

Trade Adjustment Assistance Under the U.S. Trade Act of 1974:
An Analytical Examination and Worker Survey

ABSTRACT

The goals of trade adjustment assistance (TAA) are to ease transition, compensate injury, and bleed political pressure for protectionism. Section I of the paper outlines the economic principles underlying these goals, and their shifting historical importance in the U.S. Sections II and III of the paper discuss the personal characteristics of a representative sample of worker recipients of TAA in 1976, and their labor market success in several subsequent years. Their experience is compared to that of a matched sample of workers receiving standard unemployment insurance (UI). Comparisons in Section II focus on differences in mean characteristics and experience between the TAA and UI samples, controlling only for whether workers returned eventually to the firm from which they were initially separated. Comparisons in Section III focus on differences between the TAA and UI samples in their ability to recover lost employment and income, using a regression approach that in principle controls for all relevant variables, and not for just one.

The most important conclusions of the research are the following.

(1) The majority of TAA recipients in 1976 were not permanently displaced, but returned eventually to their former employers. A far greater proportion of UI recipients suffered permanent displacement. (2) Workers receiving TAA had higher incomes on average than their counterparts who received only UI. Their incomes furthermore fell less frequently below the poverty line. (3) TAA recipients nevertheless experienced more frequent and enduring transitional unemployment than did UI recipients, and did not return to their former income level as rapidly. (4) The reasons for conclusion (3) were unclear. It could not readily be explained by differences between the TAA and UI samples in permanence of layoff, generosity of program benefits, age, experience, industry, affluence, economic environment, socioeconomic status, or behavioral responses to any of these variables.

Conclusions (1) and (2) are at variance with most previous work on TAA. Conclusion (3) is not, but the traditional explanations for it are those that conclusion (4) rules out.

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NBER WORKING PAPER SERIES

TRADE ADJUSTMENT ASSISTANCE UNDER
THE U.S. TRADE ACT OF 1974: AN
ANALYTICAL EXAMINATION AND WORKER SURVEY

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Working Paper No. 556

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge MA 02138

September 1980

This paper was prepared for a National Bureau of Economic Research Conference on Import Competition and Adjustment: Theory and Policy, May 8-11, 1980, Cambridge, Massachusetts. I wish to credit Steve Parker for valuable commentary and research assistance, and Walter Corson and Walter Nicholson for stimulating interaction and patient responses to endless questions. I am grateful to C. Michael Aho, Robert E. Baldwin, Robert W. Gillespie, Rachel McCulloch, Allen Proctor, Steven Symansky, Martin Worlf, and participants in seminars at Wisconsin, Illinois, and Tufts. Financial support from the Institute for Research on Poverty at the University of Wisconsin, Madison is gratefully acknowledged. The survey on which the empirical work is based was conducted by Mathematica Policy Research, Inc. (Princeton, New Jersey) under contract (J9K70010) to the U.S. Department of Labor, Bureau of International Labor Affairs, Office of Foreign Economic Research. Opinions and interpretations expressed herein are my own, and should not be taken to represent those of any of the individuals or institutions named above. The research reported here is part of the NBER's research program in International Studies.

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INTRODUCTION AND OVERVIEW

Since 1962 in the United States, workers and firms suffering transitional injury due to international trade have been able to benefit from a U.S. program of "adjustment assistance." The goals of trade adjustment assistance (TAA) have been to ease transition, compensate injury, and bleed political pressure for protectionism.

Section I of the paper outlines the economic principles underlying these goals, and their shifting historical importance. Sections II and III of the paper discuss the personal characteristics of a representative sample of worker recipients of TAA in 1976, and their labor market success in several subsequent years. Their experience is compared to that of a matched sample of workers receiving standard unemployment insurance (UI). Comparisons in Section II focus on differences in mean characteristics and experience between the TAA and UI samples, controlling only for whether workers returned eventually to the firm from which they were initially separated. Comparisons in Section III focus on differences between the TAA and UI samples in their ability to recover lost employment and income, using a regression approach that in principle controls for all relevant variables, and not for just one.

The most important conclusions of the research are the following.

