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Displacement-Related Earnings Losses: Evaluating Trade Adjustment Assistance and Wage Insurance

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Evaluating Trade Adjustment Assistance and Wage Insurance

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The author examines the effectiveness of stylized versions of the Trade Adjustment Assistance (TAA) and Alternative TAA (or wage insurance) programs in reducing displacement-related earnings losses. Wage insurance subsidies and returns to TAA-funded training are applied to estimates of proportional earnings losses, reported by White, that were generated using National Longitudinal Survey of Youth 1979 data spanning the period from 1979 to 2000. Wage insurance reduces the typical worker's losses by 14.4 percent, while TAA-funded training is estimated to reduce losses by 23.7 percent. However, variation in the time paths and magnitudes of losses produces considerable variation in the effects of these programs across worker types.

Keywords: displacement; earnings losses; Trade Adjustment Assistance (TAA); Alternative Trade Adjustment Assistance (ATAA); wage insurance

1. Introduction

The introduction of the Trade Adjustment Assistance program (TAA) as part of the Trade Expansion Act of 1962 led many labor constituents to support a more liberal U.S. trade policy. Effectively, the promise of assisting trade-displaced workers as they transitioned to new, potentially more productive positions was deemed an acceptable trade-off to facing greater competition from foreign producers. The U.S. Tariff Commission's subsequent rejection of all applications for TAA benefits through 1969, however, set in motion the erosion of labor's support for trade liberalization. In recent decades, support for liberal trade policies among organized labor has further diminished, and opposition has emerged as domestic firms and workers have suffered both increased exposure to import competition and public policy responses that have been viewed as ineffective.

In 2002, the Trade Promotion Authority Act reauthorized TAA, merged TAA with the North American Free Trade Agreement–Transitional Adjustment Assistance program to establish the Consolidated TAA program, and created a demonstration program, Alternative TAA (ATAA), commonly referred to as "wage insurance." Since the intent of these programs is to aid displaced workers and thus to reduce opposition

to trade liberalization, the fact that a sizable portion of the population consistently expresses antitrade sentiment suggests a failure of public policy. I evaluate the performance of stylized versions of the TAA and ATAA programs in terms of their effectiveness in reducing displacement-related earnings losses. This is important, as several studies have documented long-run monetary losses that are attributable to job displacement, but how well these programs have fared, in terms of reducing such losses, has yet to be examined. That effective public policy is in the best interests of both labor and policy makers further underscores the importance of gauging the performance of existing policies.

I begin with estimates of proportional displacement-related earnings loss reported by White (forthcoming) and calculate, for a variety of worker types, corresponding reductions in workers' losses expected to result from TAA-funded training or the receipt of wage insurance benefits. The result is a series of estimates that indicate the degree to which each program reduces earnings losses. A number of studies have examined the relationship between job displacement and earnings losses; specifically, Jacobson, LaLonde, and Sullivan (1993) used administrative data from Pennsylvania, Ruhm (1987) and Stevens (1997) used Panel Study of Income Dynamics (PSID) data, and White (forthcoming) and Kletzer and Fairlie (2003) used National Longitudinal Survey of Youth 1979 (NLSY79) data. Although each study examined a different data source and/or time period, these studies produced a set of general results (discussed below) and corresponding estimates of earnings losses (which I present in section 3). White adopted the methodology used by Jacobson, LaLonde, and Sullivan; Stevens; and Kletzer and Fairlie; however, a lengthier and more recent time period was examined. Also, the NLSY79 data more accurately identify worker displacement than the PSID data, and relative to the data used by Jacobson, LaLonde, and Sullivan, the NLSY79 data permit the construction of a larger set of control variables. Thus, the earnings losses reported by White are arguably more precise. Additionally, unlike other studies, White provided loss estimates for union and nonunion workers, female and male workers, and various age classifications and levels of educational attainment.

Displaced workers have been found to face two types of earnings losses. First, prior to displacement, losses may occur because of an erosion of the real wage or through reductions in hours worked. Such losses are referred to as "predisplacement" losses. Immediately following displacement, workers do not receive wage income but may collect unemployment insurance (UI). Once reemployed, significant time at the new job may pass before a worker's wages reach the level expected had the displacement not occurred. Earnings lost while unemployed less the sum of any UI compensation received and reduced earnings once reemployed constitute "postdisplacement" losses. It is important to note, however, that displacement-related losses are not restricted to workers' earnings. Job displacement may also result in the loss of employer-based health insurance, pension and other retirement benefits, and other nonpecuniary costs.

