United States General Accounting Office

GAO

Report to Congressional Requesters

March 1996

JOB TRAINING PARTNERSHIP ACT

Long-Term Earnings and Employment Outcomes

GAO/HEHS-96-40

GAO

United States
General Accounting Office
Washington, D.C. 20548

Health, Education, and
Human Services Division

B-256749

March 4, 1996

The Honorable Paul Simon
United States Senate

Dear Senator Simon:

Although the federal government spends billions of dollars annually to support employment training programs, little is known about their long-term effects on participants' earnings and employment rates.[1] Few training programs have been rigorously evaluated to assess their net impact, and, for those that have, the research results have often been inconclusive. Furthermore, most research on training programs has focused on short-term effects—the year or two immediately following completion of training.

Enacted in 1982, title II of the Job Training Partnership Act (JTPA) has been the cornerstone of federal employment training programs, providing block grants to state and local governments to administer these federally funded programs. JTPA supports job training for individuals facing barriers to employment and needing special training to obtain productive employment. Under recent legislative proposals[2] to consolidate multiple federally funded training programs, states would have the flexibility to design and implement a statewide approach to job training based on the concept of one-stop career centers. As states design and implement their approaches to job training, lessons learned from JTPA can help in reallocating training dollars and in setting performance standards.

Because of concerns about the long-term impact of job training programs, you asked us to (1) ascertain the long-term earnings of participants in JTPA-sponsored programs and to compare their earnings with those of nonparticipants and (2) calculate the long-term employment rates for these JTPA participants and to compare their employment rates with those of nonparticipants. For this study, we defined long-term earnings and employment rates as the annual earnings and employment rates achieved in the fifth year after applying for JTPA training.

[1]Multiple Employment Training Programs: Most Federal Agencies Do Not Know If Their Programs Are Working Effectively (GAO/HEHS-94-88, Mar. 2, 1994).

[2]Both the Senate and the House have passed bills that would consolidate over 90 federal education, employment, and job training programs. The Senate's Workforce Development Act of 1995 (S. 143) would replace the programs with one block grant to each state, while the House's Consolidated and Reformed Education, Employment, and Rehabilitation Systems Act (CAREERS Act, H.R. 1617) would authorize three consolidation grants to each state.

To develop this information, we merged data from the National JTPA Study[3] (NJS) with annual earnings records from the Social Security Administration (SSA). Participants in the NJS were randomly assigned to either the treatment group (allowed to enroll in JTPA training) or the control group (not allowed to enroll in JTPA training for 18 months). We calculated the average earnings and employment rates[4] of four target groups (adult men, adult women, male youths, and female youths[5]) for 5 years after their acceptance into the study. We considered a 5-year period sufficient to provide meaningful data on the long-term effects of JTPA training.

Because of the NJS' inherent design problems, we cannot unequivocally use our findings to draw conclusions about JTPA's effectiveness. For example, the participating areas were neither randomly selected nor necessarily representative of JTPA training nationally. Moreover, not everyone assigned to the treatment group enrolled in or completed JTPA training. Also, many control group members received some training services from other sources. Nevertheless, the NJS had some design advantages, such as random assignment of applicants for JTPA training, that made the data appropriate for our study.

Appendix I has further information on the NJS and SSA data sets and our statistical results. We conducted our work between April 1994 and January 1996 in accordance with generally accepted government accounting standards.

Results in Brief

Although our statistical analysis showed some positive effects of JTPA in the years immediately following training, we found no significant[6] effect of JTPA on earnings or employment rates after 5 years. In some earlier years, adult men and women who received training—but not male or female

[3]The Department of Labor commissioned Abt Associates to conduct the National JTPA Study in 1986 to evaluate the impact of JTPA on adults and youths.

[4]We defined employment on the basis of SSA earnings records. If a person's SSA earnings record showed positive earnings in a given calendar year, we considered that person to be employed. If 78 out of 100 people in a group showed positive earnings in their SSA earnings records, the employment rate for that group would be 78 percent.

[5]Adults were defined as those 22 years old and older. Youths were defined as those aged 16 to 21 who no longer attended school when applying for JTPA training. This included both high school dropouts and graduates.

[6]"Significance" refers to statistical significance at the 5-percent level. This significance means that we can be 95-percent confident that the observed difference between groups is not due to chance or random variation. Our convention is to calculate significance at the 5-percent level. We use this convention both in reference to other reports and in presenting our own findings.

youths—had earnings or employment rates significantly higher than those of the control group. By the fifth year, each of the four treatment groups had earnings and employment rates that were nominally higher than those of the control group. Because none of the fifth-year differences were statistically significant, however, we could not attribute the higher earnings to JTPA training rather than to chance alone.

Background

Enacted in 1982, JTPA is the largest federal employment training program, with titles II-A and II-C intended to prepare economically disadvantaged adults and youths, respectively, for entry into the labor force.[7] JTPA emphasizes state and local government responsibility for administering federally funded job training programs. In fiscal year 1995, JTPA title II-A and II-C programs received approximately $1.6 billion in funding.

JTPA training programs annually provide employment training for specific occupations and services, such as job search assistance and remedial education, to roughly one million economically disadvantaged individuals. Training is provided in local service delivery areas (SDA) through service providers, such as vocational-technical high schools, community colleges, proprietary schools, and community-based organizations. The program objectives are to increase earnings and employment and to reduce welfare dependence for participants of all ages. During the NJS, participation in JTPA involved roughly 3 to 4 months of training at an average cost of about $2,400 per participant.

In 1986, Labor commissioned the NJS to evaluate the impact of JTPA on adults and youths because previous findings on the effects of job training programs had been hampered by poor data and statistical problems. The NJS randomly assigned persons who sought JTPA services, and were eligible for them, to a treatment group or a control group. The treatment group was offered JTPA training, and the control group was not. The study was intended to ensure that the two groups would not differ systematically in any way except access to the program, so any subsequent differences in outcomes could be attributed solely to JTPA.

The study included over 20,000 eligible participants who applied for JTPA services between November 1987 and September 1989 in 16 local SDAs. The

[7]JTPA title II-A was originally targeted to both adults and youths. The 1992 JTPA Amendments split title II-A into two components: title II-A for adults and title II-C for youths.

study followed up on a sample of people in the treatment and control groups 18 months after assignment[8] and then again at 30 months.[9]

The NJS showed mixed results on the impact of JTPA programs.[10] Adult women assigned to JTPA training had significantly higher earnings than the control group of adult women after 18 and 30 months, but the treatment group of adult men, as well as of both male and female youths, did not have significantly higher earnings than its respective control groups.

Participant Earnings Not Significantly Greater Than Control Group Earnings After 5 Years

Participants assigned to receive JTPA training did not have significantly greater earnings than control group members 5 years after their assignment. For some of the four targeted worker categories—adult men, adult women, male youths, and female youths—treatment group earnings exceeded those of the control group in some of the intervening years, but any statistically significant effects disappeared by the fifth year.[11]

Earnings Outcomes for Adult Men

Annual earnings of adult men increased in each year following assignment for both the treatment and control groups. As shown in figure 1, in the first year after assignment, the average annual earnings of adult men in the treatment group grew from about $4,400 to about $6,900. This group's earnings continued to rise in the subsequent years, reaching approximately $8,700 in the fifth year after assignment to receive JTPA training. The earnings of adult men in the control group, which did not receive JTPA training, also rose following assignment, but this group's earnings were less than those of the treatment group for each of the 5 years.

