. Most of them reported in the follow-up interview that they had not received any job placement or other assistance, but that they could have used such help.

#### 1. Placement Services

Fifty-nine percent of the Corpsmembers reported that they had not "had any contact with Job Corps placement personnel or any job placement agencies that the Job Corps referred them to" when they had been out of the program, on average, for seven months. In addition, 76 percent of

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<sup>1/</sup> See "An Examination of Job Corps Participation."

<sup>2/</sup> These privately contracted agencies are currently operating in six large metropolitan areas (Atlanta, Baltimore, Los Angeles, New York, Philadelphia, and Washington, D.C.), where many former Corpsmembers reside after they leave the centers.

these Corpsmembers said that they could "have used (additional) help in finding a job."<sup>1/</sup>

Table VII.7 shows which former Corpsmembers were most (or least) likely to receive placement services. There are some significant differences. Black and Hispanic youths were more likely to receive placement assistance than either whites or American Indians. The percent of American Indians receiving placement assistance is especially low: only 27 percent of them reported any contact (after adjusting for the other explanatory variables). Younger terminees were also less likely to receive placement assistance: only 35 percent of those under 18 reported placement contacts. Among center features, Corpsmembers from medium-size centers and from centers in noncity locations were less likely to receive job-placement assistance.

From among the 41 percent of Corpsmembers who had some contact with a Job Corps placement agency, 43 percent reported a successful placement as a result of the contact.<sup>2/</sup> This represents placements for only 18 percent of all Corpsmembers in the sample, even though program completers are overrepresented. Table VII.8 shows which Corpsmembers were most likely to report a successful placement. The Corpsmembers most likely to report a placement were (statistically significant effects only) males, program completers, those receiving assistance from unions, and those receiving assistance from Job Corps center personnel. WICS and JACS scored especially

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<sup>1/</sup>Quoted from the follow-up questionnaire.

<sup>2/</sup>It should be noted that this placement definition bears no relationship to the placement data reported by Job Corps, which shows the percentage of those available (excluding the ill, the confined, and females working full-time in the home) who obtain a job, training, schooling, or military service.

TABLE VII.7

## CORPSMEMBERS RECEIVING PLACEMENT SERVICES: BY SUBGROUP

Subgroup	Percent Who Had Some Contact with Job Corps Placement Personnel (Controlling for All Other Factors) (Overall Mean=41)
<b>Corpsmember</b>	
<b>Sex</b>	
Male (n=1,502)	41
Female (n=618)	43
(F-value)	(0.46)
<b>Race-ethnicity</b>	
Black (n=1,305)	44
White (n=473)	34
Hispanic (n=258)	43
American Indian (n=84)	27
(F-value)	(6.67)***
<b>Age at termination</b>	
16-17 (n=689)	35
18-24 (n=1,431)	44
(F-value)	(16.97)***
<b>Center</b>	
<b>Administration</b>	
CCC (n=656)	44
Contract (n=1,464)	40
(F-value)	(0.78)
<b>Operator</b>	
Public (n=1,056)	39
Private (n=1,064)	43
(F-value)	(1.68)
<b>Size<sup>a/</sup></b>	
Small (n=833)	43
Medium (n=515)	35
Large (n=772)	44
(F-value)	(3.08)**
<b>Location</b>	
City (n=302)	49
Noncity (n=1,818)	40
(F-value)	(5.34)**
<b>Coed status</b>	
Coed (n=1,145)	43
Noncoed (n=975)	39
(F-value)	(1.71)

Total Number of Observations = 2,120

\*\*The adjusted means for this subgroup are significantly different from the overall mean at the 95 percent level of statistical confidence.

\*\*\*The adjusted means for this subgroup are significantly different from the overall mean at the 99 percent level of statistical confidence.

<sup>a/</sup>Center "Size" is based on the enrollment capacity for resident Corpsmembers in fiscal year 1977; "Small" is defined at 250 or fewer, "Medium" is 251 through 1,000, and "Large" is over 1,000.

TABLE VII.8

## CORPSMEMBERS' REPORTS OF SUCCESSFUL PLACEMENT: BY SUBGROUP

Subgroup	Percent Having Contact With a Placement Who Obtain a Position as a Result (Controlling for All Other Factors) (Overall=43)
<b>Corpsmember</b>	
<b>Sex</b>	
Male (n=760)	47
Female (n=352)	35
(F-value)	(12.93)***
<b>Race-ethnicity</b>	
Black (n=754)	43
White (n=193)	40
Hispanic (n=137)	47
American Indian (n=28)	50
(F-value)	(0.83)
<b>Age at termination</b>	
16-17 (n=305)	40
18-24 (n=807)	44
(F-value)	(1.77)
<b>Program completion status</b>	
Completer (n=693)	45
Partial completer (n=340)	39
Early dropout (n=79)	35
(F-value)	(2.51)*
<b>Placement Agency</b>	
Employment service (n=529)	43
Job Corps center personnel (n=306)	49
GATE-house (n=108)	39
Union (n=60)	59
WICS (n=43)	9
JACS (n=37)	6
Other (n=29)	52
(F-value)	(9.13)***

Total Number of Observations = 1,112<sup>a/</sup>

\*The adjusted means for this subgroup are significantly different from the overall mean at the 90 percent level of statistical confidence.

\*\*\*The adjusted means for this subgroup are significantly different from the overall mean at the 99 percent level of statistical confidence.

<sup>a/</sup> Each contact with a placement agency is counted as one observation, and some youths have more than one contact. Thus, the F-values may be slightly overstated.

low on placement results, placing only 9 and 6 percent, respectively, of the youths who had contact with them. However, these two agencies (WICS and JACS) primarily provide other services, and were rated highly (especially WICS) by the youths who used them, after controlling for placement results (see Table VII.9).

From among the Corpsmembers who had contact with a placement agency, the overall ratings were reasonably high (see Table VII.9). Seventy-five percent rated the services they had received as "good" or "OK" (25 percent said "not good"). However, these ratings are generally lower than for in-program services; for example, approximately 90 percent of all Corpsmembers rated the training and educational components of center services as "good" or "OK" (see Table VII.1).

The significant effects on ratings of placement services are by placement agency and by placement results. As shown in Table VII.9, Job Corps center personnel and WICS were rated especially highly (83 percent and 78 percent, respectively), after controlling for characteristics of Corpsmembers and placement results. All successful placements increased the ratings of Corpsmembers, except for placement in the military service (63 percent). The rating by Corpsmembers who did not receive a placement was 65 percent. The findings for military service are biased downward because the questions were not asked of youths in the military service (hence, only eleven Corpsmembers who were placed in the military service but stayed less than seven months were included in the sample, which is clearly a biased sample of military entrants).

Table VII.10 shows the adjusted-mean proportions of Corpsmembers who reported they needed more help in finding a job. As mentioned above,

TABLE VII.9

## CONSPONSORS' RATINGS OF PLACEMENT SERVICES RECEIVED: BY SUBGROUP

Subgroup	Percent Who Rated the Services as "Good" or "OK" (Controlling for All Other Factors) (Overall Mean=75)
<u>Corpsmember</u>	
<u>Sex</u>	
Male (n=745)	76
Female (n=348)	74
(F-value)	(0.68)
<u>Race-ethnicity</u>	
Black (n=741)	76
White (n=190)	72
Hispanic (n=135)	78
American Indian (n=27)	78
(F-value)	(0.56)
<u>Age at termination</u>	
16-17 (n=298)	77
18-24 (n=795)	75
(F-value)	(0.73)
<u>Employment status at follow-up</u>	
Employed (n=505)	77
Unemployed or not in labor force (n=588)	74
(F-value)	(1.11)
<u>Program completion status</u>	
Completer (n=685)	76
Partial completer (n=331)	74
Early dropout (n=77)	80
(F-value)	(0.54)
<u>Placement Agency</u>	
Employment service (n=523)	74
Job Corps center personnel (n=298)	83
GATE-house (n=108)	75
Union (n=60)	61
WICS (n=42)	78
JACS (n=34)	63
Other (n=28)	65
(F-value)	(3.60)**
<u>Placement Results</u>	
None (n=621)	65
Job (n=216)	91
School (n=39)	89
Training or work experience program (n=29)	76
Apprenticeship (n=19)	95
Military (n=11)	63
Placed in two or more types of positions (n=158)	90
(F-value)	(15.13)***

## OVERALL RATINGS OF PLACEMENT SERVICES RECEIVED

Good	OK	Not Good
38%	37%	25%

Total Number of Observations - 1,093<sup>a</sup>

\*\*The adjusted means for this subgroup are significantly different from the overall mean at the 95 percent level of statistical confidence.

\*\*\*The adjusted means for this subgroup are significantly different from the overall mean at the 99 percent level of statistical confidence.

<sup>a</sup>/ Each contact with a placement agency is counted as one observation, and some youths have more than one contact.

TABLE VII.10

## CORPSMEMBERS NEEDING MORE HELP IN FINDING A JOB: BY SUBGROUP

Subgroup	Percent Who Could Have Used (Additional) Help in Finding a Job (Controlling for All Other Factors) (Overall Mean=76)
<u>Corpsmember</u>	
Sex	
Male (n=1,437)	78
Female (n=602)	71
(F-value)	(10.56)***
Race-ethnicity	
Black (n=1,240)	80
White (n=468)	67
Hispanic (n=249)	73
American Indian (n=82)	67
(F-value)	(13.62)***
Age at termination	
16-17 (n=660)	76
18-24 (n=1,379)	76
(F-value)	(0.17)
Employment status at follow-up	
Employed (n=1,006)	70
Unemployed or not in labor force (n=,033)	82
(F-value)	(31.37)***
Program completion status	
Completer (n=996)	75
Partial completer (n=816)	76
Early dropout (n=227)	79
(F-value)	(0.96)
<u>Placement Agency</u>	
No contact with a Placement agency (n=1,204)	76
Employment service (n=137)	76
Job Corps center Personnel (n=168)	70
GATE-house (n=42)	85
UNION (n=31)	72
JACS (n=17)	79
WICS (n=9)	79
Other placement agencies (n=12)	65
Contact with two or more placement agencies (n=219)	77
(F-value)	(0.79)

Total Number of Observations = 2,039

\*\*\*The adjusted means for this subgroup are significantly different from the overall mean at the 99 percent level of statistical confidence.

76 percent of all Corpsmembers reported that they could have used additional help in finding a job. Those most likely to have reported that they needed additional help include males, blacks, Hispanics, and youths who were not employed (i.e., unemployed or out of the labor force). Surprisingly, whether the Corpsmembers had been to one of the agencies listed, to two or more, or to none at all seemed to have no statistically significant effect on their reports of need for additional placement services.

That additional placement services are needed seems clear: 59 percent of the Corpsmembers in our sample reported no contact with a Job Corps placement agency; only 18 percent of the full sample reported a successful placement; and 76 percent said they could have used additional help in finding a job. Furthermore, when these findings are combined with the finding that earnings are unusually low in the first couple of months after Corpsmembers terminate from the program, it suggests that the short-term economic impacts are reduced by the lack of adequate placement services. However, of those who did have a placement-agency contact, most (75 percent) seemed satisfied with the services they received.

## 2. Postprogram Services Other Than Placement

Tables VII.11 and VII.12 summarize findings from questions that asked former Corpsmembers about a variety of transitional services they may have needed and/or received during the first month after they left Job Corps. Table VII.11 shows that 31 percent of the Corpsmembers received aid in at least one of the six categories. The type of aid reported most often was help with money problems (nearly one-half of those who received any aid other than job-placement services). Corpsmember groups that reported

TABLE VII.11

## CORPSMEMBERS RECEIVING TRANSITIONAL AID OTHER THAN PLACEMENT: BY SUBGROUP

Subgroup	Percentage Provided With Any Help by Any Job Corps Agency (Controlling for All Other Factors) (Overall Mean=31)
<u>Corpsmember</u>	
<u>Sex</u>	
Male (n=1,479)	33
Female (n=609)	27
(F-value)	(3.87)**
<u>Race-ethnicity</u>	
Black (n=1,279)	31
White (n=469)	22
Hispanic (n=256)	43
American Indian (n=84)	36
(F-value)	(8.29)***
<u>Age at termination</u>	
16-17 (n=671)	28
18-24 (n=1,417)	33
(F-value)	(4.78)**
<u>Center</u>	
<u>Administration</u>	
CCC (n=648)	33
Contract (n=1,440)	30
(F-value)	(0.47)
<u>Operator</u>	
Public (n=1,044)	33
Private (n=1,044)	29
(F-value)	(2.54)
<u>Size<sup>a/</sup></u>	
Small (n=825)	29
Medium (n=508)	31
Large (n=755)	33
(F-value)	(0.52)
<u>Location</u>	
City (n=299)	31
Noncity (n=1,789)	31
(F-value)	(0.01)
<u>Coed status</u>	
Coed (n=1,123)	30
Noncoed (n=965)	33
(F-value)	(1.12)
Total Number of Observations - 2,088	

(continued)

TABLE VII.11 (Continued)

	TYPE OF AID RECEIVED					
	Finding a Place to Live	Buying Tools, Clothes, Or Other Work Materials	With Any Other Work Related Problems	With Money Problems	Adjusting To Life Away From Job Corps	Other Miscel- laneous
Percent Yes	5	8	6	15	8	4
Percent No	95	92	94	85	92	96

Number of Observations = 2,173

\*The adjusted means for this subgroup are significantly different from the overall mean at the 90 percent level of statistical confidence.

\*\*The adjusted means for this subgroup are significantly different from the overall mean at the 95 percent level of statistical confidence.

\*\*\*The adjusted means for this subgroup are significantly different from the overall mean at the 99 percent level of statistical confidence.

<sup>a</sup>/Center "Size" is based on the enrollment capacity for resident Corpsmembers in fiscal year 1977; "Small" is defined as 250 or fewer, "Medium" is 251 through 1,000, and "Large" is over 1,000.

TABLE VII.12

## CORPSMEMBERS NEEDING MORE TRANSITIONAL AID OTHER THAN PLACEMENT: BY SUBGROUP

Subgroup	Percent Who Could Have Used (Additional) Help in the First Month After Leaving Job Corps (Overall Mean=69)
<b>Corpsmember</b>	
<b>Sex</b>	
Male (n=1,472)	71
Female (n=607)	65
(F-value)	(5.30)**
<b>Race-ethnicity</b>	
Black (n=1,278)	72
White (n=466)	63
Hispanic (n=253)	69
American Indian (n=82)	69
(F-value)	(4.08)***
<b>Age at termination</b>	
16-17 (n=671)	68
18-22 (n=1,408)	70
(F-value)	(0.60)
<b>Employment status at follow-up</b>	
Employed (n=1,018)	65
Unemployed or not in labor force (n=1,061)	74
(F-value)	(16.90)***
<b>Center</b>	
<b>Administration</b>	
CCC (n=646)	76
Contract (n=1,433)	67
(F-value)	(3.55)*
<b>Operator</b>	
Public (n=1,036)	68
Private (n=1,043)	71
(F-value)	(1.16)
<b>Size<sup>a/</sup></b>	
Small (n=821)	65
Medium (n=531)	69
Large (n=757)	75
(F-value)	(2.45)*
<b>Location</b>	
City (n=297)	68
Noncity (n=1,782)	70
(F-value)	(0.24)
<b>Coed status</b>	
Coed (n=1,118)	71
Noncoed (n=961)	68
(F-value)	(0.77)

(continued)

TABLE VII.12 (Continued)

Subgroup	Percent Who Could Have Used (Additional) Help in the First Month After Leaving Job Corps (Overall Mean=69)
<b>Center (Continued)</b>	
Job Corps agency that helped	
No agency helped (n=1,558)	70
Job Corps center personnel (n=338)	69
Employment service (n=72)	71
GATE-house, JACS, union, WICS, or other (n=51)	64
Two or more agencies helped (n=60)	75
(F-value)	(0.39)

Total number of Observations = 2,079

	TYPE OF AID NEEDED					
	Finding a Place to Live	Buying Tools, Clothes, or Other Work Materials	With Any Other Work Related Problems	With Money Problems	Adjusting to Life Away From Job Corps	Other Miscellaneous
Percent Yes	26	37	37	53	19	20
Percent No	74	63	63	47	81	80
Number of Observations = 2,173						

\*The adjusted means for this subgroup are significantly different from the overall mean at the 90 percent level of statistical confidence.

\*\*The adjusted means for this subgroup are significantly different from the overall mean at the 95 percent level of statistical confidence.

\*\*\*The adjusted means for this subgroup are significantly different from the overall mean at the 99 percent level of statistical confidence.

<sup>a/</sup> Center "Size" is based on the enrollment capacity for resident Corpsmembers in fiscal year 1977: "Small" is defined as 250 or fewer, "Medium" is 251 through 1,000, and "Large" is over 1,000.

more transitional aid (statistically significant effects only) were males, Hispanics, American Indians, and older youths (18 to 24 years old when they left Job Corps). None of the center features has a significant effect upon who received transitional aid.

While much of the transitional aid that was provided was for money problems, that also seems to be the largest area of unmet needs. As shown in Table VII.12, 69 percent of the former Corpsmembers in our sample reported at least one area in which they could have used more help, and 77 percent of them (53 percent of all the Corpsmembers) cited the need for more help with money problems.

Some of the same subgroups that obtained some form of transitional aid significantly more often also reported that they could have used more of such assistance (possibly another kind). Males and minorities reported significantly more need for transitional aid than the average. Not surprisingly, Corpsmembers who were either unemployed or out of the labor force reported significantly more need for (additional) help. Two center features also showed significant effects on Corpsmembers who reported that they needed more assistance (other than job-placement services) in the first month after leaving Job Corps: Corpsmembers from CCCs and those from large centers were more likely to report that they could have used more help.

#### D. CONCLUSIONS

Overall, Corpsmembers reported a high level of satisfaction with in-program services. However, they expressed many unmet needs with post-

program services. An average of seven months after they left the centers, 77 percent of the Corpsmembers in our sample reported satisfaction with the overall program, an increase of 10 percentage points from when we interviewed them nine months earlier at Job Corps centers. The training and educational components of center services were especially highly rated--65 percent of the sample gave positive responses to four questions that asked them to rate the training and educational services, and 35 percent were neutral and only 10 percent were negative. Furthermore, 26 percent of our sample (20 percent of all enrollees) and 41 percent of all program completers reported that the training and work experience they received in Job Corps helped them obtain a specific job that lasted at least two weeks.

The responses to questions about postprogram services were less favorable. Among the Corpsmembers interviewed, 59 percent reported no contact with any Job Corps placement agency during the entire seven months, on average, since they had left Job Corps. Furthermore, 76 percent said that they could have used additional help in finding a job. Only 18 percent of the Corpsmembers reported any placement (job, school, training, apprenticeship, or military) that resulted from a contact with a Job Corps placement agency, as compared to the 26 percent who reported that the training and work experience at Job Corps centers directly helped them obtain a stable job. The Corpsmembers who did have contact with a placement agency generally gave them a positive rating (38 percent "good" and 37 percent "OK"), but a lower rating than for in-program services.

Corpsmembers also reported that they needed additional transitional aid when leaving Job Corps, for problems other than finding a job (but related). Thirty-one percent of the Corpsmembers reported that they received assistance in at least one of six problem areas (most often with money problems), but 69 percent reported at least one area in which they could have used more help (once again, most often with money problems).

Finally, there are a few interesting and consistent patterns across subgroups. Hispanic youths and Corpsmembers who went to Job Corps centers operated by public agencies reported more satisfaction with Job Corps than the average, while American Indian youths and Corpsmembers who went to Job Corps centers operated under contracts with private firms reported less satisfaction. These patterns are especially clear (and statistically significant) for in-program services. Hispanics or Corpsmembers who went to centers operated by a public agency reported higher ratings for the overall program, were more likely to report that the training and work experience received at Job Corps centers helped them obtain a stable job after leaving the program, and stayed in the program longer and were more likely to complete the full program. In contrast, American Indians and Corpsmembers from centers operated by private firms gave significantly more negative responses to each of these measures of satisfaction with the Job Corps program.

There are at least two areas that need further research. First, we need to examine variants in program treatments other than the simple center features that have been studied thus far, in order to explain more fully variations both in Corpsmembers' satisfaction with Job Corps

and in postprogram impacts. Second, we need to study more thoroughly what effects Corpsmembers' satisfaction and postprogram services have on economic outcomes.

## VIII. CONCLUSIONS

A number of interesting and important findings are presented in this report. However, some of our findings are necessarily tentative at this point in the evaluation (e.g., the net present value for Job Corps in the benefit-cost analysis), and additional follow-up surveys of the Job Corps and comparison samples will be needed to generate data that will achieve our objective of a comprehensive and more precise evaluation.

The next follow-up survey is scheduled for February and March 1979. This survey will include a larger sample of Corpsmembers than the first follow-up (many more of the Corpsmembers who were interviewed at baseline will be out of the program a long enough time to ensure productive interviews), and, on average, Corpsmembers in our sample will have longer postprogram experiences (five to twenty-two months, with an average of approximately fifteen months). The data from the second follow-up survey will help us to (1) obtain more precise estimates of the impacts of Job Corps on participants; (2) analyze more fully the causality of these impacts (e.g., between employment and criminal activities); (3) provide the first reliable information on the controversial issue of the duration of Job Corps benefits; (4) make more complete comparisons with other reference-group programs; and (5) provide better estimates of what the impact of Job Corps would have been in the absence of alternative training programs (in this report we are limited to comparisons to the usual amount of alternative program treatments, rather than to a zero treatment comparison).

Finally, care must be exercised in extrapolating the findings beyond the program and context in which they are studied. For instance, our evaluation is most directly applicable to the Job Corps program in fiscal year 1977. Since that time, there have been changes both in the program (e.g., the general expansion with proportionately more slots--i.e., positions--for women and contract centers) and in the social context of the program (e.g., changing economic conditions and the implementation of many new youth programs developed by the Department of Labor). When extrapolating specific findings, therefore, one must pay careful attention to these changes in the program and its context.

Subject to these cautions, the main findings from this report are as follows:

1. During the first two months after they left Job Corps, many Corpsmembers experienced temporarily low employment and earnings as they re-entered the regular labor market. After the first two months out of Job Corps, however, the positive economic impacts began to predominate, especially for program completers. For the week prior to the follow-up survey (an average of seven months after Corpsmembers terminated), the estimated gains in earnings for civilians who had completed the Job Corps program were \$23.24 for males and \$22.52 for females without children. Essentially zero effects were observed for the small number of women who had children living with them.
2. The impacts on employment and earnings for youths who did not complete the program (partial completers and early dropouts) are far less certain (small, sometimes negative, and most often statistically insignificant). However, these former Corpsmembers also experienced declines in employment and earnings during the first two months after leaving the program.
3. Program completers also showed positive benefits in the form of increased investments in human capital (more high school diplomas or equivalent degrees, higher attendance in college, more training, increased military service, and greater job mobility); reduced welfare and other transfer dependence (fewer receipts of AFDC, General Assistance,

Food Stamps, public housing, Unemployment Insurance, and Workers' Compensation); and reduced antisocial behavior (less abuse of drugs and alcohol and many fewer arrests). While not all of these individual effects are statistically significant, several are, and the pattern seems clear for program completers. These other economic impacts are also more questionable for youths who do not complete the program, except for the reductions in arrests for males, which amount to over eight fewer arrests for every 100 Corpsmembers.

4. The first detailed benefit-cost estimates are very favorable for Job Corps. From each of the three perspectives studied--Corpsmembers, non-Corpsmembers (everyone who does not enroll in Job Corps), and society (the sum of Corpsmembers and non-Corpsmembers)--the value of the program benefits is estimated to be greater than the corresponding costs. The findings from the social perspective suggest that public investment in Job Corps is efficient. Our benchmark estimate is that the present value of benefits exceeds costs by \$251 per Corpsmember, or by approximately 5 percent of costs. Because over 40,000 Corpsmembers enrolled in Job Corps during the base year for the evaluation (fiscal year 1977), our benchmark estimate of the total social benefit exceeds \$10 million for that year.
5. We estimate that nearly 50 percent of the social benefits are generated by a reduction in criminal activity among Corpsmembers--particularly burglary and larceny. These benefits from less crime include reductions in personal injury, property damage, stolen property, and criminal justice system costs. Another 40 percent of the social benefits are attributed to an increase in the value of the output Corpsmembers produce both while they are in the Job Corps program and after they leave. The social costs consist primarily of the resources used to operate and administer the program.
6. Approximately 40 percent of the benefits to Corpsmembers are accounted for by their increased earnings. The other benefits are primarily the transfers they receive while they are in Job Corps. The largest cost borne by Corpsmembers is the reduction in their transfer income, although the opportunity cost of the time they spend in Job Corps and the reduction in their theft income are also significant costs to them. Non-Corpsmembers receive substantial benefits from the reductions in Corpsmembers' criminal activity and their reduced use of transfer programs. The non-Corpsmember costs are primarily from the operation and administration of the Job Corps program. Of these program expenditures, over 25 percent are for transfers for Corpsmembers.

7. The estimation of the present value of benefits and costs required numerous assumptions and approximations. In particular, because this analysis is based on interview data that covered, on average, only seven postprogram months, we have had to make some speculative assumptions about the rate at which the Job Corps effects fade out over time. We assumed that all effects fade out at approximately 14 percent a year. Another important assumption that was used to obtain the benchmark benefit-cost estimates was that the appropriate discount rate for converting the values of future benefits into current dollars was 5 percent. Assumptions of lower (higher) fade-out and discount rates will make the program appear more (less) attractive. As long as the sum of the fade-out and discount rates is less than 20 percent, we estimate that Job Corps is an efficient social investment.
8. As in the baseline survey, Corpsmembers reported a high level of satisfaction with the overall program seven months after leaving Job Corps. Seventy-seven percent of the Corpsmembers in our sample expressed satisfaction with the overall program at the first follow-up interview. Hispanic youths and Corpsmembers from Job Corps centers operated by public agencies expressed the greatest satisfaction with Job Corps, while American Indian youths and Corpsmembers from centers operated by private firms expressed the lowest satisfaction with the program.
9. The in-program services in particular were highly rated by Corpsmembers, who reported that they liked the training and educational components of the program, and that the training and work experience they received in Job Corps helped them obtain jobs after they left the program. However, Corpsmembers' ratings of postprogram placement services were less favorable than for in-program services. Furthermore, 59 percent reported that they had no contact with any Job Corps-related placement agency for the first seven months, on average, after they left Job Corps, and 78 percent said that they could have used more assistance in finding a job.

We are continuing the analysis of the baseline and first follow-up data both to explore new areas of research (e.g., incorporating program data from Job Corps to enable us to better distinguish among alternative program treatments) and to refine previous work (e.g., estimating more

causal models of labor-market and related activities). Furthermore, we will soon be in the field (February 1979) gathering survey data from the second follow-up interviews. We can only hope that this effort will continue to be as fruitful and interesting as that reported on here.

AN EXAMINATION OF  
JOB CORPS PARTICIPATION

FEBRUARY 1979

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Office of Program Evaluation  
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OFFICE OF YOUTH PROGRAMS

## OVERVIEW

The Job Corps, with its intensive and expensive services, is intended for youth with serious employment problems who need and can benefit from a comprehensive residential program. This survey of Job Corps participants provides a rich array of information about their backgrounds, their reasons for enrolling, and their perceptions of the Job Corps experience.

There are three major findings:

1. Job Corps youth are extremely disadvantaged by almost every measure. On the average, the program is serving the type of youth who need and can benefit from such a program.
2. Participants tend to hear about the program most often from friends and relatives, and to enroll in order to improve their job skills and education.
3. Corpsmembers rate most aspects of the program quite highly, and feel that it lives up to their expectations. The major complaints are food and allowances.

This report is one product of a major economic impact evaluation of 1977 Job Corps enrollees being conducted by Mathematica Policy Research under the direction of the Office of Program Evaluation in the Office of Policy Evaluation and Research in the Employment and Training Administration.

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356

TABLE OF CONTENTS

Chapter		
	PREFACE . . . . .	334
	EXECUTIVE SUMMARY . . . . .	335
I	INTRODUCTION AND SUMMARY . . . . .	337
II	NATURE OF JOB CORPS IN 1977 . . . . .	343
	A. INSTITUTIONAL SETTING . . . . .	344
	B. TYPES OF SERVICE PROVIDED AT CENTERS . . . . .	346
	1. Education . . . . .	346
	2. Vocational Skills Training . . . . .	346
	3. Health Care and Education . . . . .	347
	4. Residential Living . . . . .	348
	5. Counseling and Other Ancillary Services . . . . .	348
	C. SIZE OF JOB CORPS . . . . .	349
	D. CURRENT TRENDS . . . . .	350
	1. Center Improvements . . . . .	351
	2. Special Target Groups . . . . .	351
	3. Innovative Programs for Education and Vocational Training . . . . .	353
	4. Coordinating Activities with Other Agencies . . . . .	353
	5. Additional Monitoring and Evaluative Research . . . . .	354
III	WHO ENROLLS IN JOB CORPS? . . . . .	355
	A. BASIC DEMOGRAPHIC DATA . . . . .	358
	B. FAMILY BACKGROUND WHEN GROWING UP . . . . .	361
	C. EMPLOYABILITY OF CORPSMEMBERS . . . . .	368
	D. WORK HISTORY OF CORPSMEMBERS BEFORE ENROLLMENT . . . . .	370
	E. FAMILY STATUS AND INCOME AT ENROLLMENT . . . . .	372
	F. ANTISOCIAL BEHAVIOR PRIOR TO ENROLLMENT . . . . .	376
	G. CONCLUSION . . . . .	379
IV	WHY DO YOUTHS ENROLL AND HOW DO THEY LEARN ABOUT JOB CORPS . . . . .	380
	A. REASONS FOR ENROLLING . . . . .	381
	1. Sex . . . . .	383
	2. Race/Ethnicity . . . . .	383
	3. Age . . . . .	384
	4. Summary . . . . .	384
	B. SOURCES OF INFORMATION ABOUT JOB CORPS . . . . .	384
	1. Where Corpsmembers First Heard About Job Corps . . . . .	385
	2. Where Corpsmembers Received Most of Their Information About Job Corps . . . . .	388

Chapter

IV (Continued)

C.	ACCURACY OF PRIOR INFORMATION . . . . .	391
1.	Sex . . . . .	393
2.	Race/Ethnicity . . . . .	393
3.	Age . . . . .	394
4.	Program Participants . . . . .	394
5.	Summary . . . . .	395
D.	CONCLUSION . . . . .	395

V

	HOW DO CORPSMEMBERS RATE THE PROGRAM? . . . . .	397
A.	PROGRAM RATING OF THE ENTIRE SAMPLE . . . . .	398
B.	PROGRAM RATINGS OF SUBGROUPS . . . . .	401
1.	Characteristics of Corpsmembers . . . . .	404
2.	Center Features . . . . .	405
C.	CONCLUSION . . . . .	406



LIST OF TABLES

Chapter

III.1	DEMOGRAPHIC CHARACTERISTICS OF CORPSMEMBERS . . . . .	359
III.2	FAMILY BACKGROUND WHEN GROWING UP . . . . .	363
III.3	EDUCATION, TRAINING, AND HEALTH STATUS OF CORPSMEMBERS PRIOR TO ENROLLMENT . . . . .	367
III.4	WORK HISTORY OF CORPSMEMBERS FOR SIX MONTHS PRIOR TO ENROLLMENT . . . . .	371
III.5	FAMILY STATUS AND INCOME FOR SIX MONTHS PRIOR TO ENROLLMENT . . . . .	374
III.6	ANTISOCIAL BEHAVIOR . . . . .	377
IV.1	CORPSMEMBERS' REASONS FOR ENROLLING IN JOB CORPS . . .	382
IV.2	WHERE CORPSMEMBERS FIRST HEARD ABOUT JOB CORPS . . . .	386
IV.3	WHERE CORPSMEMBERS RECEIVED MOST OF THEIR INFORMATION ABOUT JOB CORPS . . . . .	389
IV.4	CORPSMEMBERS' EVALUATION OF CENTER CHARACTERISTICS COMPARED WITH PRIOR EXPECTATIONS . . . . .	392
V.1	CORPSMEMBERS' RATING OF JOB CORPS: ALL CORPSMEMBERS . . . . .	399
V.2	CORPSMEMBERS' RATING OF JOB CORPS: SUBGROUPS . . . . .	403

The MPR staff collaborating on the evaluation of the economic impact of the Job Corps program on participants are under the direction of Charles Mallar. The principal authors of this report are Stuart Kerachsky and Charles Mallar, with assistance from Pat Lapczynski. Other members of MPR's Research and Survey teams for the Job Corps evaluation have also made valuable contributions that improve the quality of this report. The most important contributors include David Kershaw, David Long, Audrey McDonald, Charles Metcalf, Jewel Moran, Craig Thornton, and David Zimmerman.

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## EXECUTIVE SUMMARY

### EVALUATION OF THE ECONOMIC IMPACT OF THE JOB CORPS PROGRAM

#### SPECIAL REPORT:

#### AN EXAMINATION OF JOB CORPS PARTICIPATION

This report provides a comprehensive description of who enrolls in Job Corps, why they enroll, where and how much they learn about Job Corps before enrolling, and how they rate the overall program and its components while they are at Job Corps centers. The profile of Corpsmembers provided herein is based on the most detailed data yet available for a study of Corpsmembers. Information of rich detail was obtained from the interview responses of 5,133 Corpsmembers in a survey conducted at centers during May 1977.

The most important findings presented in this report include the following:

1. Job Corps is confirmed to be serving disadvantaged<sup>1/</sup> youths who have limited abilities to obtain and hold productive jobs before they enroll in the Program. Nearly 75 percent of current Corpsmembers come from minority backgrounds, and almost all Corpsmembers have experienced poverty, welfare dependence, or both. Most youths who enroll in Job Corps (between 85 and 90 percent) have not completed high school, and Corpsmembers have extremely poor work histories, as evidenced by high unemployment, few hours of work, low wage rates, and small earnings. Furthermore, 38 percent of Job Corps enrollees have been arrested before enrolling for a wide range of crimes other than minor motor-vehicle offenses, and 19 percent of those arrested have been convicted on such charges.
2. Arrest rates drop dramatically while Corpsmembers are in the program (by a factor of about 3 to 5).
3. Corpsmembers are motivated to enroll primarily because of the training and educational opportunities.

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<sup>1/</sup>The term disadvantaged is used throughout this report to define the universal set of youths who are eligible for Job Corps. As used in this report, "disadvantaged" embodies several factors related to age, educational level, income status, race/ethnicity, employment history, previous social behavior, etc., that limit the ability of young men and women to obtain and hold productive jobs.

4. Sources of information about Job Corps are dominated by friends and relatives and by the employment service.
5. The prior information Corpsmembers receive about the program is quite accurate. Corpsmembers find most aspects of the program to be as good as or better than expected. There is no evidence that Job Corps enrollees are being oversold on the program, as has sometimes been alleged.
6. The majority of Corpsmembers (65 to 70 percent) report that they are satisfied with the overall program.
7. Corpsmembers are most satisfied with the job training and educational aspects of the program, and are least satisfied with the residential aspects, such as the food, pay allowance, home-visitation privileges, and location of center.
8. The greatest satisfaction is reported by Hispanics, as well as by Corpsmembers at centers characterized by contract type, medium size, located in cities, and run by public operators.

The remainder of this report contains more detailed discussions of these findings. Chapter I introduces the topics to be discussed, and chapter II provides an overview of the current Job Corps program and plans for future directions. Chapter III presents a comprehensive description of Corpsmembers. Chapter IV addresses issues relating to why youths enroll in Job Corps, where enrollees obtain information about the program, and how accurate that information is. Finally, chapter V considers how Corpsmembers rate the overall program and its various components.

## I. INTRODUCTION AND SUMMARY

Job Corps' purpose is to assist young people who need and can benefit from intensive programs of education, vocational skills training, and other services while living in a residential setting. The typical youth it serves is an 18-year-old high school dropout who reads at the elementary school level, comes from a poor family, belongs to a minority group, and has been unemployed for many weeks or has never held a job. All enrollees are impoverished and unemployed young people between the ages of 16 and 21 who volunteer for the program.<sup>1/</sup>

This paper is the first of a series of reports on a study designed to provide the Department of Labor with a comprehensive evaluation of the short-term economic impact of the Job Corps program. These reports will provide the necessary information and analysis for such an evaluation, as well as for an overall assessment of the benefits and costs of the program. The goal of this particular report is to analyze Job Corps' service to disadvantaged youths in terms of the following questions:

1. Who enrolls in Job Corps?
2. To what extent are youths from the target population being enrolled in and completing a Job Corps program?
3. Why do youths enroll in Job Corps?
4. How do youths learn about Job Corps, and do they receive information which is both accurate and adequate?
5. How do Corpsmembers rate the program?
6. What aspects of Job Corps do Corpsmembers think are satisfactory, and what areas do they feel could be improved?

The information reported herein is based primarily on responses obtained in a baseline survey designed to collect data from Corpsmembers and from a sample of similar youths not participating in the program. The

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<sup>1/</sup>This extract is the opening paragraph of the "Overview" for Job Corps in Brief, FY-77, the U.S. Department of Labor, Employment and Training Administration, 1978.

interviews included detailed questions on the following topics:

- General demographic information
- Corpsmembers' expectations about the program
- Employment and income
- Socioeconomic background
- Education and training
- Antisocial behavior
- Information needed to locate respondents for future interviews

Similar data will be obtained in subsequent interviews so that the progress of Job Corps participants in the labor market can be compared with the progress of similar youths who were never enrolled in Job Corps.<sup>1/</sup>

The next chapter presents an overview of the current Job Corps program and outlines the purpose of the program and the institutional setting. The types of services provided to Corpsmembers, the size of the program (in terms of the number of participants and financial expenditures), and current trends in Job Corps are then discussed. Some of the main points to be emphasized in chapter II are the goal of Job Corps to increase the employability of disadvantaged youths who face very severe employment problems, the comprehensive and individualized services provided at centers, and the plans for expanding Job Corps.

Chapter III describes both recent enrollees in Job Corps and youths that can currently be found in centers at a point in time--that is,

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<sup>1/</sup>See the Appendix for more details on both the sampling procedures and estimation techniques used in this report.

"participants."<sup>1/</sup> The ages of most Corpsmembers range between 16 and 21 at enrollment (nearly 25 percent are 16-year-olds), and about 70 percent are male. The vast majority of Corpsmembers come from racial and ethnic minority backgrounds (approximately 75 percent), and few have completed high school before entering Job Corps (less than 15 percent). Their family backgrounds when growing up and just before enrollment are characterized by high incidences of one-parent families, large family sizes, limited English-speaking abilities, income below the poverty level, and welfare dependence. Corpsmembers' work histories before enrolling are characterized by weak labor-force attachments, high unemployment rates, numerous incidences of rejection for military service, few hours of work, low wages, low earnings, and greater than normal antisocial behavior, as shown by arrest rates, convictions, and drug usage. In short, Job Corps generally appears to be serving the types of disadvantaged youths it is supposed to be reaching.

Early program dropouts tend to be from the two most disparate groups of Corpsmembers. On the one hand, Corpsmembers who are male, white, and have better work histories tend to terminate early from Job Corps--that is, before completing a program. On the other hand, Corpsmembers who are young (under 16), American Indian, high school dropouts, unhealthy, and more prone to antisocial

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<sup>1/</sup> The fundamental difference between "enrollees" and "participants" is that Corpsmembers who stay in the program a longer time (i.e., program completers) will be overrepresented in participant samples compared to all enrollees. Among Job Corps enrollees a high proportion (approximately 40 percent) leave the program within ninety days. These early dropouts are replaced continuously by new Corpsmembers, so that a sample of participants at a point in time has a higher proportion of completers than found among enrollees. For the MPR evaluation of Job Corps a high proportion of program completers is desirable since the impact of the program on early dropouts is probably negligible. The Appendix explains how the observations are reweighted to obtain unbiased estimates for enrollees.

behavior also drop out early. This somewhat polarized pattern of early drop-outs is probably explained by the fact that some of the first group of Corpsmembers (as described above) have better alternatives and leave Job Corps early to explore them, while some of the latter group (as described above) find the program too difficult and drop out of Job Corps early because they are not benefiting from the program.

Finally, chapter III shows some of the main differences between female and male Corpsmembers. Compared to males, female Corpsmembers tend to be older, are more often from racial and ethnic minorities, are more likely to have completed high school, have worse work histories, have poorer pre-enrollment family statuses (more one-parent families, larger families, less income, more poverty, and greater welfare dependence), and have demonstrated less antisocial behavior (fewer arrests, fewer convictions, and less drug usage).

Chapter IV addresses issues relating to why youths enroll in Job Corps, where enrollees obtain information about the program, and how accurate that information is. Not surprisingly, most Corpsmembers enter the program because they desire more training and/or additional education to increase their employability. However, a significant proportion of Corpsmembers, particularly younger ones, also enroll in order to leave undesirable situations--to get away from home or away from school, and, in general, away from problems. Older Corpsmembers more often cite reasons related to employment. Youths from Hispanic origins are distinctly more motivated than others for the training and education.

The source of first information about Job Corps is dominated by friends or relatives, although significant proportions of enrollees also hear about Job Corps from local employment service offices, advertisements, school personnel,

and parole or probation officers. Male enrollees are relatively more likely to first hear about Job Corps from friends or relatives and parole or probation officers; female enrollees more often hear about Job Corps from advertisements. White Corpsmembers, compared with minority youths, are more likely to first hear about Job Corps from the employment service, advertisements, and parole or probation officers; minority youths more often hear about Job Corps from friends or relatives and school personnel. Finally, younger enrollees are relatively more likely to first hear about Job Corps from friends or relatives, school personnel, and parole or probation officers; older enrollees more often hear about Job Corps from the employment service and advertisements.

The two major sources of most information about Job Corps are the employment service and friends or relatives (in that order). Significant proportions of Corpsmembers also cite a Job Corps recruiter (with no other affiliation known) and school personnel as their source of most information about Job Corps. The most significant variations are that (1) black enrollees cite the employment service less often, and friends or relatives more often, than other enrollees; and (2) younger enrollees are relatively more likely to obtain most of their information about Job Corps from friends or relatives, school personnel, and parole or probation officers, while older enrollees cite the employment service more often.

The information that enrollees receive about Job Corps seems to be reasonably reliable. There is no evidence that potential enrollees are oversold or misled. In fact, the data indicate that Corpsmembers usually find all of the training and educational and social and residential aspects of the program to be at least as good as they had expected. The only categories that tend to be worse than expected are the food and pay allowance. Male, minority, and older enrollees are the most likely to find the training and

educational aspects at least as good as they had expected; male and older enrollees are also likely to feel this way about the residential aspects.

The final chapter considers how Corpsmembers rate the program. When interviewed while still in the program, the vast majority of Corpsmembers expressed satisfaction with Job Corps, both overall and especially for the training and education components. The only aspects of the program that were rated as "not good" were the pay allowance and the food served at centers. Youths who subsequently terminated early and did not complete the program were more likely to give neutral ratings to components of the program and a lower rating to the overall Job Corps program. Finally, among types of centers, Corpsmembers were more satisfied with contract centers, centers of small or medium size, those operated by public agencies, and those located in cities.

## II. NATURE OF JOB CORPS IN 1977<sup>1/</sup>

Job Corps is one of the major public programs aimed at improving the employability of severely disadvantaged youths--especially the extremely difficult employment problems of minority youths in ghetto areas. Recently, these employment problems have accelerated and have become very apparent. Currently, for instance, approximately four out of every ten black youths (i.e., between the ages of 16 and 21) in the labor market are unemployed. Moreover, in the poverty areas of central cities, fewer than two out of every ten black youths have had jobs, as shown in recent surveys.

Job Corps is a program that provides a comprehensive range of services that include "vocational skills training, basic education, health care, and residential support for young people who are poor, out of school and out of work. Its aim is to break the cycle of Poverty permanently by improving life-time earnings prospects."<sup>2/</sup> Job Corps is designed to serve a youth population that currently lives in such debilitating environments that their relocation to a residential center is needed to enable them to benefit from more traditional education, vocational training, and ancillary

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<sup>1/</sup> This chapter draws very heavily from three documents prepared recently by the national Job Corps staff: (1) Job Corps in Brief, FY-77, 1978; (2) A Planning Charter for the Job Corps, 1978; and (3) The Expansion and Enrichment of the Job Corps, 1978. The interested reader should read these papers for further details. Also, Levitan and Johnston (1975) have summarized the first ten years (1964-74) of Job Corps operations (see Sar A. Levitan and Benjamin H. Johnston, The Job Corps: A Social Experiment That Works, Baltimore: John Hopkins University Press, 1975).

<sup>2/</sup> This quotation was taken from The Expansion and Enrichment of the Job Corps, U.S. Department of Labor, Employment and Training Administration, 1978, page 1.

services.<sup>1/</sup> Job Corps attempts to make these youths both more productive (so they can earn higher incomes and can at least become self-sufficient) and more responsible citizens.

#### A. INSTITUTIONAL SETTING

The Job Corps program was originally established by the Economic Opportunity Act of 1964. Control of the program was later transferred (1969) from the Office of Economic Opportunity to the Department of Labor (DOL), and Job Corps was eventually incorporated without changes as Title IV of the Comprehensive Employment and Training Act (CETA) of 1973. Despite the general decentralization and decategorization of employment and training programs carried out under CETA, the Job Corps has largely maintained its national scope (for instance, the Job Corps program is still administered at the federal level). However, direct responsibility for program operations and center contracting has been transferred under CETA to DOL's regional employment and training offices.

There are two basic types of Job Corps centers: (1) those operated under private contracts from competitive bids with the regional offices, and (2) those located on public lands (predominantly in national parks and forests) and operated by the Department of Agriculture and the Department of the Interior. The former centers are usually referred to as "contract centers," and the latter as "civilian conservation centers" (CCCs). In fiscal year 1977, there were sixty-one centers in operation, located in thirty-two states and the Commonwealth of Puerto Rico: twenty-seven CCCs;

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<sup>1/</sup> Some of the Job Corps centers in urban locations added a few nonresidential slots in the 1970s. The nonresidential components of Job Corps are not included in the MPR evaluation, the baseline survey, nor this report.

two CCC-type centers operated by the Commonwealth of Puerto Rico; thirty centers under contracts with private business firms, nonprofit organizations, and agencies of state and local governments; and two extension centers for advanced vocational training operated by unions.<sup>1/</sup> Two contract centers had just opened during the year (a new center in Mississippi and a relocated center in New York).<sup>2/</sup>

Recruitment and placement activities are carried out under contracts with employment service offices, various unions, local schools, volunteer agencies such as Women in Community Service, Inc. (WICS) and Joint Action in Community Service, Inc. (JACS), and special private agencies,<sup>3/</sup> in addition to the efforts of individual centers and the regional offices. These groups (especially the volunteer agencies and special private agencies) often provide other support services to "program completers" in order to facilitate their transition from center living to a job and regular living arrangements. In addition, several unions have separate contracts to provide training at centers (at all CCCs and some of the contract centers).

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<sup>1/</sup> One extension center is operated by the Brotherhood of Railway, Airline and Steamship Clerks (BRAC) of the AFL/CIO; the other is operated by Stewards Training and Recreation, Inc., of the Marine Cooks and Steward's Union of the AFL/CIO.

<sup>2/</sup> Other centers have since opened, and more centers are scheduled to open in the near future to enable Job Corps to achieve its expansion goal of doubling the number of slots compared to fiscal year 1976 (see below). The focus of the MPR evaluation of Job Corps and this report is on all centers operating in the continental United States; a national probability sample of approximately one-third of the Corpsmembers at these centers were interviewed in May 1977 for the baseline survey.

<sup>3/</sup> Private contracting agencies such as the separate GATE-house (Graduate Aid to Employment for ex-Corpsmembers) contractors are operating in six large metropolitan areas (Atlanta, Baltimore, Los Angeles, New York, Philadelphia, and Washington, D.C.) in which many ex-Corpsmembers locate when they leave the centers.

## B. TYPES OF SERVICES PROVIDED AT CENTERS

Job Corps attempts to provide a comprehensive program that is flexible enough to meet the individual needs and problems of disadvantaged youths. The components of the Job Corps program include basic education, high school equivalency classes, vocational training, health care and education, residential living, and counseling and other ancillary services, each of which should be incorporated into a unified framework tailored to meet the needs of individual youths.

### 1. Education

The Job Corps' education program has evolved with the intent of being flexible enough to meet the varied deficiencies in the backgrounds of Corpsmembers and to enable them to proceed at the maximum pace commensurate with their abilities. The education program includes basic education (emphasizing reading and mathematics), World of Work (including consumer education, driver education, home and family living, health education, and bilingual education), and General Educational Development (GED) for Corpsmembers who are academically qualified. The GED certificate is recognized by state educational agencies as the equivalent of a high school diploma. The Job Corps encourages and emphasizes the GED program "for those who are academically qualified. In fiscal year 1977, over 4,000 enrollees were awarded the General Educational Development Certificate."<sup>1/</sup>

### 2. Vocational Skills Training

Like the education program, the training program at Job Corps centers is designed to meet individual needs and problems and to enable

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<sup>1/</sup> This quotation is from Job Corps in Brief, FY-77, p. 3.

Corpsmembers to advance at the maximum pace commensurate with their abilities. Therefore, all the training programs provide for an open entrance and exit capability and are continually being reviewed and revised in order to keep up with changing Corpsmembers' needs and with labor-market trends. There are some notable differences between vocational training programs at CCCs and those at contract centers. The training programs at CCCs are more often operated by unions and tend to be of a "hands-on" work-project nature, with actual construction and production taking place.<sup>1/</sup> In contrast, the training programs at contract centers are more often operated by the centers themselves or by individual private subcontractors, and the training tends to be of a classroom-instruction, shop-type, or "mock-up" nature, with some work-experience positions available upon completion.

### 3. Health Care and Education

Comprehensive health services are provided to all enrollees, including medical examinations (with follow-up treatments if necessary), immunization, dental examinations (for all Corpsmembers who stay at least ninety days) and treatment, professional help for emotional and other mental-health problems, and instruction in basic hygiene, preventive medicine, and self-care. Health education is also given high priority in Job Corps, with the aim of preparing Corpsmembers "to make responsible decisions regarding health and health-related matters by providing them with relevant, factual information."<sup>2/</sup>

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<sup>1/</sup> Most of the union instructors use curricula approved for the first two years of their apprenticeship programs.

<sup>2/</sup> This quotation is from Job Corps in Brief, FY-77, p. 3.

#### 4. Residential Living

Residential living is a key element of the Job Corps program and distinguishes it from most other public employment and training programs. The concept behind residential living is that the target population comes from such debilitating environments that they need a new and more supportive environment to derive the intended benefits from the vocational training and education courses. The residential-living program (including meals, center maintenance, dormitory life, sports and recreation, center government, entertainment, and other related activities) is "planned to help new Corpsmembers adapt to center life, motivate and support constructive attitudes and lifestyles, and prepare them to function effectively in the outside world. . . . It involves such complex areas as relationships among racial and ethnic groups, motivation of alienated or discouraged young people, adaptation to unfamiliar group living situations, adult-youth cooperation in an institutional setting, and the role of peer groups in influencing conduct and attitudes."<sup>1/</sup>

#### 5. Counseling and Other Ancillary Services

The centers provide counseling services and residential advisors both to help Corpsmembers plan their educational and vocational curricula and to help motivate Corpsmembers and create a supportive environment. Some of the other support services provided by Job Corps (for example, during recruitment, placement, and the transition to regular life and jobs) were discussed above.

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<sup>1/</sup> This quotation is from Job Corps in Brief, FY-77, pp. 4 and 5.

### C. SIZE OF JOB CORPS

At the start of fiscal year 1970 the Job Corps program was cut back drastically in terms of both financial expenditures and the number of youths served. From then until fiscal year 1977 the budget was held roughly constant in nominal amounts, and the number of youths served stabilized at about 21,000 to 22,000 slots (i.e., positions) and 45,000 new enrollees annually. However, over the same time period, inflation greatly eroded the real purchasing power of the budget (held fixed in nominal amounts), and capital equipment was allowed to deteriorate in order to serve the same number of youths within the more restrictive budget.

With the decision in fiscal year 1977 to renovate and expand Job Corps (see the next section) the budget and number of slots in the program were increased. In fiscal year 1977 the budget rose 58 percent in nominal terms, to \$274 million, while the applied funding increased by 23 percent, to \$231 million. The additional expenditures were allocated to the planning of expansion, actual expansion, improvements in services, staffing increases, and the repair and replacement of capital equipment that had been allowed to deteriorate during the previous seven years. Similarly, the number of slots in the program rose 7 percent in fiscal year 1977, to 22,225 slots, with the addition of one new center and a small amount of expansion at some existing centers. However, the average length of stay in Job Corps and the proportion of program completers increased during fiscal year 1977 (possibly a result of improved conditions due to additional resources), so that the turnover rate fell, causing the total number of youths enrolled to decline slightly.

#### D. CURRENT TRENDS

The most recent trends in Job Corps are dominated by plans to expand the program. The Job Corps began increasing its capacity in fiscal year 1977 in response to a congressional mandate to double the size of the program--from its fiscal year 1977 level of 22,000 slots to 44,000 slots by the end of fiscal year 1979. The national Job Corps staff expects to reach the full capacity enrollment of 44,000 by the middle of fiscal year 1979.

Several new centers have already begun operating, and more are scheduled to open in the next few months. The expansion of slots has been allocated on a basis of geographical need, as determined from the latest available data on poverty and unemployment among youths. The new slots will also represent a mix of center types, with CCCs receiving a smaller fraction of the growth (360 slots, or 5 percent) than they currently represent relative to contract centers (17,632 slots). Furthermore, some of the new slots will be allocated to innovative types of centers involving industry work-experience programs (852 slots) and junior college and technical schools (2,256 slots).

In conjunction with the general expansion of Job Corps, innovative approaches are being initiated in several areas. The main areas of innovation include center improvements, targeting recruitment and more service to groups that have previously been underrepresented in Job Corps, developing new educational and vocational training programs, coordinating activities and improving linkages with other programs that can benefit youths, and additional monitoring and evaluative research to improve the program.

## 1. Center Improvements

As mentioned above, the physical plants at centers had been deteriorating in past years with the restrictive budgets for Job Corps. In fiscal years 1977 and 1978, one-time renovations totaling \$39 million were authorized and completed to bring all centers up to OSHA standards and otherwise to upgrade and modernize center facilities. The national office has also increased the modest resources available for enriching the entertainment, recreational, and avocational programs for Corpsmembers.

## 2. Special Target Groups

Additional efforts are being undertaken to encourage the enrollment and serve the needs of particular groups that have previously been underrepresented in Job Corps. These special target groups include women, Hispanic youths, American Indians, handicapped individuals, and ex-offenders. The Job Corps has the explicit goal of increasing the participation of young women to 50 percent of total enrollment in the next two years. The staff plans to achieve this goal by (1) converting previously all-male centers to coeducational status, (2) proportionately increasing the number of female slots at new centers, (3) finding new ways to accommodate young women who are economically disadvantaged and have dependent children,<sup>1/</sup> and (4) redoubling the efforts of WICS and other recruitment agencies to find eligible females.

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<sup>1/</sup>One demonstration project has been undertaken at the Atlanta center, in which residential accommodations and child care have been provided for the dependent children of female (solo-parent) Corpsmembers. The results of the program have generally been favorable in terms of in-program outcomes (longer stays, higher completion rates, fewer disciplinary problems, and better morales). However, more evaluative research is needed to determine if the benefits outweigh the added costs. Another demonstration project, in cooperation with WIN, is currently underway at two centers,

Job Corps has targeted two other groups of current enrollees for additional representation and to provide them with more comprehensive services: Hispanic youths and American Indians. The Job Corps is planning innovative programs for Hispanic youths, such as (1) an education program in which they first learn to read and write at a high enough level in Spanish to be able to benefit from a bilingual program before being introduced to such a program, and (2) a national Spanish demonstration center both to develop and test the effectiveness of Job Corps techniques used for Hispanic youths and to serve as a model for other bilingual programs. In order to better serve American Indians, Job Corps is planning to open additional centers operated and/or sponsored by Tribal Councils of American Indians.<sup>1/</sup>

Under the current admissions criteria, handicapped youths and youths who are ex-offenders are sometimes ineligible for Job Corps because the present Job Corps structure cannot always accommodate their special needs. However, Job Corps plans to relax eligibility criteria somewhat within the context of some innovative approaches for such youths. In addition to developing accommodating facilities for handicapped youths in existing centers and programs, Job Corps is considering building special centers and creating programs for the handicapped (for both the physically and mentally handicapped). Many Corpsmembers are already ex-offenders prior to enrollment (see Table III.6 in chapter III); however, they currently receive no

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Atlanta and Cleveland, in which WIN mothers (solo-parents) who meet Job Corps eligibility criteria are being enrolled in nonresidential programs and their children provided with day-care services. Two additional models for enrolling solo-parents are also being planned for Job Corps.

<sup>1/</sup> These centers would be similar to the Kicking Horse center, which is operated under a contract with the Tribal Council of the Confederated Salish and Kootenai Tribes of the Flathead Indian Reservation.

special treatment in any formalized way. In order to develop a program that helps ex-offenders receive the maximum benefits from Job Corps, a special center is now being planned for this target group in the state of Vermont. It is envisioned that this Job Corps center for ex-offenders will provide a formal strategy for the community treatment of eligible ex-offenders within Vermont's correctional system.

### 3. Innovative Programs for Education and Vocational Training

In addition to the projects for special target groups discussed above, Job Corps is planning (1) more slots at junior colleges and technical schools to develop advanced career training; (2) a military training component to educational services, aimed directly at helping to prepare Corpsmembers (especially those who have previously been rejected for military service) to qualify for entrance into the military service; (3) the expansion of current work-experience programs in terms of creating both more slots and possibly a few small centers to be associated with large firms or industries located near those centers; (4) special intake centers for entrants from outside the continental United States, to teach basic skills and then refer them to the appropriate regular centers; (5) to develop new areas for occupational training, especially in growth industries; and (6) to have demonstration centers operated by community-based organizations, CETA prime sponsors, and labor unions, to assess the effectiveness of these operators relative to other operators of centers.

### 4. Coordinating Activities with Other Agencies

As mentioned above, program linkages are currently being strengthened with other agencies that can benefit youths. The programs most prominently considered include WIN, the military services, community-based organizations,

CETA prime sponsors, and labor unions. Job Corps also has plans for utilizing each of these groups and the recently formed Job Corps Alumni Association (JCAA) for the additional recruitment needed to accommodate the expansion.

##### 5. Additional Monitoring and Evaluative Research

Many of the innovative approaches discussed above are demonstration projects that will need to be assessed to determine both their effectiveness and feasibility. Job Corps is currently planning for such assessments. Additional research priorities of Job Corps include further analysis of (1) the methods used to encourage retention of Corpsmembers and program completion; (2) placement outcomes and the validity of the placement data; (3) the methods used to introduce enrollees to the occupational training possibilities at centers; (4) the reading and mathematics programs (which have changed substantially since they were last studied); (5) the recruitment and screening activities; and (6) the attitudes and opinions of Corpsmembers toward various components of the program. The study on which this report is based will provide analyses relating to many of these priorities (especially item numbers 1, 2, 5, and 6). A major portion of this report concerns the attitudes and opinions of Corpsmembers toward Job Corps and its components (see chapter V). The accuracy and adequacy of information provided by the main recruitment and screening groups are considered in chapter IV. The next chapter (chapter III) discusses factors that appear to affect retention and program completion. Finally, a major part of future reports on this project will focus on postprogram outcomes for Corpsmembers, especially placement outcomes.

### III. WHO ENROLLS IN JOB CORPS?

All enrollees are impoverished and unemployed young people between the ages of 16 and 21 who volunteer for the program.<sup>1/</sup>

The main purpose of this chapter is to present detailed descriptions of youths who enroll in Job Corps and youths who are participating in the program at any point in time.<sup>2/</sup> The data and discussions in this chapter assess whether the program is in fact drawing from the target population of impoverished and unemployed youths. Beyond a simple analysis of whether the enrollment targets are being met, it is important to know more precisely the extent of the Corpsmembers' impoverishment and the extent of their employability problems.

Previous data from the screening interviews used to determine eligibility for Job Corps have already shown some of the basic characteristics of new enrollees.<sup>3/</sup> The information on Corpsmembers presented in this chapter supplements that data and provides a better picture of Job Corps enrollees in two important ways. First, the new data are based on Corpsmembers' responses to a survey unrelated to Job Corps admissions and operations. This separation ensures more accurate information, since Corpsmembers have no incentive to provide misleading information.

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<sup>1/</sup> This extract is taken from the "Overview" of Job Corps in Brief, FY-77.

<sup>2/</sup> The differences between "enrollees" and "participants" are explained more fully in footnote 1 on page 6 and in the last paragraph of the current section.

<sup>3/</sup> Data on a few characteristics of new enrollees from the screening interviews are summarized in the annual editions of Job Corps in Brief from the U.S. Department of Labor.

Some youths might provide misleading answers to screening questions to ensure that they appear to meet the eligibility criteria for Job Corps. Therefore, the survey data can be used both to validate current program data and to obtain a more accurate analysis of whether the enrollment targets and eligibility criteria are being met.

The second advantage of the new data is that they provide richer detail on the characteristics of Corpsmembers. The Job Corps screening questionnaire is designed to test for eligibility and to provide basic management information, so by necessity it must be simple, direct, and short. The new survey data provide much supplemental information on family backgrounds when participants were growing up, employability prior to enrollment, work history, and other important factors, as well as basic information on the demographic composition and pre-enrollment status of Corpsmembers. Consequently, this chapter provides a much fuller profile of the population currently being served by Job Corps than has previously been available.

The chapter begins by providing basic demographic data similar to those presented in federal Job Corps reports. The family backgrounds of Corpsmembers when they were growing up are then covered in detail. Next, the employability, work history, income, and welfare dependence of the youths prior to enrollment are examined. Finally, the antisocial behavior exhibited by Corpsmembers prior to enrollment, as shown by arrests and by the use of alcohol, marijuana, and narcotic drugs, is analyzed.

In addition to the description of recent Job Corps enrollees (hereafter, "enrollees"), a profile is presented of youths who can be found at Job Corps centers at any point in time (hereafter,

"participants").<sup>1/</sup> Participants differ from enrollees to the extent that youths who stay in the program a long time (e.g., completers) differ from Corpsmembers who terminate after a short stay.<sup>2/</sup> Fewer early dropouts than program completers are present at centers at any point in time relative to their proportions among all enrollees.<sup>3/</sup> Also, separate data are shown for females and males whenever there are important differences between the sexes, and some comparative information is presented for general samples of the U.S. population.

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<sup>1/</sup> Information on participants is taken directly from the responses to the baseline survey of 5,133 Corpsmembers at centers in May 1977. These baseline data on participants are then reweighted to obtain estimates that are applicable to enrollees. Separate sample means are computed for each category of termination for the 2,885 Corpsmembers in the original sample who had left Job Corps by October 31, 1977. The sample mean for each category of termination is then given a weight equal to the proportion of enrollees who achieve the termination category, which yields estimates that are applicable to enrollees. In effect, for the enrollee estimates, each observation receives a weight equal to the ratio of the proportion of observations in its category for all enrollees to the proportion of observations in that category for the sample. See the Appendix for more details on the computation of these estimates and their reliability.

<sup>2/</sup> It is unclear whether the characteristics of participants will show them to be more or less disadvantaged than enrollees on average. On the one hand, relatively less disadvantaged youths may perform better in Job Corps and obtain more beneficial skills, which would tend to cause them to stay longer and be more likely to complete the program. On the other hand, the youths who are relatively less disadvantaged will have better opportunities outside of Job Corps. The benefits of the program (compared to the opportunities they are foregoing) may diminish rapidly, causing them to leave the program earlier than youths who are more severely disadvantaged. In this chapter we will describe which youths do in fact stay in the program longer and, hence, are more likely to complete Job Corps. However, a more detailed analysis of who completes various components of the program and how that affects their employability after Job Corps requires both program and follow-up data, which were unavailable when the analysis for this report was undertaken. A future report of the MPR evaluation of Job Corps will address the completion issues more directly.

<sup>3/</sup> See the explanation in footnote 1 on page 6.

## A. BASIC DEMOGRAPHIC DATA

The demographic characteristics presented in Table III.1 largely confirm the information previously obtained from Job Corps screening interviews. Youths who enroll in Job Corps tend to be young, are more often male than female, and for the most part belong to racial and ethnic minority groups.

The average age of recent Job Corps enrollees is about 18. Approximately one-quarter of the Corpsmembers are age 16 when they enroll, another quarter are 17 years old, and the remaining half are between the ages of 18 and 21. The Job Corps program seems to be serving many of the youngest youths entering the labor market, who are likely to have the most severe employability problems. The large proportion of 16-year-old enrollees indicates a potential difficulty for the job placement of Corpsmembers and shows the need for the placement alternatives of schooling, training, and work-experience programs. Many of the youngest enrollees will still be under age 18 when they leave Job Corps, even if they complete a program, and job placement will still be extremely difficult for them.<sup>1/</sup> However, most of the youngest enrollees could still profit from additional schooling, training, and work experience after they leave Job Corps, so that these placement alternatives to jobs are quite important.<sup>2/</sup>

Table III.1 also shows that female enrollees are on average slightly older than males. The majority of female Corpsmembers are over age 18. The

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<sup>1/</sup>The average entry-level age in Job Corps has tended to go up slightly in recent years, probably as a result of both the difficulties in placing the youngest Corpsmembers and a faltering economy that encourages older youths to enroll.

<sup>2/</sup>Also, some of the unions sponsoring training programs at Job Corps centers have recognized the problems of placing youths under age 18 on jobs or in apprenticeships. Unions have begun to restrict entry into their training

TABLE III.1

## DEMOGRAPHIC CHARACTERISTICS OF CORPSMEMBERS

Variable	All Enrollees	All Participants	Female Enrollees	Female Participants	Male Enrollees	Male Participants
Age at Enrollment	17.8	17.8	18.1	18.1	17.7	17.7
Percentage Sixteen and Under	24	23	19	18	26	25
Percentage Seventeen	25	24	23	20	26	26
Percentage Eighteen to Twenty-One	51	53	50	62	48	49
Percentage Females	27	31	N.A. <sup>a/</sup>	N.A.	N.A.	N.A.
Percentage Black, not of Hispanic Origin	58	61	61	62	56	61
Percentage White, not of Hispanic Origin	25	21	20	16	27	23
Percentage Hispanic	11	14	13	18	10	12
Percentage American Indian or Alaskan Native	6	4	6	3	6	4
Percentage Asian or Pacific Islander	1	1	<1	1	<1	<1

<sup>a/</sup> In this table "N.A." means not applicable.

average entry-level age is about the same for the enrollee and participant samples. However, as can be seen from the more detailed age breakdowns in Table III.1, the average age masks the fact that the youngest Corpsmembers tend to leave sooner, especially among female Corpsmembers. As a result, there are fewer very young (16- and 17-year old) Corpsmembers at the centers at any point in time (i.e., fewer of them are participants) compared to enrollees.

Approximately 73 percent of the enrollees are males; only 27 percent of the enrollees sampled are females. The proportion of females is lower than that reported by Job Corps for fiscal year 1977 (see Job Corps in Brief, FY-77), partly because the interviews were conducted in May and thus did not capture the increase in female enrollment that was due to the addition of female slots in Job Corps when twelve previously all-male centers were converted to coeducational status. Table III.1 also shows that females comprise a larger percentage of participants than of enrollees, since females tend to stay at the centers longer and are more likely to complete a program.

The Job Corps program has been acknowledged for serving minority youths who have prevalent employability problems (see Levitan and Johnston, 1975). Table III.1 shows that nearly 75 percent of recent Job Corps enrollees come from minority backgrounds.<sup>1/</sup> The representation of black,

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programs to youths who will be at least 18 years old when they finish training. This has caused some pressure both to recruit older youths and to have the youngest Corpsmembers concentrate first on basic education if they eventually want to go into one of the training programs sponsored by unions (in which case, the youngest Corpsmembers need a full two years to complete and will therefore be 18 when they leave Job Corps, if they finish).

<sup>1/</sup>The percentage of enrollees who are of minority status is higher with the survey data than with the data from the Job Corps screening forms: 75 percent versus 70 percent, respectively (based on a comparison between the data in Table III.1 and information in Job Corps in Brief, FY-77). It is unlikely that sampling variability could explain a difference this large in magnitude. A more likely explanation is that the survey data

Hispanic, and American Indian youths among Job Corps enrollees is much greater than in the U.S. population as a whole. Even more minority youths are present at centers at a point in time, since white youths do not stay as long as minorities and are less likely to complete a program. Among recent participants, 79 percent are minority youths. Within this group of minority youths, only American Indians tend to be early dropouts. Blacks and Hispanic youths stay longer than whites and American Indians on average and are more likely to complete a program.

#### B. FAMILY BACKGROUNDS WHEN GROWING UP

An important eligibility criterion for Job Corps enrollment is that youths must come from impoverished families, so that Corpsmembers need and can benefit from an intensive program of education, training, and ancillary services in a residential setting. In practice, Job Corps screeners examine both the home environment and family income of youths before referring them to Job Corps. The home environment criterion used for admission to Job Corps is based on the family living arrangements (Is the dwelling unit where the youth lives insufficient? Does the youth live with only one or neither parent?) and on the neighborhood environment (Is the incidence of poverty, welfare dependence, unemployment, or crime unusually high in the neighborhood of the youth's place of residence?). The eligibility criterion for family income is based on welfare dependence and poverty status. If the youth's family either receives public assistance or has income below the poverty level, then the family income criterion is met.

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are based on the self-reports of youths in response to direct questions (and cue cards), while the "screening" questions concerning race and ethnicity are often filled in from the observations of Job Corps screeners.

Not surprisingly, data from the Job Corps screening questionnaires show that the families of most Corpsmembers are impoverished at the time of enrollment. The remaining questions relate to both the extent and length of time that Corpsmembers' families are impoverished. Were the families of most Corpsmembers impoverished when they were growing up, or is the poverty status of many Corpsmembers a temporary phenomenon at the time of enrollment? Recent studies have shown that many families are transitorily poor. Also, the poverty status of many Corpsmembers could be a result of their efforts to establish independence from parental families just prior to enrollment. Therefore, it is important to look at the poverty status of Corpsmembers' families at an earlier time to obtain a better assessment of how disadvantaged the youths really are.

In addition to the advantages of more comprehensive measures and responses that are not conditioned by incentives to prove eligibility for Job Corps, the MFR survey obtained data on family conditions over a longer period of time and well before enrollment for most Corpsmembers. These earlier data should reduce the chances of observing temporary family phenomena or of picking up the effects of youths leaving parental families. Corpsmembers were asked a probing set of questions concerning the family they lived with when they were 15 years old. The questions covered family circumstances for an entire year, which varied between one and six years prior to entry into Job Corps, depending on the age of the Corpsmember.

Table III.2 provides substantial summary information on the family backgrounds of Corpsmembers, and contrasts it to the corresponding data for a more general population of American youths. The data in Table III.2 show that youths entering Job Corps generally do come from disadvantaged families, and that their impoverished status is not a temporary phenomenon.

TABLE III.2

FAMILY BACKGROUND WHEN GROWING UP<sup>a/</sup>

Variable	U.S. Population <sup>b/</sup>	Job Corps Enrollees	Job Corps Participants
Percentage Living with Two Parents <sup>c/</sup>	70	52	52
Percentage Living with One Parent	10	33	14
Percentage Living with Other Relatives	<1	9	9
Percentage Living Alone <sup>d/</sup>	3	2	1
Percentage Institutionalized <sup>e/</sup>	1	2	2
Family Size <sup>f/</sup>	3.44	6.32	6.44
Percentage Living Outside U.S.	<1	3	5
Percentage in Non-English-Speaking Households	4	12	15
Education of Father or Other Male Head (Highest Grade Completed)	12.5	9.3	9.2
Percentage of Fathers Completed High School	70	37	36
Education of Mother or Other Female Head (Highest Grade Completed)	12.4	10.2	10.0
Percentage of Mothers Completed High School	70	40	40
Prestige Score of Father's Occupation <sup>g/</sup>	39	33	33
Earnings of Parents or Other Family Heads <sup>h/</sup>	N.A. <sup>o/</sup>	\$6,309	\$6,237
Family Earnings <sup>i/</sup>	\$12,396	\$8,033	\$7,075
Family Income	\$14,502	\$9,016	\$8,044
Percentage of Families Below Poverty Level <sup>j/</sup>	9	43	44
Percentage Below Poverty Level or Receive Welfare Assistance <sup>k/</sup>	13	59	54
Percentage Receiving Public Transfers <sup>l/</sup>	21	56	55
Percentage Receiving Cash Welfare <sup>m/</sup>	8	31	30
Percentage Receiving Food Stamps	5	31	29
Percentage Living in Public Housing	2	10	17
Percentage Receiving Unemployment Benefits <sup>n/</sup>	34	21	19

TABLE III.2 (Continued)

FOOTNOTES

- a/ The data in this table are based on responses to questions concerning the year when the youths were 15 years old.
- b/ The information for the U.S. population was taken primarily from publications of the Bureau of the Census. The appropriate time periods and variable definitions were matched closely.
- c/ Parents include stepparents and foster parents, as well as natural parents.
- d/ Living alone includes youths who were heads of their own families, who lived with friends, or who lived by themselves.
- e/ Institutionalized is defined as living in a boardinghouse, halfway house, or some other institution.
- f/ Institutionalized youths and those living by themselves are not included; otherwise, the youths and all persons related to them by blood, marriage, or adoption and legal guardians of those youths are counted.
- g/ The prestige scores assigned to occupations are taken from ratings developed by Siegel (Paul S. Siegel, Prestige in the American Occupational Structure, unpublished Ph.D. dissertation, Department of Sociology, University of Chicago, March, '97).
- h/ Earnings include all income from jobs during the year the youths were 15. Youths who lived by themselves and institutionalized youths are not included. All of the earnings and income information from age 15 is less reliable than other data. Many Corpsmembers (25 percent) could not answer the questions and others just guessed.
- i/ Earnings from all family members including the youths themselves are counted. Institutionalized youths are not included.
- j/ All family income from earnings, transfers, and other sources are counted in determining poverty status. These percentages and all of the ones below are for the families with whom youths were living and do not include youths who were institutionalized. Most of the youths who were institutionalized would have been in poverty otherwise, so the percentages in this table may somewhat understate the real amount of poverty among Corpsmembers.
- k/ Welfare assistance includes the cash welfare, food stamps, and public housing categories that are listed below.
- l/ Public transfers includes all of the categories listed below: cash welfare, food stamps, public housing, and unemployment benefits.
- m/ Cash welfare includes AFDC and other welfare payments, such as Supplemental Security Income and General Public Assistance.
- n/ Unemployment benefits is defined as the receipt of unemployment insurance, Social Security, or Workmen's Compensation.
- o/ In this table, "N.A." means not available.

Corpsmembers are much more likely to grow up in one-parent families (93 percent of these one-parent families are female-headed), to be living with other relatives, or to be living in an institution than are other youths in the United States. Corpsmembers are much less likely to have lived in two-parent families. Furthermore, the average size of Corpsmembers' families is nearly twice as large as that for the typical U.S. family.

Many Corpsmembers lived outside the United States (predominantly Hispanics, and especially Mexicans) when they were growing up.<sup>1/</sup> Over ten times as many Corpsmembers lived outside the United States at age 15 than did other youths. Similarly, many more Corpsmembers grew up in families that were non-English-speaking households. Most of these families spoke Spanish, and, as a result, many of the youths have very difficult employability problems. Job Corps has recognized that, upon entry, many Corpsmembers are primarily Spanish-speaking, and thus has developed (and is expanding) innovative bilingual programs for those individuals.

The parents of Corpsmembers have much lower levels of education on average than other adults of the same age. Both the fathers and mothers of Corpsmembers have educational levels that are much lower on average than others in their age group, and the probability that Corpsmembers' parents have completed high school is only about half that of their peers. Similarly, the prestige of parents' (fathers') occupations for Corpsmembers is well below the U.S. norm. Also, Corpsmembers' parents and families earn much less in wage and salary income than the typical family in the

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<sup>1/</sup> Note, moreover, that the Puerto Rican, Alaskan, and Hawaiian centers were excluded from the survey, so that this finding is only for centers in the continental United States. The centers that were excluded undoubtedly have even higher incidences of youths who lived outside the United States when growing up, and whose families did not speak English.

United States. Corpsmembers' families have relatively low earnings despite the fact that they generally have more "potential" earners than the typical U.S. family.<sup>1/</sup> The amount of earnings from family members other than the heads is relatively high but not unusual for low-income families with teenage children.

The low family earnings (and, hence, income), combined with larger family sizes, lead to high incidences of poverty and welfare dependence among Corpsmembers' families. Well over 40 percent of all Corpsmembers' families had incomes below the poverty level for the year when the youths were age 15, and well over half (nearly 60 percent) either had incomes below the poverty level or were receiving welfare assistance. Only 9 percent of all U.S. families had incomes below the poverty level for the same period, and only 13 percent either had incomes below the poverty level or were receiving public assistance. The extent of welfare dependence is about four to five times greater for families of Job Corps enrollees than it is for general samples of youths. Finally, Corpsmembers' families are more likely to be receiving unemployment benefits than are other U.S. families, even though the covered employment rate is much lower for the parents of Corpsmembers: that is, even though Corpsmembers' parents are less likely to be in covered employment when working, their unemployment rate is so far above average that they receive more unemployment insurance payments than the average for all workers in the United States.

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<sup>1/</sup> The earnings and income data for age 15 are less reliable than any of the other data in this report. Many youths could not remember these amounts, if they ever did know them. About 25 percent of the youths could not answer the questions, and others merely guessed. The averages are raised by a few extremely large answers: the medians are nearly \$2,000 below the mean.

The neighborhoods in which Corpsmembers grew up show similar patterns of impoverished environments (see the Interim Report of the Job Corps Evaluation, 1977). Compared to the typical neighborhood in the United States, the neighborhoods in which Corpsmembers resided when they were age 15 were characterized by a higher proportion of minority individuals, individuals with lower educational attainments (especially, fewer high school graduates), higher youth and overall unemployment rates, lower family income, and more families with incomes below the poverty level.

In summary, the evidence from the family backgrounds of Corpsmembers-- combined with the data both from the survey questions on youths' incomes just prior to Job Corps (see below) and from the screening questionnaires-- shows that poverty and welfare dependence are widespread and lasting among Corpsmembers' families prior to enrollment. The enrollment target of reaching impoverished youths appears to be met reasonably well. The poverty status of Corpsmembers just before entering the program is neither transitory nor caused by the youths establishing separate family units; rather, the typical Corpsmember grew up in a large family characterized by small earnings and a large degree of welfare dependence.

The only observable differences between the family backgrounds of enrollees and participants are due to the greater lengths of stay, higher program completion rates, and, hence, greater representation of Hispanic youths in the participant sample. A few more participants than enrollees grew up both outside the United States and in non-English-speaking households. The parents of participants have slightly lower educational levels, slightly lower earnings, and are slightly less dependent on welfare than the sample of Job Corps enrollees. Small differences also exist between female and male Corpsmembers (not shown), with the higher representation of Hispanic youths

in the female sample leading to the same pattern of differences as above (i.e., slightly lower educational levels, lower earnings, and less welfare dependence for the families of female Corpsmembers).

