the explanatory variables, but these estimates should be viewed with caution for several reasons. For one, estimates of the program's effects were obtained by contrasting employment in firms that used the credit to employment in firms that did not use it, although the credit was an option available to all employers in the survey. This methodology yields less reliable results than could be obtained from a controlled experiment, where the credit would be available to some employers and not to other, otherwise similar, employers. Further, it was necessary to use the proportion of employment under age 25, instead of target group employment, as a measure of the program's effects because no information was available on the proportion of employees who were economically disadvantaged. The presumption was that any increase in the share of youth employment by firms that was associated with use of the TJTC would be due to increased hiring of youth eligible for the credit.

The results show that TJTC use was positively associated with an increase in the proportion of employment made up of workers under 25, but there was no consistent evidence that TJTC use increased total employment (see Tables A-4 through A-7 in Appendix A). 6/ The estimates indicate that

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6. These results hold even after eliminating the possibility of a reverse relationship between employment and TJTC use--where firms that are growing or that are altering their production techniques toward more low-skill jobs anyway may take advantage of the credit more than other firms, even though the credit has no effect on their employment decisions. This reverse effect is eliminated by using an "instrument' for the TJTC variable in the employment equation, which is obtained by predicting TJTC use based on variables excluding employment.

the share of youth employment was at least 6 percent higher in firms that used the TJTC over the survey period, relative to firms that made no use of the credit. If there was no net new employment generated by the credit, however, youth employment gains were at the expense of other workers. Even if displacement of other workers was substantial, though, the credit could be beneficial by reducing the concentration of unemployment.

CHAPTER IV. EFFECTS OF THE TJTC ON THE YOUTH TARGET GROUP

Of the nine groups eligible for the TJTC, the largest is economically disadvantaged youth age 18 to 24. This chapter assesses the effects that the TJTC has on employment for this group, after first comparing youth who get TJTC jobs to other poor youth and TJTC-subsidized jobs to other jobs held by youth. 1/

CHARACTERISTICS OF TJTC YOUTH

Youth who get private-sector jobs subsidized by the TJTC are, on average, less disadvantaged than youth in other federal employment programs who, in turn, tend to be less disadvantaged than poor youth who do not participate in any federal employment and training program. TJTC youth are more likely to be white and less likely to be high school dropouts than other poor youth. They are also less likely than participants in employment programs to be currently attending school (see Table 6).

It is expected that TJTC youth would be less disadvantaged than youth in CETA programs, since TJTC youth should be job-ready while CETA programs are intended to provide remedial education and training for youth

1. Only the youth target group is examined, since data are lacking for the other groups.

TABLE 6. CHARACTERISTICS OF TJTC, CETA, AND OTHER LOW-INCOME YOUTH, 1981

	TJTC Participants	CETA Participants	Other Low-Income Youth
Percent Male	60	59	45
Percent Nonwhite	24	39	35
Percent High School Dropouts	6	12	31
Percent Enrolled			
High School	4	17	7
College	20	27	18
Average Age	21	20	21
Average Grade Completed	12	12	11

SOURCE: 1982 National Longitudinal Survey of Youth.

who are not ready to compete in the job market. It is less clear why those who are not served by any government program are the most disadvantaged, although this may indicate that federal employment and training programs "cream" from the eligible population--that is, select those with the fewest disadvantages.

CHARACTERISTICS OF TJTC JOBS

The jobs obtained by youth subsidized by the TJTC in 1981 were more likely to be service jobs, and lower paid, than jobs held by other youth. The

average wage was close to the federal minimum of $3.35, and job duration was 3.5 months, on average. Jobs held by non-poor youth paid nearly $5.00 an hour and lasted 4.4 months, on average. Further, non-poor youth were less concentrated in service, sales, and clerical jobs (see Table 7).

TABLE 7. CHARACTERISTICS OF JOBS HELD BY YOUTH, 1981

	TJTC Youth	Other Low-Income Youth	Non-Poor Youth
Average Hourly Wage (in dollars) a/	2.82	3.84	4.82
Average Hours/Week	37	37	39
Average Job Duration (in months)	3.5	3.8	4.4
Occupational Distribution (in percents)			
Service workers	43	23	24
Sales	20	5	6
Clerical	20	16	20
Operatives/craftsman	9	23	29
Laborers	8	23	15
Prof/managerial	0	10	6

SOURCE: National Longitudinal Survey of Youth, 1982.

a. Wage reporting in this survey is subject to large errors. TJTC administrative data indicate that 8 percent of TJTC jobs were paid less than the federal minimum wage in 1981, and 65 percent were paid at the federal minimum or just above.

