

The Promise of Public Sector-Sponsored Training Programs

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The last decade has seen a rise in concern about the skills of the U.S. labor force. Government reports such as *A Nation at Risk* (1983) and *America 2000* (1991) expressed alarm about the widening gap between the skills of U.S. workers and those of their counterparts in other industrialized nations. This concern coincided with substantial changes in the U.S. labor market that have led to reduced real earnings and labor force participation rates for less-skilled workers. Partly as a result of these changes, the poverty rate, which had fallen sharply during the 1960s, has actually increased during the last two decades.

As concern about workers' skills has risen, so has interest in the role that public sector-sponsored employment and training programs might play in addressing "America's workforce crisis." The hope is that public expenditures on these programs will enhance participants' productive skills and, in turn, increase their future earnings and tax payments and reduce their dependence on social welfare benefits. One way to gauge whether increased reliance on these programs will substantially improve the skills of the work force is to examine the impact of past programs on the earnings of the two groups that have been the primary recipients of public sector-sponsored training: economically disadvantaged or dislocated workers.

The best summary of the evidence about the impact of past programs is that we got what we paid for. Public sector investments in training are exceedingly modest compared to the magnitude of the skill deficiencies that policymakers are trying to address. Not surprisingly, modest investments usually yield modest gains—too small to have much effect on poverty rates. There also

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is evidence that existing services are ineffective for some groups. As a result, training dollars now going to those groups would be better spent by reallocating them toward other groups that benefit from these programs and also toward the development of new and probably more intensive high-cost services that can generate larger post-program earnings gains. Unless policymakers can develop such services, the promise of public sector programs to improve the skills of economically disadvantaged and dislocated workers is limited.

The next section of this paper briefly describes the history of U.S. federally sponsored training programs and their evaluations.¹ Based on more than two decades of research, it is possible to estimate the impact of such programs on earnings and to form some judgments about whether this training has benefited both the trainees and society. A final section discusses the implications of past programs for the development of new and more cost-effective training strategies.

A Brief History of U.S. Training Programs and Their Evaluations

Four Decades of Training Programs

Interest in designing public sector-sponsored programs to augment the skills of the work force began at least as far back as the midst of the 1958 recession, when Congress enacted the Area Redevelopment Act. This legislation reflected increasing fears about the consequences of automation. It provided loans to businesses in depressed areas and funds for retraining the unemployed. Similarly, fear of job loss associated with automation motivated Congress to pass the Manpower Development and Training Act (MDTA) in 1962. Although policymakers originally designed this program to aid dislocated workers, its emphasis changed from retooling the unemployed to reducing poverty following the passage of the Economic Opportunity Act (1964). As a result, the MDTA program increasingly began to serve welfare recipients and low-income youth.

During its existence, MDTA was a federally operated program that provided such employment and training services as single occupation classroom training, referrals to vocational and technical schools, and subsidized on-the-job training. By the last year of the Johnson administration, MDTA programs provided 140,000 persons classroom training at a cost of \$6,500 (1994 dollars) per participant, and 125,000 persons on-the-job training at a cost of \$3,000 per participant (Manpower, 1969).

¹This paper does not examine the effectiveness of several programs that receive a substantial share of federal training expenditures: the Summer Youth Program for disadvantaged youths, the Vocational Rehabilitation Program for disabled persons, and the Vocational Education Program largely for students enrolled in secondary schools and community colleges. The literature contains very few evaluations of the impact of these programs. For a more complete survey of existing U.S. employment and training programs, see Barnow and Aron (1989).

The best-known MDTA program was the Job Corps. This program provided disadvantaged youths with a comprehensive array of services—counseling, education, training, work experience, and health care—in residences usually located outside their neighborhoods. Because Job Corps provided so many services, it was and remains a relatively expensive program: during FY 1966, the program served 40,600 persons and cost \$37,900 (1994 dollars) per participant per year. The Job Corps program continues to operate today and now serves 104,000 persons annually. But since the 1960s policymakers have trimmed its cost to approximately \$16,000 per participant per year.

During the Nixon administration, the focus of U.S. employment and training programs changed in two important respects when Congress replaced MDTA with the Comprehensive Employment and Training Act (CETA). First, in keeping with the administration's new policy of revenue sharing, this legislation turned over the administration and operation of most employment and training programs to the states. For this purpose, the act required the federal government to provide states and locales with grants so that they could train low-income unemployed and economically disadvantaged persons. Second, this legislation incorporated a program established during the 1970–71 recession that provided for temporary public service employment to eligible unemployed persons. The new policy of state and locally operated programs continued under the Carter administration, but expenditures and number of persons served were substantially raised. By FY 1981, expenditures on classroom training, on-the-job training, and other services for the disadvantaged (under Title IIB and IIC of CETA and Job Corps) had increased to \$4.4 billion (1994 dollars), and expenditures on public service employment amounted to nearly an additional \$4 billion.

