

The Long-Term Effects of Transitional Employment Services

*by Paul T. Decker and Craig V. Thornton**

A rigorous 6-year evaluation of transitional employment services indicates that the services can substantially increase the employment and earnings of Supplemental Security Income (SSI) recipients who have mental retardation. The evaluation examined the Social Security Administration's Transitional Employment Training Demonstration, which operated from 1985 to 1987. Our estimates indicate the demonstration services raised the average employment and earnings levels for mentally retarded SSI recipients who were offered the services. Furthermore, the estimates show that these increases persisted relatively undiminished over the 6 years after recipients entered the demonstration. Because average SSI payments for the group fell only slightly during the 6 years, the participants' average income rose. The rise in income, together with increases in work activity and community integration, suggests that the overall well-being of the participants increased because of the services. Our evaluation also suggests that transitional employment services benefit society as a whole because the earnings gains combined with the likely cost savings from reduced use of other services exceed the costs of the transitional employment services.

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Although transitional employment and similar employment support programs for persons with mental retardation have grown from small prototype programs to become established components of the vocational rehabilitation systems in all States, the long-term impacts of these programs have not been rigorously analyzed. The research literature supporting transitional employment initially focused on programs' feasibility and potential to place, train, and maintain persons with mental retardation in competitive jobs (Rusch and Mithaug 1980; Wehman 1981). Subsequently, researchers examined outcomes for program participants but did not compare them with outcomes for a valid comparison group (Kregel et al. 1990; Ellis et al. 1990; Vogelsberg 1990; Wehman and Kregel 1985), although a few analyses did compare participants in supported employment with participants in other programs, such as adult day care, work activity centers, and sheltered workshops (Tines et al. 1990; Noble and Conley 1987). None of these studies used rigorous evaluation methods, however, to assess whether employment support services increased the long-term earnings and income of program participants relative to what those participants would have earned in the absence of the services.

This article addresses the information gap by providing long-term impact estimates for the Social Security Administration's (SSA) Transitional Employment Training Demonstration. The demonstration rigorously tested a model of time-limited training and on-the-job support for Supplemental Security Income (SSI) recipients with mental retardation. The evaluation followed two cohorts of eligible applicants: (1) a treatment group that was offered transitional employment services; and (2) a control group that was precluded from receiving demonstration services, but could use any other available services. Eligible demonstration applicants were assigned randomly to these two groups, and both groups were followed for 6 years. Differences in the groups' experiences were used to estimate impacts of transitional employment on employment, earnings, SSI receipt, total income, and other measures of economic self-sufficiency.

The demonstration was the first large-scale randomized field experiment to test new methods for delivering vocational rehabilitation services to SSI recipients. Experience with this demonstration was instrumental in designing the Project NetWork return-to-work experiment, which was initiated in 1992 by SSA to test alternative methods to provide rehabilitation and employment services to SSI and Disability Insurance (DI) recipients and applicants (Rupp, Bell, and McManus 1994).

The study results offer encouraging support for transitional employment providers. The transitional employment services provided increased the SSI recipients' average earnings, and these increases persisted relatively undiminished for our 6-year observation period. At the same time, the services led to relatively small reductions in average SSI payments during the period. The substantial earnings increases, along with the small SSI reductions, increased total income for recipients who received transitional employment services.

Transitional Employment Services in the Demonstration

In the demonstration, transitional employment consisted of five core services to help SSI recipients with mental retardation obtain and hold competitive jobs (paying jobs that are essentially the same as other jobs in the economy).¹ The service model underlying these core services was based on the research of Moss (1980), Rusch and Mithaug (1980), and Wehman (1981). The five core services were:

(1) *Outreach*.—All mentally retarded SSI recipients aged 18-40 in the target areas were invited to enter the demonstration programs;

(2) *Benefit Protections*.—Waivers to SSI regulations were obtained to ensure that any recipients who chose to enroll in the demonstration could maintain eligibility for SSI benefits while receiving training;

(3) *Placement*.—Participants were placed on potentially permanent competitive jobs;

(4) *Training*.—Agency staff provided

on-the-job training, which was phased out over time to promote independence on the job; and

(5) *Job Retention Services*.—Post-placement support and followup were provided as necessary for job retention.

The core services were designed to address the main barriers that prevent SSI recipients with mental retardation from seeking and holding jobs. The outreach was intended to ensure that all mentally retarded SSI recipients in the communities served by the demonstration would know about the demonstration and the availability of services to help them enter the labor market. The use of waivers assured recipients that they would not lose SSI eligibility because they attempted to enter the labor force.² The combination of outreach and waivers was intended to make recipients comfortable about participating in the demonstration and trying to enter the labor market.

Job placement and specialized on-the-job training were designed to help participants overcome barriers in the labor market. These services were provided by staff from training agencies that had been selected to deliver transitional employment services in the demonstration. The agencies' placement efforts sought to inform potential employers about the employability of persons with mental retardation and the assistance the program could provide with any required training. In this way, the demonstration could address any misconceptions employers held about persons with mental retardation and could assure employers that the demonstration agencies would provide the specialized training required to help mentally retarded SSI recipients become fully productive on the job. The job placement services also helped recipients learn about job opportunities and find jobs matching their interests and skills.