EMPLOYMENT EFFECTS

Findings from the Employer Survey, discussed in Chapter II, indicated that the credit tilted employers' hiring toward youth. This provides some evidence that the credit has the intended effect, but the findings must be viewed as tentative because there was no employment information specifically for the TJTC target group. Further, even if these findings are indicative of the credit's effects for target youth, results from the Employer Survey require replication from other data sources before they can be considered conclusive. This section discusses results from sources that permit identification of target group members.

CBO estimates using data from the Current Population Survey show that the TJTC may increase employment for TJTC-eligible youth, without adversely affecting employment rates for other youth. Results were obtained by estimating an equation that predicts the probability of employment for youth, with the intensity of TJTC vouchering activity by the state as one of the explanatory variables. Estimates for 1983 showed that more vouchering activity, relative to the size of the eligible population in the state, was associated with an increased probability of employment for disadvantaged youth in the state but had no significant effect on the probability of employment for other youth. Estimates for 1982, however, showed no significant impact on employment for either group from TJTC vouchering (see Appendix B).

The greater estimated effect for 1983 is perhaps accounted for by two factors--the economic recovery and more vigorous promotional activity by the Employment Service in 1983. It is also possible, however, that the introduction in 1983 of an allocation formula for TJTC administrative funds based on the number of TJTC certifications issued induced Job Service personnel to encourage employers to certify more of the TJTC-eligible workers they hired even though the credit was not a factor in the hiring decision. Hence, these results are consistent with a range of hypotheses about the effect of the TJTC on target youth employment--from no effect to a very substantial effect relative to the level of vouchering activity.

Findings from a demonstration program for TJTC-eligible youth indicated that the credit helped to place youth in jobs. Although it is not possible to separate entirely the effects of the tax credit from other features of this demonstration, including pre-screening of applicants and job development efforts, these are additional features that Job Service personnel could provide. The program succeeded in increasing employment rates for participants relative to a comparison group, and more than half of the employers who hired a youth participant said that anticipated savings due to the TJTC were a factor in their decision to hire. Pre-screening by the Job Service was more important than savings from the tax credit,

though, since 90 percent of employers who hired a participant cited that as a factor in their decision. 2/

On the other hand, results from two controlled experiments with the TJTC, done in 1980 and 1981, found that AFDC and general assistance recipients who were taught to advertise their eligibility for a tax credit were less likely to get jobs than similar job applicants who did not mention their eligibility to prospective employers. 3/ One reason for this might be that the applicants were not able to explain the benefits of the tax credit effectively. Or, the knowledge that they were welfare recipients might have caused employers to lower their assessment of job-seekers by more than the value of the tax credit. Due to premature termination of one experiment and to methodological flaws in the other, the findings from these experiments are not conclusive even for the public assistance groups served, though. 4/ Further, is it not clear that findings for public assistance

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2. See Public/Private Ventures, "Reducing the Costs of Labor Market Transactions for Private Sector Employers and Disadvantaged Youth," December 1982.

3. See Gary Burtless and John Cheston, "The Montgomery County (Dayton) Ohio Wage-Subsidy Voucher Experiment: Initial Findings," U.S. Department of Labor, Office of the Assistant Secretary for Policy, Evaluation, and Research (July 1981). Also see Jean Badeau and others, "Jobs Tax Credits--The Report of the Wage Bill Subsidy Research Project, Phase II," Wisconsin Department of Health and Social Services and Institute for Research on Poverty (January 1982).

4. These findings are contradicted by employer responses to a survey conducted in 1983, in which it was determined that knowledge

recipients will also apply to the youth target group, who do not necessarily carry the stigma of being welfare recipients.

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4. (Continued)
(provided on job applicant forms) that applicants were eligible for the TJTC increased employers' assessment of the desirability of hiring them for clerical positions, and had no significant effect on employers' assessments for other jobs. But employers in this survey may have been responding on the basis of their experience with cooperative education students, who are no longer eligible unless they are disadvantaged.