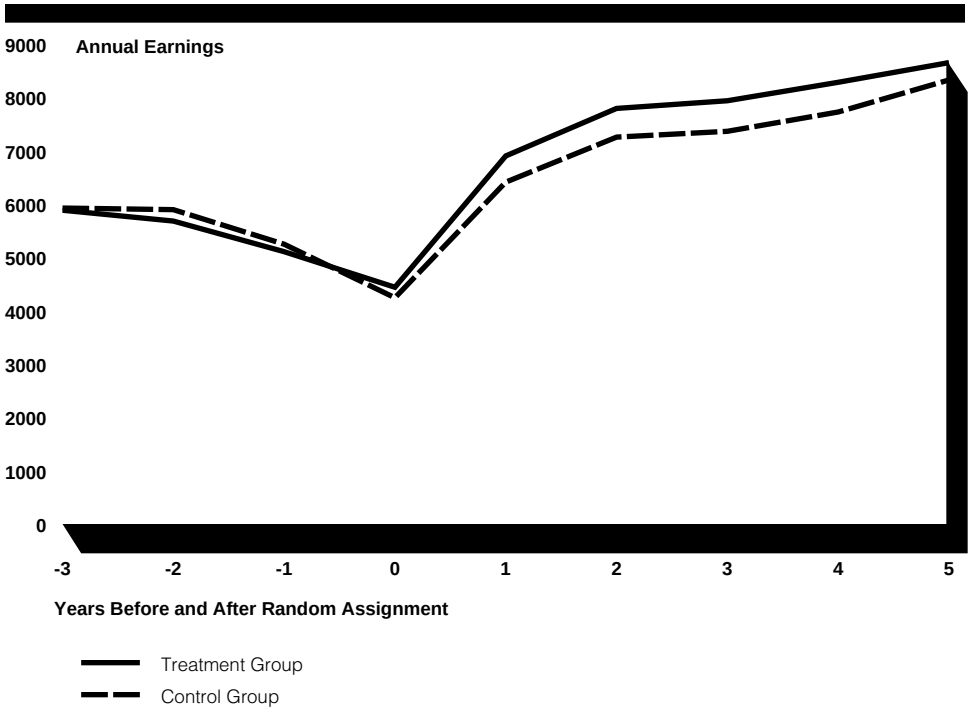
[8]See Howard S. Bloom and others, The National JTPA Study: Title II-A Impacts on Earnings and Employment at 18 Months (Bethesda, Md.: Abt Associates, Inc., Jan. 1993).

[9]See Larry L. Orr and others, The National JTPA Study: Impacts, Benefits, and Costs of Title II-A (Bethesda, Md.: Abt Associates, Inc., Mar. 1994) for the results at 30 months.

[10]Bloom and others, The National JTPA Study: Title II-A Impacts on Earnings and Employment at 18 Months and Orr and others, The National JTPA Study: Impacts, Benefits, and Costs of Title II-A.

[11]Generally, our results matched the findings of the NJS for the 30 months immediately following assignment.

Figure 1: Earnings of Adult Men Before and After Assignment

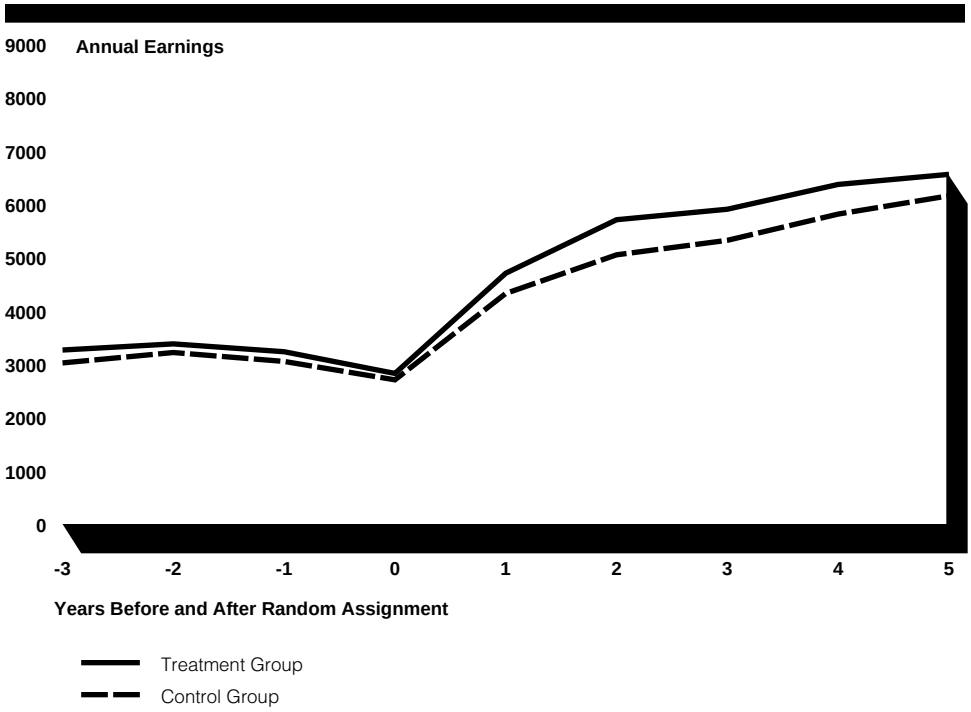


After 5 years, the difference between earnings of the treatment and control groups was not statistically significant. Five years after assignment, the treatment group's earnings had exceeded those of the control group by approximately $300 to $500 annually, but only in the first 3 years were these differences statistically significant.

Earnings Outcomes for Adult Women

Earnings of adult women showed a pattern similar to those of adult men, increasing in each year after assignment. Figure 2 shows that the annual earnings of adult women assigned to the treatment group increased from approximately $2,800 in the year of assignment to approximately $4,700 in the first year following assignment. This group's earnings continued to climb, reaching approximately $6,600 in the fifth year. Earnings of adult women in the control group followed a similar pattern, but this group's earnings were lower than those of the treatment group in each year, reaching approximately $6,200 during the fifth year.

Figure 2: Earnings of Adult Women Before and After Assignment

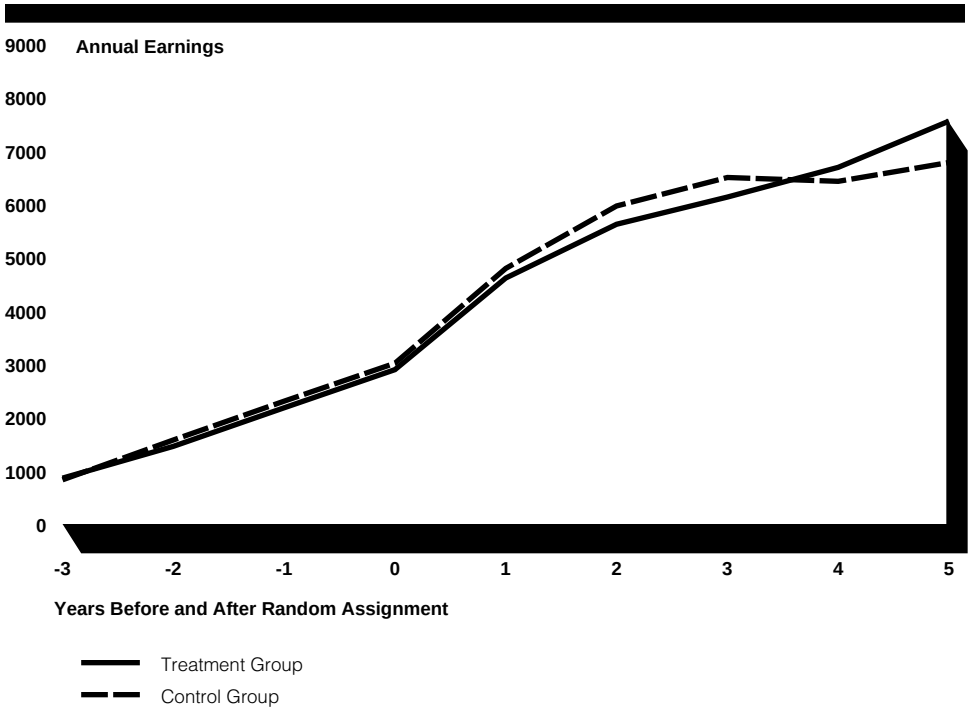


As with the earnings of adult men, 5 years after assignment the difference between the treatment and control groups' annual earnings was not statistically significant. However, during the first 4 years after assignment, the differences between the treatment and the control groups' earnings were statistically significant in each year, with treatment group earnings approximately $300 to $600 higher than control group earnings annually.

Earnings Outcomes for Male Youths

The earnings of male youths in the control group, like those of adult men and adult women, increased in each year following assignment. Figure 3 shows that the earnings of male youths in the treatment group increased from approximately $2,900 in the year of assignment to approximately $4,600 in the first year after assignment. This group's earnings continued to grow during the 5-year period, reaching a high of approximately $7,600 in the fifth year. The earnings of male youths in the control group also rose during the 5-year period following assignment, climbing from approximately $4,800 in the first year to approximately $6,800 in the fifth year.