During the Reagan administration, the federal government once again altered its policy toward public sector-sponsored training when Congress passed the Job Training Partnership Act (JTPA). In replacing CETA, this legislation reinforced its predecessor's decentralized structure, eliminated its public service employment component, and with the exception of Job Corps, substantially reduced real expenditures on traditional services for the economically disadvantaged (served under Title IIA of JTPA). However, mindful of the rising numbers of permanently laid off prime-age workers, Congress also authorized (under Title III of JTPA) funding services for unemployed dislocated workers who were not economically disadvantaged. These persons previously received special assistance only under the Trade Adjustment Assistance (TAA) program when they showed that they had lost their jobs as a result of foreign trade.²

²Congress established the Trade Adjustment Assistance program in the early 1960s to provide supplemental unemployment benefits to workers who lost their jobs as a result of trade liberalization. In 1974, Congress expanded the program's scope to cover workers who had lost their jobs as a result of increased foreign trade. In 1988, it required that those who receive benefits also be enrolled in a training program.

Currently, the federal government provides JTPA services to nearly 900,000 economically disadvantaged persons each year (under Title IIA and Job Corps) at a cost of \$2.6 billion or an average cost of approximately \$3,000 per participant. In addition, it spends approximately \$275 million providing employment and training services to nearly 200,000 dislocated workers.

These program costs are much lower than the per participant costs of the MDTA and CETA programs. However, these lower costs overstate the cutback in resources available for training the disadvantaged. A main reason for this is that, unlike its predecessors, JTPA generally does not allow participants to receive training stipends. Because these stipends are transfer payments between taxpayers and trainees, they are not a measure of the resources being spent to increase workers' skills. Their elimination does make training more costly to participants and may affect who receives training, but they do not affect the social costs of training, as long as the stipends do not cause substantial deadweight losses when they are transferred to trainees.

JTPA has successfully targeted its services to an economically disadvantaged population. For example, during FY 1988, 41 percent of Title IIA participants were high school dropouts, 92 percent were from low-income families, and more than one-half had not worked in the six months prior to applying to the program. As a result, at that time only 5 percent were receiving unemployment insurance benefits and 40 percent were receiving public assistance. By contrast, because dislocated workers had been recently employed, their characteristics were significantly different than those of Title IIA participants.³ When they apply for the program, they were substantially more likely to be male, white, not economically disadvantaged, and receiving unemployment insurance.

Both economically disadvantaged persons and dislocated workers participating in JTPA usually receive one or more of four services. Approximately 15 percent of the economically disadvantaged participants receive job search assistance. This inexpensive service often costs only a few hundred dollars per participant and provides classes teaching job search skills, career counseling, job referrals, and relocation assistance. About 45 percent of the economically disadvantaged participants receive classroom training. Some of this training is

³Under JTPA, the phrase "economically disadvantaged" refers to "an individual who receives, or is a member of a family that receives cash welfare payments under a federal, state, or local program; receives, or is a member of a family that receives, a total family income for the six month period prior to application, which does not exceed the poverty level established by the Office of Management and Budget (OMB) or 70 percent of the Bureau of Labor Statistics (BLS) lower living standard, whichever is greater; is a foster child whose family is receiving state or local government payments; or an adult handicapped individual whose own income meets the eligibility criteria, but whose family income pay does not." The JTPA defines a "dislocated worker" as a person who (i) has been terminated or laid off, cannot collect unemployment insurance because they are ineligible or have exhausted their entitlement, and are unlikely to return to their previous industry or occupation; (ii) has been terminated because of a permanent closing of their plant or facility; or (iii) has been unemployed for a long period and has limited opportunity for finding work in the same or similar occupation near where they live. See Job Training Partnership Act (1987, pp. 53, 85).

provided in private vocational and proprietary schools, but increasingly local administrators subcontract these services from community colleges. Roughly 15 percent of participants receive on-the-job training. During the 1960s participants received such training in public sector jobs, but since that time this training has shifted to private sector jobs. Usually employers participating in the program receive up to a 50 percent wage subsidy over six months to cover the cost of training. Finally, 6 percent of disadvantaged participants receive work experience. This service amounts to a short-term job in the public or nonprofit sector.

The forms of training received by participants vary substantially among demographic groups. The adults participating in classroom training are more likely to be women and usually receive 16 weeks of vocation-related instruction; the youths who receive these services are more likely to receive remedial education, sometimes culminating in a GED. Recipients of on-the-job training are much more likely to be relatively "job ready" men. Correspondingly, the participants in a work experience program are likely to be youth and adult women without recent labor market experience. The percentages of dislocated workers receiving these four services differ somewhat from those for the disadvantaged participants. Nearly one-quarter of the dislocated workers receive job search assistance, 45 percent receive classroom training, and 13 percent receive on-the-job training.