### C. EMPLOYABILITY OF CORPSMEMBERS

Another measure of the disadvantaged status of Corpsmembers is their low levels of earnings potential or human capital accumulation. Eligibility for Job Corps is restricted to youths who have either (1) dropped out of school without a high school diploma, or (2) completed high school but demonstrate substandard literacy levels. Table III.3 shows that nearly 90 percent of enrollees are school dropouts, and the average level of completed education is about two and one-half years below the U.S. norm. These data are consistent with the findings from the screening questionnaires, which further show that literacy levels are even lower in terms of school grade equivalents.<sup>1/</sup>

Corpsmembers are more likely than other youths to have participated in a training or work-experience program prior to entering Job Corps. They also have high rates of attempting to enlist in the military services: approximately 28 percent of the enrollees have tried to enlist. However, Corpsmembers' success rate at passing the enlistment exams is extremely low, which in turn is a prime motivation for many youths to enroll in Job Corps. Nearly 85 percent of the Corpsmembers who attempted to enlist in the military service prior to Job Corps enrollment failed. These

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<sup>1/</sup>That is, the average reading ability of enrollees is even lower than indicated by their educational attainments. While the average years of regular school completed is just below ten, the average Job Corps enrollee had only a fifth-grade reading ability at entry in fiscal year 1977 (see Job Corps in Brief, FY-77).

TABLE III.3

EDUCATION, TRAINING, AND HEALTH STATUS OF CORPSMEMBERS PRIOR TO ENROLLMENT<sup>a/</sup>

Variable	U.S. Population <sup>b/</sup>	Job Corps Enrollees	Job Corps Participants
Highest Grade Completed in School	12.2	9.0	9.9
Percentage Completed High School <sup>c/</sup>	62	12	15
Percentage Completed High School or High School Equivalency	N.A. <sup>e/</sup>	15	17
Percentage Participated in a Training or Work Experience Program	7	30	31
Percentage Ever in Military <sup>c/</sup>	0	4	4
Percentage Attempting to Enlist in Military and Rejected	N.A.	24	23
Percentage of Military Applicants Rejected	N.A.	84	86
Percentage with Serious Health Problems <sup>d/</sup>	N.A.	6	5

<sup>a/</sup> The data in this table are constructed to cover the time up to the point when youths enter Job Corps. The highest grade completed in regular school will not usually change while in Job Corps, and high-school equivalencies obtained while in Job Corps are not counted. However, a few of the attempts to enlist into military service for which Corpsmembers were rejected may have occurred after enrollment. The coverage of the health variable is more ambiguous (see footnote d), a few of the health problems may have begun after enrollment, and, more frequently, health problems present at enrollment but subsequently cured are missed and cannot be counted.

<sup>b/</sup> The information for the U.S. population was taken primarily from the Bureau of the Census publications. The appropriate time periods and variable definitions were closely matched.

<sup>c/</sup> The sample means for female and male Corpsmembers are approximately the same, except for the percentage of completed high school and ever in military. More female Corpsmembers had completed high school than males, and fewer females had been in the military (although a similar percentage had been rejected).

<sup>d/</sup> This is defined as the percentage of youths who at the time of the interview said they had a serious health problem that both limited the kind or amount of work they could do and had lasted for at least one year. Since few of the youths had been in Job Corps for over a year at the time of their interviews, most of these health problems were present before entering Job Corps. As noted in footnote 1 above, however, serious health problems that were present at enrollment but cured before the interview were not recorded and, hence, cannot be counted in this table.

<sup>e/</sup> In this table "N.A." means not available.

military enlistment performances are not surprising, since many disadvantaged youths who fail the Armed Forces Qualifying Test are referred to Job Corps in order to acquire the skills needed for successful enlistment in the military.

The proportion of Corpsmembers with serious health problems ("serious," in that they both limit the kind or amount of work Corpsmembers can do and have lasted for at least one year) seems similar to that for a general population of youths in the United States. Job Corps has screened out some youths with serious health problems in the past, since appropriate facilities were not available to ensure that they could receive the benefits of Job Corps. However, as part of the expansion of Job Corps, new facilities and approaches are being considered that not only would additionally benefit current handicapped Corpsmembers, but would encourage the enrollment of other mentally and physically handicapped youths as well.

About the only discernible differences between participants and enrollees, shown in Table III.3, are that high school graduates and healthy youths tend to remain in Job Corps longer and are more likely to complete a program. Therefore, more high school graduates and healthy youths will be at a center at any point in time than represented among Job Corps enrollees.

#### D. WORK HISTORY OF CORPSMEMBERS BEFORE ENROLLMENT

Job Corps is intended to serve unskilled, semiskilled, or skilled youths who have been unable to obtain gainful employment. Table III.4 summarizes the employment success of Corpsmembers in the six months prior to their enrollment. Most of the youths (approximately 85 percent) were in the labor force sometime during the six-month period. Of the 15 percent who were never in the labor force, most were discouraged workers, in

TABLE III.4

WORK HISTORY OF CORPSMEMBERS FOR SIX MONTHS PRIOR TO ENROLLMENT<sup>a/</sup>

Variable	All Enrollees	All Participants	Female Enrollees	Female Participants	Male Enrollees	Male Participants
Percentage in Labor Force	85	84	76	76	89	87
Percentage Employed	64	61	48	49	69	67
Hours Worked	323	307	221	231	359	340
Hourly Wage if Employed	\$2.81	\$2.79	\$2.61	\$2.50	\$2.86	\$2.92
Earnings <sup>b/</sup>	\$711	\$635	\$441	\$421	\$807	\$730
Percentage Ever Had a Regular Job <sup>c/</sup>	66	64	55	55	70	68

<sup>a/</sup>The data in this table cover the entire six-month period before entering Job Corps, except for the percentage ever having a regular job that covers a longer time period (see footnote b). Therefore, the percentages for being in the labor force and being employed include anyone who achieved that status anytime during the six months; hours worked is the number of hours worked by an average Corpsmember during the entire six months; and earnings covers the entire six months as well.

<sup>b/</sup>Average earnings will not equal the product of average hours worked times average hourly wage rate because of the correlation between hours worked and wages. Average earnings equals average hours times average wage plus the covariance between hours and wage rates (i.e.,  $E\{W \cdot H\} = E\{W\} E\{H\} + \text{Cov}\{W, H\}$ ). The covariance between hours and wage rates is negative for this sample (partly because wage rates were computed by dividing earnings by hours worked), so that average earnings will be less than the product of average hours worked and average hourly wages.

<sup>c/</sup>"A regular job" is defined as any job in which the youth worked at least twenty hours per week and which lasted for at least one month; "ever" refers to anytime before entering Job Corps.

school full time, and/or had family responsibilities that could not be performed if they worked.

Among Corpsmembers in the labor force, about 25 percent were not employed at any time during the entire six-month pre-enrollment period. The average amount of hours worked was approximately twelve hours per week per Corpsmember. Even among those who were sometimes employed, the average hours worked per week was fewer than twenty. The average hourly wage rate among Corpsmembers who were employed during the six-month period was only slightly above the minimum wage. The earnings were insufficient to raise youths' income above the poverty level. Finally, nearly 35 percent of all Corpsmembers never have had a job in which they worked twenty or more hours per week, and which lasted at least one month.

Corpsmembers with the worst employment histories tend to stay at the centers for a longer period of time and are more likely to complete a program than other Corpsmembers. In contrast, Corpsmembers with the best employment histories tend to leave the program early, probably because they have better opportunities in the regular labor market. Therefore, on average, participants have lower labor-force participation rates, employment rates, hours worked, wage rates and earnings, and worse job histories than enrollees. Finally, females show weaker labor-force attachments and worse employment histories than males (not unlike the rest of the U.S. population).

#### E. FAMILY STATUS AND INCOME AT ENROLLMENT

Section B of this chapter found that the degree of deprivation when Corpsmembers were growing up is similar to that which qualifies them for admission and is consistent with present targets for enrollment in Job Corps. Therefore, it is not surprising that the overall results for the questions concerning the six-month period prior to enrollment are similar

to those for the time when Corpsmembers were growing up (compare Table III.5 to Table III.2). As shown in Table III.5, however, more of the youths were living alone or with relatives other than their parents during the pre-enrollment period, which causes a few changes. For example, the average family size decreases slightly--by fewer than one person. The family sizes are still large in the six months prior to entering Job Corps, but the youths have not yet had many children of their own.<sup>1/</sup>

The incomes of most youths leave them below the poverty level. Furthermore, the incidences of welfare dependence are slightly more frequent than when growing up. In contrast, fewer Corpsmembers are in families that receive unemployment benefits than when they were growing up (no doubt this is partly because fewer youths are living with their parents). Overall, most Corpsmembers are not even able to support themselves during the six months before entering Job Corps, let alone able to help support a family.

As with the data for the year when Corpsmembers were 15 years old, the evidence from the six months prior to entering Job Corps shows that the poverty status of enrollees is not just a temporary phenomenon. Most Corpsmembers show a high degree of deprivation both in the year when they were age 15 and for the six-month period before they entered Job Corps, as well as immediately before they applied (i.e., the screening data).

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<sup>1/</sup>In searching for an appropriate comparison group (see the Interim Report of the Job Corps Evaluation, 1977), we found many young women who seemed to be eligible for Job Corps but who differed from the typical Corpsmember in that they had dependent children. The Job Corps is aware of this (see chapter II) and is trying to find better ways to serve solo-parents.

TABLE III.5

FAMILY STATUS AND INCOME FOR SIX MONTHS PRIOR TO ENROLLMENT<sup>a/</sup>

Variable	All Enrollees	All Participants	Female Enrollees	Female Participants	Male Enrollees	Male Participants
Percentage Living with Parents <sup>b/</sup>	73	73	70	70	74	75
Percentage Living with Other Relatives	12	12	14	13	11	12
Percentage Living Alone <sup>c/</sup>	12	11	14	14	12	9
Percentage Institutionalized <sup>d/</sup>	1	2	1	1	2	2
Percentage Married Sometime Prior to Enrollment	2	2	4	4	2	1
Percentage with Children	13	11	16	16	12	9
Family Size <sup>e/</sup>	5.74	5.73	5.92	5.86	5.67	5.67
Earnings of Youths	\$711	\$634	\$441	\$421	\$807	\$730
Public Transfers to Youth	\$ 45	\$ 48	\$ 65	\$ 70	\$ 37	\$ 38
Income of Youths	\$893	\$782	\$624	\$585	\$987	\$870
Percentage of Youths Below Poverty Level <sup>f/</sup>	84	85	89	91	82	83
percentage of Youth Below Poverty Level or Receiving Welfare Assistance <sup>g/</sup>	90	91	94	95	89	83
Percentage Below Poverty Level or Family Receiving Welfare Assistance	91	92	95	96	90	91
Percentage of Youth Receiving Public Transfers <sup>h/</sup>	47	46	51	47	46	45

Table III.5 (Continued)

Variable	All Enrollees	All Participants	Female Enrollees	Female Participants	Male Enrollees	Male Participants
Percentage of Families Receiving Public Transfers	59	57	61	57	58	57
Percentage of Youths Receiving Cash Welfare <sup>1/</sup>	7	8	1	12	6	6
Percentage of Families Receiving Cash Welfare	35	34	42	37	33	32
Percentage of Families Receiving Food Stamps	35	33	39	34	34	33
Percentage of Families Living in Public Housing	17	17	18	17	17	17
Percentage of Youth Receiving Unemployment Benefits <sup>2/</sup>	3	4	2	3	4	4
Percentage of Families Receiving Unemployment Benefits	14	14	9	10	16	16

<sup>a/</sup> The data in this table are based on responses to questions concerning the six-month period just before youths entered Job Corps.

<sup>b/</sup> Youths living with one or both parents are counted here. Parents are defined, as in Table III.2, to include natural parents, stepparents, and foster parents.

<sup>c/</sup> Living alone includes youths who were heads of their own families or who lived with friends.

<sup>d/</sup> Institutionalized is defined as living in a boardinghouse, halfway house, or some other institution.

<sup>e/</sup> Institutionalized youths are counted as unrelated individuals (i.e., as a family with one member) and are not included here. However, they are included as one-person families for the other variables presented below. The youths and all persons related to them by blood, marriage, or adoption and legal guardians of the youths are counted in family size.

The lower earnings for females and all participants, shown in Table III.4, results in more poverty and greater welfare dependence for these groups. As with the year when Corpsmembers were age 15, however, differences in welfare dependence are minimal between enrollees and participants. Youths who had relatively high earnings and income before entering Job Corps were more likely to leave early, and they completed a full program less often than youths who had lower earnings and income in the six months prior to entering Job Corps. This observation probably reflects the fact that youths who have the best labor-market alternatives have incentives to terminate their Job Corps training early. Therefore, at any point in time, the composition of Corpsmembers will be more heavily weighted toward weaker work histories than that shown by all enrollees.

#### F. ANTISOCIAL BEHAVIOR PRIOR TO ENROLLMENT

The reported arrest rates and hard drug usage shown in Table III.6 is well above the U.S. norm for this age cohort.<sup>1/</sup> More than one-third of all Corpsmembers were arrested sometime before entering Job Corps, and they averaged about three arrests (see the Interim Report of the Job Corps Evaluation, 1977). The arrest charges covered a diverse pattern of severity, from serious felony charges such as murder, robbery, and burglary to petty larceny and various vagrancy charges. Conviction rates for these arrests

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<sup>1/</sup> Comparison is based on known arrest rates for this age cohort from court records and the reports of drug use in the Youth in Transition and Monitoring the Future projects (see Lloyd Johnson, Drugs and American Youth, Ann Arbor: Institute for Social Research, 1973; and Drug Use Among High School Students 1975-77, the U.S. Department of Health, Education, and Welfare, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, 1977).

TABLE III.6  
 ANTI-SOCIAL BEHAVIOR<sup>a/</sup>

Variable	All Enrollees	All Participants	Female Enrollees	Female Participants	Male Enrollees	Male Participants
Percentage Ever Arrested Before Enrollment	38	32	20	14	45	40
Percentage Ever Convicted Before Enrollment	23	19	10	7	29	24
Percentage Arrested in Six Months Prior to Enrollment	14	11	5	3	17	14
Percentage Arrested in Six Months at a Job Corps Center <sup>b/</sup>	3	2	1	1	4	3
Percentage Ever Used Alcohol Before Enrollment	67	65	56	53	72	70
Percentage Ever Used Marijuana Before Enrollment	56	53	47	41	59	50
Percentage Ever Used Cocaine Before Enrollment	11	9	9	8	12	10
Percentage Ever Used Heroin or Methadone Before Enrollment	3	3	3	2	4	3

<sup>a/</sup>The data in this table are based on self-reports of arrests and drug use by youths. Research on self-reporting arrests and drug use in response to questions generally finds that some underreporting occurs (for example, compared to data on arrests from court records). The survey operations for this study attempted to minimize such underreporting by using interviewers with backgrounds similar to the youths sampled and by providing intensive interviewer training.

<sup>b/</sup>Of course, many Corpsmembers are enrolled for less than six months, while others stay at the centers up to two full years. However, the arrest rate has been adjusted to reflect a constant six-month time period.

- 377 -

are much lower but are still well above the nationwide average for this age group.

After Corpsmembers entered the program, their arrests dropped dramatically. Their arrest rate for a six-month period in Job Corps was from three to five times less than what it was for the six months before they enrolled in Job Corps. This decline in arrests for Corpsmembers is even more impressive when measured against a comparable group of youths (see the Interim Report of the Job Corps Evaluation, 1977). Arrest rates for youths from similar circumstances who did not enroll in Job Corps actually rose over the time period covered. The large reduction in criminality while in the program suggests that Corpsmembers do not pose a threat to the communities in which centers are located, even though many of them have serious criminal histories. Also, removing delinquent youths from their disruptive home environments appears to cause a large reduction in their crimes. An issue that will be addressed in future reports is whether the youths' crime rates are reestablished after they leave Job Corps.<sup>1/</sup>

Table III.6 also shows that enrollees have worse histories of criminality and drug abuse than participants, and that participants also commit fewer crimes while in the program. Corpsmembers who have relatively worse histories of arrests and drug usage and who commit crimes while in Job Corps are more likely to leave early and are less likely to complete a program. Therefore, the Corpsmembers at a center at any point in time (participants) will be less inclined toward crime and drugs than the average for all enrollees.

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<sup>1/</sup> Even this in-program reduction in crimes is of substantial value to society and will be included as a benefit in the comparative evaluation of benefits and costs being undertaken for the MPR evaluation of Job Corps.

Finally, it should be noted that female Corpsmembers report fewer arrests and convictions (between one-third and one-half as many) and less drug usage than males. As with a general population of youths in the United States, females are less likely to have been arrested, convicted, or to have abused drugs.

#### G. CONCLUSION

This chapter confirms that Job Corps has been serving disadvantaged youths with limited abilities to obtain and hold productive jobs before they enroll in the program. Approximately one-half of the Corpsmembers are under 18 at the time they enroll, and the other half are between the ages of 18 and 21. About 70 percent are male, but an effort is being made to increase female participation to 50 percent of total enrollment. Nearly 75 percent of current Corpsmembers come from minority backgrounds. Almost all Corpsmembers have experienced poverty, welfare dependence, or both. Most Corpsmembers (between 85 and 90 percent) have not completed high school, and while many (28 percent) have attempted to enlist in the military service, most Corpsmembers (85 percent) who have tried to enlist have failed to qualify. Youths who enroll in Job Corps have extremely poor work histories, as evidenced by high unemployment, few hours of work, low wage rates, and small earnings. Finally, 38 percent of Job Corps enrollees have been arrested before enrollment for a wide range of crimes other than minor motor-vehicle offenses, and 19 percent of those arrested have been convicted on such charges. These arrest rates decline dramatically (by a factor of about 3 to 5) while Corpsmembers are in the program.

IV. WHY DO YOUTHS ENROLL AND HOW DO  
THEY LEARN ABOUT JOB CORPS?

The Corpsmembers' characteristics discussed in the previous chapter describe who enrolls in Job Corps. To further our understanding of the Job Corps population, this chapter explores why these youths were motivated to enroll in the program and how they learned about it.<sup>1/</sup> This chapter concludes with an analysis of Corpsmembers' assessments of how various features of Job Corps participation compared with their prior expectations.

It is understandable that job training and education are the main motivations for enrolling, given the emphasis placed on these two components in the Job Corps program. However, other motivations, less easily categorized, are also important and need to be explored. In the next section, for instance, we find some interesting differences among race-ethnic and age subgroups.

Sources of information about the program are dominated by friends and relatives and by the employment service. The accuracy of this information concerning Job Corps is extremely important, since the degree of fulfillment of enrollees' expectations toward a program such as Job Corps can affect their attitudes toward the program and ultimately the benefits they derive from it. On average, we find that the information enrollees receive prior to joining Job Corps seems accurate regarding the training and educational aspects of the program, as well as many of

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<sup>1/</sup> Except for the last section, this chapter focuses on Job Corps enrollees and does not consider the participant perspective. See footnote 1 on page 6 for more details on the distinction between enrollees and participants.

the social aspects. However, the information seems less accurate about the residential aspects, such as the food served, pay allowance, location of centers, and so on. These results are discussed in detail in the remainder of the chapter.

#### A. REASONS FOR ENROLLING

In the Job Corps baseline interview, Corpsmembers were asked why they had enrolled in the program. Many gave several reasons. However, as the first column in Table IV.1 shows, 71 percent gave a job- or job-training-related response, while 50 percent gave an education-related response. Since the provision of vocational skills training and education is the prime purpose of Job Corps, the number who gave these training-related responses is not surprising. Of the approximately one-third of the sample who gave other reasons for enrolling, 5 percent indicated that they enrolled because of problems with the law, either actual or anticipated; 29 percent gave such miscellaneous reasons as problems at home, boredom, personal considerations, or self-improvement.

Increasing attention has been focused on the sexual, racial/ethnic, and age composition of the Job Corps population. These demographic subgroups are likely to have different reasons for enrolling, and it would be useful to become aware of and understand these differences. However, caution must be used in imputing causality: the results are derived from simple cross-tabulations that do not control for the effects of other demographic factors and background characteristics on enrollment. Thus, the differences among groups must be considered as simply the total differences that exist among enrollees, including the indirect effects of correlated explanatory variables.

TABLE IV.1

## CORPSMEMBERS' REASONS FOR ENROLLING IN JOB CORPS

Reason	Sample Response as a Percent <sup>a/</sup>								
	All Enrollees	Sex		Race/Ethnicity				Age	
		Male	Female	White	Black	Hispanic	American Indian	16-17	18-22
Job Related <sup>b/</sup>	71	72	68	77	68	79	71	64	78
Education Related <sup>c/</sup>	50	49	52	45	50	58	47	58	42
Legal Concerns <sup>d/</sup>	5	6	1	5	5	5	3	6	3
Other <sup>e/</sup>	29	29	30	30	30	25	28	31	27

<sup>a/</sup> Column totals can be greater than 100 percent, since respondents could give more than one reason for enrolling.

<sup>b/</sup> Includes "job training," "to get a job," and "could not find work."

<sup>c/</sup> Includes "for education or GED" and "to get away from regular school."

<sup>d/</sup> Includes "judge or court decision" and "to stay out of trouble."

<sup>e/</sup> Includes "to get away from home," "nothing else better to do," "for personal reasons," "for self-improvement," "for the pay allowance," "to enter the military," and "health reasons."

Future analysis may help disentangle the interrelated effects and establish causality.

### 1. Sex

The basic pattern of response to reason for enrolling is the same for both sexes, as it is for all demographic subgroups. However, some differences do exist. The largest difference in the reason for enrolling involves problems with the law: although the number giving this response is small, males are over five times more likely to enroll for this reason than females. (Recall from chapter III that males are two to three times more likely than females to have been arrested or convicted.) Males are slightly more likely to be motivated by the job training aspects of the program; females are less likely to be motivated by the educational aspects of Job Corps. Females enter Job Corps with more education on average than males (see chapter III) and are more likely to desire additional education while in Job Corps.

### 2. Race/Ethnicity

The only clear pattern that appears among the racial/ethnic groups is that Hispanics gave both job training and education as their reasons for enrolling more often than did members of the other groups. Blacks are the least likely to suggest a job-training motivation for enrolling, and whites are the least likely to suggest that education is the reason. Furthermore, American Indians are the least likely to enroll because of problems with the law, and the differences among the other race/ethnic groups are negligible as far as giving problems with the law as a reason for entering Job Corps.

### 3. Age

The most significant differences that emerge are among age groups. To illustrate this, we constructed two age categories--the younger group for those 16 and 17 years of age at enrollment, and an older group for those over 17 years of age at enrollment. The older group was distinctly more job-training-oriented than the younger, while the younger was much more education-oriented. The younger group was also more likely to enroll because of problems with the law.

### 4. Summary

Corpsmembers' motivations for enrolling in Job Corps are dominated by the job training and educational aspects of the program. As expected, given the focus of Job Corps, no other reasons for enrolling come close to either job training or education. Perhaps the most interesting patterns that emerge from this analysis are the particularly high level of both training and education motivation for enrolling exhibited by Hispanics, and the differences in motivational factors between younger Corpsmembers (for education) and older Corpsmembers (for job training).

### B. SOURCES OF INFORMATION ABOUT JOB CORPS

The next step in understanding the Job Corps population involves the sources of enrollees' information about the program. Although data on the official referral agencies are collected, much less is known about the sources of information as perceived by Corpsmembers. Furthermore, if there is a sufficient variation among Corpsmembers in their sources of information, it would be possible to analyze differences in the

expectations and evaluations of the program between the sources. This would identify the sources that are more efficient than others in screening and preparing enrollees, and it may suggest ways of improving these processes.

1. Where Corpsmembers First Heard About Job Corps

Corpsmembers were initially asked where they first heard about Job Corps. The results for the major response categories (i.e., with over 1 percent of the sample) are summarized in Table IV.3. Friends and relatives clearly dominate all categories, with almost two-thirds of the entire sample reporting this category as their first source of information. The employment service, as well as advertisements and news stories, are far behind as the second and third most common sources. Other sources are reported by only small proportions of our sample.

Sex. Some interesting differences in the first source of information are evident between the sexes. Although the majority of both sexes first heard of Job Corps from friends and relatives, males are more likely to have first heard from this source than are females. This may be because most ex-Corpsmembers are males, and there may be more social contact between members of the same sex. Males are also more likely to have first heard about Job Corps through parole or probation officers and through welfare offices. The former follows logically from the finding that males are more likely both to have had contact with the judicial system and to have been motivated to enroll because of problems with the law. Females, on the other hand,

TABLE IV.2

## WHEF CORPSMEMBERS' FIRST HEARD ABOUT JOB CORPS

Source <sup>b/</sup>	Sample Response as a Percent <sup>a/</sup>								
	All Enrollees	Sex		Race/Ethnicity				Age	
		Male	Female	White	Black	Hispanic	American Indian	16-17	18-22
Friends/Relatives	63	65	60	46	71	69	60	66	61
Employment Service	17	17	16	26	12	19	18	12	21
Advertisements/News Articles	11	9	17	17	11	3	8	6	16
School	5	5	5	4	6	3	8	7	3
Parole/Probation Officer	4	5	2	7	3	4	3	7	2
Welfare Office	2	2	1	2	1	1	3	2	1

<sup>a/</sup> Column totals are greater than 100 percent, since some respondents name more than one source.

<sup>b/</sup> Each of the other sources are associated with fewer than 1 percent of the enrollee sample. These include WICS, unions, Job Corps recruiters, Job Corps centers, judges and courts, and community centers.

are much more likely than males to have first heard through advertisements and news stories. Both sexes are equally likely to have first heard through the more formal sources--the employment service and schools.

Race/Ethnicity. Among these groups, blacks and, to a lesser extent, Hispanics are more likely to have first heard about Job Corps through informal sources--friends and relatives. Whites, on the other hand, are more likely to have first heard through the main referral agency--the employment service: they are over twice as likely to have first heard through this source than are blacks. Whites are also much more likely to have first heard from such different sources as advertisements or news stories and parole or probation officers. Hispanics seem particularly underserved by advertisements and news stories, perhaps due to language problems. American Indians are more likely than the other groups to have first heard through schools and welfare offices.

Age. Younger enrollees are at least twice as likely to have first heard about Job Corps from schools, parole or probation officers, and welfare offices than older enrollees. They are also slightly more likely to have first heard through friends and relatives. Older enrollees are more likely to have first heard from the employment service and from advertisements and news stories.

Summary. While the same basic pattern emerges for all demographic subgroups, some distinctions can be discerned. In general, whites and females rely more than other enrollees on a variety of sources. While the other subgroups tend to be tied more to their networks of friends and relatives, they also rely on other sources to varying degrees.

## 2. Where Corpsmembers Received Most of Their Information About Job Corps

Corpsmembers were also asked where they received most of their information about what Job Corps would be like. This question, the results for which are summarized in Table IV.3, is particularly relevant to expectations. The employment service is the major source of information, although this category is identified as the source of most information by only about one-half of the enrollees. Friends and relatives are the other major source of information. Other categories that are important as a first source of information about Job Corps-- including advertisements and news articles, schools, and parole and probation officers--are less important as sources of most information. Other categories, particularly Job Corps recruiters (who could not be placed in the other categories), emerge as important sources of most information, although they trail the first two categories by a large margin.<sup>1/</sup>

Sex. Few noteworthy differences exist between the sexes in their sources of most information. Males are somewhat more likely than females to have obtained most of their information from friends and relatives, as well as from parole or probation officers. Females are somewhat more likely to have obtained most of their information from Job Corps recruiters.

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<sup>1/</sup> The "Job Corps recruiter" category was used only when more specific information was not available. For example, if the respondent said that a recruiter was from an employment service office, the "employment service" option was coded. Most of the responses in the "Job Corps recruiter" category probably refer to personnel in the employment service.

TABLE IV.3

## WHERE CORPSMEMBERS RECEIVED MOST OF THEIR INFORMATION ABOUT JOB CORPS

Source <sup>b/</sup>	Response as a Percent <sup>a/</sup>								
	All Enrollees	Sex		Race/Ethnicity				Age	
		Male	Female	White	Black	Hispanic	American Indian	16-17	18-22
Employment Service	49	49	49	59	42	64	61	45	53
Friends/Relatives	39	40	37	26	48	31	27	42	37
Job Corps Recruiter	9	8	11	13	8	2	11	9	9
School	3	3	2	2	3	2	2	4	1
Parole/Probation Officer	2	3	1	3	2	5	1	4	1
Community Center	1	1	2	1	2	1	3	2	1
Job Corps Center	1	1	2	2	1	1	2	1	2
Welfare Office	1	1	1	2	1	1	1	2	1

<sup>a/</sup> Column totals are greater than 100 percent, since some respondents name more than one source.

<sup>b/</sup> Each of the other sources are associated with fewer than 1 percent of the enrollee sample. These include WICS, Gatehouse, unions, judges and courts, advertisements, and news articles.

Race/Ethnicity. The striking feature among these demographic subgroups is the reliance by blacks on information from friends and relatives. While the employment service is an important source of most information for blacks, this category is much less important than it is for the other demographic subgroups. (Also, blacks are the only group for which the employment service is a less important source than friends and relatives.) Although schools are far less substantial sources of information, they are more important for blacks than for the other racial/ethnic subgroups. Hispanics lead other groups in obtaining most of their information from the employment service as well as from parole or probation officers. They are relatively unlikely to have received most of their information from Job Corps recruiters, while whites and American Indians are the most likely to have received their information from these sources.

Age. Relative to older enrollees, younger enrollees are more likely to have received most of their information from friends and relatives, schools, parole or probation officers, community centers, and welfare offices. Older enrollees are more likely to have received most of their information from the employment service.

Summary. Although differences in sources of most information exist among demographic subgroups, the employment service and the friends and relatives categories together dominate this area of inquiry. One implication is that, excluding friends and relatives--sources over which government officials can exercise little influence--there is very little variation in Corpsmembers' sources of information. While this finding is not

necessarily surprising, it does suggest that there is little policy value in investigating the relative impact of alternative agencies on Corpsmembers' expectations.

### C. ACCURACY OF PRIOR INFORMATION

In the final set of questions in this series, Corpsmembers were asked whether different characteristics of their Job Corps experience were "better," "about the same," or "worse" than they had expected prior to enrollment. The concern is that adverse experiences with regard to expectations may detract from program benefits. To isolate such experiences, we have summarized in Table IV.4 the sample response for each program characteristic as the percent who rated each "about the same" as or "better" than expected--the percent who gave a positive response. The remaining sample members rated the respective characteristics "worse than expected," a negative response.

The first column shows the percent of our entire sample of enrollees who gave positive responses to the various program characteristics. The first set of characteristics--those pertaining to job training and education--do particularly well. Approximately 90 percent of all enrollees were not disappointed with the actual training received, the way they were treated by instructors, or by the reading and other education courses. Somewhat fewer were not disappointed with the types of job training from which they could choose. This lower positive response is no doubt the result of the problem of matching enrollees' interests with available slots.

Enrollees also responded positively to the second set of characteristics--those pertaining to social aspects of the program--but

TABLE IV.4

## CORPSMEMBERS' EVALUATION OF CENTER CHARACTERISTICS COMPARED WITH PRIOR EXPECTATIONS

Evaluation of ...	Percent Who Rated the Characteristics "About the Same" Or "Better" Than Expected									
	All Enrollees	Sex		Race/Ethnicity				Age		All Participants
		Male	Female	White	Black	Hispanic	American Indian	16-17	18-22	
<u>Job Training and Education</u>										
types of job training you can choose from	82	83	78	80	81	87	81	83	83	84
actual training received	89	89	88	87	89	93	93	88	90	91
way you are treated by instructors and teachers	91	92	89	95	88	96	93	90	92	91
reading and other education courses	90	89	91	87	90	93	91	89	90	90
<u>Social Characteristics</u>										
recreational facilities	83	84	82	81	82	91	89	83	83	82
way you get along with other Corpsmembers	89	89	91	91	88	93	85	90	89	93
social life	79	80	76	79	76	90	86	80	79	81
<u>Residential Characteristics</u>										
food	39	51	35	52	43	47	59	45	48	40
living quarters	77	78	72	78	75	83	77	75	78	78
where center is located	63	64	59	70	55	74	70	61	63	63
number of times you are able to go home for a visit	67	67	66	69	65	67	67	66	68	68
pay allowance	51	51	52	57	45	66	56	50	53	53

somewhat less often than they did to the first set. However, the response was still overwhelmingly positive, with, in the worst instance, 21 percent of enrollees expressing disappointment with the social life.

Finally, enrollees gave a positive response much less often to the last set of characteristics--those pertaining to the residential aspects of the program. A large majority were not disappointed with the living quarters, center locations, and number of home visits; however, nearly half rated the pay allowance worse than expected, and 61 percent rated the food served worse than expected.

#### 1. Sex

Males generally view Job Corps more positively relative to prior expectations than do females, although the differences are large only for the evaluations of food and living quarters. Females respond slightly more positively than males to reading and other education courses, the interaction with other enrollees, and pay allowance.

#### 2. Race/Ethnicity

Hispanics, who as a group are perhaps the most highly motivated of the enrollees (see Table IV.1), are also the most likely to respond positively to program characteristics. In fact, they lead the other racial and ethnic groups in all categories except food, center location, and home visits. As a group, whites are the most disappointed with job training and education characteristics, while blacks are the most disappointed with residential characteristics.

### 3. Age

A distinct age pattern exists for enrollees' evaluation of program characteristics compared with prior expectations. Older enrollees respond more positively than the younger group to job training and education and to residential characteristics. Younger enrollees, on the other hand, respond slightly more favorably to the social aspects of center life.

### 4. Program Participants

The discussion in this chapter has thus far focused on the program evaluations of youths who enroll in Job Corps. Of course, Job Corps participants at a point in time might give systematically different responses. This could be expected because the participant sample would include relatively more completers.<sup>1/</sup> The last column in Table IV.4 shows the evaluations of all participants. This can be compared directly with the first column--the evaluations projected to enrollees. It should be no surprise that there is a positive correlation between the proportion of completers in the sample and positive responses to program characteristics (i.e., more positive responses among the participant sample). Some of the largest differences are for the residential and social aspects of the program, although differences also exist for the job training component. The differences that exist for demographic subgroups among participants are virtually the same as those that exist among the subgroups of enrollees. Consequently, they are not presented here. No causality can be inferred from these results, since

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<sup>1/</sup> See the explanation in footnote 1 on page 6.

we do not know whether less disappointment (i.e., better information) leads to longer program participation, or whether longer participation due to unrelated reasons blurs memories of prior expectations and results in better evaluations.

#### 5. Summary

Among all subgroups, Corpsmembers rate the overall Job Corps program at least as good as their prior expectations. They are most likely to evaluate the job training and education positively, followed by the social aspects, and concluding with the residential aspects. Previous allegations that youths are misinformed by Job Corps recruiters and screeners (see Levitan and Johnston, 1975) do not hold true for the current program. The most positive evaluations relative to prior expectations are given by Hispanics, males, and older youths among the enrollees, and by program completers.

#### D. CONCLUSION

An important part of the baseline interview focused on Corpsmembers' reasons for enrolling in Job Corps, their sources of information about the program, and the accuracy of this prior information. Generally, the results are reassuring. Corpsmembers are overwhelmingly motivated to enroll because of the training and educational opportunities. Sources of information are dominated by friends and relatives and by the employment service. The former are by far the most important first source of information, as reported by nearly two-thirds of the enrollees. The latter is the most important source of most information, although

friends and relatives are also important. Finally, the prior information Corpsmembers receive about the program is quite accurate: except for the food and pay allowance, only a small proportion of enrollees are disappointed with each program characteristic. Corpsmembers seem to obtain accurate information about the program and do not appear to be misinformed, as has previously been alleged.

The demographic subgroup trends are not always clear or convincing because the effects of other sample characteristics are not held unchanged as subgroups are analyzed. However, some strong trends emerge. Among the racial and ethnic groups, Hispanics are the most highly motivated to enroll for the training and educational opportunities, and they are also the least disappointed with most aspects of the program. Relative to younger enrollees, older enrollees are more likely to enroll for job-related reasons, less likely to enroll for education-related reasons, and less likely to be disappointed with both aspects of Job Corps. Furthermore, they are more likely to rely on the main formal information source--the employment service--and less likely to rely on informal sources--friends and relatives. Finally, Corpsmembers who stay in the program longer tend to be less disappointed with almost all program characteristics.

## CHAPTER V

### HOW DO CORPSMEMBERS RATE THE PROGRAM?

The previous chapter concluded with a discussion of the accuracy of the information Corpsmembers received about Job Corps prior to enrolling. Specifically, they were asked to evaluate their program experience with regard to their prior expectations. This leads logically to the topic of this chapter: Corpsmembers were asked to rate their program experience, both in terms of specific program characteristics and in terms of their overall feelings about Job Corps.<sup>1/</sup>

Corpsmembers were asked to rate the program in two ways. First, they were asked to rate their overall feelings in terms of four levels of satisfaction. The choices of answers were designed to give Corpsmembers a meaningful range of response selections, while permitting some aggregation of response categories for statistical analysis. Second, sample members were asked to rate the various aspects of their Job Corps experience. Here, they were given only three choices--"good," "OK," and "not good." These choices were designed to funnel respondents toward the center position (OK), while allowing them to move to the positive (good) or negative (not good) positions when they felt particularly strongly about a Job Corps characteristic. This permits us to highlight the particularly good and bad features of the program from the Corpsmembers' point of view.

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<sup>1/</sup>The two evaluations of Job Corps, the first focusing on the accuracy of prior information and the second eliciting a more general rating, were kept independent of each other by placing questions for the first at the start of the baseline interview and questions for the second at the end. Thus, they were separated by approximately thirty minutes of other questions.

## A. PROGRAM RATING OF THE ENTIRE SAMPLE

As with the descriptions of Corpsmembers in chapter III, the program ratings will be viewed from two perspectives: enrollees and participants at a point in time.<sup>1/</sup> Ratings for both perspectives are summarized in Table V.1. The first set of columns shows enrollees' evaluations of center characteristics, and the second set shows participants' evaluations. The overall evaluation of Job Corps by the two groups is shown at the bottom of the table.<sup>2/</sup>

As the "Overall Evaluation of Job Corps" illustrates, enrollees are generally satisfied with their program experience. Sixty-four percent of all enrollees said they were satisfied with Job Corps, while over 33 percent of that group said they were very satisfied. Only 11 percent claimed to be not at all satisfied with the program. Of course, this summary rating weights the different program characteristics by the subjective importance of each to Corpsmembers. The ratings of specific characteristics allow us to make our own judgments about the success of Job Corps as measured by enrollees' in-program experiences.

Enrollees gave their most positive ratings to the job training and education offered by Job Corps. At least 50 percent of our sample gave a positive rating to all such characteristics, and, with a single exception, fewer than 10 percent gave a negative rating. This exception is

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<sup>1/</sup>For an explanation of the differences in these two perspectives, see footnote 1 on page 6.

<sup>2/</sup>The two sets of ratings are actually derived from the same data. The basic data are for a cross-section of 5,133 Job Corps participants who were given the baseline interview. This is our participant sample. The enrollee sample was developed by reweighting the participant sample to reflect a cross-section of youths who enroll in the program. The enrollee sample includes only the 2,885 original sample members for whom we had termination status by the beginning of the follow-up interviewing. See the Appendix for more details.

TABLE V.1

## CORPSMEMBERS' RATINGS OF JOB CORPS: ALL CORPSMEMBERS

Evaluation of . . .	Sample Response as a Percent					
	All Enrollees			All Participants		
	Good	OK	Not Good	Good	OK	Not Good
<u>Job Training and Education</u>						
types of training you can choose from	52	35	13	55	33	12
actual training received	57	35	8	62	32	6
way you are treated by instructors and teachers	54	38	8	58	35	7
reading and other education courses	50	42	8	53	40	7
<u>Social Characteristics</u>						
recreational facilities	41	46	13	42	44	14
way you get along with other Corpsmembers	49	43	8	52	42	6
social life	33	52	15	35	51	14
<u>Residential Characteristics</u>						
food	12	38	50	12	38	50
living quarters	34	50	16	35	49	16
where center is located	28	36	36	29	36	35
number of times you are able to go home for a visit	27	36	37	30	35	35
pay allowance	13	37	50	15	37	48

## OVERALL EVALUATION OF JOB CORPS

	Very Satisfied	Fairly Satisfied	Not Too Satisfied	Not At All Satisfied
All Enrollees	22	42	25	11
All Participants	27	44	22	7

for the types of training from which enrollees could choose, and, as was mentioned in the previous chapter, this may reflect the problem of matching enrollees' interests with available slots. These results are reassuring, since the provision of training and education is the prime purpose of Job Corps.

Enrollees are slightly more neutral about the social aspects of their Job Corps experience. There are distinctly fewer positive responses, with a range of nearly one-half of the sample rating the interaction with other enrollees as "good" to only one-third rating the social life as "good." However, on average, only slightly over 10 percent gave a negative rating to the social aspects. Thus, the most important shift from the training and education ratings is the jump from the positive to the neutral position.

Residential characteristics present a totally different picture. Except for living quarters, which has been given a somewhat positive rating, the vast majority of enrollees gave these characteristics neutral to negative ratings. As might be expected, the extreme cases are for food and pay allowance, for which only 12 to 13 percent of enrollees gave positive ratings, while 50 percent gave negative ratings.

The program ratings change in a predictable manner when we shift our attention from the enrollee to the participant sample. Participants' overall evaluation of Job Corps is more positive than that of enrollees. Seventy-one percent of our participant sample reported that they were satisfied (with 38 percent of those, or 27 percent of the entire group, reporting that they were very satisfied). Only 7 percent of the participant group claimed to be not at all satisfied.

An interesting pattern forms when this higher level of satisfaction is sought in specific program characteristics. Participants are distinctly more likely than enrollees to give a positive rating to the job-training and education-program components and less likely to give a neutral or negative rating. While there is some evidence of this trend among social and residential characteristics, it is much less clear. Therefore, the strongest correlation is between tenure in the program and satisfaction with the job training and education. As discussed above, however, it is inappropriate to ascribe causality.

#### B. PROGRAM RATINGS OF SUBGROUPS

There are many things that affect how Corpsmembers rate Job Corps, and many can be attributed to either the demographic characteristics of the group or features of the center. The most important of the former are sex, race/ethnicity, and age. The most important of the latter are center type (i.e., civilian conservation centers and contract centers), center size, center location (i.e., city and noncity), center operator (i.e., public or government and private), and coeducational status of the center.

A problem that is encountered in a simple comparison among subgroups is that the division into subgroups may be confused by correlations among characteristics, thus making it difficult to determine which factor is actually responsible for differences within a set of subgroups. This problem becomes more acute when we consider the example of the high correlation among centers that are civilian conservation centers (type), small (size), noncity (location), publicly operated (operator), and noncoed (coeducational status).

With some compromises in the subgroups considered, it is possible to correct for these intercorrelations. In particular, analysis of variance was used to estimate subgroups' evaluations of Job Corps, while holding constant the effects of all other relevant variables.<sup>1/</sup> For simplicity, we converted the range of four responses of the overall rating into a single binary variable. If a Corpsmember reported to be "very satisfied" or "fairly satisfied," the variable was given a value of one, indicating that the respondent was satisfied. If the answer was "not too satisfied" or "not at all satisfied," the variable was given a value of zero, indicating that the respondent was not satisfied.<sup>2/</sup>

The results of this analysis are summarized in Table V.2 for both the enrollee and participant samples. The sample means at the top of the table indicate the percent of the respective groups that are satisfied with Job Corps. They indicate that 64 percent of enrollees and 71 percent of participants are satisfied. These are the same numbers that are presented in the previous section of this chapter. The numbers associated with each subgroup identifier are the percent of that subgroup that are satisfied for the enrollee and participant samples, respectively (after separating out the effects of all the other variables in the table). Thus

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<sup>1/</sup> Note that in order to obtain estimates for a particular center or group of centers, all of the features of that (those) center(s) need to be included. For example, for civilian conservation centers the percentages in Table V.1 for Civilian Conservation Type, Small Size, Non-City Location, Public Operator, and Non-Coed Status would have to be averaged.

<sup>2/</sup> Because of the great number of subgroups that are suggested by the demographic characteristics and the center features, we have condensed this discussion by omitting subgroup evaluations of specific center characteristics. As a rule, differences among subgroups in this regard are adequately reflected in differences among subgroups' overall evaluation of the program. For evidence of this, see the more complete discussion of subgroup evaluations in the Interim Report of the Job Corps Evaluation, 1977.

TABLE V.2

## CORPSMEMBERS' RATINGS OF JOB CORPS: SUBGROUPS

(Percent of All Enrollees Who are Satisfied: 64)  
 (Percent of All Participants Who are Satisfied: 71)

Subgroup	Percent of Subgroup Who Are Satisfied	
	All Enrollees	All Participants
<u>Demographic Characteristics</u>		
Sex		
Male	65	72
Female	62	70
(F-value)	(1.42)	(1.41)
Race/Ethnicity		
White	69	77
Black	60	67
Hispanic	74	79
American Indian	74	73
(F-value)	(12.41)**	(19.89)**
Age		
16-17	63	71
18-22	66	71
(F-value)	(2.47)	(0.09)
<u>Center Features</u>		
Type		
Civilian Conservation	59	66
Contract	67	73
(F-value)	(3.08)	(6.21)*
Size		
Small	65	74
Medium	69	74
Large	61	65
(F-value)	(3.60)*	(7.99)*
Location		
Non-City	64	70
City	69	75
(F-value)	(2.45)	(4.56)*
Operator		
Public	68	76
Private	60	67
(F-value)	(9.82)**	(26.50)**
Coed Status		
Non-Coed	63	70
Coed	66	72
(F-value)	(1.05)	(0.33)

\*Statistically significant at the 95 percent level of confidence.

\*\*Statistically significant at the 99 percent level of confidence.

the first figure indicates that 65 percent of the male enrollee group reported that they were satisfied with Job Corps, somewhat more than the average of all enrollees. Finally, the numbers in parentheses are the F-values, each of which shows whether the hypothesis that there are no differences within a category can be rejected at a stated level of confidence. The first such number, 1.42, for the "sex" category of the enrollee sample indicates that while differences appear between males and females, they are not distinct enough to reject the hypothesis that the two groups have the same overall evaluations of Job Corps. That is, there is a reasonable probability that the differences are due to chance rather than to systematic population differences. The next such number, 12.41, for the "race/ethnicity" category indicates that the differences within this category do reflect systematic differences at the 99 percent level of confidence.

#### 1. Characteristics of Corpsmembers

Of the three demographic characteristics of Corpsmembers that are investigated, only the race/ethnicity subgroups suggest significantly different levels of satisfaction when other influences are held constant. Both sex and age appear to affect satisfaction: among both the enrollee and participant samples, males appear to be more satisfied than females, and older youths are more satisfied than younger youths. However, the group differences are so small, relative to the variability in response, that we cannot reject the hypothesis of no differences.

Among the racial and ethnic groups, Hispanics were the most satisfied with Job Corps, while blacks were the least satisfied. The gap between these two extremes is 14 percentage points for the enrollee sample, and 12

percentage points for the participant sample, and the racial/ethnic differences are statistically significant. Hispanics, blacks, and whites follow the overall pattern of increased satisfaction as we move from the enrollee to the participant sample. However, American Indians exhibit slightly less satisfaction. This apparent anomaly could be the result of imprecise estimates due to the small numbers of American Indians in the samples (they represent 6 percent of enrollees and 4 percent of participants).

## 2. Center Features

In contrast to the demographic characteristics, most center features have a significant effect on satisfaction, at least for participants. After we control for other effects, interesting trends appear. First, Corpsmembers in contract centers are more satisfied with Job Corps than their counterparts in civilian conservation centers. However, this difference is significant only for the participant sample. Second, Corpsmembers in medium- and small-size centers are significantly more satisfied than those in large centers. A difference between medium and small centers is evident only for enrollees. Third, centers located in cities are associated with higher levels of satisfaction than are those not located in cities, but the pattern is significant only for participants. Fourth, Corpsmembers in centers run by public (i.e., governmental) operators are significantly more satisfied than those in centers run by private operators. Finally, there are no significant differences between sample members in noncoed and those in coed centers, a somewhat surprising finding.

### C. CONCLUSION

When asked to report their overall feelings about Job Corps, Corpsmembers generally reported that they were satisfied with the program. As might be expected, a greater proportion of participants than enrollees reported satisfaction (71 versus 64 percent). Furthermore, only 11 percent of the enrollees and 7 percent of the participants expressed extreme dissatisfaction.

When asked to evaluate specific center characteristics, Corpsmembers reported that they were most satisfied with the job training and education. In contrast, they were the least satisfied with the residential aspects of center life. When we compare enrollees and participants on their evaluations of program characteristics, we find that the greatest differences between samples are in their evaluation of job training and education: participants are more positive about this set of characteristics.

The final analysis was oriented toward the reactions of specific subgroups of Corpsmembers, holding constant the effects of other subgroups. At the most general level, variations among demographic characteristics are less related to satisfaction ratings than are variations in center features. Relative to others in the respective subgroups, the greatest satisfaction was reported by Hispanics and by Corpsmembers in centers characterized by contract type, medium size, located in cities, and run by public operators. Aside from public operator, the center features describing the most popular type of center correspond closely to those being emphasized in the current expansion of Job Corps.

THE NONECONOMIC IMPACTS  
OF THE JOB CORPS

Prepared by: Abt Associates

For: Office of Research and Development  
Employment and Training Administration

OFFICE OF YOUTH PROGRAMS

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- 407 -

415

## OVERVIEW

The Job Corps provides a structured environment aiming to positively influence all aspects of the lives of enrollees. The effects of the residential experience, recreation, health care, counseling and personalized attention will not all be reflected in employment and earnings changes any more than the college experience is limited to the income increments which result.

The Noneconomic Impacts of the Job Corps seeks to assess behavioral, attitudinal and health changes of corpsmembers. The study was initially intended to develop a battery of tests to measure noneconomic benefits. The small sample of Job Corps applicants and enrollees which were surveyed (489), and the lack of a stratified sampling, precludes generalization to the Job Corps universe.

For this sample, however, it appears that many changes occur for those who stay in the Job Corps for six months. They improve in job seeking skills, job satisfaction, attitude toward authority, self-esteem, criminal justice system involvement, family status, use of leisure time and nutrition behaviors. The program appeared to be even more beneficial to women than to men according to the noneconomic measures. Dropouts experienced few gains.

There are also some important areas where the Job Corps did not help. For instance, knowledge of and attitude toward work improved more among those who did not enter Job Corps. Apparently, labor market experience is a better teacher of some things than classroom instruction.

The evidence raises more questions than it answers. It illustrates that the maturation and learning process is complex, and that it is difficult to isolate the ways in which Job Corps affects its enrollees. At the most general level, the program appears to foster more rapid maturation and discipline, while helping to ameliorate the negative influences which frequently impact at this age.

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CONTENTS		<u>Page</u>
	EXECUTIVE SUMMARY	411
1.0	INTRODUCTION	418
2.0	SUMMARY OF FINDINGS IN THREE BASIC AREAS OF STUDY	423
2.1	Job Related Non-Economic Impacts	424
2.1.1	Knowledge of Work	425
2.1.2	Attitude Toward Work	425
2.1.3	Interest in Work	428
2.1.4	Employment Status	428
2.1.5	Summary - Job Related Non-Economic Impacts	429
2.2	Social-Attitudinal Impacts	430
2.3	Health and Educational Impacts	432
2.4	Summary of Findings	434
3.0	FINDINGS ON JOB-RELATED NON-ECONOMIC IMPACTS	436
3.1	Knowledge of Work	438
3.1.1	Job Seeking Skills Scale	438
3.1.2	Job Holding Skills Scale	440
3.1.3	Job Knowledge Scale	442
3.1.4	Summary	442
3.2	Attitudes Toward Work	444
3.2.1	Work-Relevant Attitudes Scale	444
3.2.2	Work Ethic Scale	446
3.2.3	Lack of Job Skill Confidence Scale	447
3.2.4	Summary	449
3.3	Interest in Work	449
3.3.1	Job Satisfaction	450
3.3.2	Vocational Aspirations	457
3.3.3	Summary - Interest in Work	460
3.4	Employment Status	464
3.4.1	Employment Status at Posttest	464
3.4.2	Amount of Time Employed Since Job Corps	465
3.4.3	Relationship of Employment Variables to Outcome Measures	467
3.5	Summary	469
4.0	FINDINGS ON SOCIAL-ATTITUDINAL IMPACTS	470
4.1	Attitude Toward Authority	472
4.2	Self-Esteem	473
4.3	Involvement with the Criminal Justice System	475
4.3.1	Legal Status Items - Males	478
4.3.2	Legal Status Items - Females	480
4.3.3	Criminal Justice System Involvement as a Factor in Outcome Scores	483

	<u>Page</u>	
4.4	Family Relations	487
	4.4.1 Behavioral Items	487
	4.4.2 Attitudinal Items	490
	4.4.3 Conclusions	494
4.5	Leisure Time	495
4.6	Summary: Social-Attitudinal Impacts	500
5.0	FINDINGS ON HEALTH AND EDUCATIONAL IMPACTS	501
5.1	Health Information	503
	5.1.1 Changes in Health Information Scale Scores	503
	5.1.2 Impact of Job Corps on Specific Content Areas	505
	5.1.3 Summary	508
5.2	Health Care and Health Habits	509
	5.2.1 Pre and Post Items	509
	5.2.2 Posttest-Only Items	520
	5.2.3 Conclusions	523
5.3	Nutrition	524
	5.3.1 Selection of a Balanced Diet	524
	5.3.2 Ratio of "Junk Food" to Wholesome Food in the Diet	527
	5.3.3 Changes in Nutritional Information	527
	5.3.4 Conclusions	529
5.4	Educational Attainment	529
	5.4.1 Level of Education at Entry Into Job Corps	529
	5.4.2 Receipt of GED in Job Corps	531
	5.4.3 Student Status at Posttest	532
	5.4.4 Conclusions	534
5.5	Summary: Health and Educational Impacts	535
6.0	THE HEALTH SERVICES SUBSTUDY	536
6.1	Background	536
6.2	Data Collection Methodology	538
	6.2.1 Data Points	539
	6.2.2 Data Collection Forms	539
6.3	The Provision of Health Care and Health Education at Job Corps Centers	540
	6.3.1 Health Education	545
	6.3.2 Health Care	546
6.4	Analysis of Findings of the Health Services Substudy	546
	6.4.1 Prevalence Findings	547
	6.4.2 Incidence Findings	549
	6.4.3 Comparison Among Centers of Health Care Delivery	552
6.5	Conclusions	556
	APPENDIX A: STUDY DESIGN AND METHODOLOGY	559
	APPENDIX B: BASELINE DATA ON THE THREE GROUPS	562

## EXECUTIVE SUMMARY

The purpose of this study was to develop a battery of tests to measure the non-economic benefits of the Job Corps and to apply these tests to a limited (and not necessarily representative) sample of 489 young men and women in two Job Corps groups and a comparison group. Respondents in the study were between the ages of 16 and 22, 85 percent black, and 87 percent urban.

### Summary

In many ways and for many youth, Job Corps is having a substantial impact. Benefits in the areas of health and crime reduction, in particular, were revealed by the study. In all areas of study, benefits accrued more strongly to those who remained in the program at least three months. These findings imply that the disadvantaged Job Corps enrollees are receiving not only vocational training, but also health and social services which benefit the larger society as well as the youth themselves. Crime reduction is an obvious example. The treatment of contagious diseases that might not have been identified without the Job Corps physical examination is another example of the personal and societal benefits of Job Corps. The fact that enrollees are learning about good nutrition will not only benefit their health but the health of their families in later life.

### Results of the Study

In this study Job Corps had a positive impact on a number of non-economic outcomes. Twenty-one different outcomes were measured. Those who remained in Job Corps at least three months improved on eight different outcomes, compared to two for those who dropped out and five for those who did not enroll. Three months or more in Job Corps led to improvement in the following areas:

- Job Seeking Skills
- Job Satisfaction
- Attitude Toward Authority

- Self-Esteem
- Criminal Justice System Involvement
- Nutrition Behavior (2 scales)
- Family Relations
- Leisure Time

Job Corps provided benefits in all three areas of non-economic impacts studied: (1) Job-Related Impacts, (2) Social-Attitudinal Impacts, and (3) Health and Educational Impacts.

#### Specific Findings

● Crime Reduction: Job Corps enrollees had less criminal justice system involvement than the comparison group during the same 10-month period of time. For Job Corps enrollees part of this time included their Job Corps tenure. Women in particular seemed to benefit from their Job Corps training; of those who stayed more than three months a large proportion (32 percent) had previous criminal records. However, only 4 percent of these women had contact with the criminal justice system after Job Corps, a far greater reduction than was found for the comparison group of non-Job Corps women.

It appears as if Job Corps can be a rehabilitation agent for a large number of delinquent youth. Since previous studies of Job Corps indicate that post-program success depends in part on length of stay, it is encouraging to note that female ex-offenders tended to stay for a longer than average period of time. In addition, both male and female ex-offenders in the pilot sample improved significantly in a number of skill areas (Job Seeking Skills, Job Knowledge, Nutrition) while in Job Corps.

These findings have major implications for the young people themselves and for society at large. Disadvantaged young people, the group served by Job Corps, account for the majority of arrests and convictions in urban areas. Many programs refuse to admit young people with criminal records. Job Corps not only provides educational benefits and vocational training to such youth, but, as shown in this study, it also reduced recidivism. Crime reduction saves society money for courts, prisons and probation officers. It saves society from property damage, personal injury and anxiety. The cost of incarcerating a juvenile for a year is about \$12,000, and the recidivism rate is alarmingly high. Job Corps, which costs \$9,230 a year, can reduce recidivism, while also offering remedial education, vocational training and personal counseling, all important factors in rehabilitation.

RECOMMENDATION: Job Corps should experiment, in some of the new centers, with programs for delinquent young people. It should recruit such enrollees from the criminal justice system. Whether young people should be "sentenced" to Job Corps is an unresolved issue, and experiments should include such young people in order to determine whether Job Corps can remain positive if it takes on a custodial function. What is already clear is that Job Corps can play an important role in the rehabilitation of ex-offenders.

• Health Benefits. Job Corps offers preventive health services, such as physical examinations, and medical treatment for both major and minor disorders. Enrollees are entitled to receive complete medical and dental care, including optometry, ob-gyn, psychiatry and restorative dentistry, on an as needed basis. The simple fact that 45,000 disadvantaged young people a year (soon, almost 100,000) are provided with complete health services by Job Corps is evidence of a major non-economic benefit offered by the program to its participants. The larger society benefits as well, both from the number of contagious diseases treated, and from the fact that good health greatly increases employability.

In the present study, enrollees were provided ten times as many medical visits as they would have received outside of Job Corps. They averaged one visit every 21 days. The national average for low income blacks in this age group is one visit every 215 days. These young people probably received better medical care than they had in their entire lives, and such intervention during adolescence will surely have positive impacts in their later lives. The study revealed that physical examinations at entry identified previously untreated conditions among 14 percent of the enrollees. Vision difficulties, venereal disease, and anemia were the most prevalent conditions found and treated. Identification of such disorders has positive impacts on current public health and on future employability. Furthermore, prevention and early detection is far more cost-effective than later treatment.

A large number of enrollees received dental care in Job Corps-- 68 percent of the eligible men and 82 percent of the eligible women. Dental care in adolescence has substantial impact on future dental health. Provision of such care in Job Corps will probably save a great deal of money and pain in the future for participants.

All Job Corps enrollees attend health education classes where nutrition, personal hygiene, birth control, and family living are taught. Behavioral impacts of this educational program were already evident only a few months after Job Corps termination. Given a choice of food for their next day's meals, participants who had spent three months or more in Job Corps chose more nutritious foods than the dropouts or the comparison group. This improvement was particularly strong among women with children, an indication that Job Corps' health education program is not only improving the health of participants but is benefiting the next generation as well.

The pilot study also revealed that Job Corps enrollment is not a factor in the tendency of members of this disadvantaged group to bear children at an early age. About 40 percent of female participants became pregnant either during or shortly after Job Corps. Although this number appears high, it is exactly the same as that of the comparison group.

**RECOMMENDATION:** Job Corps is playing an important role in improving the health of disadvantaged young people, and it is not increasing the rate of teenage pregnancy. Nevertheless, it can be assumed that some of the pregnancies that do occur are unwanted. Job Corps, in some of its new centers, should experiment with educational and counseling programs that might reduce unwanted pregnancy.

• Employment Benefits: One of the objectives of Job Corps is to make youth more employable, through basic education, skill training, personal counseling, and health services. The present study compared the post-program employment rate of the Job Corps group with the rate of the comparison group. Among those who stayed in Job Corps at least three months, a larger number were employed full-time at the time of the post-test than those who had dropped out or not enrolled. This was particularly true for women. When part-time and full-time work are aggregated, however, those who did not enroll report the most consistent work history. Although the study did not document whether all respondents were actively seeking work, it should be noted that the reported unemployment rate for these respondents was about 80 percent, with the intervention of Job Corps training having little short-run impact.

RECOMMENDATION: Job Corps should re-examine its post-program placement system, and perhaps link with one of the recently funded youth employment programs. Other studies have indicated that youth need specialized job development services to help them overcome the job market handicaps of age and lack of schooling. If such services are given, a larger proportion of these youth might be placed.

• Variation in Benefits Across Job Corps Centers. Seven Job Corps Centers were studied.\* Based on a comparison of centers on attitudes, average length of stay and improvement on non-economic outcomes, the centers which emerged with the most positive findings were Atlanta and Portland.

The average length of stay at Atlanta was the longest (154 days). Atlanta women entered the Job Corps with the worst nutritional behavior and ended with the best. They also scored the highest on health information knowledge on the posttest. Their level of criminal justice system involvement on the posttest was the lowest of any group, although it was the highest of any predominantly women's center on the pretest.

Atlanta Corpswomen also seemed to like Job Corps better than enrollees in other centers. They responded strongly to the "which things did you like about Job Corps?" list and had few complaints on the "dislikes" list. At the time of the study \*\* the Atlanta center was unique within Job Corps because of its Solo Parent Program--an arrangement through which young mothers could live with their children in an efficiency apartment in the Job Corps center. During the day the women attended classes and activities while the children were cared for in the Child Development Center, an innovative on-center day care program. At night women took full responsibility for their children. Officials in Job Corps and at the center felt that the Solo Parent Program answered a serious need and was a great success. The center offered a normal program as well, and notes from center visits indicated that staff enthusiasm and Corpswomen motivation were high.

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\* Atlanta, Georgia; Breckenridge, Kentucky; Cleveland, Ohio; Atterbury, Indiana; Pittsburgh, Pennsylvania; Keystone, Pennsylvania; and Portland, Oregon.

\*\* Since then, the Solo Parent Program has been replaced by a similar, but non-residential, WIN Demonstration program.

Portland was another center where findings seemed quite positive. Although the length of stay was only average (110 days), this figure is biased by the fact that more than half of the youngsters who had been pretested were still in the center at posttest time, and therefore were dropped from the study. In actuality, Portland's average length of stay may have been much longer. (Job Corps has length of stay information on all enrollees.) Portland participants entered Job Corps with the highest scores among the seven centers in the sample on three variables: nutritional information, nutritional behavior, and confidence in the ability to succeed. After they left Job Corps they were still highest on nutritional information, and had become highest ranking on job knowledge, health information and self-esteem.

(Portland students had been lowest on self-esteem on the pretest.) Project staff returned from their visit there with high praise for the staff, particularly the residential advisors in the women's dormitory. An increase in self-esteem in Portland was one of the findings predicted after the center visit, and the fact that it emerged significantly is a strong validation of the instrument battery administered to the participants. In addition, Portland participants reported positive feelings about the staff more than did those in any other center.

The Portland findings are particularly important because Portland was the only all-white (and the only completely coed) center in the study. The low initial self-esteem may arise from being poor in the relatively affluent and advantaged Pacific Northwest. These findings indicate that Job Corps has an important role to play for all disadvantaged youth, not only the disadvantaged minorities that comprised most of this study's sample.

No center offered a consistently negative profile to the extent that Atlanta and Portland were positive.

RECOMMENDATION: Job Corps is clearly not a monolithic program; the outcomes and opinions differed widely from center to center. In establishing new centers, Job Corps should be aware that some centers are more worthy of replication than others. The Solo Parent Program at Atlanta, for example, should be copied elsewhere in Job Corps. In order to determine which centers--or which facets of particular centers--should be used as models, a survey of center practices and procedures should be undertaken with the express purpose of discriminating the successful from the unsuccessful. Corps-member opinions have proven, in this study, to correlate with impacts. Thus, a survey of participants can yield much reliable information.

Job Corps has provided substantial non-economic benefits to its participants and to the larger society, according to the present study. Youth who enrolled in Job Corps and stayed at least three months improved in all areas of study, from eating habits to staying out of trouble; from self-esteem to dental care. On almost all outcomes, being in Job Corps at least three months was even more beneficial to women than to men. These impacts make Job Corps participants more employable and benefit the larger society in many ways. It is important to note that these benefits do not accrue to early dropouts. Job Corps must make a concerted effort either to screen out those who seem unlikely to survive the first weeks or to strengthen the program so that more enrollees will remain long enough to benefit. That such benefits are available has been made clear by this study.

## 1.0 INTRODUCTION

"Alternative education" is a term used to describe programs which try to succeed where the public school has failed. Dropouts and under-achievers are referred to alternative education programs on the assumption that failure in a traditional school program does not necessarily mean that the student is unteachable, only that he or she is unteachable under the circumstances in which mass education is currently being offered. Giving the benefit of the doubt to the student is a new phenomenon; traditionally, both public and private schools have been regimented and rigid, leaving little alternative to the failing student other than resigning. Of course, an option that has been available for many years has been the change of curriculum; a student having difficulty with academic work could transfer to a vocational curriculum. Only in recent years, however, has the idea that certain students can learn academics better in alternative settings or with alternative teaching methods gained acceptability. Like many innovations in education, alternative educational opportunities have been concentrated in the more affluent suburban school systems.

Job Corps is an alternative education program for disadvantaged high school dropouts. Besides providing the vocational training that its name suggests, it extends the benefits of individualized instruction and ungraded classrooms to rural and core city youngsters, most of whom attended schools without such programs. Research over the last twenty years has indicated that "disadvantaged" is the proper word for describing the educational situation of youngsters whose family income lies below the poverty line. The absence of the advantages of a stimulating environment in the pre-school years and remedial opportunities in the elementary school years has powerful debilitating impacts by adolescence. Constant failure in school leads to dropping out early, and the lack of education and/or a diploma leads to joblessness, welfare or minimum wage jobs. Thus, the cycle begins again in a new generation.

Job Corps was conceived of as a second chance for disadvantaged youngsters -- to help them catch up on their schooling so that the cycle of poverty, which feeds on poor education and dead end jobs, might be broken in this generation.

The framers of Job Corps had another theory about breaking the cycle of poverty. They felt that as long as disadvantaged youngsters were living in deteriorated and crowded neighborhoods with inadequate nutrition and unproductive role models, they would have little motivation or capability to alter their inevitable destiny.

Job Corps was therefore conceived of as a therapeutic environment, a residential center where adolescents could learn, work, and play with the comfort of knowing that they would have a bed to sleep in, three square meals a day, preventive and therapeutic medical and dental services, and individual counseling to help them adjust and achieve. The goal was to make these former passengers on the "Failure Express" into self-supporting adults through basic education and vocational training. The other services were designed to upgrade their self-esteem and their health, as necessary components of employability development.

In the thirteen years since its inception, Job Corps has had its share of successes and failures. Tough, street-wise youngsters became surprisingly homesick when taken from their "debilitating environments" for, often, the first time. Job Corps Centers in beautiful national parks and forests were seen as sites of sensory deprivation by city kids accustomed to noise, traffic jams, and neon lights. Although center staff worked valiantly to acclimate the youngsters to their new, therapeutic surroundings, policymakers gradually made compromises as they realized that they were unwittingly placing the young participants in another bastion of middle-class values, where they would fail again. So, centers were opened in cities and participants were permitted to enroll as day students. Previously single-sexed centers became coed, and enrollees with low entrance-level achievement scores were no longer relegated to a school subjects-only curriculum while their peers learned auto mechanics or beauty culture.

The issue of middle-class and generally different values has not been an easy one for Job Corps to resolve, for a number of reasons. First, although the staff recruited to work with these young people were fully apprised of Job Corps' "second chance" philosophy, the relatively low staff salaries resulted in the hiring of a significant number of authoritarian staff members with backgrounds in the military and law enforcement. Although many liberal idealists were also recruited, the former group tended to be older and thus more likely to be placed in middle management at Job Corps centers.

Top management was usually taken from the middle rungs of the center contractor's organization, that is, industry or Forest Service veterans who knew little about alternative education or the problems of disadvantaged youth. Often, therefore, the disciplinary mentality of the middle management group prevailed, and crises arose in the 60's and early 70's over compulsory haircuts, dress codes, and dormitory spotlessness. Thus, one version of middle-class values was perpetrated through the values of the center staff.

To make matters more confusing, another contrasting version of middle-class values crept in via national policymakers. Job Corps began with an explicit policy of permissiveness, perhaps as an extrapolation from the concept of "free schools" which was so popular in the late 1960s among the upper middle class. It took years of retrenching to make up for this early misguided permissiveness and the chaos that often followed when over a thousand young, mostly black males were assembled near a small, predominantly white town and given freedom to "explore their environment." The fears of the local citizenry magnified the inevitable small incidents into tales of mass rape and pillage. The repression consequently imposed resulted in demonstrations and near riots--a self-fulfilling prophecy. Thus, the middle-class philosophy of permissive alternative education entered Job Corps policy and made a hasty exit. Thus, two types of values, antagonistic to each other, were both found to be antagonistic to the Corpsmembers.

Middle-class values were hard to come to terms with because the Job Corps concept contained a difficult paradox. Although there was a sincere commitment to alternative education, the program also operated under the assumption that these youngsters needed to assimilate the middle-class work ethic in order to be motivated to learn a trade and hold a steady job. This ethic, particularly in the case of blue-collar jobs, includes the virtues of punctuality, deference, and obedience, the same values which the public school had failed to inculcate. How could Job Corps offer alternative education and retain the focus on preparing youth for blue collar jobs?

The answer emerged from trial and error, but it also emerged from the Corpsmembers themselves. They asked for neither total freedom nor military discipline. More important, the work ethic was discovered to be alive and well within most Corpsmembers, although they previously had had little opportunity to see the value--partly genuine, partly merely symbolic--of

the behaviors that the middle class associates with a positive attitude toward work. Like many middle-class teenagers of their generation, they refused to submit meekly to the regimentation still prevalent in most public schools. In addition, however, they had learning disabilities which compounded their alienation from the public school and the public school's exasperation with them. What young people wanted from Job Corps was a chance to learn at their own speed and get good vocational training.

What Job Corps is, then, is an alternative school set within an alternative environment, designed to offer the security and moral support necessary for the capabilities and motivations of disadvantaged school dropouts to emerge. It attempts, on several fronts, to restore some of the self-esteem that poverty and failure have eroded so thoroughly. Neither regimentation nor permissiveness hold sway, although practice varies from center to center along that continuum.

The program offered is standard throughout the country. Adolescents 16 to 21 years of age apply through their State Employment Service, and six to eight weeks later they are transported to either a large (1,000 or more Corpsmembers) center on a former Army base, a small (100-200 Corpsmembers) "Conservation Center" usually in a national park or forest, or a medium-sized (200-600 Corpsmembers) center, about two-thirds of which are in cities. Basic education (reading and math) and vocational training are the core of the program, with health education and "World of Work" (job-seeking skills and on-the-job behavior) offered as short required courses. Ninety-five percent of the trainees live on center, where recreational programs are provided for after school hours and weekends.

Because the proponents of quick solutions to long-standing problems invariably gain support when funding is tight, Job Corps has been forced to compromise some of its early principles. In the late 1960s Job Corps was reduced in size, and an austerity program was instituted. In addition, placement rate became the outcome the program was judged by, rather than learning or rehabilitation. The minimum age for entry, for example, was raised from 14 to 16, because placement was impossible for graduates under 16. Despite these cutbacks and compromises, Job Corps has survived, giving second chances to close to 50,000 youngsters a year.

Recent legislation has restored many of the budget cuts of the early 70's, and has authorized establishment of 60 new centers. Along with these tangible restorations, there are signs (of which this project is one) that a less limited sense of the outcomes of Job Corps can also be restored.

The purpose of the present study was to determine, through a pilot study, whether the impacts of the Job Corps and of specific program components not directly tied to job training could be assessed. Because it is the only major residential program funded by the Department of Labor, Job Corps' costs are high in comparison to those of other employment and training programs. Money is spent on room and board for enrollees, for counseling and recreational activities and for medical care. Job Corps officials have assumed that these extra-training services have extra-training benefits (e.g., better health, better mental health, better attitude toward work) which justify the investment. Yet no study had ever been performed to test that assumption. Nor had any researchers even explored ways of measuring these so-called non-economic impacts. All previous research on Job Corps' effectiveness (and there has been much research) has used placement rates and pre-post program wage differentials as dependent variables. This report was designed to begin to fill the gap in Job Corps research by presenting preliminary findings on the impact of the program and its support services on non-economic outcomes.

## 2.0 SUMMARY OF FINDINGS IN THREE BASIC AREAS OF STUDY

Analysis of non-economic impacts was performed by comparing the three study groups on twenty-two different variables, each of which was measured by means of a scale or an unscaled cluster of questionnaire items. Because it is difficult for a reader to retain and compare information on so many variables, this chapter presents a summary of findings. The 22 outcomes are grouped into three areas of study and are discussed as a group. The areas of study and their definitions are:

1. Job-Related Noneconomic Impacts -- This area of study includes on-the-job behavior, job interest and satisfaction and understanding of the world of work.
2. Social-Attitudinal Impacts -- This area of study includes attitudes and behavior about self, peers, family and authority figures.
3. Health and Educational Impacts -- This area of study includes knowledge and behavior regarding health, nutrition, and education.

Findings and statistical results on each of the 22 outcomes are discussed separately and in detail in Chapters 3, 4, and 5. In this chapter, however, a summary table is presented and explained for each of the three areas of study. The summary table offers information on intergroup comparisons for each outcome without statistical details. The reader should remember to refer to the appropriate section of Chapter 3, 4, or 5 for detailed discussions.

Six basic comparisons among and within groups are covered in the summary table for each outcome.

1. Group differences on pretest scores: The mean pretest scores of each group at time of Job Corps application are compared using analysis of variance (F test). There were expected to be no differences among groups at that time.

2. Group differences on posttest scores: The mean posttest scores of each group at the time of the follow-up interview are compared, again using analysis of variance (F test). Any inter-group differences at this time imply that the intervening treatment (Job Corps attendance or remaining outside Job Corps) had impact on that outcome.

3. Pre-post changes among Persisters, Dropouts and NoShows: These are three separate within-group comparisons, using the t-test for repeated measures. This statistic measures whether or not the group changed its mean score over the ten month period from pretest to posttest. It was expected that mean scores of the two Job Corps groups would change over time and that mean scores of the comparison group would remain the same.

4. Pre-post changes (groups compared): This is a second-order comparison, in which an analysis of variance of change scores was performed. Its purpose was to determine whether any group's changes over time were significantly greater than the changes of the other two groups.

5. Male-female comparisons: Early in the analysis phase of this study, it became clear that men and women were impacted quite differently. Every outcome was therefore analyzed separately for men and women. In addition, male and female scores in each group were compared, using an analysis of variance. Because each group was divided almost evenly between males and females, it was possible for a finding to reach significance for the entire group based on a strong impact on only one sex. This box in the summary table notes such differential impact. In addition, it notes any other sex-based differences in impact not covered in the first six boxes.

6. Summary: This box repeats important notations in the upper seven boxes. Outcomes can be readily compared by reading the summary boxes of each across the page.

## 2.1 Job Related Non-Economic Impacts

Eleven of the twenty-one outcomes fall into this area of study. For convenience the eleven can be divided into four sub-areas:

1. Knowledge of Work
  - Job Seeking Skills
  - Job Holding Skills
  - Job Knowledge
2. Attitude Toward Work
  - Work Relevant Attitudes
  - Work Ethic
  - Lack of Job Skill Confidence

### 3. Interest in Work

- Job Satisfaction
- Vocational Aspirations #1 (Right Now)
- Vocational Aspirations #2 (Two Years Ago)
- Vocational Aspirations #3 (Two Years From Now)

### 4. Employment Status

- At time of follow-up interview
- Since Job Corps termination or application

The matrix of findings appears on the following pages (Table 2-1).

#### 2.1.1 Knowledge of Work

On the three scales, there were no differences among groups at the time of the pretest. Over time, however, the NoShows recorded the most improvement, as they improved on two scales and did not change on the third. Persisters had the second best showing, with strong improvement on Job Seeking Skills and no change on the other two scales. Three conclusions can be drawn:

- In the Knowledge of Work subarea, being in the labor market led to more improvement than being in Job Corps.
- Job Corps Dropouts lost ground in the Knowledge of Work subarea.
- Remaining in Job Corps at least three months is far better than dropping out, but not as beneficial as remaining in the labor market.
- Ceiling effects on the Job Holding Skills Scale made improvement virtually impossible.

#### 2.1.2 Attitude Toward Work

Again there were no differences on the pretest. On the posttest, few changes in attitude emerged, and those that did were negative. NoShows had no significant changes. Persisters recorded one significant decline, one non-significant decline and one non-significant improvement. Again the Dropouts brought up the rear, with significant declines on all three scales.

Two conclusions can be drawn:

- Attitudes about the value of work are not easily improved.
- Dropping out of Job Corps was associated with a significant and reliable negative change in attitudes toward work.