The TAA program provides trade-displaced workers with retraining, job search assistance, a health care tax credit, and an additional period of unemployment compensation, if necessary, beyond that received by other unemployed workers. I consider how well the training component of TAA fares in reducing displacement-related earnings losses, since training is thought to confer the majority of long-run benefits for participating displaced workers. The ATAA program (i.e., wage insurance) provides workers with a subsidy equal to half the difference between pre- and postdisplacement weekly earnings. The maximum payout to each worker is $10,000, and benefits are available for up to two years from the date of displacement. Eligibility for both TAA and ATAA benefits is subject to the fulfillment of conditions that at times can be considered onerous. Section 2 provides a more detailed overview of the two programs and the eligibility constraints. In this analysis, I relax these constraints to facilitate the evaluation of each program's effectiveness and to generate a broad set of estimates, across worker types, regarding reductions in earnings losses.

I find that the receipt of ATAA-provided wage insurance benefits or the successful completion of TAA-funded training fails to eliminate even a majority of the typical worker's displacement-related earnings losses. On the basis of the observed time path of losses and the structure of the wage insurance program, the receipt of ATAA benefits would reduce the typical worker's total displacement-related earnings losses by only 14.4 percent. The completion of TAA-funded training, by comparison, is estimated to reduce losses by 23.7 percent. Since the NLSY79 data provide no information on worker participation in training programs, I cannot directly examine the effectiveness of training undertaken by workers in the NLSY79 cohort. To circumvent this shortcoming of the NLSY79 data, I use estimates of returns to training (3 percent, 6 percent, and 10 percent) that are provided in the literature, while assuming no depreciation of acquired skills over the period during which displacement-related earnings losses occur. The estimated 23.7 percent reduction in losses is based on a worker realizing a 6 percent training return. To eliminate all displacement-related earnings losses, the typical worker would need to realize a 24.5 percent return from training. My comparison of the effectiveness of ATAA and TAA in terms of decreasing earnings losses reveals considerable variation across worker types, with nonunion, female, more mature, and less educated workers receiving greater proportional benefits.

I proceed as follows. In section 2, I provide an overview of the TAA and ATAA programs, their certification and eligibility requirements, and their available benefits. Section 3 discusses displacement-related earnings losses. Section 4 evaluates the effectiveness of TAA and ATAA in reducing such losses, while section 5 discusses the related implications and concludes.

2. Overview of TAA and ATAA

To establish eligibility for TAA benefits, a petition must first be filed with the U.S. secretary of labor by either a group of three or more workers or an authorized

representative. In reviewing the petition, the U.S. Department of Labor (DOL) must investigate and determine within forty days whether trade has contributed to the job loss. If so, DOL certifies that the firm and its workers can apply, as individuals, for TAA benefits. There are two specific criteria for TAA certification.[1] First, a significant number or proportion of the firm's workers have been separated, either totally or in part, from their jobs or are facing the threat of job separation. If DOL determines that the first criterion has been met, then one or both of the following secondary criteria must be satisfied: (1) there has been an absolute decrease in the firm's output and/or sales, coupled with increased imports of like goods that contributed importantly both to the workers' separations or threat of separations and to the decline in output and/or sales; and (2) production at the workers' firm has shifted to a foreign country, and (a) the country is a party to a free trade agreement with the United States, (b) the country is a beneficiary under the Andean Trade Preferences Act, the African Growth and Opportunity Act, or the Caribbean Basin Recovery Act or imports of like, or (c) imports of goods directly competitive with those produced by the petitioning workers' firm have increased or are likely to increase.

TAA certification provides workers with access to several benefits. The 2002 amendment to the Trade Act of 1974 increased the trade readjustment allowance from 52 to 78 weeks of UI; however, this extension is conditional on enrollment in a TAA-funded training program or the acquisition of a training waiver. The 78 weeks of UI, together with 26 weeks of "traditional" UI, provides 104 weeks of income support. Workers participating in training that includes remedial education are eligible for an additional 26 weeks of income support, providing a maximum of 130 weeks of support. Workers receiving TAA certification may also be eligible for health care assistance in the form of a tax credit. A onetime payment of $1,250 for job search and relocation is also available.

To be considered for ATAA certification, the following criteria must be met. An individual must be at least fifty years of age, have suffered a trade-related job loss from a firm at which at least 5 percent of the remaining employees are at least fifty years of age, have gained full-time employment within 26 weeks of displacement, have been certified to receive TAA assistance, have an annual income of less than $50,000, and be willing to forgo enrollment in TAA-funded training programs. Additionally, the petitioning workers must possess skills that are not easily transferable and have been displaced from an industry facing adverse competitive conditions.[2] As mentioned, such workers receive a subsidy of half the difference between their predisplacement weekly earnings and their earnings at the new job. The subsidy is paid for up to two years from the date of job displacement, subject to a maximum payout of $10,000.