Figure 3: Earnings of Male Youths Before and After Assignment



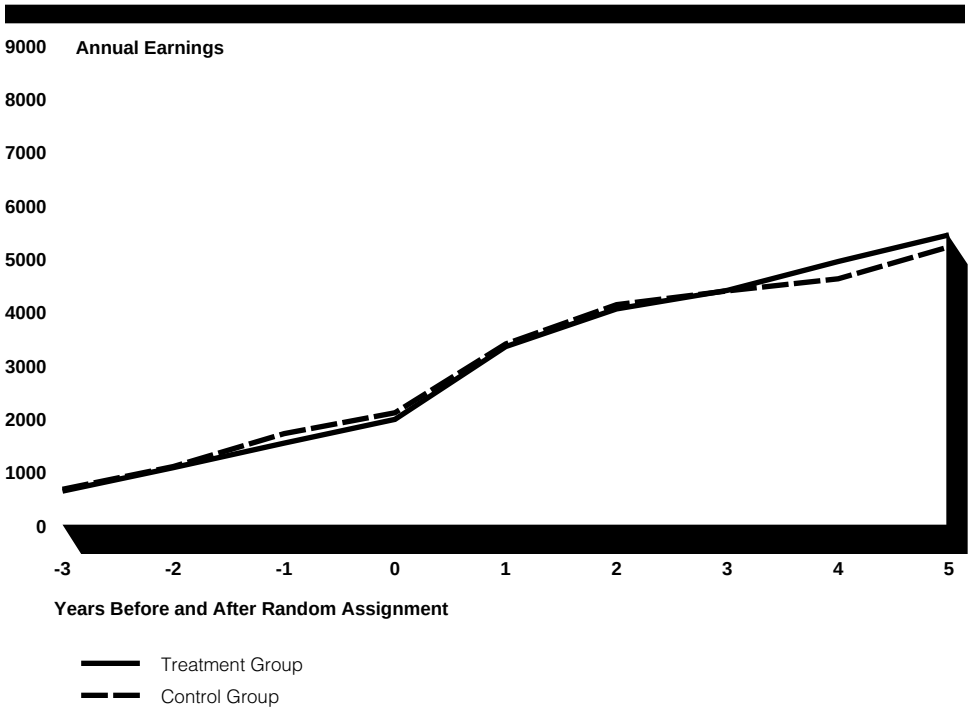
We found no significant difference between the treatment and control groups' annual earnings 5 years after assignment. Although the control group's earnings were higher than the treatment group's during the first 3 years following assignment, the differences, which ranged from approximately $200 to $400 each year, were not statistically significant. During the fourth and fifth years, the treatment group had higher earnings than the control group, but these differences too were not statistically significant.

Earnings Outcomes for Female Youths

Earnings of female youths showed a pattern similar to that of male youths, growing in each year following assignment. Earnings of female youths in the treatment group rose from approximately $2,000 during the year of assignment to approximately $3,300 in the first year following assignment (see fig. 4). This group's earnings continued to climb, reaching approximately $5,400 in the fifth year following assignment. The earnings of female youths in the control group also rose during the 5-year period,

climbing from approximately $3,400 in the first year to a high of approximately $5,200 in the fifth year.

Figure 4: Earnings of Female Youths Before and After Assignment



We found no significant differences between the treatment and control groups' annual earnings 5 years after receiving their assignments. During the first 2 years following assignment, the control group's earnings were higher than the treatment group's, but the differences of less than $100 annually were not statistically significant. In the fourth and fifth years following assignment, the treatment group had earnings of approximately $100 to $300 higher than the control group, but these differences also were not statistically significant.

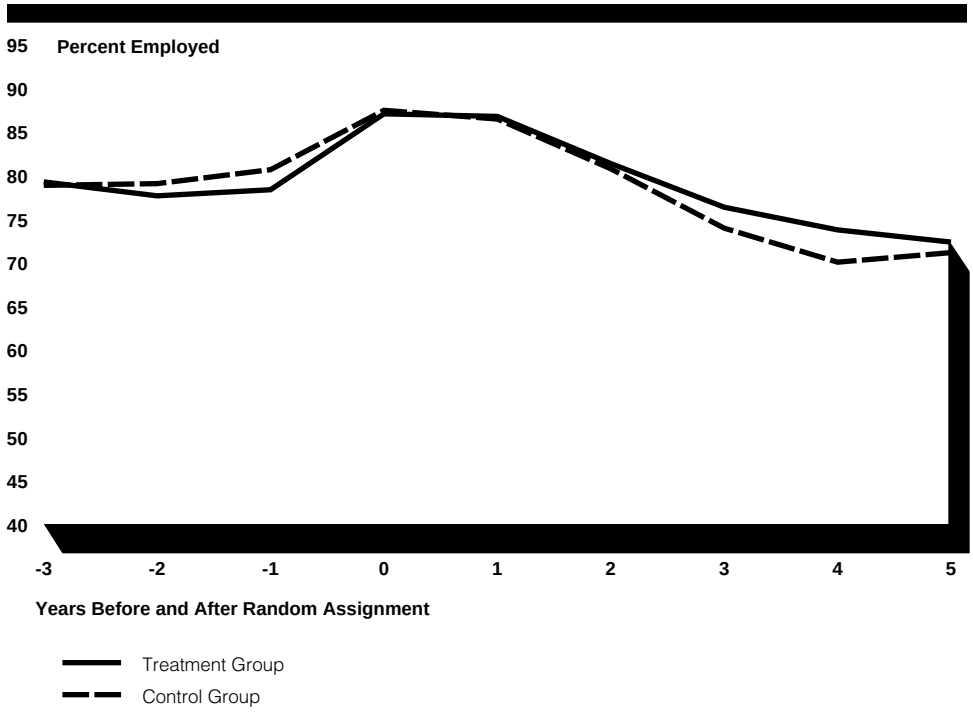
Employment Rates of Participants Not Significantly Greater Than Control Group Employment Rates After 5 Years

As with earnings, employment rates of those assigned to receive JTPA training were not significantly greater than employment rates of control group members 5 years after assignment. For some of the four targeted worker categories, treatment group employment rates were higher than those of the control group in some years, but any statistically significant effects disappeared by the fifth year.

Employment Rates of Adult Men

The employment rates of both treatment and control group adult men peaked during the calendar year of assignment and then declined in subsequent years, eventually reaching levels lower than those of the men before entering the study (see fig. 5). For example, the employment rate for adult men in the treatment group was 87 percent in the year of assignment. The percent employed declined in the following years, reaching 72 percent by the fifth year following assignment, which was lower than the group's employment rate of 79 percent in the year before entering the study. The adult men in the control group showed a similar pattern—their employment rate was 87 percent in the year of assignment but dropped to 71 percent in the fifth year after assignment.

Figure 5: Employment Rates of Adult Men Before and After Assignment

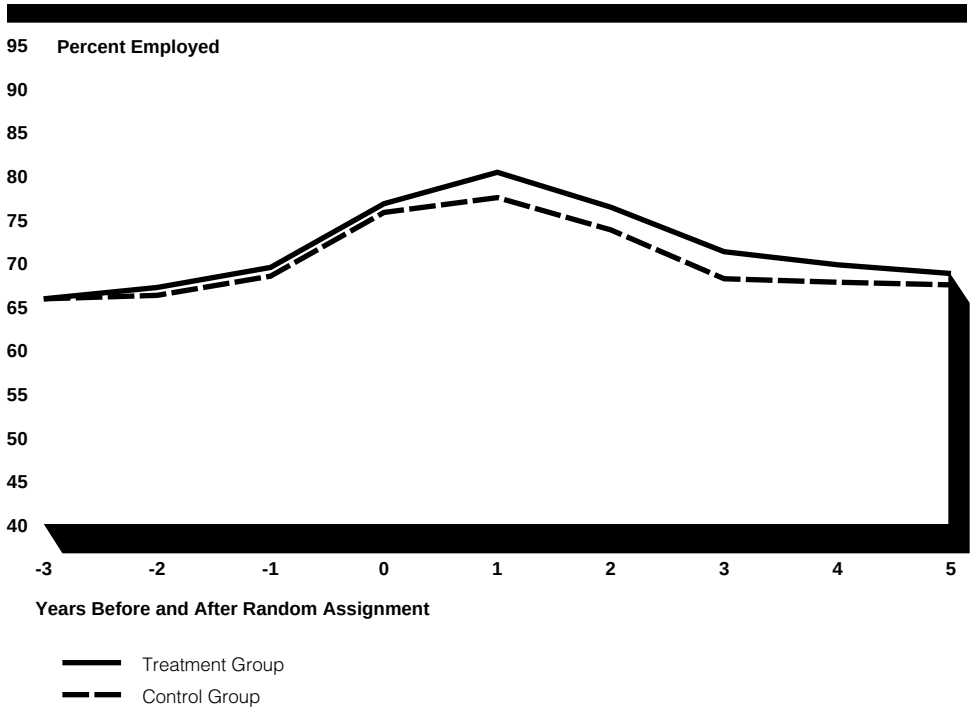


After 5 years, the difference between the treatment and control groups' employment rates was not statistically significant. The treatment group's employment rates were higher than the control group's in each year following assignment, although the differences in the employment rates were statistically significant only in the fourth year following assignment.