APPENDIX A. EMPLOYER SURVEY: DATA AND METHODOLOGY

A size-stratified random sample of for-profit firms in 28 sites around the country was interviewed in early 1980, and reinterviewed in early 1982. The sites chosen for the survey included both urban and rural regions from all areas of the country except the northeast (see Table A-1).

There were 5,301 respondents to the first interview and 3,710 respondents to the second interview--a 70 percent response rate to the reinterview. After adjusting respondent weights to reflect differences in response rates among sites and firm-size strata, comparison of weighted versus unweighted counts of firms that used the TJTC indicates that TJTC users were more likely to respond to the reinterview survey than non-users (see Table A-2). This should have little effect on behavioral estimates obtained from regression analysis, though, since nonusers are well represented in the sample and there is no reason to believe that nonusers who responded were systematically different from those who did not.

Regression equations were estimated in order first to identify the determinants of TJTC use and then to measure the effect of TJTC use on the share of employment going to youth (under age 25) and on total employment in the firm. The share of employment going to youth was used

TABLE A-1. GEOGRAPHIC COVERAGE OF THE EMPLOYER SURVEY

Site	Total Private Employment in Site (1980)	Counties
Alabama		
Mobile	115,738	Baldwin, Mobile, Escambia (in Florida)
Birmingham	271,202	Jefferson, Shelby, Walker
Colorado		
Weld County	25,207	Weld
Alamosa County	20,000	Alamosa
Logan, El Paso Counties	37,348	Logan, El Paso
Florida		
Pensacola	77,684	Escambia, Okaloosa, Santa Rosa
Kentucky		
Pike County	15,645	Pike
Harlan County	8,382	Harlan
Louisiana		
Baton Rouge	104,299	East Baton Rouge Parish
Lake Charles	87,457	Calcasieu Parish, Lafayette Parish
New Orleans	211,892	Orleans Parish
Missouri		
Central Missouri	30,067	Carroll, Chariton, Johnson, Lafayette, Pettis, Saline
South Missouri	38,165	Bolinger, Cape Girardeau, Iron, Perry, St. Francis, Ste. Genevieve
Northwest Missouri	39,847	Buchanan, Caldwell, Clinton, Daviess, Grundy, Livingston
Ohio		
Columbus	303,325	Franklin
Cincinnati	402,091	Hamilton
Toledo	171,451	Lucas
Dayton	250,000	Montgomery

TABLE A-1. (Continued)

Site	Total Private Employment in Site (1980)	Counties
Texas		
Beaumont-Port Arthur	114,064	Hardin, Jefferson, Orange
Corpus Christi	103,532	Arkansas, Bee, Brooks, Duval, Jim Wells, Kenedy, Kleberg, Live Oak, McMullen, Nueces, San Patricio
San Antonio	288,855	Bexar, Comal, DeWitt, Gonzalez, Guadalupe, Karnes, Victoria, Wilson
Virginia		
Buchanan, Dickenson Counties	14,861	Buchanan, Dickenson
Washington		
Southwest Washington	43,216	Cowlitz, Grays Harbor, Pacific, Wahkiakum
Skagit, Whatcom Counties	36,959	Skagit, Whatcom
Olympic Peninsula	20,453	Jefferson, Lewis, Mason, Skamania
Wisconsin		
Marathon County	30,978	Marathon
Outagamie County	43,113	Outagamie
Winnebago County	45,313	Winnebago

SOURCE: John Bishop, ed., Subsidizing On-the-Job Training: An Analysis of a National Survey of Employers, National Center for Research in Vocational Education, and Institute for Research on Poverty (1982), p. 18.

TABLE A-2. ESTIMATED USE OF THE TJTC BY SURVEY RESPONDENTS AND BY ALL EMPLOYERS IN THE SURVEY SITES, 1982

Type of Employer	Percent of Respondents That Used the TJTC	Estimated Percent of Firms in Survey Sites That Used the TJTC a/
By Number of Employees		
4 or less	11	4
5-19	16	10
20-49	22	12
50-199	31	21
200 or more	45	44
By Industry		
Agriculture	0	0
Mining	10	2
Construction	17	8
Manufacturing	28	13
Transport/Utilities	16	6
Wholesale/Retail Trade	20	11
Finance	18	5
Other Services	23	10
All Employers	21	10

SOURCE: 1982 Employer Survey.

a. Responses are weighted to reflect the probability of inclusion in the sample to obtain these estimates.

as a measure of the effect of the TJTC on shifting employers' hiring toward targeted groups since the largest target group is disadvantaged youth under age 25.