Although eligibility for ATAA benefits requires workers to first be deemed eligible to receive TAA benefits, workers cannot receive benefits from more than one program. While a displaced worker seeks employment to qualify for the ATAA program, if regular TAA deadlines are met, the option to receive TAA benefits is preserved.

However, once the worker selects ATAA and receives the first wage insurance supplement, he or she cannot switch to the TAA program. The initial receipt of an ATAA payment represents the decision to choose ATAA and eliminates the option to accept retraining, allowances, and TAA benefits. Similarly, enrolling in TAA-funded training indicates forfeiture of any claim to ATAA subsidies. In other words, if a worker selects TAA, ATAA eligibility is forfeited. Similarly, if ATAA is selected, TAA eligibility with the exceptions of the relocation benefit and the health care tax credit is lost.

3. Displacement-Related Earnings Losses

Studies examining long-run displacement-related earnings losses have each used regression analysis to compare the time paths of earnings for displaced workers to the earnings of comparable nondisplaced workers. Although these studies have relied on different data sources, they have produced a set of common conclusions. Jacobson, LaLonde, and Sullivan (1993), using quarterly administrative data from Pennsylvania span the years 1974 to 1986, reported predisplacement earnings losses three years prior to the quarter in which job displacement occurs. Earnings were found to decrease sharply with displacement; however, once reemployed, rapid earnings growth occurred. Nevertheless, for the typical displaced worker, five years following displacement, observed earnings remained 25 percent below the level that would be expected had the worker not suffered the displacement. Jacobson, LaLonde, and Sullivan estimated the discounted sum of real earnings losses from three years prior through six years following displacement to be approximately $50,000.

Using PSID data for the years 1969 to 1980, Ruhm (1987) found that four years following separation, 24.4 percent of men and 25.8 percent of women had earnings losses greater than 25 percent, while 39.1 percent of men and 38.7 percent of women had losses in excess of 10 percent. Examining PSID data over the years 1968 to 1988, Stevens (1997) found that long-run earnings remained 9 percent below expected levels six or more years after separation; however, a large portion of the persistence may have been due to subsequent job separations. For workers experiencing single separations, earnings fell by 25 percent from three years prior to separation to the year of separation. Six or more years after separation, earnings losses were only 1 percent. A major shortcoming of the PSID data, however, is that displacement is defined as a worker losing or leaving a job because of a plant or business closing or being either laid off or discharged from the position because of poor performance. Thus, the PSID treats nearly all involuntary job loss, with the exception of temporary layoffs or the ending of temporary jobs, as displacement.

Kletzer and Fairlie (2003) used NLSY79 data for the years 1979 to 1994 to quantify wage and earnings losses of young adult displaced workers. NLSY79 respondents separated from jobs because of layoffs or plant closings were classified as displaced. Workers who left jobs voluntarily or for any other involuntary reason, who did not change jobs, or who returned to the jobs from which they were separated were

considered nondisplaced. Predisplacement losses were reported for male workers, and in the three years immediately following displacement, both male and female workers experienced significant losses. Five years after displacement, young male workers lost approximately 9 percent and 21 percent in earnings and wages, respectively. Wage losses dissipated for female workers five years following displacement; however, the earnings of female workers remained 12 percent below their expected level. The authors reported that such displaced workers saw small reductions in earnings that, when coupled with large earnings growth experienced by nondisplaced peers, led to an increased earnings gap.