Table 2-1

## Matrix of Findings on Job Related Non-Economic Impacts

	Job Seeking Skills	Job Holding Skills	Job Knowledge	Work Relevant Attitudes	Work Ethic	Lack of Job Skill Confidence
Pretest Scores (Persisters vs. Dropouts vs. NoShows)	No Differences	No Differences	No Differences	No Differences	No Differences	No Differences
Posttest Scores (Persisters vs. Dropouts vs. NoShows)	Overall*** No-Shows Higher than Dropouts	No Differences	NoShow Male* Higher than Other Males	No Differences	Overall* & Female* Persisters Higher than Overall & Female Dropouts	No Differences
Pre-Post Changes Among Persisters	Males*** and Females*** Improved	No Change	No Change	Males Decline <sup>ns</sup>	Males Improved <sup>ns</sup>	Overall*** & Males*** Increased
Pre-Post Changes Among Dropouts	Males Unchanged; Females Improved <sup>ns</sup>	Overall* Decreased	Overall* and Female* Decreased	Overall** and Male*** Declined	Overall*** and Female*** Declined	Overall* & Males*** Increased
Pre-Post Changes Among NoShows	Males* and Females*** Improved	No Change	Overall* Improved	Females Declined <sup>ns</sup>	Females Declined <sup>ns</sup>	No Change
Pre-Post Changes (Groups Compared)	No Differences	No Differences	Overall & Drop-out Females Decrease; NoShow Overall & Females Increase	No Differences	No Differences	No Differences
Male-Female Comparisons	No Differences	Female Dropouts Higher than Male Dropouts*** on Pretest	Female Dropouts Higher than Male Dropouts*** on Pretest  Female Persisters Higher than Male Persisters on Pre*** and Post-Tests**	No Differences	No Differences	Male Dropouts Increase More than Female Dropouts*
Summary	Persisters & NoShows Improved No Intergroup Differences	Dropouts Decreased; No Intergroup Differences; Ceiling Effect Operating	Dropouts Decreased; NoShows Improved; Significant Differences Between These Two Groups	Significant Declines Among Dropouts	Significant Declines Among Dropouts	Persisters & Dropouts, especially Males, Increased (yet varied)

\* p &lt; .05

\*\* p &lt; .02

\*\*\* p &lt; .01

Table 2-1 (continued)

	Job Satisfaction	Vocational Aspirations #1 (Right Now)	Vocational Aspirations #2 (Two Years Ago)	Vocational Aspirations #3 (Two Years From Now)	Employment Status (Posttest Only)
Pretest Scores (Persisters Vs. Dropouts Vs. NoShows)	No Differences (Persisters Lowest)	No Differences	No Differences	NoShow Females Higher** than Dropout Females	N/A
Posttest Scores (Persisters Vs. Dropouts Vs. NoShows)	No Differences (Persisters Lowest)	Overall** and Female* NoShows Lower than Dropouts or Persisters	No Differences	NoShows lower* than Persisters or Dropouts	% Time Worked After Job Corps***: Persisters: 21.2 Dropouts: 15.1 NoShows: 27.6
Pre-Post Changes Among Persisters	Overall***, Males** & Females*** Improved	No Changes	No Changes	No Changes	N/A
Pre-Post Changes Among Dropouts	Overall***, Males** and Females* Improved	No Changes	Overall* Increased	No Changes	N/A
Pre-Post Changes Among NoShows	Overall***, Males* and Females** Improved	Females Decreased**	No Changes	Overall*** and Female** Decreased	N/A
Pre-Post Changes (Groups Compared)	No Differences	No Differences	No Differences	NoShows Overall* and Females** Decrease More than Dropouts or NoShows	N/A
Male-Female Comparisons	No Differences	NoShow Females Decreased while NoShow Males Unchanged*	NoShow Females Higher** than NoShow Males on Pretest	NoShow Females Higher** than NoShow Males on Posttest	Male NoShows Employed More than Female NoShows
Summary	All Improved; No Intergroup Differences	NoShow Females Decreased; No Other Changes or Differences	Small Increase among Dropouts; No Other Changes or Differences	NoShow Females Began High and Ended Low	Even Controlling for Time Period Covered, NoShows Worked Significantly More Than Those Who Attended Job Corps

\* p &lt; .05

\*\* p &lt; .02

\*\*\* p &lt; .01

### 2.1.3 Interest in Work

This subarea covers job satisfaction and three vocational aspirations items. The job satisfaction items did not discriminate well among the three groups, nor were the items responded to differentially. All groups improved on all items over time. Persisters, however, tend to rate aspects of their jobs (pay, interest, chance for promotion, the boss) lower than other groups on both the pretest and the posttest. This difference may be interpreted as the reason for Persisters' remaining in Job Corps (poor previous jobs). Another interpretation is that Persisters rated their jobs lowest both before and after Job Corps because their standards were higher than those of other groups.

The vocational aspirations items asked the respondent to rate himself or herself on a "ladder" as of two years ago, as of now and as of two years from now. On the first item, estimates of previous vocational level increased for Dropouts, a probable reflection of the more negative situation of Dropouts at the time of the posttest. The other group with the worst employment situation at the time of the posttest, NoShow women, decreased significantly on "right now" assessments. Finally, on "two years from now," NoShows decreased, a sign that their choice of remaining in the labor market led them to see their prospects for the future more narrowly.

Two conclusions can be drawn:

- The Job Satisfaction Scale used in this study did not differentiate among groups well.
- Vocational aspirations of NoShows and Dropouts decreased over time, a sign that remaining in Job Corps led to a relatively more optimistic perception of the future.

### 2.1.4 Employment Status

There were no questions on the pretest regarding employment status. Job Corps records indicate, however, that almost all applicants were un-employed at that time.

On the posttest, NoShows and Persisters were more likely than Dropouts to report that they were currently working. Persisters were working full-time more often than members of the other groups. Female NoShows were the least likely to be working.

In the area of percentage of time worked since Job Corps termination (or application, in the case of NoShows) a significant difference emerged:

NoShows were employed 27.6% of the time, compared to 21.2% for Persisters and 15.1% for Dropouts.

A disappointing finding was that employment status did not correlate with any of the other scales in this area of study. Although there might be a number of reasons why those who scored high on these scales were not working, the finding calls the validity of the scales into question.

Three conclusions can be drawn:

- Job Corps had at least a short run negative impact on steadiness of employment.
- Those who stayed at least three months in Job Corps were more likely than either other group to be working full-time several months later.
- Job Corps had a bigger positive impact on employment for women than for men.

#### 2.1.5 Summary - Job Related Non-Economic Impacts

Although Persisters did not emerge with flying colors on all scales, they scored as well as the NoShows and far better than the Dropouts.

The total picture in the area of Job Related Non-Economic Impacts shows declining scores on the part of Dropouts on almost every outcome, while NoShows declined on two and Persisters on only one. Because there were no differences among groups on the pre-test, it can be concluded that the negative Job Corps experience that led to dropping out had serious consequences in all job related areas.

The decline in vocational expectations on the part of women who did not attend Job Corps is paralleled by their high unemployment rate. Women who did attend Job Corps fared far better. They (Persisters and Dropouts) were as likely as their male counterparts to be working at the time of the follow-up interview. Female Persisters were impacted more positively than male Persisters in the area of attitudes; women maintained or improved their scores on every scale. These findings indicate that Job Corps attendance had major employment-related benefits for women.

An analysis of the areas in which Persisters improved indicates that many of their Job Corps experiences may have long term positive impacts. The fact that Persisters were most likely to be working full time and that they improved in Job Seeking Skills is an indication of potential for further vocational advancement.

## 2.2 Social-Attitudinal Impacts

Five outcomes are included in this area of study. All deal with the relationship of the youth to others in the community. (Self-esteem deals with the image of self in relation to others). The matrix of findings appears on the following page (Table 2-2).

On all five outcomes Persisters improved, while neither other group made substantial gains. As can be expected from social norms, males in all groups reported more involvement than females with the criminal justice system. However, there was a tendency for women who had previous court histories to stay in Job Corps at least three months and to stay out of trouble afterwards. Male Persisters also were somewhat less likely than other males to have further brushes with the law.

A further analysis of pre-Job Corps police involvement was made to determine whether Job Corps has differential effects on youngsters with and without police records. Youngsters with a history of criminal activity entered Job Corps with significantly lower scores on scales which measure factual knowledge, but they made up the difference during Job Corps. In addition, those who entered with such backgrounds reduced their scores on the posttest somewhat more than the sample as a whole. This is a particularly valuable non-economic impact.

Improvement by Persisters (particularly women) and slight declines by Dropouts led to significant between-group differences in Self Esteem at the time of the follow-up interview. NoShows did not change. Persisters also improved in Attitude Toward Authority.

Apparently, spending three months or more in Job Corps had positive impacts on attitudes toward peers and family as well. Both male and female Persisters reported positive changes on a number of these variables.

Three conclusions can be drawn:

- Job Corps reduced recidivism of youth (particularly women) with previous court histories.
- Job Corps had educational benefits for youth with previous court histories.
- Remaining in Job Corps at least three months had significant positive impacts on self-esteem, attitude toward authority and relations with family and friends. These impacts were not felt by Dropouts or NoShows.

Table 2-2

## Matrix of Findings on Social-Attitudinal Impacts

	Attitude Toward Authority	Self-Esteem	Police Involvement	Family Relations	Leisure Time
Pretest Scores (Persisters vs. Dropouts vs. NoShows)	No Differences	No Differences	No Differences	N/A	N/A
Posttest Scores (Persisters vs. Dropouts vs. NoShows)	No Differences	No Differences	No Differences	Among Males Only, Persisters Felt Better than NoShows about their Families** and their Spouses**	NoShows Reported the Least Change; Persisters Reported the Most Positive Change
Pre-Post Changes Among Persisters	Overall* Increase	Overall* and Female* Increased	All Groups Decreased***	Females Improved Male Improved	Males Improved Females Improved Slightly
Pre-Post Changes Among Dropouts	No Change	All Decrease <sup>ns</sup>	Overall*** and Male*** Decrease	Females Reported the Least Change	Male Dropouts Reported More <sup>ns</sup> Interest in Sports and Hobbies than Any Other Group
Pre-Post Changes Among NoShows	No Change	No Change	Overall*** and Male* Decrease	Males Reported the Least Change Females Improved	Males Reported the Least Change
Pre-Post Changes (Groups Compared)	No Differences	Persisters Increase Dropouts Decrease	Persister Women Decreased More* than Other Women	N/A	N/A
Male-Female Comparisons	Overall** and Dropout <sup>ns</sup> Males Higher than Overall & Dropout Females on Pretest	No Differences	Females Overall and in All Groups Lower than Males on Pretest and Posttest (except NoShows on Posttest)	Among Persisters and NoShows, More Women than Men <sup>ns</sup> Started Families	Female Dropouts Reported More Negative Changes than <sup>ns</sup> Male Dropouts
Summary	Persisters In- creased; No Intergroup Differences	Persisters In- creased and Dropouts De- creased	Males Reported More Police Involvement than Females; Other Findings are Study Artifacts	Among Males, Per- sisters, then Dropouts, then NoShows Improved. Among Females, Persisters and No- Shows Improved Equally and More than Dropouts	Results were Mixed; See Above

\* p &lt; .05

\*\* p &lt; .02

\*\*\* p &lt; .01

### 2.3 Health and Educational Impacts

Variables in this area of study can be divided into those which measure knowledge (Health Information and Nutrition Information) and those which measure behavior (Health Care and Health Habits, Junk Food Ratio, Balanced Diet, Educational Attainment). The matrix of findings appears on the following page (Table 2-3).

On the knowledge scales, the only consistent finding was that women almost always scored higher than men on both the pretest and posttest. There were no differences among or changes within any of the groups, except that NoShows, especially males, improved in Nutrition Information. The lack of improvement of the Job Corps groups indicates that the Job Corps Health Education program had little impact on either Persisters or Dropouts.

The behavior scales yielded more positive results. Female Persisters entered Job Corps with the strongest tendency to choose junk foods over nutritious foods. They were the only group, however, to improve significantly. Persisters, overall, improved on both measures of nutritional behavior, while the other two groups did not.

In the subarea of Health Care and Health Habits, the number of Persisters (particularly women) who had gone to the dentist in the past year increased significantly from pretest to posttest. This change can be attributed to dental care received in Job Corps. Optometry care was not as widespread, as Job Corps participants who thought they needed glasses did not receive them. In fact, more NoShows got glasses between pretest and posttest than either Job Corps group.

The final item in this group was Educational Attainment. It was found that very few youngsters received GED's in Job Corps or were ever enrolled in GED classes. Female Persisters, however, were the most likely to be in those two categories. Women of both groups entered Job Corps with more educational background.

At the time of the posttest, about 30% of the respondents were in school. There were no significant differences by group or sex.

Three conclusions can be drawn:

- Job Corps had significant health benefits for participants, especially women, who stay at least three months.

Table 2-3

## Matrix of Findings on Health and Educational Impacts

	Health Information	Health Care & Health Habits	Nutrition Information	Junk Food Ratio	Balanced Diet	Educational Attainment
Pretest Scores (Persisters Vs. Dropouts Vs. NoShows)	No Differences	No Differences	No Differences	No Differences	No Differences	No Difference Between Persisters and Dropouts in Pre-Job Corps Education
Posttest Scores (Persisters vs. Dropouts Vs. NoShows)	No Differences	NoShows had the strongest Smoking & Drinking Habits <sup>NS</sup>	NoShow Males Higher than <sup>**</sup> Other Males	No Differences	No Differences	Female Persisters Took CED Classes More than Any Other Group <sup>**</sup>
Pre-Post Changes Among Persisters	No Change	Overall and Females <sup>**</sup> Improved in Dental Frequency	No Change	Overall <sup>*</sup> and Females <sup>*</sup> Improve	Overall <sup>*</sup> Increase	N/A
Pre-Post Changes Among Dropouts	No Change	N/A	No Change	No Change	No Change	N/A
Pre-Post Changes Among NoShows	No Change	More NoShows Got Classes than Any Other Group	Overall <sup>*</sup> Improve	No Change	No Change	N/A
Pre-Post Changes (Groups Compared)	No Differences	N/A	No Differences	No Differences	No Differences	NoShows Most Likely to Have Returned to School
Male-Female Differences	On the Pretest <sup>*</sup> and Posttest <sup>*</sup> Female Persisters Scored Higher than Male Persisters. On the Posttest <sup>**</sup> Dropout Females Scored Higher than Dropout Males.	On the Pretest, More Women More Glasses or Thought They Needed Them than Men <sup>**</sup> ; More Women than Men were Overweight <sup>NS</sup> ; One-third of the Normal-Weight Women Consider Themselves Abnormal in Figure	On the Pretest, Women Persisters Scored Higher <sup>*</sup> than Male Persisters	Overall <sup>**</sup> on Pretest Women Food. Persisters Women Choose More Junk Food on the Pretest <sup>**</sup> but Improve More <sup>*</sup> than Men	Dropout Women Lower than <sup>*</sup> Dropout Men on Posttest	Women Entered with More Education than Men <sup>**</sup>
Summary	Females Tended to Score Higher. No Other Differences or Changes	Females were Most Conscientious About Health and Most in Need of Services	NoShows were the Only Group which Improved	Women, Particularly Persisters, Chose More Junk Food, but Improve During Job Corps	Persisters Improved! Dropout Women Declined	Women were Most Education-Oriented Before, During and After Job Corps

\* p &lt; .05

\*\* p &lt; .02

\*\*\* p &lt; .01

- The Health Education program in Job Corps seemed to have little impact in the area of knowledge, although behavioral changes did emerge.
- The availability of GED classes in Job Corps had little relevance to the vast majority of participants, who did not enroll.

#### 2.4 Summary of Findings

In this study Job Corps had a positive impact on a number of non-economic outcomes. Twenty-one different outcomes were measured. Those who remained in Job Corps at least three months improved on eight different outcomes, compared to two for those who dropped out and five for those who did not enroll. Three months or more in Job Corps led to improvement in the following areas:

- Job Seeking Skills
- Job Satisfaction
- Attitude Toward Authority
- Self Esteem
- Criminal Justice System Involvement
- Nutrition Behavior (2 scales)
- Family Relations
- Leisure Time

Job Corps provided benefits in all three areas of non-economic impacts studied: (1) Job-Related Impacts, (2) Social-Attitudinal Impacts, and (3) Health and Educational Impacts. Table 2-4 summarizes these results.

Job Corps has provided substantial non-economic benefits to its participants and to the larger society, according to the present study. Youth who enrolled in Job Corps and stayed at least three months improved in all areas of study, from eating habits to staying out of trouble; from self-esteem to dental care. On almost all outcomes, being in Job Corps at least three months was even more beneficial to women than to men. These impacts make Job Corps participants more employable and benefit the larger society in many ways. It is important to note that these benefits do not accrue to early dropouts. Job Corps must make a concerted effort either to screen out those who seem unlikely to survive the first weeks or to strengthen the program so that more enrollees will remain long enough to benefit. That such benefits are available has been made clear by this study.

Table 2-4

Summary of Results of the Non-Economic Impacts Study

Group Area of Study	Three Months or More in Job Corps (Persisters)	Less Than Three Months in Job Corps (Dropouts)	Did Not Attend Job Corps (No Shows)
<u>Job-Related Impacts</u>			
Job Seeking Skills	Improved	No Change	Improved
Job Holding Skills	No Change	Declined	No Change
Job Knowledge	No Change	Declined	Improved
Work Relevant Attitudes	No Change	Declined	No Change
Work Ethic	No Change	Declined	No Change
Job Skill Confidence	Declined	Declined	No Change
Job Satisfaction	Improved	Improved	Improved
Vocational Aspirations (Right Now)	No Change	No Change	Declined
Vocational Aspirations (Two Years Ago)	No Change	Increased (Declined)	No Change
Vocational Aspirations (Two Years from Now)	No Change	No Change	Declined
Employment Status	Most full-time work	lowest employment rate	Most steady work
<u>Social-Attitudinal Impacts</u>			
Attitude Toward Authority	Improved	No Change	No Change
Self-Esteem	Improved	No Change	No Change
Criminal Justice system involvement	Improved	Improved	Improved
Family Relations	Improved	No Change	No Change
Leisure Time	Improved	Mixed	No Change
<u>Health &amp; Education Impacts</u>			
Health Information	No Change	No Change	No Change
Nutrition Information	No Change	No Change	Improved
Health Care & Health Habits	Mixed	No Change	Mixed
Nutrition Behavior (2 scales)	Improved	No Change	No Change
Educational Attainment	Most in GED classes	No Change	Most returned to school

### 3.0 FINDINGS ON JOB-RELATED NON-ECONOMIC IMPACTS

This area of study contained the largest number of variables, eleven. They cover a number of job-related areas--knowledge of work, attitude toward work, interest in work and employment status. The first three subareas are taught within the Job Corps program both formally and informally. Formal teaching takes place in a course entitled "The World of Work," which is required of all enrollees. The course covers such skills as filling out applications and reading want ads, and offers opportunities to learn how to behave on the job and in a job interview, how to dress, how to handle problems on the job and how to manage money.

Informal education for future jobs takes place in all facets of center life. Vocational instructors often require businesslike dress or behavior. Training classes are usually divided into work crews, with an advanced student as leader. Former graduates sometimes return to the center and describe their work situations.

The following eleven outcomes were chosen to measure the impact of Job Corps experience in these areas. Seven of these were measured by means of scales--groups of items scored as a single measure. The other four variables were scored as individual items. In each case, however, the research questions were the same. They were:

1. Does Job Corps have an impact on this outcome?

This question is answered by means of pre-post comparisons of mean scores of each of the two Job Corps groups (Persisters and Dropouts) and by means of comparing these change scores with change scores of the comparison group (NoShows).

2. Are Job Corps' impacts on this variable different for men and women?

This question is answered by means of comparisons between change scores of males and change scores of females in each group.

3. Do there appear to be patterns of impact on these variables?

This question is answered in the summary discussions of outcomes at the end of the chapter.

Each outcome variable is discussed separately in this chapter, and each is analyzed in the same way, for ease of interpretation. First

the outcome is described briefly. Then a table is presented which displays mean pretest scores, posttest scores, and difference scores, separately for males and females within each of the three applicant groups (Persisters, Dropouts, and NoShows). On the far right of each table are the results of t tests of significance. These tests attempt to answer the first research question--to determine whether there was a substantial (significant) change in the mean scores of each of the six groups from pretest to posttest. Asterisks reference t's which are significant at the .05 level or less; the presence of more than one asterisk indicates a higher level of significance. It should be noted that the size of the t statistic required for significance varies based on the sample size of each group and subgroup.

To shed further light on the first research question, F tests have been computed to compare the three groups at the time of pretest and at the time of posttest. An F test has been also made among the difference scores of these groups. Results of these F tests on between-groups differences are reported at the bottom of the table and in the text, with statistical information in parentheses in cases of significance.

To answer the second research question, F tests have been computed to compare mean scores of males and females in each group at pretest and posttest. Again, results are reported at the bottom of the table and in the text.

Answers to the third research question appear in summary discussions. In addition, on some outcomes the results of interscale correlations are reported. In order to avoid overusing the data, these correlations were computed only in cases where associations between two scales were hypothesized a priori.

### 3.1 Knowledge of Work

Three separate skills were measured which relate to the obtaining and the keeping of a job, behaviors separate from the specific skill involved. These indirect skills are: 1) job seeking skills, the ability to actually look for a job, read ads, fill out an application, and the like; 2) job knowledge, a general level of knowledge about various types of employment including duties, salary, etc., and 3) job holding skills, the knowledge of what to do in order to get along on the job.

These three skills were measured by means of three subscales of the Youth Assessment Battery developed by Norman Freeberg at the Educational Testing Service.

#### 3.1.1 Job Seeking Skills Scale

The purpose of this measure is to assess the respondent's knowledge of the basic skills needed in looking and applying for work. Table 3-1 presents the mean scores for each of the three treatment groups (further broken out by sex) before and after Job Corps. The difference scores, that is the mean difference between the pretest and the posttest scores of each respondent are also shown. The sign of the mean difference score indicates whether there was an overall increase (positive change) or decrease (negative change) in individual scores.

As Table 3-1 indicates, both those who went into the Job Corps and stayed at least three months (Persisters), and those who were accepted but never entered the Corps (NoShows), showed increases in their job seeking skills. In addition, women who dropped out of the Job Corps within the first three months also showed a significant increase in work seeking abilities. The only group in the study population which failed to show an increase in job seeking abilities was the male Dropouts, whose scores on this indicator remained essentially unchanged.

As there were no significant differences among these groups on their pretest scores, it appears that the intervening experiences of both the Persisters and the NoShows had some impact on their ability to seek employment. For the Persisters, one can infer that their Job Corps training gave them this skill. For the NoShows, the hypothesis can be made that they did

Table 3-1  
 CHANGES IN: JOB SEEKING SKILLS SCALE SCORES  
 BY SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score (Pretest-Posttest)	N	Difference Score t
<u>Persisters</u>	<u>11.78</u>	<u>12.95</u>	<u>1.17</u>	<u>168</u>	<u>4.81***</u>
Males	11.67	12.78	1.11	100	3.35***
Females	11.94	13.19	1.25	68	3.53***
<u>Dropouts</u>	<u>11.66</u>	<u>12.10</u>	<u>.44</u>	<u>213</u>	<u>1.60</u>
Males	11.66	11.81	.14	119	.76
Females	11.65	12.47	.82	94	2.07*
<u>Noshows</u>	<u>12.00</u>	<u>13.33</u>	<u>1.33</u>	<u>75</u>	<u>3.39***</u>
Males	12.19	13.44	1.26	43	2.09*
Females	11.75	13.19	1.44	32	3.17***

Possible range: 0-17

Significant F tests: Across groups on the posttest (overall and males)  $F=5.97^{***}$

- \*p < .05
- \*\*p < .02
- \*\*\*p < .01

not show up for Job Corps training because they chose instead to look for a job, and that looking increased their job seeking skills almost as much as being in Job Corps for at least three months would have. Male Dropouts did not improve; they apparently did not spend enough time either in Job Corps or in the labor market to reap the gains that Persisters and No-Shows did. Female Dropouts, on the other hand, were able to learn from their mixed experience.

### 3.1.2 Job Holding Skills Scale

This scale is part of the Youth Assessment Battery and was designed to measure the extent to which the respondent was aware of certain skills and possessed attitudes which were conducive to positive employee/employer relationships. These things included relationships with the boss and with fellow employees, punctuality, and willingness to do a little extra on the job.

Table 3-2 shows the mean scores on the pretest and posttest administrations of this scale as well as the mean change scores for each of the three groups, separately for males and females. Analysis of variance indicated that the three test groups were the same in their pretest scores ( $F=0.27, df= 2/465, p = > .10$ ). They were also not significantly different in their posttest scores nor in their difference scores. While the scores of Persisters and NoShows did not change, the Dropouts did show a small but significant decline in job holding skills between the pretest and the posttest.

It is likely that the major reason that little or no change was observed on this scale is that the pretest scores were very close to the maximum. The average score on the Job Holding Skills scale across all applicants was 30.18, less than three points under the highest possible score, leaving little room for improvement. In fact, the lack of significant decline on the part of the Persisters is a positive finding for Job Corps, under the circumstances.

Table 3-2

CHANGES IN: JOB HOLDING SKILLS SCALE SCORES  
By SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score (Pretest-Posttest)	N	Difference Score t
<u>Persisters</u>	<u>30.21</u>	<u>30.12</u>	<u>-0.09</u>	<u>167</u>	<u>.39</u>
Males	30.12	29.85	-0.27	102	.80
Females	30.35	30.53	-0.18	65	.57
<u>Dropouts</u>	<u>30.19</u>	<u>29.65</u>	<u>-0.55</u>	<u>219</u>	<u>2.37*</u>
Males	29.87	29.35	-0.52	124	1.83
Females	30.61	30.04	-0.58	95	1.52
<u>No shows</u>	<u>30.22</u>	<u>30.17</u>	<u>-0.05</u>	<u>74</u>	<u>.13</u>
Males	30.34	30.14	-0.19	42	.43
Females	30.08	30.22	0.14	32	.25

Possible range: 11-33

Significant F tests: Between sexes on the pretest (Dropouts only)  $F = 7.4^{***}$   
Between sexes on the posttest (overall)  $F = 4.41^{**}$

\* $p < .05$

\*\* $p < .02$

\*\*\* $p < .01$

### 3.1.3 Job Knowledge Scale

The determination of whether Job Corps had an impact on this outcome is difficult to make at first glance. Male-female differences at the time of the pretest complicate the interpretation of the pre-post difference scores. For the Persisters, women had significantly higher scores than men at both pretest and posttest and neither group changed significantly. For the Dropouts, women had significantly higher scores at pretest only, because the women declined and the men did not change. It thus can be concluded that Job Corps did not have an impact on this outcome.

The NoShows, however, did improve significantly in job knowledge. Males and females began at the same level and increased about the same amount. In the small study sample, the difference is that being in the labor market has a positive impact and being in Job Corps does not.

The lack of improvement among Job Corps women can perhaps be attributed to a ceiling effect in the scale. As in the case of the job holding skills scale, the fact that the Persister women did not decline is a positive finding for Job Corps, under the circumstances. It is also possible to attribute the lack of improvement among Job Corps men to a similar ceiling effect. The fact that NoShows were able to improve despite the ceiling effect, however, indicates that being in the labor market had a powerful impact on job knowledge.

### 3.1.4 Summary

On the knowledge of work cluster of three scales, Job Corps appeared to have a positive impact only on job seeking skills, and only those who remained at least three months were so impacted. Being in the labor market during the same period of time, however, was associated with significant improvement on two scales, Job Seeking Skills and Job Knowledge. These two are the scales in the cluster which test factual knowledge rather than awareness of appropriate behavior. Scores on the Job Holding Skills scale did not improve for any group because of a ceiling effect within the scale. It can thus be concluded that youngsters who apply to Job Corps know how to behave on the job, but only those who remain in the labor market or

Table 3-3

CHANGES IN: JOB KNOWLEDGE SCALE SCORES  
By SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score (Pretest- Posttest)	N	Difference Score t
<u>Persisters</u>	<u>20.61</u>	<u>20.62</u>	<u>-0.08</u>	<u>163</u>	<u>0.24</u>
Males	20.09	19.95	-0.21	98	0.44
Females	21.41	21.59	0.12	65	0.34
<u>Dropouts</u>	<u>20.87</u>	<u>20.29</u>	<u>-0.70</u>	<u>222</u>	<u>2.03*</u>
Males	20.09	19.90	-0.30	129	0.71
Females	21.92	20.79	-1.24	93	2.17*
<u>No-shows</u>	<u>20.60</u>	<u>21.59</u>	<u>0.93</u>	<u>73</u>	<u>2.15*</u>
Males	20.60	21.50	0.90	41	1.97
Females	20.59	21.71	0.97	32	1.21

Possible range: Male - 0-25  
Female - 0-27

Significant F tests: Across groups on the posttest (males only)  $F = 3.56^*$   
Across groups on difference scores (overall & Females)  $F=3.64^*/3.36$   
Between sexes on the pretest (Persisters and Dropouts only)  $F = 7.41^{***}$  AND  $15.27^{***}$   
Between sexes on the posttest (Persisters only)  $F = 7.30^{***}$

\* $p < .05$

\*\* $p < .02$

\*\*\* $p < .01$

spend at least three months in Job Corps improve their factual knowledge. Spending a short period of time in Job Corps and then returning to the labor market is a pattern which reduces chances of improvement in the area of knowledge of work.

Male-female differences appeared on the Job Knowledge Scale, where both Persister and Dropout women entered Job Corps with a better background than the men. These differences must be interpreted with caution; however, this scale contains different items for men and women.\* It can be concluded only that the women knew more about "female jobs" than the men knew about "male jobs."

### 3.2 Attitudes Toward Work

In this section, we examine the impact which Jobs Corps training appears to have had on young peoples' attitudes concerning work and the work ethic. Two scales were used to measure these potential impacts. The first, Regis Walther's Work Relevant Attitudes Scale\*\* taps three separate types of work related attitudes. These are described by the scale's author as "Optimism," "Self-confidence" and "Unsocialized Attitudes." The second scale, the Work Ethic Scale (from Goodwin's Work Orientation Questionnaire\*\*\*) attempts to assess the extent to which the respondent perceives that work advances his or her self-development and that such efforts will lead to success.

#### 3.2.1 Work-Relevant Attitudes Scale

The results of the pre- and posttests and analysis of the changes in scores are presented in Table 3-4. While there were no significant differences among the three groups at pretest, across all the groups

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\*The Job Knowledge Scale for women also contains two more items than the scale for men. However, the number of items has been normalized here to make the two scores directly comparable.

\*\*Walther, R.H. The Measurement of Work Relevant Attitudes. Washington, D.C.: Manpower Research Projects, The George Washington University, 1975. NTIS Document No. PB 246260.

\*\*\*Goodwin, L. Do the Poor Want to Work? A Social-Psychological Study of Work Orientations. Washington, D.C.: The Brookings Institution, 1972.

Table 3-4

## CHANGES IN: THE WORK RELEVANT ATTITUDES SCALE SCORES

By SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score (Pretest- Posttest)	N	Difference Score t
<u>Pariaeters</u>	<u>55.73</u>	<u>54.51</u>	<u>-1.10</u>	<u>153</u>	<u>1.30</u>
Males	55.91	54.23	-1.49	90	1.34
Females	55.44	54.97	-0.48	43	.35
<u>Dropouts</u>	<u>55.70</u>	<u>53.45</u>	<u>-2.24</u>	<u>197</u>	<u>3.12**</u>
Males	56.54	53.06	-3.50	107	3.34***
Females	54.49	53.91	-0.78	90	.81
<u>Nonhows</u>	<u>56.77</u>	<u>54.86</u>	<u>-1.91</u>	<u>77</u>	<u>1.36</u>
Males	57.37	56.27	-1.09	41	.78
Females	55.99	53.00	-2.99	31	1.37

Possible range:

- \*p < .05  
 \*\*p < .02  
 \*\*\*p < .01

Table 3-5

## CHANGES IN: WORK ETHIC SCALE SCORES

By SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score (Pretest- Posttest)	N	Difference Score t
<u>Pariaeters</u>	<u>49.97</u>	<u>49.37</u>	<u>0.40</u>	<u>157</u>	<u>.79</u>
Males	48.36	49.35	0.99	55	1.43
Females	49.92	49.41	-0.51	42	0.70
<u>Dropouts</u>	<u>49.01</u>	<u>47.51</u>	<u>-1.50</u>	<u>204</u>	<u>2.64***</u>
Males	48.67	47.88	-0.59	108	0.70
Females	49.62	47.10	-3.52	96	3.47***
<u>Nonhows</u>	<u>48.76</u>	<u>48.21</u>	<u>-0.55</u>	<u>76</u>	<u>0.68</u>
Males	48.03	47.23	-0.07	43	0.04
Females	49.71	48.54	-1.17	33	1.05

Possible range: 15-60

Significant F tests: Across groups on the posttest (overall and women)  
 .004, 13.00/3.31\*  
 Between sexes on the pretest (overall) F=7.33\*\*\*

- \*p < .05  
 \*\*p < .02  
 \*\*\*p < .01

there was a consistent, though not always statistically significant, drop in the level of work relevant attitudes between the pre- and posttest. This drop indicates a general decline in optimism and self-confidence among these young people. Over the entire group of respondents, this decline is significant ( $t=3.41$ ;  $df=421$ ;  $p<.001$ ).

The greatest decline in job related attitudes came from those young people who attended the Job Corps for less than 3 months and dropped out before finishing their training. The decline is a reflection of the substantial decrease on the scale by males; the decline among Dropout females was not significant. While there was a general drop in job related optimism across this entire group of young people, this one subgroup of men who spent a short time in Job Corps and then re-entered the job market without having acquired further skills was most strongly affected. This differential may indicate that a failure to complete the Job Corps training program (or even to last more than 3 months) was one more failure to these young men, and that such a premature termination may have a substantial negative impact on attitudes. The overall decline in optimism is also reflected in the respondents' estimations of their situations in two years (see Section 3.3.3). Perhaps the high post-program unemployment rate experienced by all groups (see Section 3.4) tempered their enthusiasm. It can be concluded that Job Corps had impact only on male early Dropouts, and that its impact was negative. Job Corps had no significant impact on women's scores on this scale.

### 3.2.2 Work Ethic Scale

While all three groups showed statistically similar scores on the Work Ethic Scale in the pretest results (see Table 3-5), changes between the pre- and posttests were almost significantly different ( $p < .06$ ). Again, as with the Work Relevant Attitudes Scale, there was a drop in overall level of work ethic, with the exception of the Persisters males, whose scores increased slightly. The greatest drop occurred among the Dropout women. Again, the indications are that among those who persist in their Job Corps training, the benefits are the greatest, and those who fail to complete even three months run the greatest risk of major declines in general orientation towards work.

### 3.2.3 Lack of Job Skill Confidence Scale

A fifth non-economic but job related area which was examined was the degree to which the participants felt confident that they could succeed in the job market. This dimension was measured by Goodwin's "Lack of Confidence in Ability to Succeed in the World of Work Scale" (Lack of Confidence Scale). A positive change on this scale indicates a decline in confidence.

As Table 3-6 indicates, there was a decline across all of the respondents on their general level of job skill confidence, especially among the two Job Corps groups. Such changes reflect a belief that getting ahead in a job is largely a matter of luck rather than skill or hard work. Thus, the "confidence" label may be somewhat misleading. The increase in scores may simply reflect the impact which Job Corps had on the enrollee's sense of reality. For the males, the experience may have convinced them that luck is an important part of being really successful.

Indeed, as Table 3-7 shows, there were three items which accounted for the greatest amount of the difference between the two Job Corps groups and the NoShows. At least on the surface, none of these three items seems to reflect a lack of confidence but rather an acceptance of a specific point of view towards success -- that one must do or believe in certain things in order to be successful. These items reflect the belief that success mainly involves:

- Knowing the right people;
- Caring about making money; and,
- Having people like you

The indication is, then, that such values were, to some extent, transmitted either directly or indirectly to male Job Corps participants, whether they remained for three months or more or whether they dropped out prematurely. Women did not change their attitudes while in Job Corps, however.

Table 3-4

CHANGES IN: LACK OF JOB SKILL CONFIDENCE SCALE SCORES  
By SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score (Pretest-Posttest)	N	Difference Score $\pm$
<u>Persisters</u>	<u>20.13</u>	<u>21.80</u>	<u>1.67</u>	<u>155</u>	<u>1.74***</u>
Males	20.18	22.39	2.20	93	1.60***
Females	20.05	20.92	0.87	62	1.38
<u>Dropouts</u>	<u>20.53</u>	<u>21.27</u>	<u>0.75</u>	<u>101</u>	<u>2.24*</u>
Males	20.32	21.67	1.35	109	2.68***
Females	20.77	20.81	0.04	94	0.10
<u>Noshows</u>	<u>20.63</u>	<u>21.04</u>	<u>0.41</u>	<u>74</u>	<u>0.79</u>
Males	19.93	20.45	0.52	42	0.78
Females	21.54	21.81	0.27	32	0.28

Possible range:

significant F tests: Between sexes on difference scores (Dropouts only)  $F=3.89^*$ 

\*  $p < .05$   
\*\*  $p < .02$   
\*\*\*  $p < .01$

Table 3-7

Change Scores for Confidence Scale  
Items for Male Respondents

Item #	Item	Mean Score Changes		
		Persisters	Dropouts	Noshows
E3	Success in an occupation is mainly matter of knowing the right people.	.37	.19	-.10
E8	Success in an occupation is a matter of luck.	.21	.26	.20
E12	In order to get ahead in a job you need to have some lucky breaks	.34	.14	.42
E16	I like kind of work you can forget about	.11	.06	.05
E19	To be really successful in life you have to care about making money.	.20	-.08	-.29
E20	In order to be successful in a job, people have to like you.	.24	.27	.03
E22	To me, work is nothing more than a way of making a living.	.06	-.02	-.01
E23	The most important part of work is making good money.	.12	-.02	.14

#### 3.2.4 Summary

On the three scales which form the attitudes toward work sub-area, the impact of Job Corps was negative for males who dropped out early; their attitudes toward work became more negative on two of the three scales. Interestingly, female Dropouts became more negative only on the scale which did not change for male Dropouts.

For men and women who stayed at least three months, Job Corps seemed to have no impact, positive or negative. In this stability they are joined by the NoShows, who recorded no significant changes from pretest to posttest. These findings can be interpreted as follows: Attitudes toward work are not easily changed over a ten month period. If, however, a young person makes a commitment to improve his or her work skills and then does not follow through with it or does not like the program, this negative experience can have a significant negative impact on attitudes toward what does and what does not help a person get ahead in the job market. Remaining in Job Corps, on the other hand, allows a young person to retain his or her initial positive attitudes toward work.

#### 3.3 Interest in Work

This third sub-area of job-related non-economic impacts covers two topics--job satisfaction and vocational aspirations. Unlike the previous outcomes, these were measured by means of single item responses. Job satisfaction items were also aggregated into a scale. The purpose of examining these outcomes was to determine whether the experience of attending Job Corps impacted satisfaction with current work conditions and plans to achieve success in a vocational area.

A problem in interpretation in this sub-area lies in the fact that it is impossible to know whether a respondent who reported greater job satisfaction actually had a better job at the time of the posttest. Perhaps he or she became more satisfied with a post-paying job because he or she was planning to return to school shortly.

### 3.3.1 Job Satisfaction

Job satisfaction was assessed by means of four items which were developed specifically for this study. Respondents were asked to rate their current job (or, if they did not have a current job, their previous job) on four aspects: the pay, the level of interest, the chance for promotion, and the boss. Each item was rated on a scale of 1 to 4. The higher the number, the more positive the rating of the job element. Below we describe the responses to each item, as well as on the job satisfaction scale derived from combining these four items. It should be noted that youngsters who had never worked were instructed to skip this section. The sample size, therefore, is smaller than for other outcomes. A summary of findings on these five instruments follows in Table 3-8; complete tables of findings for each item are displayed in Tables 3-9 to 3-12, at the end of Section 3.3.1.

#### Pay

As Table 3-9 reveals, the three respondent groups started at approximately the same pretest baseline level on the pay item and increased significantly. There were no significant differences on the change scores, either among groups or between sexes. This item appears not to discriminate, i.e., all six groups formed by combining sex and Job Corps status increased their ratings of their job pay between pre- and posttest. Mean ratings for all groups began at between one (lowest rating) and two on the scale; all groups averaged between two and three on the posttest.

#### Level of Interest

Almost the same pattern prevailed on the interest ratings as on the pay item ratings, as Table 3-10 reveals. All three respondent groups were at approximately the same baseline level, and the change score ratings of all three groups reached significance. For the NoShows, however, the males accounted for that group's significant improvement, and only the overall score for Dropouts was significant. It can therefore be concluded that only within the Persister group did level of interest increase substantially for both men and women. Interestingly, both male and female Persisters scored the lowest on this item both times. Perhaps their higher standards induced them to stay longer in Job Corps, after which their scores increased more than those of the other groups.

Table 3-8

## SUMMARY OF JOB SATISFACTION FINDINGS

Finding	Pay	Level of Interest	Chance for Promotion	The Boss	Overall Job Satisfaction Scale
Pretest scores (Persisters vs. Dropout vs. NoShows)	ns	Persisters a bit lower <sup>ns</sup>	Persisters a bit lower <sup>ns</sup>	Persisters a bit lower <sup>ns</sup>	Persisters a bit lower <sup>ns</sup>
Posttest scores as above	ns	Persisters a bit lower <sup>ns</sup>	Persisters a bit lower <sup>ns</sup>	Persisters a bit lower <sup>ns</sup>	ns
Pre-post changers - Persisters	Males <sup>***</sup> and females <sup>**</sup> improve	Males <sup>*</sup> and females <sup>***</sup> improve	Overall <sup>***</sup> and Males <sup>***</sup> improve	Males <sup>***</sup> and females <sup>*</sup> improve	Males <sup>***</sup> and females <sup>***</sup> improve
Pre-post changers - Dropouts	Males <sup>*</sup> and females <sup>*</sup> improve	Overall improve <sup>**</sup>	ns, but post-test means higher	Overall <sup>***</sup> and males <sup>***</sup> improve	Males <sup>**</sup> and females <sup>*</sup> improve
Pre-post changes - NoShows	Males <sup>**</sup> and females <sup>*</sup> improve	Overall improve <sup>***</sup>	Overall <sup>*</sup> and females <sup>*</sup> improve	Overall <sup>***</sup> and females <sup>*</sup> improve	Males <sup>*</sup> and females <sup>***</sup> improve
Pre-post changes (Persisters vs. Dropouts vs. NoShows)	All improve <sup>ns</sup>	All improve <sup>ns</sup>	All improve <sup>ns</sup>	All improve <sup>ns</sup>	All improve <sup>ns</sup> but Persisters appear to improve the most <sup>ns</sup>

\* p &lt; .05

\*\* p &lt; .02

\*\*\* p &lt; .01

ns = no significant difference

Table 3-9  
CHANGES IN: PAY RATING SCALE SCORES

By SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score	N	Difference Score t
<u>Persisters</u>	<u>1.70</u>	<u>2.24</u>	<u>0.54</u>	<u>96</u>	<u>4.21</u> ***
Male	1.64	2.16	0.72	61	1.49 ***
Female	1.80	2.31	0.51	35	2.54 **
<u>Dropouts</u>	<u>1.91</u>	<u>2.39</u>	<u>0.47</u>	<u>122</u>	<u>1.59</u> ***
Male	1.93	2.32	0.39	71	2.29 *
Female	1.92	2.49	0.57	51	2.84 ***
<u>Nonshows</u>	<u>1.86</u>	<u>2.40</u>	<u>0.54</u>	<u>57</u>	<u>1.11</u> ***
Male	1.94	2.40	0.46	15	2.47 **
Female	1.73	2.41	0.68	22	2.19 *

Possible range: 1-4

\*p < .05

\*\*p < .02

\*\*\*p < .01

Table 3-10  
CHANGES IN: INTEREST RATING SCALE SCORES

By SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score	N	Difference Score t
<u>Persisters</u>	<u>1.42</u>	<u>1.96</u>	<u>0.53</u>	<u>95</u>	<u>1.90</u> ***
Male	1.45	1.85	0.40	60	2.29 *
Female	1.37	2.14	0.77	35	1.49 ***
<u>Dropouts</u>	<u>1.77</u>	<u>2.14</u>	<u>0.36</u>	<u>124</u>	<u>2.56</u> **
Male	1.72	2.07	0.35	72	1.74
Female	1.83	2.21	0.39	52	1.96
<u>Nonshows</u>	<u>1.72</u>	<u>2.21</u>	<u>0.51</u>	<u>57</u>	<u>2.96</u> ***
Male	1.77	2.21	0.46	35	2.16 *
Female	1.64	2.21	0.60	22	1.81

Range = 1-4

\*p < .05

\*\*p < .02

\*\*\*p < .01

### Chance for Promotion

Although there were no significant differences among groups on the pretest or the posttest, both male and female Dropouts began with the highest rankings but did not improve on the posttest. In contrast, Persisters and NoShows recorded significant overall increases in their estimates of the chance for promotion. This inter-group difference implies that attending Job Corps for at least three months or remaining in the labor market has an impact on perceived chances for promotion, and Job Corps matters more. Spending a short period in Job Corps and a short period in the labor market, however, does not have similar positive impacts.

It should be pointed out that the two groups that improved significantly (Persister males and NoShow females) recorded the lowest estimates on the pretest. Their changes may be cases of regression toward the mean as much as anything else.

### The Boss

Ratings of the boss were lowest of the four items and were about the same at pretest and posttest for all three respondent groups. The ratings increased significantly overall between pretest and posttest for all three respondent groups (see Table 3-12), although only among Persisters did both male and females increase. The two groups which did not change (Dropout females and NoShow males) had the highest scores on the pretest. They may have kept (or returned to) those good jobs and therefore did not increase markedly in their assessments. Persisters had the lowest assessment of their bosses on both the pretest and the posttest, although significant change did take place. As in the case of level of interest, higher standards among Persisters may have been responsible.

### Job Satisfaction Scale

The four item ratings were summed into a Job Satisfaction Scale. On this "scale," the three groups were similar to each other at pretest and at posttest. All six groups manifested significant change on the combined scale between pretest and posttest (see Table 3-13). Persisters,

Table 3-11

CHANGES IN: CHANCE FOR PROMOTION RATING SCALE SCORES

By SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score	N	Difference Score t
<u>Persisters</u>	<u>1.92</u>	<u>2.52</u>	<u>0.600</u>	<u>95</u>	<u>3.50</u> ***
Males	1.75	2.50	0.750	60	3.56 ***
Females	2.20	2.54	0.343	35	1.17
<u>Dropouts</u>	<u>2.37</u>	<u>2.64</u>	<u>0.264</u>	<u>121</u>	<u>1.68</u>
Males	2.33	2.51	0.186	70	0.88
Females	2.43	2.80	0.373	51	1.59
<u>Noshows</u>	<u>2.14</u>	<u>2.60</u>	<u>0.466</u>	<u>58</u>	<u>2.36</u> *
Males	2.25	2.56	0.306	36	1.30
Females	1.96	2.68	0.727	22	2.08 *

Range = 1-4

\*p < .05  
\*\*p < .02  
\*\*\*p < .01

Table 3-12

CHANGES IN: BOSS RATING SCALE SCORES

By SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score	N	Difference Score t
<u>Persisters</u>	<u>1.31</u>	<u>1.81</u>	<u>0.51</u>	<u>95</u>	<u>3.87</u> ***
Males	1.30	1.85	0.55	60	3.29 ***
Females	1.31	1.74	0.43	35	2.04 *
<u>Dropouts</u>	<u>1.54</u>	<u>2.12</u>	<u>0.58</u>	<u>122</u>	<u>4.49</u> ***
Males	1.49	2.27	0.78	71	4.55 ***
Females	1.61	1.92	0.31	51	1.61
<u>Noshows</u>	<u>1.49</u>	<u>2.00</u>	<u>0.51</u>	<u>57</u>	<u>2.89</u> ***
Males	1.63	1.97	0.34	35	1.61
Females	1.27	2.05	0.77	22	2.45 *

\*p < .05  
\*\*p < .02  
\*\*\*p < .01

Scale: 1 = lowest;  
4 = highest

Table 3-13

CHANGES IN: JOB SATISFACTION SCALE SCORES

By SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score	N	Difference Score t
<u>Persisters</u>	<u>6.25</u>	<u>8.59</u>	<u>2.34</u>	<u>93</u>	<u>4.68</u> ***
Males	5.98	8.50	2.52	58	3.68 ***
Females	6.69	8.74	2.06	35	2.91 ***
<u>Dropouts</u>	<u>7.66</u>	<u>9.29</u>	<u>1.63</u>	<u>120</u>	<u>3.48</u> ***
Males	7.57	9.17	1.61	69	2.59 **
Females	7.78	9.45	1.67	51	2.30 *
<u>Noshows</u>	<u>7.25</u>	<u>9.26</u>	<u>2.03</u>	<u>57</u>	<u>3.63</u> ***
Males	7.66	9.20	1.54	35	2.42 *
Females	6.59	9.36	2.77	22	2.70 **

Range = 4-16

\*p < .05  
 \*\*p < .02  
 \*\*\*p < .01

although they improved the most, began with the lowest ratings and ended with the lowest ratings. This finding can be interpreted in one of two ways:

- Persisters were most strongly motivated to stay in Job Corps because of previous bad experiences on the job, and were the most cautious of the groups in rating their post program jobs.
- Persisters' jobs before and after the program were not any worse than those of other groups, but these youth's standards began high and remained high.

In the absence of information about actual pre-program and post-program jobs of the three groups, conclusions regarding these items and this scale cannot be reliably drawn. That Persisters improved the most is, however, a positive finding for Job Corps.

### 3.3.2 Vocational Aspirations

An attempt was made to ascertain the respondents' perceptions of their job standing by asking them to rate their job status as of two years ago, now, and two years in the future. The ratings were made on a ten-rung "Ladder of Life" scale, as shown below. In the sections below we examine the results for each item. A summary of findings on these three items follows in Tables 3-14 and 3-15. Individuals tables 3-16 to 3-18 are placed at the end of Section 3.3.

The items were worded as follows:

To the right is a picture of a ladder. Suppose we say that the top of the ladder represents the BEST POSSIBLE JOB for you and the bottom now represents the WORST POSSIBLE JOB for you.

BEST POSSIBLE JOB

10
9
8
7
6
5
4
3
2
1

WORST POSSIBLE JOB

Where on the ladder do you feel you personally stand right now?

\_\_\_\_\_  
(Enter step number)

Where on the ladder would you say you stood two years ago?

\_\_\_\_\_  
(Enter step number)

Where do you think you will be on the ladder two years from now?

\_\_\_\_\_  
(Enter step number)

Table 3-14

## SUMMARY OF LADDER OF LIFE FINDINGS

	"Where do you stand right now?"	"Where did you stand two years ago?"	"Where will you stand two years from now?"
Pretest scores (Persisters v. Dropouts v. No Shows)	Female Persisters and Dropouts both lower <sup>ns</sup> than female NoShows; males <sup>ns</sup>	Female Persisters and Dropouts both lower <sup>ns</sup> than female NoShows; males <sup>ns</sup>	Female NoShows score highest <sup>ns</sup>
Posttest scores (Persisters v. Dropouts v. No Shows)	Female Persisters and Dropouts both higher <sup>ns</sup> than female NoShows; males <sup>ns</sup>	ns	Both male and female Persisters and Dropouts score higher <sup>ns</sup> than NoShows
Pre-post changes Persisters	Improve a bit, mostly males <sup>ns</sup>	Improve a bit, mostly females <sup>ns</sup>	Females slightly lower <sup>ns</sup>
Pre-post changes Dropouts	Improve a bit, mostly females <sup>ns</sup>	Both male and female improve	Males slightly lower <sup>ns</sup>
Pre-post changes No Shows	Males unchanged; females significantly lower ***	Males unchanged; females lower	Males lower <sup>ns</sup> ; females significantly lower ***
Pre-post changes (Persisters v. Dropouts v. No Shows)	Persisters males improve <sup>ns</sup> versus other males; No Show females significantly lower <sup>ns</sup> versus other females	Persisters and Dropouts improve <sup>ns</sup> versus No Shows	All groups score lower <sup>ns</sup> , but No Shows <sup>ns</sup> and female No Shows *** show more negative change than any other group

Table 3-15

## Mean Ladder of Life Rating Scores by Treatment Group

Treatment Groups	"Two Years Ago"		"Right Now"		"Two Years from Now"	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
Persisters	4.11	4.33	5.64	6.02	6.68	6.61
Dropouts	3.98	4.55	5.63	5.94	6.53	6.30
NoShows	4.33	4.20	5.71	5.04	6.82	7.73

Possible range: 1-10

### Perceived Job Status "Two Years Ago"

It is important to remember that, in most cases, a decrease in perception of job status two years ago represents an increase in aspirations. Since these youth were unlikely to have had good jobs in the past, a decrease in perception would have represented a realization of this. If, on the other hand, the respondent had been unemployed since Job Corps, previous jobs might have looked better by comparison, thus yielding an increase in perception. It appears as if both formulations are applicable in this case, as there was a significant negative correlation of posttest scores with being employed at the time of the posttest. This means that those who were working were likely to see previous jobs at a lower level than those who were not working.

There were no overall differences among groups on the pretest or the posttest. Dropouts as a group increased their perceptions of their previous jobs significantly. It is not surprising that Dropout males and NoShow females recorded the highest perceptions, since they were the most likely to have been unemployed at the time of the posttest.

It can be concluded that Job Corps did not increase the aspirations of those who had been enrolled. In fact, only NoShow women decreased their perceptions. They began at a much higher level than the other groups, however. Perhaps their sense of already doing well in the job market was what kept them from enrolling. Ten months (and much unemployment) later, their perceptions had "come down to earth" somewhat. There is a possibility that this decline only reflects regression toward the mean, however.

### Perceived Job Status Right Now

Regarding job status right now, it is difficult to interpret increases and decreases. If the youth was indeed working at a better job than at the time of the pretest, an increase in perception would have been warranted. If the youth was not working at a better job than previously, a decrease in perception would have indicated higher aspiration. There is, unfortunately, no way to validate these findings because no objective data on job quality was provided. Two correlations, however, of posttest "right now" scores with posttest employment status were significantly positive, an indication that those who were working perceived themselves as higher on the ladder than those who were not working.

In the present study only NoShow women changed their scores. They decreased their perceptions from the highest of any group to the lowest. The same interpretation as in the case of "two years ago" can be made: The women failed to enroll in Job Corps because they were satisfied with their current jobs. By the time of the posttest, they were not nearly so satisfied.

#### Perceived Job Status in Two Years

On this measure the assumption would ordinarily be that those who raised their scores from pretest to posttest also raised their vocational aspiration. In this study, however, a ceiling effect was operating which prevented significant increases from manifesting themselves. As in the case of current job status, NoShow women scored the highest of any group on the pretest and declined significantly from pretest to posttest. Here the interpretation is more or less the same as has been made previously: No Show women were far less optimistic about their situations after ten more months in the labor market.

Because of the presence of the ceiling effect, it is not surprising that slight decreases were recorded. The fact that the Job Corps groups stayed stable is a positive finding for Job Corps, under the circumstances.

#### 3.3.3 Summary -- Interest in Work

Job Corps seems to have had a positive impact on those who stayed at least three months. Although they consistently rated aspects of their jobs somewhat lower than did other groups, their improvement was also most consistent.

The vocational aspirations scale is difficult to interpret without other data on post-program employment. However, the change in the scores on the three items for the entire sample is a rather interesting one, as seen in the summary table provided (Table 3-15). Whereas the mean rating on the pretest changed from about 4.1 to about 5.6 between "Two Years Ago" and "Right Now," it jumped an optimistic three points (to about 8.6) between "Right Now" and "Two Years from Now." This suggests an overall optimistic future perception by the sample at the time of the pretest, an agreement that things will be much better in the future.

The "Two Years from Now" findings suggest that Job Corps Persisters remained optimistic about their prospects after Job Corps, while the Drop-out males and especially the NoShows demonstrated a more pessimistic prospect. Such a conclusion can be drawn despite the operation of the ceiling effect.

Table 3-16

CHANGES IN: "WHERE DID YOU STAND TWO YEARS AGO?" LADDER OF LIFE RATING

BY SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score	N	Difference Score t
<u>Persisters</u>	<u>4.11</u>	<u>4.31</u>	<u>0.20</u>	<u>123</u>	<u>0.72</u>
Males	4.23	4.28	0.07	71	0.22
Females	3.94	4.40	0.46	52	1.08
<u>Dropouts</u>	<u>3.98</u>	<u>4.55</u>	<u>0.57</u>	<u>161</u>	<u>2.24*</u>
Males	4.16	4.77	0.61	93	1.68
Females	3.74	4.25	0.52	68	1.45
<u>NoShows</u>	<u>4.33</u>	<u>4.20</u>	<u>-0.07</u>	<u>59</u>	<u>0.17</u>
Males	3.33	3.74	0.46	33	0.89
Females	5.27	4.34	-0.73	26	1.14

Possible range: 1-10

Significant F tests: Between sexes on the pretest (NoShows only)  $F=6.2^{**}$ 

\* $p < .05$   
 \*\* $p < .02$   
 \*\*\* $p < .01$

Table 3.17

CHANGES IN: "WHERE DO YOU STAND RIGHT NOW?" LADDER OF LIFE RATING

BY SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score	N	Difference Score t
<u>Persisters</u>	<u>5.64</u>	<u>6.02</u>	<u>0.38</u>	<u>126</u>	<u>1.40</u>
Males	5.71	5.99	0.28	72	0.71
Females	5.56	6.07	0.52	54	1.41
<u>Dropouts</u>	<u>5.63</u>	<u>5.94</u>	<u>0.31</u>	<u>162</u>	<u>1.26</u>
Males	5.86	5.88	0.02	93	0.07
Females	5.31	6.01	0.70	69	1.80
<u>NoShows</u>	<u>5.71</u>	<u>4.95</u>	<u>-0.633</u>	<u>60</u>	<u>1.57</u>
Males	5.32	5.24	-0.06	34	0.10
Females	6.15	4.82	-1.54	26	3.22***

Possible range: 1-10

Significant F tests: Across groups at posttest (overall and women)  $F=4.71^{***}/3.74^{**}$   
 Across groups on difference scores (women only)  $F=5.94^{***}$   
 Between sexes on difference scores (NoShows only)  $F=4.08^*$

Table 3-18

CHANGES IN: "WHERE WILL YOU STAND TWO YEARS FROM NOW?" LADDER OF LIFE  
BY SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score	N	Difference Score t
<u>Persisters</u>	<u>8.68</u>	<u>8.61</u>	<u>-0.07</u>	<u>119</u>	<u>0.30</u>
Males	8.54	8.63	0.09	67	0.27
Females	8.87	8.60	-0.27	52	0.94
<u>Dropouts</u>	<u>8.53</u>	<u>8.30</u>	<u>-0.23</u>	<u>161</u>	<u>1.18</u>
Males	8.70	8.32	-0.38	93	1.47
Females	8.31	8.28	-0.03	68	0.10
<u>NoShows</u>	<u>8.82</u>	<u>7.73</u>	<u>-1.08</u>	<u>60</u>	<u>3.09***</u>
Males	8.36	7.64	-0.73	33	1.40
Females	9.37	7.85	-1.52	27	3.42***

Possible range: 1-10

Significant F tests:

Across groups on the pretest (overall and women)  $F = 3.56^*/3.26^{**}$

Across groups of difference (overall and women)  $F = 3.49^*/4.11^{**}$

Between sexes on the pretest (NoShows only)  $F = 6.06$

\* $p < .05$

\*\* $p < .02$

\*\*\* $p < .01$

### 3.4 Employment Status

The focus of the present study was on the noneconomic impacts of Job Corps training. Nevertheless, during the posttest, respondents were also asked whether or not they were currently employed (full- or part-time) and the number of months they had worked either full- or part-time since their Job Corps termination. In the case of NoShows, the period asked about was since they had applied for the Job Corps. Three variables were derived from the employment items.

#### 3.4.1 Employment Status at Posttest

The first variable was simply whether or not the respondent was employed full- or part-time at the time of the posttest interview. Table 3-19 presents the employment status of the three groups at the time of the follow-up interview.

Table 3-19  
Employment Status At Time of Follow-up Interview  
By Job Corps Status  
(in percentages)

	Currently Employed Full-Time	Currently Employed Part-Time	Not Employed
Persisters	21	5	74
Male	22	7	71
Female	19	3	79
Dropouts	12	9	79
Male	11	8	81
Female	13	10	77
NoShows	17	10	73
Male	23	15	63
Female	10	3	87

There are no statistically significant differences among the three groups ( $X^2=6.88$ ;  $df=4$ ;  $p=ns$ ). However, the table shows that while the unemployment rate was approximately equal for the three groups, a greater percentage of the employed Persisters were working full-time (approximately 80%) than of the employed Dropouts (57%) or of the employed NoShows (63%). While the numbers are too small to be highly reliable, there is an indication that the employment found by the Persisters tended to be more full time than that

found by either the NoShows or the Dropouts. This is particularly notable in contrast to the NoShows, who had much more time to seek a full-time job. In any case, there is no evidence here to suggest that NoShows or Dropouts failed to enroll in or terminated from Job Corps in order to accept full-time employment.

In terms of male-female differences, there appear to be none in either the Persister or the Dropout groups. However, there is a suggestion that NoShow women found it harder to get a job--either full- or part-time--than their male counterparts. At the time of the interview, more than one-third (38%) of the NoShow males were employed, compared with only 13% of the NoShow women. Neither the differences among all of the groups ( $\chi^2=15.07$ ;  $df=10$ ; NS) nor between male and female NoShows were statistically significant ( $\chi^2=5.60$ ;  $df=s$ ; NS). Nevertheless, given that women traditionally find it harder than males to get full-time work, it may be that the Job Corps experience brought the women in the Persister and Dropout groups up to the employment levels of their male counterparts, whereas without Job Corps, their chances for employment would have been substantially less. Findings in Section 2.1 indicated that Job Corps women did not improve in job-related attitudes and skills any more than NoShow women. The higher employment rate of Job Corps women may have been related to the vocational training received.

#### 3.4.2 Amount of Time Employed Since Job Corps

The second employment variable looked at was the amount of time the respondent was employed, full time and part time, between the end of the Job Corps experience and the follow-up interview. As is shown in Table 3-20, the NoShows, on the average, reported being employed two and a half times as long as the Persisters and nearly three and a half times as long as the Dropouts. Most of this difference, of course, was expected, since the NoShows had been in the job market considerably longer than either the Dropouts or the Persisters. What was not expected, however, was the vast differences between men's and women's employment experience. In the two Job Corps groups women worked more than men, both full time and part time, while the opposite was true for NoShows. Furthermore, despite their longer time in the labor market, NoShow women did not work significantly more than Job Corps women. What this may mean is that Job Corps gave the women in this sample skills which made them highly employable, skills that NoShows

did not gain. Men, on the other hand, took longer to re-enter the labor market successfully. By the time of the posttest, however, Persister men were more likely than Persister women to be working and almost as likely as NoShow men.

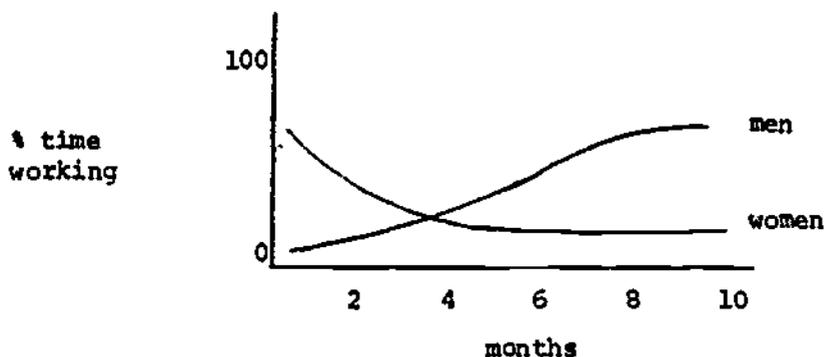
Table 3-20

	Months Worked Full-Time	Months Worked Part-Time
Persisters	<u>1.101</u>	<u>.500</u>
Males	.936	.418
Female	1.333	.615
Dropouts	<u>.815</u>	<u>.536</u>
Males	.754	.452
Females	.896	.646
NoShows	<u>2.771</u>	<u>1.215</u>
Males	3.489	1.444
Females	1.824	.912
	Males: F=26.22 p<.001 df=2/278	Males: F=7.61 p<.001 df=2/278
	Females F=2.09 p=ns df=2/205	Females F=.34 p=ns df=2/205

Another interpretation of this phenomenon would be that work patterns differed by sex more than by treatment group. The data are:

1. At four months, women had worked 30% more months than men but were somewhat less likely to be working currently.
2. At ten months, women had worked about half as much time as men and were one-third as likely to be working currently.

These two facts lead to the speculation that women of all groups tended to work less and less as time went on, and men worked more and more. The work frequency curves of men and women probably looked like this:



This interpretation implies that the work patterns of men and women were unaffected by Job Corps training. Because the data on NoShows and the Job Corps groups was gathered after different time lags, there is no way to investigate this possibility further.

### 3.4.3 Relationship of Employment Variables to Outcome Measures

Although the scales and items used in this study were considered valid and reliable for this population (insofar as they had been validated), it is important for a study of this type to take every opportunity possible to retest the validity of the scales. One of the most important types of validity to investigate is criteria validity, which answers the question "Does a high score on or improvement on this scale correlate with a high level of or improvement on the behavior which the scale is purported to predict?" Because the present study gathered data both from scales and behavioral self reports, a limited test of criteria validity was undertaken.

Posttest scores on scales which were used to measure indirect job skill acquisition were correlated with self-reports of (1) current work status, (2) amount of time employed since Job Corps and (3) percent time employed since Job Corps.

Findings were disappointing. As the table below indicates, only three correlations of the twenty-seven were significantly different from zero. The three significant correlations were in the expected direction: Those who were currently working rated their "work status now" higher, and their "work status two years ago" lower, than those who were not working at the time of the posttest interview. Similarly, those who had worked the greatest percentage of time since Job Corps rated their "work status now" highest.

Table 3-21

Correlation of Posttest Scores on Job -Related  
Outcomes with Employment Status Variables

CRITERION SCALE	Length of employment since Job Corps	, Percent time employed since Job Corps	Currently Working
Job Seeking Skills	.06	0	.04
Job Holding Skills	-.03	-.04	-.02
Job Knowledge	-.04	-.07	-.01
Work Ethic	-.02	-.03	-.08
Lack of Jo' Skill Confidence	.01	.05	.08
Work Relevant Attitudes	0	.01	-.05
Work Status Two Years Ago	0	-.02	-.10*
Work Status Now	.05	.10*	.16***
Work Status Two Years from Now	-.03	.03	.05

\*p&lt;.05

\*\*\*p&lt;.001

What was disappointing was the lack of correlation of such scales as Job Seeking Skills, Job Knowledge, etc. Although there may have been good reasons for those with high scores not to be working\*\* (poor job market, pregnancy, family obligations), the absence of any relationship casts the predictive value of these scales into question. Either the scales do not measure skills they purport to measure, or the possession of those skills did not affect the work behavior of this sample. Further research must be conducted to identify those scales which are valid against such behavioral criteria.

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\*\*These correlations were computed only on respondents who were not in school full time at the time of the posttest.

### 3.5 Summary

Although the overall employment rates for all of these groups of young people were low, it is possible that the Job Corps experience for those who stayed on past the initial three months was beneficial; they did seem to find more full-time employment than those who dropped out before three months. While conclusions are only speculative without figures at comparable intervals for the three groups, it also may be that previous Job Corps enrollment helped young women's employment chances. Their employment rate was essentially similar to those of their male counterparts-- a parity which was not found among the NoShows.

The lack of correlation of posttest scores on job-related outcome variables with post-program employment status indicates that these scales lack criterion validity, as tested by the three employment status items in this battery. Although the study was not designed as scale validation research, this finding calls into the question the validity of the results of these scales.

#### 4.0 FINDINGS ON SOCIAL-ATTITUDINAL IMPACTS

Five outcomes were included in this area of study. All are interpersonal in nature. Job Corps attempts to improve social attitudes by means of its counseling and residential living programs. Through counseling, it tries to help youth deal with family problems, difficulties in interpersonal relations and difficulties in adjustment to center life. The residential living program offers enrollees peer group companionship, extra-curricular activities and leadership opportunities. The five outcomes in the social-attitudinal area attempted to measure the impact of these Job Corps program services. The outcomes were:

- Attitude Toward Authority
- Self-Esteem
- Criminal Justice System Involvement
- Family Relations
- Leisure Time

The first three of these outcomes were measured by means of scales. In each case, the research questions were the same. They were:

1. Does Job Corps have an impact on this outcome?

This question is answered by means of pre-post comparisons of mean scores of each of the two Job Corps groups (Persisters and Dropouts) and by means of comparing these change scores with change scores of the comparison group (NoShows).

2. Are Job Corps' impacts on this variable different for men and women?

This question is answered by means of comparisons between change scores of males and change scores of females in each group.

3. Do there appear to be patterns of impact on these variables?

This question is answered in the summary discussions of outcomes at the end of the chapter.

Each outcome variable is discussed separately in this chapter, and each scaled outcome is analyzed in the same way, for ease of interpretation. First the outcome is described briefly. Then a table is presented

which displays mean pretest scores, posttest scores, and difference scores, separately for males and females within each of the three applicant groups (Persisters, Dropouts, and NoShows). On the far right of each table are the results of t tests of significance. These tests attempt to answer the first research question--to determine whether there was a substantial (significant) change in the mean scores of each of the six groups from pretest to posttest. Asterisks reference t's which are significant at the .05 level or less; the presence of more than one asterisk indicates a higher level of significance. It should be noted that the size of the t required for significance varies based on the sample size of each group and subgroup.

To shed further light on the first research question, F tests have been computed to compare the three groups at the time of pretest and at the time of posttest. An F test has been also made among the difference scores of the three groups. Results of these F tests on between-groups differences are reported at the bottom of the table and in the text, with statistical information in parentheses in cases of significance.

To answer the second research question, F tests have been computed to compare mean scores of males and females in each group at pretest and posttest. Again, results are reported at the bottom of the table.

Answers to the third research question appear in summary discussions. In addition, on some outcomes the results of interscale correlations are reported. In order to avoid overusing the data, these correlations were computed only in cases where associations between two scales were hypothesized a priori.

In the case of the two outcomes which were analyzed on an item by item basis, the results on each item are displayed for men and women separately. Because these data are limited to the nominal scale in most cases, the chi-square statistic is used to determine whether or not the distribution of respondents in the contingency table is significantly different from the expected distribution.

As in the case of the outcomes measured by means of scales, those measured on an item by item basis are discussed in terms of the three research questions enumerated above.

#### 4.1 Attitude Toward Authority

The Attitude Toward Authority scale of the Youth Assessment Battery was the instrument used to measure social attitudes in this study. A number of other social attitude scales had been considered for inclusion but were later dropped. On this scale, the higher the score, the more deferential to authority the respondent is. In Table 4-1, the results on the Attitude Toward Authority scale are arrayed. All three respondent groups started out, at pretest, at about the same level on this scale, with male Dropouts more deferential than female Dropouts at a level approaching significance ( $F = 3.82$ ;  $df = 2/210$ ;  $p = .05$ ). Of the three groups, only the Persisters increased their scores reliably. The others did not change significantly, although all subgroups except the NoShow men improved somewhat. A surprising finding, considering expectations based on stereotypes, was that females in each group scored somewhat lower (less deferential) than the males on both pretest and posttest.

These results suggest that Job Corps training inculcates respect for authority in both men and women, especially those who stay at least three months.

Table 4-1  
CHANGES IN: ATTITUDE TOWARD AUTHORITY SCALE SCORES  
BY SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score	N	Difference Score t
<u>Persisters</u>	<u>41.48</u>	<u>42.95</u>	<u>1.47</u>	<u>164</u>	<u>2.0 *</u>
Male	41.84	43.22	1.38	99	1.45
Female	40.89	42.54	1.65	45	1.43
<u>Dropouts</u>	<u>41.81</u>	<u>42.90</u>	<u>1.15</u>	<u>212</u>	<u>1.71</u>
Male	42.73	43.44	0.71	121	.81
Female	40.43	42.34	1.91	91	1.70
<u>NoShows</u>	<u>42.66</u>	<u>42.69</u>	<u>0.03</u>	<u>74</u>	<u>.03</u>
Male	43.78	43.13	-0.65	42	1.35
Female	41.19	42.13	0.93	32	.59

Possible range: 12-60

\* $p < .05$

\*\* $p < .02$

\*\*\* $p < .01$

## 4.2 Self-Esteem

One of the important noneconomic impacts that job training can have is to give its participants a sense of self-worth. In this study, that benefit was measured by Rosenberg's Self-Esteem Scale. The 10 items of this scale are particularly addressed to adolescents and cover such areas as self-concept, self-worth, and self-respect.

There were no significant differences among the three respondent groups at pretest. Examination of Table 4-2 shows that only the Persisters manifested a statistically reliable increase in self-esteem between pre- and posttest. Persister women, in fact, moved from being the group with the lowest scores to being the group with the second highest scores. Dropouts of both sexes showed a nonsignificant drop in their Self-Esteem scores.

Furthermore, the analysis of variance of the pre-post difference scores among the three respondent groups revealed that there was a significant Between Groups effect ( $F = 3.199$ ,  $df = 2/422$ ,  $p < .05$ ) due to the differences between the Persisters and Dropouts ( $t = 2.47$ ,  $df = 350$ ,  $p < .05$ ). The fact that there were no significant differences at pretest (in fact the dropouts began somewhat higher) indicates that the difference score effect is a "real" one.

What is impressive is that the differences discussed above prevailed in the presence of a possible "ceiling" effect. That is, all three groups started out, at pretest, close to the top of the range of Self-Esteem scale scores (the possible range of scores on this scale is 10-20). Thus the fact that the Dropouts' Self-Esteem scores declined and the NoShows' scores did not increase could be attributed to a ceiling effect artifact. Assuming, however, that the change scores are not a function of such an artifact, it can be concluded that remaining in Job Corps gave the Persisters (particularly the females) an increased sense of self-worth. It is interesting to note that there is a significant positive correlation ( $r_{pb} = .18$ ,  $p < .001$ ) in the Persister group between the Self-Esteem Scale change score and the tendency to join the Job Corps as a result of problems at home. It might be conjectured that as the Persisters were removed from their home environments for a substantial period of time, they discovered that they functioned much better away from home, and as a result, their self-esteem increased.

Table 4-2

## CHANGES IN: SELF-ESTEEM SCALE SCORES

## By SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score	N	Difference Score t
<u>Persisters</u>	<u>17.30</u>	<u>17.69</u>	<u>0.39</u>	<u>155</u>	<u>2.04</u> *
Males	17.36	17.54	0.20	92	0.84
Females	17.21	17.89	0.68	63	2.10 *
<u>Dropouts</u>	<u>17.53</u>	<u>17.28</u>	<u>-0.25</u>	<u>197</u>	<u>1.55</u>
Males	17.45	17.20	-0.25	106	1.13
Females	17.63	17.39	-0.24	91	1.06
<u>Noshows</u>	<u>17.64</u>	<u>17.83</u>	<u>0.19</u>	<u>71</u>	<u>.69</u>
Males	17.72	17.90	0.18	40	.50
Females	17.55	17.74	0.20	31	.48

Possible range: 10-20

Significant F tests: Across groups on difference scores (overall)  $F=3.49^*$ \* $p < .05$ \*\* $p < .02$ \*\*\* $p < .01$

Although the decrease in self-esteem on the part of Dropouts was not significant, previously discussed findings on attitudes indicate that the failure to remain in Job Corps probably did have negative effects on the self-images of these youth.

#### 4.3 Involvement with the Criminal Justice System

One of the most tangible non-economic outcomes that Job Corps hopes to achieve is a reduction in the recidivism rate of youngsters who come to Job Corps with a history of delinquency or adult offenses. Regulations indicate that applicants with court histories are to be considered "questionable" in terms of eligibility, with the decision made by the Regional Office on a case-by-case basis. Youngsters with histories of violent or property crimes are usually rejected; those with status offenses (runaways, incorrigibles) are usually accepted. According to data from Job Corps records, 10% of the Persisters and 11% of Dropouts in this sample were "questionables" at the time of application.

On the pretest and posttest instruments, five questions regarding criminal justice system involvement were asked. Information on arrests, convictions, court appearances, probation and incarceration were requested. Although responses to such sensitive questions are often considered unreliable, the self-report method of measurement was chosen instead of research into court records because of the issue of confidentiality. Because of the assurances of anonymity given in the instrument instructions, the research staff felt that the respondents would offer honest responses.

Questions on the pretest and posttest were worded somewhat differently. For example, on the pretest, respondents were asked if they had ever been arrested. On the posttest they were asked if they had been arrested "since your Job Corps experience ended,"\* a period of two to four months for the Job Corps groups, and eight to ten months for the NoShows. The posttest time frame is therefore much shorter than that of the pretest

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\*The instruction stated:

"We will be asking you questions about what has happened to you since your Job Corps experience ended. If you did not actually go to Job Corps, when we say 'Since your Job Corps experience ended' we mean since you applied to Job Corps. If you were in Job Corps, when we say 'Since your Job Corps experience ended' we mean what has happened to you since your Job Corps termination."

and the "yes" response rate is accordingly much smaller on most items. It should be remembered that the NoShow time frame on the posttest is more than twice as long as that of the other two groups.

A scale of criminal justice system involvement was developed to incorporate all five items. The scale ranges from 0 to 5, with scores representing the number of "yes" responses. This linear scoring method was chosen because answers here tend to be cumulative; a person who had been arrested only would score one, while a person who had been convicted would score two, one for the arrest and one for the conviction. Table 4-3 displays the findings.

As Table 4-3 indicates, all groups except Dropout females and NoShow females significantly reduced their police and court involvement. This drop was expected, considering that the time period covered was only four to ten months on the posttest. The fact that the two groups of women did not decline significantly is probably an artifact of a "floor" effect; that is, they were so low on the pretest that they could not decrease their scores.

Males in each group were higher than females on both the pretest and the posttest. Among women, Persisters were significantly higher on the pretest and reduced their scores significantly more; female Persisters had the lowest rate of police involvement on the posttest.

NoShows were expected to reduce their scores less than those in the Job Corps groups because the time period covered for them was more than twice as long. Their posttest scores were somewhat higher, but not nearly as much as would have been justified by the time difference. This lack of difference indicates either that the Job Corps terminees had a relatively high rate of police and court involvement or that this scale is not sensitive to the kinds of differences likely to appear over time.\*

The findings for Persister women are encouraging for Job Corps. For some reason women with previous court problems tended to stay longer in Job Corps and reduce their rates of police involvement markedly. These women seem to have found Job Corps a positive influence.

In an attempt to shed more light on the phenomenon of police and court involvement, the five items on the scale were analyzed separately.

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\*For example, the posttest question asked "Have you been arrested since your Job Corps experience ended?" Those who had been arrested several times and those arrested once would have both answered "yes," and no differentiation was possible.

Table 4-3

CHANGES IN POLICE INVOLVEMENT  
By SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score	N	Difference Score t
<u>Persisters</u>	<u>1.37</u>	<u>.41</u>	<u>-0.96</u>	165	7.01***
Males	1.64	.61	-1.03	99	5.30***
Females	.97	.10	-0.86	66	4.72***
<u>Dropouts</u>	<u>1.30</u>	<u>.55</u>	<u>-0.75</u>	205	6.05***
Males	1.90	.79	-1.10	116	6.07***
Females	.52	.24	-0.28	89	1.95
<u>Noshows</u>	<u>1.30</u>	<u>.68</u>	<u>-0.62</u>	69	2.71***
Males	1.94	.92	-0.82	39	2.47*
Females	.73	.37	-0.37	30	1.20

Possible range: 0-5

Significant F tests: Across groups on difference scores (women only) F=3.18.

Between the sexes on the pretest and the posttest (all three groups)

\*p = < .05  
\*\*p = < .02  
\*\*\*p = < .01

4.3.1 Legal Status Items - Males

For males, there were no significant differences among Persisters, Dropouts, and NoShows on any of the five items on the pretest or the posttest.

The first item was arrests:

Table 4-4  
(in percentages)

Males

Have you ever been arrested by the police?			Have you been arrested by the police since your Job Corps experience ended?			Pre-post "yes" differences
<u>Pretest:</u>	<u>Yes</u>	<u>No</u>	<u>Posttest:</u>	<u>Yes</u>	<u>No</u>	
Persisters	55	45	Persisters	19	81	36
Dropouts	60	40	Dropouts	20	80	40
NoShows	57	43	NoShows	31	69	26
$\chi^2 = .59$ df = 2 p = ns N = 267			$\chi^2 = 2.6$ df = 2 p = ns N = 274			

NoShows reported only a slightly higher arrest rate than other groups on the posttest, although the time period covered was more than twice as long. The number of arrests is not specified here, however.