Employment Rates of Adult Women

The pattern of employment rates of adult women was somewhat similar to that of adult men. The employment rates of adult women were highest during the calendar year following assignment, with 80 percent of the treatment group and 77 percent of the control group employed (see fig. 6). After the first year, however, the employment rates for both the treatment and control groups fell, reaching 69 percent and 67 percent, respectively, in the fifth year following assignment. These rates in the fifth year were also lower than each group's employment rate in the year before assignment.

Figure 6: Employment Rates of Adult Women Before and After Assignment

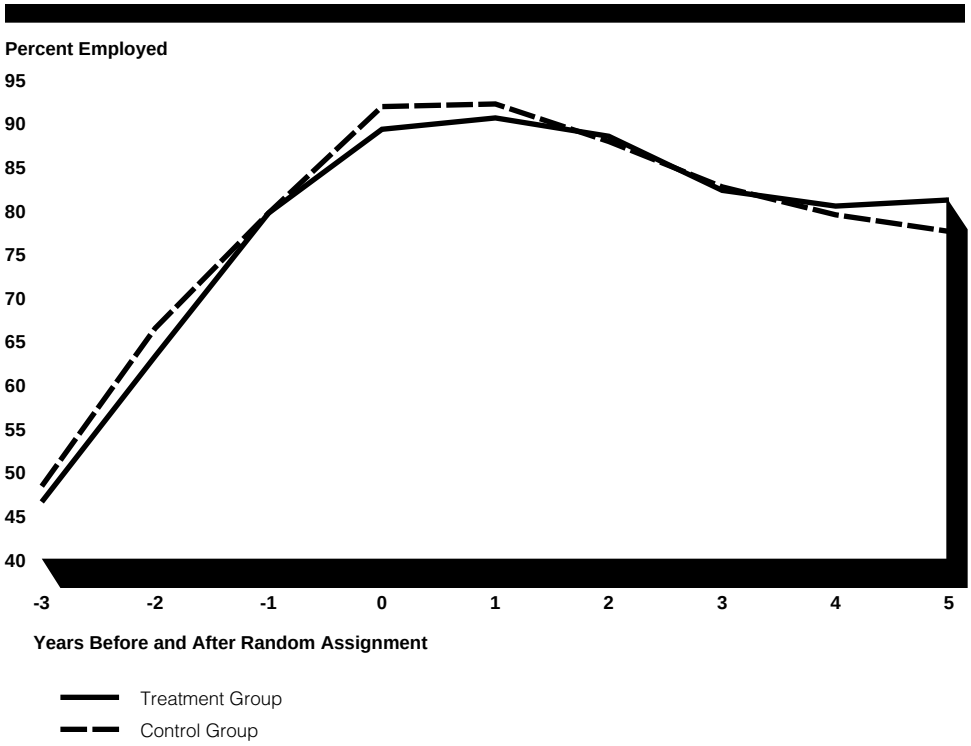


We found no significant differences between the treatment and control groups' employment rates 5 years after assignment. The treatment group's employment rates exceeded the control group's in all 5 years following assignment, usually by about 2 to 3 percent, but only in the first 3 years were these differences statistically significant.

Employment Rates of Male Youths

The pattern of employment rates of male youths was somewhat similar to that of adult men and women: the male youths' employment rates peaked during the calendar year following assignment—reaching nearly 91 percent for the treatment group and over 92 percent for the control group—but then declined (see fig. 7). However, in contrast to the employment rates of adults, those of male youths were slightly higher 5 years after assignment than before assignment, reaching 81 percent for the treatment group in the fifth year, compared with 80 percent in the year before assignment.

Figure 7: Employment Rates of Male Youths Before and After Assignment

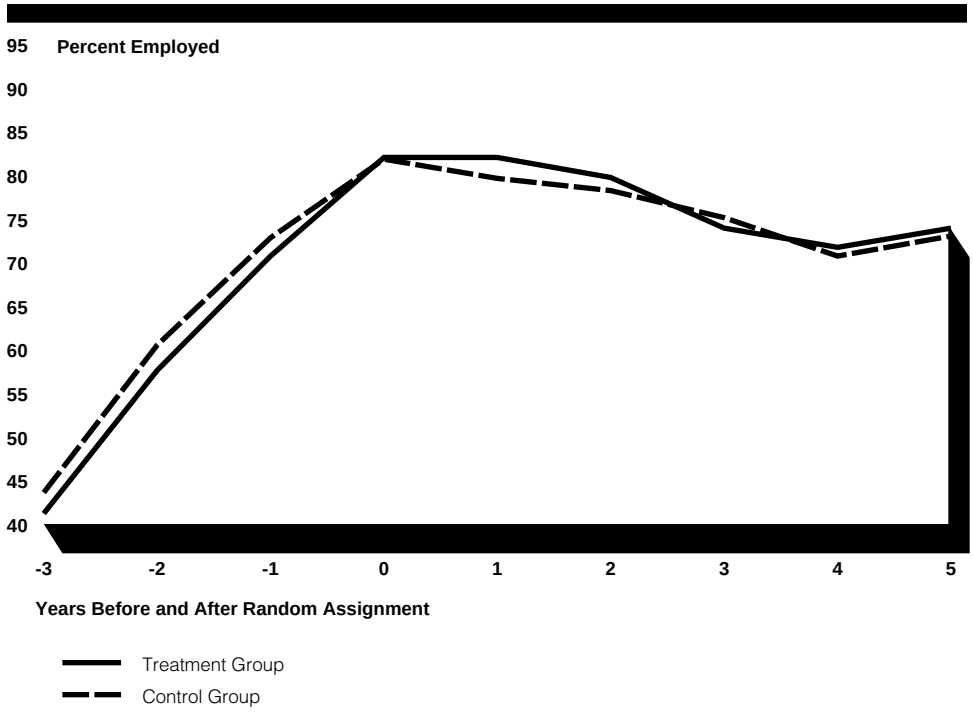


We found no significant differences between the treatment and control groups' employment rates 5 years after assignment. While the employment rates for the control group actually exceeded those for the treatment group in the year of assignment and the first and third years following assignment, none of the differences were statistically significant.

Employment Rates of Female Youths

The employment rates of female youths in both the treatment and control groups peaked during the calendar year of assignment, declined somewhat over the next 4 years, and then slightly increased in the fifth year (see fig. 8). As with those of male youths, the employment rates of female youths were slightly higher 5 years after assignment than before assignment. The employment rates of female youths were 74 percent for the treatment group and 73 percent for the control group in the fifth year following assignment, compared with 71 and 73 percent, respectively, in the year before assignment.

Figure 8: Employment Rates of Female Youths Before and After Assignment



We found no significant differences between the treatment and control groups' employment rates 5 years after assignment. Employment rates for the treatment group exceeded those for the control group in 4 of the 5 years following assignment, but none of the differences in employment rates were statistically significant.

Conclusions

Though both long-term earnings and employment rates for NJS treatment groups surpassed those for their respective control groups, the differences did not meet our test for statistical significance. Five years after expressing an interest in JTPA-sponsored job training, individuals assigned to participate in the program did not have earnings or employment rates significantly higher than individuals not assigned to participate.

Agency Comments

In commenting on a draft of this report, Labor expressed several concerns. It took exception to what it characterized as unwarranted negative conclusions that are not consistent with the report findings. Labor also

took issue with the importance the report places on tests of statistical significance applied to earnings of an individual group in a given year, preferring to emphasize other evidence of the positive effect of JTPA on participant earnings over the 5-year period. Labor also expressed concerns that the report findings have limited relevance to current job training programs.