All prior studies of this topic have reported evidence of pre- and postdisplacement earnings losses and comparable time paths of losses. White (forthcoming) followed Jacobson, LaLonde, and Sullivan (1993); Ruhm (1987); Stevens (1997); and Kletzer and Fairlie (2003) and used regression analysis to model earnings losses as the difference between the earnings of a worker who has or who will experience displacement and the earnings of a comparable nondisplaced worker. This technique results in estimates of proportional differences in earnings attributable to job displacement during each year prior to or since displacement. A sixteen-year window (five years prior to the year in which displacement occurred through ten years following the year of displacement) is used to determine the extent and time path of losses.[3] I apply the resulting proportional earnings differences to mean earnings values to estimate the magnitudes and time paths of earnings losses for each worker type. As expected, given the results of prior studies, for the typical worker, earnings losses begin three years prior to displacement, increase in severity during the year of displacement, and persist until the sixth year following displacement. Table 1 presents estimated real annual earnings losses for the full sample and for each worker type. For the typical displaced worker, predisplacement earnings losses are estimated to equal $9,912, while postdisplacement losses sum to $24,153, indicating that a typical worker's total displacement-related earnings losses equal approximately $34,065.
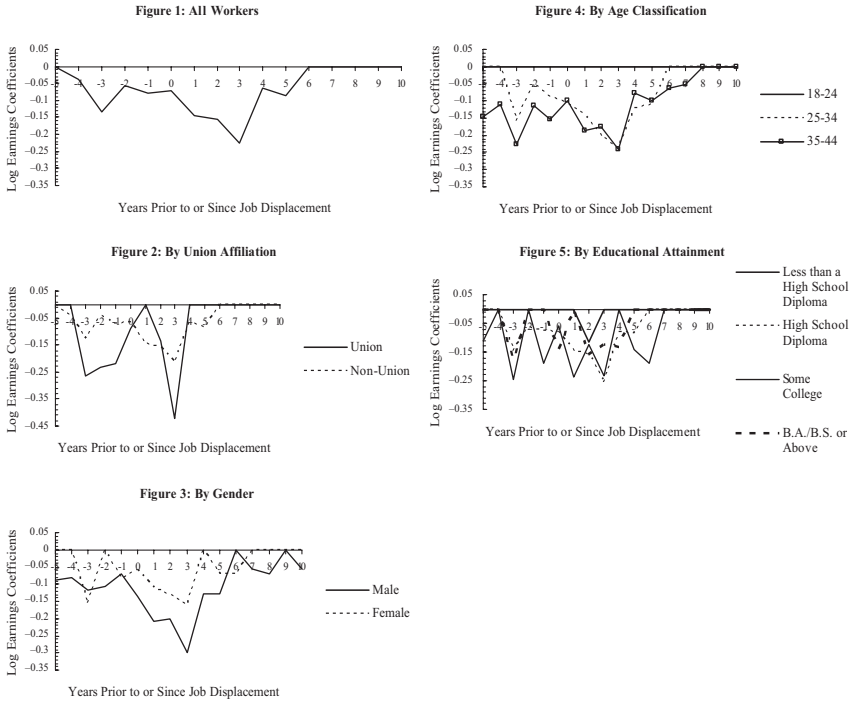
Across worker types, considerable variation is reported in the durations and magnitudes of losses. Because of higher average earnings, estimated losses are greater for union workers ($47,618) compared with nonunion workers ($32,439). The earlier onset and lengthier duration of losses combined with higher incomes contribute to greater earnings losses for the typical male worker ($57,282) compared to his female counterpart ($26,593). Workers at least thirty-five years of age lose, on average, $64,637 because of displacement, while workers twenty-five to thirty-four years of age lose $39,542. This may be due to more mature workers' being more likely to possess firm- and/or industry-specific human capital. The loss of such human capital would correspond to greater earnings losses for more mature relative to younger workers. The abbreviated time span of wage losses for the least and most educated groups reduces estimates of earnings losses ($3,294 for those without high school diplomas and $21,353 for college graduates). While earnings are positively correlated with education, college graduates are more likely to possess general skills that

Table 1

**Estimated Displacement-Related Real Annual Earnings Losses,
Full Sample and Worker Subclassifications**

Sample	Difference between Observed and Expected Real Annual Earnings in Sample Year ($)																Mean Real Annual Earnings of Nondisplaced Workers ($)
	$t-5$	$t-4$	$t-3$	$t-2$	$t-1$	t	$t+1$	$t+2$	$t+3$	$t+4$	$t+5$	$t+6$	$t+7$	$t+8$	$t+9$	$t+10$	
All workers		−1,255	−4,293	−2,535	−1,829	−2,235	−4,622	−5,074	−7,316	−2,113	−2,793						32,255
Union				−9,266	−8,055	−7,601	−3,092	−4,795	−14,808								34,900
Nonunion		−1,363	−4,008	−1,433	−2,193	−2,113	−4,703	−5,078	−6,810	−2,068	−2,671						32,061
Eighteen to twenty-four years of age																	24,706
Twenty-five to thirty-four years of age			−5,086	−1,610	−2,900	−3,444	−4,708	−6,520	−7,693	−3,959	−3,623						32,582
Thirty-five to forty-four years of age	−5,450	−4,134	−8,356	−4,208	−5,680	−3,674	−6,859	−6,540	−8,920	−2,925	−3,644	−2,332	−1,917				37,073
Men	−2,909	−2,619	−3,912	−3,534	−2,257	−4,439	−6,831	−6,617	−9,809	−4,261	−4,205		−1,849	−2,270			32,904
Women			−4,964		−2,646	−1,884	−3,449	−4,108	−5,103		−2,262	−2,177					31,501
Less than a high school diploma								−3,294									29,076
High school diploma			−4,408	−1,866	−2,260	−2,486	−4,418	−4,770	−7,809	−2,377	−2,579						30,092
Some college	−3,601		−8,066		−6,203	−1,949	−7,792	−4,102	−7,733		−4,590	−6,292					32,975
Higher than a BA/BS degree						−5,375		−6,124	−4,808	−5,046							38,253