- (1) The majority of TAA recipients in 1976 were not permanently displaced, but returned eventually to their former employers. By contrast, a far greater proportion of UI recipients suffered permanent displacement.
- (2) Workers receiving TAA had higher incomes on average than their counterparts who received only UI. Their incomes furthermore fell less frequently

below the poverty line. (3) TAA recipients nevertheless experienced more frequent and enduring transitional unemployment than did UI recipients, and did not return to their former income level as rapidly. (4) The reasons for conclusion (3) were unclear. In particular, it could not readily be explained by differences between the TAA and UI samples in permanence of layoff, generosity of program benefits, age, experience, industry, affluence, economic environment, socioeconomic status, or behavioral responses to any of these variables.

Conclusions (1) and (2) are at variance with most previous work on TAA. Conclusion (3) is not, but the traditional explanations for it are those that conclusion (4) rules out.

I. HISTORICAL AND ECONOMIC UNDERPINNINGS OF
U.S. TRADE ADJUSTMENT ASSISTANCE¹

¹This section is an expansion of parts of my contribution to Corson et al. (1979).

Economic Underpinnings

U.S. trade adjustment assistance (TAA) can be historically explained as alleviating three problems that relate to international trade liberalization. The first is a problem of distributional equity, reflected in protectionist political pressure, and the second, of allocative efficiency, reflected in much economic commentary. Political economy plays an important role in its most recent justification -- it is now frequently defended as a bribe necessary to avoid disastrous de-liberalizing trade wars.

(1) Distributional Equity. Except in ideal worlds, there are always gainers and losers from trade liberalization. To design and carry out practical mechanisms whereby every loser was fully compensated (and more) would require a mammoth diversion of any nation's resources from wealth-producing to wealth-transferring activity. Yet in the absence of such mechanisms, there may be instances in which trade liberalization is rejected or reversed because it undermines a society's sense of equity, or because its rejection creates an implicit contractual claim to comparable protection (insurance) in similar circumstances by those who sacrifice their gains from trade liberalization voluntarily (in order to inherit such insurance).² Once one

²Baldwin (1980) is a recent expansion and illustration of these points. Cordes and Weisbrod (1979) identify rejection or reversal each as a form of implicit compensation, while classifying and evaluating other means of indirect compensation.

grants either such altruism or such implicit social contracting, there exists the possibility of a social consensus that the moderately increased satisfaction of the many from trade liberalization could be judged insignificant compared to the dramatic unhappiness imposed on the few.³

³A public opinion survey summarized in Laudicina (1973, pp. 51-57) reveals that the most persuasive reason for opposing free trade was that "free trade would put some American laborers out of work because their jobs can be done by foreign labor at much lower cost." 34 percent of the sample said they would "basically oppose" free trade. But only 15 percent would continue to "basically oppose" it "if American workers who lost their jobs because of free trade did not suffer any personal financial loss and were retrained in jobs equal to or better than their old ones." The survey is also summarized in Frank (1973, Appendix B).

Partial compensation is of course one compromise position between no compensation and maintenance of the status quo. It seems reasonable to insist that government policies like trade liberalization, undertaken in the name of the whole society, should not burden any one part of it excessively.

(2) Allocative Efficiency. Furthermore, the kind of losses that trade liberalization can cause are in part social losses. In the face of contractually-determined, downwardly rigid rates of increase⁴ in wages, rents,

⁴In an inflationary environment, not only factor prices themselves, but their rates of increase over time may be temporarily rigid. Rigid rates of increase that are embodied in existing contracts presumably hover on average near the sum of expected rates of inflation and productivity growth.

borrowing costs, and dividends, trade liberalization that discourages domestic demand for import substitutes may cause temporary layoffs and idling of productive land and equipment. Dislocated labor and resources are made

involuntarily unproductive until they can be re-absorbed.⁵ And even then,

⁵Characterizing dislocation as "involuntary" is controversial, as are therefore the "social" costs that rest on that characterization. The economics of optimal contracts suggests that labor and other factor suppliers may be influenced by uncertainty and subjective attitudes toward risk to choose (optimally from their viewpoint) rigid-price or rigid-rate-of-change contracts and (optimally again) to accept the consequent quantity adjustments to their employment and utilization rates. For similar reasons, producers may choose to contract for product price rigidity, and may find the offer of fixed-schedule contracts for factor prices more supportive of their goals in the face of uncertainty than flexible-price contracts. When rigid factor and product prices are optimally chosen in this fashion, it is not clear that there is any social cost to the resulting periodic unemployment and excess capacity. In this case then, the principal defense of TAA must be on grounds of distributional equity.

their productivity may remain temporarily below par if labor must be re-trained, and if resources must be retooled, refurbished, and relocated -- often by labor and resources that are themselves diverted from other productive activity. The national efficiency cost of this adjustment process is measured by the value of goods which could have been produced, but were not, because of temporary unemployment, underutilization, and diversion of resources.⁶ (And there may also be very real subjective and psychic costs

⁶Efforts to calculate these costs empirically have been made by Magee (1972), Cline et al. (1978), and Baldwin et al. (1980).

to those unemployed that affect their future productivity unfavorably and permanently).