Court appearances and convictions are examined next:

Table 4-5  
(in percentages)

Males

Have you ever been up before a judge for anything?			Have you been up before a judge for anything since your Job Corps experience ended?			Pre-Post "yes" differences
<u>Pretest:</u>	<u>Yes</u>	<u>No</u>	<u>Posttest:</u>	<u>Yes</u>	<u>No</u>	
Persisters	46	54	Persisters	20	80	26
Dropouts	48	52	Dropouts	24	76	24
NoShows	47	53	NoShows	29	71	18
$\chi^2 = .15$ df = 2 p = ns N = 270			$\chi^2 = 1.2$ df = 2 p = ns N = 279			

Table 4-6  
(in percentages)

Males

Have you ever been convicted of a crime?			Have you been convicted of a crime since your Job Corps experience ended?			Pre-Post "yes" differences
Pretest:	Yes	No	Posttest:	Yes	No	
Presisters	18	82	Persisters	7	73	9
Dropouts	17	83	Dropouts	11	89	6
NoShows	21	79	NoShows	10	90	11
$\chi^2 = .34$ $df = 2$ $p = ns$ $N = 272$			$\chi^2 = 1.2$ $df = 2$ $p = ns$ $N = 272$			

On both court appearances and convictions, all groups decreased on the posttest, and the conviction level of NoShows over ten months was no more than for the other groups over four months. There were no significant differences among groups. The pretest and posttest conviction rate was less than half the rate of court appearances, on both the pretest and the posttest. This is probably a reflection of the non-conviction procedure of most juvenile justice systems.

The next question dealt with time in prison:

Table 4-7  
(in percentages)

Males

Have you ever spent time in jail or prison?			Have you spent time in jail or prison since your Job Corps experience ended?			Pre-Post "yes" differences
Pretest:	Yes	No	Posttest:	Yes	No	
Persisters	16	84	Persisters	14	86	2
Dropouts	17	83	Dropouts	11	89	6
NoShows	21	79	NoShows	14	86	7
$\chi^2 = .52$ $df = 2$ $p = ns$ $N = 268$			$\chi^2 = .45$ $df = 2$ $p = ns$ $N = 268$			

Incarceration rates are interesting because, like convictions, pre-test rates were low and there was little difference between pretest and post-test rates. This similarity is probably due to the respondents' increase in age, which made them less likely to be released into the custody of a parent. NoShows, over twice as much time, showed no more instances of incarceration.

The final question covered probationary status:

Table 4-8  
(in percentages)

Males

Have you ever been put on probation by a judge?			Have you been put on probation by a judge since your Job Corps experienced ended?			Pre-Post "yes" differences
<u>Pretest:</u>	<u>Yes</u>	<u>No</u>	<u>Posttest:</u>	<u>Yes</u>	<u>No</u>	
Persisters	36	64	Persisters	5	95	31
Dropouts	36	64	Dropouts	12	88	24
NoShows	25	75	NoShows	10	90	15

$X^2 = 2.1$ $df = 2$ $p = ns$ $N = 269$	$X^2 = 4.06$ $df = 2$ $p = ns$ $N = 274$
--	---

Although differences were not significant, Persisters were less likely than other groups to have been placed on probation after Job Corps.

4.3.2 Legal Status Items - Females

In comparison to males, all items of police involvement were low for all groups, both pre- and post. The comparison of the legal status of females contains one significant finding: Female Persisters were most likely to have been on probation prior to Job Corps.

Items are discussed in the same order as for males. Arrests are first:



Table 4-9  
(in percentages)  
Females

Have you ever been arrested by the police?			Have you been arrested by the police since your Job Corps experience ended?			Pre-Post "yes" differences
<u>Pretest:</u>	<u>Yes</u>	<u>No</u>	<u>Posttest:</u>	<u>Yes</u>	<u>No</u>	
Persisters	25	75	Persisters	4	96	21
Dropouts	16	84	Dropouts	5	95	11
NoShows	13	87	NoShows	6	94	7

$X^2 = 2.9$	$X^2 = .31$
df = 2	df = 2
P = ns	P = ns
N = 199	N = 203

As noted in the discussion of the scale scores above, Persister women came to Job Corps with a more serious police history. As is shown here, they had the highest pre Job Corps and lowest post Job Corps arrest rate.

The next table illustrates rates of court appearance:

Table 4-10  
(in percentages)  
Females

Have you ever been up before a judge for anything?			Have you been up before a judge for anything since your Job Corps experience ended?			Pre-Post "yes" differences
<u>Pretest:</u>	<u>Yes</u>	<u>No</u>	<u>Posttest:</u>	<u>Yes</u>	<u>No</u>	
Persisters	32	68	Persisters	4	96	28
Dropouts	20	80	Dropouts	7	93	13
NoShows	25	75	NoShows	9	91	16

$X^2 = 2.7$	$X^2 = 1.38$
df = 2	df = 2
P = ns	P = ns
N = 201	N = 204

Persister women were highest on the pretest and lowest on the posttest in rate of court appearance. Next, convictions are displayed:

Table 4-11  
(in percentages)

Females

Have you ever been convicted of a crime?		
<u>Pretest:</u>	<u>Yes</u>	<u>No</u>
Persisters	11	89
Dropouts	4	96
NoShows	6	94

$x^2 = 2.4$   
df = 2  
p = ns  
N = 199

Have you ever been convicted of a crime since your Job Corps experience ended?		
<u>Posttest:</u>	<u>Yes</u>	<u>No</u>
Persisters	0	100
Dropouts	4	96
NoShows	6	94

$x^2 = 4.02$   
df = 2  
p = ns  
N = 204

Pre-Post "yes" differences
11
0
0

Dropouts and NoShows reported the same conviction rates on the pretest and posttest. Persisters, on the other hand, went from 11% to 0%, an encouraging finding for Job Corps.

The incarceration rate for women is displayed in the next table:

Table 4-12  
(in percentages)

Females

Have you ever spent time in jail or prison?		
<u>Pretest:</u>	<u>Yes</u>	<u>No</u>
Persisters	10	90
Dropouts	8	92
NoShows	9	91

$x^2 = .13$   
df = 2  
p = ns  
N = 192

Have you spent time in jail or prison since your Job Corps experience ended?		
<u>Posttest:</u>	<u>Yes</u>	<u>No</u>
Persisters	1	99
Dropouts	4	96
NoShows	6	94

$x^2 = 1.93$   
df = 2  
p = ns  
N = 192

Pre-Post "yes" differences
9
4
3

Unlike males, females in all groups reduced their rates of incarceration. Again, Persisters made the greatest gains, although differences were small.

The final question concerned probation:

Table 4-13  
(in percentages)

Females

Have you ever been put on probation by a judge?			Have you been put on probation by a judge since your Job Corps experience ended?			Pre-Post "yes" differences
<u>Pretest:</u>	<u>Yes</u>	<u>No</u>	<u>Posttest:</u>	<u>Yes</u>	<u>No</u>	
Persisters	22	78	Persisters	1	99	21
Dropouts	8	92	Dropouts	3	97	5
NoShows	16	84	NoShows	6	94	10

$\chi^2 = 6.31$ $df = 2$ $p = <.04$ $N = 193$	$\chi^2 = 1.87$ $df = 2$ $p = ns$ $N = 204$
--	--

This item is the only one in which significant differences among groups were found; significantly more Persister women had been on probation than women in other groups. Reasons for these baseline differences are unclear. Perhaps women on probation had been in group homes or reform schools and were thus more comfortable than others in an institutional environment. Another interpretation might be that these women saw Job Corps as a way out of their damaging home situations. In any case, the trend observed earlier appears again: Persister women showed the greatest decrease over time.

4.3.3 Criminal Justice System Involvement as a Factor in Outcome Scores

Because the findings on the differences among groups were interesting and policy relevant, further analysis was undertaken to determine whether differences in legal status were associated with differences in the impact of Job Corps. Study subjects were divided into two groups -- those who made one or more positive responses to the Criminal Justice System Involvement questions on the pretest and those who made no positive responses. The former group will be called "ex-offenders" for the purposes of this analysis. The two groups were compared in terms of their mean scores on outcome variables; the research question to be answered was

"Does Job Corps have more impact on ex-offenders than on others?" NoShows were eliminated from this analysis to assure that all youth were measured on the impact of Job Corps.

The results of this analysis are extremely valuable to Job Corps. On a large number of outcome variables ex-offenders improved after Job Corps more than others did. Table 4-14 displays pretest, posttest and difference scores of the two groups for each outcome in which one or more of the intergroup comparisons was significant.

On Job Seeking Skills, ex-offenders simply improved more than the others. On Job Holding Skills, Job Knowledge, Nutrition Information, Health Information and Ladder of Life in Two Years, ex-offenders improved slightly or remained the same while others declined. Only on two scales -- Ladder of Life Now and Work Relevant Attitudes -- did ex-offenders fare worse on the posttest than on the pretest. (A final variable -- Criminal Justice System Involvement -- will be discussed in detail below). The decline in Ladder of Life Now may not actually represent a negative finding, since ex-offenders' consideration of themselves lower on the ladder at posttest than at pretest may well reflect a desirable change -- a sense of realism replacing a sense of bravado. The decline in Work Relevant Attitudes cannot be interpreted in a positive way, however.

The fact that ex-offenders improved or did not decline on Job Seeking Skills, Job Knowledge, Nutrition Information and Health Information indicates that on all the scales which tested factual knowledge, Job Corps had a positive impact on ex-offenders. Such a consistent finding is a rarity in a study of this type, and it merits serious consideration on the part of Job Corps officials, both for its positive and its negative implications. Apparently, those youngsters who had police records were the ones who also had missed much schooling. Whether they missed school because they had to go to court or they got in trouble for missing school is unknown. What is clear is that they made up a great deal of what they missed in Job Corps. They were aware of this improvement evidently, because their ratings of their job status two years from now increased from pretest to posttest, while the ratings of the others declined. The negative implication of this finding lies in the decline of the other group. Those who entered Job Corps with somewhat better academic skills did not improve, and in some cases lost ground.

Table 4-14

Impact Of Outcome on Ex-Offenders

Key: 0 = no police record; 1+ = "ex-offenders"; N =

Scale			Means	F	df	p
Job Seeking Skills	Pretest Scores	0	12.18	7.16	1/365	<.005
		1+	11.30			
	Posttest Scores	0	12.67	2.48	1/363	ns
		1+	12.15			
Difference Scores	0	.56	2.71	1/352	ns	
	1+	.89				
Job Holding Skills	Pretest Scores	0	30.45	6.23	1/363	<.02
		1+	29.87			
	Posttest Scores	0	29.84	.12	1/370	ns
		1+	29.95			
Difference Scores	0	-.69	4.58	1/356	<.05	
	1+	-.05				
Job Knowledge	Pretest Scores	0	21.37	12.18	1/362	<.001
		1+	20.15			
	Posttest Scores	0	20.27	.44	1/365	ns
		1+	20.57			
Difference Scores	0	-1.19	8.72	1/350	<.005	
	1+	.27				
Criminal Justice System Involvement	Pretest Scores	0	0.00	1031.51	1/368	<.001
		1+	2.70			
	Posttest Scores	0	0.22	23.09	1/368	<.001
		1+	0.76			
Difference Scores	0	0.27	258.09	1/368	<.001	
	1+	-1.94				
Work Relevant Attitudes	Pretest Scores	0	55.76	.58	1/334	ns
		1+	55.03			
	Posttest Scores	0	55.09	10.88	1/365	<.001
		1+	51.90			
Difference Scores	0	-.58	3.16	1/325	ns	
	1+	-2.74				
Nutrition Information	Pretest Scores	0	2.79	11.09	1/369	<.001
		1+	2.39			
	Posttest Scores	0	2.72	4.25	1/368	<.05
		1+	2.48			
Difference Scores	0	-.09	1.92	1/360	ns	
	1+	.10				
Health Information	Pretest Scores	0	12.43	10.58	1/366	<.005
		1+	11.46			
	Posttest Scores	0	12.05	2.45	1/369	ns
		1+	11.48			
Difference Scores	0	-.23	.35	1/358	ns	
	1+	.00				
Ladder of Life, low	Pretest Scores	0	5.58	.38	1/296	ns
		1+	5.77			
	Posttest Scores	0	6.28	5.44	1/335	<.02
		1+	5.67			
Difference Scores	0	.65	4.00	1/271	<.05	
	1+	-.10				
Ladder of Life, Two Years From Now	Pretest Scores	0	8.74	.48	1/292	ns
		1+	8.59			
	Posttest Scores	0	8.21	1.87	1/333	ns
		1+	8.53			
Difference Scores	0	-.55	5.35	1/263	<.02	
	1+	.15				

The final topic for discussion here is the comparison of Criminal Justice System Involvement of the two groups. To compare them on the pretest would be redundant; by definition the non-offenders began at zero, and the 2.70 mean "yes" responses of the ex-offenders was significantly higher. On the posttest, however, the results were more valid. The non-offenders had nowhere to go but up, and so they did, modestly. The ex-offenders decreased sharply, but not enough to eliminate the significant difference between groups. It was enough of a reduction, however, to assure that the difference between change scores (non-offenders up, ex-offenders down) would be highly significant. The question remains "was this reduction among ex-offenders simply an artifact of the study (the pretest covered many years, while the posttest covered only a few months) or can Job Corps be said to have had a positive impact on ex-offenders?" This question cannot be answered statistically, yet it can be pointed out that posttest scores of Persisters as a group were 30% of their pretest scores and posttest scores of Dropouts as a group were 44% of their pretest scores, while the posttest scores of ex-offenders were only 28% of their pretest scores. Job Corps can look at this finding as a major non-economic impact.

It can be concluded that:

- Ex-offenders benefited greatly from Job Corps in the area of factual knowledge;
- Non-offenders did not gain in factual knowledge from Job Corps training;
- Ex-offenders improved in criminal behavior after Job Corps more than the sample as a whole.

#### 4.4 Family Relations

Two of the original outcomes proposed for study were family relations and leisure time activities. Both were dropped as major areas of study because of the difficulty of finding appropriate instruments to measure these outcomes. In order to offer a limited view of changes in these areas, a number of items were developed to be added to the posttest. The posttest items were worded so that they could be administered both to former Job Corps enrollees and to NoShows. The phrase "since your Job Corps experience ended" was used to give a baseline point for comparison.\* Six items on the topic of family relations were included--three items concerned behavioral changes in regard to family life; three items concerned changes in feelings.

##### 4.4.1 Behavioral Items

The first behavioral item presented is marriage.

Table 4-15  
(in percentages)  
Males

Have you gotten married or started living with a partner since your Job Corps experience ended?	Persisters	Dropouts	NoShows	Statistics
Yes	6	7	10	$\chi^2 = .65$ df=2 p =ns N =265
No	94	93	90	

##### Females

Have you gotten married or started living with a partner since your Job Corps experience ended	Persisters	Dropouts	NoShows	Statistics
Yes	11	12	10	$\chi^2 = .13$ df =2 p =ns N =202
No	89	88	90	

\*The instruction stated: "We will be asking you questions about what has happened to you since your Job Corps experience ended. If you did not actually go to Job Corps, when we say 'Since your Job Corps experience ended' we mean since you applied to Job Corps. If you were in Job Corps, when we say 'Since your Job Corps experience ended' we mean what has happened to you since your Job Corps termination."

There were no significant differences; all groups remained overwhelmingly unmarried. The Job Corps demographic data discussed in Appendix B indicated that only one person who later attended Job Corps was married at the time of application. (NoShows were not included in that data base.) The second item concerned divorce.

Table 4-16

Table 4-16  
(in percentages)  
Males

Have you gotten divorced or broken up with your partner since your Job Corps experience ended?	Persisters	Dropouts	NoShows	Statistics
Yes	12	14	2	$\chi^2=3.97$ df=2 p =ns N =268
No	88	86	98	

Females

Have you gotten divorced or broken up with your partner since your Job Corps experience ended?	Persisters	Dropouts	NoShows	Statistics
Yes	19	15	17	$\chi^2= .41$ df=2 p =ns N =201
No	81	85	83	

On this variable there were again no significant differences, although NoShow males indicated more stability in their relationships, perhaps because those relationships were not disrupted by the absence of one partner at Job Corps. Another interpretation is that the NoShow males, who were the most likely of any group to be working at the time of the posttest (see Section 3.4), were the most reliable breadwinners and therefore least vulnerable to marital dissolution. Research from the National Longitudinal Study indicates that marital stability and steady employment of the male are correlated.

The final behavioral variable was childbirth.

Table 4-17  
(in percentages)  
Males

Have you started your own family since your Job Corps experience ended?	Persisters	Dropouts	No Shows	Statistics
Yes	13	18	12	$\chi^2=1.45$ df=2 p =ns N =268
No	87	82	88	

Females

Have you started your own family since your Job Corps experience ended?	Persisters	Dropouts	No Shows	Statistics
Yes	21	13	38	$\chi^2=9.51$ df=2 p = .008 N =203
No	79	87	63	

Findings here were significant for females. Over the nine-month period since Job Corps application, almost 40% of the NoShow women had children or became pregnant. Perhaps pregnancy was the reason why they did not enroll. A majority of these women were probably unmarried. This inference is derived from the fact that there was only one married applicant in the Job Corps groups and that only 10% of the female NoShows indicated above that they had recently gotten married. It should be noted that Persister women also started their own families at the same rate, since the period of time for NoShows was more than twice as long.

The wording of the question was probably confusing. Although it was an attempt to measure fertility of men as well as women, male respondents may have fathered children without feeling that they had "started their own family." In addition, women who became pregnant but already had a child might have responded negatively. The same confusion would have held for men who already had a child. This problem with the wording of the question

might explain the lower "yes" rate for Dropout women. They might have dropped out because of child care problems. This is a fairly common problem among Job Corps women. If they did have children at the time they were enrolled, then subsequent pregnancies would not have showed up as "yes" answers to this question.

Although the wording of the question lowered the reliability of the responses, it should be remembered that such lack of reliability means only that respondents, both male and females might have under-reported their fertility rates.

The lack of real differences among groups (when time is adjusted for) indicates that Job Corps has no impact on the high teenage pregnancy rate. Because of problems with the wording of the question, it is difficult to interpret male-female differences on this item.

#### 4.4.2 Attitudinal Items

The first attitudinal item presented is changes in general family relations. The question did not specify whether "family" referred to parents and siblings or to spouse and children.

Table 4-18  
(in percentages)

#### Males

Since my Job Corps experience ended, my relations with my family have	Persisters	Dropouts	NoShows	Statistics
Become better	35	29	15	$\chi^2=10.6$ $df= 4$ $p = < .03$ $N =268$
Stayed about the same	54	64	83	
Become worse	11	7	2	

Females

Since my Job Corps experience ended, my relations with my family have	Persisters	Dropouts	NoShows	Statistics
Become better	26	23	25	$\chi^2 = .60$ $df = 4$ $p = ns$ $N = 202$
Stayed about the same	59	64	63	
Become worse	16	13	13	

In the area of feelings about their families, significant differences were found among the males. NoShows were most likely to report no change; while Persisters reported the most change, both positive and negative. Women overall were more likely than men to report negative changes in family relations, and like the men, female Persisters reported the most change. Job Corps seemed to help men get along better with their families, perhaps because, having been on their own for a while, they were more able to see their families in perspective. For women, on the other hand, the Job Corps experience did not seem to be a factor in their changes in feelings.

The second attitudinal item presented is changes in heterosexual relations.

Table 4-19 (in percentages)

## Males

Since my Job Corps experience ended, my relations with my husband/wife or boyfriend/girlfriend have:	Persisters	Dropouts	NoShows	Statistics
Become better	38	30	10	$\chi^2=13.44$ df= 6 p = < .03 N =264
Stayed about the same	37	43	63	
Become worse	11	14	10	
I have no husband/wife or boyfriend/girlfriend	15	13	17	

## Females

Since my Job Corps experience ended, my relations with my husband/wife or boyfriend/girlfriend have:	Persisters	Dropouts	NoShows	Statistics
Become better	31	24	31	$\chi^2=8.12$ df=6 p =ns N =198
Stayed about the same	37	39	56	
Become worse	13	17	9	
I have no husband/wife or boyfriend/girlfriend	18	19	3	

Here again, findings for males but not females were significant. The trend is similar to that in the previous question; NoShows reported the least change and Persisters reported the most positive change. On this item as well as on the previous one, female NoShows reported feeling as positive as the Persisters and not as negative. The most negative change was reported by the female Dropouts. Apparently, the Job Corps experience

helped men relate not only to their families, but also to their partners. That it did not help women to do so must be viewed with concern.

The final attitudinal item presented is change in feelings about living partners.

Table 4-20 (in percentages)

Males

Since my Job Corps experience ended, how I feel about the person or persons with whom I live has:	Persisters	Dropouts	NoShows	Statistics
Become better	40	32	27	$\chi^2=3.98$ $df=4$ $p =ns$ $N =268$
Stayed about the same	52	57	68	
Become worse	10	11	5	

Females

Since my Job Corps experience ended, how I feel about the person or persons with whom I live has:	Persisters	Dropouts	NoShows	Statistics
Become better	42	34	41	$\chi^2=4.47$ $df=4$ $p =ns$ $N =200$
Stayed about the same	49	57	41	
Become worse	9	9	19	

The general trend continued here; female NoShows felt as positively as Persisters about their changes over the past few months. In this case, however, a high proportion of female NoShows reported negative changes. Male NoShows again reported the least change, either positive or negative. Differences here were not significant for either sex.

#### 4.4.3 Conclusions

Findings on the behavioral questions indicate that Job Corps had no impact on the rate of marriage, divorce or childbearing of this respondent group. Because of the variation in time period covered, the lack of differences among groups is difficult to interpret. Furthermore, the wording of the childbearing question makes its results unreliable. Thus, little significance should be attributed to these findings.

The attitudinal questions were not subject to such difficulties, however. Among males, two of the three questions yielded significant differences among groups. In each case, NoShows reported the least change and Persisters reported the most (and most positive) change. Job Corps clearly made an impact on the attitudinal part of the family relations outcome for males.

In the case of females, the findings were less encouraging. Persisters and NoShows responded almost identically, with Dropouts reporting an only slightly more negative picture. It appears, therefore, that Job Corps had no impact on women's attitudes toward their families and living partners.

4.5 Leisure Time

Like family relations, this outcome was dropped as a major focus because of the difficulty of measuring it. Again, however, some insight can be gained by examining the posttest results of five items which were developed to examine changes in friendships and activities.

The first item presented is the making of new friends:

Table 4-21  
(in percentages)

Males

Have you made new friends since your Job Corps experience ended?	Persisters	Dropouts	NoShows	Statistics
Yes	69	74	81	$\chi^2=2.04$ $df=2$ $p =ns$ $N =269$
No	31	26	20	

Females

Have you made new friends since your Job Corps experience ended?	Persisters	Dropouts	NoShows	Statistics
Yes	68	74	77	$\chi^2=1.38$ $df=2$ $p =ns$ $N =203$
No	32	26	23	

There were no significant differences for either sex. Unlike the pattern in the Family Relations outcome, here the NoShows reported the most change and the Persisters the least. For both males and females, NoShows, then Dropouts, then Persisters were most likely to have made new friends. Of course, NoShows had the most time to make new friends "since their Job Corps experience ended." This alone might explain the small marginal differences.

The second item presented is relationships with friends:

Table 4-22  
(in percentages)

Males

Since my Job Corps experience ended, my relations with my friends have	Persisters	Dropouts	NoShows	Statistics
Become better	33	35	12	$\chi^2=10.25$ $df= 4$ $p = < .03$ $N =267$
Stayed about the same	60	59	85	
Become worse	7	7	2	

Females

Since my Job Corps experience ended, my relations with my friends have	Persisters	Dropouts	NoShows	Statistics
Become better	30	25	28	$\chi^2=3.52$ $df=4$ $p =ns$ $N =202$
Stayed about the same	66	63	59	
Become worse	4	12	13	

Here the NoShow males returned to their previous mode of response; they reported significantly less change than the other groups. Also, Persisters and Dropouts were more likely than NoShows to have improved their relationships with friends. Among females there was little difference among groups, except that Persisters felt that their relations had gotten worse only a third as often as women in the other two groups.

The next item presented in participation in sports:

Table 4-23  
(in percentages)

Males

Since my Job Corps experience ended, my interest and participation in sports has:	Persisters	Dropouts	NoShows	Statistics
Become better	37	45	32	$\chi^2=2.86$ $df=4$ $p =ns$ $N =267$
Stayed about the same	55	50	61	
Become worse	8	6	7	

Females

Since my Job Corps experience ended, my interest and participation in sports has:	Persisters	Dropouts	NoShows	Statistics
Become better	34	25	22	$\chi^2=3.23$ $df=4$ $p =ns$ $N =203$
Stayed about the same	59	62	66	
Become worse	7	13	13	

There were no significant differences on this item. As usual, NoShows reported the least change among the men. This was also the case among women, although differences were small. There was a slight tendency among both men and women for both Job Corps groups to report the most positive change. Perhaps the availability of recreational activities in Job Corps served as a catalyst for increased later participation.

The next item presented is interest in hobbies:

Table 4-24  
(in percentages)

Males

Since my Job Corps experience ended, my interest in hobbies has:	Persisters	Dropouts	NoShows	Statistics
Become better	37	43	24	$\chi^2=4.7$ $df=4$ $p =ns$ $N =268$
Stayed about the same	56	50	68	
Become worse	7	7	7	

Females

Since my Job Corps experience ended, my interest in hobbies has:	Persisters	Dropouts	NoShows	Statistics
Become better	32	31	28	$\chi^2= .35$ $df=4$ $p =ns$ $N =203$
Stayed about the same	60	61	66	
Become worse	7	8	6	

Responses to this item were similar to those on the previous item; Job Corps veterans reported more interest in hobbies. There were no significant differences, although NoShows (this time of both sexes) continued to show the least change.

The final item in this outcome is feelings about the environment in which the respondent lives:

Table 4-25  
(in percentages)

Males

Since my Job Corps experience ended, how I feel about where I live has:	Persisters	Dropouts	NoShows	Statistics
Become better	29	27	12	$\chi^2=6.2$ $df=4$ $p =ns$ $N =269$
Stayed about the same	60	61	81	
Become worse	12	12	7	

Females

Since my Job Corps experience ended, how I feel about where I live has:	Persisters	Dropouts	NoShows	Statistics
Become better	33	35	25	$\chi^2=2.44$ $df=4$ $p =ns$ $N =202$
Stayed about the same	54	47	53	
Become worse	13	18	22	

Responses to this final question repeated the pattern of the previous two. The two Job Corps groups felt better about their environments, although there were no significant differences. The least change was among male NoShows and the most negative change was among female NoShows.

Conclusions

Responses to these items showed a definite pattern that is encouraging to Job Corps. The leisure time activities offered by Job Corps resulted in a feeling of positive change among males, both Persisters and Dropouts, who were exposed to them. The tendency for NoShow males not to change, and to be least likely to report positive change, was noted in the Family Relations section and continued here.

For women, findings followed no discernable pattern. As in the case of Family Relations, it must be concluded that Job Corps had little impact on women on this outcome.

#### 4.6 Summary: Social-Attitudinal Impacts,

This area of study included scales which measure both behavioral and attitudinal change in the area of getting along with others -- friends, family, authority figures. On the three formal scales, Persisters improved more than the other two groups. On the two item-by-item outcomes, Persisters improved at least as much as the other two groups. The impact of Job Corps on those who stayed at least three months is clear.

It is encouraging for Job Corps that Dropouts performed quite well on this cluster of outcomes. On every outcome except Self-Esteem, their positive changes approached or exceeded those of the Persisters. This was more true for males than for females.

Probably the most important findings were those recorded for the criminal justice system outcome. Job Corps' positive impact on ex-offender women is most encouraging, both in terms of length of stay and in terms of recidivism. The program also helped both male and female ex-offenders in acquiring remedial education in a variety of areas.

The Family Relations and Leisure Time outcomes were measured in the least reliable way -- through a series of previously unvalidated items. The findings on these outcomes were relatively positive for Job Corps, although the lack of reliability calls some of the results into question. It remains for further research to study the impact of Job Corps on post-program family life, social life, pregnancy rate and marriage/divorce rate.

## 5.0 FINDINGS ON HEALTH AND EDUCATIONAL IMPACTS

In addition to its central mission of vocational training, Job Corps offers its participants health and educational services. In health, it provides full medical care, with a clinic for outpatient care and an infirmary for more serious problems, both on center. Further, all Job Corps enrollees are required to take a course in health as part of their educational program.

Job Corps' educational services consist of classes in basic reading and math for those who need it, intermediate-level classes for enrollees with better backgrounds, and GED (General Equivalency Diploma) classes for those advanced enough to work toward a high school diploma. These classes are required for all enrollees except the few who enter with high test scores and a high school diploma.

In order to assess the impact of Job Corps in these two areas, six outcomes were included in the Assessment Battery. They were:

- Health Information
- Health Care and Health Habits
- Selection of a Balanced Diet
- Junk Food Ratio
- Nutrition Information
- Educational Attainment

All were measured by means of scales, except for Health Care and Health Habits and Educational Attainment. As in the case of Chapters 3 and 4, the research questions for the scaled items were:

1. Does Job Corps have an impact on this outcome?

This question is answered by means of pre-post comparisons of mean scores of each of the two Job Corps groups (Persisters and Dropouts) and by means of comparing these change scores with change scores of the comparison group (NoShows).

2. Are Job Corps' impacts on this variable different for men and women?

This question is answered by means of comparisons between change scores of males and change scores of females in each group.

3. Do there appear to be patterns of impact on these variables?

This question is answered in the summary discussions of outcomes at the end of the chapter.

Each outcome Variable is discussed separately in this chapter, and each scaled outcome is analyzed in the same way, for ease of interpretation. First the outcome is described briefly. Then a table is presented which displays mean pretest scores, posttest scores, and difference scores, separately for males and females within each of the three applicant groups (Persisters, Dropouts, and NoShows). On the far right of each table are the results of t tests of significance. These tests attempt to answer the first research question--to determine whether there was a substantial (significant) change in the mean scores of each of the six groups from pretest to posttest. Asterisks reference t's which are significant at the .05 level or less; the presence of more than one asterisk indicates a higher level of significance. It should be noted that the size of the t required for significance varies based on the sample size of each group and subgroup.

To shed further light on the first research question, F tests have been computed to compare the three groups at the time of pretest and at the time of posttest. An F test has also been made among the difference scores of the three groups. Results of these F tests on between-groups differences are reported at the bottom of the table and in the text, with statistical information in parentheses in cases of significance.

To answer the second research question, F tests have been computed to compare mean scores of males and females in each group at pretest and posttest. Again, results are reported at the bottom of the table.

Answers to the third research question appear in summary discussions. In addition, on some outcomes the results of interscale correlations are reported. In order to avoid overusing the data, these correlations were computed only in cases where associations between two scales were hypothesized a priori.

In the case of the two outcomes which were analyzed on an item by item basis, the results on each item are displayed for men and women separately. Because these data are limited to the nominal scale in most cases, the chi-square statistic is used to determine whether or not the distribution of respondents in the contingency table is significantly different from the expected distribution.

As in the case of the outcomes measured by means of scales, those measured on an item by item basis are discussed in terms of the three research questions enumerated above.

## 5.1 Health Information

The Health Information Scale was developed to assess retention of knowledge transmitted to enrollees in the mandatory Job Corps health curriculum. The scale was specifically designed to reflect the relative emphasis placed on several areas of health information by the courses. The areas covered and the number of items in each were:

- Personal Hygiene and First Aid -- 5 items
- Venereal Disease -- 4 items
- Birth Control -- 2 items
- Reproduction, Pregnancy and Birth -- 4 items
- Adolescent Sexuality -- 1 item
- Sickle Cell Anemia -- 1 item

In this section we look first at the changes in the overall Health Information Scale (scored as the total number of correct answers across the 17 items). Because there were no significant changes between pre- and post-test on this scale, we examine, secondly, the relative knowledge levels of the entire sample groups on each item before and after their Job Corps experiences. Finally, we also examine differences in health knowledge between males and females.

### 5.1.1 Changes in Health Information Scale Scores

Table 5-1 presents the mean pretest and posttest scores for males and females in each of the three groups and the mean change scores for each group. Both the Dropout males and females showed negative mean difference scores (stronger in the males), although these were not statistically significant. NoShows, who started out with somewhat higher scores, improved in health knowledge without being exposed to the Job Corps course. The other major trend was for the females to do significantly better than the males -- both in pretest scores and in posttest scores. Even among the Dropouts, where the scores declined between pretest and posttest, the females' scores declined less than the males' scores.

It would appear then that the Job Corps had a small impact on the level of health knowledge of enrollees who remained for a period of longer than three months. What is not clear is why the Dropouts (particularly males)

Table 5-1

CHANGES IN: HEALTH INFORMATION SCALE SCORES  
By SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score	N	Difference Score t
<u>Persisters</u>	<u>11.93</u>	<u>12.13</u>	<u>.20</u>	<u>167</u>	<u>.79</u>
Males	11.57	11.64	.07	98	.19
Females	12.45	12.83	.38	69	1.25
<u>Dropouts</u>	<u>11.95</u>	<u>11.59</u>	<u>-.37</u>	<u>215</u>	<u>1.34</u>
Males	11.61	11.00	-.61	120	1.69
Females	12.39	12.33	-.06	95	.15
<u>NoShows</u>	<u>12.00</u>	<u>12.56</u>	<u>.56</u>	<u>75</u>	<u>1.37</u>
Males	11.63	12.37	.74	43	1.23
Females	12.50	12.81	.31	32	.60

Possible range: 0-17

Significant F tests: Between sexes on the pretest (Persisters and Dropouts)  
F = 3.81\*/3.89\*

Between sexes on the posttest (Persisters and Dropouts)  
F = 4.83\*/7.17\*\*\*

\*p = .05  
\*\*p = .02  
\*\*\*p = .01

showed a decline in knowledge and why those applicants who never attended a training center showed greater improvement in their health knowledge scores than those who attended training.

#### 5.1.2 Impact of Job Corps on Specific Content Areas

The overall Health Information Scale scores suggest that the study respondents already knew a fair amount about health matters before applying to Job Corps, since all groups answered an average of 12 out of 17 items correctly on the pretest. This ceiling effect may have been a factor accounting for the lack of statistically reliable change on the Health Information Scale at posttest. Because of the high scores on the pretest, we also examined the individual item scores to see what patterns of health knowledge they revealed.

Table 5-2 lists the seventeen health knowledge items and give their rank order by the percentage of respondents who gave the correct answer in the pretest, while Table 5-3 shows percentage correct for each item. Clearly, the applicants were most knowledgeable about "the facts of life," with nine out of ten knowing not only length of human gestation and how eggs are fertilized, but also the position of an infant at birth. Surprisingly, the question on where the baby develops was correctly answered by only 40%.

On the whole, the group also appeared knowledgeable on the topic of venereal disease. Nine out of ten males and females knew that a man who feels burning during urination should see a doctor. In addition, four out of five (80%) knew that gonorrhea was a venereal disease and three out of four (74%) knew that VD is spread through sexual intercourse. Less than one of three (31%), however, was aware that use of a condom is the birth control method which is also capable of preventing the spread of VD. Fully 70 percent of both males and females, however, were aware that the pill was the most effective means of birth control and the one most likely to have side effects.

Nearly two out of three applicants (62%) knew that sickle cell anemia was a hereditary disease which occurs mainly among Blacks. An equal proportion were aware that accidents are the leading cause of death among young people aged 15 to 20.

It is interesting to note that items which had the most to do with everyday life and health care--how to care for your teeth and the type of

Table 5-2

## Rank Order of Items by Percentage of Correct Answers

<u>Health Information Scale Items</u>	<u>Pretest Rank</u>	<u>Posttest Rank</u>
<u>Personal Hygiene and First Aid</u>		
Best way to clean your teeth	13	10
Doctor to go to first	14	14
Doctor for female problems	12	12
Purpose of mouth-to-mouth resuscitation	5	6
Leading cause of death among youths	10.5	11
<u>Venereal Disease</u>		
Definition of venereal disease	7	7.5
Identification of a venereal disease	6	5
Treatment for burning urination	3.5	1
Birth control method which prevents VD	17	16.5
<u>Birth Control</u>		
Most effective method of birth control	8.5	9
Method most likely to have side effects	8.5	7.5
<u>Reproduction, Pregnancy and Birth</u>		
Length of normal pregnancy	1	2
Orientation of baby at birth	2	3.5
Where baby develops during pregnancy	16	16.5
What causes egg to be fertilized	3.5	3.5
<u>Adolescent Sexuality</u>		
What is normal for adolescents	15	15
<u>Sickle Cell Anemia</u>		
Cause and afflicted population	10.5	13

Table 5-3

Change in Percentage of Correct Answers on Health Knowledge Items  
Between Pretest and Posttest for Total Sample

<u>Health Information Scale Items</u>	<u>Percent Giving Correct Response</u>		
	<u>Pretest</u>	<u>Posttest</u>	<u>Difference</u> <u>Posttest-Pretest</u>
<u>Personal Hygiene and First Aid</u>			
Best way to clean your teeth	58	71	13
Doctor to go to first	53	56	3
Doctor for female problems	59	61	2
Purpose of mouth-to-mouth resuscitation	81	79	-2
Leading cause of death among youths	62	63	1
<u>Venereal Disease</u>			
Definition of venereal disease	74	75	1
Identification of a venereal disease	80	81	1
Treatment for burning urination	90	91	1
Birth control method which prevents VD	31	38	7
<u>Birth Control</u>			
Most effective method of birth control	70	74	4
Method most likely to have side effects	70	75	5
<u>Reproduction, Pregnancy and Birth</u>			
Length of normal pregnancy	94	89	-5
Orientation of baby at birth	92	88	-4
Where baby develops during pregnancy	40	38	-2
What causes egg to be fertilized	90	88	-2
<u>Adolescent Sexuality</u>			
What is normal for adolescents	42	46	4
<u>Sickle Cell Anemia</u>			
Cause and afflicted population	62	58	-4

509  
547

physician to go to for most health problems--were correctly answered by only slightly more than half of the applicants (58% and 53% respectively). The awareness that strong desires for sexual activity and sexual experimentation were natural parts of adolescence was reflected by only two out of five (42%) of the respondents at the time of the pretest.

Table 5-2 also indicates that overall there was little change in the ranking of the individual items on the posttest. Indeed, a Spearman rank order correlation of .94 exists between the pre- and posttest item rankings.

Table 5-3 gives the mean pre- and posttest scores for the entire study sample on each of the 17 health knowledge items, along with the change between the two administrations. The greatest impacts, across the entire sample, tended to occur on those variables where the pretest percentages were lowest. Thus, the greatest improvement was in such items as the best way to care for one's teeth, type of physicians to see for most health problems, and normal adolescent sexuality. Items on which, on the other hand, applicants did best during the pretest were most likely to show a drop in numbers of correct answers (e.g., length of pregnancy, orientation of the baby at birth, etc.). This may suggest that regression towards the mean is a substantial factor in these changes.

### 5.1.3 Summary

There were no differences among groups of either the pretest or posttest. It must therefore be concluded either that Job Corps had no impact on health information or that this scale was totally insensitive to changes in knowledge.

Given that this scale was developed and tailored specifically to the Job Corps Health Education curriculum, the results suggest that:

- Enrollees, particularly women, are fairly sophisticated about certain health care facts at entry;
- There may be forces outside Job Corps which transmit this knowledge as effectively as the Job Corps Health curriculum.

Although it is possible that the lack of change can be attributed to a ceiling effect or other validity problems, these findings nevertheless imply that the current Health Education program in Job Corps needs a thorough evaluation to determine whether the lack of significant gains found here is a reflection of the actual Job Corps situation.

## 5.2 Health Care and Health Habits

Health Care and Health Habits is the second in a series of health-related outcomes. Unlike the previous one, which measured change in knowledge, this outcome covered behavioral changes in use of health care services and in personal health practices. It was measured by means of a series of self-report questions. No attempt was made to obtain a thorough health history or to compare responses to center medical records. Questions were limited to those which the respondents could be expected to answer readily and accurately.

Six health care and health habits questions were asked identically on the pre- and posttest. In addition, four questions concerning change in health habits since Job Corps termination (or application, in the case of NoShows) appeared only on the posttest. Findings for the entire sample and for the three groups, by sex, are discussed below.

### 5.2.1 Pre and Post Items

The first item covered frequency of dental treatment:

Table 5-4  
(in percentages)

#### Pretest-Males

When was the last time you went to the dentist?	Persisters	Dropouts	NoShows	Statistics
In the past year	53	58	47	$\chi^2 = 2.86$
One to three years ago	25	22	27	df = 6
More than three years ago	14	12	20	p = ns
Never	9	9	7	N = 278

#### Posttest-Males

When was the last time you went to the dentist?	Persisters	Dropouts	NoShows	Statistics
In the past year	68	54	52	$\chi^2 = 6.56$
One to three years ago	15	22	23	df = 6
More than three years ago	8	12	16	p = ns
Never	9	12	9	N = 277

Pretest-Females

When was the last time you went to the dentist?	Persisters	Dropouts	NoShows	Statistics
In the past year	56	56	65	$\chi^2 = 5.5$ df=6 p=ns N=206
One to three years ago	20	19	9	
More than three years ago	19	19	12	
Never	6	7	15	

Posttest-Females

When was the last time you went to the dentist?	Persisters	Dropouts	NoShows	Statistics
In the past year	82	56	56	$\chi^2 = 16.09$ df=6 p<.01 N=208
One to three years ago	11	20	15	
More than three years ago	6	19	21	
Never	1	6	9	

On the pretest, over half the total group stated that they had gone to the dentist within the past year, a good proportion in any adolescent population. Furthermore, only 8% overall claimed to have never seen a dentist, a figure considerably lower than is generally assumed for this population. There were no differences among groups for either males or females on the pretest.

Differences on the posttest are significant for women, however. Female Persisters improved 26 percentage points on recent dental visits. Among males there was a non-significant improvement of 15 percentage points for Persisters. Clearly, Persisters received dental treatment between pretest and posttest while Dropouts and NoShows did not. Job Corps policy specifies that dental treatment is available after 90 days' enrollment. This policy explains the differences in the findings; Persisters apparently received dental care in Job Corps. It should be noted, however, that 32% of male Persisters and 18% of female Persisters chose not to take advantage

of the availability of dental treatment. Among the male persisters, 9% both before and after Job Corps had never seen a dentist. The percentages for women declined from six to one percent. Nevertheless, these percentages suggest that a certain proportion of the population may lack dental treatment by choice and that its availability is not the issue. It also indicates that at least occasional dental care is received by all adolescents in this population, except for those who don't avail themselves of it even when it is convenient and free, i.e., in Job Corps.

The second question covered another aspect of dental health--restorative work. This item was included in order to assess the need for restorative dentistry in the population and, more importantly, to determine whether the need is met by Job Corps health services.

Table 5-5  
(in percentages)  
Pretest-Males

Do you have any front teeth missing?	Persisters	Dropouts	NoShows	Statistics
Yes	10	9	9	$\chi^2 = .52$ df=4 p=ns N=280
No	86	88	89	
Yes, but I have a replacement	4	3	2	

Posttest-Males

Do you have any front teeth missing?	Persisters	Dropouts	NoShows	Statistics
Yes	5	10	5	$\chi^2 = 4.93$ df=4 p=ns N=278
No	92	88	96	
Yes, but I have a replacement	4	2	0	

Pretest-Females

Do you have any front teeth missing?	Persisters	Dropouts	NoShows	Statistics
Yes	6	8	6	$\chi^2 = 1.85$ df=4 p=ns N=207
No	90	89	94	
Yes, but I have a replacement	4	3	0	

Posttest-Females

Do you have any front teeth missing?	Persisters	Dropouts	NoShows	Statistics
Yes	7	10	6	$\chi^2=1.68$
No	90	87	94	df=4
Yes, but I have a replacement	3	3	0	p=ns N=205

Overall, almost 90 percent of Job Corps applicants had their natural front teeth intact at the time of the pretest. Of those with missing front teeth, almost four-fifths did not have a replacement. Differences between males and females on this item were small both on the pretest and on the posttest.

A comparison of pre- and post-test scores indicates that there must have been some confusion regarding the proper way to respond to the multiple choice question. For example, among the male NoShows the number answering "yes" went down over time while the number answering "yes, but I have a replacement" also went down. This combination of negative change is impossible in the context of the question; therefore it must have been misinterpreted. The third option was chosen by a handful of respondents on the pretest and a few on the posttest in an apparently random fashion. It is possible that most respondents considered the answer "no" to be appropriate if they either had their natural front teeth or a false tooth. If the data in the tables are restructured to eliminate those who chose the third option, it appears that Persister and NoShow males received restorative dentistry and Dropouts did not. Among the females there were no changes in any group.

Although the reliability of these data is somewhat suspect, a tentative conclusion can be reached that Persister males, but not females, had restorative dental work done in Job Corps.

The third question in the series covered awareness and treatment of eye problems. "Do you think you might need glasses?" was the phrasing chosen, with "I already wear glasses" as a possible response. It was anticipated that pre-post comparisons would indicate whether Job Corps meets the need for vision correction among its enrollees. It should be noted, of course, that thinking one needs glasses does not insure that an optometrist would agree.

Table 5-6  
(in percentages)

Pretest-Males

Do you think you might need glasses?	Persisters	Dropouts	NoShows	Statistics
Yes	13	22	16	$\chi^2=8.75$ df=4 p=.06 N=280
No	73	74	71	
I already wear glasses	14	5	13	

Posttest-Males

Do you think you might need glasses?	Persisters	Dropouts	NoShows	Statistics
Yes	22	20	12	$\chi^2=4.29$ df=4 p=ns N=277
No	71	72	72	
I already wear glasses	8	9	16	

Pretest-Females

Do you think you might need glasses?	Persisters	Dropouts	NoShows	Statistics
Yes	23	24	27	$\chi^2=6.39$ df=4 p=ns N=206
No	54	47	65	
I already wear glasses	24	30	9	

Posttest-Females

Do you think you might need glasses?	Persisters	Dropouts	NoShows	Statistics
Yes	18	30	15	$\chi^2=6.66$ df=4 p=ns N=207
No	52	48	62	
I already wear glasses	31	22	21	

On the pretest, over 20% of the applicants thought they might need glasses. Another 15.8% already wore glasses. These percentages did not differ significantly among groups, although the table for males approaches significance, as Dropouts reported the least amount of previous care and the most perceived need for it. Among females, it was the NoShows who were least likely to wear glasses and the most likely to feel they need them. Women in general were more vision-conscious than men.

Results of the pre- post comparison are disturbing. Among Persisters males and Dropout females, more thought they needed glasses after Job Corps than before, and fewer reported that they already wear them.\* The other two Job Corps groups changed in the opposite, more expected direction. NoShows of both sexes tended to get treatment for vision problems.

These findings indicate that Job Corps served the optometry needs of only a small portion of the enrollees in this sample. The number wearing glasses actually went down over time. Perhaps some of those who failed the vision test at entry did not want to get glasses, and after Job Corps they realized that they did indeed need them. The vision consciousness of NoShows may be a product of their employment during this period (and consequent ability to pay for glasses).

Another unexpected finding in the analysis of this item was a sex difference, on both the pretest and posttest, within the two Job Corps groups. Males were much less likely than females to feel they needed glasses or to be already wearing glasses. This difference was highly significant for Persisters (Pretest:  $\chi^2 = 6.83$ ;  $df = 2$ ;  $p = <.03$ . Posttest:  $\chi^2 = 16.3$ ;  $df = 2$ ;  $p = <.0003$ ) and for Dropouts (Pretest:  $\chi^2 = 29.5$ ;  $df = 2$ ;  $p = <.0001$ . Posttest:  $\chi^2 = 14.67$ ;  $df = 2$ ;  $p = <.0007$ ) but not for NoShows (Pretest:  $\chi^2 = 2.3$ ;  $df = 4$ ;  $p = ns$ . Posttest:  $\chi^2 = 1.6$ ;  $df = 4$ ;  $p = ns$ ). Interpretation of this finding seems difficult at first. Why should vision-conscious women and nonvision-conscious men show up for Job Corps so reliably? Why didn't more of the women get glasses in Job Corps, since they were aware of their needs?

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\*Unless a large number of people lost their glasses in Job Corps, this combination of responses (more need glasses and fewer wear them) might be another case of item misinterpretation.

A partial explanation may lie in the different expectations for training of the two sexes. Most women who enter Job Corps hope to get training in secretarial skills, keypunching or health occupations, all of which require extensive reading. Most men, on the other hand, look toward blue collar occupations such as construction trades, auto mechanics, and machine repair. These require little reading on the job, although the training programs include classroom work. The men were probably less concerned with vision problems both before enrollment and while on center. The women were concerned both before and after Job Corps, but did little about it. NoShows, who did not enroll, did not display these sex differences. They were the only group to improve substantially, however.

That the same proportion of women felt that their vision needed correction after Job Corps as before must be considered an indictment of the optometry services offered to this group. Further examination of center medical practices to determine whether this apparent deficiency prevails currently seems warranted.

Another pair of questions asked both on the pretest and the posttest concerned height and weight. One purpose of the question was to determine the self-knowledge of such personal data among the sample. The difficulties in analysis of the two previously discussed questions requesting self-reports of health data have indicated that youngsters in the sample had trouble either answering or understanding such questions. The results of the height question were therefore used as an additional check on self-knowledge.

An analysis of individuals' height changes was made. Since there were no records which could verify their self-reports, the method chosen to examine this issue was a pre-post analysis of self-reported height. Since a decrease in height is physiologically unlikely among this population, any reported decreases even small ones, must be considered errors. The table below illustrates the findings:

Table 5-6  
(in percentages)

N = 489	Persisters	Dropouts	NoShows
Decreased in height one inch	8	11	9
Decreased in height more than one inch	10	8	4

These figures imply that 13 to 18 percent of respondents reported inaccurate personal information on either the pretest or posttest. It can therefore be assumed that gains in height and changes in weight were also inaccurately reported by at least an equal proportion of respondents. The data available, however, did not permit detection of these.

A second reason for asking for height and weight on the pretest and the posttest was to determine the impact of Job Corps on youth who were overweight or underweight at time of entry. However, to perform this analysis, it was necessary for us to define thresholds of underweight and overweight. For purposes of this study, these were defined as twenty pounds over or under the average weight for each height for this age group.\* The percentage of respondents in each of the three weight categories, as defined actuarially, is shown separately for males and females, pre- and posttest, below:

Table 5-7  
(in percentages)  
Pretest-Males

	Persisters	Dropouts	NoShows	Statistics
Overweight	13	4	14	$\chi^2=6.84$
Normal	68	78	72	df=4
Underweight	19	18	14	p=ns
				N=266

Posttest-Males

	Persisters	Dropouts	NoShows	Statistics
Overweight	14	6	9	$\chi^2=4.18$
Normal	74	79	79	df=4
Underweight	13	15	12	p=ns
				N=270

\*An actuarial table of average heights and weights by age was used.

Pretest-Females

	Persisters	Dropouts	NoShows	Statistics
Overweight	29	20	21	$X^2=3.71$
Normal	68	76	79	df=4
Underweight	3	4	0	p=ns
				N=202

Posttest-Females

	Persisters	Dropouts	NoShows	Statistics
Overweight	29	24	21	$X^2=4.2$
Normal	69	75	74	df=4
Underweight	1	1	6	p=ns
				N=203

About three fourths of both males and females tended to weigh in the normal range for their height. The other 25% was divided differently within male and female subgroups; very few women were underweight, while 12-19% of men were underweight. Persisters, both male and female, were most likely to be overweight. There were no major changes in any group from pretest to posttest, and there were no significant differences among groups.

A separate question was asked to measure awareness of weight problems and to serve as a baseline for changes in weight. The data were analyzed in two ways. First we present the basic findings separately for males and females.

Table 5-8  
(in percentages)

Pretest-Males

Do you consider yourself underweight, overweight, or normal?	Persisters	Dropouts	NoShows	Statistics
Overweight	11	8	7	$X^2=1.56$
Normal	69	72	69	df=4
Underweight	20	21	24	p=ns
				N=266

Posttest-Males

Do you consider yourself underweight, overweight, or normal?	Persisters	Dropouts	NoShows	Statistics
Overweight	15	6	12	$\chi^2=5.52$
Normal	71	75	75	df=4 p=ns
Underweight	14	19	14	N=270

Pretest-Females

Do you consider yourself underweight, overweight, or normal?	Persisters	Dropouts	NoShows	Statistics
Overweight	34	28	29	$\chi^2=1.4$
Normal	44	50	44	df=4 p=ns
Underweight	22	22	27	N=202

Posttest-Females

Do you consider yourself underweight, overweight, or normal?	Persisters	Dropouts	NoShows	Statistics
Overweight	34	26	35	$\chi^2=2.32$
Normal	51	55	44	df=4 p=ns
Underweight	16	20	21	N=203

The above tables present some interesting findings. There were few changes in self-evaluation of weight among either males or females. The trend in both groups was for underweight to be reported less frequently at the time of the posttest, but in no case was the change more than nine percentage points. The most notable difference, however, is between males and females. A full three-quarters of males considered themselves normal, while only half the females felt this way. Since the tables in the section on actual weight indicate that about 75% of females in the sample were of

normal weight, this phenomenon may be a reflection of a poor self-image on the part of the women surveyed. What is interesting is that most of the incorrect perceptions of women concerned underweight, that is, women who were normal thought they were underweight. This perception/actuality disparity cut across treatment groups and was retained on the posttest.

Another way of pointing out the disparity is to compare the proportion of correct weight evaluations across groups and between sexes. Tables like the one below were generated for each sex x group x time period set of scores. (For example, female persisters on the pretest). There were a total of twelve tables in all. (They are not reproduced because of lack of space).

ACTUAL WEIGHT

		<u>ACTUAL WEIGHT</u>		
		Overweight	Normal	Underweight
<u>PERCEIVED WEIGHT</u>	Overweight			
	Normal		X	
	Underweight			

The proportion of scores in the middle box was used as an indication of the percentage of respondents who correctly perceived that they were of normal weight.

Correct assessments of normal weight among males (i.e., normal actual weight and normal perception) ranged from 74% (NoShow males on pretest) to 82% (NoShow males on posttest). Correct assessments of normal weight among females, however, ranged only from 52% (NoShow females on posttest) to 67% (persister females on posttest). The proportion of female persisters making correct assessments increased seven points from pretest to posttest, while other groups did not change. Among males, persisters increased four points, while Dropouts did not change and NoShows increased eight points.

The problem of poor self-image among women has become accepted by many employment and training programs as a significant barrier to employment success. Many programs offer group counseling and assertiveness training to help women feel confident in their abilities. The findings discussed above seem to indicate that self-image was a problem among these Job Corps women and that Job Corps training impacted Persisters but not Dropouts.\*

### 5.2.2 Posttest-Only Items

A number of questions were asked to all respondents on the post-test regarding perceived changes over time in their health habits. Issues of general health, smoking, drinking and physical appearance were covered.

The first issue was general health:

Table 5-9  
(in percentages)

#### Males

Since my Job Corps experience ended, my health has:	Persisters	Dropouts	NoShows	Statistics
Become better	30	34	17	$\chi^2 = 4.45$ $df = 4$ $p = ns$ $N = 268$
Stayed about the same	65	61	78	
Become worse	5	6	5	

#### Females

Since my Job Corps experience ended, my health has:	Persisters	Dropouts	NoShows	Statistics
Become better	27	26	44	$\chi^2 = 4.99$ $df = 4$ $p = ns$ $N = 202$
Stayed about the same	64	62	44	
Become worse	9	12	13	

\*Similarly, on the ten item measure of self esteem discussed in Chapter 4.2, female Persisters were the only group to make significant gains.

From the table above, it can be concluded that Job Corps had a positive (non-significant) impact on the health of males but not females. There are two other notable findings here. One is that females reported more negative changes than males. The second notable finding is that while NoShow males felt they had changed little, NoShow females reported the most change of any group. In each case, however, more than three times as many respondents felt their health had improved than felt that their health had declined.

The second question concerned smoking behavior:

Table 5-10  
(in percentages)

Males

Since my Job Corps experience ended, my smoking habit has:	Persisters	Dropouts	NoShows	Statistics
Become better	17	15	10	$\chi^2 = 2.07$ $df = 6$ $p = ns$ $N = 269$
Stayed about the same	52	57	63	
Become worse	12	10	12	
I never smoked	19	18	15	

Females

Since my Job Corps experience ended, my smoking habit has:	Persisters	Dropouts	NoShows	Statistics
Become better	17	23	22	$\chi^2 = 9.54$ $df = 6$ $p = ns$ $N = 203$
Stayed about the same	38	49	47	
Become worse	20	7	19	
I never smoked	25	21	13	

An interesting though not significant finding here is that NoShows, both male and female, reported the most harmful tobacco habit. "Become better" and "I never smoked," combined, covered only 25% of the NoShow males and 35% of the NoShow females. These figures were lower than those of any of the Job Corps groups. For the sample as a whole, only about 20% have never smoked. The best post-program profile was recorded by the female Dropouts, who improved the most and declined the least.

A similar question was asked about drinking:

Table 5-11  
(in percentages)  
Males

Since my Job Corps experience ended, my drinking habit has:	Persisters	Dropouts	NoShows	Statistics
Become better	15	19	12	$\chi^2 = 5.04$ $df = 6$ $p = ns$ $N = 268$
Stayed about the same	37	35	51	
Become worse	6	7	2	
I never drank	43	40	34	

Females

Since my Job Corps experience ended, my drinking habit has:	Persisters	Dropouts	NoShows	Statistics
Become better	17	16	13	$\chi^2 = 2.46$ $df = 6$ $p = ns$ $N = 203$
Stayed about the same	25	25	28	
Become worse	0	2	0	
I never drank	58	57	59	

On this item, responses may not accurately reflect the condition of the sample. Because of the wording of the question, a moderate drinker who did not change would have been confused as to whether option #2 or option #4 was the proper response. To some, "my drinking habit" may have implied previous alcohol abuse (hence a #4 response by a moderate drinker), while to others the phrase may have implied any use of alcohol (hence a #1, #2 or #3 response by a moderate drinker).

Under these circumstances, it is safe to examine only the "became better" and "became worse" responses. Unfortunately, the three groups showed virtually no differences among males or females. It must therefore be tentatively concluded that Job Corps has no impact on the drinking habits of former enrollees.

The last question in this series asked about changes in physical appearance:

562

Table 5-12  
(in percentages)

Males

Since my Job Corps experience ended, my physical appearance has:	Persisters	Dropouts	NoShows	Statistics
Become better	47	41	37	$\chi^2 = 5.22$ $df = 4$ $p = ns$ $N = 268$
Stayed about the same	52	51	59	
Become worse	2	8	5	

Females

Since my Job Corps experience ended, my physical appearance has:	Persisters	Dropouts	NoShows	Statistics
Become better	52	38	44	$\chi^2 = 3.95$ $df = 4$ $p = ns$ $N = 202$
Stayed about the same	39	55	47	
Become worse	9	7	9	

In terms of physical appearance, Persisters of both sexes reported the most positive change. In addition, two of the three female groups (Persisters and NoShows) reported more positive change than the men in their groups. This finding somewhat contradicts those found in terms of self-assessment of weight, in which women with normal figures tended to see themselves as overweight or underweight, while men were more realistic. It should be noted, however, that female Persisters improved in their perceptions of weight. Their positive orientation toward their physical appearance may have been a reflection of this better attitude.

5.2.3 Conclusions

Job Corps seemed to have had a positive impact on the health habits and health care of Persisters in the areas of dental care (routine and restorative), accurate perception of normal weight and physical appearance. Positive impacts accrued to Dropouts in smoking habit and general health. None of the groups changed their figures over the pre-post time period.

The tendency of women to perceive themselves as overweight or underweight may be interpreted as a problem of poor self-image. Persisters improved in this area over time, however.

The lack of optometry care received by the Job Corps groups appears to reflect a deficiency in the health services provided to these respondents. In sum, Job Corps had a moderate impact on both Persisters and Dropouts.

### 5.3 Nutrition

The learning of proper eating habits and the basics of good nutrition was seen as an important noneconomic impact of the Job Corps by both the Job Corps staff and the Abt Associates research team. In order to assess the possible impact which the Job Corps training had on trainees' nutrition habits and knowledge, three indicators were used. Taken together, these three provide a picture of the impact which the Job Corps had on these trainees' orientation towards good nutritional habits.

#### 5.3.1 Selection of a Balanced Diet

The first indicator, originally developed for an evaluation of the "Mulligan Stew" program on educational television, is a quasi-behavioral index of the respondent's likelihood of selecting a balanced diet during an average day. The instrument asks the respondent to select up to five foods out of a possible 42 (including one self selection) which the respondent would like to eat for a particular meal on the following day (see Figure 5-1). The selection process is repeated for breakfast, lunch, dinner and a snack. The responses are converted into food groups, summed across the four "meals" and scored against an ideal "balanced diet" composed of four foods from the bread and cereals group, four fruits and vegetables, two from the milk and cheese and two from the meats group.\*

The results, shown in Table 5-13, indicate that, on the pretest, respondents were fairly good at selecting a balanced diet. Pretest-posttest changes, however, were slight, and only the Persister group showed a significant increase in the balanced diet score. The Dropout women actually

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\*The scale was scored by analyzing the food groups of the 20 foods chosen on the instrument. A perfect 4-4-2-2 profile or better scored a 12. Each group deficiency reduced the score by a point.

Figure 5-1  
Item From the "Mulligan Stew" Instrument

**BREAKFAST**

Put an "X" on each of the foods you would like to have for **BREAKFAST** tomorrow. (up to five)

1.6. For **BREAKFAST** I would like to have . . .

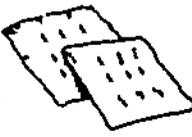
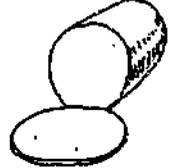
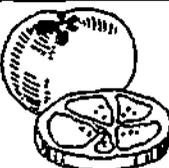
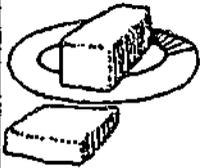
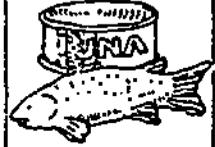
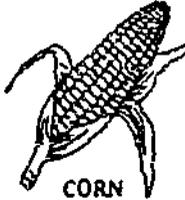
 CRACKERS	 BOLOGNA	 MILK SHAKE	 POTATO CHIPS OR FRENCH FRIES	 JELLO	 POPSICLE
 COKE OR SODA POP	 TOMATO	 BUTTER	 CAKE	 PORK	 BANANA
 CHICKEN	 RICE	 PEANUT BUTTER	 POTATO	 MACARONI NOODLES OR SPAGHETTI	 CARROTS
 GREEN BEANS	 COFFEE	 BACON	NAME YOUR OWN!	 ORANGE ORANGE JUICE	 FISH
 CEREAL	 BEANS	 ICE CREAM	 CORN	 EGG	 TORTILLA
 CHEESE	 APPLE	 PIZZA	 GREENS	 JAM	 HAMBURGER
 COOKIES	 MILK	 HOT DOG	 CANDY	 GREEN PEAS	 BREAD OR ROLLS

Table 5-14

CHANGES IN: SELECTION OF A BALANCED DIET SCALE SCORES  
BY SEX AND TREATMENT GROUP

Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score	N	Difference Score t
<u>Persisters</u>	<u>9.30</u>	<u>9.71</u>	<u>.42</u>	<u>154</u>	<u>2.05*</u>
Males	9.57	9.92	.36	90	1.45
Females	8.92	9.42	.50	64	1.42
<u>Dropouts</u>	<u>9.68</u>	<u>9.63</u>	<u>-.03</u>	<u>194</u>	<u>.15</u>
Males	9.79	10.12	.33	104	1.13
Females	9.56	9.12	-.43	90	1.51
<u>Noshows</u>	<u>9.48</u>	<u>9.48</u>	<u>.20</u>	<u>71</u>	<u>.49</u>
Males	9.51	9.76	.24	41	.50
Females	8.97	9.10	.13	30	.20

Significant F tests: Between sexes on the posttest (overall and Dropouts)  
F = 14.21\*\*\*/10.69\*\*\*

Possible range: 0-12

\*p = < .05

\*\*p = < .02

\*\*\*p = < .01

566

showed an almost significant decline in their approximation of a balanced diet, with women significantly lower than men on the posttest. These findings suggest, then, that the Job Corps did have a positive impact on the dietary orientation of men and women who stayed for at least three months. The decrease for female Dropouts parallels other findings which indicate that this group was negatively impacted by Job Corps.

### 5.3.2 Ratio of "Junk Food" to Wholesome Food in the Diet

A second score which was derived from the Mulligan Stew instrument consisted of the computed ratio of selections made of "junk foods" (e.g., candy, cookies, cake, etc.) to nutritious foods.\* This ratio indicates the degree to which the respondents select wholesome foods over the more popular, but less nutritious, "junk" foods. Here, a decline in score indicates an improvement, that is, a decline in the number of junk foods chosen relative to the number of wholesome foods selected. Table 5-14 shows that, as with the balanced diet index, the Persister group showed a significant improvement in the "Junk Food Ratio" whereas there were no significant changes in the other groups. Improvement by Persisters was primarily attributable to changes on the part of females, who started out with the worst ratio. Female Dropouts again showed the least positive scores; they were the only group which got worse.

### 5.3.3 Changes in Nutritional Information

The third source of nutritional measurement was the Nutritional Information Scale, developed to test the enrollee's general knowledge of nutrition. At the pretest, all three groups were essentially alike (see Table 5-15). However, comparisons of the pre- and posttest scores indicate that the NoShows improved significantly on the posttest, whereas there were no significant changes in either the Dropouts or the Persisters. This finding appears to conflict with the previous two findings, which showed significant improvement among the Persisters and not among other groups. One possible explanation for this apparent inconsistency is that substantially more NoShows (44%) had gone back to school during the pretest/

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\*The scale was scored by summing all junk foods chosen from the total of 20 and dividing that number by the total of nutritious foods chosen.

Table 5-15

## CHANGES IN: RATIO OF JUNK FOOD TO WHOLESOME FOOD SCALE SCORES

By SEX AND TREATMENT GROUP					
Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score	N	Difference Score t
<u>Persisters</u>	<u>.39</u>	<u>.34</u>	<u>-.05</u>	<u>154</u>	<u>2.07*</u>
Male	.33	.33	-.01	90	.39
Female	.46	.36	-.10	64	2.17*
<u>Dropouts</u>	<u>.36</u>	<u>.35</u>	<u>-.01</u>	<u>194</u>	<u>.37</u>
Male	.35	.32	-.03	104	.94
Female	.37	.38	.01	90	.22
<u>Withdraw</u>	<u>.38</u>	<u>.33</u>	<u>-.05</u>	<u>71</u>	<u>1.11</u>
Male	.36	.34	-.02	41	.34
Female	.41	.32	-.09	30	.39

Possible range: 0-19

\*p = .05

\*\*p = .02

\*\*\*p = .01

Significant F ratios: Between sexes on the pretest (overall and Persisters)  
F=6.21\*\*/8.67\*\*\*

Table 5-16

## CHANGES IN: NUTRITIONAL INFORMATION SCALE SCORES

By SEX AND TREATMENT GROUP					
Treatment Groups	Mean Pretest Score	Mean Posttest Score	Mean Difference Score	N	Difference Score t
<u>Persisters</u>	<u>2.54</u>	<u>2.56</u>	<u>.02</u>	<u>165</u>	<u>.21</u>
Male	2.39	2.48	.10	100	.71
Female	2.77	2.68	-.10	65	.68
<u>Dropouts</u>	<u>2.61</u>	<u>2.62</u>	<u>.01</u>	<u>220</u>	<u>.10</u>
Male	2.60	2.52	-.07	121	.64
Female	2.64	2.74	.10	99	.79
<u>Withdraw</u>	<u>2.49</u>	<u>2.65</u>	<u>.16</u>	<u>73</u>	<u>2.02*</u>
Male	2.59	3.02	.43	44	1.91
Female	2.35	2.59	.24	29	.85

Possible range: 0-5

\*p = .05

\*\*p = .02

\*\*\*p = .01

Significant F ratios: Among groups on the posttest (Males only) F = 3.96\*  
Between sexes on the Pretest (Persisters only) F = 4.45\*

posttest interval than either the Persisters (31%) or the Dropouts (25%), (see Chapter 5.4). The more academic environment of school may have increased the NoShows' factual knowledge of nutrition, although it apparently had no behavioral effect. On the other hand, the Job Corps training experience had its impact on the more behavioral components.

#### 5.3.4 Conclusions

Nutritional behavior of Persisters improved significantly over time, while that of Dropout women declined slightly. As noted before, Dropout women seem to have been adversely affected by Job Corps on a number of outcomes. In nutritional knowledge, the patterns were different, with NoShows making the most improvement. This parallels the findings on Health Information, discussed in the previous section, where NoShows made the most improvement and Dropouts declined. It is encouraging for Job Corps that those who stayed at least three months improved in behavior, even if their factual knowledge did not increase. Behavior, after all, is what counts in nutrition.

#### 5.4 Educational Attainment

Four items examined the educational attainment of the study's participants:

- level of education at entry into Job Corps
- whether the respondent received a GED in Job Corps
- whether the respondent has returned to school since Job Corps
- whether the respondent is currently in school

Although the study, when it was originally designed, was intended to measure changes in reading and math skills, this part of the outcome was dropped when Job Corps discontinued its testing program for terminating enrollees.

##### 5.4.1 Level of Education at Entry Into Job Corps

Data on educational level at entry were taken from Job Corps records. Comparisons of the two treatment groups for whom data were available (Persisters and Dropouts) yielded no significant differences (see Table 5-17). Analysis between sexes, however, revealed that females, both Persisters and Dropouts, had completed significantly more schooling than the males. For example, 17% of female Persisters had completed high school as

Table 5-17  
 Level of Education at Entry into Job Corps  
 (in percentages)

	Persisters	Dropouts	Statistics
Eighth grade or less	16	18	$\chi^2 = 1.98$
Ninth grade	36	35	df = 4
Tenth grade	31	26	p = ns
Eleventh grade	7	11	N = 310
Twelfth grade	10	10	

Table 5-18  
 Level of Education at Entry Into Job Corps  
 By Sex for Each Treatment Group\*  
 (in percentages)

Dropouts			
	Males	Females	Statistics
Ninth grade or less	61	42	$\chi^2 = 16.88$
Tenth grade	26	26	df = 6
Eleventh grade	10	12	p = <.0097
Twelfth grade	3	7	N = 173

\*Data were not available for NoShows

Persisters

	Males	Females	Statistics
Ninth grade or less	60	42	$\chi^2 = 16.46$
Tenth grade	33	28	df = 5
Eleventh grade	4	12	p = <.0056
Twelfth grade	4	17	N = 146

compared with 4% of male Persisters. Substantially more male Persisters (60%) had only finished ninth grade or less as compared with female Persisters (42%). These findings are displayed in Table 5-18.

The fact that women had significantly more education than men may help explain their tendency to do better, on both the pretest and the post-test, on tests of factual knowledge (Health Information, Nutrition Information, Job Knowledge).

5.4.2 Receipt of GED in Job Corps

One of the major benefits which Job Corps offers is the opportunity for an enrollee to study for and pass the test for a GED (high school equivalency diploma). Because 90% of the enrollees were high school drop-outs, it was expected that a large number would be enrolled in a GED course. Table 5-19 displays the findings of this comparison:

Table 5-19  
Attainment of GED During Job Corps Stay  
(in percentages)

Males			
	Persisters	Dropouts	Statistics
Eligible but not enrolled	11	21	$\chi^2 = 9.40$
Ineligible	89	79	df = 1
			p = ns
			N = 32

Females

	Persisters	Dropouts	Statistics
Passed GED	4	0	$X^2 = 16.63$
Enrolled but not Completed	19	3	$df = 3$
Eligible but not Enrolled	62	90	$p = <.0008$
Ineligible	15	7	$N = 121$

Findings are disappointing. As illustrated in Table 5-19, the vast majority of male participants were ineligible for GED classes, and eligible women tended not to enroll. Persister women were significantly more involved in getting GED's than Dropout women; 23% enrolled or passed vs. 3%. There were no significant differences for males. The sample for males was small because, for some reason, the Job Corps data file from which these figures were taken was incomplete on this item.

Apparently, most Job Corps enrollees either did not score high enough on achievement tests or stay long enough to enroll in GED classes. Only two Corpsmembers received GED's; both were female Persisters.

#### 5.4.3 Student Status at Posttest

More than a third of the total group had returned to school since Job Corps involvement ended. Among both males and females, the NoShow group contained the largest proportion of students. This is understandable when the time scale is taken into account. Persisters and Dropouts were post-tested only four months after they terminated from Job Corps. Depending on the time of year, it is possible that many posttests were given before a new school semester had even begun. The NoShows, after ten months, had had a far greater opportunity to return to school.

Another application of these data is the speculation that a number of NoShows failed to enroll because they went back to school. In Chapter 3.4 it was pointed out that NoShows worked more than those who attended Job Corps. It could be that Job Corps enrollment took place only if attempts at employment and education failed. Those who succeeded in one or the other did not enroll.

Table 5-20

Has Returned to School Since Job Corps  
(in percentages)

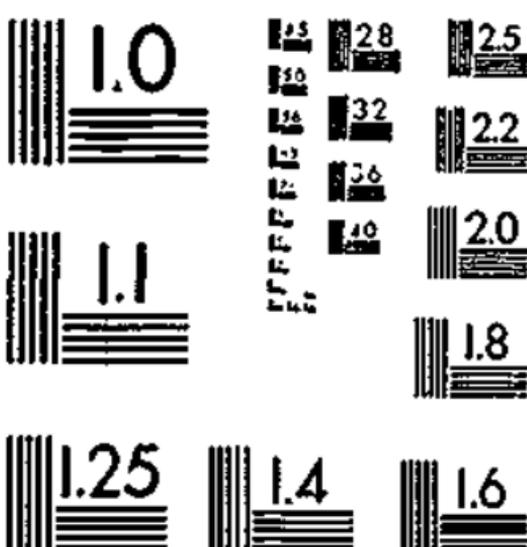
## Males

	Persisters	Dropouts	NoShows	Statistics
Has Returned to School	30	25	40	$\chi^2 = 3.24$
Has Not Returned	70	75	60	df = 2 p = ns N = 266

## Females

	Persisters	Dropouts	NoShows	Statistics
Has Returned to School	32	25	50	$\chi^2 = 7.05$
Has Not Returned	68	75	50	df = 2 p < .05 N = 204

The final topic covered here is whether the respondent was currently in school, full-time, or part-time. Findings were almost identical for men and women and followed the same pattern as employment status findings. Job Corps apparently did not impact current school status. About three-quarters of all respondents were not in school at the time of posttest. Dropouts, male and female, were somewhat less likely than members of the other two groups to be in school. Female NoShows, as in the previous item, were in the largest in-school group. What is interesting, however, is that while 50% of female NoShows claimed to have returned to school (Table 5-21), only 39% were actually in school at the time of the posttest. This discrepancy parallels that discussed in Chapter 3.4 on employment status. Perhaps NoShow women's school behavior paralleled their employment behavior, with both beginning strong and growing weaker.



MICROCOPY RESOLUTION TEST CHART  
 NATIONAL BUREAU OF STANDARDS  
 STANDARD REFERENCE MATERIAL 1010a  
 (ANSI and ISO TEST CHART No. 2)

Table 5-21  
 Current Student Status  
 (in percentages)

Males

	Persisters	Dropouts	NoShows	Statistics
Currently Fulltime Student	14	13	20	$\chi^2 = 3.29$ df = 4 p = ns N = 269
Currently Parttime Student	16	10	10	
Not Now a Student	71	78	71	

Females

	Persisters	Dropouts	NoShows	Statistics
Currently Fulltime Student	14	15	18	$\chi^2 = 5.13$ df = 4 p = ns N = 206
Currently Parttime Student	14	8	21	
Not Now a Student	72	77	61	

5.4.4 Conclusions

Women reported the most promising behavior in the education area. They entered Job Corps with a better educational background, they gained more in Job Corps, and they attended school somewhat more often after Job Corps. Among the Job Corps participants there were no differences between Persisters and Dropouts except in GED attainment, which requires a longer length of stay.

## 5.5 Summary: Health and Educational Impacts

In this area of study it can be concluded that the impact of Job Corps was moderate to good. Gains were not made in knowledge of either health or nutrition. Behavioral gains, however, were recorded for Persisters in both these areas. For example, more Persisters had gone to the dentist recently at the time of the posttest, and Persisters chose less junk food and a more balanced diet at the time of the posttest. Dropouts and NoShows did not improve in these areas.

The findings of this study indicate that the Job Corps health program had positive impacts on this sample. Two areas of weakness, however, seemed to be the health education program and the optometry services.

The improvement of Persister women from worst to best on the two nutrition behavior scales is particularly encouraging, since many of these women already had children who would benefit from these changes.

The most notable educational finding was that few Job Corps enrollees were even eligible for GED classes, much less for the diploma. No measure of educational gains in Job Corps was made, however, because such data were unavailable. Those who had attended Job Corps were no more likely than the comparison group to be enrolled in school at the time of the posttest.

## 6.0 THE HEALTH SERVICES SUBSTUDY

### 6.1 Background

When the noneconomic impacts study of Job Corps was first conceived, it was envisioned as complementary to the economic impact studies previously performed. While the economic studies measured Job Corps' impact in terms of placement rate and starting wages, the noneconomic impacts study would measure it in terms of eyeglasses dispensed, cases of venereal disease cured, and number of drug abuse cases ameliorated. The emphasis would be on quantifying (and perhaps monetizing) those benefits of Job Corps which had not been measured before.

By the time the original idea had become an RFP mailed out for competitive bid, however, the emphasis on quantifying material benefits had given way to a broader purpose--the development and application of a set of self-report instruments to measure outcomes such as social attitudes and self-esteem. When the final design of the study was completed, in fact, no data sources other than the corpsmembers (and comparison group members) themselves were planned, thus removing the possibility of a detailed accounting of health department records.

After the contract was awarded, the government Project Officer asked that it be modified to include a substudy of tangible benefits covering the area of health services. The Health Service in each Job Corps center offers youngsters high quality medical and dental care, on a preventive and emergency, as well as routine, basis. The purpose of the substudy was to ascertain if Job Corps had health impacts on this sample of participants. Job Corps records indicate that about one-half of Job Corps enrollees are receiving welfare support at the time of enrollment, \* and, therefore, are eligible for welfare-supported medical services. If this study were to indicate that Job Corps helps to relieve some of that medical services burden from the welfare system, or that the program makes it easier for participants to receive medical attention, then, Job Corps could be assumed to be providing a substantial benefit. If the study were to indicate that Job Corps provides medical services to its participants that they might not otherwise receive (especially those without access to welfare-supported services), then these are clearly further benefits of the program. -

\*Job Corps in Brief, 1976.

At first, the Abt Associates project staff hoped to use the medical records of youngsters in the sample as a separate data source. Information from medical records would form an outcome--Health Services-- which could be examined in relation to the outcomes measured by means of the instrument battery. A serious problem for the design of the sub-study, however, was the confidential nature of medical records. Health services staff at centers do not permit divulgence of medical information, and, after Corpsmembers terminate, records are sealed before being stored. The problem thus lay in how to collect medical data on the Corpsmembers in the study without violating medical confidentiality. One possibility would have been to hire medical record librarians to visit Regional Offices and copy information on youngsters in the study from the medical records of recent terminees. This plan was dropped for several practical reasons and because there were still issues of confidentiality. A second suggestion was that health data be collected only on a self-report basis, as a supplement to the basic instrument battery. This idea was rejected on the grounds that Job Corps applicants might not be aware of the basic information concerning their own condition of health, and self-reports would therefore be incomplete and possibly inaccurate.