Determinants of TJTC Use

A logistic regression equation was estimated, in which the variable to be explained was whether or not the firm had claimed a tax credit for targeted workers hired during 1980 or 1981. One set of explanatory variables identified TJTC outreach efforts made toward employers. Other explanatory variables included firm employment characteristics, attitudes of the employer, industry and regional identifiers, and the local unemployment rate.

TJTC program outreach efforts were significant determinants of TJTC use by employers (see Table A-3). The probability of use was higher by 21 percentage points among firms that were contacted by the Job Service or some other agent to inform them about the TJTC, compared to firms that had no formal contact. The probability of use was higher by 32 percentage points for firms that were contacted and also asked to accept referrals of eligible workers, relative to firms with no formal contact. 1/

In addition, use of the TJTC was more likely for larger firms, and for firms with a larger proportion of the work force under age 25 at the start of the survey period. Employment growth was positively, but weakly, related

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1. The change in the probability of TJTC use was calculated as the difference in the value of the logistic equation evaluated first with the outreach variables set to one and then set to zero.

to TJTC use. 2/ Employers who had demonstrated a willingness to fire unsatisfactory employees were more likely to use the credit, as were employers whose attitudes toward government programs were favorable. The probability of use was highest for firms in the service or wholesale and retail trade industries, after controlling for other factors. Use was not related to local unemployment rates, nor did it vary significantly by region when other factors were held constant (see Table A-3).

Effects on Employment

Least squares regression equations were estimated for the percent of firm employment in 1982 that was under age 25, for the ratio of youth employment for 1982 relative to 1980, for average total employment in 1981, and for the ratio of total employment for 1981 relative to 1980. The explanatory variable of primary interest was whether the firm had used the TJTC during the survey period. Estimates for the effect of TJTC use on employment were obtained first using the actual incidence of TJTC use (ordinary least squares) and then using predicted TJTC use (two-stage least squares). The two-stage least squares estimates were intended to eliminate any bias in the estimated coefficients that would result if some of the

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2. Although a two-way causal relationship between TJTC use and employment growth is posited by the equations specified in Tables A-3 and A-7, no attempt to get two-stage least square estimates for the coefficient of employment growth was made since the best equation for employment growth explained only 2 percent of its variation in the sample.

TABLE A-3. DETERMINANTS OF TJTC USE BY FIRMS FOR 1980 AND 1981

Explanatory Variables	Estimated Coefficients (and Standard Errors)
Intercept	-5.412 (0.736)
Firm Characteristics:	
Employment growth (ratio of 1981 over 1980)	0.227 (0.144)
Log firm size (1980)	0.222 (0.047)*
Percent of workers who are under 25 (1980)	0.008 (0.003)*
Firing flexibility (0,1)	0.401 (0.144)*
Employer Attitude to Government Programs (0,1) a/	
Favorable	0.468 (0.225)*
Unfavorable	-0.108 (0.134)
Outreach (0,1) b/	
Informed of the program	2.123 (0.145)*
Asked to accept eligible referrals	0.555 (0.134)*
Local Unemployment Rate (average for 1980 and 1981)	-0.004 (0.055)
Industry (0,1) c/	
Construction	0.568 (0.594)
Manufacturing	0.709 (0.534)
Transport/Utilities	0.436 (0.628)
Wholesale/Retail Trade	1.056 (0.521)*
Finance	0.851 (0.568)
Other Services	1.129 (0.526)*
Region (0,1) d/	
South	0.035 (0.142)
West	-0.079 (0.182)
R^2	.24
Sample Size	2,955

TABLE A-3. FOOTNOTES

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* Significant at .05 for a two-tailed test.