Requiring Work in Exchange for Welfare

Running alongside and together with these programs has been the policy that welfare recipients should participate in employment and training services in exchange for welfare checks. Congress established this principle in 1967 when, fearing the consequences of a rising Aid to Families with Dependent Children (AFDC), it enacted the Work Incentive Program (WIN). This program assisted AFDC recipients in finding regular employment, thereby reducing their dependence on welfare. Although the program's content varied among states, welfare recipients served by WIN usually received low-cost job search assistance. After 1981, the federal government allowed many states to add a short-term work experience component to their WIN programs. In practice, this meant that certain states required some of their welfare recipients who could not find a job on their own to work in public sector jobs for a number of hours equal to their annual AFDC benefits divided by the minimum wage.

More recently, the Family Support Act of 1988 replaced WIN with the Job Opportunities and Basic Skills Program (JOBS). The program intended that job search assistance be followed by more comprehensive classroom training services providing either remedial education or vocational instruction. However, because of insufficient funding, it operates in this way in only a few locales.

One important difference between WIN or JOBS and other existing employment and training programs is that participation can be linked to the receipt of welfare. WIN originally required participation of all welfare recipients who did not have preschool children; now it mandates participation of all welfare recipients with children over three years of age. Thus, evaluations of WIN and JOBS assess an environment in which participants are compelled to participate in training. By contrast, participation in other employment and training programs is voluntary. Further, under current law, access to public sector training is not an entitlement. This means that program administrators can choose from among persons in the eligible population those who they believe would benefit from training.

Other things equal, we might expect the social returns to training to be larger for programs in which participation is voluntary. However, this expectation may be wrong, because social welfare programs are means-tested. This fact implies that after welfare participants participate in training, any subsequent earnings gains may cause them to lose a portion of their welfare benefits. As a result, the private benefits that a person receives from training may be less than the social benefits associated with training.

Issues in Evaluating U.S. Training Programs

The evaluation of these public sector-sponsored programs began in earnest during the mid-1970s when it had become increasingly clear that “although billions of dollars had been spent on employment and training programs, very little was known on a systematic basis about the impact of these programs” (Hollister, Kemper, and Maynard, 1984, p. 3). At that time, evaluators asked a straightforward question: what is the difference between participants’ post-program earnings and the earnings that they would have received had they not participated in training? In practice, this question has been difficult to answer. The difficulties result partly from the design and implementation of training programs. Program administrators could mitigate some of these difficulties if they randomly assigned eligible volunteers either into a treatment group that received training or into a control group that received no services. In this case, an unbiased estimate of the training effect is the difference between the treatments’ and controls’ mean earnings.

In practice, however, MDTA, CETA, and JTPA site administrators usually decide who participates in training based on personal judgments about who is likely to benefit from these services and who is likely to be employed once training has ended. Under JTPA, administrators also must take into account how their admission decisions affect their performance as judged by a series of formal criteria created by the Department of Labor. Locales that perform well may be entitled to receive additional funding, while those that perform poorly may be sanctioned. For example, one of these criteria is the employment rate of trainees 13 weeks after they leave the program. Although policymakers intend that such a standard will improve the performance of the program, they also

cause sites to select participants who are likely to be employed once they leave the program. These participants need not be the ones likely to benefit the most from training. More importantly, the incentives that these criteria create help ensure that JTPA participants are not a random subsample of the population that is eligible for and would like to receive training.

Without a true control group to measure how participants' earnings would have grown in the absence of training, program evaluators must use nonexperimental methods to assess training's impacts. Such methods usually require evaluators to select a group of individuals who did not participate in training to serve as a comparison group. Next, they specify a statistical model of earnings and training participation that accounts for differences between the trainees' and the comparison group members' earnings and their decisions to participate in training. Unbiased (or consistent) estimates of the training effect depend both on the criteria used to select the comparison group and on the specification of the earnings and program participation equations.

Although most evaluations of large ongoing programs rely on these nonexperimental methods, an increasing number of studies have used experimental designs to evaluate demonstration programs and ongoing programs in a few select sites. Because the earnings history of a true control group is known in these evaluations, they can circumvent the principal shortcoming of nonexperimental evaluations and yield relatively straightforward estimates of the impact of training on earnings. But these experimental studies also have important limitations.

Some of these limitations complicate the statistical analyses of both experimental and nonexperimental evaluations. In both types of evaluations there is always a problem of sample attrition. More seriously, control or comparison group members may receive these same training services through another community organization. In this case, the evaluations measure the effect of a particular training program relative to other available services.

However, other limitations are unique to experimental designs. When participation is voluntary, the experimental evaluation measures the effect of the *offer* of program services to eligible participants, not the effect of actually participating in training (Heckman, 1992). Also, in the decentralized U.S. political environment, it is often difficult to persuade site administrators that they should randomly deny services to eligible applicants. This problem is serious enough that any design to test the impact of a large ongoing nationwide program is likely to be infeasible (Doolittle and Traeger, 1990; Hotz, 1992). Finally, some questions are not easily evaluated with an experimental design. For example, it is difficult to use an experimental design to estimate how training affects whether people participate in the program in the first place. Moreover, although experiments can yield unbiased estimates of the effect of training on earnings and employment rates, they cannot yield such estimates of training's effects on wages or the duration of subsequent employment spells. The reason is that we can collect information on wages and on the length of

current jobs only from those who are employed. A successful training program will raise the fraction of employed trainees compared with the fraction of employed controls. As a result, the characteristics of the two experimental groups are likely to differ among those who are employed. To examine these important questions, researchers must continue to rely on nonexperimental methods.