Both of these concerns can be seen underlying the U.S. political/economic/philosophical concept of "injury" that was prominently stressed in the Trade Agreements program of 1934.⁷ The belief is that trade

⁷Metzger (1971, pp. 319-326) is a useful brief history of the concept and its reference to TAA.

liberalization should be abandoned if it involves undue economic injury to U.S. firms or labor groups. That rule was formalized in the late 1940s by the "escape-clause" provisions of U.S. trade legislation, and also by Article XIX of the General Agreement on Tariffs and Trade (GATT). Governments could "escape" from trade concessions that caused undue injury by restoring their previous trade barriers or acceptable substitutes. The domestic income distribution would presumably return toward the desired status quo. And wasteful unemployment of labor and resources would be discouraged.

Invoking the escape clause, however, appeared to many commentators to be a costly way to avoid undesirable dislocation. It essentially surrendered all resource-reallocation and standard-of-living gains that had come from the trade concession in the name of avoiding inequity and dislocation -- thereby throwing out the baby with the bath water. Furthermore, under the rules of the GATT, recourse to the escape clause allowed trading partners to be compensated⁸ through retaliation -- which could sometimes impose

⁸Two "needs" for compensation invariably arise in trade policy: the need for domestic losers to be compensated by domestic gainers, and the need for foreign losers to be likewise compensated. In both cases, once the merit of compensation is granted, the key problem is finding the most efficient (or least inefficient) scheme for carrying it out. See Cordes and Weisbrod (1979).

unexpectedly severe injury on the U.S. exportables sector. Finally the U.S. escape clause made other nations less willing to embark on significant multi-lateral liberalization, since they could not be certain of just how permanent U.S. concessions would be (Metzger (1971, p. 324)).

In practice, the escape clause was simply infeasible as a tool for avoiding inequity and dislocation while pursuing expanded national pur-

chasing power through trade. Between 1947 and 1962, the U.S. Tariff Commission found injury in 33 escape-clause cases brought before it, and split evenly in 8 more. Of the 41, the President invoked the escape clause in 15, and refused to do so in 26, presumably with an eye to foreign reaction and retaliation. In the 15, at least some beneficial trade liberalization was abandoned. In the 26, at least some undesirable injury was left unrequited.

To several commissions and commentators in the 1950's, this Hobson's choice was neither intrinsic nor inevitable.⁹ Most explored and recommended

⁹ Frank and Levinson (1978, pp. 2-3) cite a number of examples, including: an influential article by Clair Wilcox (1950); the "Bell Report" (U.S. Public Advisory Board for Mutual Security (1953)); and the well-publicized 1954 ideas of David McDonald, president of the United Steelworkers of America in the "Randall Report" (U.S. Commission on Foreign Economic Policy (1954)). For eight years following McDonald's proposal Congressional bills were introduced that codified the idea of trade adjustment assistance. But no hearings were ever held, even during consideration of the 1955 and 1958 extensions of the Trade Agreements Act (Metzger (1971, p. 323)).

alternative ideas that later became embodied in trade adjustment assistance: (1) directly targetted financial support to compensate both dislocated labor and firms; and (2) encouragement to both labor and firms to re-orient quickly their skills, resources, and enterprise toward expanding buoyant industries (such as exportables) where their productivity would be enhanced in the long run. It was hoped that the former aspect would ease distributional inequities from trade liberalization, and thereby remove political obstacles to it. It was hoped that the latter aspect would reduce the duration of inefficient, involuntary unproductivity for resources moving among sectors, and thereby reduce the economic cost of trade liberalization. Neither aspect, of course,

would force the U.S. to forego beneficial trade concessions. And neither would provoke foreign anger, retaliation, or reluctance to bargain. Administrative resource costs of each kind of compensation would probably have seemed comparable -- some government agency would have to investigate and recommend in each case, and the executive branch would have to approve or deny the recommendation. For all dimensions taken together, therefore, trade adjustment assistance seemed in principle to dominate escape-clause relief.