NOTE: The estimated coefficients were obtained from a logistic regression.

a. The reference group is employers who expressed no strong opinion.

b. The reference group is firms who had no formal contact concerning the tax credit.

c. The reference industries are agriculture and mining.

d. The reference region is the North Central states.

correlation between TJTC use and the employment measure was due to the greater likelihood that rapidly growing firms or firms that were altering their production techniques to use lower-skill labor anyway would find it advantageous to use the TJTC even though it did not influence their hiring decisions.

The estimates show that the share of employment that was under age 25 was at least 6 percent higher in firms that had used the TJTC over the survey period, relative to similar firms that did not use the credit. 3/ This result emerges both from the equation in which the variable to be explained is the percent of youth employment (Table A-4) and from the equation in which the variable to be explained is the change in the percent

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3. The share of youth employment actually dropped by 7 percent, on average, over the survey period. It dropped only 2 percent in firms that used the TJTC, compared to a drop of 8 percent in firms that did not use the credit.

TABLE A-4. EFFECT OF THE TJTC ON THE PERCENT OF FIRM EMPLOYMENT THAT IS UNDER AGE 25 IN 1982

Explanatory Variables	Estimated Coefficients (and Standard Errors) Ordinary Least Squares Regression	Two-Stage Least Squares Regression a/
Intercept	3.679 (2.655)	3.803 (2.656)
TJTC Use in 1980 or 1981 (0,1) b/	1.969 (0.669)*	3.814 (1.680)*
Employment Growth (ratio of 1981 over 1980)	3.875 (0.726)*	3.851 (0.726)*
Local Unemployment Rate (average for 1980 and 1981)	-0.533 (0.224)*	-0.554 (0.224)*
Percent Employment Under 25 in 1980	0.831 (0.010)*	0.830 (0.010)*
Industry (0,1) c/		
Construction	-3.834 (2.002)	-3.797 (2.003)
Manufacturing	-1.366 (1.912)	-1.484 (1.918)
Transport/Utilities	-0.026 (2.196)	-0.076 (2.197)
Wholesale/Retail Trade	0.299 (1.800)	0.283 (1.802)
Finance	-1.773 (2.011)	-1.820 (2.013)
Other Services	-1.312 (1.827)	-1.307 (1.829)
Region (0,1) d/		
South	0.012 (0.585)	-0.037 (0.585)
West	-0.613 (0.746)	-0.677 (0.746)
R^2	.68	.68
Sample Size	3,172	3,172

* Significant at .05 for a two-tailed test.

TABLE A-4. FOOTNOTES

a. A predicted value is used for TJTC use in 1980 or 1981, calculated from a preliminary regression of TJTC use on exogenous determinants.

b. The mean of youth employment in the sample was 26.84. At the mean, the ordinary least squares results imply that youth employment was 1.969 percentage points--or 7 percent--higher in firms that used the TJTC relative to those that did not use it. The two-stage least squares results indicate that youth employment was 3.814 percentage points--or 14 percent--higher.

c. The reference industries are agriculture and mining.

d. The reference region is the North Central states.

of youth employment from 1980 to 1982 (Table A-5). When a predicted value for TJTC use was substituted in the estimating equation to eliminate possible biases from reverse causation (the two-stage least squares regression technique), the estimated effect of TJTC use on youth employment increased in size and significance, indicating that the estimated effect of TJTC use on youth employment is not just due to simultaneous-equations bias. Although the two-stage least squares estimates indicate that youth employment may be from 14 to 20 percent higher in firms that used the TJTC over the survey period, confidence in these estimates is low since the estimating equation used to obtain a predicted value for TJTC use explains only 21 percent of its variation.