The Earnings Impacts of Employment and Training Programs

What sort of earnings gain would a reasonable analyst expect from investments in training? The education and earnings literature finds that an additional year of schooling is associated with approximately an 8 percent increase in the average worker's earnings—about \$1800 per year.⁴ The cost of that year of education includes both the formal per-pupil expenditures, other inputs from the family and the community, and perhaps the student's forgone earnings. Given that existing public sector sponsored employment and training programs usually are less intensive and expensive than an additional year of schooling, it would be surprising if they generated larger earnings increases. Instead, we should expect that most JTPA programs, which usually cost several hundred to a few thousand dollars per participant, would generate annual earnings gains of perhaps several hundred dollars. By contrast, a substantially more expensive program, such as Job Corps, would generate earnings gains equal to or perhaps greater than those from an additional year of schooling.

Nonexperimental Evaluations of Disadvantaged Workers

The findings from previous evaluations conform with the view that because public sector-sponsored training usually is less intensive and costly than a year of schooling, it has a smaller impact on participants' earnings. As shown by Table 1, nonexperimental evaluations of MDTA and CETA programs indicate that when training is most effective it raised the post-program earnings of its participants by perhaps \$1,000 to \$2,000 per year. Given the modest cost of these programs, if these impacts were to persist throughout participants' careers, they would imply a substantial rate of return to training. Unfortunately, in only a few instances have the effects of training been followed for more than a few years after training ends.

Although the table suggests that employment and training services sometimes raise participants' earnings, these gains are found most consistently for disadvantaged adult women. By contrast, program evaluators often report that training had no effect or that it actually lowered the earnings of disadvantaged men and youths. This finding that training actually lowered participants' earnings seems counterintuitive. It might result from specification errors in the

⁴In 1993, the average hourly earnings of private nonagricultural production and nonsupervisory workers was \$10.83; on an annual basis this amounts to approximately \$22,500 (1994 Economic Report of the President, p. 320, Table B-45). The \$1800 figure in the text is 8 percent of \$22,500.

Table 1
The Effect of Government Training Programs on Participants' Earnings
(increase in post-program annual earnings)

A. Nonexperimental Estimates for Disadvantaged Adults

<i>Study</i>	<i>Training Cohort</i>	<i>Men</i> <i>(whites/minorities)</i>	<i>Women</i> <i>(whites/minorities)</i>
Ashenfelter (1978)	1964 MDTA	\$750/ \$520	\$1,740/ \$1,540
Kiefer (1979)	1969 MDTA	-1,670/ - 1,850	1,570/ 2,160
Gay and Borus (1980)	1969-72 MDTA	125/ 133	1,132/ 311
Cooley et al. (1979)	1969-71 MDTA	1,150 ^a	1,680 ^a
Westat (1984)	1976 CETA	- 10/ - 210	810/ 660
Bassi (1983)	1976 CETA	50/ - 870	1,060/ 2,200
Dickinson et al. (1986)	1976 CETA	- 1,280 ^a	20 ^a
Geraci (1984)	1976 CETA	0 ^a	1,670 ^a
Bloom/ McLaughlin (1982)	1976 CETA	300 ^a	1,520 ^a
Ashenfelter/ Card (1985)(1)	1976 CETA	160 ^a	1,412 ^a
Ashenfelter/ Card (1985)(2)	1976 CETA	2,913 ^a	2,781 ^a
Dickinson et al. (1986)	1/ 76-6/ 76 CETA	- 850 ^a	450 ^a
Westat (1984)	1977 CETA	930/ 1,220	990/ 1,410
Bassi et al. (1984)	Welfare Recipients 1977 CETA	1,170/ - 190	1,660/ 1,260
Bassi et al. (1984)	Nonwelfare 1977 CETA	140/ 450	1,360/ 1,470

B. Nonexperimental Estimates for Disadvantaged Youth

<i>Study</i>	<i>Training Cohort</i>	<i>Men</i> <i>(whites / minorities)</i>	<i>Women</i> <i>(whites / minorities)</i>
Cooley et al. (1979)	1969-71 MDTA	\$1,230 ^a	\$600 ^a
Gay and Borus (1980)	1969-72 Job Corps	- 215/ 148	- 1,282/ - 325
Maller et al. (1982)	1977 Job Corps	1,600 ^a	800 ^a
Dickinson et al. (1986)	1976 CETA	- 1,110 ^a	370 ^a
Bryant and Rupp (1987)	1976 CETA-WE	60 ^b	
Bryant and Rupp (1987)	1977 CETA-WE	1,050 ^b	
Bassi et al. (1984)	1977 CETA	- 1,010/ - 1,330	80/ 260

Note: All earnings figures are expressed in 1990 dollars. The two sets of estimates for each gender refer to the training effect for whites and minorities, respectively.