Figures 1 to 5
Real Annual Earnings Relative to Expected Levels

Figure 1: All Workers

Figure 4: By Age Classification

Figure 2: By Union Affiliation

Figure 5: By Educational Attainment

Figure 3: By Gender

transfer across firms and industries. This may explain this cohort's lower estimated losses. A protracted duration of losses, coupled with greater proportional decreases in wages, leads to higher estimated earnings losses for high school graduates ($32,972) and workers who have completed some college ($50,326).

Figures 1 through 5 illustrate the corresponding time paths of earnings losses for displaced workers relative to comparable nondisplaced counterparts. The horizontal line represents the earnings of the typical nondisplaced worker. The line that lies beneath the horizontal indicates the time path of earnings for a typical displaced worker. Thus, the area bordered by the line depicting the time path of earnings losses and the horizontal line represents earnings losses for the typical displaced worker.

Having estimated earnings losses for each worker type, I now can calculate the proportional reductions in losses that are expected to result from effective TAA-funded training or the worker's receipt of wage insurance benefits.

4. Evaluation of TAA and ATAA

To consider the effectiveness of TAA and ATAA, I apply expected wage insurance (ATAA) subsidies and returns from TAA-funded worker training to the earnings losses estimates presented in Table 1. As evaluation requires producing refined estimates of total earnings losses, I adjust estimated earnings loss values to allow for UI payments received. UI compensation for the typical worker in each classification is calculated as the probability that an unemployed worker files for and receives UI payments times the percentage of the typical worker's earnings that UI accounts for (the wage replacement ratio [WRR]; Bureau of Labor Statistics 2006b; O'Leary and Rubin 1997; U.S. Department of Labor 2006a).[4] The WRR is multiplied by the estimated ratio of the IUR to the TUR to derive the typical unemployed worker's UI receipts.[5] This value is listed in column 4 of Table 2. Revised total losses are presented in column 5.[6]

As mentioned at the outset, I relax ATAA program eligibility requirements to derive the broadest possible set of reductions in earnings losses attributable to wage insurance. As more mature workers tend to face greater earnings losses than their younger counterparts, relaxing the eligibility requirements potentially produces conservative estimates of residual earnings losses and thus overstates the effectiveness of the wage insurance program. Wage subsidies equal to half of year $t + 1$ and year $t + 2$ earnings losses up to the maximum payout are listed in column 6.[7] These values are subtracted from corresponding values in column 5, which presents earnings loss estimates (column 3) less UI compensation received (column 4). Column 7 presents reductions in postdisplacement earnings losses due to UI and wage insurance, while column 8 presents adjusted total earnings losses. Comparison of columns 8 and 5 permits derivation of the share reduction in losses, presented in column 9, due to wage insurance. For the typical displaced worker, wage insurance reduces earnings losses by 14.4 percent. Figure 6 amends Figure 1 to illustrate this reduction in earnings losses that is attributable to receipt of ATAA program benefits.

Corresponding results for all worker types are presented in column 9 of Table 2. Less educated workers benefit to a greater degree than their more educated counterparts. For example, earnings losses of high school dropouts are halved by wage insurance, while all other education classifications realize reductions between 10.5 and 15.3 percent. Nonunion workers realize a greater share reduction in losses than union workers (15.3 percent compared to 5.1 percent), while female workers experience a slightly greater share reduction (14.4 percent) than male workers (11.9 percent). Finally, more mature workers benefit more from a wage subsidy than younger workers.