TABLE A-5. EFFECT OF THE TJTC ON THE CHANGE IN THE PERCENT OF FIRM EMPLOYMENT THAT IS UNDER AGE 25 IN 1982

Explanatory Variables	Estimated Coefficients (and Standard Errors) Ordinary Least Squares Regression	Two-Stage Least Squares Regression a/
Intercept	1.111 (0.145)	1.110 (0.145)
TJTC Use in 1980 or 1981 (0,1)	0.062 (0.037)	0.205 (0.092)*
Employment Growth (ratio of 1981 over 1980)	0.148 (0.040)*	0.147 (0.040)*
Local Unemployment Rate (average for 1980 and 1981)	-0.030 (0.013)*	-0.032 (0.013)*
Industry (0,1) b/		
Construction	-0.173 (0.108)	-0.175 (0.108)
Manufacturing	-0.106 (0.102)	-0.118 (0.103)
Transport/Utilities	-0.118 (0.122)	-0.122 (0.122)
Wholesale/Retail Trade	-0.082 (0.097)	-0.088 (0.097)
Finance	-0.158 (0.111)	-0.167 (0.111)
Other Services	-0.052 (0.099)	-0.058 (0.099)
Region (0,1) c/		
South	-0.036 (0.033)	-0.037 (0.033)
West	-0.027 (0.042)	-0.028 (0.042)
R^2	.01	.01
Sample Size	2,653	2,653

* Significant at .05 for a two-tailed test.

a. A predicted value is used for TJTC use in 1980 or 1981, calculated from a preliminary regression of TJTC use on exogenous determinants.

b. The reference industries are agriculture and mining.

c. The reference region is the North Central states.

There was no consistent evidence that TJTC use induced net new employment overall, however. Total employment grew by 2 percent, on average, over the survey period both in firms that used the TJTC and those that did not. Using the level of employment as the dependent variable, regression estimates imply that employment was about 3 percent higher, at the mean, in firms that used the TJTC over the survey period compared to similar firms not using the credit. When a predicted value for TJTC use was substituted, the estimated effect increased to about 12 percent (Table A-6). When change in employment was the dependent variable, though, the effect of TJTC use on employment was small and nonsignificant (Table A-7).

In summary, findings from this survey indicate that firms using the credit shifted hiring toward youth, relative to firms that did not use the credit, but clear evidence for net new employment is lacking. Further, there is no way from this survey to assess the effects of the TJTC on aggregate (economy-wide) target group employment or on overall employment. It is possible that the credit just shifted the site of youth employment from other firms to those that used the credit, but the results reported in Appendix B make that seem unlikely.

TABLE A-6. EFFECT OF THE TJTC ON TOTAL FIRM EMPLOYMENT FOR 1981

Explanatory Variables	Estimated Coefficients (and Standard Errors) Ordinary Least Squares Regression	Two-Stage Least Squares Regression a/
Intercept	5.844 (3.455)	5.817 (3.452)
TJTC Use in 1980 or 1981 (0,1) b/	1.940 (0.907)*	7.523 (2.345)*
Sales Growth (1980 to 1982)	4.171 (0.710)*	4.038 (0.712)*
Local Unemployment Rate (average for 1980 and 1981)	-0.645 (0.304)*	-0.686 (0.304)*
Firm Employment for 1980	0.980 (0.002)*	0.979 (0.002)*
Industry (0,1) c/		
Construction	-4.571 (2.723)	-4.509 (2.720)
Manufacturing	-3.854 (2.605)	-4.235 (2.608)
Transport/Utilities	1.335 (2.987)	1.304 (2.984)
Wholesale/Retail Trade	-2.273 (2.452)	-2.441 (2.450)
Finance	-0.008 (2.786)	-0.132 (2.784)
Other Services	-1.955 (2.491)	-2.100 (2.489)
Region (0,1) d/		
South	0.427 (0.800)	0.410 (0.799)
West	-0.120 (1.024)	-0.168 (1.023)
R^2	.99	.99
Sample Size	3,201	3,201

* Significant at .05 for a two-tailed test.

a. A predicted value is used for TJTC use in 1980 or 1981, calculated from a preliminary regression of TJTC use on exogenous determinants.

b. The mean of total employment in the sample was 60.2. At the mean, the ordinary least square results imply that employment was higher by 1.9 employees--or 3 percent--in firms that used the TJTC relative to those that did not use it. The two-stage least squares results indicate that employment was higher by 7.5 employees--or 12 percent.

c. The reference industries are agriculture and mining.

d. The reference region is the North Central states.