After these two plans had been rejected, it was decided that the only way to collect health information on Corpsmembers without violating confidentiality would be by using aggregate, anonymous data. All parties were aware that this system did not permit medical record information to be correlated directly and individually with responses to the instrument battery, and therefore the idea of comparing health services received with changes in other non-economic variables had to be abandoned.\* Instead, a small incidence and prevalence study was designed to be complete within itself. Aggregate data would be gathered on the prevalence of a limited number of disorders and on the incidence of all disorders serious enough to prompt a visit to the health office. Since aggregate data must still be collected individually and is subject to the problems of confidentiality, a method was devised to permit gathering of data on the specific youngsters in the study without making it identifiable outside of Job Corps. Abt Associates provided data collection forms to each Job Corps health office, each form bearing the name of a participant in the main study. The name

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\*A few questions on health were added to the instrument battery to serve as a limited source of pretest-posttest comparison (see Chapter 5.2 for these findings).

was written on a tearoff sheet, however, so that after the data were entered on the form the name could be removed. This system permitted data collection from a specific group without abridging confidentiality.

The procedure developed therefore relied on the health staff of each center to collect the data. The drawback to this system lay in the extra workload that was imposed on center health staff. The Job Corps National Health Director pledged that center staff would cooperate if they were trained in the proper use of the forms. Abt Associates staff therefore arranged to meet with the health staff in each center before asking them to complete the research forms. Because staff visits to centers could not be made as early as planned, the start of data collection was somewhat delayed. Some youngsters in the study, therefore, terminated before the data collection system had been introduced in their centers. There was, however, no systematic bias from the difference in inauguration times from center to center or in the enrollees who terminated too early to be included in the substudy.

#### 6.2 Data Collection Methodology

Collection of the data for the health services substudy followed a precise sequence of steps. When a notice of Corpsmember arrivals reached Abt Associates, the list was scanned for names of youngsters who had completed the pretest and become part of the main study. For each such youngster on the list, a blank medical data-collection form was prepared with the name of the new enrollee printed on a tearoff sheet. The form was then mailed to the health office of the appropriate center. The form remained in the center health office until the enrollee's termination, when the relevant data from the medical record were copied onto the forms, the identifying tearoff sheet removed, and the form sent to Cambridge project headquarters.

The form consisted of two parts. The first two pages included a list of some of the disorders which are screened for on the Job Corps entrance physical exam. Entries on this part of the form became data for the prevalence study. Pages 3 and 4 consisted of blank lines and boxes to be filled in each time the participant visited the health office. The number and type of these entries became data for the incidence study.

Abt Associates staff instructed a member of the health staff at each center in the above procedures. In most cases, the center medical

director selected a nurse as the person responsible for keeping track of filling out and mailing in the forms. There was a continuous flow of mail back and forth, as blank forms for new arrivals were sent from Jbt Associates headquarters and completed forms for terminees were returned.

#### 6.2.1 Data Points

The objective of the prevalence study was to determine the health condition of enrollees at entrance. The choice of disorders, however, was guided by practical as well as research considerations. Because confidentiality required that all recording be done by center health staff, emphasis was placed on brevity and simplicity in data collection. Thus hard-to-define disorders, such as "emotional problems" or "overweight," were not included because of the likelihood of diagnostic inconsistencies from center to center. Standardization of normal and abnormal readings on various examinations was achieved by including on the form the level or finding defined by Job Corps' National Health Office for purposes of this study as abnormal. Only disorders specifically screened for in the entrance physical exam were included in the prevalence study. The disorders chosen to be examined were those that the National Job Corps Health staff felt, from other evidence, were either widespread, pervasive but undetected, or incorrectly rumored to be widespread. Obviously, a complete health profile was not obtained on the form.

The objective of the incidence study was to obtain data on the incidence of symptoms serious enough to induce Corpsmember-initiated visits to the center health office. Symptoms or disorders prompting the visit were to be determined, and followup data were to be gathered in this component of the medical substudy.

#### 6.2.2 Data Collection Forms

Six laboratory tests and two examinations performed at the time of the enrollee's initial physical were listed on the form (see Figure 6-1 for a reproduction of the form). Noted next to each of the eight tests was the quantitative level which equaled a positive reading, then a series of columns where further information was to be entered if the reading reached that level. For each positive finding, further questions were:

- Was the condition confirmed?
- Was a clinical diagnosis entered of \_\_\_\_?
- Was a return visit recommended?

- Was a return visit made?
- Was any medication given?
- Were other treatments given? (Specify)

Confirmation is considered important in medical practice in four of the eight disorders. The diagnosis column was included because the National Office Health staff wanted to know whether formal diagnoses were generally made when positive readings were recorded. The question about return visits was included to determine whether center health staff request followups, and to form a baseline against which to measure the response to the next question, "Was a return visit made?" From this pair of questions, the percentage of patients returning when recommended could be determined. The questions about medication and other treatment were included to compare individual center practices in the treatment of disorders discovered on the initial physical exam.

Data for the incidence study were collected on page three of the form (see sample, Figure 6-1). The date of the visit to the health office and the symptom or diagnosis were recorded in the first two columns. The four following columns corresponded to the final four columns in the prevalence study, i.e., return visit recommended, return visit made, medication given, other treatments given. Health office staff were instructed to list every Corpsmember-initiated contact.

### 6.3 The Provision of Health Care and Health Education at Job Corps Centers

Before the results of the health services substudy are discussed, it is important that some background information on the Job Corps health care system be provided. As indicated above, visits were made to each of the seven centers to instruct center health office staff in the procedures for completing the substudy data collection forms. As part of that meeting, a discussion was held with one or more representatives of the health office and with the health education teacher regarding health office policies, center health education policies, and the opinions of staff on a number of health-related topics. This section offers a general outline of the role of the health staff, the health office, and the health teacher in different centers, in order to set a context for the medical records findings of the medical substudy, discussed in Section 6.3 below. All information was current at the time of the visits (1976), but may have changed since then.

Medical Substudy Data Collection FormJOB CORPS NATIONAL HEALTH SURVEY

This health survey of a sample of Job Corps members is part of a larger national study being carried out for Job Corps by Abt Associates to study the impacts of Job Corps on corps members. You are requested to complete the attached health record abstract form for the member whose name is given below.

In order to identify the corps member to you, but to preserve his or her anonymity regarding the information which you supply, the corps member's name is written below. This front page is to be torn off before you return the completed form to Abt Associates, thus preserving the corps member's anonymity.

The attached health record abstract form has been designed so as to require a minimal amount of time and effort to complete. Most of the information which is requested can be gathered from Form SF-88 and Form SF-93 in the corps member's medical file. Page 1 and most of Page 2 of this abstract form requires information from Form SF-88. On Page 1 in the left hand column, the appropriate item number from SF-88 is referred to. The next column lists the test or examination which is covered by that item. In the next column, if the test finding was abnormal as stated, check Y\_ (Yes), and continue to the next column; but if it was not as stated, check N\_ (No), and go on to the next item. If you checked Yes, the next column asks if the condition was confirmed. Again, check Y\_ (Yes) if it was, and N\_ (No) if it was not; then proceed to the next column. The next column asks whether a specific diagnosis was made, so you should again check Y\_ (Yes) or N\_ (No) as appropriate. Complete the remaining columns for the item in the same way, and then go on to the next item. On Page 2, a similar item is asked, for which the information may be obtained from Form SF-93. Information for Page 3 can be obtained by going through the rest of the corps member's medical file.

Corps Member's Name \_\_\_\_\_

(TEAR OFF THIS PAGE AFTER FORM IS FILLED OUT AND RETURN COMPLETED FORM IN ENVELOPE PROVIDED.)

Figure 6-1 (continued)

HEALTH RECORD ABSTRACT

MEDICAL FILES

SEQUENT MEDICAL CONDITIONS

Examine the Job Corps member's medical file and note below any visits to the center health office for any condition first noted on the previous pages of this form.

No.	Date of visit	What symptom or diagnosis was recorded?	Was a return visit recommended?		Was a return visit made?		Was any medication given?		Were other treatments given?	
			YES	NO	YES	NO	YES	NO	YES (Specify: e.g., hospitalization, referral, etc.)	NO
1.			Y _	N _	Y _	N _	Y _	N _	Y _____	N
2.			Y _	N _	Y _	N _	Y _	N _	Y _____	N
3.			Y _	N _	Y _	N _	Y _	N _	Y _____	N
4.			Y _	N _	Y _	N _	Y _	N _	Y _____	N
5.			Y _	N _	Y _	N _	Y _	N _	Y _____	N
6.			Y _	N _	Y _	N _	Y _	N _	Y _____	N
7.			Y _	N _	Y _	N _	Y _	N _	Y _____	N
8.			Y _	N _	Y _	N _	Y _	N _	Y _____	N
9.			Y _	N _	Y _	N _	Y _	N _	Y _____	N
10.			Y _	N _	Y _	N _	Y _	N _	Y _____	N

Figure 6-1 (continued)

Item no.	Type of examination	Was the test (finding)...		Was the condition confirmed by...		Was a clinical diagnosis entered of...		Was a return visit recommended?		Was a return visit made?		Was any medical treatment given?		Were other treatments given?  (Specify, e.g., hospitalization, referral)	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No		
57	Blood pressure	140/90 or higher	Y	N	Two more visits	Y	N	Hypertension	Y	N	Y	N	Y	N	Y
59	Distant vision	20/40 or worse in better eye	Y	N	--	Y	N	Defective vision	Y	N	Y	N	Y	N	Y
	Near vision	J6 or higher, 50% or less	Y	N	--	Y	N	Defective vision	Y	N	Y	N	Y	N	Y
(6 through 4), 71-74	Any condition noted as requiring treatment while in Job Corps	(List conditions)			--	Y	N	--	Y	N	Y	N	Y	N	Y
					--	Y	N	--	Y	N	Y	N	Y	N	Y
					--	Y	N	--	Y	N	Y	N	Y	N	Y
<b>HEALTH RECORD ABSTRACT</b>				<b>FORM 57-93</b>				<b>INITIAL MEDICAL HISTORY</b>							
40	Any condition noted as requiring treatment while in Job Corps	(List conditions)			--	Y	N	--	Y	N	Y	N	Y	N	Y
					--	Y	N	--	Y	N	Y	N	Y	N	Y
					--	Y	N	--	Y	N	Y	N	Y	N	Y

543

Figure 6-1 (continued)

Age Code [ ] Sex Code [ ] Status Code [ ] Enter Code [ ] Date sent to center [ ] [ ] [ ] [ ] [ ] [ ]

HEALTH RECORD ABSTRACT			FORM SF-88		INITIAL MEDICAL EXAMINATION																		
Line No.	Test or examination	Was the test (finding)...	Yes No		Was the condition confirmed by...	Yes No		Was a clinical diagnosis entered of...	Yes No		Was a return visit recommended?	Yes No		Was a return visit made?	Yes No		Was any medical care given?	Yes No		Were other procedures given?	Yes (Specify) No (Specify)		
			Y	N		Y	N		Y	N		Y	N		Y	N		Y	N		Y	N	Y
45	Urine B)Albumin	1+ or more	Y	N	2nd Specimen	Y	N	Urinary Tract Condition	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
45	C)Sugar	1+ or more	Y	N	2nd Specimen	Y	N	Diabetes	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
47	Serology	Positive	Y	N	2nd Specimen	Y	N	Syphilis	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
50	Hematocrit - Male	less than 34%	Y	N	--	Y	N	Anemia	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
	- Female	less than 32%	Y	N	--	Y	N	Anemia	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
	OR																						
	Hemoglobin - Male	less than 12.5 gaw.	Y	N	--	Y	N	Anemia	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
- Female	less than 10.5 gaw.	Y	N	--	Y	N	Anemia	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
50	Pregnancy test	Positive	Y	N	--	Y	N	Pregnancy	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
50	Gonorrhea culture - Female	Positive	Y	N	--	Y	N	Gonorrhea or P.I.D.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
50	Gonorrhea smear or - Male	Positive	Y	N	--	Y	N	Gonorrhea	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	

544

### 6.3.1 Health Education

Job Corps requires that each center conduct a mandatory health education course. These courses last up to six weeks and cover a wide range of health topics. The Cleveland Center, however, offered the entire health education course during a six-hour orientation session. The personnel in Cleveland indicated that health education has been an area somewhat slighted because of lack of funds. Other centers used the orientation session as an introduction to center health policies and provided health education weekly in a school course format.

Nutritional information was provided at all centers as part of the health education course. In addition, food service managers at the centers provided balanced diets in the cafeteria. Although Corpsmembers were generally able to choose from a flexible menu, "junk foods" were not available in the cafeteria. These could, however, be purchased at nearby canteens or grocery stores. Students were usually not allowed to take food out of the cafeteria. Food service managers at the centers felt they were providing both nutritious meals and a variety of food choices.

Centers varied in the amount of formal attention they paid for weight control in the health program. Atlanta had a weight-watchers club. The Keystone Center maintained that between their physical fitness program and a weight-watchers club in town, the problem received adequate attention. At the Cleveland Center, Corpswomen with a weight problem were referred to a physician who suggested special diets. At Portland, non-amphetamine diet pills were issued by the infirmary. At Breckenridge, an overweight program was being planned.

Sex education was provided in all centers. At Breckenridge, sex education was taught in class, at the clinic, and during weekly family planning sessions. Birth control devices were available at the health offices and in family planning clinics. Some centers required parental permission before certain birth control devices could be dispensed.

It is a general health policy at Job Corps Centers to require that linens be changed weekly and dormitories cleaned daily. As suggested by personnel at the Breckenridge Center, personal hygiene problems tended to be controlled by peer pressure. Policies with respect to cigarette smoking varied considerably among centers. For example, the Atterbury Center placed no restrictions on smoking, while the Keystone Center did not permit smoking in classes, dormitories, or in the cafeteria.

### 6.3.2 Health Care

All centers visited had infirmaries that were staffed 24 hours a day, seven days a week. Most medical problems were treated during office hours established at the clinic, however. Some centers required an appointment to see the nurse; others worked on a walk-in basis. All were staffed to deal with emergencies immediately.

In all instances, there was a physician at the clinic at least part-time, and one on call at all times. Specialized health care, such as optometry, gynecology, and psychiatry, were available at all centers, although access to these specialists was limited to those referred by the primary care staff at the health office. Although dental care for emergencies was available to all enrollees, preventative treatment was provided only to those who had been enrolled at least three months.

This portrait of health care services is reasonably consistent throughout Job Corps, as National Office regulations govern many of the procedures.

### 6.4 Analysis of Findings of the Health Services Substudy

The results of the health services substudy are provided in this section. Before they are discussed, however, a few comments should be made about the quality of the data and the nature of the sample on which the findings were based.

The data collection forms for the prevalence study called for results of tests which ordinarily were administered to all enrollees at entry. Some centers did not, however, administer the full range of tests. At the Atterbury Center, for example, neither hematocrit nor hemoglobin tests were administered.\* In most centers, however, all tests were given, and positive results were verified where appropriate through testing of second specimens.

Center staff usually did not fill in the space provided, on the data collection form for other conditions requiring treatment while in

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\*The reason for this was that such tests are only required for females, and Atterbury was just beginning to admit women at the time of the study.

Job Corps. Although this may have been a staff oversight, it is probably safe to assume that the youngsters in the sample were a healthy group.

Large variations were found in the health office visits section of the data -collection form. Some Centers (e.g., Cleveland) were either unusually meticulous about recording each visit or had exceedingly high visitation rates. Other Centers grouped visits, an indication that visits were not recorded as they occurred. It should be noted that differences among centers with respect to incidence and prevalence of medical disorders, discussed below, as well as number of visits made by enrollees, might be attributable to extraneous variables--the care taken by center health staff in filling out the data-collection forms, the level of specificity provided by them on the forms, individual center health care policies, or various situational variables (accessibility of infirmary or health care personnel).

Although visitation rates can be calculated from the study results, the columns on treatment did not include enough information to assess its effectiveness. Not enough information was provided on most forms to permit analysis. In any case, it would be difficult to assess the adequacy of treatment for a medical condition without detailed symptomatology, which was not provided. Therefore, the treatment columns of the form were not analyzed.

All seven centers participating in the main study cooperated in the medical substudy. Although there were differences from center to center in the level of detail on the data collection forms, there was no apparent difference in the percentage of terminees for whom we received these forms. As Table 6-1 indicates, the proportion of the health services substudy sample from each center reflected closely the proportion of main study sample from each center (with only two minor exceptions).

A total of 262 medical forms, from 156 male enrollees and 106 female enrollees, were analyzed in the course of the substudy. The range in ages was from 17 to 20, with the majority of enrollees 18 years of age.

#### 6.4.1 Prevalence Findings

Analysis of the prevalence data encompassed a description and tabulation of preliminary disorders found by the battery of medical tests given at enrollment. For purposes of this study, enrollees were classified as

Table 6-1

Number and Percentage of Enrollees in Main Study and in Medical  
Substudy, by Center

Center	Enrollees in Main Study (Persisters and Dropouts)		Enrollees in Medical Substudy	
	N	%	N	%
Atterbury	223	58.8%	131	50.0%
Cleveland	66	17.4	39	14.9
Keystone	33	8.7	27	10.3
Atlanta	18	4.7	14	5.3
Pittsburgh	16	4.2	25 <sup>a</sup>	9.5
Breckenridge	14	3.7	18 <sup>a</sup>	6.9
Portland	9	2.4	8	3.1
<b>TOTAL</b>	<b>379</b>	<b>100</b>	<b>262</b>	<b>100</b>

<sup>a</sup>Number of medical substudy participants is greater than number of main study participants of this center due to failure to track enrollees after termination for Posttest Interview for main study.

either (1) negative on all initial tests, (2) negative on all tests as verified by second specimens, or (3) having a prevailing medical condition. Prevalence was disaggregated by disorder.

In the initial battery of medical examinations administered to the enrollees, over 40 prevalent medical conditions were discovered. The majority of these conditions were vision related;\* 16 for hyperopia (far sightedness), and six for both myopia (nearsightedness) and hyperopia.. Eyeglasses were prescribed when necessary (i.e., when the new enrollee did not own a pair). Positive hematocrits (a sign of anemia) were found for six enrollees. Four cases of syphilis and another four of gonorrhea were discovered on admission. In addition, two enrollees were found to have high blood pressure and another three had positive urine albumin tests (indicative of a urinary tract infection).

That over half the disorders found on the initial exam were vision-related indicates that this kind of health screening is particularly valuable in an educational program such as Job Corps. Having poor vision diagnosed and treated is extremely important, and may have been as significant as other program services in helping to make these youth more employable.

The 41 youth with disorders discovered at entry represented 14% of the number of youth examined. A quantifiable benefit of Job Corps is its diagnosis and treatment of health disorders.

#### 6.4.2 Incidence Findings

Analysis of incidence results was performed by means of categorization and enumeration of enrollee-initiated visits to the center health offices. The variables examined included frequency of visits and the level of enrollee compliance with medical recommendations. The frequency of visits and level of compliance was analyzed by each major set of disorders or symptoms and by center.

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\*Centers varied in their response to the item on eyesight-related disorders. Some Centers chose to note enrollees with known eye problems (i.e., already wore glasses), while others considered as a positive finding only those cases discovered for the first time.

The categorization of symptoms and disorders was difficult for project staff because of wide variations in terminology. Eight categories of symptoms were empirically derived from the returned medical data forms as follows:

- Cold and flu: These refer to head colds, sore throats, coughs, and routine upper respiratory infections. Nontension headaches were also placed in this category. Where symptoms such as stomach aches and watery eyes were found in conjunction with the above symptoms, visits were placed in this category.
- Genitourinary: This category refers to venereal diseases, vaginal infections, pregnancies, painful or absent menstrual periods, and other disorders/conditions that would generally be treated by a gynecologist or obstetrician. Male GU problems, such as venereal disease and painful urination, were also grouped in this category. Guidance and planning visits with regard to birth control, pregnancy, and VD were included here.
- Gastro-intestinal: These refer to digestive problems in the absence of other symptoms.
- Dental: These included toothaches and other problems involving the teeth, gums, and mouth.
- Vision: These include problems typically treated by an optometrist, such as blurred vision.
- Asthma, Allergies, bronchitis: Self-explanatory.
- Minor Injuries: These included cuts, abrasions, contusions, and general muscle and bone aches and pains. Sprains and strains are also included in this category.
- Dermatological: These conditions included rashes, skin inflammations, acne, and insect bites.
- Other: Conditions which did not fall in the above categories were placed in this category.

Approximately 1,400 health office visits were made by the 262 enrollees followed in this substudy. The mean number of visits per enrollee was 5.3, over an average Job Corps length of stay of three months. The median number of visits was less than three, however. As Figure 6-2 shows, 58 enrollees made zero visits and another 61 make only one to two visits; at the other extreme, nine hundred thirty-seven (67%) of the visits were made by 16 percent of the sample population (42 enrollees). Therefore, the analyses which follow were largely influenced by those 42 enrollees who made 11 or more infirmary visits.

Table 6-2 shows the distribution of health office visits by disorder or symptom. As that table indicates, the plurality of visits (35%) was for cold and flu symptoms. Many of these were for headaches. Genitourinary

Figure 6-2

Frequency Distribution of Health Office Visits  
(Total number of visits is 1,401)

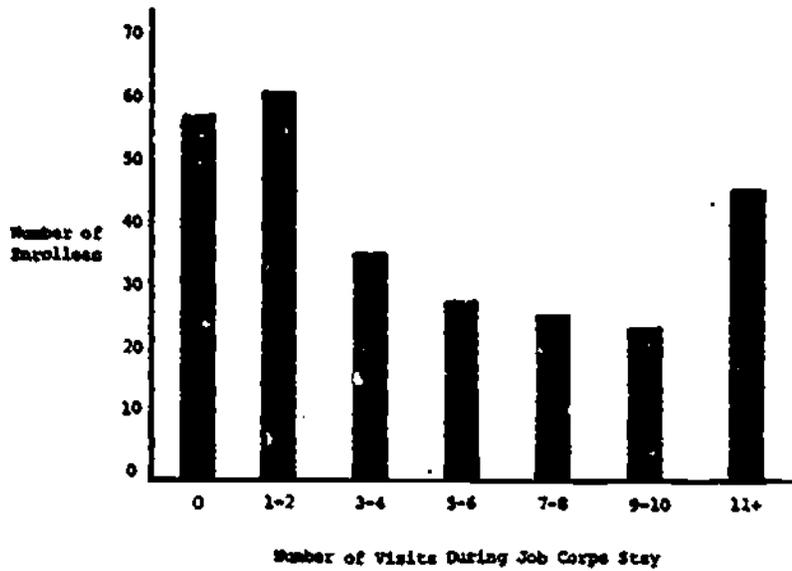


Table 6-2

Distribution of Health Office Visits by Disorder or Symptom

Disorder or Symptom	Percentage of Visits
Cold and flu symptoms	15%
Genito-urinary problems	17%
Gastrointestinal symptoms	12%
Minor injuries	11%
Dental problems	9%
Other problems	6%
Dermatological symptoms	4%
Eye-related disorders	3%
Asthma, allergies, bronchitis	3%

problems were the next most common reason for visits (17%). Most of these visits involved female enrollees with painful or absent menstrual periods. Some male problems of painful passage of urine were also recorded. Gastrointestinal distress made up 12% of total visits. The majority were non-serious, with only one case of appendicitis identified. In that instance, the patient was referred to a local hospital, and an appendectomy was performed. Minor injuries, the typical day-to-day cuts, abrasions, strains, and muscle pains, were the next largest visit cause, 11% overall. This was followed by dental complaints (9%), other problems (6%), dermatological symptoms (4%), eye-related disorders (3%), and asthma, allergies, and bronchitis (3%). The "other" category included nervous disorders, (e.g., tension headaches, hyperventilation, heart palpitations, insomnia), ear problems (e.g., loss of hearing, painful earlobes, impacted wax), dizziness, positive tuberculin tests, alleged rapes, psychiatric disorders (depression, alcoholism), weight problems, seizures, hemorrhoids, fainting, and bivalent sickle cell anemia.

#### 6.4.3 Comparison Among Centers of Health Care Delivery

For reasons stated previously, even the limited intercenter analysis undertaken had methodological problems. All findings discussed below must be qualified by the limitations inherent in our data collection system. Frequency counts of health office visits may have been affected by the degree of conscientiousness in recording. Levels of compliance with recommended treatments were also difficult to assess. Some centers requested return visits only for fairly severe problems, while other centers requested return visits for almost all disorders. Therefore, the intercenter comparisons discussed below should be considered neither highly definitive nor highly precise.\*

Individual center health office visitation rates varied considerably, according to our data. Much of the variation might be explained by the differences in care taken in preparing the data-collection forms. Despite this possibility, however, the data did yield some interesting findings. The

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\*Portland's sample was very small--8 enrollees--so additional care should be taken in interpreting the findings for this center.

three centers (Cleveland, Keystone, and Atlanta) which had all or almost all female enrollees in their medical substudy sample recorded the highest mean number of health office visits per enrollee, 18, 8, and 5, respectively. There was, clearly, a sex differential in visit rates in this sample. The other mean visit rates are indicated in Table 6-3. At the time of the study the Cleveland center was the only center in the group where an extensive course in health care was not provided, and its exceedingly high rate of visitation might therefore have been related to lack of health education beyond the orientation period.

It might be speculated that health office visitation rates were related to enrollees' length of stay, that is, the longer an enrollee stayed at a center, the more likely he or she was to frequent that center's health office. We examined this possibility by comparing the center data for length of stay, calculated for the main study sample, with the center data for total number of clinic visits, calculated for the medical substudy sample. Thus, while the data are not from identical samples, they can provide insight into the issue.

Table 6-4 shows the mean length of stay and the mean number of clinic visits per enrollee in the substudy. Visual inspection of these data suggest that length of stay was not related to mean number of enrollee visits. This is confirmed by a fairly small Spearman rank-order correlation ( $\rho$ ) for these data of  $-.21$ , which suggests, if anything, a tendency toward an inverse relationship of length of stay and number of health office visits. The visitation rates by symptom and center are shown in Table 6-5: For three of the symptom categories -- colds and flu, minor injuries, and dermatological -- visitation rates were roughly consistent across centers. Surprisingly, GU problems accounted for a larger proportion of all visits in male centers than in female ones. For the other symptom categories, the visitation rates varied widely across centers, suggesting that centers may have put different degrees of stress on reporting and attending to different types of more serious symptoms. Of course, the visitation rate variation across centers among these symptom categories may well reflect different incidence and contagion situations at these widely scattered centers at that time. Again, we must caution against giving too much weight to these intercenter comparisons due to the many problems in data reporting and the sampling of substudy participants.

Table 6-3

Health Office Visitation Rates by Center

Center	N	Total No. Visits	Mean No. Visits
Atterbury	131	297	2.3
Cleveland	39	692	17.7
Keystone	27	216	8.0
Atlanta	14	71	5.1
Pittsburgh	25	24	1.0
Breckenridge	18	64	3.6
Portland	8	37	4.6
ALL	262	1,401	5.3 (mean)

Table 6-4

Comparison of Mean Length of Stay and Mean Number of Health Office Visits

Center	Mean Length of Stay (days) <sup>1</sup>	Mean Number of Enrollee Visits <sup>2</sup>
Atterbury	110	2.3
Cleveland	114	17.7
Keystone	57	8.0
Atlanta	154	5.1
Pittsburgh	125	1.0
Breckenridge	141	3.6
Portland	107	4.6
All	110	5.3

<sup>1</sup>Calculated from main study sample (N = 379)

<sup>2</sup>Calculated from medical substudy sample (N = 262)

Table 6-5

Infirmiry Visits and Visitation Rates by Center and Symptom Category

Center	SYMPTOM CATEGORY																			
	All		Cold & Flu		Genito-Urinary		Gastro-Intestinal		Minor Injuries		Dental		Other		Dermatological		Eye-Related		Asthma-Related	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Attorbury	297	100%	98	33.0%	14	23.0%	15	5.1%	45	15.2%	59	19.9%	33	19.9%	21	7.1%	5	1.7%	7	2.4%
Cleveland	642	100%	260	37.6%	145	22.5%	112	16.2%	70	10.1%	41	5.9%	25	3.6%	20	2.9%	11	1.6%	0	1.2%
Keystone	216	100%	83	38.4%	37	17.1%	27	12.5%	18	8.3%	14	6.5%	13	6.0%	11	5.1%	6	3.0%	7	3.2%
Atlanta	71	100%	22	31.0%	14	19.7%	9	12.7%	8	11.3%	5	7.0%	1	1.4%	2	2.8%	7	9.9%	3	4.2%
Pittsburgh	24	100%	6	25.0%	0	0.0%	2	8.3%	2	8.3%	4	16.7%	4	16.7%	1	4.2%	1	4.2%	4	16.7%
Breckenridge	64	100%	2	3.1%	21	32.8%	5	7.8%	3	12.5%	0	0.0%	3	4.7%	2	3.1%	11	17.2%	12	18.8%
Portland	37	100%	18	48.6%	7	18.9%	0	0.0%	4	16.2%	0	0.0%	4	10.8%	2	5.4%	0	0.0%	0	0.0%
Total	1401	100%	489	34.9%	238	17.0%	170	12.1%	157	11.2%	123	8.8%	63	5.9%	59	4.2%	41	2.9%	41	2.9%

Note: Percentage figure is for percentage of visits for a symptom of all visits to that center's health office.

Compliance with recommendations for return visits is shown in Table 6-6. Atterbury, Pittsburgh, Breckenridge, and Atlanta showed very high compliance percentages (around 90 percent), while Keystone, Cleveland, and Portland showed relatively moderate compliance levels (around 55 percent). With the exception of the Atlanta center, our sample of the high compliance centers is predominantly male, and our results might be interpreted to suggest that male Job Corps enrollees were more likely than females to follow up on medical recommendations. In this regard, it is interesting that the male enrollees in the main study sample scored consistently (although not significantly) higher at pretest on the Attitude Toward Authority Scale), i.e., they were more deferential toward authority than were females (see Chapter 4.1 above).

#### 6.5 Conclusions

It should be stressed again that the results of this study are by no means definitive. Recognizing the limitations noted above in the data-collection process, however, several tentative conclusions can be drawn about medical care in Job Corps.

Job Corps does appear to provide tangible medical benefits to enrollees. The initial medical screening examination uncovered prevailing medical conditions among 14 percent of the enrollees. Granted, some of the enrollees may have known about their conditions but also knew that they would receive medical attention upon enrollment in Job Corps and so did not seek treatment before Job Corps. Still, a considerable percentage of medical conditions was undoubtedly uncovered in the screening examination. Some of these conditions (e.g., venereal disease) have obvious epidemiological consequences, and so their discovery had even wider impact.

The number of infirmary visits (a mean of 5.3 visits during a mean length of stay of 110 days, yielding a mean frequency of one infirmary visit every 21 days) suggests further that Job Corps enrollees received medical attention that they might otherwise not have received. It is difficult to conceive that disadvantaged youth would normally be able, on the "outside," to receive medical attention an average of once every three weeks. In fact, national statistics indicate that low income blacks of this age group visit a medical facility once every 215 days, or one-tenth as often as this sample did in Job Corps.

Table 6-6

Compliance Levels with Health Office Recommendations

Center	Percentage Complying with Recommendations
Atterbury	88%
Cleveland	53%
Keystone	58%
Atlanta	92%
Pittsburgh	88%
Breckenridge	83%
Portland	50%
All	70%

Concerning the health care and health education that enrollees received in Job Corps, several conclusions deserve discussion. For all of the possible biases that may have been introduced in the data collection, the finding that the one center with an extremely high average number of health office visits per enrollee was also the one center which paid scant attention to formal health education suggests, at least tentatively, that health education may contribute toward a decrease in enrollees' seeking of medical care. In other words, there may be a need for health information among Job Corps enrollees which, at the center with the least amount of formal health education, is satisfied by the enrollees' obtaining it through infirmary visits.

The findings also suggest that, although females may initiate more health office visits, males comply more with recommendations made by health office personnel (although this finding may have been confounded by other center-specific conditions). Job Corps may want to give greater emphasis to follow-through on medical care recommendations provided to females, while at the same time monitoring the reasons for health office visits of females to see if they are excessive, and if health education in specific areas can reduce what may be informational visits.

A small percentage of enrollees accounted for a disproportionately large percentage of clinic visits. While this finding parallels the situation in society in general, it suggests that some attention might be paid to this issue by Job Corps, so that health care services may be more efficiently provided.

Many of the enrollees with high clinic visitation rates may have been more in need of counseling than of general medical care. This was indicated by the nature of visits (every day or every other day within the findings of Job Corps medical personnel (i.e., no apparent medical cause). There were a number of enrollees whose complaints (e.g., hyperventilation, nervousness, insomnia, seizures, alleged rape) imply somatization of emotional problems. Although seriously disturbed applicants to Job Corps are ruled ineligible, the incidence of emotional disorders in this sample suggests that counseling and psychiatric services provided by Job Corps are needed for this population.

Finally, it was noted that the more serious symptoms seemed to receive different amounts of attention from center to center. If further study bears this out, Job Corps may wish to issue guidelines in the area of minimum care standards.

APPENDIX A  
STUDY DESIGN AND METHODOLOGY

559

602

## 1.0 STUDY DESIGN

This study to assess the non-economic impacts of Job Corps was seen by both the Department of Labor and by Abt Associates as laying the foundation for a broader study of Job Corps' non-economic impacts to be conducted at a later date. In that sense, then, this was designed as a pilot study of the non-economic impacts of Job Corps. This chapter discusses the objectives of the study and the design of the research. This project was planned to produce three products: an Outcomes Assessment Battery (OAB) which can be used for research on other employment and training programs and further research on Job Corps; a Handbook of Noneconomic Outcome Measures for Employment and Training Programs which instructs researchers in the use of the OAB; and this report, which presents the findings of a preliminary pretest-posttest study of about 500 Job Corps applicants.

### 1.1 Research Objectives

In order for a research design and methodology to be developed, the objectives of the research first had to be refined. As with any project of this size, scope, and complexity, deciding on project objectives was an interactive process. Early in the project, discussions among Abt Associates contract staff and DOL government technical representatives successively refined the project's objectives to the following:

- To develop an assessment instrument battery to measure certain noneconomic impacts of employment and training programs;
- To assess certain noneconomic impacts among selected Job Corps participants;
- To determine aspects of Job Corps programs which may contribute to noneconomic outcomes.

In each subsection below, the research objectives of this project are discussed more or less chronologically as they developed from the actual project methodology.

#### 1.1.1 Development of a Noneconomic Outcomes Assessment Battery

The first objective of this project was to develop an assessment instrument package to measure selected noneconomic outcomes of employment and training programs. Existing literature was searched and experts were consulted in order to construct a battery of instruments which held promise

of assessing the outcomes of interest according to certain criteria. This effort is described more fully in the Design Phase Report (March 1975) of this project and in Section 2.2 (Description of the Outcomes Assessment Battery) of this Appendix.

The instrument development phase resulted in two products. The first is the Job Corps Noneconomic Outcomes Assessment Battery, which was administered to this study's participants and is available for subsequent employment and training program research. The second is a Handbook of Non-economic Outcome Measures for Employment and Training Programs, which can be used for further evaluations of Job Corps and similar programs. The Handbook describes each instrument selected for the battery and is produced as a separate volume.

#### 1.1.2 Assessment of the Noneconomic Impacts of Job Corps

From the beginning of the contract, it was recognized that the assessment of the noneconomic impacts of Job Corps would be preliminary in nature and would not lead to findings that would be generalizable to the Job Corps as a whole. The Request for Proposal which originated this project recognized the inappropriateness of attempting to generalize about all Job Corps enrollees at all Job Corps centers on the basis of the small sample of centers to which the study was limited. For example, the RFP stated "If this approach (the application of the developed set of measures in a limited Job Corps setting) proves feasible and yields meaningful data, these measures could be applied on a broader scale to the Job Corps program and to other manpower programs." As the contract work progressed, the number of Job Corps centers included in the study expanded from one (as originally envisaged) to seven. Still, because these centers were not sampled randomly, nor study participants assigned randomly to treatment and control groups (for ethical and practical reasons), the "evaluative" component of this study is necessarily limited. The results of this study cannot be generalized to all Job Corps Centers, at all times, for all persons. All statements of the study's findings have these limits implicit in them. It remains for a larger study, much wider in scope, to provide a more complete evaluation of the noneconomic impacts of Job Corps.

## APPENDIX B - Baseline Data on the Three Groups

### BASELINE DATA ON THE THREE GROUPS

As discussed in the previous chapters, membership in the "Persister", "Dropout" or "NoShow" group was determined after study subjects had responded to the pretest Instrument Battery. Their association with the study and their association with Job Corps were not dependent on each other in any way after the pretest Instrument Battery was completed at the Job Corps screener's office.

Because of this post-hoc design, there was no way of assuring that the three groups were comparable before the "treatment" (Job Corps attendance). Indeed, there were empirical reasons for believing that NoShows were not as motivated as those who enrolled, and therefore by definition not comparable. A decision was made to compare pretest scores of the Job Corps group and the NoShow group in order to determine whether there were any systematic differences. The first fifty NoShow instruments were analyzed in comparison to the first 350 or so Job Corps instruments. (As it turned out, the pretest was administered to many fewer NoShows). There were no significant differences on any of the 18 scales. This finding was considered sufficient evidence of the comparability of NoShows and Arrivals on these variables at the time of pretest.

Another issue that should be covered here is the comparability of the study sample to the Job Corps population. As mentioned several times in Appendix A, the present study was designed as a pilot study to test the feasibility of measuring non-economic impacts. As a pilot study, it was not intended to reflect the Job Corps population accurately. No generalizations to the Job Corps as a whole are made, so it was not necessary that the study sample be representative. Nonetheless, readers, of course, are interested in the characteristics of the study sample, and in how it differed from Job Corps as a whole. Both types of information are included in the discussion of baseline data below. The statements above serve simply as a caveat: Differences between the sample and the population are not important for the purposes of this study.

In the sections below, demographic baseline data on the three groups are presented. Such information was derived from two different sources: Data on sex, race, age and urban/rural background are taken from items on the pretest and posttest of the Outcomes Assessment Battery. The additional information was taken from the Job Corps Mainstream file, the computerized management information system used by Job Corps for research

purposes.\* Because of the confidentiality of the Mainstream file, all youngsters whose records were searched had first given Abt Associates permission to do so.

Basic Demographic Data Across Groups

Group Formation

All analysis in the study is focused on differences among the three groups of Job Corps applicants. "Persisters" were defined as youngsters who remained in Job Corps 90 days or more. This cutoff date was chosen to correspond with Job Corps termination categories; Category I and Category II\*\* are the names used by Job Corps for those called Persisters here. "Dropouts" were defined as those who enrolled in Job Corps but remained on center less than 90 days. (Job Corps calls these Category III terminees). "NoShows" were defined as youngsters who applied to Job Corps, were accepted and assigned to a center, but who literally did not show up on the specified date for enrollment. Job Corps uses the same term and definition. The table below illustrates the distribution of study subjects into treatment groups.

Table 1  
Group Formation

	Persisters	Dropouts	"NoShows"	TOTAL
Number	178	232	79	489
Percentage	38	45	16	100 %
Total Job Corps Percentage in 1976	37	33	30	100%

\* Our thanks go to John Amos, Program Analyst in the Job Corps Division of Program Review, for generating the data tape upon which these findings are based.

\*\*Category I terminees are those who either graduate or stay 6 months or more; Category II terminees are those who stay 3 to 6 months. In this study, these two groups were not differentiated.

Although there is no problem, for the purposes of this study, in examining findings from groups of unequal size, it would be well to comment on the discrepancy in group sizes between the study and National Job Corps statistics. At the time the research design was developed, the study staff envisioned an even group division of about one-third of the applicants in each, like the overall Job Corps figures above. This breakdown had been relatively consistent in Job Corps for several years. At the time of the pretest, however, different parts of the country were being affected more or less strongly by the recession of the mid-70's. For Job Corps, this variation was reflected in the application and enrollment rates; areas of high unemployment had long Job Corps waiting lists and a low no-show rate. Instead of not showing up for Job Corps, many ambivalent youngsters probably enrolled. Hence the low no-show rate and high dropout rate. If the sites from which this sample of applicants taken were suffering from higher unemployment than average, this explanation of the discrepancy between the proportion of Job Corps NoShows in the study and the proportion in the entire Job Corps is plausible. There is no way of verifying it, however.

Another explanation lies in the well-known methodological bias called volunteerism. Job Corps screeners were asked to hand out instrument batteries to all applicants after their interview. The slow rate of receipt of completed pretests indicated that not all applicants were filling them out. It might be speculated that refusals came mostly from those applicants who, by the end of their screening interview, had already decided not to follow through on their applications. Hence, the finding that only half the applicants who became NoShows filled out the Instrument Battery. This theory leads to the inevitable conclusion that the small NoShow group is biased in favor of the more motivated applicants, i.e., those who were willing to spend an additional 45 minutes in the screener's office filling out a questionnaire. But, under that argument, all three groups should have been biased in that direction. Under the conditions of this study, there was no way in which the volunteer bias could be eliminated. If the NoShow group were more biased than the others in ways that might affect the study, the comparison of scale scores should have reflected that. Since there were no differences, it may be concluded that, although only well motivated NoShows became part of the sample, they were comparable to the Job Corps groups in the areas under study.

Male/Female Breakdown

Table 2  
Male/Female Breakdown

	Persisters	Dropouts	No Shows	TOTAL	All Job Corps Contract Center Enrollees
Percent Male	60%	56%	56%	58%	58%
Percent Female	40%	44%	49%	42%	42%
Percent TOTAL	100%	100%	100%	100%	100%

The sample was 58% male, identical to the proportion in all Job Corps contract centers. The male/female ratio within each group is consistent with the total ratio.

Racial Breakdown

Early in the survey phase of the project, it became clear that almost all applicants in the study were black. The reason was that the pretest was administered only in large cities east of the Mississippi, where a large proportion of the disadvantaged population is black. In an attempt to add more white study subjects, the survey was later extended to Portland, Oregon and its local Job Corps Center, where almost all enrollees are white. The addition of Portland did not make a significant change in the study's racial profile, however, because most of the applicants pretested enrolled in Job Corps and stayed too long to be posttested. Table 3 displays the distribution of the study sample in terms of race and treatment group.

608

Table 3

Racial Breakdown  
(in percentages)

	Persisters	Dropouts	NoShows	TOTAL	All Job Corps Contract Center Enrollees
Black	88	83	85	85	BLACK: 61
White	8	13	9	10	WHITE: 22
American Indian	< 1	1	1	< 1	SPANISH- SPEAKING: 12
Mexican-American	< 1	0	0	< 1	OTHER: 5
Puerto Rican	1	2	1	1	
Other	2	1	4	1	

Two comments should be made regarding the table above. One, the proportional distribution of the races, although highly skewed, is reasonably consistent among treatment groups. Two, a somewhat larger proportion of white youngsters is found in the Dropout group. This situation is a familiar one to Job Corps; in centers, especially large ones, where minorities predominate, white youngsters often feel out of place and consequently terminate early.

Age Breakdown

The ages of applicants were taken from birthdates entered on the post-test questionnaire. Because the study covered almost 18 months, it was necessary to standardize ages by subtracting birthdates from a common date. January 1, 1976 was chosen because it represents an approximate midpoint of the pretest survey period. Table 5 displays the ages of the study sample and the Job Corps population.

Table 4

Age Breakdown  
(in percentages)

	Persisters	Dropouts	NoShows	TOTAL	All Job Corps Contract Center Enrollees
Under 16	3	6	1	3	-
16	34	35	39	33	26
17	27	27	34	28	24
18	19	15	22	18	21
19	10	10	10	10	15
20	7	7	9	7	15

This distribution approximates that of Job Corps as a whole, although this study population has about 10% more youth 16 years old and younger. This is not surprising, since younger applicants are usually sent to Contract Centers (such as those in the study) rather than Conservation Centers.\* Within the study sample, the NoShow group was somewhat older, with 41% of the NoShows aged 18 or over compared to 36% and 32% of Persisters and Dropouts, respectively. Getting a job may have been a major reason for not showing up, and older youth have a better chance in a competitive job market.

Urban/Rural Background Breakdown

Although all youngsters in the sample applied to Job Corps in a screening office in one of the cities selected, it was considered important that the applicant's background be determined, because of the possible differential impacts of Job Corps on youngsters brought up in urban or rural areas. Table 5 displays the breakdown of urban/rural background.

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\*Conservation Centers offer union-run draft training programs designed to lead directly into apprenticeship after Job Corps graduation. The unions cannot place those under 18 in apprenticeships so they prefer not to train them in Job Corps.

Table 5

Urban/Rural Background Breakdown  
(in percentages)

Where have you lived most of your life?	Persisters	Dropouts	No Shows
In farm country outside the town	3	3	4
In a small town	9	7	8
In a city	88	90	89

As can be seen, recent rural to urban migration is not a characteristic of this sample. Job Corps does not keep statistics on this variable, so no comparison with the entire population is possible. With a few exceptions, all members of the study sample were living in a city of 250,000 or more at the time of application. In Job Corps as a whole, only 43% of enrollees come from large cities. The sample, however, was purposely taken from cities only.

Conclusions

Although there was no attempt to make this purposive sample representative of the Job Corps population, it fortuitously turned out to be representative by sex and somewhat representative by age. The three groups of applicants--Persisters, Dropouts and NoShows--were not actually sampled, and therefore were not stratifiable by any demographic variables. Nevertheless, the groups were virtually identical by sex and urban/rural background. There were some differences, none of them significant, in race and age.

Additional Demographic Information on Job Corps Groups

As an additional source of information, the Job Corps management information system was consulted. Personal data, mostly demographic, was accessed for all study subjects who were in the Job Corps file (all NoShows and some Dropouts and Persisters are missing from the file). As stated in the previous section, deviation of this sample from the Job Corps population should not be construed as a weakness of the sampling frame; no attempt was made to make the sample representative or to make generalizations to the entire program.

Some demographic items covered in the previous section are repeated here in order to display all variables according to internal Job Corps categories. The racial breakdown appears in Table 6.

Table 6  
Group by Race (in percentages)

Males			
N = 179	Persisters	Dropouts	Statistics
White	4	9	$\chi^2=1.53$ df=1 p =ns
Minority	96	91	

Females			
N = 136	Persisters	Dropouts	Statistics
White	7	20	$\chi^2=4.01$ df=1 p = <.04
Minority	93	80	

For both sexes, whites tended to be Dropouts rather than Persisters. Differences were significant for women. Almost 75% of white women left after less than 90 days.

The next demographic variable, size of city of origin, is displayed in Table 7.

Table 7  
Group by City Size  
(in percentages)

	Persisters	Dropouts	Statistics
Less than 2500	3	2	$\chi^2=2.07$ df=3 p =ns
2500 to 50,000	3	5	
50,000 to 250,000	7	6	
More than 250,000	87	87	

Because patterns for males and females were identical here, only one table is presented. There are no differences between groups. Table 8 illustrates differences in welfare status.

Table 8

Group by Welfare Status (in percentages)

Males

N = 182	Persisters	Dropouts	Statistics
Yes	50	69	$\chi^2=6.32$ df=1 p = .01
No	50	31	

Females

N = 138	Persisters	Dropouts	Statistics
Yes	64	67	$\chi^2=3.11$ df=1 p =ns
No	36	33	

Job Corps appears to be less successful with males who were on welfare before enrolling. Over 60% of male welfare recipients dropped out early. There were no differences for women.

Applicants with a history of delinquency or crime are classified as "questionable." Each such case is considered for eligibility on an individual basis. Often a questionable youngster is permitted to enroll as an alternative to probation. The breakdown for the study sample appears in Table 9.

Table 9

Group by Behavior Category (in percentages)

Males

N = 180	Persisters	Dropouts	Statistics
Questionable	16	15	$\chi^2=1.22$ df=2 p =ns
Eligible	84	85	

Females

N = 136	Persisters	Dropouts	Statistics
Questionable	3	6	$\chi^2= .07$ df=2 p =ns
Eligible	97	94	

It is not surprising that more males than females were questionables. There were no differences between groups for either sex.

Educational attainment prior to Job Corps is illustrated by Table 10.

Table 10  
Group by Highest Grade Completed (in percentages)

Males

N = 182	Persisters	Dropouts	Statistics
6th	0	2	$\chi^2=8.16$ $df=6$ $p =ns$
7th	0	3	
8th	17	19	
9th	43	37	
10th	33	26	
11th	4	10	
12th	4	3	

Females

N = 138	Persisters	Dropouts	Statistics
6th	0	1	$\chi^2=3.63$ $df=6$ $p =ns$
7th	3	0	
8th	11	9	
9th	28	32	
10th	28	26	
11th	13	12	
12th	17	20	

Although there were no significant differences in educational attainment for either sex by group, within both groups females entered Job Corps with more education than males (Persisters:  $\chi^2=16.46$ ;  $df=5$ ;  $p<.005$ . Dropouts:  $\chi^2=16.88$ ;  $df=6$ ;  $p<.01$ ). These differences may help account for the consistent results in the findings section that women scored higher on the scales that test knowledge (see Chapters 3 and 5).

Summary

In general, the youngsters who became Persisters or Dropouts were alike in background. White women and men from families on welfare tended to terminate early.

### 1.1.3 Assessment of Job Corps Program Elements Related To Noneconomic Outcomes

The project's third objective was to ascertain, in a preliminary fashion, which specific aspects of various Job Corps training programs contribute to various noneconomic outcomes. This objective had a process focus; attention was paid here to Job Corps program elements which might be tied to noneconomic outcomes. A case study approach was deemed the most appropriate one to use here since the seven centers were not selected randomly, nor was the number of centers studied large.

Each center in the study was visited and center personnel were interviewed using a semi-structured interview protocol. The center study interviews focused upon program elements which could be related to the study outcomes. A variety of center personnel, ranging from center director to residential advisors, were interviewed, as appropriate, about various program elements relating to the study outcomes. In these interviews Abt staff attempted to ascertain critical components of the program.

### 1.2 Research Design

To achieve the three objectives described above, a research design was needed that would allow administration of the Outcomes Assessment Battery to a large number of respondents, that would determine the extent to which Job Corps impacted various noneconomic areas, and that would examine different program elements and determine in a preliminary fashion, what elements influenced what outcomes. The research design which seemed to meet these criteria and reach the project objectives in the most cost-effective manner, was a pretest-posttest, Nonequivalent Control Group Design.\*

In this quasi-experimental design, the study participants were not assigned to treatment and control groups randomly, as is required in a true experimental design. Obviously, both ethical and practical considerations did not allow randomly assigning Job Corps applicants to

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\* Cook, T.D. and Campbell, D.T. The Design and Conduct of Quasi-Experiments and True Experiments in Field Settings. In M.D. Dunnette (Ed.), Handbook of Industrial and Organizational Research. Chicago: Rand McNally, 1976.

a "treatment" status (participation in Job Corps) or to a "control" status (non-participation in Job Corps). Rather, the Job Corps applicants "selected" themselves for assignment to treatment and "control" groups by their subsequent behavior. When they applied at selected Job Corps screening sites, applicants were given the pretest questionnaire, that is, the Outcomes Assessment Battery. Of those applicants sampled, some did not show up for travel to, or enrollment in, their assigned Job Corps center; these participants were classified as NoShows. Of those applicants who did subsequently enroll in Job Corps, some terminated before the Job Corps "treatment" could reasonably be expected to have any effect (i.e., in less than 90 days). These study participants were classified as Dropouts. Finally, those applicants who enrolled in Job Corps and subsequently remained for at least 90 days comprised the treatment group, the Persisters. A time lag of about three months after termination from Job Corps was allowed before Dropouts and Persisters were tracked and given the Posttest interview. About nine months after their scheduled arrival date, NoShows were tracked and given the posttest interview.

Figure 1-1 schematically shows the process by which the initial pool of Job Corps applicants were subsequently classified into the three study respondent groups. The resulting research design consisted, then, of two measurement points, a pretest and a posttest, and three groups of study participants: a treatment group of Persisters, a comparison group of Dropouts, and a "control" group of NoShows.

To obtain data on the contribution of Job Corps to the outcomes, the Job Corps centers to which the study participants were assigned were visited. Information was gathered at each site in order to inform the data analysis regarding the relationship of program elements and outcomes. Table 1-2 displays the types of center staff interviewed and the topics discussed.

Figure 1-1

Classification and Assessment of Study Participants

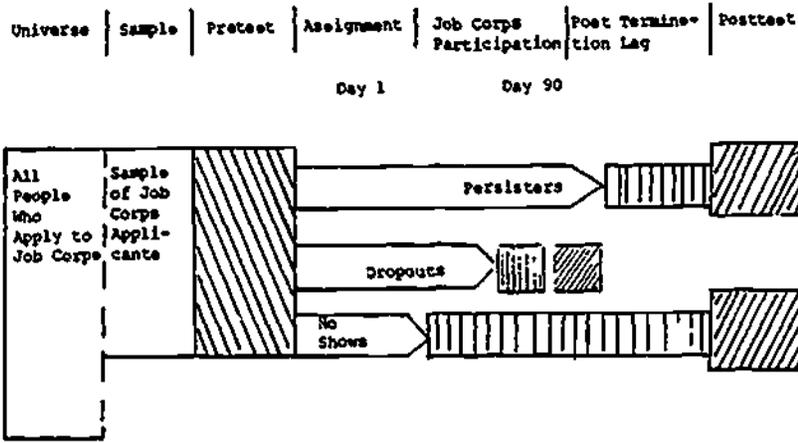


Table 1-2  
Interview Topics for Center Visits

Topics:	Source People:							
	Center Director	Counselors	World of Work Instructor	Vocational Education Instructor	Residential Advisors	Physician	Health Education/Physical Education Instructor	Physicians/Nurses
Self Esteem	X	X			X			
Attitudes Toward Authority	X	X	X	X	X			
Job Knowledge and Aspirations	X	X	X	X				
Job Seeking and Holding Skills and Job Satisfaction			X	X				
Nutrition and Nutrition Knowledge						X	X	X
Health Education							X	X
Medical Records for Substudy								X

### 1.3 Analysis Plan

Data analysis for the project was tailored to each of the three objectives of the study. The analysis for the first objective (development of a noneconomic outcomes assessment battery) was a psychometric evaluation of the instruments selected to measure noneconomic impacts. The analysis for the second objective (assessing noneconomic impacts of Job Corps on enrollees, as measured by these instruments) was more in the nature of a hypothesis-testing analysis, although for this pilot study specific hypotheses were not made or tested. Analysis for the third objective (determining program aspects contributing to noneconomic outcomes) was purely qualitative.

## 2.0 STUDY METHODOLOGY

Planning, conducting and monitoring the pretest--posttest Non-equivalent Control Group Design took two of the study's three years. The procedures followed for selection and development of outcomes and measures and for site and respondent selection are discussed in this chapter.

### 2.1 Criteria for Instrument Selection or Development

Investigation of the measurability of the outcomes initially listed was the major focus of activity during the project's design phase. In coordination with the outcome selection process, project staff identified, collected, and selected existing scales and developed original measures where adequate scales did not exist for assessing a particular study outcome. In considering the tradeoffs between the research advantages of previously validated instruments and the specific appropriateness of newly-generated instruments, cost considerations dictated a preference for instruments already validated and normed. It was not always feasible, however, to find such instruments, and, where necessary and feasible, new items were written to measure several of the outcomes.

In evaluating existing instruments or in developing new items, the primary criteria were as follows:

- Brevity - A time limit of about ninety minutes for the entire instrument package was set, meaning that individual instruments would have to be fairly brief.
- Self-administrability - Because the pretest was self-administered by Job Corps enrollees at the screening office where they applied, the instruments had to be self-administerable, or readily modified to be self-administerable.
- Appropriateness to population - Disadvantaged youth tend to have unique problems vis-a-vis tests and test-taking, namely, low reading level, unfamiliarity with objective tests and test-taking, anxiety about written instruments and short attention span. Instruments selected or developed had to have been designed to minimize these problems. The existence of normative data on disadvantaged youth was a distinct advantage for any instrument.
- Reliability - Instruments selected had to be internally consistent without being redundant and had to measure the same thing consistently over time. The latter consideration was particularly important since the experimental design called for a pre-post test interval averaging nine months.

- Validity - Instruments should, of course, measure what they are purported to measure. Evaluation of instruments paid close attention to validity considerations and evidence.
- Efficiency - The research design called for up to 2,000 instrument administrations. Considerations of time, cost, and ease of scoring consequently also guided evaluation of instruments.

## 2.2 Description of the Outcomes Assessment Battery

This section described the measures finally selected for submission to the Department of Labor as the Outcomes Assessment Battery (OAB). With slight modifications, the battery served as the assessment instrument for both the pretest and the posttest. Separate male and female versions of the test battery were used because three subscales of the Youth Assessment Battery (YAB) have male and female versions.\* A few questions appeared on the pretest only; several groups of questions appeared on the posttest only. Table 2-1 is organized by outcome and summarizes the instruments and subscales selected. The discussion presented below is organized by instrument, with a description and major referenced provided for each instrument. The order in the Outcomes Assessment Battery was administered to study subjects, and the item numbers in brackets refer to item numbers in the final OAB.

Form 16 (FSI) is a Department of Labor form completed for each Job Corps enrollee. It provided an estimate of the enrollee's ability to speak English at the time of pretest. It also provided supporting demographic information needed in data analysis. It is not included in the Outcomes Assessment Battery, but was part of the data flow of the study.

Biographical Information Blank (BIB) (A1-A10) was developed by Richardson, Bellows, Henry & Co., Inc., under contract with the U.S. Department of Labor. It has been used extensively in Job Corps and, as such, it was appropriate to the study population. The seven "motivational" items selected from it (BIB items 7, 15, 39, 50, 51, 63, and 66) were selected as those which best differentiated both male and female Job Corps Persisters

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\*The sex differences on the YAB were regarded negatively by many reviewers, and the Educational Testing Service plans to revise the scales to eliminate the separate forms. The use of separate forms was not intended to discriminate against females, but to permit respondents of each sex to identify with the cartoon characters which were used to illustrate the items.

from Dropouts in previous research. Major references: Dropout Prediction and Intervention (Washington, D.C., General Services Administration: 1972).

Youth Assessment Battery (YAB) (B1 - B28, C1 - C30, D1 - D13) was developed at Educational Testing Service, also under contract with the Department of Labor, specifically to provide a nontraditional, innovative approach to the assessment of disadvantaged youth. The battery consists of fifteen scales. Extensive and careful research went into the development and validation of the battery. The three subscales selected for inclusion in this test battery (Attitudes Toward Authority, Job-Seeking and Job-Holding Skills, and Job Knowledge) have been shown to have the greatest validity among the noncognitive skill subscales. Major reference: Norman E. Freeberg, Development of Assessment Measures for Use with Youth - Work Training Program Enrollees. Phase II: Longitudinal Validation, Final report of U.S. Department of Labor Contract No. 41-9-005-32 (Princeton, New Jersey, Educational Testing Service: 1974).

Work Orientation Questionnaire (WOQ) - (E1 - E24) was developed by Leonard Goodwin as part of a Brookings Institution study of the motivations and orientations of welfare mothers. It is appropriate in wording and content for disadvantaged persons. Originally developed as a personal interview survey, it was easily modified to be self-administered. Major reference: Leonard Goodwin, "Do the Poor Want to Work?" (Washington, D.C., Brookings Institution: 1972).

Self-Esteem Scale (SEL) (F1 - F10) was developed by Morris Rosenberg. Of the various self-esteem scales considered (including the Self-Esteem Scale of the YAB, Coopersmith's Self-Esteem Inventory, and Fitts' Tennessee Self-Concept Scale), the Rosenberg scale was selected because of the extensive developmental research involved in its construction and the consistent research findings pertaining to its validity. It was originally validated on a sample of over 5,000 urban high school students. It was also the shortest and the most appropriately worded of the various scales for the disadvantaged adolescent population. Major reference: Morris Rosenberg, Society and the Adolescent Self-Image (Princeton, New Jersey, Princeton University Press: 1965).

Work-Related Attitudes Scale (WRA) (G1 - G26) was developed by Regis H. Walther, director of the George Washington University Manpower Research Projects, under a U.S. Department of Labor contract. It is a twenty-six item scale requiring only a sixth-grade reading level. It measures the attributes of optimism, self-confidence, and unsocialized

attitudes. Major reference: Regis H. Walther, The Measurement of Work-  
Relevant Attitudes, Final Report of the U.S. Department of Labor Contract No.  
41-7-004-9 (Washington, D.C., The George Washington University: 1970).

Ladder of Life (LAD) (H1 - H3) is a psychometric technique developed  
by Hadley Cantril to obtain self-report measures of human status. It was  
adapted for purposes of this study to provide a brief and easy-to-understand  
measure of long-term vocational aspiration. Major reference: Hadley Cantril,  
The Pattern of Human Concerns (New Brunswick, New Jersey, Rutgers University  
Press: 1965).

"Mulligan Stew" Questionnaire (STW) (I1-I14) was developed by Abt  
Associates as part of a contract with the U.S. Department of Agriculture to  
evaluate the efficacy of that Department's "Mulligan Stew" nutrition televi-  
sion series aimed toward 9-12 year olds. It proved to be a highly effective  
instrument in that study, and its straightforward wording and pictorial for-  
mat ideally suited it for the measurement of nutrition information in this  
study. Selected items of the extensive questionnaire were chosen for the  
instrument battery. Major reference: Sydelle Stone Shapiro et al., An Eval-  
uation of the Mulligan Stew 4-H Television Series, Final Report of U.S.  
Department of Agriculture Contract No. 12-05-300-256 (Cambridge, Massachusetts,  
Abt Associates Inc.: 1974).

Job Corps Information Survey (JCS) (Posttest #3-11) was developed  
by J-Squared, B-Squared Consultants under contract with the U.S. Department  
of Labor. The survey was administered to approximately 2,000 Job Corps  
enrollees. The seven items chosen from the over 200-item survey instrument  
were the items dealing with opinions and attitudes about Job Corps training.  
These items appeared only in the posttest battery. Major reference: J<sup>2</sup>B<sup>2</sup>  
Consultants, Job Corps National Drug Survey, Final Report of the U.S. Depart-  
ment of Labor Contract No. JCC-2169-99 (Los Angeles, California, J-Squared,  
B-Squared Consultants: 1973).

Newly Constructed Items were developed by project staff to cover those  
few areas of outcomes for which adequate existing instruments were not found  
to exist. Those areas included demographic identifiers (front page), health  
care and health habits (A11 - A16 and posttest items K14, K16, K19), court  
involvement (K1 - K5), job satisfaction (G27 - G30), health information (J1 -  
J17), changes in family relations and leisure time (posttest K7, K13, K17, K18,  
K20, K21). While, of course, these items could not and do not have a develop-  
mental history bearing upon their validity, reliability, and appropriateness  
for the study population, the items did draw upon Abt Associates staff's  
extensive capabilities and experience in survey design and questionnaire  
construction.

**Table 2-1**  
**Outcomes and Measures Selected**

Outcome	Aspects of Outcome	Instrument Author	Instrument	Subscale or Item	Item Key (Posttest)	Comments
Demographic Identifiers)	Name, sex, address, contact persons	Project staff	Newly constructed items		Front Page	Not an outcome, but necessary identifying information to allow for record keeping, tracking and analysis. Posttest only.
	Urban/rural, race	Richardson, Bellows, Henry & Co.	Biographical Information Blank	Items 11, 12, and 39	A4 - A6	
Social Attitudes	Attitudes toward authority	Norman Freeberg	Youth Assessment Battery	Attitude Toward Authority subscale	D1 - D13	Has male and female versions
Self Attitudes	Self-esteem	Morris Rosenberg	Self-Esteem Scale		Y1 - Y10	
	Autonomy, independence, self-sufficiency	Richardson, Bellows, Henry & Co.	Biographical Information Blank	Items 7, 15, 50, 51, 63 and 66	A1 - A3, A7 - A10	
Indirect job skill acquisition	Job-seeking and job-holding skills	Norman Freeberg	Youth Assessment Battery	Job-seeking and job-holding skills, job knowledge subscales	B1 - B2B, C1 - C30	Has male and female versions
Work attitudes	Attitudes which will enhance job-holding ability	Leonard Goodwin	Work Orientation Questionnaire	Work Ethic Scale	E1 - E24	
	How individual perceives self	Regis Walker	Work Relevant Attitudes Scale		G1 - G26	
Vocational Aspirations	Level of work aspired to	Nadley Cantrell	Ladder of Life		H1 - H3	
Job satisfaction	Satisfaction with specific job conditions	Project staff	Newly constructed items		G27 - G30	
Criminal Justice System involvement	Involvement with police and courts	Project staff	Newly constructed items		X1 - X5	
Educational Attainment	School attendance, performance, achievement	Project staff	Newly constructed items		Posttest K5, K6	
Job Skill Confidence	Feeling of comfort and confidence in work	Leonard Goodwin	Work Orientation Questionnaire	Lack of Confidence in the Ability to Succeed in the World of Work Subscale	Z1 - Z24	
Nutrition Information and Behavior		Abt Associates	"Mulligan Stew" Questionnaire	Items 1, 1-4b, 1f, 1-4; 1ff, 1, 2, 6, 32 and 33	11 - 116	
Health Care and Health Habits	Data on height, weight, vision, etc.	Project staff	Newly constructed items		A11 - A16 Posttest K14-16, 19	
Health Information	Care of self physically, physical health and illness, understanding of sexual activity	Project staff	Newly constructed items		J1 - J17	
Training Satisfaction	Satisfaction with Job Corps training	J-Squared, B-Squared Consultants	Job Corps Information Survey	Items Q5-Q10, Q12	Posttest J-11	Posttest only
Family Relations and Leisure Time	Changes in interpersonal relationships, family life, health habits	Project staff	Newly constructed items		Posttest K7-13, 17-18, 20-21	Posttest only

### 2.3 Sampling and Data Collection

Strictly speaking, the study did not involve sampling among the universe of interest--all people who apply to Job Corps. The necessity of obtaining a large enough and diverse enough pool of Job Corps applicants to pretest in a timely and cost-effective manner meant that a few cities in which large-scale Job Corps screening is done and several Job Corps centers which process a relatively large number of applicants would have to be used. Otherwise, it would have taken too long to obtain a large enough sample for the study. The generation of 1,210 completed pretest questionnaires required surveying applicants in five cities over a thirteen month period during 1975-76. Four hundred eighty nine posttests were completed during an overlapping thirteen month posttest period during 1976-77. Table 2-2 presents the cities and centers selected. Tables 2-3 and 2-4 present information on the sample.

Table 2-2

City-Center Pairings Included in Study

<u>City</u>	<u>Centers</u>
Atlanta, Georgia	Breckenridge, Kentucky <sup>1</sup> Atlanta, Georgia <sup>2</sup>
Chicago, Illinois	Attarbury, Indiana <sup>1</sup> Cleveland, Ohio <sup>1a</sup>
Philadelphia, Pennsylvania	Keystone, Pennsylvania <sup>1</sup> Attarbury, Indiana <sup>1</sup> Pittsburgh, Pennsylvania <sup>3</sup>
Pittsburgh, Pennsylvania	Keystone, Pennsylvania <sup>1</sup> Attarbury, Indiana <sup>1</sup> Pittsburgh, Pennsylvania <sup>3</sup>
Portland, Oregon	Portland, Oregon <sup>1</sup>

---

<sup>1</sup> Coed Center

<sup>1a</sup> Coed Center but only females used in study

<sup>2</sup> Women's Center

<sup>3</sup> Men's Center

Table 2-3

Total Sample Size

COMPLETED PRETEST	1210
No posttest attempt made (did not terminate, no status notification received from DOL, etc.) 537	
QUALIFIED FOR POSTTEST	673
Could not locate for posttest	137
Not available for posttest (in army, jail, deceased, etc.)	9
Refused to take posttest	7
Interviewer fraud on posttest	31
COMPLETED POSTTEST	489

Table 2-4

Sample Size by Treatment Group and Sex

Group	Sex	N
Persisters	Males	103
	Females	75
Dropouts	Males	129
	Females	93
NoShows	Males	45
	Females	34

**A COMPARATIVE EVALUATION OF THE BENEFITS  
AND COSTS OF THE JOB CORPS AFTER SEVEN  
MONTHS OF POSTPROGRAM FOLLOW-UP**

**Craig Thornton  
David Long  
Charles Mallar**

**Prepared for:**

**Office of Program Evaluation**

**Office of Youth Programs**

**February 1979**

## OVERVIEW

This benefit-cost analysis of Job Corps seeks to determine whether the impacts of the program on earnings, reduced crime, drug use and dependency, increased tax payments and other effects of benefit to corpsmembers and society have an economic value which exceeds the cost. The analysis is based on a follow-up study of a large sample of 1977 enrollees and a group of comparable youth seven months after termination; in other words, it projects measured benefits during this period into the future.

The analysis reaches the encouraging finding that the public investment in Job Corps is "efficient" -- that benefits exceed costs.

However, as the study carefully illustrates, markedly different benefit-cost estimates emerge from the same data under equally plausible assumptions. For instance, if the economic benefits experienced at the seven month point after terminations are assured to fade out at 14 percent a year, and future benefits are translated into current value by a 5 percent discount rate, the ratio of benefits to costs is 1.15 -- in other words, the human resource investment has a positive rate of return. If a 10 percent discount rate is used, the benefit-cost ratio is only .88. On the other hand, if it is assumed that benefits do not fade out, the ratio increase to 3.12 even with a 10 percent discount rate.

The detailed study is important because it assesses all these alternative assumptions and their consequences. The analysis of the components of benefits and costs is also important. For instance, the report illustrates how experienced crime corrections really are, estimating the savings which accrue as a result of the measured reductions in criminal activity among corpsmembers. Nearly half of the youth benefits of Job Corps are the result of these reductions in criminal activity.

This study was conducted by Mathematica Policy Research under the guidance of the Office of Program Evaluation in the Employment and Training Administration. A one-year later follow-up is planned which will provide critical evidence on the permanence of benefits and thus a better foundation for benefit-cost analysis.

Robert Taggart  
Administrator  
Office of Youth Programs

TABLE OF CONTENTS

<u>Chapter</u>	<u>Page</u>
I INTRODUCTION . . . . .	593
A. JOB CORPS . . . . .	593
B. THE EVALUATION OF THE ECONOMIC IMPACT OF THE JOB CORPS . . . . .	595
II OVERVIEW OF THE ANALYSIS . . . . .	598
A. EFFICIENCY AND DISTRIBUTIONAL EFFECTS . . . . .	599
B. COMPONENTS OF THE ANALYSIS . . . . .	603
1. Benefit Components . . . . .	603
2. Cost Components . . . . .	609
C. SUMMARY OF THE MAIN FINDINGS . . . . .	611
III PROGRAM BENEFITS . . . . .	614
A. IN-PROGRAM OUTPUT . . . . .	614
1. Sampling and Estimation Procedures . . . . .	616
2. Value of Output Measurement. . . . .	621
3. Alternative Supply Price . . . . .	622
4. Value of the Output . . . . .	628
B. INCREASED POSTPROGRAM OUTPUT . . . . .	631
1. Estimates of Output Changes for the First Six Postprogram Months . . . . .	631
2. Adjustments for Fringe Benefits . . . . .	633
3. Estimated Changes in Future Output . . . . .	636
4. Corpsmember Tax Payments . . . . .	644
C. REDUCED DEPENDENCE ON TRANSFER PROGRAMS . . . . .	651
1. Aid to Families with Dependent Children . . . . .	652
2. General Assistance . . . . .	659
3. Food Stamps . . . . .	661
4. Public Housing . . . . .	662
5. Medicaid . . . . .	666
6. Unemployment Insurance and Workers' Compensation . . . . .	669
7. Summary of Benefits Related to Reduced Transfer Program Participation . . . . .	670
D. REDUCED CRIMINAL ACTIVITY. . . . .	672
1. Measuring Criminal Activity . . . . .	672
2. Reduced Personal Injury and Property Damage. . . . .	678
3. Reductions in Stolen Property . . . . .	687
4. Reduced Criminal Justice System Costs . . . . .	691
5. Summary of the Benefits Related to Crime Reduction . . . . .	695

Table of Contents (Continued)

<u>Chapter</u>		<u>Page</u>
III	E. REDUCED DRUG AND ALCOHOL ABUSE . . . . .	696
	F. USE OF ALTERNATIVE TRAINING AND EDUCATIONAL PROGRAMS . . . . .	699
	1. General Methodology . . . . .	699
	2. High School Education . . . . .	702
	3. Vocational Education . . . . .	704
	4. College and University Education . . . . .	705
	5. Unspecified Schooling . . . . .	706
	6. CETA and Other Training Programs . . . . .	707
	7. Training Allowances . . . . .	708
	8. Public Service Employment . . . . .	709
	9. Overview of the Use of Alternative Programs . . . . .	710
	G. SUMMARY OF BENEFITS . . . . .	711
IV	PROGRAM COSTS . . . . .	714
	A. BUDGETARY EXPENDITURES . . . . .	714
	1. Center Operating Expenditures . . . . .	715
	2. Transfers to Corpsmembers . . . . .	715
	3. Central Administrative Costs . . . . .	717
	B. OPPORTUNITY COST OF CORPSMEMBER LABOR . . . . .	718
	C. OTHER UNBUDGETED EXPENDITURES . . . . .	719
	1. Sample of Centers . . . . .	720
	D. AGGREGATION OF COSTS . . . . .	726
V	OVERALL FINDINGS FOR NET PRESENT VALUE . . . . .	728
	A. BENCHMARK NET PRESENT VALUE ESTIMATE . . . . .	729
	B. GENERAL ASSUMPTIONS . . . . .	731
	1. Fade-Out Rates . . . . .	732
	2. Discount Rates . . . . .	739
	3. Other General Assumptions . . . . .	744
	C. ASSUMPTIONS REGARDING SPECIFIC BENEFITS AND COSTS . . . . .	747
	1. Value of Output . . . . .	747
	2. Earnings as a Measure of Output . . . . .	749
	3. Stolen Property . . . . .	751
	4. The Cost of Murder . . . . .	754
	D. UNMEASURED BENEFITS AND COSTS . . . . .	756
	1. Unmeasured Benefits . . . . .	756
	2. Unmeasured Costs . . . . .	758
	E. CONCLUSIONS . . . . .	759

LIST OF TABLES

II.1	COMPONENTS OF BENEFIT-COST ANALYSIS . . . . .	602
III.1	RANDOMLY SELECTED WORK ACTIVITIES . . . . .	617
III.2	WORK-ACTIVITY DISTRIBUTION, BY INDUSTRY, RECIPIENT, AND CENTER TYPE . . . . .	620
III.3	SUPPLY PRICE OF IN-PROGRAM OUTPUT PER CORPSMEMBER ASSIGNMENT DAY FOR EACH WORK ACTIVITY STUDIED . . .	626
III.4	BENEFITS FROM INCREASED OUTPUT BY CORPSMEMBERS . . .	650
III.5	BENEFITS FROM REDUCED TRANSFER PAYMENTS . . . . .	655
III.6	BENEFITS FROM REDUCED ADMINISTRATIVE COSTS OF TRANSFER PROGRAMS . . . . .	658
III.7	SOCIAL BENEFITS FROM REDUCED CRIMINAL ACTIVITY . . .	675
III.8	ESTIMATED COSTS OF PERSONAL INJURY AND PROPERTY DAMAGE PER ARREST . . . . .	679
III.9	BENEFITS FROM REDUCED PERSONAL INJURY AND PROPERTY DAMAGE . . . . .	686
III.10	VALUE OF STOLEN PROPERTY . . . . .	688
III.11	VALUE OF REDUCED AMOUNT OF STOLEN PROPERTY . . . . .	690
III.12	REDUCED CRIMINAL JUSTICE SYSTEM COSTS . . . . .	694
III.13	BENEFITS FROM REDUCED UTILIZATION OF ALTERNATIVE TRAINING AND EDUCATIONAL PROGRAMS . . .	703
III.14	SUMMARY OF ESTIMATED VALUES OF JOB CORPS BENEFITS . . . . .	712
IV.1	PROGRAM OPERATING EXPENDITURES FOR JOB CORPS IN FISCAL YEAR 1977, BY CATEGORY . . . . .	716
IV.2	SELECTED CHARACTERISTICS OF CENTERS SAMPLED FOR STUDIES OF UNBUDGETED EXPENDITURES . . . . .	721
IV.3	VALUE OF UNBUDGETED EXPENDITURES AT JOB CORPS CENTERS . . . . .	723
IV.4	SUMMARY OF COSTS PER CORPSMEMBER, BY ANALYTICAL PERSPECTIVE . . . . .	727

LIST OF TABLES (continued)

V.1	NET PRESENT VALUES PER CORPSMEMBER FOR JOB CORPS UNDER THE BENCHMARK ASSUMPTIONS . . . . .	730
V.2	NET PRESENT VALUE PER CORPSMEMBER FOR ONE YEAR PERIOD . . . . .	735
V.3	NET PRESENT VALUE PER CORPSMEMBER IF EFFECTS DO NOT FADE OUT . . . . .	737
V.4	NET PRESENT VALUE PER CORPSMEMBER IF THERE IS NO FADE OUT OF EARNINGS AND TRANSFER EFFECTS . .	738
V.5	NET PRESENT VALUE PER CORPSMEMBER UNDER DIFFERENT DISCOUNT RATES . . . . .	742

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Charles Mallar  
Project Director

## EXECUTIVE SUMMARY

This report presents detailed findings of a benefit-cost analysis of Job Corps, a federal training program for disadvantaged youths. The analysis was conducted as part of an evaluation of the economic impact of Job Corps being performed for the U.S. Department of Labor. The findings are based on short-term economic impacts covering the time that Corpsmembers spend in the program and the first seven months after they leave Job Corps centers.

The principal issue analyzed in this report is whether the investment in Job Corps is economically efficient--specifically, does society have more goods and services at its disposal because of the investment in Job Corps, or would it be better off if the resources devoted to the program were used for alternative purposes? The results of this analysis suggest that public investment in Job Corps is efficient. Our benchmark estimate is that the present value of benefits exceeds costs by \$251 per Corpsmember or by approximately 5 percent of costs. Because over 40,000 Corpsmembers enrolled in Job Corps during the base year for the evaluation (fiscal year 1977), our benchmark estimate of the total social benefit exceeds \$10 million for that year.

We estimate that nearly 50 percent of the social benefits are generated by a reduction in criminal activity among Corpsmembers--particularly burglary and larceny. These benefits from less crime include reductions in personal injury, property damage, stolen property, and criminal justice system costs. Another 40 percent of the social benefits are attributed to an increase in the value of the output Corpsmembers produce both while they are in the Job Corps program and after they leave. The social costs consist primarily of the resources used to operate and administer the program.

The analysis of social benefits and costs abstracts from the fact that members of society share disproportionately in the benefits and costs. The equity effects of the program are very important for a complete analysis of the program. As a result, the report also analyzes the benefits and costs of investments in Job Corps from the perspectives of Corpsmembers and of all other members of society (non-Corpsmembers). Our benchmark distributional estimates indicate that the average Corpsmember receives a net benefit of \$212 from participating in Job Corps. We estimate that non-Corpsmembers, as a group, receive benefits worth only slightly more than the costs they incur. For non-Corpsmembers, their net present value of the investment in Job Corps is approximately \$40 per Corpsmember enrolled.

Approximately 40 percent of the benefits to Corpsmembers are accounted for by their increased earnings. The other benefits are primarily the transfers they receive while they are in Job Corps.

The largest cost borne by Corpsmembers is the reduction in their transfer income, although the opportunity cost of the time they spend in Job Corps and the reduction in their theft income are also significant costs.