(3) Bribes. In recent years, the issue underlying trade adjustment assistance has changed from "how much trade liberalization?" to "how much protection?". As a result, TAA is frequently defended from a new point of view that springs from political economy. It is argued that if TAA were not available, the political forces for increased protection would dominate, imposing large social costs through inefficiencies that would increase exponentially as trade barriers rise. TAA still assists and adjusts ex post. But now it also bribes ex ante those coalitions of losers from trade that would destroy a socially beneficial status quo in the absence of TAA. In its new role, then, TAA has additional distributive and allocative effects: compensating groups with credible threats to do social harm, and avoiding the allocative inefficiencies that are the instruments of that potential harm.

The Program Under the Trade Expansion Act of 1962

The Kennedy Administration was prodded by attitudes both at home and abroad to propose trade adjustment assistance formally in 1962. Kennedy very much wanted significant multilateral tariff cuts to assure U.S. access to the burgeoning European Common Market. To gain the same commitment from European nations, he proposed significant tightening of the criteria for

escape-clause relief, so as to reassure them of the permanency of U.S. concessions. To reassure Congress about this tightening, and to gain congressional authority for substantial tariff cuts, he proposed TAA as the preferable way of relieving any U.S. injury. A cautious Congress incorporated a carefully circumscribed program¹⁰ into the Trade Expansion Act of 1962.

¹⁰ Congressional caution was due largely to the unprecedented nature of the program. The early 1960's also marks the beginning of a similar program to assist Americans dislocated by military base closings, and to help them adjust. These years also saw passage of labor "adjustment" legislation such as the Manpower Development and Training Act (1962) and the Economic Opportunity Act (1964). On these parallel programs to TAA, see Frank and Levinson (1978, Chapters 6 and 7). Trade adjustment assistance was also a temporary feature of the Canadian-American Auto Agreement, and is summarized briefly by Fooks (1971, p. 352) and Jonish (1970).

The most important distributional assistance provisions of this early TAA program were:

-- for labor: supplements to unemployment insurance (UI) payments to replace 65 percent of normal income for up to one year,¹¹ and up to a year and a half for workers who were over

¹¹ One might argue that normal unemployment insurance would have been sufficient. But that would give no weight to the social-choice motivation for compensating this injury. Workers dislocated because of trade liberalization are paying a personal price for a policy deemed socially profitable. On the other hand, workers dislocated because of similar socially profitable policies such as deregulation, environmental control, and occupational safety and health standards receive no compensation beyond UI.

60 or being retrained, as long as such payments did not exceed the maximum income-support level of 65 percent of the average weekly manufacturing wage;

-- for firms: special tax privileges that enabled them to increase after-tax profits.

The most important provisions that were designed to reduce inefficiency by speeding adjustment included:

-- for labor affected (or threatened) by trade liberalization: (1) special encouragement to take part in existing training, counseling, and job-placement programs (but no special programs); and (2) relocation allowances covering family moving expenses to a new job elsewhere:

-- for firms affected (or threatened) by trade liberalization: low-interest loans or loan guarantees for modernization or retooling of plant and equipment and for acquisition of working capital; free technical consultation on adapting to change, and on sales outlooks and forecasts.

In practice, trade adjustment assistance under this legislation was initially non-existent. The support of organized labor for the U.S. program quickly dried up as seven years went by with significant import growth but without a single approval of any adjustment assistance case. (Six cases were turned down.) Adjustment assistance, in the eyes of most labor spokespersons, was a cruel hoax.

What created this dormancy was a combination of stringent criteria for eligibility, and strict interpretation of the criteria by the Tariff Commission officials responsible for ruling on each case. To be approved for adjustment assistance benefits, petitioners had to prove not only that they

had been injured by U.S. trade liberalization, but that it had been the major cause of their injury. "Major" was initially interpreted to mean "single most important." That conservative interpretation made approval almost impossible -- labor and management are continually buffeted by a myriad of other important shocks in addition to trade liberalization.