TABLE A-7. EFFECT OF THE TJTC ON THE CHANGE IN TOTAL FIRM EMPLOYMENT

Explanatory Variables	Estimated Coefficients (and Standard Errors)	
	Ordinary Least Squares Regression	Two-Stage Least Squares Regression a/
Intercept	0.974 (0.062)	0.973 (0.062)
TJTC Use in 1980 or 1981 (0,1)	-0.007 (0.016)	0.026 (0.041)
Sales Growth (1980 to 1982)	0.084 (0.013)*	0.083 (0.013)*
Local Unemployment Rate (average for 1980 and 1981)	0.004 (0.005)	0.003 (0.005)
Industry (0,1) b/		
Construction	0.003 (0.049)	0.002 (0.049)
Manufacturing	-0.033 (0.047)	-0.037 (0.047)
Transport/Utilities	-0.033 (0.054)	-0.034 (0.054)
Wholesale/Retail Trade	-0.037 (0.044)	-0.039 (0.044)
Finance	-0.014 (0.050)	-0.015 (0.050)
Other Services	-0.021 (0.045)	-0.023 (0.045)
Region (0,1) c/		
South	0.030 (0.014)*	0.030 (0.014)*
West	-0.016 (0.018)	-0.016 (0.018)
R^2	.02	.02
Sample Size	3,193	3,193

* Significant at .05 for a two-tailed test.

a. A predicted value is used for TJTC use in 1980 or 1981, calculated from a preliminary regression of TJTC use on exogenous determinants.

b. The reference industries are agriculture and mining.

c. The reference region is the North Central states.

APPENDIX B. CURRENT POPULATION SURVEY: DATA AND METHODOLOGY

A subsample composed of all youth age 18 to 24 was selected from the March 1983 Current Population Survey (CPS). This subsample was divided into two groups--those whose family income for 1982 would have made them eligible for the TJTC, and other, higher-income youth. 1/

Logistic regression equations were estimated, separately for each of these two groups, in which the variable to be explained was the incidence of employment for individuals either sometime during 1982 or during the survey week in March 1983. A measure of TJTC program activity was included as one of the explanatory variables. The measure used was the voucher rate, defined as the ratio of vouchers issued for youth age 18 to 24 over the size of that target population in each state. Other explanatory variables included state-level measures for labor market conditions and Job Service activity as well as individual demographic variables.

The voucher rate was not significantly related to employment rates during 1982, either for the TJTC-eligible group of youth or for other youth

1. Eligibility determination was based on annual family income for 1982, although in practice TJTC eligibility is based on family income for the six months prior to application. As a result, some of the youth classified as ineligible could have been eligible for the TJTC sometime during the year.

(see Table B-1). It was significantly related to employment for the TJTC-eligible group--but not for other youth--during the survey week in March 1983, though (see Table B-2). 2/ The results for March 1983 apparently indicate that the TJTC increased the probability of employment for eligible youth without adversely affecting employment prospects for other youth. It is not clear, however, why the effect exists for employment during the survey week but not for the previous year, although there are two factors that might account for this. One is that employment was declining throughout most of 1982, but began to recover at the end of the year, increasing the prospects for positive effects from TJTC program activity. A second factor is that the U.S. Employment Service began to encourage local Job Service offices to implement the TJTC more vigorously beginning in 1983.

The estimates for March 1983 imply that each additional voucher was associated with about 0.4 additional jobs for TJTC-eligible youth. 3/ Since 45 percent of vouchers reflected certified jobs in 1983, the most sanguine interpretation of these results would be that nearly all TJTC-certified jobs

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2. The results for 1983 are robust, in that they emerge in a variety of specifications for the equation. These include restricting the sample to those who had no employment during 1982, or using the data on individuals to construct employment rates by state and using the voucher rate and other state-specific variables to predict the employment rate.

3. An increase in the annual voucher rate of 1 percentage point increases the estimated probability of employment for TJTC-eligible youth by 0.41 percentage points.