On-the-job training provided by agency staff helped recipients learn to do jobs in the actual work environment in which they would function after training. In addition, on-the-job training provided an opportunity to address the practical aspects of holding a job, such as traveling to and from work, maintaining good relations with supervisors and coworkers,

and managing the money earned. Experience with employment-support programs has shown that training in these aspects is essential for helping persons with mental retardation succeed (Moss 1980; Rusch and Mithaug 1980; Wehman 1981; Kiernan and Stark 1986; Rusch 1986).

Job-retention services were provided to assist persons in maintaining their employment. While participants were enrolled in the demonstration, agency staff helped them hold jobs by monitoring their progress and providing additional training and assistance as needed. Agency staff also worked to ensure that participants understood any relevant SSI regulations and to see that the benefit protection offered by the demonstration waivers was implemented correctly. Finally, agency staff sought to find long-term employment supports to help workers maintain their jobs after demonstration-funded services ended. The core demonstration services were provided for up to 1 year after the time SSI recipients enrolled in the demonstration. During this year, agency staff made arrangements for any additional long-term job-retention services that were needed, but these services had to be funded by a source other than the demonstration. These supports included informal efforts by coworkers, supervisors, and family members and more formal efforts on the part of training agencies.

Eight training agencies provided the demonstration transitional employment services in 13 different communities across the country. The 8 agencies received grants from SSA and were selected from among 80 training providers that submitted proposals in a competitive procurement process. They began enrolling participants in June 1985 and continued to enroll them until July 1986. Demonstration placement and training operations continued until the end of June 1987.

Our evaluation found that the eight agencies implemented the basic demonstration model of transitional employment successfully, although the individual agencies differed in the specific methods used to deliver core demonstration services (Thornton et al. 1988). In

general, the outreach, benefit protections, job placement, on-the-job training, and job-retention services called for in the demonstration model were provided. The demonstration agencies placed two-thirds of the treatment group members in jobs during the demonstration. Half (or one-third of all treatment group members) reached a point in their jobs at which agency staff felt they were capable of performing their job without active agency support. This success rate is consistent with the rate observed for other large transitional employment programs that serve persons with mental retardation (Kerachsky and Thornton 1987).

The model of time-limited services tested in the demonstration differed from the more open-ended supported employment programs currently being fielded across the country, but the two types of programs share enough to make the demonstration results relevant for both types of programs. Following the development of the demonstration in the early 1980's, general employment policies for persons with disabilities continued to evolve and to place greater emphasis on long-term support for persons placed in jobs (Wehman and Kregel 1985, and Wehman and Kregel 1994). The expanded versions of the program model, termed "supported employment," is now offered in all States and serves more than 90,000 persons (Braddock et al. 1994). The core services in the demonstration were essentially the same as those offered currently by supported employment programs. The major difference is that the demonstration training agencies arranged for ongoing support paid for by nondemonstration funding, while supported employment programs can provide this support directly. Both models focus on helping persons with disabilities obtain and hold competitive jobs and emphasize training provided on the job, along with an array of support services. This similarity in goals and methods means that the lessons of the transitional employment demonstration provide a basis for considering the potential performance of more broadly implemented supported employment programs.

Evaluation Design

The central feature of the evaluation was the use of an experiment to test the impact of demonstration services. The evaluation randomly assigned eligible SSI recipients who applied to the demonstration to either a treatment group (whose members were offered demonstration services) or a control group (whose members were precluded from receiving demonstration services but were free to seek any other available services). The postenrollment experiences of the treatment group members indicate what happened to persons who were offered transitional employment services. The experiences of the control group members indicate what would have happened to the treatment group members in the absence of the demonstration.

Because the random assignment process is expected to ensure that the pre-enrollment characteristics of the two groups are identical, any postenrollment differences between them can be attributed to the demonstration services with a known degree of statistical precision.³ Random assignment therefore implies that differences between outcomes for the treatment and control groups are unbiased estimates of the impacts of the demonstration services. Alternative designs for estimating the impacts of services tend to fall prey to selection bias, which arises if the group receiving services and the comparison group not receiving services differ in ways that are correlated with the outcomes of interest.

A total of 745 SSI recipients with mental retardation were enrolled in the demonstration: 375 were assigned randomly to the treatment group, and the remaining 370 to the control group. Eligibility was limited to SSI recipients who (1) were between ages 18 and 40, (2) had a diagnosis of mental retardation in their SSI files, and (3) lived in one of the communities served by the demonstration training organizations. SSA staff screened the case folders of more than 30,000 SSI recipients to identify approximately 13,000 eligible participants, who were then sent invitation letters describing the demonstration. In addition, followup letters, telephone calls, and

outreach to service providers were also used to recruit SSI recipients. A total of 2,404 recipients expressed at least some interest. Intake workers in the training organizations explained the availability of demonstration services to all interested applicants and the fact that participation was strictly voluntary. Intake workers also collected basic information about applicants. If an applicant consented to participate and an intake worker decided that the applicant could be served, the applicant was randomly assigned to the treatment or control group.

It is important to note that the demonstration results pertain only to SSI recipients who volunteered for and were subsequently enrolled in the demonstration. The results cannot be generalized to the broader population of all mentally retarded SSI recipients. Volunteers who enrolled in the demonstration differ substantially from SSI recipients with mental retardation who were invited to enter the demonstration but chose not to participate (Decker and Thornton 1994). In particular, the demonstration volunteers were, on average, younger and had better employment histories than did the eligible nonparticipants.