We now turn to the influence of effective TAA-funded training on earnings losses. Prior research into the effectiveness of public-funded training has frequently concluded that for the majority of workers, such programs are ineffective (Decker and Corson 1995; Leigh 1991; LaLonde 1995). However, Jacobson, LaLonde, and

Table 2

Summary of Estimated Earnings Losses and Estimated Effectiveness of Wage Insurance in Reducing Losses

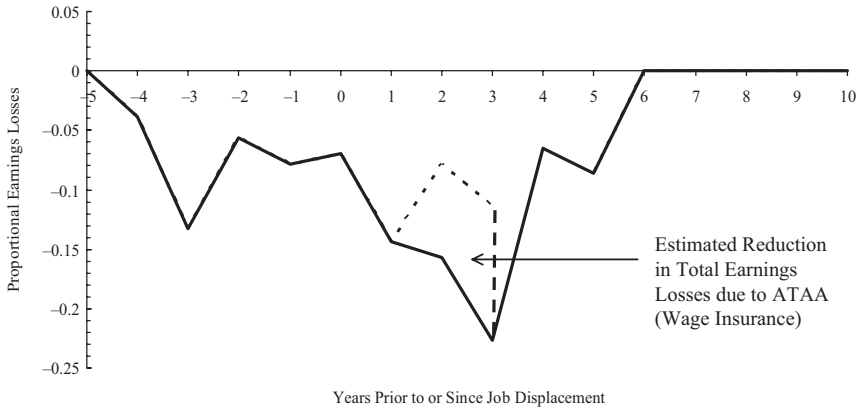| Sample	(1) Predisplacement Losses ($)	(2) Postdisplacement Losses ($)	(3) Total Displacement-Related Earnings Loss ($)[a]	(4) Expected UI Received ($)	(5) Total Earnings Loss ($)	(6) Hypothetical WI Subsidy ($)[b]	(7) Postdisplacement Earnings Loss Less UI and WI Subsidy ($)	(8) Total Earnings Loss with UI and WI Subsidy ($)	(9) Reduction in Total Loss Due to WI Subsidy (%)[c]
All workers	−9,912	−24,153	−34,065	391	−33,674	4,848	−18,914	−28,826	14.40
Union	−24,922	−22,695	−47,618	541	−47,077	2,398	−19,757	−44,679	5.09
Nonunion	−8,996	−23,443	−32,439	370	−32,070	4,891	−18,182	−27,179	15.25
Eighteen to twenty-four years of age	0	0	0	0	0	0	0	0	0.00
Twenty-five to thirty-four years of age	−9,595	−29,946	−39,542	603	−38,939	5,614	−23,730	−33,325	14.42
Thirty-five to forty-four years of age	−27,827	−36,810	−64,637	643	−63,994	6,699	−29,468	−57,295	10.47
Men	−15,231	−42,051	−57,282	777	−56,505	6,724	−34,550	−49,781	11.90
Women	−7,611	−18,982	−26,593	330	−26,263	3,778	−14,875	−22,485	14.39
Less than a high school diploma	0	−3,294	−3,294	0	−3,294	1,647	−1,647	−1,647	50.00
High school diploma	−8,534	−24,438	−32,972	435	−32,537	4,594	−19,409	−27,943	14.12
Some college	−17,869	−32,457	−50,326	341	−49,985	5,947	−26,169	−44,038	11.90
Higher than a BA/BS degree	0	−21,353	−21,353	940	−20,413	3,062	−17,351	−17,351	15.00

Note: Year t indicates the year of displacement. UI = unemployment insurance; WI = wage insurance,,

a. Total displacement-related earnings loss is calculated as the sum of pre- and postdisplacement earnings losses less estimated UI received.

b. The hypothetical WI subsidy is derived as the sum of half the earnings lost in years $t + 1$ and $t + 2$. This implicitly assumes that all displacement-related earnings losses in year t are due to joblessness. All other values presented are either sums over specified time periods of values presented in Table 1 or are derived directly from the values presented in this table.

c. Total earnings loss is the sum of displacement-related earnings losses less UI received.

Figure 6
Earnings Losses with and without Alternative Trade
Adjustment Assistance (ATAA)

Proportional Earnings Losses

Years Prior to or Since Job Displacement

Estimated Reduction
in Total Earnings
Losses due to ATAA
(Wage Insurance)

Sullivan (1994) reported long-run benefits for workers completing relatively rigorous community college-level vocational and academic courses. Similarly, displaced workers realize a 6 percent earnings increase from a year of community college training (Jacobson, LaLonde, and Sullivan 1997). Returns vary across worker and training types. For example, Jacobson, LaLonde, and Sullivan (2005) reported that male workers over the age of thirty-five years who completed a year of quantitative vocational courses gained about 10 percent in earnings, while female workers tended to realize greater gains. Workers completing other community college courses saw gains of 3 to 5 percent.

To evaluate the effectiveness of TAA-funded training, I adopt a range of possible returns to training: 3 percent, 6 percent, and 10 percent. I assume that all workers complete one year of quantitative or technical training; that there is no depreciation, throughout the period during which losses are realized, of any newly acquired skills and knowledge; and that returns begin to be realized in the year immediately following displacement. This results in generous measures of the reduction in earnings losses attributable to TAA-funded training and thus potentially overstates the effectiveness of such training.