We believe that our conclusions are well supported by our findings. On several occasions where appropriate, we have noted comparisons favorable to the JTPA treatment groups, including in the "Results in Brief" and "Conclusions" sections. Although other evidence covering the 5-year period might be found to better highlight the positive effects of JTPA training, our research focused on the earnings and employment rates of each target group in the fifth year after applying for JTPA training. Also, we do not believe that current or proposed job training programs sufficiently differ from JTPA training at the time of the NJS to limit the relevance of our report findings.

In its response, Labor enclosed an attachment with specific comments on the report and additional information. This attachment and our evaluation of the comments appear in appendix III. Labor also provided us with technical comments, which we have incorporated in the report where appropriate.

As agreed with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of this letter. At that time, we will send copies to interested parties and make copies available to others upon request.

This report was prepared under the direction of Wayne B. Upshaw, Assistant Director, who may be reached on (202) 512-7006 if you or your staff have any questions. Gene Kuehneman, Senior Economist, (202) 512-4091, Jill Schamberger, Senior Evaluator, and Thomas L. Hungerford, Senior Economist, were major contributors to this report.

Sincerely yours,

Cornelia M. Blanchette

Cornelia M. Blanchette
Associate Director, Education
and Employment Issues

Contents

Figures

Abbreviations

BLS	Bureau of Labor Statistics
CPS	Current Population Survey
JTPA	Job Training Partnership Act
NJS	National JTPA Study
SDA	service delivery area
SSA	Social Security Administration

Data Sources and Methodology

To select our sample of individuals assigned to receive training under JTPA and our control group, we used participation information from the National JTPA Study (NJS). We then obtained long-term earnings and employment information for these individuals from SSA. Our analysis compared earnings and employment levels of individuals in the treatment and control groups to determine whether differences between these groups were statistically discernable.

National JTPA Study

The original NJS data set contained demographic and program information on 20,601 people who applied for JTPA services between November 1987 and September 1989 in 16 local service delivery areas. Program applicants were recruited, screened to determine their eligibility, assessed to determine their service needs and wants, and recommended for services. NJS participants were then randomly assigned to either the treatment group, which was allowed to participate in JTPA title II-A programs, or the control group, which was not allowed to participate in these programs for 18 months. Approximately two-thirds of the applicants were assigned to the treatment group and one-third to the control group. The control and treatment groups were closely matched in demographic variables such as age, race, and education, which typically allows a meaningful comparison of average outcomes between the two groups.

However, two factors intervened to make such a comparison problematic. First, not all members of the treatment group participated in JTPA programs. For example, about two-thirds of the adult treatment group members enrolled in JTPA, but the other one-third either found jobs on their own or decided not to participate in the program. Second, a substantial minority of the control group members chose to participate in some alternative, non-JTPA training programs. These complications preclude attributing earnings differences between the two groups solely to JTPA training. Therefore, our findings refer to differences between the treatment and control groups rather than between individuals who did or did not receive JTPA training. Furthermore, we do not know which of the control and treatment group members chose to receive training later than 18 months after assignment.

The NJS was not designed to track treatment or control group members beyond 30 months. Therefore, to calculate and compare longer term earnings and employment outcomes for these groups, we needed information from another source.

Social Security Earnings Records

We obtained annual earnings records from SSA for the individuals in the NJS treatment and control groups. SSA maintains information on annual earnings of individuals contributing to either Social Security or Medicare. We assumed that an individual was employed if his or her SSA records showed positive earnings for a given year. We adjusted data for what we assumed were data entry or processing errors, and we also rounded reported negative earnings to zero.

Data Analysis

We analyzed the NJS and SSA earnings records of 13,699 NJS participants[12] to determine their annual earnings and employment outcomes for the 3 years before assignment to the treatment or control group, the year of assignment, and 5 years following assignment. The 3 years of prior earnings and employment data served to demonstrate the prior comparability of treatment and control groups. The 5 years of postassignment data effectively doubled the 30-month follow-up period for the NJS. The treatment group had 9,275 individuals, and the control group had 4,424 individuals.

We used individual earnings data and calculated means and variances for each of the four target groups—adult men, adult women, male youths, and female youths—to compare the treatment groups' earnings and employment outcomes with those of the control groups. We tested for differences in earnings and employment outcomes at the 5-percent significance level.

We calculated annual earnings amounts using SSA information on Social Security-covered earnings for nonfederal workers and on earnings covered by Medicare for federal workers. We calculated employment rates as the percentage of each group with positive covered earnings in a calendar year. Individuals with unreported earnings may have had their earnings and employment understated in our analysis. Individuals whose earnings exceeded the Social Security withholding ceiling may also have had their earnings understated in our analysis.[13] These limitations applied to both the treatment and control groups, and we do not believe they affected the two groups differently.

[12]We did not analyze earnings and employment information for the NJS participants who were assigned after 1988 because we had only 4 years of postassignment data for them. We also excluded the NJS participants whose SSA records did not adequately match information collected for the NJS, such as name or birth month and year.

[13]Only a certain amount of workers' earnings—for example $55,500 in 1992—were subject to the Social Security tax.

Data and Statistics for Figures

Table II.1: Data Points for Figure 1—Earnings of Adult Men Before and After Assignment

Time period	Annual earnings		Statistically significant difference at 5% level?
	Treatment group	Control group	
3 years before	$5,883	$5,924	no
2 years before	5,680	5,894	no
1 year before	5,106	5,246	no
Assignment	4,439	4,242	no
1 year after	6,901	6,410	yes
2 years after	7,792	7,254	yes
3 years after	7,936	7,363	yes
4 years after	8,282	7,725	no
5 years after	8,651	8,326	no

Table II.2: Data Points for Figure 2—Earnings of Adult Women Before and After Assignment

Time period	Annual earnings		Statistically significant difference at 5% level?
	Treatment group	Control group	
3 years before	$3,262	$3,020	no
2 years before	3,377	3,215	no
1 year before	3,230	3,048	no
Assignment	2,823	2,703	no
1 year after	4,702	4,323	yes
2 years after	5,705	5,047	yes
3 years after	5,902	5,319	yes
4 years after	6,367	5,811	yes
5 years after	6,556	6,154	no

Table II.3: Data Points for Figure 3—Earnings of Male Youths Before and After Assignment

Time period	Annual earnings		Statistically significant difference at 5% level?
	Treatment group	Control group	
3 years before	$860	$828	no
2 years before	1,456	1,575	no
1 year before	2,179	2,303	no
Assignment	2,894	3,014	no
1 year after	4,612	4,792	no
2 years after	5,620	5,963	no
3 years after	6,130	6,497	no
4 years after	6,687	6,425	no
5 years after	7,554	6,778	no

Table II.4: Data Points for Figure 4—Earnings of Female Youths Before and After Assignment

Time period	Annual earnings		Statistically significant difference at 5% level?
	Treatment group	Control group	
3 years before	$629	$663	no
2 years before	1,069	1,090	no
1 year before	1,529	1,707	no
Assignment	1,974	2,098	no
1 year after	3,339	3,389	no
2 years after	4,045	4,125	no
3 years after	4,393	4,383	no
4 years after	4,934	4,610	no
5 years after	5,433	5,209	no

Table II.5: Data Points for Figure 5—Employment Rates of Adult Men Before and After Assignment

Time period	Employment rates (percent employed)		Statistically significant difference at 5% level?
	Treatment group	Control group	
3 years before	79.2	78.8	no
2 years before	77.6	79.0	no
1 year before	78.3	80.6	no
Assignment	87.0	87.4	no
1 year after	86.7	86.4	no
2 years after	81.3	80.7	no
3 years after	76.3	73.9	no
4 years after	73.7	70.0	yes
5 years after	72.3	71.1	no

Table II.6: Data Points for Figure 6—Employment Rates of Adult Women Before and After Assignment

Time period	Employment rate (percent employed)		Statistically significant difference at 5% level?
	Treatment group	Control group	
3 years before	65.8	65.8	no
2 years before	67.1	66.2	no
1 year before	69.4	68.4	no
Assignment	76.7	75.7	no
1 year after	80.3	77.4	yes
2 years after	76.3	73.7	yes
3 years after	71.2	68.1	yes
4 years after	69.7	67.7	no
5 years after	68.7	67.4	no