Data Sources and Characteristics

The data for the study come from computerized SSA records and intake forms completed when sample members enrolled in the demonstration. The outcome data are drawn largely from SSA's Supplemental Security Record (SSR) files. These files contain a complete history of benefit payments, earnings, and other income for SSI recipients while in the SSI program. Information about the characteristics of sample members at the time they enrolled in the demonstration were obtained from the Intake Data Collection Form. Intake workers at the eight training agencies completed this form for each sample member prior to random assignment. The form provides information about basic demographics, living arrangement, previous work history, types of disabling conditions, and the intake worker's assessment of the participant's probability of successfully obtaining and holding a competitive job.

The data on participants' pre-enrollment characteristics show that the demonstration enrolled a group with significant barriers to employment, including barriers that go beyond those associated with mental retardation (table 1). First, the demonstration served a group of persons who were relatively economically disadvantaged. Sample members' average total income from all sources during the year prior to enrollment was just over \$5,000 and SSI payments accounted for nearly three-quarters of this total. Second, few participants had recent work experience in the regular unsubsidized labor market. Nearly one-third of the participants had no vocational activity in the year prior to enrollment, and only 10 percent had held a competitive job during this period. These low rates of vocational activity are reflected in low earnings levels that averaged only \$450 for the year prior to enrollment. Third, many enrollees also exhibited physical, social, or emotional problems that could be expected to impair their ability to function in the labor market. Finally, the enrollees' average IQ score was 57 (the mean for the population as a whole is approximately 100); 84 percent had IQ scores between 40 and 70, and 6 percent had scores below 40.

We have full intake data on all demonstration enrollees, but some of the outcome data are missing for a small portion. The SSR data on outcomes are available only for SSI recipients, and only 658 of the original 745 demonstration enrollees (88 percent) were still enrolled in the SSI program by the end of the 6th year following their demonstration enrollment. Thus, our analysis of impacts on earnings and income could be biased if the sample attrition caused by exits from SSI is correlated with whether a recipient was assigned to the treatment or control group. In particular, the impacts based only on the sample members for whom we have data could be biased if the transitional employment services provided to treatment group members led to increased rates of exit from the SSI program.⁴ But the exit rates were similar for the treatment and control groups—about 12 percent of each group were no longer receiving SSI 6 years after enroll-

ment. In addition, a review of SSI case files for sample members who left SSI during the 6-year followup period indicates that most left for reasons unrelated to the demonstration. Most members left because they received Social Security disability benefits under the DI program that were sufficient to raise their income above the threshold for SSI eligibility. Some of these persons may have also had income from earnings, but their primary source of income and reason for SSI

termination was DI receipt. These findings suggest that attrition bias is not a significant issue for our estimates of earnings impacts.

We also tested for attrition bias in our estimates of earnings impacts by generating alternative impact estimates using data from SSA's Master Earnings Files (MEF), which contain data on all workers covered by Social Security. These data are not affected by participation in the SSI program.⁵ Decker and Thornton

Table 1.—Characteristics of the research sample at pre-enrollment, by randomization status

Characteristic	Total sample
Average age (in years).....	26.5
Gender (in percents)	
Female.....	40.8
Male.....	59.2
Race (in percents)	
Black.....	30.3
White or other.....	69.7
Measured IQ score (in percents)	
Greater than 70.....	9.9
55-70.....	48.6
40-54.....	35.0
Less than 40.....	6.4
Average IQ score.....	56.6
Total income per person during year prior to enrollment (in dollars).....	\$5,058
Average time on SSI (in years).....	6.5
Total SSI received per person during year prior to enrollment (in dollars) ¹	\$3,638
Concurrently receiving DI benefits at enrollment (in percents).....	31.0
Total other unearned income per person during year prior to enrollment (in dollars).....	\$970
Any vocational activity during year prior to enrollment (in percents) ²	68.6
Regular job.....	10.5
Mainstream job training or volunteer job.....	8.3
Work in sheltered workshop or enclave.....	33.4
Other type of job.....	16.4
No vocational activity during year prior to enrollment (in percents).....	31.4
Total earned income per person during year prior to enrollment (in dollars).....	\$450
Physical, social, and emotional characteristics at enrollment (in percents)	
Has been institutionalized.....	18.0
Receiving psychiatric treatment.....	14.3
One or more physical disabilities that limit employment.....	39.9
Exhibits an emotional, behavioral, or speech problem that limits employment.....	82.8
Intake worker's opinion of probability of success in competitive job (in percents)	
High.....	35.0
Medium.....	52.9
Low.....	12.1

¹ SSI payment includes an imputation of the State supplemental payment for some sample members because individual-level data on State supplementation were not available for Illinois and Oregon, which have State-administered SSI supplements.

² For persons with a job, the classifications are hierarchical and mutually exclusive. Some persons who held regular jobs may also have been in a workshop for part of the year.

Source: Intake data collection form and SSA records data for the 745 SSI recipients with mental retardation who enrolled in the demonstration.