^aSeparate estimates for whites and minorities were unavailable.

^bSeparate estimates for men and women were unavailable.

underlying econometric model. Or more seriously, it might result from lost labor market experience or from some stigma associated with having participated in a government training program.

Most of these program evaluations of adults studied the effects of relatively low cost services. The findings presented here suggest that although these conventional services do benefit adult women, other and perhaps more

intensive training strategies are needed for adult men and youths. One evaluation that supports this contention examines the effects of Job Corps on the program's 1977 participants (Maller et al., 1982). Job Corps is at least three times as costly as other services usually provided youths, more costly than a year of school, but probably less costly than a year in prison. As shown in the table, the program appears to have raised the post-program earnings of male participants by \$1,600 annually. The authors of that study also report that these gains persisted for at least four years after participants left the program. This finding is an important reason for the continued bipartisan popularity of the Job Corps program.

The most striking result of nonexperimental evaluations of employment and training programs is the variability in the estimated impacts of training. As shown by Table 1, not only do the effects vary among different cohorts, but even when program evaluators have studied the same cohort, they often arrive at substantially different estimates of the effect of training. For example, the six evaluations of CETA's impact on the 1976 cohort's earnings range from a decline of \$1,210 to a gain of \$1,350 for male participants, and gains of \$20 to \$2,200 for female participants.⁵ This remarkable array of estimates was produced by very able empirical researchers who evaluated the same cohort of participants using basically the same data. Subsequent analyses demonstrate that the variability in these estimates results not from sampling variability but from very subtle differences among evaluators' statistical models and choices of who they put into their comparison groups (Bryant and Rupp, 1987; Dickinson et al., 1987).

Experimental Evaluations of Disadvantaged Workers

The substantial variability in the estimated impacts of training, especially in the case of CETA, has contributed to the increased use of experimental designs. The experimental evaluations indicate that a variety of employment and training services can raise the post-program earnings of disadvantaged adult women, but that such programs generally have mixed or no effects on the earnings of disadvantaged adult men or youths.

Table 2 shows that when adult women participate in these programs their earnings gains are usually modest in size, persist for several years, arise from a variety of training strategies, and are sometimes achieved at remarkably little expense. (See citations at the bottom of Table 2.) Perhaps the most persuasive evidence that economically disadvantaged women can benefit from public sector-sponsored programs comes from the National Supported Work (NSW) Demonstration. This demonstration provided AFDC recipients with unusually long welfare histories with approximately 12 months of guaranteed work experience in clerical or services occupations (Hollister, Kemper, and Maynard,

⁵Separate estimates of the impact of different program services on earnings exhibit the same variability as the overall program estimates presented in Table 1 (Barnow, 1987).

Table 2
**Experimental Estimates of Effects of Employment
 and Training Programs on the Earnings of Disadvantaged Women**
(increase in post-program annual earnings)

<i>Services Tested / Demonstration</i>	<i>Net Cost per Participant</i>	<i>Post-Program Gain (Loss) for:</i>	
		<i>1st Year</i>	<i>3rd Year</i>
Job Search Assistance:			
Arkansas	\$140	\$220 ^a	\$410 ^a
Louisville (WIN-1)	170	350 ^a	530 ^a
Cook County, IL	190	10	NA
Louisville (WIN-2)	280	560 ^a	NA
Job Search Assistance & Work Experience:			
West Virginia	320	20	NA
Virginia Employment Services	520	90	330 ^b
San Diego I (EPP/ EWEP)	770	600 ^a	NA
Baltimore	1,160	190	630 ^a
Maine	2,450	140	1,140 ^b
Job Search Assistance & CT or OJT Services:			
San Diego II (SWIM)	1,120	430 ^a	NA
New Jersey	960	720 ^b	
GAIN (JOBS)	NA	266 ^a	519 ^a
MFSP-San Jose	4,230	NA	1,212 ^a
MFSP-Other Sites	3,730	NA	330 ^a
Work Experience & Retraining:			
AFDC Homemaker	6,900	1,760 ^a	NA
National Supported Work	7,100	460 ^a	810 ^a
National JTPA Study	NA	446 ^a	NA

Sources: Gueron and Pauly (1991), pp. 15–20; Bell et al. (1987), Tables 3 and 4; Couch (1991), Table 1; Bloom et al. (1992), Exhibit S.6, p. 13; Burghardt et al. (1992); Friedlander et al. (1985, 1993).

Note: —All figures in the table are expressed in 1990 dollars.

^aStatistically significant at the 5% level.

^bStatistically significant at the 10% level.

1984). Subsequent evaluations show that this work experience caused treatments' earnings to exceed those of the controls for at least seven years after the program ended (Couch, 1992).