Non-Corpsmembers receive substantial benefits from the reductions in Corpsmember criminal activity and their use of transfer programs. The non-Corpsmember costs are primarily from the operation and administration of the program. Of these Job Corps expenditures, over 25 percent are for transfers for Corpsmembers.

The estimation of the present value of benefits and costs required numerous assumptions and approximations. In particular, because this analysis is based on interview data that covered, on average, only seven postprogram months, we have had to make some speculative assumptions about the rate at which the Job Corps effects fade out over time. We assumed that all effects fade out at approximately 14 percent a year.

Another important assumption that was used to obtain the benchmark benefit-cost estimates was that the appropriate discount rate for converting the values of future benefits into current dollars was 5 percent.

Assumptions of lower (higher) fade-out and discount rates will make the program appear more (less) attractive. As long as the sum of the fade-out and discount rates is less than 20 percent, we estimate that Job Corps is an efficient social investment.

## TECHNICAL REPORT D

### A COMPARATIVE EVALUATION OF THE BENEFITS AND COSTS OF JOB CORPS AFTER SEVEN MONTHS OF POSTPROGRAM FOLLOW-UP

#### I. INTRODUCTION

This report presents the detailed findings of a benefit-cost analysis of Job Corps, a federal training program for disadvantaged youths.<sup>1/</sup> The analysis was conducted as part of an evaluation of the economic impact of Job Corps that was performed for the U.S. Department of Labor. The purpose of this introductory chapter is to describe the Job Corps program and how the benefit-cost analysis fits into the overall evaluation. Chapter II presents an overview of the benefit-cost analysis. The next two chapters are devoted to the benefit and cost findings, which are then aggregated and assessed in Chapter V.

#### A. JOB CORPS

Job Corps was established by the Economic Opportunity Act of 1964. The program was later transferred from the Office of Economic Opportunity to the Department of Labor (DOL) under Title IV of the Comprehensive Employment and Training Act (CETA) of 1973. Job Corps is composed of individual centers located throughout the country and is administered centrally by DOL. The program is designed to provide "vocational skills training, basic education, health care, and residential support for young

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<sup>1/</sup> The term disadvantaged, as used in this report, embodies several factors related to age, education, income, race/ethnicity, and employment history that limit the ability of young men and women to obtain and hold jobs. These factors also define eligibility for the Job Corps.

people who are poor, out of school, and out of work. Its aim is to break the cycle of poverty permanently by improving life-time earnings prospects."<sup>1/</sup>

In fiscal year 1977, there were sixty-one centers operating in thirty-two states and the Commonwealth of Puerto Rico. The centers were of two basic types: (1) "contract centers," which were operated by business firms, nonprofit organizations, or local government agencies under contracts with DOL regional offices; and (2) "civilian conservation centers" (CCCs), which were located on public lands (primarily national parks and forests) and operated by the Department of Agriculture and the Department of the Interior under executive agreements with DOL.<sup>2/</sup> During fiscal year 1977, these centers had a total capacity for enrolling 22,000 Corpsmembers, and over 40,000 youths received some training in Job Corps. The program, however, was under a congressional mandate to double the size of its enrollment by the end of fiscal year 1978.<sup>3/</sup>

Job Corps attempts to provide a comprehensive program of services to its participants, which includes the following:

1. Education. This aspect of the program is intended to correct the various educational deficiencies of enrollees. It includes basic education (emphasizing reading and mathematics), "World of Work" (including consumer education, driver education, home and family education, health education, and bilingual education), and General Educational Development (leading to the GED certificate, which is equivalent to a high school diploma).

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<sup>1/</sup> The Expansion and Enrichment of the Job Corps, U.S. Department of Labor, Employment and Training Administration, 1978, p. 1.

<sup>2/</sup> There were also two "extension centers," which offered advanced vocational skills training and had a combined capacity of 110 slots (i.e., positions).

<sup>3/</sup> The expansion to a capacity of 44,000 will entail centers and initiating some new education and training programs. For details of the expansion, see A Planning Charter for the Job Corps, U.S. Department of Labor, Employment and Training Administration, 1978.

2. Vocational Skills Training. This component of the program encompasses training in almost fifty occupations. It typically offers both classroom instruction and on-the-job training. The training offered at CCCs is generally in the construction trades, is often operated by trade-union representatives, and typically involves on-the-job experience in a work project on center improvements or in a nearby community. Training of this type is also provided by some of the contract centers, though classroom training in service occupations (such as nursing, cooking, clerical, and custodial services) is the most common form of training at contract centers. Training in the service fields often concludes with work experience in a part-time position at a center or with an outside employer.
  
3. Residential Living and Ancillary Services. The residential setting of Job Corps distinguishes it from other public employment and training programs. Job Corps provides meals, health services, counseling services, recreation and entertainment, and other support services to all Corpsmembers. In addition, 94 percent of the Corpsmembers receive dormitory accommodations and live at centers. The residential living component of Job Corps reflects the belief that the youth population served by the program can derive the greatest benefits from the education and training services when new and more supportive living accommodations are provided.

The recruitment and placement of Corpsmembers is carried out by Job Corps centers (primarily placement) and by other agencies under separate contracts with DOL. These agencies include employment service offices, certain unions and local schools, volunteer agencies such as Women in Community Service, Inc. (WICS) and Joint Action in Community Service, Inc. (JACS), and special private agencies. The placement agencies often attempt to provide Job Corps graduates with other support services to facilitate their transition from center living to regular living arrangements.

#### B. THE EVALUATION OF THE ECONOMIC IMPACT OF THE JOB CORPS

The economic evaluation of Job Corps consists of two main components: an analysis of the effects of the Job Corps experience on program participants,

and a benefit-cost analysis. The former component focuses on how the individual behavior and economic status of Corpsmembers change as a result of participating in the program. These changes are estimated from the observed pre- and postprogram differences between Corpsmembers and a comparison group for four broad categories: employment and earnings; welfare dependence; antisocial behavior (criminal activity and drug use); and investment in human capital (education and training). The attitude of Job Corps enrollees toward the program and their rating of program services were also examined in the impacts component of the evaluation.

Baseline interviews were administered to 5,133 Corpsmembers at fifty-two centers and to 1,496 comparison-group members at fifteen sites during an eleven-week period from April to July 1977. Approximately nine months later, follow-up interviews were obtained from 2,419 Corpsmembers and from 1,321 comparison-group members.<sup>1/</sup> On the basis of multiple regression analysis of the interview data, estimates of the effects of the Job Corps program on participants were obtained for the variables of interest. The design and results of this analysis are presented in detail in separate reports.<sup>2/</sup>

The second component of the Job Corps evaluation is an analysis of the benefits and costs of the program. Benefit-cost analysis

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<sup>1/</sup>Nearly one-half of the Corpsmembers who were interviewed at baseline (2,241 of 5,133) had not been out of the program long enough to be included in the follow-up survey. For additional details, see "Survey Methodology and Results," Technical Report B.

<sup>2/</sup>See "Econometric Models and Methods for the Impact Analysis," Technical Report C, for further details on the methodology. The results are summarized in the main volume of the full report.

is a method of aggregating the diverse effects of Job Corps--both on Corpsmembers and on other members of society--and determining the net desirability of the program according to public investment criteria. Data for the benefit-cost assessment are derived from the following: the impact analysis; budget records from Job Corps centers, DOL, and the Office of Management and Budget (OMB); special studies conducted at a sample of Job Corps centers; and "shadow price" data, derived from various published sources, for cases in which the economic values could not be observed directly.<sup>1/</sup> The benefit-cost evaluation presents one view of the results obtained in the impact analysis and should not be regarded as separate from, or an alternative to, that analysis; rather, it is a supplement to the impact analysis and provides a useful summary interpretation of the basic findings.

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<sup>1/</sup>"Shadow prices" are used to value the program's effects in those situations where market prices either do not exist or are inappropriate, and thus where the economic values cannot be observed directly. The shadow prices, as well as the other data sources mentioned, are documented in the appropriate sections of this report. For more information regarding shadow pricing, see R. McKean, "Shadow Prices," in Problems in Public Expenditure Analysis, edited by J.B. Chase, Washington, D.C.: The Brookings Institution, 1968, as well as Chapter III of this report.

## II. OVERVIEW OF THE ANALYSIS

The main question addressed in this benefit-cost analysis is whether the social investment in Job Corps is efficient. In other words, does society have more goods and services at its disposal as a result of providing funding for Job Corps, or would society be better off if the resources devoted to Job Corps were to be used for alternative purposes? The tentative answer to this question, as provided by our analysis, is that Job Corps is socially efficient. However, there are numerous qualifications to this simple answer, and precise estimates can be based only on findings obtained from longer follow-up periods. The benefit-cost methodology and our general findings are outlined in this chapter. The details are then presented in the chapters that follow.

The basic technique used to determine economic efficiency is to obtain current dollar values for all of the estimated effects of the program under study. These values are then summed together to yield an estimate of the program's net present value (i.e., the difference between the total discounted value of benefits and the total discounted value of costs).<sup>1/</sup> A positive net present value indicates that resources are being used efficiently. A negative net present value indicates that the program represents a poor use of resources (at least

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<sup>1/</sup> Discounting is a technique used to adjust the value of benefits or costs that accrue over several time periods to reflect their value at the present time (as Corpsmembers are entering the program). See W.J. Baumol, "On the Social Rate of Discount," American Economic Review 57, September 1968, pp. 788-802.

at its current scale). For Job Corps, under the most plausible set of assumptions, the social net present value is estimated to be approximately \$250 per Corpsmember, or approximately \$10 million in fiscal year 1977; thus, the program appears to be efficient.

In addition to the problems that arise in the empirical application of this benefit-cost technique, there are numerous theoretical issues that must be resolved. While many of these empirical and theoretical issues are beyond the scope of this report,<sup>1/</sup> the issues that bear directly on the analysis of Job Corps are discussed in the relevant sections of this report.

#### A. EFFICIENCY AND DISTRIBUTIONAL EFFECTS

Economists usually distinguish between two criteria in judging the desirability of social programs--efficiency and equity. As was previously mentioned, "efficiency" is the maximizing of the value of the goods and services available to society. "Equity" is the distribution of those goods and services among groups in society. In many program evaluations (particularly of employment and training programs for economically disadvantaged youths), equity considerations may dominate efficiency considerations in determining the program's social desirability. However, regardless of the equity aspects of the program, an evaluation of its economic efficiency is important for determining the best means

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<sup>1/</sup> For an introduction to benefit-cost analysis, see A.K. Disgupta and D.W. Pearce, Cost-Benefit Analysis: Theory and Practice, New York: MacMillan and Co., 1972. Two collections of essays are also convenient sources of discussions of these questions: Problems in Public Expenditure Analysis, edited by J.B. Chase, Washington: Brookings Institution, 1968; and Public Expenditure and Policy Analysis, edited by R.J. Haveman and J. Margolis, Chicago: Markham, 1970.

for achieving any particular equity goal. Examining the resource efficiency of programs should enable policymakers to identify which program provides a given level of benefit for the lowest cost.

Emphasizing the efficiency aspects, as do most social benefit-cost estimates, provides useful information but tends to blur the fact that groups within society benefit disproportionately from the program. Estimates of the net present value of Job Corps from the perspective of society as a whole ignore the relative gains and losses among these groups.<sup>1/</sup> To deal with these distributional aspects of the program, we will make net present value estimates from the perspective of Corpsmembers and from the perspective of all the other people in society (non-Corpsmembers).<sup>2/</sup>

One analytically useful feature of evaluating Job Corps from the social, Corpsmember, and non-Corpsmember perspectives is that the sum of the net present values calculated from the Corpsmember and non-Corpsmember perspectives equals the social net present value. This result holds because, together, Corpsmembers and non-Corpsmembers represent all members of society. Therefore, transfers between these two groups cancel each

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<sup>1/</sup>The usual assumption made in applications of benefit-cost analysis (at least implicitly), including most of this report, is that the marginal utility of income is equal for all individuals in society--that is, a dollar of benefit or cost to one person is equal to a dollar of benefit or cost to any other person (see Dasgupta and Pearce, Cost-Benefit Analysis, pp. 38-46). This assumption is needed to abstract from the distributional aspects of the program and focus on efficiency.

<sup>2/</sup>The term non-Corpsmember will be used consistently throughout this benefit-cost report to refer to all members of society other than those who enroll in Job Corps. It should be pointed out that this term is not meant to refer specifically to that group of non-Corpsmembers interviewed in our study as a comparison group, although those individuals are of course included as (a small) part of the non-Corpsmember group.

other out when the net present values are summed for society and, thus, do not appear in the social net present value.<sup>1/</sup> Benefits or costs that accrue to one group and are not offset by corresponding costs or benefits to the other group will not cancel out and, thus, will enter into the social net present value calculation.

The relationships among the Corpsmember, non-Corpsmember, and social perspectives for a benefit-cost evaluation of Job Corps are illustrated in Table II.1. This table lists the principal components of the benefit-cost analysis; suggests whether a component is, on average, a benefit, a cost, or neither, from each of the three perspectives;<sup>2/</sup> and indicates data sources used to measure and value the components. The redistributive aspects of Job Corps can be seen in this table. For example, the reduction in public transfer payments to Job Corps enrollees is a net loss to them, a net benefit to nonparticipants who no longer make the payments, and, consequently, neither a benefit nor a cost to society as a whole. The individual benefit-cost components listed in Table II.1 are explained in the following section.

Before proceeding, however, it is important to note that many items will not be valued in this analysis. Some benefits and costs of

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<sup>1/</sup> The value of any resources used in making the transfers, however, is counted as a cost from the social perspective. For example, the administrative expenses incurred in public transfer programs are a social cost.

<sup>2/</sup> Whether the net effect of Job Corps on one component is a benefit or a cost is sometimes problematic (e.g., the utilization of alternative education and training programs could increase or decrease). Table II.1 reflects prior judgments based on previous evidence regarding the impacts.

TABLE II.1  
COMPONENTS OF BENEFIT-COST ANALYSIS

Component	Perspective <sup>a/</sup>			Data Source <sup>b/</sup>
	S	NC	C	
<b><u>BENEFITS</u></b>				
<b>A. Output Produced by Corpsmembers</b>				
1) Value of in-program output	+	+	+	S
2) Value of increased postprogram output	+	0	+	I,P
3) Increased tax payments of Corpsmembers (postprogram)	0	+	-	I,P
4) Increased utility due to preferences for work over welfare	+	+	+	U
<b>B. Reduced Dependence on Transfer Programs</b>				
1) Reduced transfer payments	0	+	-	I,P
2) Reduced administrative costs for transfer programs	+	+	0	I,P
<b>C. Reduced Criminal Activity</b>				
1) Reduced criminal justice system costs	+	+	0	I,P
2) Reduced personal injury and property damage	+	+	0	I,P
3) Reduced value of stolen property	+	+	-	I,P
4) Reduced psychological costs of crime	+	+	+	U
<b>D. Reduced Drug/Alcohol Use</b>				
1) Reduced drug-treatment costs	+	+	0	I,P
2) Reduced alcoholism-treatment costs	+	+	0	I,P
3) Increased utility from reduced drug/alcohol dependence	+	+	+	U
<b>E. Reduced Utilization of Alternative Services</b>				
1) Reduced use of training and educational programs other than the Job Corps	+	+	0	I,P
2) Reduced net costs of public service employment	+	+	0	I,P
3) Reduced training allowances	0	+	-	I,P
<b>F. Other Benefits</b>				
1) Improved personal well-being of Corpsmembers	+	+	+	U
2) Increased utility from redistribution	+	+	+	U
<b><u>COSTS</u></b>				
<b>A. Program Operating Expenditures</b>				
1) Center operating expenditures, excluding transfers to Corpsmembers	-	-	0	A
2) Transfers to Corpsmembers	0	-	+	A
3) Central administrative costs	-	-	0	A,S
<b>B. Opportunity Cost of Corpsmembers Labor During the Program</b>				
	-	-	-	I,P
<b>C. Unbudgeted Expenditures Other Than Corpsmembers' Labor</b>				
	-	-	0	S,P

<sup>a/</sup>The columns indicate whether the net impact of a particular item is a net benefit (+), a net cost (-), or neither (0). This is done from the social (S), non-Corpsmember (NC), and Corpsmember (C) perspectives in order to indicate both economic efficiency and redistributive effects. In doing this, Corpsmembers are treated as nontaxpayers (except in benefit component I.) and in cost component II) to simplify the exposition.

<sup>b/</sup>The codes used for data sources are: S = special study; I = interview; P = published data source; A = accounting system data; U = item will not be measured.

a program such as Job Corps will be unidentifiable, unobservable, or unmeasurable. How can individuals' preferences for work over welfare be measured? What is the value of increased social welfare brought about by a reduction in crime? What are the true foregone opportunities implicit in the resource-use decisions made by Job Corps? Some proxy measures are available for these intangible components, but, in general, they will fail to fully capture the true benefits and costs. One way to interpret the results, given these problems, is to note that if measured costs exceed measured benefits, the program can be considered worthwhile only if this difference is made up by an equally large (or larger) excess of unmeasured benefits over unmeasured costs.

## B. COMPONENTS OF THE ANALYSIS

### 1. Benefit Components

The benefit components of the analysis include the following: the output produced by Corpsmembers in the program and the increase in the output they produce after they leave Job Corps; reduced dependence on transfer programs; reduced criminal activity; reduced drug and alcohol use; reduced use of alternative employment training services; and other benefits.

Output Produced by Corpsmembers. The goods and services produced by participants constitute an important benefit of the Job Corps program. For analytical purposes, it is necessary to distinguish between goods and services that Corpsmembers produce while they are enrolled in Job Corps and those that they produce after they leave the program. This distinction is made because the production of in-program output is an operational part of Job Corps, and, therefore, the value of this output cannot be observed directly (and, moreover, is often forgotten). The value of postprogram

output can be estimated on the basis of wages (see Chapter III). However, because pay allowances that Corpsmembers receive while in the program are unrelated to what they produce during the program, the in-program output must be measured with different techniques from postprogram output and treated differently for each of the three benefit-cost perspectives.

The in-program output produced by Corpsmembers in connection with their vocational training provides benefits to Corpsmembers, to non-Corpsmembers, and to society as a whole.<sup>1/</sup> These outputs include goods produced in work projects (for instance, the addition built onto the community hospital in rural Colorado by Corpsmembers who were receiving on-the-job training in several construction trades), and services provided in work-experience programs (for instance, the nursing assistance provided by Corpsmembers at a county hospital in Guthrie, Oklahoma, as they were gaining job experience). The value of the goods and services produced on program work assignments was estimated on the basis of twenty-two special studies of randomly chosen work projects and work-experience programs at eleven Job Corps centers.<sup>2/</sup>

There are several benefits that can be estimated from the interview data that relate to the increases in postprogram output produced by

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<sup>1/</sup> Corpsmembers also benefit from some of the in-program output as members of society. However, for the most part, we will use the approximate (and computationally convenient) assumption that only non-Corpsmembers benefit from community-serving output. The Corpsmember benefits included for in-program output arise from the center-serving output production that provides transfer benefits to Corpsmembers (e.g., residential services from dormitory construction) corresponding to items on the cost side of the ledger (see Section III.A below).

<sup>2/</sup> For more details, see Technical Report E, "The Value of Output in Job Corps Work Activities."

Corpsmembers in the jobs they obtain.<sup>1/</sup> The increase in output provides benefits to Corpsmembers in the form of increased wage earnings and fringe benefits, but is neither a net benefit nor a net cost to non-Corpsmembers (because they both pay for and consume the output). Consequently, increased wages and fringe benefits are a net benefit to society. The increased taxes paid by Corpsmembers on their earnings are a cost to them but are a benefit to non-Corpsmembers; therefore, they do not enter into the social benefit-cost calculation. Finally, increases in Corpsmembers' and non-Corpsmembers' utility due to their preferences for having people work rather than receiving transfers are social benefits, but cannot be measured.

Reduced Dependence on Transfer Programs. Corpsmembers and their families should have lower rates and levels of participation in income-conditioned transfer programs. This reduction in dependence is expected both for cash transfers (AFDC and General Assistance) and in-kind transfers (Food Stamps, Medicaid, and public housing). Reductions in welfare dependence are expected for Corpsmembers while they are enrolled in the Job Corps, since during that time all their living needs are being provided. Postprogram reductions in transfer dependence should result from improved employment status.

Reductions in the amount of transfer payments represent a cost to participants of being in Job Corps and a corresponding benefit to non-Corpsmembers. In contrast, reductions in the administrative costs

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<sup>1/</sup>The benefit associated with the postprogram earnings of Corpsmembers will be measured as the increase in earnings--the difference between what Corpsmembers earn and the estimate of what they would have earned in the absence of the program, based on interviews with the comparison group.

of making these transfer Payments benefit non-Corpsmembers and do not cost Corpsmembers anything. Therefore, while the value of the transfers themselves is not included in the social benefit-cost computation, administrative cost savings do enter into the computation.

Reduced Criminal Activity. The observed reduction in Corpsmembers' criminal activities after entering the program appears to be caused by two factors. First, during the period of enrollment, criminally prone participants may respond positively to the institutional features of Job Corps centers. Potentially important features include the structured environment, staff oversight and counseling, peer models, the prospect of career opportunities provided by education and training, and the virtual absence of opportunities for theft crimes. Second, the increased attractiveness of legitimate activities compared to illegal activities should cause continued reductions in crimes after Corpsmembers leave the program.

Four types of benefits result from reductions in criminal activities. The first is reduced criminal justice system costs. These are the resources saved by the police, courts, and corrections systems in not having to investigate, arrest, prosecute, judge, sentence, or incarcerate as many of the Corpsmembers. The second benefit is the reduced costs of personal injury and property damage from crime. These first two benefits accrue to non-Corpsmembers, with no offsetting costs to Corpsmembers; therefore, they represent social benefits. Third, the value of reduced stolen property represents a benefit to non-Corpsmembers, but is partially offset by a loss to Corpsmembers. However, the administrative costs associated with recovering losses from insurance and fencing stolen property are

social costs. All these benefits are estimated on the basis of self-reported arrests in the interviews (by arrest charge) and valued by using national arrest data, criminal justice system expenditure data, and criminal victimization survey data.

The fourth benefit from the reduction in criminal activities is related to the psychological costs of crime. These costs are associated with the fear and anxiety induced by actual or potential victimizations. Offenders may also incur such costs if they find criminal activities distasteful per se. A reduction in criminal behavior will reduce these psychological costs. However, these psychological benefits are intangible and cannot be measured accurately beyond society's willingness to pay to prevent and punish criminal behavior (as reflected in the expenditures of the criminal justice system).

Reduced Drug and Alcohol Use. The primary benefit of decreases in drug and alcohol use (in addition to increased output from employment and fewer crimes) is the reduced costs of drug/alcohol treatment. The differences estimated in the impact analysis are valued on the basis of cost data for drug- and alcohol-treatment programs. The reduced costs of drug/alcohol treatment are counted as a benefit to non-Corpsmembers and to society.

Reduced dependence on drugs may also result in psychological benefits to both drug users and others in society. However, as with the psychological benefits associated with increased employment and reduced crime, these benefits cannot be measured beyond the willingness to pay for treatment. Finally, it should be emphasized that reduced drug dependence may cause employment output to increase and may reduce criminal behavior-- benefits that will be captured in those benefit components.

Reduced Utilization of Alternative Services. While they are enrolled in Job Corps, participants' demand for alternative training and educational services is clearly limited. The resource costs associated with the reduction in the utilization of such programs as CETA, other public vocational training, and remedial high school programs represents a benefit to non-Corpsmembers and society. Training allowances associated with these programs affect the Corpsmember and non-Corpsmember calculations, but not society, because they represent a transfer.

The effect of Job Corps on the postprogram utilization of these alternative services is less clear. If Corpsmembers decide to obtain additional education and training (i.e., higher levels), the net increase in their earnings caused by this training will represent an additional benefit to them. The cost of this education will be borne by Corpsmembers and (to the extent that education and training programs are subsidized by tax revenues) by non-Corpsmembers. The net social benefit will be the present value of the earnings gain minus the costs of the training or education. However, with an observation period of only seven months, these training and education effects cannot be measured accurately.

Other Benefits. In addition to the benefit components discussed above, there are two benefits that cannot be directly measured and valued; however, some indirect evidence on them does exist. The first of these benefits is the improved personal well-being of participants beyond what is reflected in increased earnings and the value of the transfers they receive from Job Corps (room, board, medical services, etc.). In particular, it is very likely that the value of improved health status and basic education (including high school equivalencies through the General

Educational Development--GED--program) are not fully captured in the benefit components--especially in the short run.

The second benefit is the utility that both Corpsmembers and non-Corpsmembers derive from the income redistribution implicit in the Job Corps program. This benefit has important implications because, as mentioned above, the equity considerations may even dominate the efficiency concerns addressed by this paper.

## 2. Cost Components

The three cost components of the analysis are as follows:

(1) program operating expenditures; (2) the opportunity cost of participant labor; and (3) the costs of unbudgeted expenditures other than the Corpsmembers' labor.

Program Operating Expenditures. This cost component includes three categories of budgeted Job Corps expenditures: center-operating expenditures other than transfers to Corpsmembers; transfers to Corpsmembers; and central administrative costs. This division is necessary for analytical purposes. While all program expenditures are costs to non-Corpsmembers, transfers to Corpsmembers provide benefits to Corpsmembers, as well as costs to non-Corpsmembers. Therefore, expenditures for transfers are not included in the social benefit-cost calculation.

The source of the center-operating expenditure data is the Job Corps Financial Reporting System. The data used for this report cover fiscal year 1977.<sup>1/</sup> Estimates of central administrative costs were provided by the Office of Management and Budget.

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<sup>1/</sup>The federal Job Corps staff provided access to center-by-center cost estimates.

Opportunity Cost of Participant Labor. Youths who enroll in Job Corps forego employment opportunities that otherwise they would have taken. The wages they would have earned in the foregone employment are a cost to them of participating in Job Corps. This "opportunity cost" of participant labor is not balanced by corresponding benefits to non-Corpsmembers; thus, it enters into the social benefit-cost calculation.<sup>1/</sup> An estimate of the opportunity cost of participant labor is made on the basis of the estimated earnings foregone by Corpsmembers while they are in the program.

Another way of viewing this cost is that, from the social perspective, the decision to enroll a person in Job Corps implies that the output that person would have produced otherwise must now be foregone. This output is a net cost to society, and its value is measured by the wages plus fringe benefits that would have been paid to the Corpsmembers. Therefore, the opportunity cost of Corpsmembers' labor can be viewed as an offset to the value of output they produce during the program.

Other Unbudgeted Expenditures. The value of some of the resources used by Job Corps is not reflected in its budget. These resources fall into six categories: meal costs reimbursed by the National School Lunch program; surplus goods received from the General Services Administration; surplus food supplied by the Department of Agriculture; medical supplies and services provided by state and local agencies; other goods received;

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<sup>1/</sup> However, if labor markets are in disequilibrium (i.e., if disadvantaged youths are unemployed in the labor market), non-Corpsmembers benefit in that they replace participants in the foregone jobs, so that social costs are less than the opportunity cost for Corpsmembers.

and other services acquired at below-market prices. The use of these resources is a cost to non-Corpsmembers and to society. The opportunity cost of these goods and services, which are normally equal to the market price, was estimated on the basis of special studies conducted at thirteen Job Corps centers.<sup>1/</sup> However, many of the unbudgeted items are in-kind transfers (benefits) to Corpsmembers (e.g., food from the school lunch program) and are netted out of costs to non-Corpsmembers from the social perspective.

#### C. SUMMARY OF THE MAIN FINDINGS

In Chapter V we present estimates of the net present value of the Job Corps program. The benchmark estimate is that Job Corps provided net social benefits (net of costs) of \$251 per Corpsmember in fiscal year 1977. Because over 40,000 Corpsmembers participated in Job Corps during fiscal year 1977, the benchmark estimate yields a total net present value of over \$10 million for that year or benefits that exceed costs by approximately 5 percent of costs.

The computations of the net present value are obtained by summing together the estimated present values of all observed benefits and then subtracting out the estimated present values of all observed costs. The benchmark estimate of the net present value is designed to yield our best point estimate at the current stage of the evaluation.<sup>2/</sup> As a result of the short postprogram observation period, the estimates of the present

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<sup>1/</sup> For additional details, see Technical Report F, "Special Studies of Resource Use at Job Corps Centers."

<sup>2/</sup> The benchmark estimate will tend to be conservative, however, because unmeasured benefits probably exceed unmeasured costs and because in general, when two or more equally plausible values for benefits were available the lowest value was systematically chosen.

value of many of the benefits are imprecise. Many of the benefits can occur long after Corpsmembers leave the program (e.g., increases in output, reductions in welfare dependence, and reductions in criminal activity), and the postprogram observation period underlying this report covers, on average, only the first seven months of the postprogram period.

Not surprisingly, the estimates of the net present value are sensitive to assumptions about how benefits continue into the future. Furthermore, some benefits are difficult to value (e.g., the savings to society from fewer murders), other benefits are not valued at all (e.g., increased utility due to preferences for work over welfare), and the appropriate discount rate is known only within a broad range (i.e., 3 to 10 percent).

Sensitivity tests are presented in Chapter V by comparing estimates that incorporate alternative assumptions about the following: (1) the time profile of postprogram effects; (2) shadow prices that are difficult to measure; and (3) the discount rate. These sensitivity tests generally support the finding that the net present value is positive for Job Corps. The Job Corps program seems to be an efficient use of resources and represents a desirable social investment. However, the degree of economic efficiency will need to be estimated more precisely when follow-up data over a longer postprogram period become available.

Of the \$251 in net present value to society per Corpsmember in the benchmark estimate, approximately 84 percent (\$212 per Corpsmember) accrues to Corpsmembers--most of the Corpsmember benefits are from increased earnings in the postprogram period and from program transfers. The remaining 16 percent of the net present value to society (\$39 per Corpsmember) goes to non-Corpsmembers--most of the non-Corpsmember benefits are from

the value of in-program output, from reductions in Corpsmembers' dependence on transfer programs, and from reductions in criminal activity among Corpsmembers (benefits from reductions in personal injury, in property damage, in stolen property, and in judicial system costs).<sup>1/</sup>

The principal sources of social benefits are the increases in output produced by Corpsmembers during and after the program and the reduction in criminal activity among Corpsmembers. These two benefits account for nearly 90 percent of the total present value of benefits to society in the benchmark estimates.

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<sup>1/</sup>Of course, because there are many more non-Corpsmembers than Corpsmembers, the average benefit to non-Corpsmembers will, on average, be quite small (much smaller than the \$39 per Corpsmember). However, some non-Corpsmembers (e.g., recipients of the value of output and potential victims of Corpsmembers' crimes) will benefit substantially.

### III. PROGRAM BENEFITS

This chapter presents detailed discussions of the separate Job Corps benefit components outlined in the previous chapter-- specifically, increases in output produced (both during and after the program), reductions in welfare dependence, reductions in criminal activity, reductions in drug/alcohol abuses, and changes in the use of alternative training and educational programs to Job Corps. Each of these benefit components is discussed and estimated below. In Chapter V the benefit estimates will be combined with the costs presented in the next chapter to yield estimates of the net present value for the Job Corps program.

#### A. IN-PROGRAM OUTPUT<sup>1/</sup>

Benefits from the value of output produced by Corpsmembers consist of three categories: (1) the value of output produced by Corpsmembers while they are in the program; (2) the increase in the value of the output produced by Corpsmembers after they leave the program; and (3) changes in the amount of taxes Corpsmembers pay after they leave the program. These three distinctions are necessary because of (1) the different nature of the three types of output, (2) differences in distributional effects on Corpsmembers and non-Corpsmembers, and (3) the separate measurement problems posed by each. This section

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<sup>1/</sup> For more details on the concept and measurement of in-program output, see Technical Report E, "Value of Output in Job Corps Work Activities." The key elements of Technical Report E that relate to the benefit-cost analysis are summarized in the text below; however, the interested reader should definitely consult the entire report.

discusses the in-program output; the next section discusses the postprogram output.

There are two types of work activities at Job Corps centers-- work projects and work-experience programs, both of which produce socially valuable goods and services. These work activities are undertaken as part of the vocational skills training component of the program. Work projects are typically part of the vocational training in the construction trades. The output produced in these projects provides benefits to individuals outside Job Corps (usually in communities near the center), or are part of capital improvements at the centers themselves.

The second type of work activity (work-experience programs) entails job experience in a position with an outside employer or at a center. Work-experience positions in Job Corps are often arranged for Corpsmembers who are being trained in the service vocations (nursing, clerical, cooking, etc.) after they complete the classroom component of their training. Employers do not pay for the labor services they receive from these arrangements.

The value of in-program output is estimated on the basis of a representative sample of twenty-two studies of work projects and work-experience positions at eleven Job Corps centers. A full report on these studies, as well as examples of the studies themselves, is contained in a separate volume (See Technical Report E).

## 1. Sampling and Estimation Procedures

The work activities chosen for study were randomly selected on a probability basis, so that a simple average over the twenty-two studies of the value of output per assignment day in the activities would yield a representative estimate of all Corpsmembers.<sup>1/</sup> The probability of choosing any work activity was proportional to the total number of Corpsmembers assigned to that work activity at the time of sampling in June 1977 (see Technical Report E for more details). Therefore, to obtain an accurate estimate of the value of output per assignment day for Job Corps as a whole, we found it necessary to estimate the average for each work activity studied, and then to average these estimates over the twenty-two studies (i.e. in the final estimate, the weight for any work activity was proportional to the inverse of the total number of Corpsmembers assigned to that work activity). Therefore, our estimates of the value of output were based on the averages for the twenty-two work activities studied.

Table III.1 lists the twenty-two activities and the eleven centers that were chosen. At the time of sampling, 554 Corpsmembers were assigned to these twenty-two work activities, which is over 10 percent of the 5,404 Corpsmembers who were assigned to work activities programwide. The extent of this coverage reflects the weighting used in the random-selection process, which resulted in choosing centers and work activities that had relatively large numbers of work-activity

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<sup>1/</sup> The estimate should be unbiased and as efficient as possible for the given budget. The objective of the sample design, as usual, is to maximize the accuracy of estimates subject to a budget constraint or, equivalently, to minimize the cost of obtaining a desired level of accuracy.

TABLE III.1

## RANDOMLY SELECTED WORK ACTIVITIES

- 
- Atlanta Contract Center (Atlanta, Georgia)  
Center Clerical: Work Experience Program (clerical and office services)  
Southside Day Care: Work Experience Program (other services)
- Blackwell Civilian Conservation Center (Laona, Wisconsin)  
Center Maintenance: Work Project (building and grounds maintenance)  
Nicolet National Forest Welding: Work Project (special trades construction--fence and gate construction)
- Breckinridge Contract Center (Morganfield, Kentucky)  
Center Auto Body Shop Construction: Work Project (general construction--buildings)  
Cooking and Baking: Work Experience Program (food services)
- Collbran Civilian Conservation Center (Collbran, Colorado)  
Leon Creek Access Road: Work Project (general construction--other)  
Plateau Valley Hospital Addition: Work Project (general construction--buildings)
- Fort Simcoe Civilian Conservation Center (White Swan, Washington)  
Bison Hall Dormitory Rehabilitation: Work Project (general construction--buildings)  
BIA Material Storage Building: Work Project (general construction--buildings)
- Gary Contract Center (San Marcos, Texas)  
Center Building Trades Shop: Work Project (general construction--buildings)  
Wilfred Hall Nurse's Aide: Work Experience Program (health occupations)
- Guthrie Contract Center (Guthrie, Oklahoma)  
Clerical: Work Experience Program (clerical and office services)  
Nursing Assistant: Work Experience Program (health occupations)
- Oconaluftee Civilian Conservation Center (Cherokee, North Carolina)  
Center Rehabilitation: Work Project (special trades construction--masonry)  
Twin Creeks Seasonal Quarters: Work Project (general construction--buildings)
- Pittsburgh Contract Center (Pittsburgh, Pennsylvania)  
Automotive Trades: Work Experience Program (automotive trades)  
Welding: Work Experience Program (other services)

Table III.1 (continued)

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San Jose Contract Center (San Jose, California)

Center Maintenance: Work Project (building and grounds maintenance)  
Nurse's Aide: Work Experience Program (health occupations)

Weber Basin Civilian Conservation Center (Ogden, Utah)

Center Dormitory Construction: Work Project (general construction--  
buildings)

Clearfield Road Curb, Gutter, and Approachways Construction: Work  
Project (general construction--other)

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660

assignments. Thus, while the eleven centers in the sample constituted 20 percent of all centers, they had almost 30 percent of all work-activity assignments (and roughly one-third of the total participant enrollment). The twenty-two activities drawn at the centers in the sample comprise only 18 percent of the 122 work projects and work-experience programs at these centers, but include 37 percent of the Corpsmembers' assignments to those 122 activities.

Table III.2 shows that the twenty-two activities drawn for the study were representative of the work projects and work-experience programs throughout Job Corps. The table compares the breakdowns of the twenty-two work activities studied (by industrial type, recipient of the outputs, and center administration) to those same breakdowns for work assignments programwide. Only building construction at CCCs, which is center-serving (e.g., on-center dormitory construction),<sup>1/</sup> is noticeably underrepresented, and community-serving service activities at contract centers (e.g., work experience as nursing assistants in local hospitals) are correspondingly overrepresented. These differences are small, however, and are well within the expected bounds on sampling error (e.g., a 95 percent confidence interval for a simple random sample contains values well beyond those observed).

The sample is equally divided between construction and service activities. The construction activities (all of which are work projects) are evenly divided between those that produce center-serving and those

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<sup>1/</sup> The work projects and work-experience programs are divided into two groups--center-serving and community-serving--according to the principal recipient of the project's output. Center-serving projects produce goods and services for the center, whereas community-serving projects produce output for individuals outside Job Corps.

TABLE III.2

## WORK-ACTIVITY DISTRIBUTION, BY INDUSTRY, RECIPIENT, AND CENTER TYPE

Category of Work Activity	Total Assignment Days at All Centers		Studies in Sample	
<b>Construction</b>				
General Construction--Buildings	2,136	(39%)	7	(32%)
General Construction--Other	408	(8%)	2	(9%)
Special Trades Construction	545	(10%)	2	(9%)
	3,089	(57%)	11	(50%)
<b>Services</b>				
Health Occupations	430	(8%)	3	(13%)
Building and Grounds Maintenance	560	(10%)	2	(9%)
Clerical and Office Services	400	(8%)	2	(9%)
Automotive Trades	230	(4%)	1	(5%)
Food Services	220	(4%)	1	(5%)
Other	475	(9%)	2	(9%)
	2,315	(43%)	11	(50%)
<b>Center-Service Output</b>				
Construction	1,808	(33%)	5.5	(25%)
Services <sup>a/</sup>	738	(14%)	3.0	(14%)
	2,546	(47%)	8.5	(39%)
<b>Community-Serving Output</b>				
Construction	1,281	(24%)	5.5	(25%)
Services <sup>a/</sup>	1,577	(29%)	8.0	(36%)
	2,858	(53%)	13.5	(61%)
<b>Civilian Conservation Centers</b>				
Construction	2,600	(48%)	9	(41%)
Services	350	(7%)	1	(5%)
	2,950	(55%)	10	(46%)
<b>Contract Centers</b>				
Construction	489	(9%)	2	(9%)
Services	1,965	(36%)	10	(45%)
	2,454	(45%)	12	(54%)

Sources: Data are obtained from Job Corps center directors and from special studies of the work activities.

<sup>a/</sup> The Blackwell welding project produced output for both the center and a national forest; therefore, it is allocated between center-serving and community-serving.

that produce community-serving output. Most of the construction (seven of eleven projects) is general contracting work for buildings--that is, it involves all aspects of building construction. However, there are four construction projects that entail only one construction trade (e.g., masonry), or that involve nonbuilding construction (e.g., an access road in a national forest in Colorado). The service activities, most of which are community-serving work-experience programs, include health, clerical, custodial, automotive, food, and other (e.g., day-care or welding) services.

## 2. Value of Output Measurement

The value of the output produced by Corpsmembers depends on (1) the amount of goods and services they produce and (2) the value that society places on those goods and services. In the special studies, determining the amount of output that had been produced in a randomly drawn work activity was relatively straightforward once the activity had been defined. For example, in studying a nursing-assistant work-experience program, the activity had to be defined in terms of nursing services provided by a specific number of Corpsmembers during a specified period. Normally, work-project outputs are discrete (e.g., a hospital addition or a dormitory) and therefore easily defined. However, the access road in Colorado had been under construction for several years and had not been completed at the time of evaluation; thus, the study was limited to the 6,380 feet of road that had been completed at the time the study was undertaken. Accurate estimation of the value of output requires that both the identified outputs and the Corpsmember input in terms of days assigned to the activity correspond to the activity definition (see below).

Having identified the outputs, their values can be estimated.

Two methods of valuing these outputs are used: (1) deriving an estimate of the price an alternative supplier would charge to provide goods and services produced by Corpsmembers, and (2) obtaining and analyzing available information on the willingness of society to pay for these outputs.

### 3. Alternative Supply Price

Three techniques were used to estimate the alternative supply price for individual work activities. For construction projects, an independent estimator--a professional contractor experienced in the type of work being performed--was hired to provide an estimate of the price an alternative supplier would charge to produce the same output. We gave the estimators the necessary blueprints and specifications and asked them to make a work-site inspection. As warranted, MPR staff members made supplementary estimates on the basis of production standards either contained in published commercial-estimation guides or provided by recipient organizations.

In service activities, Corpsmember labor is all that is typically provided. Thus, the output that has been defined (services provided during Corpsmember labor hours) should be valued in terms of an hourly labor price--that is, a shadow wage.<sup>1/</sup> MPR staff analysts determined this wage rate by (1) estimating the ratio of time needed by regular workers in the relevant occupational field to provide the same services, to the hours actually required by Corpsmembers, and

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<sup>1/</sup>This is the unobserved value of one hour of a Corpsmember's labor in a work-experience position.

(2) multiplying this relative productivity ratio by the regular workers' wage rate.<sup>1/</sup> This shadow wage multiplied by the amount of Corpsmember labor hours supplied yields an estimate of the amount that would have to be paid to regular workers (alternative suppliers of the services) to provide the same output produced by Corpsmembers.

All supply prices estimated with these techniques--independent estimator, production standards, and relative productivity--were needed per assignment day of service by Corpsmembers to obtain estimates per Corpsmember for the benefit-cost analysis. This entailed dividing the supply price determined for a given work activity by the total number of Corpsmember assignment days recorded for that activity.<sup>2/</sup> The result was then multiplied by the average number of Corpsmember assignment days per Corpsmember year at the time of sampling, which was 69.13 days, to obtain estimates per Corpsmember year of service.<sup>3/</sup> Estimates per Corpsmember were then obtained by multiplying the per Corpsmember estimates by the average length of stay in years (5.9 months divided by 12).

For the purpose of the benefit-cost analysis, an adjustment had to be made in these supply-price estimates that corrected for four

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<sup>1/</sup> The time required by regular workers to produce given outputs, as well as the appropriate wage rate, was determined from the recipient organization or published sources. For more details, see Technical Report E.

<sup>2/</sup> Corpsmember assignment time for work projects was recorded in months. This was converted to days by multiplying the average number of work days in a month--21.67.

<sup>3/</sup> This was determined as (1) the ratio of all Corpsmembers assigned to work activities at the time of sampling (5,404) to total enrollees at that time (20,324), times (2) the total number of work days in a year (52 x 5 = 260).

troublesome aspects of center-serving output. First, center-serving output that does not increase the capital stock of Job Corps, but that merely serves to reduce program operating costs, is not a net benefit.<sup>1/</sup> Any of this output produced by Corpsmembers is also consumed by Job Corps, so that the net effect on benefit-cost estimates is zero. Second, the Job Corps capitalizes some expenses incurred in center-serving work activities, which makes the supply-price estimate of output benefits inconsistent with incurred costs.<sup>2/</sup> Third, capital output that is center-serving depreciates while Corpsmembers are in the program.<sup>3/</sup> Therefore, the center-serving capital output has been adjusted downward to reflect only increases to the center's capital stock at the end of the operating period under study (fiscal year 1977). An estimate for all depreciations from Corpsmember additions to capital stock (both current and past additions) has been netted out. Finally, there are benefits to Corpsmembers corresponding to some of the costs of both the depreciation of Corpsmember-produced capital

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<sup>1/</sup> For example, center-serving building maintenance work serves to reduce the custodial expenses of the center. As a result, the value of the work is already reflected in program costs, which presumably would be higher in the absence of these activities. The construction of a dormitory would be capital-adding because the project increases the supply of capital plants and equipment available to Job Corps (or for some alternative use).

<sup>2/</sup> Job Corps capitalizes direct expenses incurred in connection with large center-serving work projects. This means that the value of output that can be attributed to capitalized inputs is included in the supply-price estimate of the benefit from the project, but that the capitalized costs of those inputs is not reflected in current program costs (see Chapter IV).

<sup>3/</sup> For example, Corpsmembers in Job Corps at the time a center dormitory is renovated are often able to use the renovated dormitory before leaving the program. Also, Corpsmembers in the program at any point in time use capital assets previously produced by other Corpsmembers.

and the capitalized value of materials used in construction. These transfer benefits (e.g., housing services) are provided to Corpsmembers as part of their labor in work activities. Because corresponding costs are shown on the cost side of the benefit-cost accounts (opportunity cost of Corpsmember labor and capitalized direct project expenditures), the benefits need to be included as well.<sup>1/</sup>

The average supply-price estimates per assignment day for the twenty-two special studies are presented in Table III.3. The average value of output is \$1,364 per Corpsmember year of service for non-Corpsmembers, \$175 for Corpsmembers, and \$1,539 for society. Two aspects of the figures reported here are especially noteworthy. First, construction activities generally result in higher gross supply prices per Corpsmember year, which reflects, in part, the value added by inputs other than Corpsmember labor. Second, the center-serving output adjustment reduces the value of center-serving output by approximately 53 percent.

Readers should be cautioned about drawing conclusions from Table III.3 about project differences. The number of Corpsmember hours worked per assignment day varied between activities in the sample.

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<sup>1/</sup>The housing services provided by Corpsmember labor are a benefit from a social perspective, because the opportunity cost of Corpsmember labor is included on the cost side of the ledger. Also, the depreciation from the capitalized value of materials used in building the dormitories is treated as a cost by Job Corps and thus is added back in here as a net benefit to Corpsmembers because this depreciation transfers benefits to Corpsmembers.

TABLE III.3

## SUPPLY PRICE OF IN-PROGRAM OUTPUT PER CORPSEMEMBER ASSIGNMENT DAY

FOR EACH WORK ACTIVITY STUDIED<sup>a/</sup>

Work Activity <sup>b/</sup>	Number of Work Assignment Days	Gross Supply Price per Assign- ment Day	Center-Serving Adjustment <sup>c/</sup>		Supply Price for non- Corpsmembers per Assign- ment Day
			Benefits to Corpsmembers	No Social Benefits	
Atlanta clerical	12	\$ 3.08	---	\$ 3.08	---
Atlanta day care	40	10.19	---	---	\$10.19
Blackwell center maintenance	1,716	33.81	\$ 6.20	27.61	---
Blackwell welding	55	21.89	---	2.29	19.60
Breckinridge shop construction	5,040	105.92	---	95.44	10.48
Breckinridge cooking and baking	20	12.68	---	---	12.68
Collbran road construction	1,798	46.89	---	---	46.89
Collbran hospital construction	3,835	35.45	---	---	35.45
Fort Simcoe dormitory construction	3,467	110.90	33.27	13.53	64.10
Fort Simcoe storage building	779	31.38	---	---	31.38
Gary shop construction	520	49.27	---	32.75	16.52
Gary nurse's aide	25	18.95	---	---	18.95
Guthrie clerical	90	11.50	---	---	11.50
Guthrie nursing assistant	120	12.01	---	---	12.01
Oconaluftee center rehabilitation	82	22.77	---	9.82	12.95
Oconaluftee seasonal quarters	2,752	29.14	---	---	29.14
Pittsburgh automotive trades	46	23.11	---	---	23.11
Pittsburgh welding	22	13.00	---	---	13.00
San Jose center maintenance	1,920	4.42	0.81	3.61	---
San Jose nurse's aide	73	13.24	---	---	13.24
Weber Basin dormitory construction	4,590	11.25	15.38	26.26	9.61
Weber Basin road construction	<u>91</u>	<u>43.25</u>	---	---	<u>43.25</u>
Average for all work activities studied	1,231.50	32.01	2.51	9.75	19.73

Table III.3 (continued)

Benefit to Corpsmembers per Corpsmember year	$= (\text{Average net benefit}) \times \left( \frac{\text{Average number of assignment days per Corpsmember year}}{\text{Corpsmember year}} \right)$ $\approx (2.53) \times (69.13)$ $\approx \$174.90$
Benefit to non-Corpsmembers per Corpsmember year <sup>d/</sup>	$= (\text{Average net supply price}) \times \left( \frac{\text{Average number of assignment days per Corpsmember year}}{\text{Corpsmember year}} \right)$ $\approx (19.73) \times (69.13)$ $\approx \$1,363.93$
Benefit to society per Corpsmember year	$\approx \$174.90 + \$1,363.93$ $\approx \$1,538.83$
Benefit to Corpsmembers per Corpsmember	$\approx \$174.90 \times \left( \frac{5.9}{12} \right)^{e/}$ $\approx \$85.99$
Benefit to non-Corpsmembers per Corpsmember	$\approx \$1,363.93 \times \left( \frac{5.9}{12} \right)$ $\approx \$670.60$
Benefit to society per Corpsmember	$\approx \$756.59$

<sup>a/</sup> This table presents both the gross and net supply prices per assignment day. The gross supply price shows our estimate of what it would have cost an alternative supplier to produce the output. The net supply price shows our estimate of what it would have cost non-Corpsmembers to purchase the net output accruing to them in the year of the study (net of output consumed by Job Corps).

<sup>b/</sup> The work activities studied are described in more detail in Table III.1.

<sup>c/</sup> The center-serving adjustment is our estimate of the amount of gross supply price of current Corpsmember output that is used up in the current year (from current and past work activities). This includes noncapital assets consumed by Job Corps, capitalized direct project expenditures (on current and past Corpsmember output), and capital depreciation (on current and past Corpsmember output). Part of this consumption by Job Corps provides benefits to Corpsmembers, the costs of which are included on the cost side of the benefit-cost accounts (capitalized direct project expenditures and opportunity cost of Corpsmember labor), so that a corresponding benefit needs to be shown.

<sup>d/</sup> For the purposes of this table we assume that the consumers of the output would have been willing to pay the supply price.

<sup>e/</sup> On average, Corpsmembers stayed in the program for 5.9 months during fiscal year 1977.

For example, one center-maintenance project entailed only two hours of work per day, while some construction projects involved eight-hour work days. In addition, the supervisory costs and training benefits varied among work activities.

#### 4. Value of the Output

The price that an alternative supplier would charge to provide the output produced by Corpsmembers can provide a measure of the resources that went into the output. However, it does not necessarily provide an adequate measure of the value that society places on the output. The value of the output to society is estimated by obtaining information on the demand for the output and on the markets for both the output and its associated inputs.

If the output produced by Corpsmembers represents an expansion of the amount of goods and services that otherwise would have been available to society, the social value of the output equals the price (unobserved) that society would pay for it. In most cases of output expansion caused by Job Corps, the demand price is less than supply price. If the price society is willing to pay for the output equals or exceeds the supply price, the output generally would be provided without Job Corps. Of course, if there are benefits that accrue to individuals other than those who pay for it, or if the collective demand for a public good is underestimated by the governmental (or quasi-public) recipient, then the good might not have been provided in the absence of Job Corps, even if its value to society exceeds the supply price.<sup>1/</sup>

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<sup>1/</sup> For a detailed discussion, see Dasgupta and Pearce, Cost-Benefit Analysis; and A.C. Pigou, The Economics of Welfare, 4th edition, London: MacMillan, 1932, Chapter 9.

In the case of output that substitutes for goods and services that would have been produced in the absence of the program, the social value of the output equals the value of the resources freed to produce output elsewhere in the economy. Under conditions of full employment and smooth market adjustments,<sup>1/</sup> the value of the new output produced by the freed resources will equal the alternative supplier's price. To the extent that these conditions are not present, however, the supply price overstates the value of the output.

Therefore, the social value of the output can be described as a function of five variables: the alternative supply price; the extent of substitution; the extent that freed resources are employed; the demand for the output by recipients; and the value of external benefits and costs that are not reflected in the recipients' demand. The estimates of supply price have been reported above. The extent of substitution was also estimated by the MPR field analysts for the work-activity studies (see Technical Report E for more details on the procedures and findings). In general, construction activities represented output expansion, while most service activities entailed at least some substitution.

The other three parameters needed for demand estimates are even more difficult to measure. However, data were collected in the special studies that can be directly related to these variables: the observed effects of substitution (layoffs, use of freed labor resources elsewhere in the recipient organization, etc.); reports by

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<sup>1/</sup>These are normal assumptions in benefit-cost analysis (see Dasgupta and Pearce, Cost-Benefit Analysis, pp. 103-109), although present economic conditions suggest that they may not be the most reasonable assumptions for this study.

recipients of satisfaction with the output, the quality of Corpsmember workmanship, etc.; and any observable evidence of external benefits and costs. With these data, it is possible to assign a range of values to all of the parameters of the demand price. In Technical Report E, the demand values are estimated under alternative assumptions about the parameters of demand within the observed ranges. Not surprisingly, we find a very broad range of value of output estimates at the extreme values of the demand parameters.

The alternative supply price estimate of the in-program output falls near the upper middle of the range of estimated social values from the sensitivity tests (with the extreme values on demand parameters) and is just below the top of a narrow and more reasonable range.<sup>1/</sup> This supports our judgment that while the alternative supply price is probably an upper-bound estimate of the social value of output, the actual value is probably quite close to the supply price. The procedures used by Job Corps to select work activities, as well as the evaluative data collected, provide further evidence to support this judgment.<sup>2/</sup> Consequently, the overall supply price estimate of \$1,538 per Corpsmember year (\$757 per Corpsmember) is used as the benchmark in the benefit-cost analysis for the value of in-program output.

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<sup>1/</sup> See Technical Report E for precise numbers and details.

<sup>2/</sup> Community work projects, for example, are typically chosen in cooperation with community leaders based on community priorities and on Corpsmember training opportunities. In addition, Job Corps staff members explicitly seek to minimize the substitution of Corpsmember services for those of paid employees (see Technical Report F for additional discussion). Of course, the supply price estimate will still tend to overestimate the value of some work activities. For example, part of the high value for the Fort Simcoe dormitory construction project is due to the remote location of that center.

## B. INCREASED POSTPROGRAM OUTPUT

Although the benefits associated with the in-program output are important, the major focus of the program is on the output produced by Corpsmembers after they leave the program. Specifically, the primary long-run benefit of the program is expected to be the extent to which postprogram earnings are greater than they would have been in the absence of Job Corps.<sup>1/</sup>

### 1. Estimates of Output Changes for the First Six Postprogram Months

To value postprogram output in the absence of detailed knowledge about Corpsmember productivity, postprogram employment history, and other items needed to value output directly, we will use an analytical simplification. If we assume that labor- and products-markets function competitively, then workers' total compensation will reflect (i.e., be equal to) the value of the output that they produce.<sup>2/</sup> (An employer will hire a worker only if the value of the worker's output is at least as great as the cost of the worker to the employer.) Therefore, by using Corpsmembers' earnings, we can estimate the value of their postprogram output. The value of the increase in Corpsmembers' postprogram production

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<sup>1/</sup> For example, an earlier benefit-cost analysis of Job Corps used the estimated increase in output as the principal measured benefit of the program (in-program output was the only other benefit included). (See Glen G. Cain, "Benefit/Cost Estimates for Job Corps," Institute for Research on Poverty, Discussion Paper no. 9-68, Madison, Wisconsin, 1968.)

<sup>2/</sup> Technically, competitive firms will pay gross wage rates (wages plus employer-paid benefits such as Social Security and Unemployment Insurance taxes, health care, insurance premiums, and other fringe benefits) that are equal to the value of the marginal product of labor.

compared to what it would have been in the absence of Job Corps can be estimated simply by using the difference in earnings between the Corpsmember and comparison groups.<sup>1/</sup>

By using sample differences between the Job Corps and comparison groups, estimating the program's effect on earnings was relatively straightforward. We had detailed interview data that covered the civilian earnings of both Job Corps and comparison-group members from six months before Corpsmembers entered the program to seven months (on average) after they left the program. We were also able to determine military earnings for these groups by using our survey data on military participation for the two groups, combined with data on military earnings provided by the Department of the Defense.<sup>2/</sup> On the basis of pre- and postprogram data, we estimated that the effect for Corpsmembers was a reduction in earnings by an average of approximately \$5.51 per week during the first six months

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<sup>1/</sup> For more details regarding the nature of the earnings gain attributable to Job Corps participation and how the earnings gain was estimated, see Chapter V of the main report ("Evaluation of the Economic Impact of the Job Corps Program," MPR, 1978) or Technical Report C, "Econometric Models and Methods for Impact Analysis." The estimates adjust for pre-enrollment differences between the Job Corps and comparison groups by using the change in the sample mean differences between pre-enrollment and postprogram.

<sup>2/</sup> We used an estimate of regular military compensation (RCM)--basic pay, quarters and subsistence allowances, and the tax advantage on these allowances--provided by the Office of the Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics: Office of the Deputy Assistant Secretary for Military Personnel Policy: Compensation Directorate. The number, based on RCM for a person in grade E-1 who was unmarried, is \$7,205 per year. This number is fairly accurate for the Job Corps sample, most of whom had been in the military for less than six months. For further information regarding military compensation, see Military Compensation Background Papers: Compensation Elements and Related Manpower Cost Items, Their Purpose and Legislative Background, The Department of the Defense, 1976.

after leaving the program, or a total of \$143.17 for a six-month period.<sup>1/</sup> However, this overall negative effect on earnings for the first six post-program months was caused by temporarily low earnings when Corpsmembers re-entered the labor market immediately after leaving Job Corps. By the time of the interview (almost seven months, on average, after Corpsmembers had been out of the program), earnings had increased greatly for Corpsmembers and were well above what they would have been in the absence of Job Corps participation (see the discussion of future output, below).

## 2. Adjustments for Fringe Benefits

Because we are interested in the effect of the program on the output produced by Corpsmembers, the estimate of earnings gain (loss) must be adjusted to a total compensation basis. In addition to wages, three categories of employee compensation are considered: (1) paid leave and premium benefits; (2) private retirement and insurance benefits; and (3) legally required employer payments. These three categories of benefits are treated as follows:

1. Paid leaves (e.g., vacation, sick leave, and holidays), severance pay, and wage and salary premiums (e.g., overtime, shift differentials, and bonuses) are part of the payroll; consequently, we assume that they were fully captured in reported earnings.
2. Employer contributions to private retirement, health, accident, and life-insurance plans are treated as part of compensation. The imputed value of these benefits (see the discussion below) is added to earnings for all benefit-cost analysis uses.

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<sup>1/</sup>The actual estimate was \$5.50658 per week. This was multiplied by 26 to obtain an estimate for the six-month period. See the main volume of the report and Technical Report C for more details on the estimation procedures.

3. Legally required payments programs (Social Security, Unemployment Insurance, Workers' Compensation) are treated as taxes. Employee taxes (paid by either employees or employers) indicate a benefit to society (output) and taxpayers (tax revenue). Employee taxes should be included in the interview data on earnings, and secondary data are needed to separate them out.<sup>1/</sup>

Employer contributions to private fringe benefits and taxes must be determined by using national data on employee compensation, payroll tax rates, and regulations on the basis of reported earnings. Briefly, the various items were estimated as follows.

Private Retirement and Insurance Benefits. An estimate was derived from national data on employer expenditures for private retirement and insurance plans. Bureau of Labor Statistics survey data indicate that such expenditures for low-wage employees amount to approximately 5 percent of wages and salaries (i.e., monetary earnings).<sup>2/</sup> Therefore, these benefits were estimated as 5 percent of total monetary earnings.

Payroll Taxes. These taxes were determined on the basis of applicable federal and state tax rates and regulations. The payroll tax rate for Social Security (both employer and employee components) was 5.85 percent of wages; in 1977 this rate applied up to a taxable wage base

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<sup>1/</sup> While benefits to individuals are directly associated with these taxes, quid pro quo benefit formulas do not apply. Thus, payments should be realistically viewed as tax revenue to finance redistributive and other social objectives, rather than as insurance premiums.

<sup>2/</sup> This figure was derived from U.S. Department of Labor, Bureau of Labor Statistics, Employee Compensation in the Private Non-Farm Economy, 1972, Bulletin 1873, Washington, D.C.: GPO, 1975, Tables 1, 22, 24 and 25. It applies to office and nonoffice employees who receive less than \$3.00 of total compensation (including fringe benefits) per hour in 1972.

of \$16,500.<sup>1/</sup> The rate was applied to all reported wages--a procedure that overestimated these tax payments to the extent that (1) Corpsmembers obtain jobs in uncovered industries (primarily casual employment that, for tax purposes, is not reported), and (2) Corpsmembers earn more than \$16,500 a year in covered employment (errors caused by this second consideration are probably very small).

Unemployment Insurance. The implicit tax rate for Unemployment Insurance varies according to state regulations and "risk" ratings of individual employers. However, the standard rate (the rate used prior to an employer rating) is 2.7 percent of wages up to a taxable base in all states except New Jersey, where the standard rate is 2.8 percent. Social Security contributions are subtracted from wages to compute the wage base, which is \$4,800 in most states.<sup>2/</sup> Consequently, the tax is determined on the basis of the standard rates and reported earnings. It should be noted here that, as in the case of Social Security, the de facto loss of coverage with casual earnings and incomes above the wage base may cause us to overestimate the Unemployment Insurance payments.<sup>3/</sup>

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<sup>1/</sup> This causes a slight problem because some of the reported earnings were earned in January and February, 1978, when the tax rate was increased from 5.85 to 6.05 percent. However, given that most of the earnings were earned in 1977 and that the difference between rates is small, the approximation should be adequate.

<sup>2/</sup> See Joint Economic Committee, U.S. Congress, "Studies in Public Welfare," Paper No. 20, Washington, D.C.: GPO, for information on the Social Security program.

<sup>3/</sup> Tendencies to overestimate taxes and fringe benefits caused by high incomes will be at least partially offset by the fact that retirement and insurance benefits are underestimated for individuals with higher paying jobs; that is, the estimated rate for private retirement and insurance benefits rises rapidly with wage rates, so the 5 percent figure reported above may result in an underestimate of these benefits.

Workers' Compensation. Finally, employer contributions for Workers' Compensation average 1.12 percent of gross payroll wages. Therefore, reported earnings were further adjusted by this amount.

Together, these adjustments imply that reported earnings must be adjusted upward by 14.67 percent to arrive at (1) an estimate of the total amount an employer is willing to pay for the employees and, thus, (2) an appropriate estimate of the value of the employees' contribution to total output. Applying this adjustment to the earnings reported by our sample suggests that during their first six postprogram months, Corpsmembers produced, on average, \$164.17 less in output than they would have produced had they not entered the program.

### 3. Estimated Changes in Future Output

Because the interview data from the first follow-up survey dealt only with Corpsmembers' experience during the first seven months after they left Job Corps, estimates of benefits occurring in later time periods have to be based on extrapolations. These extrapolations require five pieces of information: (1) any trends in the seven-month data or another method by which to base an extrapolation; (2) the rate at which the Job Corps effect fades out; (3) the rate of growth in real wages; (4) the appropriate discount rate for determining the present value of future benefits; and (5) the time period over which benefits accrue. Because extrapolations will be necessary to estimate many benefits in addition to those that involve earnings gains, it will be useful to examine these five items in detail.

Extrapolation Basis. The first step in the extrapolation is to examine the seven-month data to find a basis for estimating future benefits. This was quite difficult in the case of earnings gains because Corpsmembers had adjustment problems after leaving Job Corps, and it is unclear whether these problems had been fully resolved after seven months. Thus, using the average Corpsmember's employment and earnings performance over the entire seven-month period as the extrapolation basis would be inappropriate.

A more accurate basis can be obtained by using the trend in Corpsmembers' earnings over this initial postprogram period. An examination of the data shows that while Job Corps had a negative effect on average total earnings over the first six-month period, the effect was not uniform throughout the entire period.<sup>1/</sup> Immediately after leaving the program, Corpsmembers earned, on average, much less than they would have had they not enrolled in Job Corps. However, as time went on, their employment rates and average earnings increased. By the end of the first seven months of postprogram observation, Corpsmembers were earning more than they would have in the absence of Job Corps. Thus, there was a tendency for the earnings gain induced by Job Corps to increase in the short run. Therefore, this short-term trend needs to be incorporated in the extrapolation of earnings gain into the future.

Specifically, the basis for extrapolating the gains in earnings was to use an estimate of the difference between the average Corpsmembers'

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<sup>1/</sup>For a detailed discussion of the employment and earnings effects of Job Corps during the months covered by interview data, see Chapter V of "Evaluation of the Economic Impact of the Job Corps Program," MPR, 1978.

earnings and what they would have been earning in the absence of Job Corps at the end of the first follow-up period. On the basis of earnings data for the Job Corps and comparison samples at the end of the follow-up period (just after the six-month period for which estimates were provided above), the earnings effect for Job Corps was estimated to be a \$4.32 per week gain. If we adjust this figure to account for fringe benefits, the estimated value of the increase in output production was approximately \$4.95 per week per Corpsmember.<sup>1/</sup>

Fade-Out Rate. While the observed seven-month trend in earnings suggests that the \$4.95 per week figure should be used as the basis for estimating future earnings gains, the trend does not provide much information about how long such an effect will be likely to persist. It is possible that the Job Corps effect--the difference between what Corpsmembers actually earn and what they would have earned had they not entered the program--will either continue to grow over time or will peak and begin to diminish.

A study by Ashenfelter provides the best evidence available on the future magnitude of the effect.<sup>2/</sup> He found that the earnings gains for adult men who had participated in employment and training programs had declined by approximately 50 percent after five years, while the gains

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<sup>1/</sup>This utilizes the 14.67 percent adjustment discussed in the previous section. Because all magnitudes will be put on a six-month basis when the extrapolations are made, this per-week figure will be multiplied by 26 to yield an estimate of the Job Corps effect on output produced in a six-month period. The exact estimate of the basic effect is thus \$128.80 per Corpsmember per six months ( $4.32 \times 1.1467 \times 26$ ).

<sup>2/</sup>Orley Ashenfelter, "The Effect of Manpower Training on Earnings," in Research in Labor Economics: Evaluating Manpower Training Programs, edited by Farrell Block, Greenwich, Connecticut: JAI Press, 1977.

for adult women did not fade out. If we assume a decline for Job Corps similar to the larger magnitude that Ashenfelter found for males, on a continuous basis it would imply a rate of decline of just under 14 percent per year.<sup>1/</sup> In the absence of better information, Ashenfelter's decay rate for adult males has been adopted.<sup>2/</sup> This probably overstates the decay rate for Corpsmembers, because Corpsmembers are young and because Ashenfelter's estimated decay rate for males is larger than that for females. However, when additional follow-up data become available, better extrapolation will be possible.

Rate of Growth in Real Wages. Because we are interested in the value of the goods and services produced by Corpsmembers, it is necessary to account for any secular rises in real wages (i.e., growth in the general

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<sup>1/</sup>A more exact rate is 0.138629 per year. This "fade-out," or "decay," rate will be used as a standard throughout this chapter in order to obtain benchmark estimates of the present value of benefits. Alternative rates are then used in Chapter V to test the sensitivity of our overall findings to the decay rate assumed.

<sup>2/</sup>In mathematical terms, this implies that the increase in earnings at any time will equal:

$$E(t) = (E_J - E_C)e^{-ft},$$

where  $E_J$  is the postprogram earnings of Corpsmembers,  $E_C$  is what they would have earned in the absence of Job Corps,  $f$  is the decay rate, and  $t$  represents calendar time ( $e$  of course is the base of natural logarithms used for continuous discounting). As noted in the previous section, we will use \$128.80 as the estimate of  $(E_J - E_C)$ , and  $t$  will be measured in periods of six months (e.g., at one year,  $t$  would equal 2).

level of wages net of inflation).<sup>1/</sup> Such growth will imply that not only will actual Corpsmember postprogram earnings rise at this growth rate, but the wages they would have earned in the absence of Job Corps (estimated on the basis of the comparison group's earnings) would also have risen at the same rate. Therefore, the difference between these two earnings levels--the Job Corps effect--will rise at the rate of growth for real wages. Because the Job Corps effect is the basis for estimating the increase in goods and services available to society as a result of the program, this growth will be accounted for in our estimates by adding the growth rate to the decay rate when present values are calculated.<sup>2/</sup>

While exact estimates of future growth in the general level of wages are not available, historical data indicate that such growth may be on the order of 2 percent a year. Since 1947, the growth in real wages

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<sup>1/</sup>As discussed below, a real discount rate will be used to estimate present values; therefore, all benefit streams must be valued in real terms.

<sup>2/</sup>If the secular rate of growth in real wages is  $g$ , the equation for the Job Corps effect at time  $t$  will be:

$$(E_J e^{gt} - E_C e^{gt}) e^{-ft}$$

or

$$(E_J - E_C) e^{(g-f)t}$$

Therefore, this growth rate for real wages is a partial offset to the decay rate given by  $f$ .

has been approximately 1.8 percent a year.<sup>1/</sup> This long-run average rate has fallen during the past few years because of the generally poor economic conditions (relatively high rates of inflation and unemployment since the early seventies) and because of the changing composition of the labor force (more youths and women). However, a return to more normal macroeconomic conditions and less dramatic changes in the composition of the labor force should be accompanied by growth rates of real wages that average close to 2 percent per year. Therefore, a 2 percent rate has been adopted for this study.<sup>2/</sup>

Discount Rate. It is inappropriate to simply sum up benefits that accrue in different time periods, because the value of a dollar several years from now will be worth less than the value of a dollar in the current period (even when all arguments about uncertainty are eliminated). Therefore, a discount rate is used to translate the value of benefits that occur in different time periods into common units--namely, monetary value in the current time period.<sup>3/</sup>

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<sup>1/</sup>This is computed by using the wage data for non-farm workers given in "The Employment and Training Report of the President," 1978, U.S. Department of Labor, Table C-10, p. 275.

<sup>2/</sup>This is, of course, slightly arbitrary, but the 2 percent rate is a reasonably accurate approximation. It should be noted, however, that this 2 percent rate is for quality-constant labor: if wages rise because higher skilled labor enters the labor force (thus raising the average wage level), then this part of the overall rise should be subtracted out because it does not correspond to the productivity of Corpsmembers and the comparison group. See Glen G. Cain, "Benefit/Cost Estimates for Job Corps," and Gary Becker, Human Capital, National Bureau of Economic Research, Number 80, New York: Columbia University Press, 1964.

<sup>3/</sup>For further discussion of discounting, see David Bradford, "Constraints on Government Investment Opportunities and the Choice of Discount Rate," American Economic Review, December 1975, pp. 887-899, and the references cited in that paper.

Because we are concerned primarily with the use of actual resources, all values assigned to benefits will be "real" values (i.e., we will measure all benefits and costs with 1977 dollars); thus, we need a real discount rate. However, estimating such a real discount rate is extremely difficult. Government projects have been evaluated by using rates that range from zero to 15 percent per year.<sup>1/</sup> Even when we look only at evaluations of employment and training programs, we find that rates range from 3 to 10 percent a year.

The benchmark rate used in this study is 5 percent. This rate was chosen somewhat arbitrarily, but it does represent a moderate assumption. To test the sensitivity of the results to this assumption, we will also present the final estimates of the net present value by using 3 and 10 percent annual discount rates.<sup>2/</sup>

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<sup>1/</sup> See E.B. Staats, "Survey of Use by Federal Agencies of the Discounting Techniques in Evaluating Future Programs," in Program Budgeting and Benefit-Cost Analysis, edited by H.H. Hinrichs and G.M. Taylor, Santa Monica, Calif.: Goodyear Publishing Company, 1969.

<sup>2/</sup> The 3 percent rate is used as a reasonable lower bound on the real long-run discount rate. The 10 percent rate is used in accordance with an OMB directive to evaluate government programs with that rate (see Executive Office of the President, Office of Management and Budget, "Discount Rates to be Used in Evaluating Time-Distributed Costs and Benefits," OMB Circular No. A-94, March 27, 1972); such a rate is probably an upper bound. Present values (PV) will be calculated by using the formula:

$$PV = \int_0^T B(t)e^{-rt} dt,$$

where  $B(t)$  is the benefit at time  $t$ ,  $r$  is the discount rate, and  $T$  is the time horizon (discussed in the next section). In the case of earnings where there are both decay and real wage growth effects, the formula will be:

$$PV = \int_0^T (E_J - E_C)e^{(g-r-f)t} dt.$$

Benefit Time Horizon. The benefits from Job Corps can accrue over the lifetimes of Corpsmembers. Therefore, some estimate of the appropriate time horizon must be made. If we assume that the average Corpsmember leaves the program at age 18, then the expected worklife of that Corpsmember is about 43 years, or 516 months.<sup>1/</sup> Therefore, our entire time period for the evaluation will start with time zero (the enrollment date) and extend through month 516.<sup>2/</sup>

The Value of Changes in Future Output. It is now a relatively straightforward procedure to value the Job Corps-induced change in output produced by Corpsmembers. Given our assumptions of (1) a decay rate that yields a 50 percent reduction after five years, (2) a 2 percent rate of growth in the wage level, (3) a 5 percent discount rate, and (4) an expected worklife of forty-three years, then the present value of the increased output is estimated to be \$1,402.98 per Corpsmember. When this figure is added to the estimated change in output for the first six months of the postprogram period, the estimated net increase in output during the entire postprogram period is \$1,238.81 per Corpsmember.

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Thus, if (1) the decay rate is 13.8629 percent per year, (2) the annual real wage growth rate is 2 percent per year, and (3) the discount rate is 5 percent per year, then the resulting rate used in the discounting formula will be -0.168629 per year ( $-.138629 + .02 - .05$ ).

<sup>1/</sup>Howard N. Fullerton, Jr. and James J. Byrne, "Length of Working Life for Men and Women, 1970," Special Labor Force Report 187, U.S. Department of Labor, 1976.

<sup>2/</sup>Because the calculations are made on the basis of six-month periods, the time frame in the analysis will be 0 to 86.

#### 4. Corpsmember Tax Payments

Because of taxes, the benefits or costs associated with changes in Corpsmember earnings will not accrue entirely to Corpsmembers. A portion of any increase in earnings will go to non-Corpsmembers in the form of taxes, and any decline in Corpsmember earnings will partially be borne by non-Corpsmembers in the form of reduced tax receipts. Thus, the estimation of Corpsmember tax payments is an important consideration in determining the distribution of social benefits.

However, estimating tax incidence is a very difficult task because the individuals who ultimately bear the burden of a tax may differ from the individuals who make the tax payments to the government (e.g., part of the burden of the corporate income tax may be borne by employees and consumers, as well as by stockholders).<sup>1/</sup> Attention must be given to the incidence of taxes such as federal corporate income taxes and various local property taxes, which are at least partially passed on to consumers and workers. It will also be necessary to go beyond tax withholding schedules and statutory tax rates in order to examine effective tax rates.

Such a major research effort is clearly beyond the scope of this benefit-cost analysis. As a result we rely heavily on the estimates of tax incidence calculated by Pechman and Okner.<sup>2/</sup> By utilizing data from federal tax returns and economic surveys, they were able to estimate the combined incidence of federal, state, and local tax systems. These

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<sup>1/</sup> For a discussion of tax incidence, see Richard A. Musgrave and Peggy Musgrave, Public Finance in Theory and Practice, San Francisco: McGraw-Hill, 1975, Chapters 15-19, or Joseph A. Pechman and Benjamin A. Okner, Who Bears the Tax Burden?, Washington, D.C.: The Brookings Institution, 1974.

<sup>2/</sup> See Pechman and Okner, Who Bears the Tax Burden?

estimates are presented for several sets of incidence assumptions and are broken down by income class and type of tax (income, payroll, property, sales, excise, etc.). The estimates show that the cumulative effect of the tax system is approximately equal to a 25 percent proportional tax on income for all households except those at the extreme ends of the income distribution.

For households at the low end of the income distribution, the major form of taxation is sales and excise taxes. Because these taxes are based on consumption and are collected by retail firms, it is very difficult to avoid paying them.<sup>1/</sup> The other major form of taxation for these households is the payroll tax, which, when combined with sales and excise taxes, accounts for 66 percent of the total tax burden of low-income households. Thus, even though these households face low rates for the individual income tax, their total tax burden (as a percentage of income) is not significantly different from the tax burden of most taxpayers.

The principal reason for supplementing income data from the survey with the Pechman and Okner estimates (rather than using estimates of tax liability based on data reported in the interviews) concerns the treatment of income that is not reported to the tax authorities. The earnings data collected in the interviews contain information on total income only and make no distinction between income reported and not reported to the tax authorities. Because there is evidence that earnings are substantially underreported for tax purposes, estimates of taxes based solely on the total income figures would overestimate actual taxes paid. The Pechman

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<sup>1/</sup> However, it could be argued that the incidence is at least partially incurred by producers.

and Okner study explicitly treats this problem, and their estimates reflect such underreporting. Therefore, their rates can be applied directly to our measures of total income without any need for additional information on Corpsmember underreporting. Another advantage in using the Pechman and Okner estimates is that they estimate the incidence of taxes where the payee and ultimate burden of the tax differ substantially (e.g., property and corporate income taxes)--tax incidences that would be difficult for us to estimate directly.

There are, however, problems with using the Pechman and Okner findings--specifically, because the Job Corps program is being evaluated and ten years after their study. First, their analysis was based on tax rates on household income, whereas our interview data contain information only on Corpsmember (or comparison-group member) income. Second, their study was based on 1966 incomes and tax laws; thus, it is somewhat outdated. Third, their definition of income meant that many individuals receiving private pensions or living temporarily off their savings were classified as low income even if their normal cash flow (and, hence, current consumption patterns) reflected high long-run incomes. Because several important taxes for low-income individuals are based on consumption patterns, the inclusion of these individuals along with those whose long-run incomes are low may lead to an overestimate of the effective tax rates for our purposes.<sup>1/</sup>

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<sup>1/</sup>For example, individuals with highly variable incomes might have low or negative income during a particular year. However, those persons could continue to consume on the basis of their higher average income if they had savings. Their taxes would reflect this high consumption, while their income would be defined as low for the year. A similar case would occur when individuals retire and live on cash flow from a private pension plan or from savings. In these cases, income would be low, but consumption and taxes would be relatively high. These types of situations may have led Pechman and Okner to overestimate taxes on low-income individuals--especially low-income youths who have very low savings.

While these problems should not be overlooked, we feel that the Pechman and Okner estimates are currently the best available and, on balance, are fairly accurate. The rate used for this study is approximately 22 percent, which is the average of the eight estimates that incorporate different incidence assumptions for 1966 household income in the 0 to \$3,000 range (this would be a 0 to \$5,400 range in 1977 dollars).<sup>1/</sup>

Once this rate had been determined, it was necessary to estimate total income for Corpsmembers. Income was defined as earnings plus transfers (in accordance with the definition used by Pechman and Okner). Using the procedures outlined elsewhere in this report, the Job Corps-induced change in the average Corpsmember's income during the first six postprogram months was estimated to be a loss of \$239.87. The present value (using a 5 percent discount rate) of the estimated change in their income after those first six months was \$724.56 per Corpsmember. The 22 percent average tax rate implies that tax payments (revenues for non-Corpsmembers) were \$52.77 less per Corpsmember than they would have been in the absence of Job Corps during the first six postprogram months, while the present value of the change in taxes for later periods was \$159.40. Thus, the net present value of the postprogram tax changes is a net cost of \$106.63 per Corpsmember and a net benefit of the same amount to non-Corpsmembers.