(1994) show that the estimated impact on earnings based on the MEF data is similar to the estimate based on the SSR data used for the bulk of our analysis. This similarity between the two sets of estimates, one subject to attrition and the other not, suggests that the findings based on the SSR data are not affected substantively by the small attrition in our data set.

Impact on Earnings

The central goal of the demonstration was to enhance the economic self-sufficiency of SSI recipients with mental retardation. The driving force behind any increase in economic self-sufficiency is increasing employment and earnings. Our initial examination of earnings is based on the average monthly earnings among treatment and control group members, shown in chart 1. The earnings path for the control group members represents the path that would have been expected for the treatment group in the absence of the demonstration.

Average earnings for individuals enrolled in the demonstration were extremely low before the demonstration began and tended to grow during the early part of the observation period, even in the absence of the transitional employment services. This growth is reflected in the average earnings of the control group, which increased from \$38 in the month of randomization to \$127 per month 3 years later (to control for inflation, all figures are expressed in 1986 dollars). This tripling of earnings occurred during the mid- to late 1980's, when the economy was expanding nationwide. In the latter part of the observation period, average earnings among control group members tended to stagnate and even decline slightly, as shown in chart 1. This downward trend probably reflects the less favorable economic conditions that prevailed at the end of the 1980's and the beginning of the 1990's.⁶

Average earnings were substantially higher among treatment group than control group members throughout the 6 years after enrollment in the demonstration, suggesting that transitional employment greatly increased average earn-

ings among the treatment group. Average earnings for treatment group members increased quickly after enrollment in the demonstration as the demonstration agencies placed many of them in jobs. By the 4th month after enrollment, treatment group members earned, on average, \$66 per month more than control group members. This difference represents a 161-percent impact on earnings in month 4. As shown in chart 1, the treatment group earnings remained substantially higher than the control group earnings during the first 3 years after enrollment. Near the end of the 3rd year, the earnings difference narrowed, but it widened gradually again in the later months.

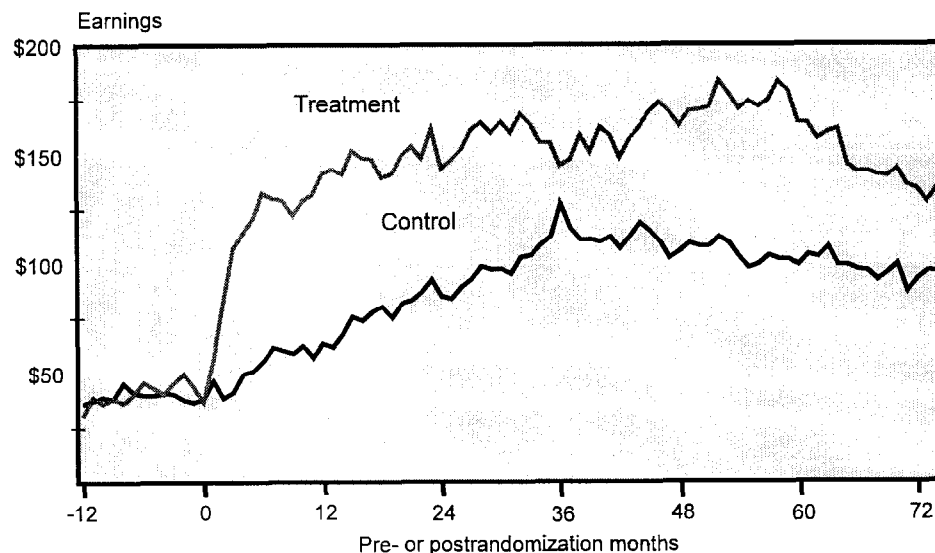
The earnings of treatment group members also appear to have stagnated or declined slightly in response to less favorable economic conditions in the late 1980's and early 1990's. Chart 1 shows that the impact of the economy was similar for the treatment and control group members, although the figure also suggests that the earnings stagnation occurred later for the treatment group. Earnings of control group members peaked at month 36, while earnings of treatment group members peaked in month 59.

Differences in average earnings between the treatment and control groups were caused by both differences in employment rates and differences in either average wage rates or hours worked

(chart 2). The time pattern of employment differences is similar to the time pattern of earnings differences shown in chart 1. The percentage impacts on employment rates, however, were smaller than the percentage impacts on earnings. For example, near the end of the first year after randomization, average earnings were more than 100 percent higher among the treatment group than among the control group (\$132, compared with \$57), while the employment rate was only about 30 percent higher among the treatment group than among the control group (53 percent, compared with 40 percent). This finding suggests either that the treatment group members took jobs with higher average wages than those earned by control group members, or that employed treatment group members worked more hours than employed control group members, on average. Unfortunately, the SSA data used in this analysis do not provide the information on wages and hours worked that would be required to determine the precise cause of the difference between impacts on earnings and employment.

To conduct a more rigorous test of earnings impacts, we divided the postenrollment period into 1-year blocks. Then, for each of the postenrollment years, we estimated a regression equation using total earnings in that particular year as the dependent variable. We also estimated a separate equation with earn-

Chart 1.—Average monthly earnings (in 1986 dollars) for treatment and control groups



ings during the entire 6-year observation period as the dependent variable. We estimated a final equation in which the dependent variable was total earnings in years 2 to 6 after enrollment in the demonstration. This final equation was used to isolate the impact on earnings after the

end of the demonstration-funded services, which lasted no more than a year after enrollment.