Moreover, strategies that provide only low-cost job search assistance sometimes can significantly raise adult women's post-program earnings. The Louisville WIN laboratory experiments (Wolfhagen and Goldman, 1983) and the 1980s work-welfare demonstrations showed that just a few weeks of low-cost job search assistance can raise AFDC applicants' and recipients' earnings even

three years after the services were received.⁶ These job search services appear to have been most effective when received by less “job ready” women (Friedlander, 1988). However, unlike the outcome of the NSW Demonstration, the brief work experience component of the work-welfare demonstrations, which was required of some participants who could not find jobs after receiving job search assistance, did not significantly affect subsequent earnings.

There is less evidence from experimental evaluations on the value of classroom training, and of on-the-job training, and the evidence that exists is mixed. Recently, the national JTPA study, which examined the effects of JTPA services in 16 sites, found that access to Title IIA programs raised adult women’s earnings by approximately \$1,200 over a 2½ year period. Evidence about which services were most effective is ambiguous, partly because this question was not directly tested by the experimental design and partly because the answer to this question differs in different studies (Bloom et al., 1992, 1993). But the evaluations do suggest that disadvantaged women can benefit from on-the-job training. Results from other recent studies, the Minority Female Single Parent Demonstration (MFSP) and GAIN, suggest that classroom training is more effective when it teaches job-specific rather than basic skills, even to women with poor verbal and analytical proficiencies.

In contrast to the many social experiments about the effects of employment and training programs on economically disadvantaged adult women, fewer experiments examine the effects of these services on adult males and youths. The results of these evaluations are mixed, showing that training services sometimes modestly raise adult men’s earnings, but many times have no effect on them. The NSW Demonstration found that guaranteed work experience did not significantly raise earnings of disadvantaged ex-criminal offenders and ex-drug addicts. The work-welfare demonstrations indicated that job search assistance can raise the post-program earnings of men who had a prior history of receiving welfare, but not of men with no prior welfare history. Finally, the national JTPA study found that the relatively less disadvantaged men assigned to a service strategy that offered on-the-job training and job search assistance had marginally significant higher earnings. By contrast, those men assigned to a strategy that offered classroom training did not appear to benefit from JTPA services.

The findings from the few social experiments that studied disadvantaged youth are even less encouraging than the findings for disadvantaged adult

⁶The proliferation of social experiments during the 1980s was partly an unintended result of the Omnibus Budget and Reconciliation Act (OBRA) of 1981. OBRA gave states increased flexibility to design and manage welfare employment programs. One provision of the act allowed states to require AFDC recipients to work in public sector-created jobs as a condition for receiving their welfare grants. States attracted to this idea quickly discovered that they did not have enough money to create jobs for all eligible welfare recipients. Random assignments proved to be one way to allocate these scarce positions. Because most welfare recipients are women, during the 1980s many states initiated “work-welfare” demonstrations involving economically disadvantaged women.

males. For example, more than seven years of follow-up indicated that the prolonged work experience provided to disadvantaged 17- to 20-year-old high school dropouts in the NSW Demonstration had no effect on their subsequent earnings (Couch, 1992). Similarly, the JOBSTART Demonstration, which provided disadvantaged youths with similar services as Job Corps but without the residential living centers, did not generate significant higher earnings for its participants during the four post-program years followed in the evaluation (Cave and Doolittle, 1991). Finally, the national JTPA study offers no evidence that the relatively less disadvantaged youths receiving this program's services benefit from this relatively low cost training. This evaluation found that youths offered access to classroom training, on-the-job training, or job search assistance services did not have higher earnings during the 30 post-program months covered by the study.

Evaluations of Dislocated Workers

By contrast to the many studies of disadvantaged persons, relatively little is known from either nonexperimental or experimental evaluations about the impact of training on the earnings of dislocated workers. This lack of evidence is largely the result of the greater emphasis that policymakers have placed on training the economically disadvantaged. Although some of the adults participating in MDTA or CETA programs would be classified as "displaced" under JTPA, there have been no separate evaluations of training for displaced workers served by these programs. Much of our understanding of how training affects displaced workers comes from several demonstrations conducted during the 1980s. Leigh (1990) provides a compact summary of these studies. Like the MDTA and CETA evaluations, evaluations of these demonstrations find considerable variability in the impact of training services on different cohorts of displaced workers.

Nevertheless these evaluations yield several substantive findings. First, job search assistance is a cost-effective service for displaced workers. Participants receiving this service have higher earnings because they find jobs sooner than similarly skilled nonparticipants. Second, participants who have the option of receiving classroom instruction or on-the-job training derive no additional benefit from having access to those services. Finally, as was the case for economically disadvantaged participants, female displaced workers usually benefit more from these programs than do their male counterparts.