Column 1 of Table 3 presents estimated total losses for the full sample and each worker type. Columns 2 through 4 present estimated earnings losses assuming the stated range of returns to training, and columns 5 through 7 indicate corresponding proportional reductions in earnings losses. For the typical worker, training reduces earnings losses by approximately 23.7 percent (assuming a 6 percent return); however, the estimated range of reductions in losses is quite large. For example, use of the

Table 3
Estimated Effectiveness of Trade Adjustment Assistance–Funded Training in Reducing Earnings Losses

Sample	(1) Total Earnings Loss ($)	Total Loss ($) with Training and			Reduction in Total Loss (%) Due to			(8) Required Return to Eliminate All Losses (%)
		(2) 3 Percent Return	(3) 6 Percent Return	(4) 10 Percent Return	(5) 3 Percent Return	(6) 6 Percent Return	(7) 10 Percent Return	
All workers	−33,674	−29,884	−25,703	−20,129	11.25	23.67	40.22	24.45
Union	−47,077	−46,112	−44,606	−42,598	2.05	5.25	9.51	94.87
Nonunion	−32,070	−28,270	−24,101	−18,542	11.85	24.85	42.18	23.35
Eighteen to twenty-four years of age	0	0	0	0	0.00	0.00	0.00	0.00
Twenty-five to thirty-four years of age	−38,939	−35,449	−31,357	−25,901	8.96	19.47	33.48	28.99
Thirty-five to forty-four years of age	−63,994	−57,846	−51,054	−41,999	9.61	20.22	34.37	28.56
Men	−56,505	−50,513	−43,745	−34,720	10.60	22.58	38.55	25.39
Women	−26,263	−22,381	−18,168	−12,552	14.78	30.82	52.20	18.94
Less than a high school diploma	−3,294	−2,521	−1,747	−716	23.48	46.96	78.26	12.78
High school diploma	−32,537	−29,117	−25,261	−20,121	10.51	22.36	38.16	25.66
Some college	−49,985	−46,295	−42,264	−36,890	7.38	15.45	26.20	37.46
Higher than a BA/BS degree	−20,413	−18,389	−15,426	−11,475	9.91	24.43	43.79	21.62

Note: Total earnings loss is the sum of displacement-related earnings losses less unemployment insurance received. Values presented in column 1 correspond to values in column 5 of Table 2. Estimated losses, given various returns to training, are calculated as the sum of mean real annual earnings of nondisplaced workers less estimated earnings losses for all years in which losses are reported (from Table 1) less the corresponding proportional increase in earnings, due to training, for all years $t + 1$ and beyond. All estimated returns are annual.

Figure 7
Earnings Losses with and without Trade Adjustment
Assistance–Funded Training
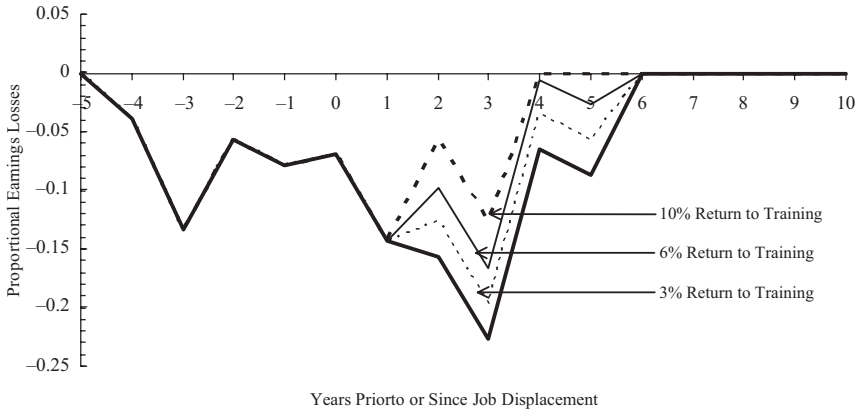
10 percent return reported by Jacobson, LaLonde, and Sullivan (1995) would have reduced losses further (40.2 percent). To eliminate all displacement-related earnings losses, a return to training equal to 24.5 percent would be necessary. Figure 7 illustrates the time path of earnings losses, for the typical worker, without effective TAA-funded training and with the assumed 3 percent, 6 percent, and 10 percent returns.