According to our regression estimates, transitional employment substantially increased both short-term and long-term earnings. Table 2 shows that, during the

full 6-year observation period, the transitional employment services increased earnings by an estimated \$4,282 (in 1986 dollars), which represents a 72-percent increase in earnings. The impacts on earnings were not limited to the year in which the demonstration operated: Even after excluding earnings in the first post-enrollment year, we found that the demonstration intervention increased average earnings by an estimated 69 percent. In fact, the earnings impacts were quite persistent over time. Each of the yearly impact estimates presented in table 2 is statistically significant at the 1-percent significance level, and each implies an earnings impact of at least 40 percent. As shown in chart 1, the earnings of the treatment and control groups may have converged near the end of the observation period, but any convergence appeared to occur slowly, suggesting that the earnings impacts were likely to persist beyond the 6-year observation period. In addition, a similar narrowing of the earnings difference appeared to occur in year 4, but the difference then grew again in year 5. Hence, the short-term trend toward convergence of treatment and control group earnings in year 6 is not a reliable indicator that the earnings continued to converge.

The regression analysis also confirms that the impacts on earnings were caused, in part, by impacts on employment. The estimated impacts on employment rates that are presented in table 3 show that the demonstration intervention significantly increased employment at each observation point after randomization. These estimates, however, also clearly show that the demonstration intervention did not lead to employment for all treatment group members. Rather, it increased the employment rate by 8 to 15 percentage points over the rates for control group members, which averaged between 40 and 49 percent. The estimated percentage impact on employment rates is less than the estimated percentage impact on earnings. This pattern suggests that, relative to control group members, treatment group members had either relatively high wage rates or more hours of work, in addition to a higher likelihood of employment.

Chart 2.—Average monthly employment status for treatment and control groups, by percent earning any income

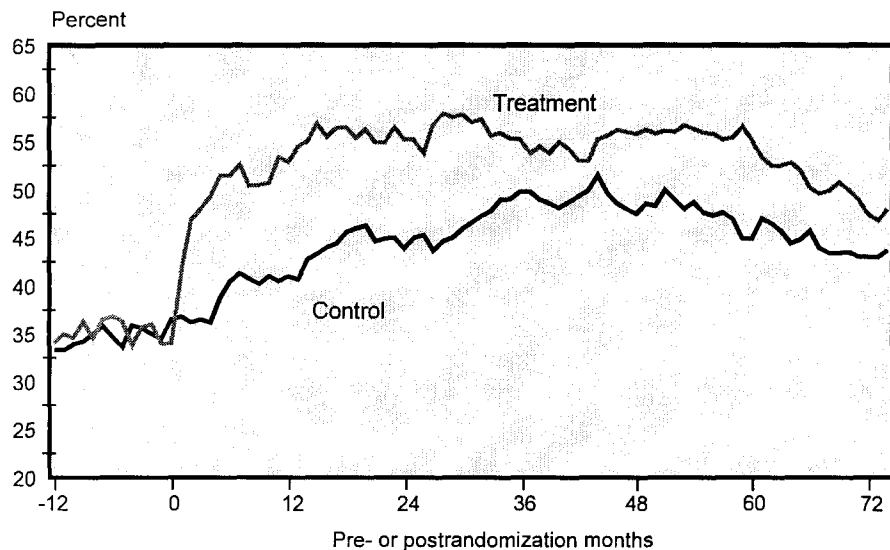


Table 2.—Estimated impacts on postenrollment earnings

[In 1996 dollars]

Years after enrollment	Estimated impact (standard error in parenthesis)	Control group mean	Estimated percentage impact
Total.....	\$4,282** (761)	\$5,974	72
Total, years 2-6.....	3,736** (714)	5,391	69
1.....	678** (96)	615	110
2.....	835** (137)	921	91
3.....	737** (160)	1,167	63
4.....	574** (172)	1,336	43
5.....	869** (184)	1,206	72
6.....	637** (182)	1,131	56

* Significantly greater than 0 at the 5-percent level of significance using a one-tail test.

** Significantly greater than 0 at the 1-percent level of significance using a one-tail test.

Source: SSA Supplemental Security Records and the demonstration Intake Data Collection Forms.

Note: Estimates are based on multiple regression models that control for project and individual pre-enrollment characteristics. The sample includes between 650 and 745 individuals assigned to either the treatment group or the control group. The exact size of the sample depends primarily on attrition from the SSI program. Statistical tests indicate that attrition does not bias the estimated impacts.

Impacts on SSI and DI Receipt

In undertaking the demonstration, SSA hoped that earnings increases would lead to lower average SSI benefits for treatment group members because SSI regulations require a recipient's benefits to be reduced to reflect earnings and other income that exceed specified thresholds. Because of the waivers and SSI eligibility rules, we did not expect a large effect on SSI participation. We investigated impacts on SSI benefits by comparing SSI receipt for the treatment and control groups during the observation period.

Average SSI payments to both the treatment and control group members declined during the 6 years after enrollment in the demonstration. Chart 3 shows that average monthly benefits (in 1986 dollars) for both groups fell from about \$300 per month at the time of enrollment to about \$220 per month 6 years later. Chart 3 also suggests that average SSI benefits were somewhat less for the treatment than control group members throughout the postenrollment period.