Further research may demonstrate that, like disadvantaged youth, displaced workers receive little benefit from short-term training strategies, but would benefit from more intensive long-term programs. Indeed one recent study indicates that some displaced workers derive long-term benefits from completing relatively rigorous vocational and academic community college level courses (Jacobson, LaLonde, and Sullivan, 1994). One concern sometimes raised about providing dislocated workers with such intensive services is that they have fewer working years left in which to realize a return on their

investment. For practical purposes, this concern is unimportant: the typical dislocated worker is a male in his 30s or early 40s with as many as 25 or more years left in his working life. Even for an effective program, properly discounted earnings gains during the 25th year after leaving training are unlikely to amount to much. A more practical concern about providing displaced workers with expensive training services is whether prime-age workers can accumulate new skills in a classroom setting as efficiently as younger persons. The returns to schooling literature, which has focused on education received by young persons, provides little guidance on this question.

Before turning to discuss whether the earnings gains generated from public sector programs imply that training is socially beneficial, we should acknowledge that training effects often are so imprecisely estimated that it is difficult to determine whether a particular program is cost-effective. For example, one study of the effect of training on Trade Adjustment Assistance beneficiaries reported that training raised participants' quarterly earnings by \$294 with a standard error of \$270 (Corson et al., 1993, p. 127). In this instance the operating costs of the program averaged \$2,350 per participant. The plausible range of net benefits here varies from less than zero, up to quite socially beneficial. The underlying problem with this study and others is that sample sizes used in program evaluations often are too small to measure the likely impact of the program with adequate precision.

Do Earnings Gains Imply that Training is Socially Beneficial?

Public sector investments in training can generate substantial earnings gains for some participants. Most often, these earnings gains result from higher post-program employment rates. By contrast, there is scant evidence about the effect of training on wages. Because evaluations of the long-term effects of training usually use administrative records that do not have information on hours or wages, we usually know nothing about whether public sector training raises wages during a participant's subsequent career. The possible tendency for training to increase employment rates instead of wages raises the question of whether training simply helped participants to "displace" nonparticipants from jobs. If job search assistance does not improve the trainees' productivity by enabling participants to better "match" their skills to prospective employers, the earnings gains associated with this service would not measure the social benefit from training, but the transfer of earnings between two groups of disadvantaged persons. It is difficult to discount completely the possibility that displacement explains the estimated earnings gains generated from employment and training programs, especially for programs that offer only job search assistance. However, it is hard to understand why displacement would be larger for adult women than for low-income men and youths. Moreover, it does

appear that certain programs have caused long-term changes in labor market behavior: the NSW Demonstration caused adult women's earnings to be higher as much as seven years after leaving training. In the light of these impacts, the purest version of the displacement argument, that training merely shuffles these low-income women between employment and nonemployment, does not seem to be true.

Even if the earnings impact are taken as an estimate of the productive benefit of training, training offers other social benefits besides earnings gains, including the output produced by the trainees while in training, reduced criminal activity, and reduced use of the social welfare system. These other social benefits vary considerably among different groups. For example, training for young males may benefit society by reducing crime. But training for adults, especially dislocated workers, is unlikely to affect crime, because adults in their 30s and 40s usually have low rates of criminal activity. Alternatively, training may benefit society by reducing the cost of administering social welfare programs, especially when it provides services to women with children, who make the greatest use of such programs. Society as a whole does not benefit from reduced transfer payments per se, because (absent any deadweight losses) taxpayers' gains exactly offset trainees' losses.

Besides the operating costs of the training program, there are other associated costs that vary among groups. Most important among these costs are the forgone labor market earnings during trainees' participation in the program. For programs serving people with low employment rates and wages, such as disadvantaged youths or adult women with long prior histories on welfare, these opportunity costs are likely to be relatively small. Therefore, it is less important to consider these costs when computing the net benefits of the job search assistance programs for AFDC women listed in Table 2. These programs lasted only a few weeks and served a population with very low employment rates.

But for groups with potentially higher employment rates, such as disadvantaged adult men and dislocated workers, these costs are likely to make up a much larger proportion of training's total cost. Moreover, these costs may grow nonlinearly with the length of the program because of the well-documented tendency for participants earnings to "bounce back" toward their normal levels no matter what the effect of the program (Ashenfelter, 1978). Indeed, the cost associated with a dislocated worker's forgone earnings is likely to exceed substantially the operating costs associated with a year of training.

To illustrate the potential significance of these alternative costs and benefits, consider the cost-benefit analysis for the popular Job Corps program. As shown by Table 3, a comparison between the estimated social benefits and costs of Job Corps reveals a gain of approximately \$5,600 per Corps member. But the table shows that the post-program earnings gains (during the first four post-program years) fall far short of covering the social cost of Job Corps.

Table 3
A Cost-Benefit Analysis of the Job Corps Program

<i>Benefits:</i>	
Increased Post-Program Earnings	
... During First Four Years	4,639
... From Extrapolation	3,223
	<u>7,862</u>
Value of In-Program Output	1,817
Reduced Criminal Activity	
... From Fewer Murder Arrests	3,650
... For Other Crimes	3,360
	<u>7,010</u>
Reduced Use of Transfer and Training Programs	1,070
Total Benefits Per Participant	<u>\$17,760</u>
<i>Costs:</i>	
Program Operating Costs	\$9,940
Forgone Output (Earnings)	2,110
Other Resource Costs	110
Total Costs Per Participant	<u>\$12,170</u>
Net Social Benefit Per Participant	\$5,590

Source: Maller et al. (1982), p. 245. All figures in the table are in 1993 dollars.