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<sup>1/</sup>See Pechman and Okner, Who Bears the Tax Burden?, page 49. The GNP deflator showed that prices had risen on average by about 80 percent between 1966 and 1977. This rate was used to adjust the income ranges presented by Pechman and Okner. For all incidence assumptions in this income range, the average effective tax rate was 21.85 percent, with a standard deviation of 3.08.

In addition to this net charge in postprogram taxes, there is an in-program reduction in Corpsmember taxes that is due to the fact that when Corpsmembers participate in the program, they give up earnings opportunities they might otherwise have accepted.<sup>1/</sup> They also give up the transfer payments they would have received had they not enrolled. Corpsmembers will view this foregone income as a cost of participating in the program, but part of this cost is being borne by non-Corpsmembers in the form of reduced tax receipts. The loss in tax revenue is partially offset by the tax imposed on the pay allowances from the Job Corps program.<sup>2/</sup> The estimated foregone income (earnings and transfers) is \$1,005.57 per Corpsmember during the program. This reduced income yields a reduction of \$221.23 per Corpsmember in tax payments. The average tax paid while they are in the program is \$68.49 per Corpsmember, which implies a net reduction in in-program taxes of \$152.74 per Corpsmember.<sup>3/</sup>

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<sup>1/</sup> For additional discussion of the opportunity cost of Corpsmembers' foregone earnings while participating in the program, see Chapter IV.

<sup>2/</sup> Corpsmembers pay Social Security taxes and are liable for federal income tax, although, as a rule, they end up paying only the Social Security tax and sales and excise taxes because of their low income.

<sup>3/</sup> This estimation poses severe problems because of the tax-free nature of many of the in-kind transfers made to Corpsmembers. However, they do pay the consumption-based taxes and the Social Security payroll tax. Our estimate utilizes the most progressive Pechman and Okner estimates of the tax rate for households with less than \$3,000 a year income, and further excludes that component of this tax rate that is due to income taxes. Furthermore, the definition of income included only the cash transfers (i.e., the value of the food, shelter, and medical care provided by Job Corps was not included). The resulting per Corpsmember "income" was \$405.28, and the tax rate was 16.9 percent, so the tax paid is estimated to be \$68.49 per Corpsmember.

The results of the estimation of the benefits associated with increased output are summarized in Table III.4. The \$757 per Corpsmember from output produced in connection with Job Corps training yields \$671 in benefits to non-Corpsmembers and \$86 in benefits to Corpsmembers. The entire \$757 is also the value of the social benefit. Of the \$1,239 per Corpsmember net increase in Corpsmember postprogram earnings, \$107 accrues to non-Corpsmembers, while the rest (\$1,132) accrues to Corpsmembers. There is also a net cost to non-Corpsmembers of \$153 per Corpsmember for tax receipts foregone while the Corpsmembers are in the program. From the social perspective, the total benefit from increased output of \$2,039 per Corpsmember covers approximately 40 percent of the program cost.

TABLE III.4  
BENEFITS FROM INCREASED OUTPUT BY CORPSMEMBERS

Component	Behavioral Measure	Change in Behavior			Value Per Unit	Total Discounted Value <sup>b/</sup>
		In-Program Changes	Postprogram Changes			
			Months 1 to 6	Months 7 to 516 <sup>a/</sup>		
In-Program Output	Years in Program	0.4916	0.0	0.0	\$1,538.13/yr.	\$756.59
Increased Postprogram Output	Gross Earnings + Fringe Benefits	N.A. <sup>c/</sup>	-\$164.17	\$2033.15	N.A.	\$1238.01
Increased Tax Payments	Estimated Tax Payments	-\$152.74	-\$ 52.77	\$ 159.40	N.A.	-\$ 46.11

<sup>a/</sup> This assumes an expected working life of 43 years (516 months) at the time the Corpsmembers leave Job Corps.

<sup>b/</sup> Before being added into this column, values for months 7 to 516 are discounted to the time of termination from Job Corps, at a rate of 5 percent.

<sup>c/</sup> N.A. means Not Applicable.

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### C. REDUCED DEPENDENCE ON TRANSFER PROGRAMS

The expected increase in Corpsmember employability from participating in Job Corps should be accompanied by reduced dependence on transfer programs. These programs include the welfare programs-- Aid to Families with Dependent Children (AFDC), General Assistance (GA), Food Stamps, public housing, and Medicaid--and the employment-related programs--Worker's Compensation (WC) and Unemployment Insurance (UI).

In each case, reductions in the use of a specific program will give rise to two benefit components. First, there will be a decline in the level of payments. Because these are transfer payments, the decline will be a cost to Corpsmembers and a benefit to non-Corpsmembers. From a social perspective, these benefits and costs will offset each other. The second benefit component will be the administrative costs associated with making the transfers. Any reduction in these costs due to a decline in the use of transfers by Corpsmembers will be a benefit to non-Corpsmembers. Because there is no offsetting cost to Corpsmembers in this case, the value of these administrative cost savings will be a social benefit.<sup>1/</sup>

While the transfer programs considered herein vary a great deal, the methods used to estimate the benefits resulting from declines in Corpsmembers using the programs are quite similar. The first step is to estimate the extent to which Corpsmembers reduce their participation in a particular program (using the interview data). The Job Corps effect is typically measured in terms of months of participation

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<sup>1/</sup>We are ignoring the costs incurred by Corpsmembers in obtaining transfers (particularly the cost of their time). Reductions in these costs also constitute social benefits.

(extrapolated by using a fade-out rate similar to that used for earnings). This effect can be multiplied by the transfer program's benefit per participant month (obtained from budget data) and then discounted appropriately to yield an estimate of the present value of the reduction in transfer payments. The administrative cost savings can be estimated in a similar manner by multiplying the Job Corps-induced change in the number of months in a program by that program's average administrative cost per case.<sup>1/</sup> The details of the estimation procedures for the seven transfer programs included will be discussed in turn below.

1. Aid to Families with Dependent Children<sup>2/</sup>

The procedures for estimating the benefits associated with reduced use of AFDC are essentially similar to those discussed above. The major difference is that a procedure was developed to distinguish between those Corpsmembers who were heads of households with children (and would thus be able to receive their own AFDC benefits) and those Corpsmembers who were receiving AFDC benefits as secondary members (i.e., as neither head nor the spouse of the head of household). Once the effects for these two groups have been separated out, the Job Corps effect on their average months of AFDC participation can be multiplied by the average transfer payment (administrative cost per household or

<sup>1/</sup>This use of average rather than marginal cost may lead to an overestimate of the savings. However, in the long-run, marginal and average costs are probably about equal, so that approximating marginal cost by average cost is acceptable (except for small differences caused by short-run adjustment costs).

<sup>2/</sup>For a discussion of the purpose, administration, and legislative history of AFDC and the other six transfer programs discussed in the text, see Studies in Public Welfare, Paper No. 20--Handbook of Public Income Transfer Programs: 1975, Joint Economic Committee, December 1974.

per recipient, depending on the group in which the Corpsmember belonged) to yield the appropriate benefit estimates.

For the purpose of estimating the Job Corps effect on AFDC, the rules adopted for distinguishing household heads from household members were to assume that all females with children were heads of households and that all males and females with no children were only secondary members of families. The assumptions about females are somewhat conservative because they assume that females with no children will not have children later. However, because the presence of children is a requirement for AFDC eligibility, the assumption is accurate in the short-run. Furthermore, because future benefits are discounted heavily, the net effect of this assumption may not be too large. The assumption that all males are in the secondary family-member category will also tend to bias the estimate of benefits downward because in states that cover families with unemployed fathers, males can have children and be eligible for AFDC benefits. However, because relatively few males in the program had children, the error introduced by this procedure is probably small (except for the problem posed by future births).<sup>1/</sup>

The average benefit levels were estimated with data from the U.S. budget.<sup>2/</sup> Total benefit payments for fiscal 1977 were \$10,270,985,000,

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<sup>1/</sup>At baseline, only 9 percent of Job Corps males in our sample had children, while about 16 percent of the comparison-group males had children. See "Evaluation of the Economic Impact of the Job Corps Program-- Interim Report," Volume I, MPR, September 1977, p. 83. For the follow-up time period the comparable figures are approximately the same. Furthermore, even among those who had children, some (about 15 percent) did not have any child living with them.

<sup>2/</sup>The "Budget of the United States Government," Appendix: Fiscal Year 1979, p. 448.

and the average monthly caseload was 11,202,000 individuals. This implies an average benefit per recipient year of \$916.89, or \$76.41 per month. To estimate the average benefit per household (for the head-of-household group), we multiplied the benefit per recipient month by the average number of recipients per AFDC family (3.13), which may be high for our sample. The resulting figure was \$239.43 per family month.

The average administrative cost was estimated in a similar manner. The AFDC fiscal 1977 budget showed an expenditure of \$1,185,694,000 for program administration. This implies a cost of \$105.85 per recipient year, or \$8.82 per recipient month.<sup>1/</sup> For families, this cost is estimated to be \$27.64 per family month ( $\$8.82 \times 3.133$ ).

The estimated Job Corps effect showed a substantial reduction in AFDC use while Corpsmembers were in the program, and a smaller but significant reduction during the first six months of postprogram observation. The findings are shown in Table III.5.

To estimate the effect of Job Corps on AFDC dependence in future time periods, we used a similar extrapolation procedure to that used with the gains in earnings. A 5 percent discount rate was used to compute the present value, and the time period was assumed to be the expected worklife of Corpsmembers (forty-three years).

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<sup>1/</sup>See "Budget of the U.S. Government," Appendix, p. 448. State and local, as well as federal, administrative costs are included. The calculation assumes that enrollment costs associated with AFDC participation (i.e., costs associated with putting someone on or taking them off the rolls) can be spread out over all the months of participation. If Job Corps leads to people exiting and re-entering the system, the assumption may lead us to overestimate the actual administrative cost savings.

TABLE III.5

## BENEFITS FROM REDUCED TRANSFER PAYMENTS

Component	Behavioral Measures	Change in Behavior		Value Per Unit	Total Discounted Value
		In-Program Period	Postprogram Period		
			Months 1 to 6	Months 7 to 516	
d to Families with Dependent Children					
Respondent (head of family)	Months Received Transfers	.1114	.0383	.5141	\$239.42/mo \$124.29
Respondent (other than head of family)	Months Received Transfers	.2221	.0837	1.1236	\$ 76.41/mo \$ 95.05
General Assistance					
Respondent (head of family)	Months Received Transfers	.0178	.0003	.0040	\$151.90/mo \$ 3.19
Respondent (other than head of family)	Months Received Transfers	.0355	.1307	1.7545	\$116.05/mo \$165.59
Food Stamps	Months Received Food Stamps	.4822	.2376	3.1895	\$ 73.65/mo \$221.80
Public Housing	Public Housing Net Benefit	\$ 5.72	\$ 4.15	\$ 55.65	N.A. \$ 49.90
Medicaid	Months Received AFDC	.3335	.1220	1.6377	\$ 76.62/mo \$126.66
Unemployment Insurance/Worker's Compensation	Amount Received From U.I./W.C.	\$29.30	\$19.26	\$258.54	N.A. \$234.33
Total Benefits (Present Value) <sup>a/</sup>					<u>\$1,010.33</u>

<sup>a/</sup>This represents a benefit to non-Corpsmembers and a cost to Corpsmembers. Therefore, the net value from social perspective is zero (see the text for more details).

In addition, the Job Corps effect was assumed to fade out over time, so that it was reduced by 50 percent after five years.<sup>1/</sup> The only differences between the extrapolations used for transfers and those used for earnings concerns the basic effect from which the extrapolation was made and the adjustment for secular growth in real wages.

The effect used as the basis for extrapolation was the average reduction in months of AFDC participation observed among Corpsmembers during the first six months after leaving Job Corps.<sup>2/</sup> This was done because, unlike earnings, no clear trend was observed in the use of AFDC; the six-month average seemed to be representative. The only problem with this procedure is that if Corpsmembers are financially eligible for AFDC but do not become enrolled because of adjustment problems caused by their stay in Job Corps, their experience in the first six postprogram months may be dominated by their adjustment problems, and future benefits to non-Corpsmembers and society will be underestimated. Similarly, Corpsmembers may lose their eligibility for welfare as their earnings gains become larger in the short-run. However, we have no detailed information about such adjustment problems; thus, for analytical simplicity, the entire six-month period is used.<sup>3/</sup>

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<sup>1/</sup>This 50 percent/five-year assumption is somewhat arbitrary for the transfer calculations because Ashenfelter estimated this decay rate for earnings gains from employment and training programs only. However, because the transfer effects should parallel the earnings effect, the use of this rate may not introduce too much error. Further follow-up data should help refine these estimates.

<sup>2/</sup>From this point on in the text, we will refer to a six-month postprogram period, which is the time dimension for our estimates, although the average postprogram experience was closer to seven months.

<sup>3/</sup>The data from the next follow-up survey should yield more definitive findings for the extrapolation of effects, especially for the first few years after leaving the program. These first few years are crucial because later years are discounted heavily.

The second difference between this extrapolation and the extrapolation for the earnings gain is that, here, no adjustment is made for a secular rise in real prices. No adjustment is made because once we net out the influence of inflation, real product prices will move both upward and downward over time, whereas real wages will generally rise. Because there is no secular trend visible in real product prices, there is no basis to estimate a future trend. As a result, there is no reason for adjusting Job Corps benefits (for effects other than on earnings) to include an expected secular increase.

The final estimates of the benefits resulting from the effect of Job Corps on AFDC dependence are shown in Table III.5. We estimate that the decline in AFDC use among family members (male and females with no children) results in benefits whose present value is \$85.05 per Corpsmember. The present value of the benefits from reduced AFDC use among Corpsmembers who are household heads (females with children) is \$124.29 per Corpsmember. Thus, the value of the aggregate Job Corps effect on AFDC payments is \$209.34 per Corpsmember.

The administrative cost savings are similarly computed and are presented in Table III.6. The total benefits from reduced AFDC administration is \$24.18 per Corpsmember. Of this amount, \$14.35 is associated with a reduction in AFDC use among females with children, and \$9.83 is associated with a reduction in AFDC use by males and females without children.

TABLE III.5

## BENEFITS FROM REDUCED ADMINISTRATIVE COSTS OF TRANSFER PROGRAMS

Component	Behavioral Variable	Change in Behavior		Value Per Unit	Total Discounted Benefit
		In-Program Period	Postprogram Period Months 1 to 6    Months 7 to 516		
<b>Benefits to Families with Dependent Children</b>					
Respondent (head of family)	Months on AFDC	.1114	.0181    0.5141	\$27.64/mo	\$ 14.35
Respondent (other than head of family)	Months on AFDC	.2221	.0837    1.1216	\$ 8.93/mo	\$ 9.81
<b>General Assistance</b>					
Respondent (head of family)	Months on G.A.	.0178	.0001    0.0040	\$17.47/mo	\$ 0.37
Respondent (other than head of family)	Months on G.A.	.0355	.1307    1.7545	\$13.35/mo	\$ 19.05
Food Stamps	Months on Food Stamps	.4822	.2376    1.1895	\$ 9.48/mo	\$ 28.55
Public Housing	Months in Public Housing	.1389	.0954    1.2806	\$12.50/mo	\$ 14.41
Welfare Aid	Months in AFDC	.3335	.1220    1.6377	\$ 9.49/mo	\$ 15.49
Unemployment Insurance/ Worker's Compensation	Weeks on U.I./W.C.	.1438	.2238    3.0042	\$ 6.96/wk	\$ 17.56
<b>Total Benefits (Present Value)</b>					<u><u>\$119.65</u></u>

## 2. General Assistance

The procedures used to estimate the benefits from reduced Corpsmember dependence on general assistance programs are the same as those used to estimate the benefits from reduced dependence on the AFDC program. Corpsmembers were divided into two groups according to the likelihood that they were receiving GA benefits as a secondary member of a household or as the head of a household. We used the same, relatively conservative, assumptions as before: females with no children were assumed to be household heads, while males and females with no children were assumed to be secondary members. Estimates of the average reduction in months on GA due to Job Corps were then made for these groups, and these estimates were valued by using average benefit and average administrative cost estimates.

The pattern of GA effects is similar to that for AFDC. There were very large reductions in the use of GA while the Corpsmembers were in the program. For females with children, the Job Corps effect became quite small during the first six months of postprogram observation. However, males and females with no children showed a large decrease in GA dependence after leaving Job Corps, as well as while they were at the centers. This pattern of welfare effects is probably due to the fact that GA, unlike AFDC, is targeted toward single individuals and childless couples. Thus, low-income females with children probably qualified for AFDC and, thus, did not participate in GA. In contrast, the low-income males and females with no children probably found that they were categorically ineligible for AFDC and, thus, participated more heavily in GA. These effects are shown in Table III.5.

Average benefit levels were computed by using data from forty-two states and territories that had GA programs.<sup>1/</sup> Using figures from fiscal year 1977, we estimated that the average monthly benefit payment per recipient was \$116.05, and the average payment per family was \$151.90.

Because the state and local general assistance programs are run independently, there is no central budget from which average administrative costs can be estimated. As a result, the cost savings from reduced administration were estimated by using an indirect procedure. We used the ratio of AFDC administrative costs to total AFDC benefits as an estimate of the ratio of these two magnitudes for GA. Because these programs are similar cash transfer programs, there is reason to believe that they have similar ratios of administrative costs to benefit payments (although GA may be slightly less expensive to administer because it has simpler eligibility rules). In fiscal year 1977, the ratio was 0.115 for AFDC.<sup>2/</sup> By applying this number to the GA benefit amounts, we estimated that the average monthly administrative cost was \$13.35 per recipient, or \$17.47 per family.

If we follow the same assumptions used to extrapolate the postprogram benefits from reduced AFDC dependence (i.e., a 5 percent discount rate, a forty-three-year time horizon, a fade-out of 50 percent after five years, and no adjustment for secular growth in real prices)

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<sup>1/</sup>See "Public Assistance Statistics," U.S. Department of Health, Education and Welfare, Table 8. This publication presents monthly data; those months used in this report were July 1976 through August 1977. To eliminate seasonality problems, we based all estimates on the average value for this twelve-month period.

<sup>2/</sup>"Budget of the U.S. Government," Appendix: Fiscal Year 1979, p. 448.

and adopt as our basis for extrapolation the average effect over the first six postprogram months, the estimated present value of the benefits from reduced GA dependence is \$168.78 per Corpsmember. This benefit can be broken down into a per Corpsmember benefit of \$3.19 attributed to reduced GA use among females with children, and a per Corpsmember benefit of \$165.59 from reduced use by males and females with no children. These results are summarized with the other transfer results in Table III.5.

The administrative cost savings are presented in Table III.6. They indicate that the total benefit from reduced GA administration is \$19.42 per Corpsmembers. The bulk of this benefit, \$19.05, is associated with reductions in use by males and females with no children. Females with children accounted for only a small fraction of this benefit--\$0.37 per Corpsmember.

### 3. Food Stamps

The benefits resulting from Job Corps-induced reductions in the use of Food Stamps were estimated by using the basic methodology outlined above. The U.S. Department of Agriculture budget provided estimates of the average bonus per participant, as well as the data necessary to estimate average administrative costs.<sup>1/</sup> The average bonus was \$24.55 per recipient month during fiscal year 1977, and the average administrative cost was \$3.16 per recipient month. To obtain figures on a per-household basis, we multiplied these figures by 3.00, which is the average number

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<sup>1/</sup> "Budget of the U.S. Government," Appendix: Fiscal Year 1979, p. 195.

of recipients per household.<sup>1/</sup> The estimates for average bonus value and average administrative cost per household month were \$73.65 and \$9.48, respectively.

Because Food Stamp benefits are given to households without the requirement that there be children present, it was not necessary to separate out household heads from the rest of the Corpsmembers. Thus, the overall Job Corps effect on Food Stamp use was estimated directly. While Corpsmembers were in the program, there was a substantial program effect: on average, participation fell by 0.4822 months per Corpsmember. For the first six postprogram months, the effect fell by about half to 0.2376 months per Corpsmember.

If we again use the same assumptions as above regarding the future time pattern of effects, the data for the first six postprogram months will yield an estimated total reduction of 3.1895 months per Corpsmember in the use of Food Stamps. Using the estimated bonus and administrative cost figures with a discount rate of 5 percent, we estimate that the present value of the Job Corps-induced reduction in Food Stamp bonus is \$221.80 per Corpsmember, and the associated administrative cost savings are \$28.55 per Corpsmember. The findings for Food Stamps are shown in Tables III.5 and III.6.

#### 4. Public Housing

The procedures used to evaluate the benefits associated with reduced use of public housing among Corpsmembers differ substantially

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<sup>1/</sup>The estimate of recipients per household came from Characteristics of Food Stamp Households--September, 1976, U.S. Department of Agriculture, 1977, Table 36.

from those used to evaluate the Job Corps effect on other transfer programs. The principal difference is due to the fact that because public housing is an in-kind transfer, it is necessary to impute a value to the transfer. A second difference is that program administrative costs must be adjusted in order to separate the costs of making the transfer from those of operating the housing units (these latter costs are part of the transfer).

The value for the transfer is estimated for our purposes as the difference between what a tenant pays for the housing unit and the regular market rental rate for that unit. This difference is the cost to taxpayers of the transfer. However, it is possible that this value does not equal the value that the recipients place on the transfer. Specifically, it is possible that the recipients believe the transfer is smaller because of the stigma associated with public housing, or because the recipient would have purchased a different amount of housing if the transfer had been in cash. In addition, locational and neighborhood effects are, at best, imperfectly captured in the estimates of the units' market values, and public-housing units may tend to be located in undesirable locations and neighborhoods with high incidences of crime.

We obtained estimates of the value of the public-housing transfer from a report by James Storey.<sup>1/</sup> He estimated the average

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<sup>1/</sup>James R. Storey, Welfare in the 70's: A National Study of Benefits Available in 100 Local Areas, Joint Economic Committee, 93rd Congress, July 1974, pp. 32-34 and Table 18. The 100 local areas included a larger proportion of the U.S. poverty population, and it appears that accurate estimates regarding average national benefit levels can be made with these data.

difference between rent paid and market value for public-housing projects in 100 counties. These estimates are quite detailed, accounting for such factors as family size, housing-unit size, family income, and the effect of public-housing rent levels on other transfer programs, such as AFDC and Food Stamps. The estimates we used in calculating the public-housing transfers to recipients were \$18.27 per month for individuals living alone, \$44.12 per month for couples, and \$61.28 per month for individuals living with children.<sup>1/</sup>

The procedure used to separate the respondents in our sample into these categories of public-housing recipients involved six steps. First, youths living with their parents (or other legal guardians) were excluded, because it was assumed that childrens' behavior or income were unlikely to affect their parents' receipt of public housing. Second, youths who were living alone were grouped into the single category. Third, youths living with others were grouped into a couples or family category, depending on whether or not they had children living with them. Fourth, the Job Corps effect on public housing was estimated for each of these groups of youths. Fifth, the estimated effects were multiplied by the appropriate transfer values to construct an estimate of the value of the Job Corps effect on public-housing transfers for each group. Finally, the values for each group were added together, with each group receiving a weight equal to the proportion of Corpsmembers in that group. As might be

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<sup>1/</sup>We adjusted Storey's estimates (Table 18) for inflation to obtain estimates that were applicable to 1977. Storey's estimates were obtained with data from 1972. We multiplied his estimates by a factor equal to the increase in the GNP price deflator between 1972 and 1977 (i.e., 1.4052).

expected from the orientation of public housing toward families with children, the bulk of this benefit is due to a decline in the use of public housing among Corpsmembers with children.<sup>1/</sup> We estimate the reduction in average public-housing transfer per Corpsmember to be \$5.72 for the time when Corpsmembers were in the program, and \$4.15 for the first six postprogram months. Extrapolating by using our assumptions about decay rates and worklife, we find that the estimated reduction in public-housing transfers over the remainder of a Corpsmember's worklife will be \$55.65 on average. If this value is then discounted by using the 5 percent rate, the present value of the reduced public-housing transfers is \$49.90 per Corpsmember.

Because administrative costs for public housing are essentially independent of family size, no distinctions were made in estimating administrative cost savings about the family circumstances of sample members who were not living with their parents. However, it was necessary to use an estimate of average administrative costs that included only the costs of providing the transfer and that counted the costs of managing the public-housing units as part of the transfer. The estimate we used came from data gathered as part of the Housing Assistance Supply Experiment.<sup>2/</sup> While this experimental program

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<sup>1/</sup> For example, during the first six postprogram months, the total reduction in average public-housing transfers per Corpsmember was \$4.15. Of this amount, \$3.23 was attributed to a reduction in the use of public housing by Corpsmembers with children. Of course, our assumption that youths living with their parents do not affect their parents' receipt of public housing also accounts for part of this phenomenon, because most youths who live with their parents do not have children.

<sup>2/</sup> Ira S. Lowry, "Early Findings from the Housing Assistance Supply Experiment," publication number P-6075, Santa Monica, California: The Rand Corporation, 1978.

differs from the usual low-income public-housing programs, the eligibility requirements are roughly equivalent. Because the administration of these eligibility rules determines to a large extent the administrative costs, we believe that the figures from the experiment serve as adequate proxy measures. The estimate given was \$150 per client year to administer the transfer component of the Housing Assistance Program. If we assume that in-take costs are spread evenly over the year, this annual figure implies a monthly cost of \$12.50.

The estimated Job Corps effect on public-housing residence is a reduction of 0.1389 months per Corpsmember during the in-program period, and a reduction of 0.0954 months per Corpsmember during the first six postprogram months. The present value of the administrative cost savings associated with this reduction in public-housing residence (under our usual assumptions for extrapolating and discounting) is \$14.43 per Corpsmember. The results for public housing are shown in Table III.6.

##### 5. Medicaid

Estimating the benefits associated with the reduced use of Medicaid by Corpsmembers presented several problems. First, the interviews did not contain direct questions on Medicaid use; thus Medicaid use had to be determined on the basis of other information.<sup>1/</sup>

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<sup>1/</sup> One of the reasons for not including questions on Medicaid use was the fact that it was possible to make this alternative determination. Also, the reliability of direct questions on Medicaid use was doubted, unless a very lengthy and probing set of questions could be added. Therefore, in an effort to keep down the length of the interview, direct questions were dropped.

Second, it is difficult in general to value Medicaid transfers, because not only are they in-kind, but there may also be significant external effects (i.e., benefits to persons other than those who receive the medical care). Finally, the lack of published data on the actual claims experience of Medicaid makes it difficult to estimate accurately either the average benefit levels or the administrative costs.

The procedure used to resolve these problems was to treat Medicaid as an additional benefit given to individuals participating in the AFDC program. This method was adopted because over 90 percent of AFDC beneficiaries also received Medicaid benefits. However, this method will fail to account for individuals who are ineligible for AFDC (because of family status, income level, etc.), but who do qualify for Medicaid by meeting the "medically needy" provisions.<sup>1/</sup> Our procedure of linking Medicaid to AFDC may fail to capture the insurance provided to individuals who are marginally above the income eligibility levels. This omission may bias our results upward if an effect of Job Corps is to raise income levels high enough so that Corpsmembers become ineligible for AFDC but can still obtain Medicaid benefits, especially if they incurred heavy medical expenses for some reason.<sup>2/</sup>

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<sup>1/</sup> For a description of the medically needy provisions and the Medicaid program in general, see Handbook of Public Income Transfer Programs: 1975, Joint Economic Committee, 93rd Congress, December 1974, pp. 220-239.

<sup>2/</sup> In other words, by not accounting for benefits given to these people, we may overestimate the actual reduction in Medicaid benefits. However, it is conceivable that an even larger proportion of Corpsmembers would have been in the medically needy and not eligible for AFDC categories had they not entered Job Corps, in which case we are underestimating the impact of Job Corps on Medicaid.

The estimate of Medicaid benefits was derived from the ratio of the dollar cost of Medicaid services provided to AFDC recipients to the number of families receiving AFDC. In fiscal year 1976 this ratio was \$919.28 per family, or (if benefits are provided uniformly over the year) \$76.61 per AFDC family month.<sup>1/</sup> If this estimated transfer value is multiplied by the Job Corps-induced change in AFDC participation, the resulting estimate of the value of the decline in Medicaid transfers is \$25.55 per Corpsmember for the in-program period, and \$9.35 per Corpsmember for the first six postprogram months. If these amounts are extrapolated and discounted by using our standard methods, the present value of the change in Medicaid transfers is \$126.68 per Corpsmember.<sup>2/</sup>

The administrative costs were estimated by dividing AFDC's pro rata share of Medicaid administrative costs for 1976 by the number

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<sup>1/</sup> See Medicaid Statistics, 1976, U.S. Department of Health, Education and Welfare, 1977, and Public Assistance Statistics--January 1977, U.S. Department of Health, Education and Welfare, 1977, p. 22.

<sup>2/</sup> In addition to the exclusion of people who receive Medicaid through the medically needy provisions, there is another bias in this estimate. This bias is due to the fact that the youths in our sample may have received far less than the average amount of Medicaid services. This would be the case if the bulk of Medicaid expenditures were devoted to health care for older poor people. Thus, even if we correctly estimated the Job Corps effect on Medicaid participation, we might have overvalued that effect by using the average Medicaid benefit level. This problem may be partially alleviated by using Medicaid benefits to AFDC families, because these families may contain a higher proportion of young people than the general Medicaid population. In any event, in the absence of a detailed analysis of Medicaid, it does not seem possible to substantially improve our estimate.

of AFDC family years in that year.<sup>1/</sup> The resulting estimate of average annual administrative costs is \$113.86 per year, or \$9.49 per month. By multiplying this estimate by the Job Corps-induced reduction in months of AFDC participation (extrapolating to future periods by using our standard method, and then discounting future benefits at a 5 percent rate), we estimate the present value of the administrative cost savings to be \$15.49 per Corpsmember. The estimated benefits from administrative cost savings are included in Table III.6, while the estimated taxpayer savings associated with the reduction in transfers are shown in Table III.5.

#### 6. Unemployment Insurance and Workers' Compensation

The goals of the Unemployment Insurance and Workers' Compensation programs are different from the public assistance programs discussed above. However, increased employability among Corpsmembers should cause reductions in transfers and administrative costs from Unemployment Insurance and Workers' Compensation in a similar manner to those for the public assistance programs. Similarly, while Corpsmembers are in the Job Corps program, there should be significant reductions in their use of Unemployment Insurance and Workers' Compensation, which would augment the savings induced by Job Corps for transfer programs.

These two programs were aggregated together in the baseline interview. As a result, it was necessary to use the interview data directly to estimate the size of the transfers. These data provided

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<sup>1/</sup> See Medicaid Statistics--1976, in which total Medicaid administrative costs were multiplied by 0.642--the fraction of all Medicaid recipients who are in AFDC--to estimate those administrative costs attributed to AFDC families.

information on the weekly benefit amounts received from either of the programs, as well as the number of weeks the payments were received. Multiplying these two numbers together determined the total amount of the transfer. The estimated effects of Job Corps on these payments was a reduction of \$29.30 per Corpsmember for the in-program period, and a further reduction of \$19.26 per Corpsmember during the first six postprogram months. Using our standard assumptions, we estimated the present value of the average reductions in Unemployment Insurance and Workers' Compensation payments to Corpsmembers to be \$234.33.

The administrative cost savings accompanying this reduced use of Unemployment Insurance and Workers' Compensation was estimated by multiplying the number of weeks the person received payments by \$6.96, which is the average administrative cost per case week of Unemployment Insurance.<sup>1/</sup> Given that the in-program and early postprogram effects were, respectively, 0.1438 and 0.2238 fewer weeks per Corpsmember, the estimated present value of these savings is (if we utilize the extrapolation procedure outlined above) \$17.58 per Corpsmember.

#### 7. Summary of Benefits Related to Reduced Transfer Program Participation

The overall results are presented in Tables III.5 and III.6. The total present value of the reduction in transfers is estimated to be

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<sup>1/</sup> This number was used rather than the average of the administrative costs of both programs because the average number of weeks per Corpsmember on Unemployment Insurance is approximately four times the number of weeks per Corpsmember on Workers' Compensation. In addition, because of the greater federal participation in Unemployment Insurance, better data were available to estimate the average administrative costs (see "Budget of the U.S. Government," Appendix: Fiscal Year 1979, p. 619). Both the transfer and administrative cost estimates include state and local, as well as federal, expenditures. Finally, from available state data, it appears that the administrative costs of these programs are similar, with Workers' Compensation, if anything, being slightly more expensive to administer (approximately \$1.50 more a month).

\$1,011 per Corpsmember. This value will be a benefit to non-Corpsmembers, who, in the absence of Job Corps, would have had to provide these dollar amounts of transfers to the Corpsmembers. The Corpsmembers will view this value as a cost because they lose the transfers. Corpsmember costs from the changes in transfers will be exactly equal to the non-Corpsmember benefits (under our assumptions), so that the Job Corps-induced changes in these transfers will not affect the social benefit-cost calculations; however, they do affect the other perspectives because the distribution of income between Corpsmembers and non-Corpsmembers is affected.

The estimated present value of the administrative cost savings is \$120. The resource savings represented by this value will be a benefit to society and will accrue primarily to non-Corpsmembers.

The largest effects are estimated for Food Stamps, due primarily to the large reduction in the use of Food Stamps. The large benefits from reduced receipt of transfers, in addition to Food Stamps, were the reductions in transfers from AFDC, general assistance, Unemployment Insurance, and Workers' Compensation. The large administrative cost savings were for Food Stamps, AFDC, and general assistance. Altogether, from the non-Corpsmember perspective the transfer-related benefits cover about 20 percent of program costs, while from the social perspective they cover only about 3 percent of costs (because only the costs of administering the transfers affect the social perspective). Of course, for Corpsmembers, the reductions in transfers represent costs.

#### D. REDUCED CRIMINAL ACTIVITY

This section discusses the methodology used to value the reduction in criminal activity brought about by Job Corps participation. The section analyzes measures of criminal activity, and then examines the valuation of the three measured crime-related benefit components: the reductions in (1) property damage and personal injury, (2) stolen property, and (3) criminal justice system costs.

##### 1. Measuring Criminal Activity

The first step in the valuation of any benefit is to measure the associated behavioral effect. However, in the case of criminal activity this step presents difficulties because such activity is inherently unobservable. To solve this problem, we use arrests as a proxy for criminal activity. This is clearly only a crude estimate of the amount of criminal activity for youths, because many youths commit crimes for which they are not arrested, while others are arrested for crimes they did not commit. On average, arrests will greatly understate the number of crimes (see the correction factors discussed below).

One alternative proxy measure that is not used here is convictions. This measure would reduce the problems associated with arrests of individuals for crimes they did not commit. However, it has other serious shortcomings. Because of plea bargaining and problems with evidence, the charge on which a person is convicted may not reflect the seriousness of the crime actually committed. More important, the use of judicial outcomes (such as conviction) to measure short-run changes in criminal activity may fail to capture

the Job Corps effect on the more serious crime types, because arrests for these crimes often take a long time to fully adjudicate.

To correct for the fact that many crimes do not result in arrests, we used data from victimization studies, where appropriate, to adjust the Job Corps effect on arrests. Surveys of crime victims indicate that not only do many reported crimes go unsolved, but many crimes are never reported to the police. The adjustment used here to obtain an estimate of criminal activity involves multiplying the Job Corps effect on arrests by the ratio of criminal incidents to arrests for each crime type. This procedure (which is explained in more detail in the following sections) will yield an adequate estimate of the effects of Job Corps on criminal activity, as long as the "true" ratio of incidents to arrests is relatively constant and independent of Job Corps participation.

The measure of arrests used in this analysis is the number of self-reported arrests per Corpsmember. The self-reports were gathered as part of the series of interviews given to Corpsmembers and the comparison-group members in our sample. The use of self-reports yields considerable savings in data collection costs compared to what they would be to obtain arrest measures for a nationwide program through searches of court records. However, there is some empirical evidence that people tend to underreport their arrests in interviews. If the underreporting bias is independent of participation in Job Corps, then the final estimate of the Job Corps effect on crime will be understated. Thus, the estimates presented here may be biased toward zero.

The general approach used to value the reduction in criminal activity caused by Job Corps participation is outlined in Table III.7.

TABLE III.7

## SOCIAL BENEFITS FROM REDUCED CRIMINAL ACTIVITY

$$B = \sum_i \delta_i (O_i VC_i + O_i \sum_j \frac{\partial P_{ij}}{\partial O_i} + J_i + O_i \frac{\partial PC_i}{\partial O_i} + \sum_i F_{ii})$$

Variable Definitions<sup>a/</sup>:

- B = Social benefit per Corpsmember from reduced criminal activity
- $\delta_i$  = Mean reduction in arrests per Corpsmember for crime type i attributable to Job Corps participation.
- $O_i$  = Mean number of offenses per arrest for crime type i
- $VC_i$  = Direct costs to victims of crime type i =  $PI_i + PD_i$
- $PI_i$  = Mean personal-injury cost per offense associated with crime type i
- $PD_i$  = Mean property-damage cost per offense associated with crime type i
- $P_{ij}$  = Crime-prevention costs involving the use of resource j for crime type i
- $J_i$  = Criminal justice system costs per arrest =
- $$\sum_k \rho_{ik} A_k + \sum_l \rho_{il} CA_l + \sum_m \rho_{im} DT_m + \sum_n \rho_{in} C_n + \sum_q \rho_{iq} COR_q$$
- $\rho_{ir}$  = Fraction of people arrested for crime type i who experience judicial event r
- $A_k$  = Police-apprehension costs for event k
- $CA_l$  = Court-arraignment costs for event l
- $DT_m$  = Costs of detaining arrestees for trial (for event m)
- $C_n$  = Trial-court costs for event n
- $COR_q$  = Corrections costs for event q
- $PC_i$  = Psychological costs associated with crime type i

TABLE III.7 (continued)

$F_{ii}$  = Expected costs associated with subsequent criminal activities of type  $i$  committed by individuals initially arrested for crime type  $i$

Subscript Definitions:

- $i, i'$  = Murder, robbery, felonious assault, burglary, larceny/  
motor-vehicle theft, narcotics violation, other personal  
crime, other miscellaneous crime, unspecified
- $j$  = Public police, private police, public goods, private goods
- $k$  = Detective investigation, patrolman investigation, detective  
court activities, patrolman court activities
- $l$  = Found over, final disposition, appealing disposition
- $m$  = Released, bail review, released on bail (released on own  
recognizance, money, and other)
- $n$  = Dismissal, plea, bench trial, jury trial
- $q$  = Presentence investigation, probation, corrections  
(incarceration), parole, postrelease programs

The approach takes the estimated change in arrests for nine crime types and multiplies it by a shadow price that yields the average social cost of an arrest for each crime type.<sup>1/</sup> The nine crime categories include all possible arrest charges: murder; robbery; felonious assault; burglary; larceny or motor-vehicle theft or other property crimes; narcotics violations; other personal crimes; other miscellaneous and a special unspecified arrest category.<sup>2/</sup>

The average social cost of an arrest is the sum of the average direct losses incurred by victims, the value of the resulting change in public and private crime prevention expenditures, the average cost of processing an arrested person through the criminal justice system, the psychological costs resulting from the crime, and the expected value of the future costs due to recidivism.

The estimation procedure used to value the crime reduction from the Corpsmember and non-Corpsmember perspectives is quite similar to the social procedure. The basic difference is the treatment of the value of stolen property. From the non-Corpsmember perspective, reductions in the amount of stolen property result in benefits, and

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<sup>1/</sup>This procedure assumes that other criminals do not change their behavior because of the reduction in crime among Corpsmembers (i.e., they do not "take up the slack" left when Corpsmembers reduce their criminal activities). That is, the reduction in criminal activity among Corpsmembers is assumed to not make it significantly more profitable for other persons to enter into illegal activities and replace the Corpsmembers.

<sup>2/</sup>In some instances, the respondent could not tell the interviewer the charge for which he or she was arrested. In this case the arrest was coded as unspecified, and the estimated cost of an average arrest was used to value these unspecified arrests.

thus are added to the direct losses to victims ( $O_i VC_i$  in the equation in Table III.7).<sup>1/</sup> The Corpsmembers who engage in less crime no longer receive the stolen property, and thus should view at least part of its value as a loss. Any difference between these benefits and costs will represent the social costs associated with stolen property--in particular, damaged property, fencing costs, added risk, and the loss of legal title to the goods. Only the savings from the reduction in resource losses, not the entire value of the stolen property, are included in the social benefit-cost estimates.<sup>2/</sup>

Not all of these crime-related benefit components were estimated. As was mentioned in the benefit-cost overview, we did not have an accurate method for estimating the psychological costs of crime; thus, they have been omitted from the benefit estimation. In addition, the lack of adequate data has forced us to omit the change in crime prevention costs. Because of these omissions, our estimates of the benefits of reduced crime will probably underestimate the true benefits.

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<sup>1/</sup> Because some Corpsmembers would be expected to be victims of crime, some of the reduction in victims' losses should be counted as a benefit to Corpsmembers. However, this gain is likely to be very small, and thus the entire savings is treated for analytical purposes as a gain to non-Corpsmembers.

<sup>2/</sup> A related difference between the value of reduced crime as seen from the three perspectives is the reduced criminal penalties. Corpsmembers view this as a benefit because they will spend less time in jail or prison. There is also a gain to society to the extent the Corpsmembers are more productive, on balance, when they are out of rather than in prison. These benefits, however, are not included in the estimation because of the lack of adequate data with which to measure (in the short run) and value them (in general).

The measured benefit components associated with the reduction in crime will be discussed below. The first benefit discussed is the reduction in direct losses to victims associated with personal injury and property damage; the second is the reduced value of stolen property; and the third is the reduction in resources devoted to the criminal justice system.

## 2. Reduced Personal Injury and Property Damage

Personal injury and property damage are two of the most serious components of the losses incurred by crime victims. We have been able to value four specific components of these costs by using data collected as part of the National Crime Survey (NCS) program.<sup>1/</sup> These components are as follows: (1) the average value of property damage due to criminal acts; (2) the average cost of the medical care needed by victims of personal crimes; (3) the average administrative cost incurred by insurance companies when compensating insured victims; and (4) the average value of the output lost when victims lose time from work while they are recovering from crimes (or, in the case of murder, because of death). The cost per arrest of these items is given in Table III.8.

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<sup>1/</sup> The data from the National Crime Survey are a good source of information regarding criminal incidents. The data are based on a survey of approximately 60,000 households (containing 135,000 individuals) and 14,000 business establishments. The data used here are from the criminal-incident data extracted from the main National Crime Survey data base. They were gathered during the first half of 1977 and refer to incidents that took place in 1976. For a more detailed description of this data, see Criminal Victimization in the United States, 1974: A National Crime Survey Report, Law Enforcement Assistance Administration, U.S. Department of Justice, 1977. Wesley G. Skogan provided us with the information needed from this data base.

TABLE III.8

## ESTIMATED COSTS OF PERSONAL INJURY AND PROPERTY DAMAGE PER ARREST

Arrest Category	Property, Medical, and Insurance Costs per Incident	Lost Output per Incident	Total Measured Cost per Incident	Incidents per Arrest	Cost per Arrest
Murder	\$ 537.61 <sup>a/</sup>	\$100,000.00	\$100,537.61	1.0	\$100,537.61
Robbery	46.04	27.88	73.92	7.7	569.18
Felonious Assault	66.51	29.32	95.83	5.1	488.73
Burglary	30.99	5.29	36.28	14.8	536.94
Larceny/Motor Vehicle Theft	17.33	2.88	20.21	20.2	408.24
Narcotics	N.E.	N.E.	N.E.	N.E.	N.E.
Other Personal	8.86	9.13	17.99	5.2	94.09
Other Miscellaneous	N.E.	N.E.	N.E.	N.E.	N.E.
Unspecified	8.68	2.78	11.46	14.9	170.79

N.E. means that the amount could not be estimated and is assumed to be small, so that zero will subsequently be used.

<sup>a/</sup> The murder estimate does not contain an estimate of insurance costs, which would be very small compared to the other costs because only the administrative (and not the transfer) costs of insurance are counted.

Once the victimization data had been obtained, estimating these direct losses to victims was relatively straightforward for the following five arrest categories: robbery, felonious assault, burglary, larceny and motor-vehicle theft, and other personal crimes. However, the remaining categories posed some problems. The losses from murder were difficult to estimate because data for this crime are not collected as part of the National Crime Survey program, and the value of a lost life is difficult to measure. Victimization losses from narcotics violations and other miscellaneous crimes were not available. However, these crimes are primarily "victimless," so that the direct losses to victims are small; hence, we used a value of zero. Finally, a method had to be found to estimate the average cost of an unspecified crime. The following four subsections will describe the techniques used to estimate the direct losses to victims of these various groups of crimes.

Robbery, Felonious Assault, Burglary, Larceny or Motor-Vehicle Theft, and Other Personal Crimes. Estimating the direct losses to victims of these crimes was relatively straightforward because NCS obtained detailed information on the victims' losses from these crimes. To estimate the expected property-damage costs per incident, we multiplied the percent of the victims reporting property damage by the average cost of repairing or replacing the property. The expected medical costs per incident were estimated in a similar manner by

multiplying the percent of victims who reported incurred medical costs by the average amount of the costs.<sup>1/</sup>

Estimating the social benefit from reduced insurance costs was more problematic because only the administrative costs of an insurance plan represent social costs (the compensation expenditures are merely transfers between individuals who are pooling their risks in the insurance plan). To estimate the value of the change in administrative costs of insurance, we first estimated the ratio of administrative costs to claims paid, with data from both the government and the insurance industry.<sup>2/</sup> For medical insurance the ratio was approximately 5 percent, while the ratio for property insurance was approximately 28 percent. The average claims paid for crime-related medical treatment and property damage were estimated for each crime category by using the NCS data. The changes in insurance administrative costs were then estimated by multiplying the insurance compensation amount by the appropriate ratio for administrative costs.

The final component of the personal injury and property loss to victims is the lost output when crime victims lose time from work. To value this lost output, we multiplied the average number of hours

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<sup>1/</sup> For the average cost of both property damage and medical care, the NCS data apply only to those who actually incurred costs. That is why it is necessary to multiply by the percent of victims who incurred these costs to obtain estimates on a per-incident basis.

<sup>2/</sup> Data were from the fiscal year "Budget of the United States Government" regarding expenditures for the administration of the federal crime-insurance program operated by the Federal Insurance Administration (see page 505 of the "U.S. Budget," Appendix: Fiscal Year 1979). The data for private insurance plans were obtained from Best's Aggregates and Averages, 1977, Oldwick, New Jersey: A.M. Best Company, 1977.

lost from work for each crime category (as estimated from the NCS data) by \$6.01, which is the average hourly gross compensation rate for workers in the nongovernment sector.<sup>1/</sup>

All these estimates of the value of the direct losses to victims have been calculated on a per-incident basis (primarily because the NCS data are collected on the same basis). However, because we need estimates of the average losses per arrest, we must convert incidents to arrests. This conversion is performed by multiplying the various estimates by the ratio of incidents to arrests shown in Table III.8.<sup>2/</sup>

Murder. Estimating the social benefits derived from a reduction in the number of murders was difficult not only because of the problems associated with valuing human life, but because no victimization data on murder are gathered by the NCS. For our purposes, we have adopted a conservative strategy. We have assumed

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<sup>1/</sup>The average gross hourly wage rate for U.S. nongovernment workers in 1977 was \$5.24 (The Employment and Training Report of the President, U.S. Department of Labor, Employment and Training Administration, 1978, p. 265). To obtain an estimate of output per hour, we need to estimate gross compensation (i.e., the cost to the employer of the employee). This estimate is obtained by multiplying the wage rate by 1.1467 (see the discussion of fringe benefits in Section B). The estimate of total compensation per hour is thus  $\$5.24 \times 1.1467 = \$6.01$ .

<sup>2/</sup>The estimated number of incidents (based on the NCS data) and the estimated number of arrests (based on FBI data) used to compute these ratios were obtained from the Sourcebook of Criminal Justice Statistics--1977, U.S. Department of Justice, Law Enforcement Assistance Administration, 1978, Table 3.1, 3.16, 4.1. These data are for 1975, the year for which the most recent published data were available. This procedure merely assumes that the actual reduction in crime is greater than the reduction in arrests by a factor equal to the national incident to arrest ratio. It does not assume that the arrested person personally committed all the uncleared criminal incidents.

that the property damage and medical costs are the same for murder as they are for victims of felonious assault who actually incurred medical costs.<sup>1/</sup>

The only other cost we have assigned to murder is the value of the output the murdered person would have produced had they lived which admittedly is a conservative measure of the loss of life (see below). There are several estimates of this lost output, ranging from \$100,000 to over \$400,000.<sup>2/</sup> In keeping with general conservative nature of our estimates, we use the lower end of this range. The results of this estimation are presented in Table III.8. It must be emphasized that these estimates are extremely conservative because they do not account for any of the psychological costs that murder imposes on its victims, their families, and potential victims. However, we will present some tests in the final chapter that indicate what effect this exclusion of psychological costs has on the final estimate of net present value.

Narcotics Violations and Other Miscellaneous Crimes. These categories contain primarily "victimless" crimes; thus, it is difficult to estimate the value of any direct losses incurred by victims.<sup>3/</sup>

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<sup>1/</sup> Insurance costs associated with murder were not estimated; however, they are probably relatively small because only administrative costs would enter into the social perspective.

<sup>2/</sup> This range of estimates is given in Steven E. Rhoads, "How Much Should We Spend to Save a Life?" The Public Interest, Spring 1978, pp. 74-92. For a detailed discussion of the problems associated with valuing life, see M.W. Jones-Lee, The Value of Life: An Economic Analysis, Chicago: The University of Chicago Press, 1976.

<sup>3/</sup> The "Other Miscellaneous Crimes" category contains such crimes as prostitution, failure to make family-support payments, gambling, drunkenness, obstructing the police, obscenity, and vagrancy.

While it is clear, at least in some cases, that there are social costs associated with these crimes (other than the judicial system costs discussed below), we have no way to accurately measure them. Therefore, we have omitted these costs from the analysis.

Unspecified Crimes. This category of crimes was created to deal with those individuals in our sample who, when interviewed, reported that they had been arrested, but reported that they did not remember or could not adequately specify the arrest charge. In such cases, the arrest charge was coded in the unspecified category.

In the absence of other information, we have assumed that the arrests in this category were for an "average" crime category; thus, to estimate the cost of this average charge, we have taken a weighted average of the costs of the other arrest categories (with zero used as the value for narcotics and other miscellaneous crimes arrests). The weights used for each crime in calculating this average were the proportions of total criminal incidents accounted for by that crime category.<sup>1/</sup> The results are shown in Table III.9.

Benefits from Reduced Personal Injury and Property Damage.

Once the values per arrest have been estimated for personal injury and property damage, the value of the benefits resulting from the Job Corps-induced reduction in these items can be estimated by using the techniques developed in the section on transfer programs. First, the reduction in arrests for the various categories is estimated

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<sup>1/</sup>The proportions were computed by using the estimated number of arrests provided in the Sourcebook of Criminal Justice Statistics--1977 (U.S. Department of Justice, Law Enforcement Assistance Administration). These arrest estimates are based on data reported by the FBI for 1975.

from interview data.<sup>1/</sup> Because discounting is unnecessary in the initial period, the benefits accruing during the in-program and first six postprogram months can then be estimated by simply multiplying the estimated reductions in arrests for each category by the value of personal injury and property damage per arrest for that category. For benefits accruing in later periods, it is necessary to extrapolate the Job Corps effect and then discount the future values in order to estimate the present value of the stream of future benefits. We used the procedure described in the section on transfers to value the future benefits,<sup>2/</sup> and then added in the early period benefits.

Overall we estimate that the present value of the benefits from the Job Corps effect on crime-related personal injury and property damage is \$274 per Corpsmember.<sup>3/</sup> Approximately 34 percent of this benefit derives from burglary reductions, 34 percent from the reduction in murder arrests, and 30 percent from reduced larceny and motor-vehicle theft arrests. These figures are presented in Table III.9.

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<sup>1/</sup>The interview data included all charges for which the individual was arrested. A "most serious" charge was selected from this list by using a ranking procedure that took into account measures of social concern regarding the crime (such as the Sellin-Wolfgang index; see Thursten Sellin and Marving Wolfgang, The Measurement of Delinquency, New York: John Wiley, 1974), and the relative social costs of the charges (determined from the data presented here, or system, personal injury, and property damage costs).

<sup>2/</sup>That is, a decay rate of 50 percent every five years, a forty-three-year expected worklife, a 5 percent discount rate, and using the effect estimated for the first six postprogram months as the basis for extrapolation.

<sup>3/</sup>The fade-out and worklife assumptions are primarily speculative for crime effects. Longer term data are needed to estimate these Job Corps benefits accurately.

TABLE III.9

## BENEFITS FROM REDUCED PERSONAL INJURY AND PROPERTY DAMAGE

Component	Behavioral Variable <sup>b/</sup>	Change in Behavior <sup>a/</sup>			Value Per Unit	Total Discounted Benefit
		In-Program Period	Months 1 to 6	Postprogram Period Months 7 to 516		
Murder	Number of Arrests	0.0009	0.0000	0.000	\$100,537.61	\$ 90.48
Robbery	Number of Arrests	0.0009	-0.0020	-0.0260	569.18	-11.61
Felonious Assault	Number of Arrests	0.0028	0.0023	0.0309	488.75	13.33
Burglary	Number of Arrests	0.0307	0.0131	0.1705	536.94	92.51
Larceny/Motor vehicle Theft	Number of Arrests	0.0345	0.0151	0.2027	408.24	79.71
Narcotics <sup>c/</sup>	Number of Arrests	0.0150	0.0010	0.0134	0	0
Other Personal	Number of Arrests	0.0111	0.0122	0.1638	94.09	13.26
Other Miscellaneous <sup>c/</sup>	Number of Arrests	0.0295	0.0379	N.E.	0	0
Unspecified	Number of Arrests	-0.0019	-0.0019	-0.0255	170.79	<u>-3.78</u>
<b>Total Benefits</b>						<u>\$ 273.90</u>

<sup>a/</sup> Reductions in arrests are shown in positive numbers. Negative changes in behavior (as with the postprogram robbery and unspecified categories) denote increased criminal activity among Corpsmembers.

<sup>b/</sup> See the text for a discussion of arrests as a measure of criminal activity.

<sup>c/</sup> These categories contain primarily "victimless" crimes. As a result, the value of reduced property damage and personal injury is small, not estimated, and assumed to be zero in deriving total benefits.

### 3. Reductions in Stolen Property

The procedure for estimating the value of changes in the amount of stolen property is essentially the same as that used to value changes in personal injury and property damage. Estimates of the net property loss per arrest for several theft arrest categories were obtained from victimization data. The amount of property loss by crime category was then used to value the estimated effect of Job Corps on the average number of arrests per Corpsmember by crime category.

The estimates of stolen property per arrest were obtained from NCS data. These figures were adjusted, as shown in Table III.10, to net out the average value of the property recovered from the value of the stolen property. Therefore, the numbers represent the expected net loss to the victims of the various categories of theft incidents. The per-incident estimates are then adjusted by the ratio of incidents to arrests to obtain estimates on a per-arrest basis.<sup>1/</sup> The figures for the unspecified arrest category are the weighted averages of the expected losses for all crime types where zero was used for the value of stolen property in nontheft crimes, and the weight for each crime type was the proportion of total arrests classified as that crime type. It is interesting to note that among theft crimes the highest average value of stolen property is attributed to burglary (\$3,564 per arrest), and that robbery has the lowest average (\$738 per arrest).

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<sup>1/</sup> The stolen-property figures, like the personal-injury and property-damage figures, were obtained from the National Crime Survey incident file for 1976 with the assistance of Wesley Skogan. The ratios of incidents to arrests for each of the theft crime types are the same as those used in the personal-injury and property-damage analysis (see Table III.8).

TABLE III.10  
VALUE OF STOLEN PROPERTY

Arrest Category	Average Value of Property Stolen per Incident	Average Value of Property Recovered per Incident	Average Property Loss per Incident	Incidents per Arrest	Average Value of Property Loss per Arrest
Robbery	\$ 178.19	\$ 82.40	\$ 95.79	7.7	\$ 737.58
Burglary	261.34	20.53	240.81	14.8	3,563.99
Larceny/Motor Vehicle Theft	137.08	40.51	96.56	20.2	1,950.51
Unspecified	46.95	10.98	35.97	14.9	535.95

Source: Unpublished data from the National Crime Survey Program.

The estimates of the Job Corps effect on arrests were the same as those used in the personal-injury and property-damage analysis. If we use our standard assumptions regarding future patterns of effects and a 5 percent discount rate, the estimated present value of the net reduction in stolen property due to Job Corps is \$968 per Corpsmember. As might be expected, the large value per arrest for burglary (in addition to the relatively large effect Job Corps had on burglary arrests) resulted in burglary accounting for 65 percent of this total value. A detailed breakdown of the benefits is presented in Table III.11.

Non-Corpsmembers will view the reduction in stolen property as a benefit (because the goods are no longer stolen from them), while Corpsmembers will view it as a cost (because they no longer receive the stolen goods). However, the benefit to non-Corpsmembers will not necessarily equal the cost to Corpsmembers. For example, if thieves try to convert stolen goods into cash, they will be able to realize only about 35 percent of the goods' value to the victims of theft.<sup>1/</sup> Furthermore, there may be a decline in the social value of the goods for any one of three reasons: (1) the goods may be damaged; (2) the thief (and whoever else ultimately receives the stolen property) does not have a legal title to the good; and (3) resources (human labor and others) are used up in fencing and related activities for selling stolen property. Therefore, the estimation of the value of the \$968

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<sup>1/</sup>This estimate is taken from "Heroin Related Crime," Drug Enforcement Administration, February 1977. The figure is based on a study by McGlothlin et al. (McGlothlin, William H., V.C. Tabbosh, C.D. Chambers, and K. Jamison, Alternative Approaches to Opiate Addiction Control: Costs, Benefits and Potential, Final Report, BNDD contract J-70-33, Washington, D.C., 1972) and includes an adjustment for the fact that stolen cash need not be converted.

TABLE III.11

## VALUE OF REDUCED AMOUNT OF STOLEN PROPERTY

Component	Behavioral Measure	Change in Behavior		Value Per Unit	Total Discounted Benefit
		In-Program Period	Postprogram Period Months 1 to 6    Months 7 to 474		
Robbery	Number of Arrests	.0009	-.0020    -.0268	\$ 737.58	\$ -15.04
Burglary	Number of Arrests	.0307	.0133    .1785	3,563.99	614.01
Larceny/Motor Vehicle Theft	Number of Arrests	.0345	.0151    .2026	1,950.51	380.83
Unspecified	Number of Arrests	-.0019	-.0019    -.0255	535.95	<u>-11.86</u>
<b>Total Value</b>					<u>\$ 967.94</u>

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735

reduction in stolen property as seen by the different analytical perspectives is quite difficult to compute.

To facilitate our estimation we assume that thieves directly consume property obtained through larceny, and that they convert property obtained through robbery and burglary into cash (if it is not cash to begin with). Thus, the \$614.01 per Corpsmember decrease in property obtained through burglary implies a cost to Corpsmembers of only \$214.90 (35 percent of \$614.01), while the cost to Corpsmembers of the decline in larceny would be the entire \$380.83. For unspecified arrests, we assume, as above, that the cost to Corpsmembers is the weighted average of the costs for all arrest types. The resulting total loss to Corpsmembers is \$580.51.

The difference between the \$968 benefit to non-Corpsmembers and the \$581 cost to Corpsmembers is the net social benefit. This \$387 social benefit is derived from three sources. First, there are fewer resources devoted to fencing activities. Second, there are reductions in damage to property that would otherwise have been stolen. Third, there is less loss in value due to stolen goods being sold at a discount, because the legal title attached to the good has been destroyed, and, hence, risk has been added (i.e., the purchaser has no legal recourse against the seller if the good proves to be defective).

#### 4. Reduced Criminal Justice System Costs

The final, and largest, measured benefit associated with reduced criminal activity among Corpsmembers is the resource savings due to a decline in arrests. This benefit is estimated by multiplying

the Job Corps-induced reduction in arrests by the average cost of processing an arrestee through the criminal justice system. This calculation is performed for each of the nine crime categories, so that not only reductions in the overall level of Corpsmember criminal activity are valued, but changes in the portfolio of criminal activity are also valued.

The average cost figures were estimated on the basis of a study on justice system costs in Baltimore, Maryland.<sup>1/</sup> This study broke down total system costs by major subsystem, police, detention, district court (for preliminary hearings and misdemeanors), Supreme Court bench (appeals and felonies), and corrections. The costs were also broken down by crime type. Because the study also included data on the number of people arrested for each crime type, it was possible to estimate average costs per arrest for the different crime categories. The average cost of an unspecified arrest was taken to be the weighted average cost for all arrests.

While the Baltimore data probably reflect the relative costs of the different arrest charges, they may be inaccurate for nationwide studies because they were obtained from only a single jurisdiction. Furthermore, the Baltimore data were obtained in fiscal year 1974, and we need estimates for 1977. Therefore, an adjustment was necessary to obtain estimates of the average cost of processing the different types of arrests that would be appropriate for a 1977 evaluation of a nationwide program like Job Corps. Our adjustment procedure

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<sup>1/</sup> Michael A. Lettre and Anthony M. Syntax, "Application of JUSSIM to the Maryland Criminal Justice Planning Process," Maryland Governor's Commission on Law Enforcement and the Administration of Justice, 1976.

entailed calculating the average system cost per arrest for the United States as a whole. This was done by dividing total fiscal year 1976 expenditures (the most recent year available) for all levels of the criminal justice system by the estimated total number of arrests for that time period;<sup>1/</sup> the estimated value was \$2,048.33. This can be compared with an average cost per arrest for all arrest types of \$1,262 in Baltimore during fiscal year 1974. The ratio of these two numbers (1.6231) was then used to adjust the Baltimore average cost by crime category so that they more closely reflected national cost levels in 1977.<sup>2/</sup> Once this adjustment had been made, the resulting average cost figures were used to estimate the criminal justice system resource savings. These savings were estimated to have a present value (under the assumptions outlined in the transfer section) of \$1,895.74 per Corpsmember. Of this total, more than one-half was accounted for by the reduction in burglary; the reduction in larceny and motor-vehicle thefts accounting for another 25 percent. These results are detailed in Table III.12.

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<sup>1/</sup> The cost data came from Expenditure and Employment Data for the Criminal Justice System--1976, U.S. Department of Justice, 1978. The figures include all expenditures except those incurred by police for non-crime-related activities (see p. 382). The estimated number of arrests came from FBI data presented in Crime in the United States, 1976: Uniform Crime Reports, Federal Bureau of Investigation, U.S. Department of Justice.

<sup>2/</sup> For example, the average cost of processing a burglary arrest, as estimated from the Baltimore data, was \$3,632 per arrest. This number was multiplied by the ratio of national to Baltimore costs, 1.6231, to obtain an estimate of the national average cost per burglary arrest of \$5,895. It should be noted that because system costs (as defined here) are incurred only when a person is arrested, it is unnecessary to adjust the figures further to reflect the number of incidents per arrest.

TABLE 111.12

## REDUCED CRIMINAL JUSTICE SYSTEM COSTS

Component	Behavioral Variable	Change in Behavior			Value Per Unit	Total Discounted Benefit
		In-Program Period	Postprogram Period			
			Months 1 to 6	Months 7 to 474		
Murder	Number of Arrests	0.0009	0.0000	0.0000	\$24,767/ arrest	\$ 22.29
Robbery	Number of Arrests	0.0009	-0.0020	-0.0268	12,087/ arrest	-246.46
Felonious Assault	Number of Arrests	0.0028	0.0023	0.0309	2,732/ arrest	74.54
Burglary	Number of Arrests	0.0307	0.0133	0.1785	5,895/ arrest	1,015.61
Larceny/Auto Theft	Number of Arrests	0.0345	0.0151	0.2027	2,618/ arrest	511.15
Narcotics	Number of Arrests	0.0150	0.0014	0.0187	2,590/ arrest	77.45
Other Personal	Number of Arrests	0.0111	0.0122	0.1638	756/ arrest	106.58
Other Miscellaneous	Number of Arrests	0.0295	0.0379	0.5087	919/ arrest	379.89
Unspecified	Number of Arrests	-0.0019	-0.0019	-0.0255	2,048/ arrest	-45.31
Total Benefits						<u>\$1,895.74</u>

739

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## 5. Summary of the Benefits Related to Crime Reduction

Of the three measured crime-related components, the combined value of the social benefits from reduced personal injury and property damage, reduced stolen property, and reduced judicial system costs is estimated to be \$2,557 per Corpsmember. This is the largest of the measured social benefits and covers over 50 percent of the Job Corps program's cost per Corpsmember. The combined value of non-Corpsmember benefits is \$3,138 per Corpsmember, or approximately 55 percent of the program's cost to non-Corpsmembers. Corpsmembers will view the reduction in stolen property as an income loss of about \$580 per Corpsmember.

The benefits derived from the Job Corps effect on criminal activities are attributable in large part to burglary. The benefits associated with fewer burglary arrests account for over one-half of the total benefits. This is due in part to the relatively large effect the program appeared to have on this type of crime, and in part to the fact that the social costs of burglary are relatively high.

One important qualification to the valuation of the Job Corps effect on crime is that we have been able to measure only a part of the total benefits. In particular, benefits from reduced fear about crime have not been measured. These benefits could be substantial, and it is possible that non-Corpsmembers would be willing to pay a good deal more than the average costs measured here in order to avoid being victimized. Thus, while our estimates of the three benefit components studies may be accurate, our overall estimate of the value associated with reductions in crime is low.

## E. REDUCED DRUG AND ALCOHOL ABUSE

The only benefit associated with reduced drug and alcohol abuse that will be measured here is the reduction in treatment costs that should accompany the reduction in abuse. Thus, psychological benefits (or costs) to Corpsmembers and non-Corpsmembers will not be measured. However, benefits associated with increased earnings and reduced drug-related crime brought about by decreases in drug and alcohol abuse should be captured in our measures of earnings and crime.

It was difficult to value the decline in drug and alcohol treatment because very little information on the use and type of such treatment was obtained in the interviews.<sup>1/</sup> The costs vary tremendously by type of treatment--group therapy may cost only a few hundred dollars per person treated, while in-patient hospital care can cost thousands of dollars per person treated. Because of the data limitations, our estimates for this benefit component are less precise than for other components.<sup>2/</sup> However, the procedures followed for valuing the effects are the same.

The behavioral measure used was whether or not a person was in a drug- or alcohol-treatment program anytime during the interview period (either the in-program period or the first six-month postprogram period).

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<sup>1/</sup> The questions regarding drug and alcohol abuse were greatly restricted during the federal clearance process. A slight change is being planned for subsequent interviews to provide more detailed information on each incidence of treatment, including two important aspects of drug treatment costs--detoxification and residential care.

<sup>2/</sup> The value estimated for drug and alcohol treatment is probably a reasonable average figure; however, because of the wide variance in treatment costs, there is a great deal of uncertainty (i.e., high variance) associated with these estimates.

As a result, the shadow price had to be the cost of a drug or alcohol treatment during the period. This price was determined by estimating the costs of drug and alcohol treatments separately, and then using the average of the two as a measure of the cost per treatment.

The cost of drug treatment was estimated by using a report by Bjorklund et al.<sup>1/</sup> The report provided daily costs and average lengths of treatment for a sample of forty-four treatment programs from ten drug-abuse treatment centers. Altogether, fourteen different types of treatment were studied. Using this data, we computed an average cost per treatment for each drug type, and then constructed a weighted average from the individual estimates (using as weight the relative sizes of the treatment types in terms of admissions per year). The costs of the different treatments ranged from \$156 per treatment for outpatient detoxification to \$2,262 per treatment for residential programs for youths.<sup>2/</sup> The largest program (a weight of 0.37) was outpatient methadone maintenance; its average cost was \$1,694 per treatment. The weighted average of the various drug treatment costs was \$1,382.19 per treatment in 1977 dollars.

The estimates used for the costs of alcohol treatment were taken from an article by Hertzman and Montague.<sup>3/</sup> They reported monthly costs

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<sup>1/</sup> Peter B. Bjorklund, P.A. Schooley, W. Byrd, and N.S. Borgeson, A Survey of Drug Abuse Treatment Costs, Stanford, California: Stanford Research Institute, 1975.

<sup>2/</sup> All cost numbers from the Bjorklund study have been multiplied by 1.1049 to adjust them for the inflation (measured by the change in the GNP price deflator) since 1975 (the year the Bjorklund survey was made).

<sup>3/</sup> M. Hertzman and B. Montague, "Cost-Benefit Analysis and Alcoholism," Journal of Studies on Alcohol 38, No. 7, 1977, p. 1382. They report that the numbers were originally estimated as part of a study performed by the California Department of Health and the National Institute on Alcohol Abuse and Alcoholism. As was the case with the drug-treatment members, these average cost figures mask a great deal of the variance in costs across specific treatment programs.

of \$100 for outpatient care, \$3,000 for inpatient hospital care, and \$450 for intermediate care. Assuming that the relationships between these types of treatments is the same as those observed for drug treatment (60 percent outpatient and 21 percent inpatient), then the weighted average of the costs is \$788.80 per month. In the absence of any other information, we have made the additional assumption that treatments last, on average, a month, so that the \$788.80 is also the cost per treatment.<sup>1/</sup> Averaging this figure with the estimate of drug-treatment costs yields an estimated cost per drug or alcohol treatment of \$1,085.50.

This price must then be multiplied by the Job Corps effect on drug-treatment utilization in order to value the benefit. The estimated effects were a reduction of about 2 treatments per 100 Corpsmembers (-0.0205) during the in-program period, and a reduction of just over 1 treatment per 100 Corpsmembers (-0.0132) during the first six-month postprogram period. Together, these estimates imply a benefit of \$36.58 per Corpsmember. If the effect decays by a rate of one-half after five years and continues to decay at that rate over an expected worklife of forty-three years, the present value of the total benefit will be \$174.79 per Corpsmember at a 5 percent discount rate.<sup>2/</sup>

This \$174.79 is a benefit to non-Corpsmembers who would have had to pay for this treatment in the absence of Job Corps. Because there is no direct offsetting cost to Corpsmembers associated with these benefits, the entire amount is a benefit to society.

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<sup>1/</sup>The sensitivity of the final results to these assumptions will be examined in Chapter V.

<sup>2/</sup>The fade-out and worklife assumptions are primarily speculative for drug/alcohol treatment. Longer-term data are needed to accurately estimate these Job Corps benefits.

## F. USE OF ALTERNATIVE TRAINING AND EDUCATIONAL PROGRAMS

Alternative training and educational programs generate a wide variety of benefits and costs in a manner similar to those generated by Job Corps. In the short-run, there are the costs of operating the programs, including the opportunity cost of participant labor. In the long-run, there will be benefits associated with increased earnings, less dependence on transfer programs, less antisocial behavior, and psychological benefits from more socially acceptable lifestyles. If Job Corps causes Corpsmembers to alter their use of alternative training and education programs, then the resulting changes in all these benefits and costs should be incorporated into the evaluation of Job Corps.

### 1. General Methodology

In an evaluation with a relatively long follow-up period, the incorporation of these benefits and costs into the evaluation would be relatively straightforward. The various benefits would be captured in the estimates of the Job Corps effect on earnings, transfer dependence, and antisocial behavior that were discussed in the previous sections. The change in costs associated with a change in the use of alternative programs would be estimated by using the interview data to estimate the change in the average number of months that Corpsmembers use such programs. This change would then be multiplied by the average operating cost per participant month. A further refinement would be to perform this cost estimation procedure on a disaggregated basis for several program types--including CETA training (possibly by program), public service employment, and high school, college, and vocational education. This would enable any change to be made in the general level of alternative program use and, thus, any change to be valued in the specific type of programs used.

The problem with this procedure for our analysis is that we do not have a long follow-up period. As a result, our net present value calculations will be biased because of an inability to fully capture the second-round changes in benefits and costs resulting from Job Corps-induced changes in the use of training and educational programs. For example, if Job Corps motivates Corpsmembers to obtain vocational training that they would not have obtained in the absence of Job Corps, our net present value results will be biased downward for two reasons. First, we will underestimate the Job Corps effect on earnings because while Corpsmembers are in vocational education programs, they will earn less than they would have if they had been in the labor market. Second, it is highly unlikely that we will observe any effect of this post-Job Corps vocational training on Corpsmember earnings during our six-month follow-up period. As a result, benefits are understated, while costs are relatively accurately captured; thus, the estimated net present value will be too low.

It is also possible that our net present value estimates may have some upward bias. For example, if, in the absence of Job Corps, Corpsmembers would have obtained a good deal of training and education through alternative programs, then we may overestimate the Job Corps effect on average earnings.<sup>1/</sup> Thus, if the individuals in our comparison group enroll in high school programs to a greater extent than Corpsmembers (i.e., if we estimate that in the absence of Job Corps the Corpsmembers would have

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<sup>1/</sup>This fact highlights the trouble inherent in evaluating a program in the presence of a variety of alternative (and, in some sense, competing) programs. Our estimates should be understood to refer to a comparison of Job Corps with a general mix of other programs, rather than as a treatment versus no-treatment comparison.

obtained more high school education), their earnings during the follow-up period will be understated for the same reasons Corpsmember earnings were understated in the previous example. Therefore, estimates of the Job Corps effect on postprogram earnings that were based on these low comparison-group earnings would be biased upward. This would in turn lead to overestimates of net present value.

A potential way to avoid these biases in such a short-run evaluation would be to incorporate estimates of the returns to education and training into the evaluation.<sup>1/</sup> In this way the present value of any future earnings gains associated with participation in education and training programs other than Job Corps could be figured into our estimates of the Job Corps effect on long-run earnings. However, for several reasons, this method was not adopted. First, the inclusion of these estimates would lead to the double-counting of some earnings gains, unless the effects of such alternative education and training programs could be eliminated from our direct measures of earnings based on interview data. Second, many of the studies that estimate returns to education deal with populations that are not nearly as disadvantaged as the Corpsmembers; therefore, their estimates may be inappropriate for this evaluation. Finally, it is not at all clear that the returns to completing an education or training program can be used to infer the returns to completing a portion of a program.<sup>2/</sup> Even for those

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<sup>1/</sup> Such estimates are contained in Jacob Mincer, Schooling, Experience, and Earnings, New York: National Bureau of Economic Research and Columbia University Press, 1974; and Zin Griliches, "Earnings of Very Young Men," in Income Distribution and Economic Inequality, edited by Zin Griliches, Wilhelm Krelle, Hans-Jurgen Krupp, and Oldrich Kyn, New York: Halsted Press, 1978, pp. 209-219.

<sup>2/</sup> There is substantial evidence of a "diploma effect," in which the benefits from completing a program are significantly higher than those gained by almost completing the program.

cases in which returns to a year of schooling have been estimated, these estimates are inappropriate for valuing the changes of a few months of discontinuous participation, such as those observed for disadvantaged youths.

Therefore, the procedure adopted here is to expressly account for Job Corps-induced changes in the operating costs of alternative programs, while not imputing any observed changes in benefits associated with the change in the use of these alternative programs. We will distinguish between five types of alternative education and training programs: high school, vocational education, college or university education, an unspecified educational program, and CETA or other training. In addition, we will consider the Job Corps effect on public-service employment. The details of the exact procedures used to estimate the changes in the costs of these programs are outlined below, while the results are summarized in Table III.13.

## 2. High School Education

There is a fairly sizable reduction among Corpsmembers in participation in regular high school programs. This is probably due to the fact that (1) they obtain basic education in Job Corps, (2) they are unable to participate in such programs while in Job Corps and some left Job Corps too late to enroll for school year 1977-78, and (3) many Corpsmembers obtain GEDs (i.e., high school equivalency certificates) while in Job Corps, so that further high school education is unnecessary after they leave. The changes in participation are estimated from interview data on the number of months respondents spent in various training and educational programs.

The operating costs of high school programs were estimated by using national data on the average operating costs for school year

TABLE III.13

## BENEFITS FROM REDUCED UTILIZATION OF ALTERNATIVE TRAINING AND EDUCATIONAL PROGRAMS

Component	Change in Behavior				Value Per Unit	Total Discounted Benefit
	Behavioral Measure	In-Program Period	Postprogram Period			
			Months 1 to 6	Months 7 to 474		
Use of Training and Educational Programs other than Job Corps						
High School	Months in High School	.5479	.2098	2.0236	\$187.42/mo.	\$521.27
Vocational education	Months in Voc. Ed.	.0916	-.0047	-.0630	\$ 93.27/mo.	3.09
College/University	Months in College	.0654	-.0595	-.7987	\$410.06/mo.	-232.91
Unspecified school	Months in School	.1632	.0230	.3087	\$231.12/mo.	94.31
CETA and other training programs	Months in CETA/Other	.1232	-.0295	-.3959	\$173.33/mo.	-33.08
Public service employment	Months in PSE	.2078	.0428	.5745	\$ 55.90/mo.	37.09
Training allowances	Training Allowances	\$22.2760	\$4.7372	\$63.5905	N.A.	<u>72.71</u>
Total social benefit <sup>a/</sup>						\$390.57

<sup>a/</sup>The value of the training allowances are not included since they represent a transfer item from taxpayers to those receiving training and, hence, are not social costs (i.e., their increases is not a social cost).

749

750

1975-76.<sup>1/</sup> These figures were then inflated to 1977 dollars by multiplying them by the change in the implicit price deflator for gross national product.<sup>2/</sup> The resulting cost estimate (\$187.42 per pupil month) was obtained by dividing the annual costs by the average length of a school term in months. Using the same assumptions regarding extrapolation and discount rates as before,<sup>3/</sup> we estimated the present value of the savings to be \$521.27 per Corpsmember. Of this amount, \$102.69 is due to reductions in the use of high school while the Corpsmembers are enrolled in Job Corps.

### 3. Vocational Education

As expected, there was a decline in the use of alternative vocational education programs among Corpsmembers while they were enrolled in Job Corps. However, during the first six months after they left the program, Corpsmembers were slightly more likely to be in a vocational education program other than Job Corps. These changes, measured in months of participation-per Corpsmember, are shown in Table III.13.

The operating-cost figures were obtained from a review of vocational

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<sup>1/</sup> See Digest of Education Statistics--1976 edition, National Center for Education Statistics, 1977, Table 75. The figures include all current operating costs as well as the interest on school debt. They do not include capital costs.

<sup>2/</sup> Between 1975-76 and the second quarter of 1977, this price deflator rose 7.65 percent.

<sup>3/</sup> The fade-out and worklife assumptions are mostly speculative for training and educational programs. Longer-term data are needed to accurately estimate these Job Corps impacts.

programs by Stromsdorfer.<sup>1/</sup> He most recently reviewed a study by Fernbach and Somers, in which the annual average cost of vocational training was estimated to be approximately \$661 for the United States during the period 1964-69. If these figures are inflated to 1977 dollars, this cost would be \$1,119.23, or \$93.27 per month.

The cost savings due to the reduced use of vocational education by Corpsmembers while they are in Job Corps average \$8.54 per Corpsmember. The increase in Corpsmember use during the first six postprogram months implies an increase in costs of about \$0.44 per Corpsmember. If this increase in costs is extrapolated to future periods by using our standard assumptions, the estimated present value of the net change in the use of alternative vocational educational programs is \$3.89 per Corpsmember.