Regression estimates demonstrate that transitional employment reduced average SSI benefits by about 5 percent during the 6 years after enrollment. Table 4 shows that, during the entire observation period, average SSI receipt was about \$870 (or about \$12 per month) lower among the treatment group than among the control group (all other things being equal). This difference is statistically significant at the 5-percent level. The impact was not isolated to the 1st year of the demonstration: The proportional decline in benefit payments was the same regardless of whether observations in the first year were included.

The impacts on SSI receipt clearly persist over time. Measured in 1986 dollars, the estimated impacts in each postenrollment year were similar, at between \$104 and \$183 per individual. Because the control group mean declined over time, the impact measured as a percentage of the control group mean grew over time, from about 3 or 4 percent to more than 6 percent.

The estimated reduction in SSI re-

ceipt is consistent with expectations, given the relatively small absolute increase in earnings. Because the demonstration intervention had little, if any, impact on unearned income other than SSI receipt, any demonstration-induced

reductions in SSI payments for the treatment group were generally due to increased earnings. We used the estimated earnings and employment impacts to calculate lower and upper bounds on the predicted reduction in SSI receipt that

Chart 3.—Average monthly SSI payments (in 1986 dollars) to treatment and control groups

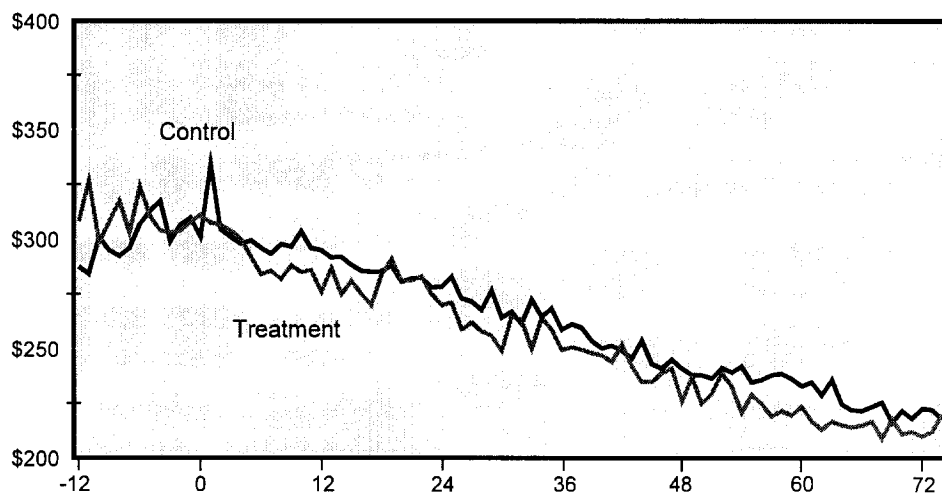


Table 3.—Estimated impacts on the probability of being employed on the anniversary of enrollment, 1985-87

Years after enrollment	[In percents]		
	Estimated impact on probability of being employed ¹ (standard error in parentheses)	Control group mean	Estimated percentage impact
1.....	14.6** (4.5)	39.6	37
2.....	12.2** (4.3)	44.8	27
3.....	8.1** (4.3)	48.6	17
4.....	9.9** (4.4)	47.5	21
5.....	13.6** (4.4)	44.4	31
6.....	8.9** (4.5)	41.8	21

¹ Impacts are expressed as the percentage point differences between the treatment and control group means in employment 1-6 years after enrollment.

*Significantly greater than 0 at the 5-percent level of significance using a one-tail test.

**Significantly greater than 0 at the 1-percent level of significance using a one-tail test.

Source: SSA Supplemental Security Records and the demonstration Intake Data Collection Forms.

Note: Estimates are based on logistic regression models that control for project and individual preenrollment characteristics. The sample includes between 650 and 724 individuals assigned to either the treatment group or the control group. The exact size of the sample depends primarily on attrition from the SSI program. Statistical tests indicate that attrition does not bias the estimated impacts.

would be caused by the increased earnings (Decker and Thornton 1994). On the basis of these bounds, we expected that, given the estimated impacts on earnings, the 6-year reduction in SSI receipt should fall somewhere between \$432 and \$1,829 per individual. The estimated reduction in SSI payment of \$870 indeed fell within this range (table 4).

While average SSI payments appear to have fallen slightly for the treatment group, there was virtually no impact on participation in the DI program for the full sample (table 5). At the end of the 6-year postenrollment period, we estimate that approximately 3 percent fewer treatment group members received DI payments than would have been the case in the absence of the demonstration, although this difference is not statistically significant. When we look only at sample members who received DI benefits at the time they enrolled in the demonstration, however, we find a substantial and statistically significant impact. For this subgroup, the demonstration appears to have reduced DI receipt by 11 percent.

The lack of impact on DI participation and payments for the full sample is not surprising. Only 31 percent of the sample received DI payments at baseline (while all sample members received SSI benefits), so impacts are diluted when measured for the full sample. We expected that persons who received DI payments might lose their eligibility for such payments if they obtained and held a job. Unlike the SSI program, the DI program does not have special provisions for persons who engage in ongoing work despite a severe impairment. For such persons, DI payments continue unchanged by any earnings as long as the beneficiary is judged unable to engage in substantial gainful activity (as indicated by an ability to consistently earn more than \$500 per month). If a beneficiary is judged capable of ongoing substantial gainful activity, DI payments are suspended. This means that the demonstration could have reduced DI payments if treatment group members were more likely to have earnings in excess of this threshold. This was apparently true for some sample members who received DI

benefits. The net income loss for these persons, however, was typically quite small because their SSI payments were increased to reflect all but \$20 of any loss of income from the termination of DI benefits.