Instead, the substantial social benefits associated with Job Corps also depend on the quality of the following estimates: i) “extrapolated” earnings gains (\$3,223); ii) the value of output produced by Corps members while in training (\$1,817); iii) the value of reduced criminal activity (\$7,010); and iv) the value of reduced use of other transfer and training programs (\$1,070). The importance and difficulty of valuing these other social benefits from training is illustrated by the figures for reduced criminal activity. In this study, more than one-half of the estimated benefit results from fragile estimates of lower arrest rates for murder, which generate very large savings for the criminal justice system. Moreover, although the earnings gains may persist, the gains associated with reduced criminal activity are nearly certain to decline as participants age. Table 3 also indicates, as expected, that operating costs constitute most of the social costs of the Job Corps. Because disadvantaged youths have relatively low employment rates and wages, forgone earnings associated with their participation in the program are relatively small.

Interpreting the Evidence on Public Sector-Sponsored Training

Despite the variability in the estimated training effects among studies, it is clear that existing programs do not integrate their participants into the economic mainstream. Training, when and if it is effective, makes economically disadvantaged persons less poor, but the gains are not sufficiently large to lift many out of poverty. Further, the results of these evaluations suggest that it is unlikely that a substantial increase—even a doubling—in government-funded training services will significantly improve the workforce's skills. As indicated above, this finding should not be surprising, because most of these programs cost only a few thousand dollars or less per participant. To expect such programs to raise participants' subsequent annual earnings by several thousand dollars would imply that these social investments have an extraordinary rate of return. Instead, a more realistic view of the returns to training would suggest that this type of impact requires an investment that is more than an order of magnitude greater than what is currently being spent by the public sector on low-income and dislocated persons (Heckman, Roselius, and Smith, 1993).

Although the gains from public sector-sponsored programs are small compared to the problems they are trying to address, the evidence indicates that both society and economically disadvantaged women benefit from these services. These gains are found for a variety of programs, often last more than a few years, and are frequently more than sufficient to justify the program's costs. By contrast, it remains unclear whether policymakers have developed employment and training services that consistently raise the earnings of economically disadvantaged males and youths, and dislocated workers. With the exception of job search assistance, which benefits dislocated workers, and Job Corps, which may benefit disadvantaged youths, studies show that less intensive employment and training services, like those offered under JTPA, rarely have any positive impact on these groups' earnings.

These findings have several implications about the future direction of public sector-sponsored employment and training programs. First, these findings suggest that JTPA dollars are misallocated to the extent that sites must deny services to eligible adult women to reserve some of their funds for adult men and especially for youths. Second, because Job Corps appears to be the only program that benefits disadvantaged youths, it would make sense to allocate more JTPA funds to this program, even if it means serving fewer people overall. During the next few years, the recently initiated National Job Corps Experiment will provide more concrete evidence about whether this reallocation would be a desirable change in training policy toward youths. Third, if public policy makers wish to provide effective services to disadvantaged men and youths and to dislocated workers, they must develop new and probably more intensive long-term training services. For this purpose, it would

make sense to expand the number of demonstration projects funded under JTPA.

Fourth, the evidence on training programs is not particularly encouraging about their prospects for offsetting the losses associated with worker dislocation. The hotly contested debate over NAFTA has underscored the growing concerns about these losses and the hope that they might be mitigated significantly by increased public sector-sponsored training. At its best, however, a cost-effective service such as job search assistance may cumulatively raise participant's earnings by \$1,000 to \$2,000, an amount that is far less than the cumulative losses expected for prime-age displaced workers (Jacobson, LaLonde, and Sullivan, 1993).

Finally, the large gains often associated with investments in inexpensive services such as job search assistance suggest that diminishing returns may plague investments in more expensive services such as classroom training and on-the-job training. Although some evidence supports this contention for disadvantaged women, it remains an important question for future research (Freidlander and Gueron, 1990). If upheld by additional research, the implication of this contention is that when training resources are scarce, the social returns are likely to be larger if a larger population receives less expensive services than if a smaller population receives more expensive services.

Of course, the disadvantage of this allocation is that each person gains only a relatively small amount, and thus training is less likely to affect poverty rates. Policymakers may not be attracted to this allocation, because while it makes an efficient use of resources, it yields mundane results. Larger and more dramatic gains require more expensive services, which also may be less cost-effective. But only these expensive and intensive services offer the possibility of substantially reducing poverty among the economically disadvantaged, or of reducing earnings losses among dislocated workers.

■ *I thank David Card, Terry Devine, James Heckman, V. Joseph Hotz, Alan Krueger, Timothy Taylor, and participants at the Employment and Immigration Canada Conference on Policy Research in Training, Unemployment, Income Support, and Immigration for their comments and suggestions.*

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