#### 4. College and University Education

The effect of Job Corps on Corpsmember enrollment in college and university programs was similar to the effect on vocational education enrollment. There was a decline in Corpsmember use of these programs while they were in Job Corps. After leaving, however, Corpsmembers were motivated to increase their participation in college and university programs. Measured in months of participation, the average in-program reduction was 0.0654 months per Corpsmember, while the average postprogram increase was 0.0595 months per Corpsmember.

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<sup>1/</sup>Ernst W. Stromsdorfer, Review and Synthesis of Cost Effectiveness Studies of Vocational and Technical Education, Columbus, Ohio: ERIC Clearinghouse on Vocational and Technical Education, 1972. The cited study by Susan Fernbach and Gerald G. Somers is An Analysis of the Economic Benefits of Vocational Education at the Secondary, Post-Secondary and Junior College Levels, Madison, Wisconsin: Center for Studies in Vocational, Technical Education, University of Wisconsin, 1970.

The average operating cost of these programs was estimated from statistics provided by the National Center for Education Statistics.<sup>1/</sup> The national average cost per full-time equivalent student in a public college or university was estimated to be \$2,362 in the 1973-74 school year.<sup>2/</sup> Assuming a typical thirty-two-week year per full-time student implies an average cost of \$319.85 per month. If this figure is inflated to 1977 dollars by using the implicit price deflator, the resulting estimated average cost is \$410.06 per month.

Using these cost figures and our standard assumptions for extrapolating the postprogram increase in college and university participation, the present value of the net increase in operating costs is \$232.91 per Corpsmember.

##### 5. Unspecified Schooling

Some interview respondents indicated that they were in school, but could not specify the type of program (e.g., vocational, high school, or college/university). As a result, we constructed a special unspecified schooling category. Changes in participation were again estimated on a months-in-program basis. Average operating costs were estimated by taking a weighted average of the costs of the three specific types of education, where the weights were the proportion of all Corpsmembers reporting participation in an educational program made up by those who reported a specific type. The estimated average cost per participant was \$231.12.

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<sup>1/</sup> Digest of Education Statistics--1976 edition, p. 138.

<sup>2/</sup> For cost purposes, a part-time student is, on average, equivalent to one-third of a full-time student.

With (1) this cost number, (2) the estimated Job Corps effects (reductions in the use of schooling for both observation periods), and (3) the usual assumptions regarding the time pattern of future effects, the present value of the cost savings is estimated to be \$94.31 per Corpsmember.

#### 6. CETA and Other Training Programs

Because CETA-funded programs represent the vast majority of training programs available to Corpsmembers, the analysis of the operation costs of training programs was restricted to CETA programs. Specifically, we use CETA Title I programs because they represent most of the non-Job Corps employability development programs within CETA. It is implicitly assumed that the costs of other training programs do not differ substantially, on average, from those of the CETA Title I programs. Data for estimating these costs came from the CETA Quarterly Progress Reports and Desk Review (QPR). By dividing total expenditures by the number of participants served, average social costs were estimated to be \$173.33 per participant month.<sup>1/</sup>

This average cost per participant is multiplied by the average change in the number of months Corpsmembers participate in training programs, to provide an estimate of the value of the change. During the in-program period, Corpsmember use of training programs was reduced from

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<sup>1/</sup>The QPR divides costs into six categories: (1) administration, (2) allowances, (3) wages, (4) fringe benefits, (5) training, and (6) services to clients. The allowances, wages, and fringe benefits are treated as transfers, so that the social costs are just those in categories 1, 5, and 6. For exact definitions of the categories, see CETA Forms Preparation Handbook.

what it would have been in the absence of Job Corps by an average of 0.1232 months per Corpsmember. This implies a savings of \$21.35 per Corpsmember. After leaving Job Corps, Corpsmembers were motivated to increase their use of training programs by 0.0295 months per Corpsmember. This implied a cost of \$5.11 during the first six postprogram months. If this increase in the use of alternative training programs by Corpsmembers decays by 50 percent every five years for forty-three years, and if the associated costs are discounted at 5 percent, the present value of all future costs (excluding those incurred during the first six postprogram months) is \$49.32. By summing these costs, the present value of the net change in the operating costs of training programs due to Job Corps is approximately an increase of \$33.08.

#### 7. Training Allowances

As mentioned above, only part of the total expenditures for training represents social costs. Part of those expenditures--the allowances, pay, and fringe benefits--represent transfers to the trainees. As a result, these expenditures do not enter into the estimates of the social net present value; however, they do enter into the distributional perspectives of Corpsmembers and non-Corpsmembers.

These transfers were estimated directly from interview data. As a result, we have measured the allowances received from all training programs, and not just those funded by CETA. The receipt of training allowances from programs other than Job Corps reflected the degree to which Corpsmembers participated in such programs. While Corpsmembers were in Job Corps they received, on average, about \$20 less from these other programs than they would have received in the absence of Job Corps. This reflects the fact that their

participation in Job Corps prevented them from participating in alternative training and educational programs. Once Corpsmembers had left Job Corps, they were free to enter alternative programs, and the decrease in training allowances for Corpsmembers fell correspondingly. In the first six-month postprogram period, Corpsmembers' receipt of training allowances were reduced by \$4.74 from what we estimate they would have been in the absence of Job Corps. If this initial Postprogram effect is extrapolated by using our standard assumptions, the present value of the reduction in training allowances will be \$72.71. This reduction will be a cost to Corpsmembers and a benefit to non-Corpsmembers. Given our assumption about a dollar of benefit or cost being equivalent for everyone in society, these benefits and costs will offset each other exactly from the social perspective.

#### 8. Public Service Employment

As was the case for training programs' operating costs, we use CETA public service employment (PSE) programs as the basis for our cost estimates. This procedure is probably quite accurate because almost all public service employment jobs are CETA-funded (with the exception of WIN); and very few individuals in our sample (much less than 1 percent) report any WIN-related employment. Therefore, our CETA-based average cost estimates are probably reasonable. Data on these costs were obtained from the CETA Quarterly Progress Reports and Desk Reviews in the same manner as the training program costs. In the PSE case, the training and client services categories are quite small, and administration is the principal social cost. We have

included the costs from both Title II and Title VI programs.<sup>1/</sup> The resulting average social cost per participant month in public service employment is \$55.90.

As was the case for all the alternative education and training programs, Job Corps caused Corpsmembers to reduce their use of PSE programs while they were in the program. We estimate that if the Corpsmembers had not been in Job Corps, they would have spent, on average, 0.1232 months in public service employment. The program also led Corpsmembers to participate less in PSE during the first six postprogram months, although the magnitude of this latter effect is approximately 80 percent smaller than the in-program effect. If we use the CETA-based cost estimate and our standard assumptions about future benefits and the discount rate, the present value of the decrease in the administrative costs of public service employment is \$37.09.

#### 9. Overview of the Use of Alternative Programs

As was suggested at the beginning of this section, the effect of Job Corps on the use of alternative programs depends on the nature of the alternative program. In all cases, participation in Job Corps caused a reduction in participation in other programs while youths were participating

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<sup>1/</sup>There is some overlap between Titles I, II, and VI, so that the distinction between CETA training and CETA PSE is not always clearcut. There is also a problem with participant counts in Title II and VI, because participants are sometimes shifted between titles as funding is exhausted. However, the division of programs is fairly close to that adopted here, and the participant count problem is avoided by using costs per participant year.

in Job Corps. However, when Corpsmembers leave the program, they may be motivated to increase their use of more advanced training and educational programs--particularly vocational and college education--beyond what it would have been in the absence of Job Corps. The sum of the present values of the various cost changes is a reduction of \$390.57 per Corpsmember in costs of operating alternative training and educational programs. The largest cost reduction, \$521.27, is associated with lower use of high school programs. This is partially offset by the increases in costs associated with a higher likelihood for Corpsmembers to enroll in college and university programs--\$232.91 per Corpsmember. The net cost savings will be seen as a social benefit (at least in the short-run) that accrues primarily to non-Corpsmembers.

#### G. SUMMARY OF BENEFITS

Table III.14 summarizes the benchmark estimates of the values of each benefit component. As can be seen in Table III.14 the largest social benefit component is associated with reduced crime. These benefits from reductions in systems costs, personal injury and property damage, and costs related to the sale of stolen goods, account for over 50 percent of the social benefits. Another 40 percent of the social benefits are associated with the increases in output produced by Corpsmembers. The total social benefits are valued at \$5,237 per Corpsmember, while total non-Corpsmember benefits are valued at \$5,684. The larger benefits for non-Corpsmembers are due primarily to the fact that non-Corpsmembers will view reductions in transfers as a benefit, while society as a whole (i.e., society including the Corpsmembers) will see this benefit cancelled out by a corresponding cost to Corpsmembers.

TABLE III.14

## SUMMARY OF ESTIMATED VALUES OF JOB CORPS BENEFITS

	Analytical Perspective		
	Social	Non-CoPmember	CoPmember <sup>a/</sup>
<b>I. Output Produced by Corpsmember</b>			
• In-program output	\$ 756.92	\$ 670.87	\$ 86.03
• Increased out of Program output	1,238.81	0	1,238.81
• Increased tax payments on post-program earnings	0	106.63	-106.63
• Preferences for work over welfare	+	+	+
<b>II. Reduced Dependence on Transfer Programs</b>			
• Transfer payments	0	1,010.83	-1,010.83
• Administrative costs	119.65	119.65	0
<b>III. Reduced Criminal Activity</b>			
• Property damage and personal injury	273.90	273.90	0
• Stolen property	387.43	967.94	-580.51
• Justice system costs	1,895.74	1,895.74	0
• Reduced psychological costs	+	+	+
<b>IV. Reduced Drug/Alcohol Use</b>			
• Treatment costs	174.79	174.79	0
• Psychological benefits	+	+	+
<b>V. Utilization of Alternative Training and Educational Services</b>			
• Training and educational	390.57	390.57	0
• Training allowances	0	72.71	-72.71
<b>VI. Other Benefits</b>			
• Improved Corpsmember health status	+	+	+
<b>Total Value of Benefits</b>	<u>\$5,237.81</u>	<u>\$5,683.65</u>	<u>\$ -445.84</u>

<sup>a/</sup> Components are categorized as benefits according to their expected impact on the social net present values. Thus, some of the items listed here are costs to Corpsmembers. These items are indicated as negative benefits.

The Corpsmember costs corresponding to reductions in transfers to Corpsmembers are substantial. In fact, they are large enough to more than offset an earnings gain worth \$1,238 per Corpsmember. The largest loss in transfer income (and, correspondingly, the largest transfer-related benefit to non-Corpsmembers) is that associated with the public transfer programs. This lost income was worth, on average, \$1,011 to Corpsmembers, or approximately 40 percent of their total costs. Other costs were the loss in theft income and training program allowances. However, as we discuss in the next chapter, Corpsmembers receive many offsetting transfer benefits from Job Corps that are counted in program costs.

In Chapter V some alternative values of program benefits are estimated based on assumptions different from those underlying the values in Table III.14. The values developed in this chapter (and shown in Table III.14) are the ones that we have the most confidence in at the current time. As is shown in Chapter V, however, alternatives to the most speculative estimates and assumptions (e.g., the long-run effects of Job Corps) can yield substantially different values for benefits.

#### IV. PROGRAM COSTS

This chapter presents a detailed discussion of program costs and their estimation. For analytical purposes the various expenditures are divided into three categories: the first contains all of the budgetary expenditures made by the Job Corps and reported in its financial accounting system; the second category is the opportunity cost of Corpsmember labor while they are participating in the program; and the third category contains all of the other unbudgeted expenses. Items for the second and third categories are not included in the DOL financial accounts for Job Corps and, thus, must be estimated from other sources. In the first three sections of this chapter we discuss the measurement issues for each of the categories; in the fourth section, we then present the aggregation of costs into the total present values from the social, non-Corpsmember, and Corpsmember perspectives.

##### A. BUDGETARY EXPENDITURES

The program expenditures reported in this chapter are preliminary, but nearly complete, estimates provided by Job Corps. Final numbers for expenditures in fiscal year 1977 are not yet available, although the estimates used here are expected to be proximate to the final numbers (within \$20 per Corpsmember year). Each of the methods used to separate the various recorded expenditures into center operating expenditures, transfers to Corpsmembers, and central program and administrative costs is explained in this section. The budgetary items are separated into these subcategories both to help understand the financial costs and to show transfers to Corpsmembers, which are

treated differently in the benefit-cost estimates than are expenditures on resources that are used up in the program but would not have been in the absence of Job Corps. Table IV.1 provides a summary of the estimates for all of the major items in the Job Corps Financial Reporting System.

#### 1. Center Operating Expenditures

As shown in Table IV.1, center operating expenditures were the largest budgeted item (more than one-half of the total expenditures reported)--almost \$113 million during fiscal year 1977, or approximately \$5,500 per Corpsmember year. These expenditures were for such items as facilities and equipment leases, staff salaries, and inputs for work projects. Because these expenditures represent the value of resources paid for by non-Corpsmembers and are used up by Job Corps personnel in the program, they are costs for both non-Corpsmembers and society.

#### 2. Transfers to Corpsmembers

In addition to the operating expenditures mentioned above, Job Corps made sizable transfers to Corpsmembers. The total expenditure for these transfers, as indicated in Table IV.1, was over \$50 million, or approximately \$2,500 per Corpsmember year. The cash allowances paid to Corpsmembers accounted for 45 percent of these transfers. The remaining 55 percent represented a variety of in-kind transfers--particularly meals,<sup>1/</sup> housing, and medical services. These

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<sup>1/</sup>Center staff and visitors sometimes take meals at the centers and pay for these items themselves; this revenue is subtracted from total expenditures to arrive at transfer estimates.

TABLE IV.1

PROGRAM OPERATING EXPENDITURES FOR JOB CORPS IN  
FISCAL YEAR 1977, BY CATEGORY

Category	Total Expenditure Fiscal Year 1977 <sup>a/</sup>	Expenditure Per Corpsmember Year <sup>b/</sup>
Center operating expenditures excluding transfers to Corpsmembers		
Capital expenditures	\$102,492,363	\$4,986.73
Noncapital expenditures	<u>10,499,624</u>	<u>510.86</u>
Total	\$112,991,987	\$ 5,497.59
Transfers to Corpsmembers		
Cash allowances	\$ 22,382,734	\$1,089.03
In-kind transfers	<u>27,707,871</u>	<u>1,348.12</u>
Total	\$ 50,090,605	\$ 2,437.15
Central administrative costs		
Central administration	\$ 19,200,000	\$ 934.17
Recruitment and placement	13,200,000	642.24
Engineering support	13,600,000	661.70
Enrollee transportation	3,600,000	175.16
Union training contracts	5,200,000	253.00
Other miscellaneous	<u>2,000,000</u>	<u>97.31</u>
Total	\$ 56,800,000	\$ 2,763.58
Total program operating expenditures	<u>\$219,882,598</u>	<u>\$10,698.32</u>

Sources: Job Corps Financial Reporting Systems, and Office of Management and Budget.

<sup>a/</sup> Center expenditures and Corpsmembers' allowances were estimated on the basis of Job Corps financial data for fiscal year 1977. Central services and administrative cost estimates were obtained from the Office of Management and Budget.

<sup>b/</sup> Expenditures per Corpsmember year are calculated by dividing the overall expenditure figures by 20,553--the total Corpsmember years during fiscal year 1977.

items are costs to non-Corpsmembers and benefits to Corpsmembers; therefore, they will not affect the social net present value calculations.

In general, Job Corps expenditures were classified as operating or transfer expenditures directly from definitions given in the Job Corps financial reporting manual.<sup>1/</sup> The rule used to classify expenditures as transfers was whether the Corpsmembers could have reasonably been expected to consume an item in the absence of Job Corps. Thus, food and clothing expenditures, as well as Corpsmember allowances, were treated as transfers, while expenditures for training were treated as operating expenses.

### 3. Central Administrative Costs

Cost estimates for the federal administration of Job Corps and for centrally provided program services were obtained from the Office of Management and Budget. In addition to expenditures related to central administrative functions, these figures include expenditures for recruitment and placement services provided by regional DOL offices and private agencies, engineering support (for work projects and center construction), enrollee transportation to and from centers, union training contracts, payment services for Corpsmembers' allowances, legal services, and special enrichment projects.

The cost of providing these services was \$56.8 million, which brings the total financial expenditures from Job Corps to \$219.9 million,

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<sup>1/</sup> ET Handbook No. 334, Job Corps Center Financial Report MA2-223a-MA2-223b, Definitions of Report Line Items (April 1976), pp. VII-43 to VII-66.

or \$10,698 per Corpsmember year.<sup>1/</sup> As was the case for operating expenditures, the central administration expenditures represent the value of the resources used and, thus, are included as costs in both the non-Corpsmember and social perspectives. Therefore, the financial costs of \$10,698 per Corpsmember year for non-Corpsmembers (taxpayers) include \$8,261 in social costs and \$2,437 in benefits to Corpsmembers from the transfers.

#### B. OPPORTUNITY COST OF CORPSMEMBER LABOR

The largest cost item not included in program expenditures is the opportunity cost of the Corpsmembers' labor while they are in Job Corps. When youths participate in Job Corps, they forego employment opportunities that they otherwise would have taken. The wages Corpsmembers forego by participating in Job Corps represent a cost to them and society. If labor markets function competitively and are in equilibrium, these foregone wages will be exactly equal to the value of the reduction in output. These costs are borne by Corpsmembers in the form of foregone income and fringe benefits and by non-Corpsmembers in the form of reduced tax revenues.

If labor markets are in disequilibrium (i.e., if disadvantaged youths are unemployed in the labor market), non-Corpsmembers receive benefits because they replace Corpsmembers on the job; thus, the social

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<sup>1/</sup> According to the Office of Management and Budget, the total fiscal year 1977 obligation of Job Corps was \$221 million. The discrepancy between this figure and the \$219.9 million estimate provided by Job Corps is probably due to the fact that two centers were late in reporting their costs to the central financial division of Job Corps. The OMB figures suggest that costs to Corpsmembers have been higher than those estimated from Job Corps accounts by approximately \$55 per Corpsmember year, or \$27 per Corpsmember.

735

costs of foregone employment are reduced.<sup>1/</sup> However, the benefits from non-Corpsmembers replacing Corpsmembers on jobs while the latter are in Job Corps cannot be estimated very precisely and are assumed to be trivially small (i.e., zero) for the current analysis.<sup>2/</sup>

The social cost of Corpsmembers' foregone labor includes gross wages plus fringe benefits. Using similar procedures to those for the postprogram impact analysis,<sup>3/</sup> we obtained an estimate of \$87.58, of which \$725.84 is estimated to be borne directly by Corpsmembers, and \$152.74 represents reduced tax revenues to non-Corpsmembers.<sup>4/</sup>

### C. OTHER UNBUDGETED EXPENDITURES

In addition to the opportunity cost of the Corpsmember labor input into Job Corps, there are a variety of other expenditures that are not included in the Job Corps budget. The estimates for these

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<sup>1/</sup> See George E. Johnson, "The Labor Market Displacement Effect in the Analysis of the Net Impact of Manpower Training Programs," in Research in Labor Economics: Evaluating Manpower Training Programs, edited by Farrell Block, Greenwich, Connecticut: JAI Press, 1978.

<sup>2/</sup> Given the imperfections in youth labor markets, this assumption is almost certainly wrong. However, some of the postprogram gains in earnings that are counted as benefits probably also result from Corpsmembers displacing non-Corpsmembers in employment.

<sup>3/</sup> The growth in earnings from before to during the program period among youths in the comparison group is added to the preprogram earnings of Corpsmembers. Because our samples are so well matched, this is almost identical to using the during-program average for the comparison sample. Furthermore, our sample of participants is self-weighting for in-program effects. The wage costs are estimated to be \$891.93 for males, \$499.59 for females without children, and \$320.85 for females with children. Fringe benefits are estimated to be 14.67 percent of wages.

<sup>4/</sup> The estimate of tax revenues is discussed in Chapter III.

expenditures are based on the findings of special studies on the use of goods and services at thirteen Job Corps centers.<sup>1/</sup>

### 1. Sample of Centers

Goods and services used at Job Corps centers were studied concurrently with the work activities that were used to estimate the value of output. A sample of thirteen centers was used for this unbudgeted expenditure analysis, which included the eleven centers where work activities were evaluated (see Section A of Chapter III). For reasons identified earlier, these eleven centers are larger and place greater emphasis on work activities than is the case programwide. Therefore, to protect against potential sample bias, we randomly selected two additional centers from the nine centers that had less than twelve work-activity assignments at the time of center/work-activity sampling.<sup>2/</sup> These two centers were Cass CCC in Ozark, Arkansas, and Timber Lake CCC in Estacada, Oregon.

As is apparent in Table IV.2, the inclusion of these two additional centers (which are CCC, small, noncity and have few work

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<sup>1/</sup>A detailed report of these studies is included in Technical Report F, "Special Studies of Resource Use at Job Corps Centers." The interested reader should consult that report because of the condensed nature of the discussion herein.

<sup>2/</sup>Centers with fewer than twelve work-activity assignments were excluded from the sample selection for studies of the value of output in work projects. The probability of selection from the nine-center group was proportional to the ratio of Corpsmembers at a given center to the total number of Corpsmembers at all nine centers. The random selection of two out of the nine centers excluded from the work-assignment sample yields a selection probability per center that is approximately equal to the average selection probability for centers included in the work-assignment sample. Therefore, each Corpsmember has an approximately equal chance of being selected, and the sample can be treated as self-weighting. For more details, see Technical Report F, "Special Studies of Resource Use at Job Corps Centers."

TABLE IV. 2

## SELECTED CHARACTERISTICS OF CENTERS SAMPLED FOR STUDIES OF UNBUDGETED EXPENDITURES

Center Characteristic	Number (Percent) of Centers		Number (Percent) of Corpsmembers <sup>b/</sup>	
	Job Corps <sup>a/</sup>	Sample	Job Corps <sup>a/</sup>	Sample
<b>Center Administration</b>				
Civilian conservation centers	27 (50%)	6 (46%)	14,990 (74%)	5,973 (81%)
Contract centers <sup>u</sup>	27 (50%)	7 (54%)	5,334 (26%)	1,490 (20%)
<b>Center size<sup>c/</sup></b>				
Small	36 (67%)	9 (70%)	6,374 (31%)	1,809 (24%)
Medium	14 (26%)	2 (15%)	6,954 (34%)	999 (14%)
Large	4 (7%)	2 (15%)	6,996 (35%)	4,574 (62%)
<b>Work-activity emphasis</b>				
0-5% of Corpsmembers assigned	10 (18%)	2 (15%)	2,364 (12%)	399 (5%)
5-25% of Corpsmembers assigned	23 (43%)	5 (39%)	13,420 (66%)	3,363 (46%)
25% of Corpsmembers assigned	21 (39%)	6 (46%)	4,540 (22%)	3,620 (49%)
<b>Location<sup>d/</sup></b>				
Large city location	12 (22%)	3 (23%)	3,736 (18%)	810 (11%)
Other location	42 (78%)	10 (77%)	16,588 (82%)	6,572 (89%)

Sources: (1) Job Corps in Brief, Fiscal Year 1977, U.S. Department of Labor Employment and Training Administration; (2) information obtained from Job Corps center directors; and (3) data obtained from special studies of work activities.

<sup>a/</sup> Includes all centers in operation at the beginning of fiscal year 1977, except those in Hawaii, those in Puerto Rico, and the two extension centers.

<sup>b/</sup> Corpsmembers are estimated from the distribution of positions given to us by the center directors.

<sup>c/</sup> Size was determined by the center's number of slots (capacity for Corpsmembers); if capacity is less than 250 Corpsmembers, the center is in the small category; if it is larger than 1,000 Corpsmembers, it is in the large category; all others are in the medium category.

<sup>d/</sup> Large cities are defined as those with populations greater than 100,000 in 1970.

activities), makes the sample more representative of all centers. However, large Job Corps centers are still slightly overrepresented in the sample. Overall, more than one-third of the slots (i.e., positions) for Corpsmembers (7,382 out of 20,324) are represented in the thirteen sampled centers.<sup>1/</sup>

Results. Based on the detailed reviews of resource use at the sampled centers during fiscal year 1977, six categories of unbudgeted Job Corps expenditures were significant: reimbursements from the National School Lunch program; receipt of GSA surplus; receipt of surplus food; acquisition of medical goods and services at zero or below-market prices; other donated miscellaneous goods; and other donated miscellaneous services. The findings are summarized in Table IV.3.

National School Lunch program reimbursements are the largest single component of unbudgeted costs. Twelve of the thirteen centers in the sample received reimbursements in fiscal year 1977; the other center began receiving them in 1978. Job Corps centers meet the necessary institutional eligibility requirements, and most Corpsmembers are under the age limit set by the National School Lunch program. A total of \$2,236,944 in monthly reimbursements was received by the centers in the sample during fiscal year 1977, which amounts to \$303 per Corpsmember year.

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<sup>1/</sup> In this section we use the center capacity of 20,324 slots corresponding to our sampling frame, rather than the total capacity of Job Corps 20,553 stated this larger number includes the Hawaiian and Puerto Rican centers, which were not included in our sampling frame. For more details on our overall sample exclusions, see Technical Report A, "Sample Design and Implementation."

TABLE IV. 3

## VALUE OF UNBUDGETED EXPENDITURES AT JOB CORPS CENTERS

Type of Resource	Results from Studies		
	Percent of Centers Using Resource	Net Value of Resource <sup>a/</sup>	Expenditure per Corpsmember Year <sup>b/</sup>
School Lunch Program	92	\$2,236,944	\$303.03
GSA surplus goods	85	564,437	76.46
Department of Agriculture surplus food	77	268,017	36.31
Medical supplies and services	62	156,516	21.20
Other goods	39	121,109	16.41
Other services	<u>62</u>	<u>1<sup>^</sup>8,625</u>	<u>17.42</u>
Total for all resources	<u>100</u>	<u>\$3,475,648</u>	<u>\$470.83</u>

Source: Special studies of resource use at Job Corps centers (for more details, see Technical Report 8). Details do not sum to the total because of rounding.

<sup>a/</sup> See text for description of measurement techniques.

<sup>b/</sup> Net value of resource divided by total Corpsmembers (7,382) at the thirteen centers included in the special studies.

It was more difficult to estimate the value of surplus goods received from the General Services Administration by the centers. In terms of the acquisition values recorded for the GSA excess property acquired, the centers received roughly \$4 million during fiscal year 1977. The market value, however, was estimated to be much lower. First, the acquisition value of all goods "excessed" in 1977 by the centers (i.e., surplus goods returned to GSA) was subtracted. Second, it was assumed that the value of all nondurable goods was zero;<sup>1/</sup> consequently, these acquisition values were subtracted. Third, it was assumed that, on average, general-purpose durable surplus goods (office furniture, dormitory furniture, and construction equipment) had half their useful lives remaining when acquired by the Job Corps (by applying a straight-line depreciation rule, the value of these goods is estimated to be one-half of the acquisition value). Finally, one center received scrapped military airplanes that were used temporarily in its welding training program, with an acquisition value unrelated to its value in alternative feasible uses. An estimate of value was thus made on the basis of the scrap value of the planes.<sup>2/</sup> The estimate of the total opportunity cost of all GSA surplus property received in fiscal year 1977 is \$564,437, which is approximately 15 percent of acquisition (book) value.

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<sup>1/</sup> These included surplus clothes, linens, and similar items that, as used goods, have very limited market value. Moreover, center staff often has to have them cleaned before they could be used, and complained about the quality and usefulness of these items.

<sup>2/</sup> According to the GSA, legal restrictions on the use of the planes meant that when the planes were returned to the GSA after use by Job Corps, they would be sold as scrap. Therefore, the value imputed for these planes was an appropriate interest amount on the scrap value.

Most centers also received surplus food through the U.S. Department of Agriculture. The food's market value was estimated by knowledgeable staff at the centers where the food was received. The total value was estimated as \$268,017, or \$36 per Corpsmember year.

Medical supplies and services were received at zero or below-market prices by eight of the thirteen centers in the sample. The estimated value of these supplies and services, subtracting the amount paid for them, was \$156,516, or \$21 per Corpsmember year.

Other unbudgeted goods and services received by the centers in the sample included various goods contributed by the local community and by public agencies, as well as uncompensated labor from CETA workers, tutors, and counselors from local colleges and public agencies, and others. The market value of these goods and services was determined on a case-by-case basis.<sup>1/</sup> The total estimated value amounted to \$249,734, or \$34 per Corpsmember year.

The estimated opportunity cost of the unbudgeted resources was \$3,475,648, or \$471 per Corpsmember year. The bulk of these resources represents transfers to Corpsmembers and, therefore, enter into the Corpsmember and non-Corpsmember benefit-cost calculations only. These transfers include the following: National School Lunch Program food; DOA surplus food; and medical services and about half of the other donated goods and services. The value

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<sup>1/</sup>We attempted to exclude the fraction of these services that Corpsmembers might be expected to receive in the absence of the Job Corps. See Technical Report E for more details on the estimation procedures.

of these transfers is 80 percent of the total value, or \$377 per Corpsmember year. The remaining unbudgeted items are used by Job Corps and, therefore, represent social (as well as non-Corpsmember) costs. The value of these resources is \$94 per Corpsmember year.

#### D. AGGREGATION OF COSTS

The costs of Job Corps as seen from the three analytical perspectives are presented in Table IV.4. The financial costs, opportunity cost of labor, and costs from miscellaneous unbudgeted items are converted from a Corpsmember year to Corpsmember basis and are added together for each perspective. As was the case in the benefits aggregation, transfers appear only in the Corpsmember and non-Corpsmember perspectives, while resource costs appear in the social perspective as well as the relevant distributional perspective. The social cost per Corpsmember is almost \$5,000, while the cost from the non-Corpsmember perspective is approximately \$5,600 per Corpsmember. The average Corpsmember, however, receives net benefits from these components (negative net cost) of about \$660 because they receive substantial transfers while they are in the program, while their only cost is the cost of foregone earnings.

TABLE IV.4

SUMMARY OF COSTS PER CORPSMEMBER, BY ANALYTICAL PERSPECTIVE<sup>a/</sup>

Cost Component	Present Value of Costs by Perspective		
	Social	Non-Corpsmember	Corpsmember
<b>A. Program operating costs</b>			
● Center operating expenditures	\$2,702.98	\$2,702.98	\$ 0
● Transfers to Corpsmembers	0	1,198.26	-1,198.26 <sup>b/</sup>
● Central administrative costs	1,358.77	1,358.77	0
<b>B. Opportunity cost of Corpsmember labor</b>			
● Foregone earnings	878.58	0	878.58
● Foregone tax payments	0	152.74	- 152.74
<b>C. Unbudgeted expenditures other than for Corpsmember labor</b>			
● Program costs	46.22	46.22	0
● Transfers to Corpsmembers	0	185.36	- 185.36 <sup>b/</sup>
<b>Total present value of costs</b>	<u>\$4,986.55</u>	<u>\$5,644.33</u>	<u>\$- 657.78<sup>b/</sup></u>

<sup>a/</sup>The cost per Corpsmember is estimated by multiplying the cost per Corpsmember year (as estimated in the previous sections) by the average length of stay in years for Job Corps during fiscal 1977--0.492 years (5.9 months).

<sup>b/</sup>Because Corpsmembers benefit from transfers, they are presented here as negative costs.

## CHAPTER V

### OVERALL FINDINGS FOR NET PRESENT VALUE

Calculating the net present value is quite simple once the various benefits and costs have been estimated and valued. All that is required is to sum up the present values of the benefits and subtract the present values of the costs. The resulting difference can then be used as a guide for assessing the degree to which Job Corps represents an economically efficient use of resources.

However, a single estimate for the net present value can be quite error-prone--especially for a short-term evaluation. Even the best estimate is subject to inaccuracies. In addition to sampling error, numerous assumptions must be made in estimating the component benefits and costs (assumptions regarding decay and discount rates, unmeasured benefits and costs, the competitiveness of product and labor markets, and the appropriateness of the methods used to estimate shadow prices and program effects). Each of these assumptions will affect the magnitude of the net present value, and while an attempt has been made to keep the assumptions as realistic as possible, they still must be regarded as approximations and, in some cases, speculative. Therefore, it is necessary to present not only our benchmark set of assumptions used in estimating the net present value of Job Corps (the ones that the researchers were most comfortable with), but also a set of different assumptions used in making a series of alternative estimates. In this way, the sensitivity of the net present value estimate to changes in various assumptions can be examined.

This chapter will begin with a presentation of the benchmark net present value estimate. The proceeding sections then discuss the basic assumptions underlying the benchmark estimates, and show the sensitivity of the estimates of net present value to changes in some of the more uncertain assumptions. The final section summarizes the findings.

#### A. BENCHMARK NET PRESENT VALUE ESTIMATE

The benchmark estimates of the net present value of Job Corps are shown in Table V.1. As can be seen, the estimates indicate that, from all perspectives, the present value of the benefits is greater than the value of costs. Non-Corpsmembers receive benefits that are in excess of their costs by \$39.03 per Corpsmember while the benefits received by Corpsmembers outweigh their costs by an average of \$211.90. The estimated social impact of Job Corps is a net benefit of \$250.93 per Corpsmember. The largest benefits are associated with reductions in the criminal activity of Corpsmembers, and with increased output. These two components account for approximately 87 percent of the total social benefits and 69 percent of the non-Corpsmember benefits. As expected, the largest costs are those associated with operating the centers and providing training to the Corpsmembers. These estimates clearly indicate that Job Corps is an efficient use of resources, especially because unmeasured benefits are likely to exceed unmeasured costs (see Section V.D below).

Of course, as explained above, these estimates are only benchmarks. In an effort to provide an indication of the economic efficiency of Job Corps, these estimates utilize assumptions that, while plausible, are to some extent speculative. In particular, assumptions about the rate at

TABLE V.1

NET PRESENT VALUES PER CORPSMEMBER FOR JOB CORPS UNDER THE BENCHMARK ASSUMPTIONS<sup>a/</sup>

	Social	Non-Corpsmember	Corpsmember
<b>Benefits</b>			
<b>I. Output Produced by Corpsmember</b>			
• In-program output	\$ 756.59	\$ 670.60	\$ 85.99
• Increased out of program output	1,238.81	0	1,238.81
• Increased tax payments on post-program earnings	0	106.63	-106.63
• Preferences for work over welfare	+	+	+
<b>II. Reduced Dependence on Transfer Programs</b>			
• Transfer payments	0	1,010.83	-1,010.83
• Administrative costs	119.65	119.65	0
<b>III. Reduced Criminal Activity</b>			
• Property damage and personal injury	273.90	273.90	0
• Stolen property	387.43	967.94	-580.51
• Justice system costs	1,895.74	1,895.74	0
• Reduced psychological costs	+	+	+
<b>IV. Reduced Drug/Alcohol Use</b>			
• Treatment costs	174.79	174.79	0
• Psychological benefits	+	+	+
<b>V. Utilization of Alternative Education and Training Services</b>			
• Education and training costs	390.57	390.57	0
• Training allowances	0	72.71	-72.71
<b>VI. Other Benefits</b>			
• Improved Corpsmember health status	+	+	+
<b>Costs</b>			
<b>I. Program Operating Costs</b>			
• Center operating expenditures other than for Corpsmember transfers	\$2,702.98	\$2,702.98	0
• Transfers to Corpsmembers	0	1,198.26	\$-1,198.26
• Central administrative costs	1,358.77	1,358.77	0
<b>II. Opportunity Cost of Corpsmember Labor</b>			
• Foregone earnings	878.58	0	878.58
• Foregone tax payments		152.74	-152.74
<b>III. Unbudgeted Expenditures other than for Corpsmember Labor</b>			
• Program costs	46.22	46.22	0
• Transfers	0	185.36	-185.36
<b>Net Present Value</b>	<b>\$ 250.93</b>	<b>\$ 39.03</b>	<b>\$ 211.90</b>
<b>Benefit-Cost Ratio</b>	<b>1.0504</b>	<b>1.0070</b>	<b>1.0800<sup>b/</sup></b>

<sup>a/</sup> See the text for a review of these assumptions and their implications for the values presented in this table.

<sup>b/</sup> The numerator of the benefit-cost ratio for Corpsmembers includes all of their benefits listed in this table as either positive benefits or negative costs, and the denominator includes all of their costs listed in this table as either positive costs or negative benefits.

which the Job Corps effects fade out (which were made to compensate for lack of longer-run follow-up data) significantly affect the estimates of net present value. Also, some potentially important benefits remain unmeasured in our analysis. Some of these items are represented by plus signs in Table V.1, to indicate how their omission may bias the estimates. It seems likely that if we had been able to measure these items, our estimates of net present value would have been larger.

Because the estimates of the net present value will change in response to changes in the underlying assumptions, we must review our benchmark assumptions. The assumptions will be divided into three sets: those that concern the measurement of a wide range of benefits; those that deal with specific benefit or cost components; and those regarding unmeasured components. For each set of assumptions, the rationale underlying their use as benchmarks will be reviewed. In addition, tests will be made of the sensitivity of the final estimates to changes in these assumptions. This discussion should provide a better understanding of (1) the context within which the estimates are made, and (2) what the actual net present values are.

#### B. GENERAL ASSUMPTIONS

There are four assumptions that were used in estimating almost all the measured benefits; they can be summarized as follows:

- All effects of Job Corps fade out over time by approximately 14 percent per year.
- The appropriate annual discount rate in real (zero inflation) terms for computing present values is 5 percent.

- The marginal savings to the various agencies affected by changes in behavior among Corpsmembers (e.g., AFDC, General Assistance, courts, police and corrections, drug-treatment programs, and Job Corps) are equal to their average cost of operation.
- The estimated magnitudes of the Job Corps effects correctly measure the true effects regardless of the statistical significance attributed to the results.

Each of these assumptions will be considered in turn.

### 1. Fade-Out Rates

Until the longer-run follow-up data are available, it will be necessary to make some assumptions about or indirect estimates of the degree to which the effects of Job Corps fade out over time. The fade-out rate we used for the benchmark estimates--that effects decay at a continuous rate so that they are 50 percent lower after five years, or approximately 14 percent per year--is based on previous research by Orley Ashenfelter.<sup>1/</sup> Ashenfelter's study examines (among other things) the degree to which earnings gains declined over time for adults who had participated in MDTA training programs, and he finds a fade-out rate of 50 percent after five years for males who had received MDTA training. However, this 14 percent annual decay rate is likely to overestimate the fade out in Job Corps earnings gain for three reasons: (1) Ashenfelter finds a much lower (zero) fade-out rate for females; (2) there is no evidence of fade out in our short-term data; and

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<sup>1/</sup>Orley Ashenfelter, "Estimating the Effect of Training Programs on Earnings," Review of Economics and Statistics LX, no. 1, February 1978, pp. 47-57. He found the 14 percent decay rate for men but the earnings gains for women did not fade out at all. We adopted the 14 percent rate because males constitute 70 percent of enrollees, and the Job Corps effects for females were very similar to those for males.

(3) with increasing employability for youths as they grow older and the effects of additional investments in human capital (e.g., college) among Corpsmembers, there is reason to believe that Job Corps' impacts on earnings could continue to grow in the short-run.

While the use of the 14 percent annual decay rate to estimate earnings gains in periods for which we do not have interview data seems to yield a reasonable lower bound on the earnings gains, it is less certain for estimating long-run benefits for other effects (e.g., criminal activity and the use of alternative employment and training programs).<sup>1/</sup> However, we felt that this assumption was as good an estimate as could currently be defended, especially because most of the effects of Job Corps are hypothesized to be related to increased employability among Corpsmembers.

The effect of variation in the decay rate can be illustrated by recalculating the net present value estimates under different rates. At one extreme it could be assumed that there are no future benefits--that all benefits accrue while Corpsmembers are in the program or during the first six months after they leave the program. Only those effects actually observed need to be valued. If we maintain all other benchmark assumptions, the estimated net present value per Corpsmember is -\$3,212 from the social perspective, -\$3,542 from the non-Corpsmember perspective,

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<sup>1/</sup> For example, Belenko and Friedman ("The Impact of Supported Work on Arrest Rates of Ex-Addicts," Federal Probation, June 1977) found that arrest differentials observed during the first six postprogram months for the Wildcat supported work program disappeared by the end of the first postprogram year. For benefit components such as crime and the use of alternative training and educational programs, a rapid fade out is expected for Corpsmembers because of the tendency of youths to engage in less crime or to enroll in fewer training programs as they grow older. However, it is very uncertain whether the fade-out rate that we use is sufficiently rapid, too rapid, or about right.

and \$331 from the Corpsmember perspective. The components of this estimate of the net present value one year after enrollment are shown in Table V.2. Most of the benefits to non-Corpsmembers and society are realized after the first year in the benchmark estimates, so that total fade out immediately after six months would make the program very inefficient from these perspectives. In contrast, most of the Corpsmember benefits are realized while Corpsmembers are in the program, with future gains in earnings being offset by losses in transfer income (ignoring the benefits from reduced welfare dependencies).

The net present value estimates for the first year are almost certainly lower-bound estimates, because some benefits have already been observed beyond six months (the seventh month of the postprogram data). If there were no benefits beyond the first year, then the program clearly would not be an efficient use of resources from society's point of view (unless unmeasured benefits were exceedingly large or the net present value changes substantially for a different scale of program). In fact, the estimates suggest that the future benefits must be worth over \$3,200 per Corpsmember (in present value) for the program to be acceptable on efficiency grounds. Non-Corpsmembers will view the program in a similar light--that is, they will generally find it undesirable in the absence of substantial future benefits. Corpsmembers, however, should view the program's first-year effect as positive. This is due to the fact that they receive large transfers during their participation in Job Corps, which more than outweigh the costs to them of participating in the program.

TABLE V.2

## NET PRESENT VALUE PER CORPSMEMBER FOR ONE YEAR PERIOD

	Social	Non-Corpsmember	Corpsmember
<b>Benefits</b>			
<b>I. Output Produced by Corpsmember</b>			
• In-program output	\$ 756.59	\$ 670.60	\$ 85.99
• Out of program output	35.37	0	-35.37
• Tax payments on post-program earnings	0	-26.80	26.80
• Preferences for work over welfare	+	+	+
<b>II. Reduced Dependence on Transfer Programs</b>			
• Transfer payments	0	228.04	-228.04
• Administrative costs	26.01	26.01	0
<b>III. Reduced Criminal Activity</b>			
• Property damage and Personal injury	137.76	137.76	0
• Stolen property	101.08	250.72	-149.64
• Justice system costs	526.41	526.41	0
• Reduced psychological costs	+	+	+
<b>IV. Reduced Drug/Alcohol Use</b>			
• Treatment costs	36.58	36.58	0
• Psychological benefits	+	+	+
<b>V. Utilization of Alternative Education and Training Services</b>			
• Education and training costs	225.82	225.82	0
• Training allowances	0	27.01	-27.01
<b>VI. Other Benefits</b>			
• Improved Corpsmember health status	+	+	+
<b>Costs</b>			
<b>I. Program Operating Costs</b>			
• Center operating expenditures other than for Corpsmember transfers	\$2,702.98	\$2,702.98	0
• Transfers to Corpsmembers	0	1,198.26	-1,198.26
• Central administrative costs	1,358.77	1,358.77	0
<b>II. Opportunity Cost of Corpsmember Labor</b>			
• Foregone earnings	878.58	0	878.58
• Foregone tax payments		152.74	-152.74
<b>III. Unbudgeted Expenditures other than for Corpsmember Labor</b>			
• Program costs	46.22	46.22	0
• Transfers	0	185.36	-185.36
<b>Net Present Value</b>	<b>-\$3,211.67</b>	<b>-\$3,542.18</b>	<b>\$ 330.51</b>
<b>Benefit-Cost Ratio</b>	<b>0.3605<sup>a/</sup></b>	<b>0.3755<sup>a/</sup></b>	<b>1.2507<sup>a/</sup></b>

<sup>a/</sup>The numerator of the benefit-cost ratios includes all of the benefits listed in this table as either positive benefits or negative costs, and the denominator includes all of the costs listed in this table as either positive costs or negative benefits.

Another extreme assumption about future effects is that the effects observed during the first six postprogram months remain constant forever and never fade out at all. If we maintain all the other benchmark assumptions, the resulting estimates of net present value per Corpsmember are \$10,612 for society, \$9,532 for non-Corpsmembers, and \$1,081 for Corpsmembers. Not surprisingly, the Job Corps program is very desirable from all these perspectives, with zero fade-out of effects. The benefit and cost components of these estimates are summarized in Table V.3.

The no fade-out assumption is probably unrealistic. For example, there is much evidence that criminal activity declines with age, as does participation in training and educational programs. Therefore, the magnitudes of reductions both in arrests and in the use of alternative training and educational programs would likely fade out even if the percentage reduction due to Job Corps participation did not fade out. As a result, a better assumption about future effects may be that only earnings gains and the associated reductions in transfers remain constant, while the other effects fade out. Under these assumptions (assuming that crime and training/education effects decline at the standard 14 percent per year), the social net present value estimate is still substantially larger than the benchmark estimate, but not as high as it is under the no fade-out assumption. As shown in Table V.4, the social net present value per Corpsmember is about \$5,183, while the estimates from non-Corpsmember and Corpsmember perspectives are approximately \$2,882 and \$2,301 respectively. The program is still very desirable from all three perspectives, and Job Corps would clearly be an efficient use of resources under these assumptions. However, allowing for a fade out in the crime effect causes the social and non-Corpsmember estimates to decline substantially. In

TABLE V.3

NET PRESENT VALUE PER CORPSEMEMBER IF EFFECTS DO NOT FADE OUT

	Social	Non-Corpsmember	Corpsmember
<b>Benefits</b>			
<b>I. Output Produced by Corpsmember</b>			
• In-program output	\$ 756.59	\$ 670.60	\$ 85.99
• Out of program output	5,930.87	0	5,930.87
• Tax payments on post-program earnings	0	704.04	-704.04
• Preferences for work over welfare	+	+	+
<b>II. Reduced Dependence on Transfer Programs</b>			
• Transfer payments	0	3,016.01	-3,016.01
• Administrative costs	359.51	359.51	0
<b>III. Reduced Criminal Activity</b>			
• Property damage and personal injury	622.66	622.66	0
• Stolen property	1,120.98	2,805.21	-1,684.23
• Justice system costs	5,467.50	5,467.50	0
• Reduced psychological costs	+	+	+
<b>IV. Reduced Drug/Alcohol Use</b>			
• Treatment costs	528.81	528.81	0
• Psychological benefits	+	+	+
<b>V. Utilization of Alternative Education and Training Services</b>			
• Education and training costs	812.03	812.03	0
• Training allowances	0	189.75	-189.75
<b>VI. Other Benefits</b>			
• Improved Corpsmember health status	+	+	+
<b>Costs</b>			
<b>I. Program Operating Costs</b>			
• Center operating expenditures other than for Corpsmember transfers	\$2,702.98	\$2,702.98	0
• Transfers to Corpsmembers	0	1,198.26	\$-1,198.26
• Central administrative costs	1,358.77	1,358.77	0
<b>II. Opportunity Cost of Corpsmember Labor</b>			
• Foregone earnings	878.58	0	878.58
• Foregone tax payments		152.74	-152.74
<b>III. Unbudgeted Expenditures other than for Corpsmember Labor</b>			
• Program costs	46.22	46.22	0
• Transfers	0	185.36	-185.36
<b>Net Present Value</b>	<b>\$10,612.40</b>	<b>\$9,531.79</b>	<b>\$ 1,080.61</b>
<b>Benefit-Cost Ratio</b>	<b>3.1283</b>	<b>2.6888</b>	<b>1.1670<sup>a/</sup></b>

<sup>a/</sup>The numerator of the benefit-cost ratio for Corpsmembers includes all of their benefits listed in this table as either positive benefits or negative costs, and the denominator includes all of their costs listed in this table as either positive costs or negative benefits.

TABLE V.4

NET PRESENT VALUE PER CORPSMEMBER IF THERE IS NO PAID  
OUT OF EARNINGS AND TRANSFER EFFECTS

	Social	Non-Corpsmember	Corpsmember
<b>Benefits</b>			
<b>I. Output Produced by Corpsmember</b>			
• In-program output	\$ 756.59	\$ 670.60	\$ 85.99
• Out of program output	5,930.87	0	5,930.87
• Tax payments on post-program earnings	0	704.04	-704.04
• Preferences for work over welfare	+	+	+
<b>II. Reduced Dependence on Transfer Programs</b>			
• Transfer payments	0	3,016.01	-3,016.01
• Administrative costs	359.51	359.51	0
<b>III. Reduced Criminal Activity</b>			
• Property damage and personal injury	273.90	273.90	0
• Stolen property	387.43	967.94	-580.51
• Justice system costs	1,895.74	1,895.74	0
• Reduced psychological costs	+	+	+
<b>IV. Reduced Drug/Alcohol Use</b>			
• Treatment costs	174.79	174.79	0
• Psychological benefits	+	+	+
<b>V. Utilization of Alternative Education and Training Services</b>			
• Education and training costs	390.57	390.57	0
• Training allowances	0	72.71	-72.71
<b>VI. Other Benefits</b>			
• Improved Corpsmember health status	+	+	+
<b>Costs</b>			
<b>I. Program Operating Costs</b>			
• Center operating expenditures other than for Corpsmember transfers	\$2,702.98	\$2,702.98	0
• Transfers to Corpsmembers	0	1,198.26	\$-1,198.26
• Central administrative costs	1,358.77	1,358.77	0
<b>II. Opportunity Cost of Corpsmember Labor</b>			
• Foregone earnings	878.58	0	878.58
• Foregone tax payments		152.74	-152.74
<b>III. Unbudgeted Expenditures other than for Corpsmember Labor</b>			
• Program costs	46.22	46.22	0
• Transfers	0	185.36	-185.36
<b>Net Present Value</b>	<b>\$5,182.85</b>	<b>\$2,881.48</b>	<b>\$2,301.37</b>
<b>Benefit-Cost Ratio</b>	<b>2.0394</b>	<b>1.5106</b>	<b>1.4382<sup>a/</sup></b>

<sup>a/</sup> The numerator of the benefit-cost ratio for Corpsmembers includes all of their benefits listed in this table as either positive benefits or negative costs, and the denominator includes all of their costs listed in this table as either positive costs or negative benefits.

contrast, the Corpsmember estimates increase somewhat with a higher fade-out rate for effects on criminal activities, because their income would be higher from illegal activities.

This discussion of the future pattern of Job Corps effects shows the necessity for follow-up data over a longer postprogram period. The program does not appear to be a socially efficient use of resources if only those effects occurring during the initial observation period are valued (i.e., those effects that occur while Corpsmembers are in the program or during the six months immediately after they leave the program). As shown above, it is likely that the future benefits will be large enough to make the program socially desirable. The Job Corps effects observed from the first follow-up data would have to decline by more than 14 percent per year in order for the social net present value to be negative. If the impacts resulting from Job Corps participation remain constant for a relatively long time, then the net present value estimates will be overwhelmingly favorable. The data from the next follow-up interview should enable us to make much better extrapolations. Also, estimates with the next follow-up data will become more precise because the unobserved years are further into the future and, hence, discounted more heavily when present values are computed.

## 2. Discount Rates

The appropriate discount rate to use when evaluating government training and educational programs is always a controversial issue, because while the choice of a discount rate is very important for the evaluation and is well established theoretically, there has never been a completely

satisfactory way to estimate discount rates.<sup>1/</sup> Imperfections in the markets for capital, the existence of risk and uncertainty, inflation, and the fact that many tax incidence questions are still unresolved have made it impossible to determine a single discount rate that is appropriate for evaluating government investments. As a result, we have somewhat arbitrarily adopted a 5 percent rate as our benchmark and will present sensitivity tests on this assumption.

The social net present value will change in an opposite direction from a change in the discount rate, because all of the social costs are incurred during the base period (i.e., the time period to which all other benefits and costs are discounted), while the benefits accrue over many time periods. Therefore, if a higher rate is used, the present value of future benefits will fall while costs remain the same. As a result the net present value (the difference between the present value of the benefits and costs) will decline with a higher discount rate.

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<sup>1/</sup>William Baumol ("On the Social Rate of Discount," American Economic Review V, 58, No. 4, 1968, pp. 788-802) provides a theoretical foundation for measuring the social discount rate. He suggests that it should measure the rate of return that the resources used for the public investment (Job Corps) would have otherwise earned in the private sector. David Bradford ("Constraints on Government Investment Opportunities and the Choice of Discount Rate," American Economic Review V, 65, 1975, pp. 887-899) suggests the use of the rate at which consumers trade off future for current consumption (the social rate-of-time preference). These approaches lead to the same rate if all markets are competitive. In the presence of markets characterized by monopoly power, inflation, taxes, and uncertainty, however, the approaches lead to quite different results and are difficult to implement empirically in a correct manner.

If a smaller discount rate is used, the present value of benefits accruing in the future will rise, with costs again remaining constant. The effect of a smaller discount rate would be to increase the net present value.

The effect of changes in the discount rate on the net present value estimates for non-Corpsmembers will be similar to the effect on the social net present value, because non-Corpsmembers also incur all of their costs during the base period. However, Corpsmembers incur costs (e.g., reductions in transfer receipts), as well as benefits (e.g., increases in earnings) in the future. Changes in the discount rate will thus affect the present value of costs and benefits more uniformly for Corpsmembers, so that the effect of increasing or decreasing the discount rate will be smaller for them than it is either for non-Corpsmembers or for society as a whole.

The magnitude of the effect of changing the discount rate can be seen by comparing estimates of the net present value that are made with discount rates of 3 and 10 percent with the benchmark estimates that are made with a 5 percent rate.<sup>1/</sup> Such comparisons are shown in Table V.5. As can be seen, the net present value for Corpsmembers does not differ substantially as the discount rate is changed. The non-Corpsmember net present value, however, changes

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<sup>1/</sup> The range of 3 to 10 percent includes most of the rates that have been used to evaluate government education and training programs. The 10 percent rate is the one mandated by the Office of Management and Budget for the evaluation of government investments (see OMB Circular No. A-94, "Discount Rates to be Used in Evaluating Time-Distributed Costs and Benefits," March 27, 1972).

TABLE V.5

NET PRESENT VALUE PER CORPSMEMBER  
UNDER DIFFERENT DISCOUNT RATES

Analytical Perspective	Net Present Value Per Corpsmember For Given Discount Rate <sup>a/</sup>		
	3 Percent	5 Percent	10 Percent
Social	\$757.39 (1.15)	\$250.93 (1.05)	-\$581.57 (0.88)
Non-Corpsmember	\$508.11 (1.09)	\$ 39.03 (1.01)	-\$794.91 (0.86)
Corpsmember	\$249.28 (1.09)	\$211.90 (1.08)	\$213.34 (1.08)

<sup>a/</sup> Benefit-cost ratios are shown in parentheses below the estimates of the net present values.

substantially, as does the estimate of the social net present value. From the social perspective, doubling the discount rate leads to a decline of over \$800 per Corpsmember in the net present value. Decreasing the rate from 5 to 3 percent leads to an increase of over \$500 in the social net present value. Using the 3 percent figure, we estimate that the program is economically efficient; at 10 percent, we estimate that the program is inefficient. In order for the program to be economically efficient at the 10 percent rate of discount, either unmeasured social benefits must exceed unmeasured social costs by at least \$581.57 per Corpsmember, or the Job Corps effects must not fade out as rapidly as 14 percent per year.

Our belief is that the appropriate discount rate should be close to the 5 percent rate used in the benchmark estimates. In computing net present value, we use the discount rate to obtain estimates in current dollars; hence, a "real" rate net of inflation should be used. A 5 percent real rate, along with a 6 percent inflation rate, corresponds to a nominal interest rate of 11 percent (i.e., including points built in for inflation). This figure is in line with current interest rates and, in fact, may be somewhat high considering the rate of return on relatively risk-free assets such as short-term government bonds.<sup>1/</sup> However, the net present value estimates with alternative discount rates indicate that a relatively small change in the discount rate will lead to a substantial change in the net present value estimates for both non-Corpsmembers and society.

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<sup>1/</sup> Twenty-six-week Treasury bonds currently yield slightly over 9 percent interest, while long-term Treasury bonds yield over 8.5 percent interest.

### 3. Other General Assumptions

Two additional assumptions were used in estimating many of the benefits: the assumption that average and marginal costs are equal, and the assumption that the point estimates of the Job Corps effects obtained from the interview data are the true effects. No alternative estimates will be presented for these assumptions. Brief discussions of their effect on the estimates of the net present value can indicate the sensitivity of the overall findings.

Average and Marginal Costs. In many instances, the benefits from Job Corps take the form of reduced operational or administrative costs for other public programs. In these cases, the value of the benefit is the marginal cost reduction or the change in total system costs that result from the reduced use of that system by Corpsmembers.

However, the changes in total system costs are likely to be small and extremely difficult to detect because the system will be responding to hundreds of other forces at the same time. As a result, we have used the average system cost (total costs divided by the total number of cases) as a measure of marginal costs for valuing the Job Corps effects on all such programs.

Average and marginal costs do not have to be equal (and, in fact, are not likely to be equal in the short run). For example, a small change in AFDC caseloads may not require any change in the capital equipment needed by the administrative system for AFDC. As a result, the marginal cost reduction will be the value of the resources saved from not having the additional cases (e.g., caseworker time, postage, paper, computer time, etc.). The average cost, however,

will include some portion of the capital costs in addition to the marginal costs. Thus, in our example, average costs will be greater than marginal costs, although under other circumstances, marginal costs could be greater.

The basic rationale for using average costs is that they are much easier to estimate, and, in the long run, marginal and average costs will tend to be equal. The data necessary to estimate average cost, total costs, and caseload per period of time are almost always available from budget data. Marginal costs, on the other hand, require special estimation, by using cost data corresponding to several caseload levels. Thus, average costs can be estimated accurately and cheaply. In addition, in the long run, agencies will adopt the level of capital equipment that best fits their caseloads. By adjusting their scale in this manner they can minimize their average costs; by doing so, they will tend to equate marginal and average costs in the long run. Thus, if Job Corps reduced the system's caseloads in the long run, the agency would respond by changing its scale; therefore, the change in the marginal costs would be approximately equal to the change in average costs.<sup>1/</sup>

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<sup>1/</sup>This result does not require that the affected programs actually reduce their scale if there is continually increasing demand for the system's services. In that case, the fact that Job Corps reduced the demand of Corpsmembers for the service would mean that the expansion to the optimal scale would be smaller than in the absence of Job Corps. Of course, this entire argument is based on the assumption that the agency can and will make optimal adjustments in its scale (i.e., that marginal cost equals average cost in the long run)--an assumption that is reasonably valid. Of course, we are also implicitly assuming that the adjustment to a long-run optimal level is relatively quick and costless.

The effect of this assumption on our estimates of the net present value is difficult to determine. However, if we adopt a long-run view of both Job Corps and the other affected programs, then the approximation error from this is probably quite small.

Estimates of Job Corps Effects. We have used the estimates of Job Corps effects on Corpsmember behavior without regard to statistical significance.<sup>1/</sup> The rationale for this approach is that we should use the best estimates of Job Corps effects, regardless of their precision. However, it must be noted that many effects that were valued in this report (e.g., the reduction in murder and robbery arrests and some of the changes in the use of other programs) are not statistically significant at the levels usually adopted. Thus, there is a good chance in these cases that the estimates for Job Corps effects used in this report do not accurately reflect the direction of Corpsmembers' behavior.

To the extent that our estimates are unbiased we should be just as likely to observe a negative effect as we would a positive effect if the true effect is zero or close to zero. Thus, our decision to include all estimated effects, regardless of significance, should lead to neither an overestimate nor an underestimate of the net present value. The estimates used in the benefit-cost analysis are the best (i.e., most accurate) estimates of Job Corps effects that are currently available; they are generally unbiased or conservative

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<sup>1/</sup> In essence, statistical significance is a statement about the probability of the estimated effect being observed by chance. The usual standard for determining significance is that an estimate is significantly different from zero if the probability of observing that effect (given that the true effect is zero) would be less than 5 or 10 percent.

(i.e., underestimates of benefits); and they were obtained from an evaluation designed to yield accurate overall benefit-cost estimates.<sup>1/</sup>

### C. ASSUMPTIONS REGARDING SPECIFIC BENEFITS AND COSTS

Estimating the five benefit components (dealing with changes in output, transfer dependence, criminal activity, drug and alcohol use, and the use of alternative education and training programs) involved many specific assumptions or approximations. Of these, four are of sufficient importance to restate here:

- The value of the output produced by Corpsmembers in Job Corps is approximately equal to the price an alternative supplier would have charged to produce that output.
- The increase in Corpsmember earnings can be used as a measure of the increase in social output (in particular, there is no displacement of non-Corpsmembers).
- Corpsmembers view as a cost 35 percent of the reductions in the value of stolen property from robbery- and burglary-related theft, plus all of the value of stolen property from larceny-related theft.
- The social cost of a murder can be measured by the value of the output the victim would have produced, plus the medical costs incurred in trying to save the victim.

The basis for each of these specific assumptions and the impact of each on the estimates of the net present value are discussed in this section.

#### 1. Value of Output

The use of the price an alternative supplier would charge to produce the output that Corpsmembers produce as part of their vocational

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<sup>1/</sup> See the main volume of the "First Follow-up Report." Also, see Technical Report C for details on the accuracy of the estimates of Job Corps effects, and Technical Report A for details on the evaluation design.

training while in Job Corps may overestimate the actual social value of that output. As was described earlier, this supply price may be viewed as an upper bound for the social value.<sup>1/</sup> The supply price reflects the value of the resources that went into the output rather than the value of that output to its recipients. The social-demand value could differ from the supply price because of the displacement of other workers, external benefits or costs, altruism on the part of recipients, the lack of demand for the output, and other features of the market for such output.

As is shown in Technical Report E, the value of this output might reasonably be expected to fall between slightly above the supply price to only about 65 percent of the supply price. Using a value that is only slightly above our benchmark estimate will not affect the final estimate of the net present value. However, if we use a lower-bound estimate of 65 percent of the supply value of in-program output, the estimates of the net present value will decline appreciably. Under this lower-bound assumption on the value of output, our benchmark estimate of net present value to society would be reduced from approximately \$251 to \$-13 per Corpsmember; the non-Corpsmember net present value would drop about \$235 to a value of \$-195; and the Corpsmember net present value would drop about \$30 to a value of \$182. Under the lower bound for the estimate of the value of in-program output, the social net present value of Job Corps would be close to zero (given our assumptions about the fade-out of effects, etc.), with the net benefits to Corpsmembers being offset by net costs to non-Corpsmembers.

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<sup>1/</sup> See Section A.4 of Chapter III.

## 2. Earnings as a Measure of Output

It is quite possible that some of the jobs that Corpsmembers obtain after leaving Job Corps would have otherwise gone to other workers (i.e., non-Corpsmembers). If these other workers remain unemployed (i.e., if they are displaced by Corpsmembers who would have been unemployed in the absence of Job Corps), then social output will not have been increased. In fact, if there is 100 percent displacement, total output will remain the same, with the Corpsmembers merely taking the place of the displaced workers. In this manner, the earnings gains observed among Corpsmembers may overstate the true increase in social output.

In cases where the workers who were displaced later obtain jobs, the earnings gains among Corpsmembers will still overstate the actual value of the benefit to society from increased output, because the earnings gains ignore the adjustment costs associated with the efforts of displaced workers to find new jobs. Therefore, by ignoring displacement and adjustment costs, the earnings gains of Corpsmembers will overestimate the increase in social output and, thus, the present value of social benefits.

Corpsmembers will view all the earnings gains as benefits; thus, their estimate of net present value will not be changed if we assume that there was displacement. The non-Corpsmember group, however, will have an additional cost associated with the program--namely, the value of the reduction in the output they produce as a result of the displacement. The social benefit would then be the net change in total output, or the difference between the gain to Corpsmembers and the cost to non-Corpsmembers.

Of course, if there is displacement in the markets that Corpsmembers enter upon leaving Job Corps, there is even a higher probability of displacement in those markets Corpsmembers leave in order to enter Job Corps, so that the present value of social costs will also be too high. Our estimate of the opportunity cost of Corpsmember labor while in Job Corps also will be too high. Social output will not fall by the full amount of the in-program reduction in Corpsmember earnings; instead, other workers will fill some of those jobs vacated or foregone by Corpsmembers. Thus, there will be a cost to Corpsmembers of their foregone earnings, a benefit to non-Corpsmembers who become employed, and a net social cost of the difference between losses to Corpsmembers and the gains to non-Corpsmembers.

If we were to assume that there was displacement, therefore, the value of the benefits would be reduced, but the value of the costs would also be reduced. To the extent that Job Corps is successful in removing youths from labor markets that have high unemployment rates and are slow to adjust to changing economic conditions, and in training them for jobs in more flexible markets with less unemployment, we would expect that the percentage reduction in costs due to replacement should be greater than the reduction in benefits caused by displacement.<sup>1/</sup> Therefore, it is likely that

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<sup>1/</sup>This hypothesis is also supported by the fact that displacement problems should be worked out after a few years. As a result, benefits corresponding to earnings gains several years after Corpsmembers leave Job Corps are not likely to be affected by our assumptions regarding displacement.

dropping our assumption that there is no displacement (or replacement) should have little impact on the overall estimates of the net present value, and it is possible that the estimate of the net present value for society would rise (with non-Corpsmembers benefiting more by replacement than they lose by displacement).

### 3. Stolen Property

The benchmark estimate treats the value of stolen property as a loss to the victim, a partial gain to the criminal, and a net loss to society. The entire value of the stolen property is taken as the value of the loss to the victim, while criminals are assumed to view the gains differently--depending on whether they consume the stolen property directly or convert it into cash. In cases where the property is sold for cash, the criminal is assumed to receive 35 percent of its value.<sup>1/</sup> When the property is consumed directly, the criminal is assumed to benefit by the entire market value. From the social perspective, the losses of the victims and the gains of the criminal partially cancel out, leaving a net social cost corresponding to the fencing costs, damaged property, added risk, and costs associated with the fact that stolen property carries no legal title.<sup>2/</sup>

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<sup>1/</sup> This estimate of 35 percent includes an allowance for stolen cash that does not have to be converted.

<sup>2/</sup> There are, of course, other social costs associated with stolen property. Some other property may be damaged in the crime (e.g., windows broken in order to steal property), and there may also be some personal injury. These costs are captured to a degree in our estimates of the reduction in personal injury and property damage. This treatment is analogous to the treatment of Food Stamp transfers, in which the value of the goods transferred (food) is treated as a transfer, while the costs of making the transfer are treated as social resource costs.

Because Job Corps leads to a reduction in the overall amount of property crime committed by Corpsmembers, this treatment of stolen property implies that there are benefits to non-Corpsmembers. The benchmark estimates of the gain to non-Corpsmembers was approximately \$970 per Corpsmember, while the average foregone theft income of Corpsmembers was estimated to be approximately \$580. The benchmark estimates assume that all property stolen by means of robbery or burglary was fenced, while property obtained through larceny or other property crimes was consumed by the Corpsmember (and had full value to the Corpsmember),

These assumptions are only crude approximations to what actually happens. It is possible that Corpsmembers would have consumed all the goods they stole, or that they would have fenced all of them. It is also possible that the estimate of the amount of cash realized by fencing the property is inappropriate for Corpsmembers. For example, youths may be inefficient at dealing in illegal markets and, consequently, are not able to realize as much as 35 percent of the market value of the stolen property.

To test the sensitivity of the net present value estimates to the assumptions regarding the value of stolen property, we can calculate two alternative estimates. First, if Corpsmembers value the stolen property as highly as non-Corpsmembers (i.e., if they consume it all or are able to sell it at the legal market price), then they will view as a cost the entire Job Corps-related reduction in the value of stolen property. This would reduce the net present value estimate for Corpsmembers by an average of \$387.43 from the benchmark estimate

to -\$175.53 per Corpsmember. If this assumption were true, Corpsmembers would, on average, incur a loss in order to participate in Job Corps, and, therefore, it is unlikely that we would observe individuals continuing to enter Job Corps (at least some of the Corpsmembers would be making irrational decisions).<sup>1/</sup>

If Corpsmembers valued stolen property as highly as non-Corpsmembers, there would be no social costs other than those associated with personal injury and property damage. Because Corpsmembers would directly consume all the stolen property under this assumption, there would be no social cost due to fencing or other sources. Therefore, the estimate of the social net present value would have to be reduced by \$387.43 to yield an estimate of -\$135.50. Under these conditions Job Corps would seem to be inefficient from a social perspective, with the net present value of losses equal to \$136.50. The non-Corpsmember would, of course, still perceive the entire value of the reduction in stolen property as a benefit.

The second sensitivity test would be to assume that all stolen goods are fenced, and that Corpsmembers receive only 35 percent of the market value.<sup>2/</sup> Under this assumption the cost to Corpsmembers, with respect to the value of foregone theft income,

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<sup>1/</sup>Of course, it is possible that the Corpsmembers would place a high value on those benefits not included in our benchmark (e.g., improved health status, time spent on their own away from their home environment, etc.). In these cases, the true net present value could be positive even though our estimate was negative.

<sup>2/</sup>We mentioned previously that this "fence factor" includes an adjustment for the fact that part of the stolen property is cash that does not need to be fenced.

would be reduced, while the fencing and other social costs would be increased. The non-Corpsmembers estimates would again be unaffected by this change in assumptions. The estimates of the net present value per Corpsmember under these assumptions about stolen property would be \$492.66 from the social perspective and \$453.63 from the Corpsmember perspective. The Job Corps program would clearly be desirable from all perspectives under this set of assumptions about the value of stolen property.

Changing the treatment of stolen property has a substantial effect on the estimates of the net present values for society and Corpsmembers. However, as long as thieves value stolen property at less than 80 percent of the pretheft value to victims, the net present value estimates will be positive from all three perspectives, society, non-Corpsmembers, and Corpsmembers.

#### 4. The Cost of Murder

All the estimates of property damage and personal injury suffer from the fact that they do not include the psychological costs associated with crime. However, this shortcoming seems particularly problematic in the case of murder. Here, the anxiety and fear over potential murders, as well as the grief and suffering incurred by families and friends of murder victims, seem to be greatly undervalued.

To partially correct for this omission, we would increase the estimate of the property damage and personal injury cost of murder. We could use an estimate of the lost output that was in the upper part of the \$100,000 to \$400,000 range estimated by

Rhoads, instead of using the conservative \$100,000 estimate.<sup>1/</sup> If we used \$400,000, it would imply that the total nonsystem cost was \$400,537.61 per arrest. This would, in turn, raise the estimated social and non-Corpsmember net present value estimates by \$270, to values of \$520.93 and \$309.03, respectively.

Of course, even this number is conservative, in that it still fails to capture the amount people would be willing to pay to reduce the chance of murder. Jones-Lee provides evidence that society would be willing to pay approximately \$6 million to avoid one (anonymous) murder.<sup>2/</sup> If we used this estimate in our calculations, the net present values for both society and non-Corpsmembers would rise by \$5,400 per Corpsmember.

Caution must be exercised in interpreting these results, because the estimate of the reduction in murder arrests is not statistically significant. As a result, it is possible that the true effect of Job Corps on murder (and, thus, on murder arrests) is zero. In any event, we would need a larger sample to accurately predict the effect of Job Corps on the number of murders; such an effort seems unwarranted because, even if we assume no effect on murders, the benchmark estimate of net present value from the social perspective clearly remains positive.

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<sup>1/</sup> See the discussion in Chapter II, Section D.2 above.

<sup>2/</sup> M.W. Jones-Lee, The Value of Life: An Economic Analysis, p. 139.

#### D. UNMEASURED BENEFITS AND COSTS

In order to interpret the benchmark net present value estimates accurately, it is necessary to consider those benefits and costs that have been omitted or are unmeasured. While we have operated under the assumption that the measured components will dominate the unmeasured components, these other benefits and costs may be substantial. In fact, the extent of the unmeasured benefits suggests that the true social net present value is probably larger than our benchmark estimate.

##### 1. Unmeasured Benefits

While the major tangible benefits of Job Corps have been identified and estimated in our analysis, several potential benefits remain unmeasured. These potential benefits include the following:

- The reduction in the psychological costs of crime (both costs to actual and potential victims and incarceration costs incurred by convicted criminals)
- Satisfaction Corpsmembers derive from having more socially acceptable lifestyles
- Increased satisfaction among both Corpsmembers and non-Corpsmembers due to preferences for having individuals work (even in subsidized jobs or training programs) rather than receiving transfers
- Satisfaction that Corpsmembers derive from being in Job Corps
- Increases in the health status of Corpsmembers
- Changes in the welfare of Corpsmembers and non-Corpsmembers due to reduced Corpsmember drug and alcohol use and treatment for both problems
- Future earnings increases of Corpsmembers if they obtain further training and education after leaving Job Corps

- Satisfaction from a more equitable distribution of income, with high per capita benefits for Corpsmembers

While no values are assigned to these intangible benefits, some indication of their magnitude can be inferred from other data sources. For example, it seems clear that people are greatly concerned about perceived increases in crime. Data gathered as part of the National Crime Survey indicate that approximately 50 percent of the people in the United States have "changed or limited their activities in the past few years because of crime."<sup>1/</sup> In addition, because of the short-term nature of the follow-up data, we have not included the benefits Corpsmembers receive because they receive less punishment for crime (particularly the reduction in foregone earnings associated with detention and incarceration, which is a social benefit).

The reduction in criminal activities along with increases in Corpsmembers' employability may also lead to increases in Corpsmember self-esteem and satisfaction with their more socially acceptable lifestyles. This point also has important implications from the non-Corpsmembers' perspective of Job Corps because they may be willing to pay for the program in order to induce Corpsmembers to adopt more acceptable lifestyles.<sup>2/</sup>

One element of a more acceptable lifestyle is that Corpsmembers reduce their use of drugs. Recent survey data indicate that between

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<sup>1/</sup> Sourcebook of Criminal Justice Statistics--1977, Table 2.14, p. 265.

<sup>2/</sup> Thus, they may view Corpsmembers' return to school as a benefit, even though it implies further costs for non-Corpsmembers.

55 and 58 percent of the population feels that in their own communities, drug and alcohol use by young people is a serious problem.<sup>1/</sup> These people would conceivably support a program like Job Corps that seems to reduce drug and alcohol use among youths.

## 2. Unmeasured Costs

From the financial data provided by Job Corps, our interviews with Corpsmembers, and the special studies of resource use, we have been able to capture the bulk of the costs of Job Corps. We have omitted the costs that stem from the displacement by Corpsmembers of other workers, as well as any costs brought about by community disruption due to the location of Job Corps centers. However, these costs are likely to be small. The fact that the net effect of including both labor-market replacement and displacement is probably small, as discussed above. The costs of community disruption are also probably small because centers make concerted efforts to smooth relationships between themselves and the neighboring communities. A final potential unmeasured cost that we have been able to identify would occur if Corpsmembers value the in-kind transfers they receive from Job Corps (food, housing, etc.) less highly than their cost to Job Corps. Thus, there would be a social cost associated with the provision of such items as food and housing to Corpsmembers if the cost to non-Corpsmembers were greater than the benefit<sup>to</sup> Corpsmembers.

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<sup>1/</sup> Sourcebook of Criminal Justice Statistics--1977, Tables 2.45 and 2.46, p. 277.

## E. CONCLUSION

The conclusion that emerges from this comparative evaluation of Job Corps benefits and costs is that the social benefits outweigh the social costs. Our benchmark estimate suggests that, on average, it costs society \$4,987 to enroll a person in Job Corps, and that this investment generates benefits worth (in present value) \$5,237. Thus, Job Corps appears to be an economically efficient use of resources.

As a group, non-Corpsmembers appear to be slightly better off because of Job Corps. Non-Corpsmembers receive benefits averaging approximately \$5,683 per Corpsmember, primarily from increased output and reduced criminal activities among Corpsmembers. Their corresponding costs are about \$5,604 and derive mainly from the Job Corps program expenditures. This leaves a net present value for non-Corpsmembers of about \$40 per Corpsmember.

Corpsmembers appear to profit from Job Corps to a greater extent than non-Corpsmembers. The Corpsmembers incur costs of about \$2,650, on average, but receive corresponding benefits worth over \$2,860. The Corpsmember benefits stem from the increase in their employability attributable to Job Corps. They also receive substantial benefits in the form of transfers (both cash and in-kind) given to them while they are in the program. The main costs to Corpsmembers are from reductions in welfare transfers, less income from crime, and the opportunity cost of their labor while they are in Job Corps.

The largest social benefit component is the one associated with reductions in Corpsmember criminal activity. The reduction in

the costs to the criminal justice system of processing individuals who are arrested averaged about \$1,900 per Corpsmember. When this benefit is added to those associated with reductions in stolen and damaged property and personal injury, the total crime-related benefits come to over \$2,500 per Corpsmember. The bulk of these benefits is due to reductions in burglary and larceny.

The other large social benefit from Job Corps is the increase in output produced by Corpsmembers. The value of the goods and services they produce while they are in Job Corps is almost as large as what they would have produced if they had not entered Job Corps. This fact is encouraging given that work projects in Job Corps are chosen primarily for their compatibility with the training objectives of the program. Furthermore, the training seems to pay off because the present value of Corpsmember's earnings after leaving Job Corps is estimated to increase by an average of approximately \$1,200.

The effect of Job Corps on Corpsmember use of transfer programs has a relatively minor impact on social benefits, but represents a substantial cost to Corpsmembers. We estimated that approximately 40 percent of the cost of Job Corps to the average Corpsmembers is accounted for by such reductions in transfers (\$1,010 of a total cost of \$2,650). However, the costs to Corpsmembers of the reduction in transfers is cancelled out from the social perspective by the corresponding benefit to non-Corpsmembers, who as a group no longer must pay for the transfers. The only social benefit derived from the reduced use of transfer programs is the estimated decline in administrative costs of about \$120 per Corpsmember.

The other measured social benefits are relatively small. They include a benefit of \$175 per Corpsmember associated with less use of drug- and alcohol-treatment facilities by Corpsmembers, and a benefit of approximately \$400 per Corpsmember that is due to the fact that Corpsmembers enroll in fewer alternative training and educational programs because of Job Corps.

Further social benefits undoubtedly exist but are not valued in this analysis. These unmeasured benefits include the increased well-being of Corpsmembers because of improved health status and self-esteem, and psychological benefits resulting from reductions in criminal activity. Thus, our benchmark estimates of the net present value probably underestimate the true value to society of investments in Job Corps.

The sensitivity tests on the importance of the different assumptions highlight the importance of the postprogram effects of Job Corps. It seems clear that if the program were evaluated only on the basis of during-program effects, it would be regarded as socially inefficient. Even if we include the benefits from the first six postprogram months, the social costs still outweigh benefits by over \$3,200. Thus, future benefits must be worth at least this much if the program is to be successful.

Until we finish collecting and analyzing follow-up data from a longer time period, the estimates of these crucial postprogram benefits will, by necessity, remain imprecise. The sensitivity tests indicate that if the actual decay rate for program effects is lower than our benchmark assumption of approximately 14 percent a

year (a decline of 50 percent every five years), then the program will be a success. If, however, the actual decay rate is much above 14 percent, the net present value will be negative. In general, however, we feel that the assumption of a 14 percent decay rate is upper-bound approximation for the individuals in our sample, and that the resulting estimates of net present value probably understate the true social benefits and costs. In this light and on the basis of our early observations, we conclude that Job Corps is an efficient use of resources.