Impacts on Income

The combination of the increase in earnings and the relatively small reduction in SSI payments raised the income of the treatment group, compared with that of the control group. During the entire 6-year observation period, transitional employment increased total income by more than \$3,200, or by about 10 percent (table 6).⁷ This estimate is statistically significant at the 1-percent level. As with impacts on other outcomes, the impacts on income were relatively persistent over time. For the individual yearly impacts on income, the estimates were between \$420 and \$720, which represents between 7.4 percent and 13.1 percent of average control group income.

Conclusion

Our findings show that the Transitional Employment Training Demonstration had significant long-term impacts on participants. During the first 6 years after enrollment, transitional employment increased earnings and decreased SSI payments among individuals assigned to the treatment group. The increase in earnings was substantial—almost \$4,300, or about 72 percent, per treatment group member. In addition, the impact on earnings persisted for several years. The estimated impact in the 6th year after enrollment was nearly as large as the impact in the 1st year after enrollment. The impact on SSI payments during the 6 postenrollment years was relatively small—a 5-percent reduction—but still statistically significant. The impact on SSI payments, like the impact on earnings, was persistent during the observation period.

The treatment group members clearly benefited from the transitional employment services. On average, earnings gains substantially outweighed reductions in average SSI payments, so that overall income rose by about 10 percent. In

Table 4.—Estimated impacts on postenrollment SSI receipt

[In 1996 dollars]

Years after enrollment	Estimated impact in 1986 dollars (standard error in parentheses)	Control group mean	Estimated percentage impact
Total.....	-\$870* (471)	\$18,956	-5
Total, years 2-6.....	-731* (439)	15,325	-5
1.....	-138* (65)	3,630	-4
2.....	-104 (87)	3,443	-3
3.....	-156 (97)	3,264	-5
4.....	-121 (102)	3,037	-4
5.....	-183 (112)	2,876	-6
6.....	-167 (113)	2,705	-6

*Significantly less than 0 at the 5-percent level of significance using a one-tail test.

**Significantly less than 0 at the 1-percent level of significance using a one-tail test.

Source: SSA Supplemental Security Records and the demonstration Intake Data Collection Forms.

Note: Estimates are based on multiple regression models that control for project and individual preenrollment characteristics. The sample includes between 650 and 745 individuals assigned to either the treatment group or the control group.

addition, the increased employment brought about by the services created nonpecuniary benefits, as treatment group members increased their interactions with other members of society and were able to assume roles more in line with those held by their nondisabled peers. At the same time, the continuation of SSI payments for most demonstration participants provided basic income support and security (and continuing eligibility for Medicaid) that was probably important as mentally retarded SSI recipients entered an often uncertain and volatile labor market.

The net benefits of transitional employment from other perspectives were less clear. From the perspective of the SSA budget, the small reductions in SSI and DI payments were the only financial benefits from the investment in transitional employment services. The estimated reduction in average SSI payments of \$870 offset only 16 percent of the approximately \$5,600 it cost to provide the transitional employment services (Thornton et al. 1988).⁸ Thus, the SSA budget could not fund the full cost of transitional employment services for mentally retarded SSI recipients without raising total program costs.

Nonetheless, transitional employment services may have generated a net benefit from the perspective of the overall Government budget despite small reductions in SSI and DI payments. Thornton and Decker (1989) examined data on the impacts of transitional employment services on the use of alternative vocational services paid for by the Government and found that transitional employment services need not increase total Government spending. The key factor in determining the net cost of the program to the Government was the targeting of transitional employment services. If the services had been provided to persons who would have used relatively few services otherwise, transitional employment would have represented an overall expansion of assistance to persons with mental retardation, and that expansion would have required an increase in overall expenditures. Alternatively, if transitional employment services had been targeted to persons currently in sheltered workshops,

Table 5.—Estimated impacts on postenrollment DI receipt

[Numbers in percents]

Years after enrollment	Estimated impact on the probability of receiving OASDI	Control group mean	Estimated percentage impact
Full sample (N=745)			
1.....	5.1	31.4	16
2.....	1.4	33.2	4
3.....	.9	33.8	3
4.....	-2.0	36.6	-6
5.....	-1.5	38.3	-4
6.....	-1.1	39.2	-3
Subsample with DI at baseline (N=230)			
1.....	.2	98.2	0
2.....	-4.9*	97.2	-5
3.....	-9.0**	95.2	-10
4.....	-12.4**	94.2	-13
5.....	-9.1**	92.9	-10
6.....	-10.1**	90.5	-11

*Significantly less than zero at the 5-percent level of significance using a one-tail test.

** Significantly less than zero at the 1-percent level of significance using a one-tail test.

Source: SSA Supplemental Security Records and the demonstration Intake Data Collection Forms.

Note: The sample includes between 650 and 745 individuals assigned to either the treatment group or the control group. The exact size of the sample depends primarily on attrition from the SSI program.