Table II.7: Data Points for Figure 7—Employment Rates of Male Youths Before and After Assignment

Time period	Employment rate (percent employed)		Statistically significant difference at 5% level?
	Treatment group	Control group	
3 years before	46.5	48.3	no
2 years before	63.2	66.4	no
1 year before	79.6	79.6	no
Assignment	89.2	91.8	no
1 year after	90.5	92.1	no
2 years after	88.4	87.8	no
3 years after	82.2	82.6	no
4 years after	80.4	79.4	no
5 years after	81.1	77.5	no

Table II.8: Data Points for Figure 8—Employment Rates of Female Youths Before and After Assignment

Time period	Employment rate (percent employed)		Statistically significant difference at 5% level?
	Treatment group	Control group	
3 years before	41.2	43.6	no
2 years before	57.6	60.5	no
1 year before	70.7	72.8	no
Assignment	82.0	81.8	no
1 year after	82.0	79.6	no
2 years after	79.7	78.2	no
3 years after	73.8	75.1	no
4 years after	71.7	70.7	no
5 years after	73.9	73.0	no

Table II.9: Standard Errors Associated With Earnings of Adult Men Before and After Assignment

	Standard error			
Time period	Treatment	Control	Pooled error	T-ratio
3 years before	6,740	6,983	221	–0.19
2 years before	6,547	6,702	213	–1.00
1 year before	5,818	5,779	188	–0.74
Assignment	4,724	4,405	149	1.32
1 year after	6,825	6,406	216	2.27
2 years after	8,029	7,516	254	2.12
3 years after	8,753	8,335	279	2.06
4 years after	9,446	9,117	302	1.84
5 years after	10,134	9,611	322	1.01
Subgroup size	2,874	1,435		

Table II.10: Standard Errors Associated With Earnings of Adult Women Before and After Assignment

	Standard error			
Time period	Treatment	Control	Pooled error	T-ratio
3 years before	4,638	4,412	134	1.81
2 years before	4,714	4,664	137	1.18
1 year before	4,315	4,296	126	1.44
Assignment	3,297	3,128	95	1.27
1 year after	5,017	4,828	145	2.62
2 years after	6,242	5,707	178	3.70
3 years after	6,829	6,414	196	2.98
4 years after	7,646	7,039	218	2.55
5 years after	7,797	7,480	225	1.79
Subgroup size	3,631	1,723		

Table II.11: Standard Errors Associated With Earnings of Male Youths Before and After Assignment

	Standard error			
Time period	Treatment	Control	Pooled error	T-ratio
3 years before	1,689	1,687	87	0.36
2 years before	2,339	2,604	125	–0.96
1 year before	2,762	2,778	142	–0.88
Assignment	3,048	2,902	154	–0.78
1 year after	4,799	4,603	243	–0.74
2 years after	5,807	5,703	297	–1.16
3 years after	6,561	6,646	338	–1.08
4 years after	7,445	7,186	378	0.69
5 years after	8,150	7,807	413	1.88
Subgroup size	1,177	559		

Table II.12: Standard Errors Associated With Earnings of Female Youths Before and After Assignment

	Standard error			
Time period	Treatment	Control	Pooled error	T-ratio
3 years before	1,327	1,392	61	–0.56
2 years before	1,885	1,797	84	–0.25
1 year before	2,113	2,352	99	–1.80
Assignment	2,194	2,307	101	–1.23
1 year after	3,828	3,767	172	–0.29
2 years after	4,612	4,663	209	–0.38
3 years after	5,271	5,388	240	0.04
4 years after	6,053	5,803	270	1.20
5 years after	6,494	6,309	291	0.77
Subgroup size	1,593[a]	707		

[a]Subgroup size for the treatment group 3 years after assignment is 1,592.

Comments From the Department of Labor and Our Evaluation

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

U.S. Department of Labor

Assistant Secretary for
Employment and Training
Washington, D.C. 20210

NOV 30 1995

Ms. Cornelia Blanchette
Associate Director
Education and Employment Issues
U.S. General Accounting Office
Washington, D.C. 20548

Dear Ms. Blanchette:

The Department of Labor appreciates the opportunity to comment on the General Accounting Office (GAO) report on the long-term earnings and employment outcomes of Job Training Partnership Act (JTPA) Title II participants. We think that the study is well-designed; however, we have a number of concerns with this report. Our main issues are summarized below. We have attached more detailed technical comments from our staff and academic reviewers.

See comment 17.

We believe that the report's conclusions present an unwarranted negative picture of the effectiveness of JTPA adult programs that are not consistent with the findings presented in the report. They also fail to recognize the limited relevance of those findings to current job training programs. At the time the study was conducted -- participants examined by GAO enrolled in the program during 1987-1989 -- the average federal investment in JTPA participants was only $2,400 per participant. The impacts in your report imply that the benefits outweigh the cost and also suggest a return from JTPA comparable to the return of a year of postsecondary education. Moreover, these returns were achieved with training lasting only about three and a half months on average and with a group that is more disadvantaged than the typical college student and therefore, would be expected to require a larger investment to achieve substantial returns.

The GAO report finds consistently positive impacts of JTPA on earnings of adult men and women throughout the five year period. For both male and female youths, the pattern of negative impacts early in the period is followed by consistently positive impacts. Such patterns are unlikely to have occurred by chance. Thus, despite the results of individual statistical significance tests which are emphasized, there is good evidence that JTPA increased the earnings of its participants.

In considering the implications of these findings it is important to recognize that there have been many changes in JTPA since 1989. We have learned a great deal about what makes a job training program successful from carefully conducted and evaluated demonstration programs such as JOBSTART and the Minority Female Single Parent Demonstration. Implementation of lessons learned from such efforts and major amendments to the legislation

have resulted in the current JTPA program serving a more at-risk population with more intensive services than was the case in the period covered by the GAO report. We are confident that a careful evaluation of JTPA, if conducted on the current program, would show larger impacts than those found in this study.

Finally, there are several technical issues that are amplified in the attachment, but which point to an overemphasis on statistical significance tests without disclosure of the magnitude of the standard errors. Statistical significance is not clear-cut, it represents a continuum of acceptability. Basic standards of research dictate that the report should include in each table the sample sizes for each target group, the size of the treatment and control groups for these target groups, the standard errors, and significance levels.

Again, we thank you for the opportunity to comment, and we appreciate your taking these comments into consideration as you finalize the report.

Sincerely,

Timothy M. Barnicle
Assistant Secretary of Labor

Attachment

DOL Comments on GAO Report

The General Accounting Office (GAO) in this report uses social security earnings data to examine the long-term net impact of JTPA training provided to adults and out-of-school youth. This GAO Study extends to five years the 30-month follow-up information on JTPA impacts information that DOL published last year. DOL's comments on this GAO Report are as follows:

See comment 1.

1. The report understates the gross returns to JTPA training of those that received training.

See comment 1.

- The gross returns to JTPA participation for adults exceed or are comparable to the gross returns from postsecondary education reported in the literature. In particular, for women they exceed Kane and Rouse's estimated gross return of 5% for a year of credit at either a community college or a four-year college. Further, these gross returns were achieved with a group that is more disadvantaged, in less time (three to four months of training), and at a lower cost (Abt reported the net incremental cost was $1146 for adult women and $1509 for adult men) than a year of postsecondary education.

See comment 2.

2. There are favorable aspects to the findings in the study that are not acknowledged in the report.

See comment 2.

- In all four target groups--adult men, adult women, male youth, and female youth--participant earnings are higher in the fifth year than the control group. For both adult men and adult women, the participant earnings are higher than controls throughout the five-year post-program period. For male youth, there is a positive trend and the fifth-year earnings of participants are over 10 percent above those of controls.

See comment 3.

- If the net impacts are accumulated over time during the five-year follow-up--which GAO does not do in this report--the net benefits of the program clearly outweigh the costs of the program for both adult men and adult women.

3. A major conclusion of the report is that JTPA impacts on adults are dissipating over time. GAO's estimates do not support this conclusion.

See comment 4.

- The increase in standard errors appears to be equally if not more responsible for the decline in statistical significance than the change in the estimated impacts. For example, adult males in the treatment group 4 years after training had $557 higher earnings than controls, which was not statistically significant at the .05 level. But the treatment effect for adult

males in the first year after training was a smaller $491, which was statistically significant at the .05 level.