Across worker types, considerable variation can be seen in the ability of effective training to reduce displacement-related earnings losses. This is due to variations in the associated time paths of losses across worker types and the magnitudes of corresponding losses. For example, union workers are estimated to realize reductions in losses equal to 2.1 percent to 9.5 percent because of training. High school dropouts, however, are estimated to see 23.5 percent to 78.3 percent of losses ameliorated because of effective training. Union workers are estimated to benefit (proportionally speaking) the least; a training return of 94.9 percent would be necessary to eliminate all earnings losses for these workers. For high school dropouts, the required return to eliminate all associated losses is a much more reasonable 12.8 percent.

5. Conclusion

I have estimated the effectiveness of TAA-funded worker training and the receipt of ATAA (i.e., wage insurance) benefits in terms of reducing displacement-related earnings losses. The resulting analysis suggests that both policies fall well short of fully compensating displaced workers for monetary losses. In fact, neither program appears

sufficiently effective to compensate workers for even half of their earnings losses. For example, for the typical worker, ATAA benefits reduce earnings losses by 14.4 percent, while completion of TAA-funded training (assuming a 6 percent return) reduces earnings losses by 23.7 percent. Additionally, across worker types, I find considerable variation with respect to corresponding reductions in earnings loss estimates: when considering TAA-funded training, estimated reductions in earnings losses are seen ranging from 5.3 percent for union workers to 47 percent for workers without high school diplomas; somewhat similarly, ATAA-provided wage insurance decreases the earnings losses of the typical union worker by an estimated 5.1 percent and decreases the losses for high school dropouts by 50 percent. That these estimated reductions are, admittedly, upper-bound values reinforces what some may consider the miserly level of adjustment assistance provided to trade-displaced workers.

I mentioned at the outset that the TAA and ATAA programs serve the dual purposes of assisting displaced workers and reducing opposition to trade liberalization. While my primary focus has been on how well stylized versions of each program fare in alleviating displacement-related earnings losses, it is important to consider such performance within a broader context. Considering the degree of opposition to trade liberalization frequently reflected in public opinion polls, in conjunction with the observed magnitudes and lengthy durations of displacement-related earnings losses, suggests a need for an effective public policy response. In short, the more effective programs are in reducing earnings losses, the more effective they may also be in reducing public opposition to future trade liberalization.

Whether the levels of estimated reductions in losses that are presented here are sufficiently large to deem the TAA and ATAA programs as successful is a subjective determination; however, that support for trade liberalization has waned during the more than four decades since the establishment of TAA may signal a perceived failure, among the public, of the policies that are purported to assist displaced workers. I cannot determine this from my analysis; however, the measurements provided do offer what I consider to be valuable information regarding the extent to which wage insurance or effective TAA training reduces estimated displacement-related losses. Moving forward, barring a substantial revision of U.S. trade policy, more expansive and extensive trade liberalization is likely to occur. The willingness of policy makers to devise effective programs that assist workers who are harmed by trade may be determined in part by the ability of labor to influence policy makers. To that end, I hope that the analysis provided here is both of interest and of value.

Notes

1. The current certification requirements combine the criterion of the traditional TAA program with that of the North American Free Trade Agreement–Transitional Adjustment Assistance program. See DeRocco (2003) for a detailed description of eligibility requirements.

2. The determination of whether job skills are not easily transferred to other employment is made through DOL contact with a company official. To determine the industry's competitive situation, information

is collected from government and industry sources to determine if (1) the number of firms in the industry is declining, (2) the conditions (such as declining production and/or employment) in the industry are such that the affected workers are not likely to find new employment within the industry, or (3) aggregate U.S. imports of products like or directly competitive with those produced in the industry are increasing.

3. For a complete discussion of the estimation methodology and NLSY79 data set, see White (forthcoming).

4. The probability of filing for and receiving UI is .487. This is the monthly average insured unemployment rate (IUR) divided by the monthly average total unemployment rate (TUR) from 1979 to 2000. An alternative measure is the ratio of ongoing UI claimants to the number of unemployed workers, the average monthly value of which equals 0.426. The series are highly correlated ($\rho = .96$). The IUR/TUR ratio produces upper-bound estimates of reductions in total earnings losses (Bassi and McMurrer 1997; Bureau of Labor Statistics 2006a; U.S. Department of Labor 2006b). The WRR value employed, 0.3595, is the average for the years 1979 to 1995.

5. This assumes that each worker experiences at most one spell of unemployment per year.

6. Bassi and McMurrer (1997) reported that most workers at risk for involuntary unemployment who are not covered by the UI system are at the low end of the wage spectrum. I assume uniform UI receipt across the wage distribution, possibly overstating expected UI compensation for low-wage workers.

7. Because of data limitations, I exempt year t earnings losses from wage insurance subsidies. While for individual worker observations, this may be a flawed assumption, in aggregate, the effects may be minimal.

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