TABLE B-1. LOGISTIC REGRESSION EQUATIONS ESTIMATING THE INCIDENCE OF EMPLOYMENT IN 1982

Explanatory Variables	Estimated Coefficients (and Standard Errors) Low-Income Youth	All Other Youth
Intercept	-2.14 (0.78)	-0.60 (0.50)
State-Specific Variables:		
Annual voucher rate (82)	-1.04 (1.06)	-0.50 (0.63)
Job service activity (82)	4.22 (1.19)*	1.39 (0.77)
Industry mix (82)	3.60 (1.17)*	0.65 (0.71)
Unemployment rate (82)	-0.04 (0.02)*	-0.06 (0.01)*
Person-Specific Variables:		
Age (In years)	-0.02 (0.02)	0.04 (0.01)*
Black (0,1)	-0.64 (0.09)*	-0.91 (0.08)*
Other nonwhite (0,1)	-0.87 (0.16)*	-0.84 (0.12)*
Family status (0,1)--Male, Married, with children (Y or N): a/		
NNN	-0.48 (0.09)*	-0.18 (0.06)*
NNY	-1.27 (0.17)*	-1.59 (0.15)*
NYN	-1.30 (0.12)*	-1.25 (0.07)*
NYY	-1.78 (0.38)*	-1.86 (0.22)*
YNY	1.42 (1.11)	0.04 (0.76)
YYN	0.95 (0.18)*	1.38 (0.20)*
YYY	1.28 (0.65)*	0.29 (0.48)
Education (In years)	0.15 (0.02)*	0.21 (0.01)*
Enrolled (0,1)	-0.57 (0.09)*	-1.44 (0.06)*
Central City (0,1)	-0.19 (0.09)*	-0.25 (0.06)
Non-SMSA (0,1)	0.20 (0.10)	-0.11 (0.06)
R^2	.10	.13
Sample Size	3,579	15,613

* Significant at .05 on a 2-tailed test.

a. The reference group is YNN--male, unmarried, and no children.

TABLE B-2. LOGISTIC REGRESSION EQUATIONS ESTIMATING THE INCIDENCE OF EMPLOYMENT IN MARCH 1983

Explanatory Variables	Estimated Coefficients (and Standard Errors) Low-Income Youth	All Other Youth
Intercept	-2.40 (0.78)	-1.23 (0.38)
State-Specific Variables:		
Annualized voucher rate (83)	1.92 (0.69)*	0.39 (0.32)
Job service activity (83)	1.47 (1.06)	0.13 (0.52)
Industry mix (82)	0.54 (1.16)	0.28 (0.53)
Unemployment rate (83)	-0.06 (0.02)*	-0.04 (0.01)*
Person-Specific Variables:		
Age (In years)	-0.00 (0.02)	0.03 (0.01)*
Black (0,1)	-0.81 (0.11)*	-0.72 (0.07)*
Other nonwhite (0,1)	-0.82 (0.18)*	-0.56 (0.11)*
Family status (0,1)--Male, Married, with children (Y or N): a/		
NNN	-0.19 (0.09)*	0.29 (0.05)*
NNY	-0.99 (0.20)*	-1.07 (0.15)*
NYN	-1.19 (0.13)*	-0.79 (0.05)*
NYY	-1.97 (0.54)*	-1.67 (0.23)*
YNY	-0.04 (0.88)	-0.48 (0.49)
YYN	0.87 (0.15)*	0.75 (0.09)*
YYY	0.44 (0.47)	-0.29 (0.28)
Education (In years)	0.21 (0.02)*	0.17 (0.01)*
Enrolled (0,1)	-1.32 (0.11)*	-2.10 (0.05)*
Central City (0,1)	-0.22 (0.10)*	0.06 (0.05)
Non-SMSA (0,1)	-0.04 (0.10)	-0.18 (0.05)*
R^2	.12	.17
Sample Size	3,579	15,613

* Significant at .05 on a 2-tailed test.

a. The reference group is YNN--male, unmarried, and no children.

were additional jobs for target youth. Employment among eligible youth did not necessarily increase by this full amount, though, since some of the association could be due to greater efforts by Job Service personnel to certify workers that employers would have hired anyway. Job Service personnel had no incentive to do this in 1982, but did in 1983 due to the introduction of an allocation formula for TJTC administrative funds based on the number of TJTC certifications they issued. Consequently, these results are consistent with a range of hypotheses about how effective the TJTC was at increasing the employment prospects of youth who were eligible for the credit--from no effect, so that the credit was a windfall benefit to employers, to a very substantial effect. Neither extreme seems likely, though.

In sum, the TJTC probably resulted in some increased employment for eligible youth in 1983, but the amount is uncertain. Further, it seems clear that employment gains for eligible youth did not come at the expense of nonpoor youth, perhaps because employers structured their hiring practices to favor youth in general in order to increase their chances of obtaining TJTC-eligible workers. If no net new employment was generated by the credit, though, employment gains for youth were at the expense of adult workers.