- Obviously, the imprecision of the estimates is rising over time. To conclude that the training effects dissipate over time, the study must test whether the training effect is different in year 5 than it was in year 1.

See comment 5.

4. The report emphasizes the individual year-by-year tests of statistical significance; however, its conclusions calling into question the usefulness of the program in improving participants long-term earnings and employment prospects are much broader.

See comment 5.

- These conclusions require the analysis of the total impact on earnings and an assessment of the overall costs and benefits, not a comparison of earnings levels at a specific point in time. These analyses were not provided in the report, and based upon the information provided in the tables, the conclusions for adults are misleading. While the positive fifth year earnings impacts are statistically insignificant for each of the four target groups, the odds of all four being positive purely by chance are 6.25 percent.

See comment 6.

See comment 7.

5. The report does not mention the magnitude of the standard errors. The tables should list 95 percent confidence intervals for each estimated training effect.

See comment 8.

See comment 9.

See comment 10.

See comment 7.

- The report also treats figures that are not significant at the 5 percent level as if they are equal to zero. If the significance levels are between the 5% and 10%, it is misleading to treat the values as zero. Statistical significance is not a knife edge of yes or no, but a continuum. The report should discuss the results, the probability values, and changes in the significance levels. At a minimum the appendix tables should include the sample size (for men, women, male youths and female youths), the size of the treatment and control groups for these target groups, the standard errors, and specify significance levels (1%, 5%, 10%).

See comment 11.

6. The report notes that a third of the group assigned to the treatment group never enrolled in JTPA and that a substantial minority of the control group received some form of non-JTPA training. The conclusion that "these complications preclude solely attributing earnings differences between the two groups to JTPA training" is incorrect.

See comment 11.

- The fact that a third of the treatment group never enrolled in JTPA and that a substantial minority of control group members received some form of non-JTPA training and the additional fact that control group members were allowed to enroll in JTPA after 18 months all imply that the impacts estimated by GAO **understate the total impact of JTPA** on participants' earnings and employment.

See comment 12.

- A JTPA effect which adjusts for this understatement can be estimated by making the assumption that non-participating treatment group members received no benefit from JTPA. In the 30-month report, DOL reported both pure assignee impacts and corrected enrollee impacts. Correcting for non-participating treatment group members boosts treatment effects by roughly one-third--making the impact close to $1,000 in some years for adult men and women and for young males in the fifth year of follow-up.

See comment 13.

7. This study reports results only for the four major target groups. GAO will be providing access to the social security data to DOL's contractor for additional analysis, including examining the results for sub-groups.

- Given the 30-month study results and some preliminary work done using UI wage records data, most likely some sub-groups will show quite favorable 5-year net impacts. For example, adult women who were receiving AFDC at entry and assigned to OJT showed markedly positive impacts in the 30-month follow-up, and we expect such impacts will continue in the 5-year results.

- Also, our preliminary work with UI wage records data suggest that youth with prior arrest records may show strong positive impacts in the fourth and fifth years of follow-up. This finding for youth with prior arrest records would be consistent with the positive results found for such youth in the JOBSTART demonstration.

8. While it is disappointing that the impacts throughout the follow-up period are not larger for each of the four target groups, these results serve to highlight the disparity between the amount spent in these programs during the observation period and our current expectations of what these programs can accomplish.

- The investment put into participants by JTPA during 1987 to 1989 when this sample was enrolled was very modest both in terms of dollars and time. An average federal investment of $2,400 was spent on participants during this period in JTPA, and the median length of training was three and a half months.

- Taking into account that some controls found training on their own, the incremental cost of the program was $1,200 for adult women and $850 for adult males. The earnings gains reported in this study of $500 a year for five years yield a positive return for this small investment.

- Achieving impacts sufficient to boost persons out of poverty--say, $5,000 a year throughout a person's working life--is totally unrealistic for a one-time investment of $1,000 or $2,000. If we want to have a reasonable

chance of moving people out of poverty, then we need to invest more in participants.

- States and localities need to keep this in mind as new legislation gives them much more control of the design and operation of their job training programs. The current JTPA serves a more at-risk population with more intensive services than the JTPA in the 1987-89 period covered by this report.

- DOL expects that the current JTPA would produce larger impacts than the earlier JTPA. States and localities will need to make their programs at least as intensive as the current JTPA if they expect to achieve greater impacts than those found here.

9. The findings in this GAO report should be examined in combination with results from other random assignment studies of more intensive employment and training programs. There is a fair number of programs that now have been evaluated using random assignment.

- While the results of early State welfare-to-work programs were somewhat mixed, the GAIN evaluation is showing strong impacts through the third follow-up year. The average third-year net impact across all six sites in the GAIN evaluation is an increase in earnings of $628--representing an increase in earnings of 25 percent over controls. In the Riverside site, participants earned over a $1,000 more than controls during the third year of follow-up--an increase in earnings of 40 percent over controls.

- The JOBSTART demonstration tested a fairly intensive non-residential program for out-of-school youth. The results were disappointing for the sample as a whole, but one site achieved a net earnings gain for participants over controls of over $3,000 a year during the third and fourth years of follow-up--representing a 50 percent increase in earnings of participants over controls. Further, among males with arrest records prior to entering the JOBSTART program at all sites, participants earned $1,200 more than controls during the fourth year of follow-up--an increase in earnings of 28 percent over controls.

- The Minority Female Single Parent Demonstration provided job training to women in their 20s and 30s in four sites. The site that did so well in the JOBSTART demonstration for youth--the Center for Employment and Training (CET) in San Jose--also was the best performing program in this

demonstration aimed at young adults. Earnings impacts of over a $1,000 a year above controls were maintained through the fifth year of follow-up -- representing a 16 percent increase in earnings over controls. The CET program is distinguished from other job training programs in the extent of its links to the private sector both in terms of instruction and placement.

See comment 14.

10. GAO's reported findings are for a subsample of 13,799, which is only 67 percent of the 20,601 total sample. About a third of the sample was excluded because there were only four years of follow-up data for the persons who were randomly assigned after 1988.

See comment 14.

- It is possible that employment and earnings differ across individuals assigned in earlier and later years due to changing economic conditions (e.g. the most recent recession). GAO should provide information on the full sample for the first four years, in addition to the information provided for five years on two-thirds of the sample.

See comment 15.

11. GAO should explain that the measure of employment rates contained in this report is not the definition that is generally reported in government statistics. The definition in the report is the proportion of the sample ever employed during a year as this is the only employment rate that may be calculated with the Social Security data. However, GAO should note that the reported levels are not comparable to figures reported in other sources such as the CPS and BLS reports.

See comment 16.

12. DOL's experience using social security data in our old Continuous Manpower Longitudinal Survey suggests that the most recent year of available social security records is subject to considerable corrections the following year. This somewhat calls into doubt both the fifth year declines in impacts for adult men and women and the fifth year increase in impact for male youth.

The following are GAO's comments on the Department of Labor's letter dated November 30, 1995.

GAO Comments

1. Labor comments that our report understates the gross returns to JTPA training. Furthermore, Labor implies that these gross returns calculations compare favorably with the returns to college education.

Our objective, as clearly stated in the report, was not to evaluate the cost-effectiveness of JTPA training, but rather to determine and compare the long-term effects of JTPA training. In fact, because we did not calculate the gross return to JTPA participants the report cannot have understated or overstated the values. Such calculations were not within the scope of this report. While it may be true that these returns are favorable, we have no basis to judge the favorability of the gross returns to training.

2. Labor states that the report does not acknowledge favorable aspects of this study. Specifically, Labor cited that (1) all four target groups had higher earnings in the fifth year after assignment; (2) both adult treatment groups had higher earnings than their respective control groups in each of the 5 years following assignment; and (3) for male youths, a positive trend exists, and the fifth-year earnings exceed those of the control group by over 10 percent.

Contrary to Labor's comment, we did note many of these favorable program outcomes in our report. We stated that adult male treatment group members had higher earnings than adult male control group members and presented similar findings for the other three target groups. We further stated that adult male treatment group earnings exceeded control group earnings in each of the 5 years and reported similar information for adult women. Also, we noted the positive trend for earnings of male youths. We did not note the percentage difference for male youths in the fifth year because we did not report percentage comparisons for any of the target groups.