Table 6.—Estimated impacts on postenrollment total income

[In 1996 dollars]

Years after enrollment	Estimated impact in 1996 dollars (standard error in parentheses)	Control group mean	Estimated percentage impact
Total.....	\$3,232** (659)	33,244	10
Total, years 1-6.....	2,790** (606)	27,906	10
1.....	549** (111)	5,323	10
2.....	719** (133)	5,509	13
3.....	554** (146)	5,660	10
4.....	420** (159)	5,701	7
5.....	655** (155)	5,568	12
6.....	424** (166)	5,525	8

*Significantly greater than zero at the 5-percent level of significance using a one-tail test.

**Significantly greater than zero at the 1-percent level of significance using a one-tail test.

Source: SSA Supplemental Security Records and the demonstration Intake Data Collection Forms.

Note: Estimates are based on multiple regression models that control for project and individual pre-enrollment characteristics. The sample includes between 650 and 745 individuals assigned to either the treatment group or the control group. The exact size of the sample depends primarily on attrition from the SSI program.

Government funding would have shifted from one employment-support program to another, rather than to an expansion of services. Whether this shift in services would have saved the Government money depends on (1) the relative costs of sheltered workshops and long-term job-retention services and (2) the fraction of transitional employment recipients who subsequently used these services. Evidence from the short-term impact analysis suggests that the shift in service use would have reduced the Government's *net* costs of the transitional employment services substantially below the \$5,600 direct cost of the services (Thornton and Decker 1989). Whether targeting services would have enabled the Government to achieve a net savings is uncertain.

When all groups in society are considered, transitional employment appears to have the potential for creating a net social benefit. Balancing the net cost of the services to the Government would be the employment gains of mentally retarded SSI recipients. During the 6-year period examined here, the earnings gains of participating SSI recipients offset approximately 75 percent of the gross costs of providing the services. Savings from the shift in service use seem likely to offset the remaining costs. In addition, SSI recipients gain nonpecuniary benefits from their increased work activity and greater integration into society at large. Indeed, the increased self-esteem of persons with mental retardation who are able to enter and participate in the labor market, as well as the satisfaction that we as a society can derive from assisting such individuals in their efforts, represents a major justification for transitional employment services.

The demonstration findings can guide more general efforts to assist SSI recipients in obtaining and holding jobs. The demonstration's relevance stems from the fact that persons with mental retardation make up approximately 30 percent of current SSI recipients and 43 percent of the children receiving SSI (Kochhar and Scott 1995). The results are also relevant because the demonstration is one of the few rigorous evaluations of an employment program for SSI recipients. Nevertheless, the demonstration tested only one

service model with a small group of recipients with a specific disabling condition. As a result, it provides a very limited basis for developing rehabilitation policy for the 4.4 million SSI recipients (or the 3.7 million disabled workers receiving DI benefits).

From the perspective of broad-based efforts to assist SSI recipients, the demonstration results suggest that employment support services can play an important role in making persons with disabilities better off, but a limited role in helping SSI recipients earn their way off SSI. The findings suggest that it will be very difficult to use employment-support programs to move a large number of recipients off the rolls because few current recipients may volunteer (and motivation to work is probably a key ingredient to success), only a fraction of the volunteers may make the transition to work, and many may still not earn enough to become economically independent. At the same time, many recipients will benefit from the services even if their SSI benefits are not reduced sufficiently to pay for all of the program services. The outlook for the SSI program may be better if replication efforts adopt the service approaches of the best performing demonstration programs, if services are targeted to the SSI subgroups that are most likely to have large earnings increases and large SSI reductions, or if SSA jointly funds services with other agencies that are already funding supported employment programs. The findings from the Project NetWork demonstration should provide more information on these issues and on the effectiveness of employment services for broad cross-sections of the SSI and DI populations.

Notes

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¹Prero and Thornton (1991) and Thornton et al. (1988) provide more details about the demonstration services and their implementation.

²After the demonstration started, SSI regulations were modified to provide this type of benefit protection to all SSI recipients.

³Metcalf and Thornton (1992) and Greenberg and Robins (1986) provide details about the use of random assignment in program evaluation.

⁴Estimated impacts on SSI receipt were not affected by attrition bias because we know that persons who exited the program no longer received any SSI payments.

⁵We chose not to use the Master Earnings Files data for our primary analysis because they are organized by calendar year. Using data from the Supplemental Security Record allowed us to investigate monthly rather than annual data and to organize the data for each individual according to the actual month that individual enrolled in the demonstration.

⁶Another potential explanation for the decrease in average earnings is that those with high earnings dropped out of the sample when they stopped receiving SSI, and were no longer included in the calculation. This attrition of high earners was probably a factor in the decline; however, alternative data from the Master Earnings Files, which we have for all sample members, confirm that average earnings for the full sample tended to stagnate in the late 1980's and early 1990's. For example, average annual earnings among the control group (in 1986 dollars) were \$1,387 in 1989, \$1,353 in 1990, and \$1,263 in 1991.

⁷Total income includes earnings, SSI payments, DI benefits, and all other income reported to SSA.

⁸The cost estimate is expressed in 1986 dollars to be consistent with the impact estimates. If 1995 dollars were used, costs would be approximately \$7,300.

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