3. Labor states that if the training impacts are accumulated over time during the 5-year follow-up period, the net benefits outweigh the costs.

As we stated in comment 1, our objective was not to evaluate the cost-effectiveness of JTPA training, but rather to determine and compare the long-term effects of JTPA training. While it may be true that the net

benefits outweigh the costs, we have no basis to judge this because such calculations were beyond the scope of this report.

4. Labor states that the increase in standard errors is primarily responsible for the decline in statistical significance of the estimated impacts.

While Labor is correct in stating that the standard errors were greater in the fifth year, it is not accurate to attribute a decline in statistical significance to either the estimated training effects or to the standard errors. The test statistics used for our significance tests are determined by the ratio of the estimates to their standard error, and attributing the lack of significance solely to either component of these ratios is inappropriate.

5. Labor states that our conclusion requires assessing the total impact of JTPA and the overall cost and benefits. The Department states that we overemphasize the importance of year-by-year significance tests in questioning the program's usefulness in improving participants' long-term earnings prospects by stressing the insignificant effect of JTPA in the fifth year.

We agree with Labor that year-by-year significance tests have limited value in assessing the total impact of JTPA and the overall cost and benefits. Furthermore, our year-by-year significance tests provide statistical evidence that adult treatment group members achieved higher earnings for several years following assignment to JTPA training. While other evidence covering the 5-year period might be found to better highlight the positive effects of JTPA training, we chose to address the question of whether the fifth-year earnings of those assigned to participate in JTPA differed significantly from the fifth-year earnings of those not assigned to participate in JTPA.

6. While acknowledging that the observed earnings differences between the four target groups were not statistically significant in the fifth year, Labor asserts that the odds that all four differences would be positive purely by chance is 6.25 percent.[14]

This implies that an accumulation of not statistically significant observations provides more compelling empirical evidence than the actual

[14]For example, if training truly had no effect on earnings, then the probability that the estimated difference would be positive for any one target group is 50 percent—that is, half of the time the estimate would be positive and the other half it would be negative. Thus, the chance that all four groups would show positive estimated earnings effects, if no true effect existed for any group, would be 50 percent to the fourth power or 6.25 percent.

significance test for any one group. While the probability (not odds) that all four not significant fifth-year earnings differences would be positive purely by chance might be low, our research question is whether a significant earnings difference occurred for each target group.

7. Labor comments that the report does not report the standard errors. Labor states that the report should include confidence intervals for the estimates, sample sizes, and standard errors and specify significance levels for the estimates.

We have made several additions to tables in appendix II in response to this comment. We have added the sample size, the size of the treatment and control groups, the standard errors, and a reminder that the significance level chosen is 5 percent for the tables in this appendix. Since we have not presented point estimates of the earnings effects, we did not calculate confidence intervals for these estimates. Technical readers of our report can construct such estimates and the associated intervals from the information in the appendix II tables.

8. Labor claims that the report treats figures that are not significant as zero.

We do not report any training effect as zero. The magnitude of the earnings differences, whether significant or not, is discussed in the report and is easily calculated from the tables in appendix II.

9. Labor states that statistical significance is not a knife edge of yes or no but a continuum.

The level used for tests of statistical significance may be chosen from a broad range (or continuum) of values. Although different researchers may choose to use different values for the significance level, choosing a significance level before analyzing any data is common practice. Once this level has been chosen, statistical hypothesis testing very much involves a yes or no decision. Either the data reject the null hypothesis of no training effect at the set significance level or not. We follow these commonly accepted procedures for hypothesis testing, and our convention is to set the significance level for such tests at 5 percent.

10. Labor also states that the report should discuss the results, the probability values, and changes in the significance levels.

Our report does discuss the results as well as whether the earnings and employment effects were significant and whether this significance changed over time. Although we do not present the probability values, technical readers of our report can calculate them using the information in the appendix II tables.

11. Labor takes issue with our statement that complications (not all treatment group members received training and some control group members did receive training) precluded our attributing earnings differences solely to JTPA training. It claims that these complications led us to understate the effect of training, implying that the earnings differences observed, along with perhaps some further overlooked earnings effects, can be attributed to JTPA.

We clearly state that these complications preclude solely attributing the earnings effects to JTPA training. However, we have no evidence that these factors led to an understatement of the effect of JTPA training. In the first place, a short delay can occur before an assignee can begin a training program. In some of these cases, individuals find and accept employment instead of reporting for training. To the extent that these individuals are more fully employed and may earn more than they might have if they had attended JTPA training, our estimate may actually overstate the effect of training. Second and more importantly, if those who attend training are in some way more motivated than those who do not attend, it would be difficult to separate any increase in earnings due to training from the increase in earnings due to this motivation. At a minimum, we would need to identify which control group members were motivated to attend training to draw such inferences.

12. Labor recommends adjusting the comparison by effectively removing treatment group members who did not enroll in training.

We chose to compare only those assigned to JTPA training with those not assigned to training to take full advantage of the original random assignment design. As we stated in comment 11, we would have needed to identify which control group members were motivated to attend training to justify removing the treatment group members who did not attend training. Since we could not take all the necessary steps to fully implement Labor's suggestion, we chose not to make that or any other adjustments.

13. Labor comments that we will be providing the Department's contractor with access to Social Security data for additional analysis, including examining the results for subgroups.

We would like to clarify the details of this arrangement in light of the sensitive nature and confidentiality of individual earnings records. When we began our work, Labor was also planning to evaluate the long-term impact of JTPA training on earnings. Both our and Labor's evaluation (contracted out to Westat, Inc.) planned to use Social Security earnings records to supplement the information collected through the NJS. In the spirit of cooperation, Labor requested and we agreed to provide aggregated earnings data to the Department, which will submit computer programs to us; we will in turn run the programs and provide the output to Labor. Only aggregated information, such as means and standards deviations, will be reported. No data will be released that could be traced to individuals, nor will we provide Labor or its contractor with individual earnings records.

14. Labor suggests that we include earnings and employment information for the third of the sample for whom only 4 years of follow-up data were available.

We did not include this group in our analysis since we could not report on their earnings or employment 5 years after training. As such, any additional information provided would not address the question of whether JTPA had a long-term effect on the earnings or employment outcomes of the treatment group.

15. Labor states that we should explain that our employment measure is not the definition that is generally reported in government statistics and is not comparable to figures reported in Current Population Survey (CPS) and Bureau of Labor Statistics (BLS) reports.

Our employment rate differs from measures reported in CPS and BLS reports but is appropriate for our purposes. Our employment rate is the number employed divided by all who were in the treatment or control group, which includes those workers who may have dropped out of the labor force.[15] Since these workers presumably applied for training because

[15]The CPS counts people at any given time as (1) employed, (2) unemployed, or (3) not in the labor force—that is, not employed and not seeking employment. The unemployment rate in the CPS is the number of unemployed divided by the sum of the employed plus unemployed. If an employment rate were reported, it would be one minus the unemployment rate, or, equivalently, the number employed divided by the sum of the employed plus unemployed.

they intended to keep working, we believe that all workers should be included in the denominator of the measure. Our measure also counts as employed everyone who worked during the year, even if they might have been unemployed for some portion of the year. As such, our measure may overstate the instantaneous employment outcomes of both the treatment and control groups relative to figures reported in CPS and BLS reports.

16. Labor states that Social Security data are subject to considerable revisions in the first year of availability. It believes this calls into doubt fifth-year estimates for adult men, adult women, and male youths.

While data are often subject to revision, we have no reason to suspect that the data for those assigned to training in 1988 are materially less reliable than for those assigned to training in 1987. The fifth year (1993) of earnings data for those assigned to training in 1988 was extracted from SSA records in March 1995. An SSA official responsible for updates and revisions to SSA earnings data said that we could expect the accuracy and completeness of our extract to exceed 99 percent.

17. Labor states that we fail to recognize the limited relevance of our findings to current job programs.

While we agree that our evaluation has limitations, we disagree that it has little relevance to current job programs. We make it quite clear that our analysis is not nationally representative of JTPA training. Additionally, we cite many flaws associated with the design and implementation of the original NJS that limit our analysis. However, no evidence exists to suggest that job training funded by JTPA and administered at the state and local level has changed so dramatically since 1989 that our findings are not relevant to the current program.

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