Furthermore, the process of applying for adjustment assistance was a bureaucratic nightmare. It not only diverted the services of company and union officials, but also required lawyers in preparation of "the case," and finally involved considerable time. Each case had to be determined within roughly eight months, but coupled with other lags and delays, it could sometimes take more than two years to receive the first adjustment assistance payments -- even when the case was approved,¹² There is no

¹²Bale (1973) reports an average delay of 13 months between separation and receipt of the first adjustment assistance check. McCarthy (1975a, p. 8) reports an average delay of 19.4 months for a sample of dislocated New England shoeworkers. Other studies of worker and firm experience under the initial U.S. TAA program include McCarthy (1975b, 1975c), Neumann (1978), and Neumann et al. (1976). Studies of worker experience under the most recent TAA program include Corson et al. (1979) and Jacobson (1979). Studies of worker and firm experience under both programs include numerous General Accounting Office reports, Frank and Levinson (1978), and Bale (1979).

doubt that many firms and labor groups simply were unwilling to apply. Even approval would have been unprofitable. For them, adjustment assistance might just as well not have been available.

The Nixon Administration brought a shift toward less strict interpretations in the early 1970's, and revived U.S. adjustment assistance. Both applications and approvals accelerated. Legislative revision of the adjustment-assistance program under the U.S. Trade Act of 1974 made an even more dramatic impact, as revealed in Table 1. Most dramatic of all is the

increase in petitions and projected outlays brought on by the auto-centered recession of 1979-80. These are not reflected in the table but have been estimated to require an extra \$1 billion of outlays in fiscal 1980 and \$0.4 billion in fiscal 1981 (Washington Star, April 3, 1980). 859 petitions for TAA were filed during the first three months of 1980 alone (Rosen (1980, p. 2))!

The Program Under the Trade Act of 1974

Under the Trade Act of 1974, the number of workers certified eligible for TAA benefits quickly rose to more than 10 times its annual average under even the liberal administration of the former program. And budget outlays mushroomed comparably.

Statutory changes that made adjustment assistance more attractive included: (1) raising labor's potential income support with TAA supplements to 70 percent of normal income, as long as this did not exceed 100 percent (raised from 65 percent) of the average weekly manufacturing wage; (2) requiring that labor cases be determined in two, not eight, months, by the Secretary of Labor, and not by the slow-moving, quasi-judicial International Trade Commission (née the Tariff Commission); (3) providing separate funds out of tariff revenues for retraining trade-displaced workers; and (4) allowing reimbursement for a portion of job-search expenses.

But by far the most important statutory changes related to eligibility. First, adjustment assistance was made potentially available to firms and labor injured by imports for any reason, whether because of government trade concessions or not. And second, imports needed only to contribute importantly to the injury, not be its major cause.

TABLE 1

THE HISTORY OF U.S. ADJUSTMENT ASSISTANCE

	ADJUSTMENT ASSISTANCE FOR LABOR				FIRM ADJUSTMENT ASSISTANCE			
	Cases Approved	Cases Denied	Number of Workers in Cases Approved	Number of Workers in Cases Denied	Dollar Outlays (Millions)	Cases Approved	Cases Denied	Dollar Outlays (Millions)
1962-72 ¹	56	80	23,519	27,632	n.a.	6	15	n.a.
1972-75 ²	54	91	30,380	39,799	n.a.	22	n.a.	n.a.
Total	110	171	53,899	67,431	\$75.6	28	n.a.	\$45.3
1975 ³	123	112	51,261	56,887	n.a.	13	1	\$ 3.5
1976	428	442	131,765	177,889	\$162.5	25	3	\$14.4
1977	413	612	107,674	99,624	\$151.7	116	3	\$24.3
1978	844	1010	126,403	- 65,179 ⁴	\$280.0 ⁺	129	1	\$72.2
1979 ⁵	710	957	165,123	63,189 ⁶	\$270.0 ⁷	n.a.	n.a.	n.a.

UNDER THE TRADE
EXPANSION ACT
OF 1962:

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- 1 October, 1962, when the Trade Expansion Act took effect, through February, 1972.
- 2 March, 1972 through March 1975, when the Trade Expansion Act was superseded by the Trade Act of 1974.
- 3 The nine months from April to December.
- 4 The cumulated total of workers denied adjustment assistance unaccountably falls from the 22nd to the 23rd Annual Report on the Trade Agreements Program (see sources below). Three industries account for almost all the decline:

	<u>Workers Denied Trade Adjustment Assistance</u>	
	<u>4/3/75 - 12/31/77</u>	
	<u>4/3/75 - 12/31/78</u>	
Total	334,404	269,221
Fabricated Metal Products (SIC 34)	40,308	9,305
Electrical Machinery (SIC 36)	26,056	16,194
Transportation Equipment (SIC 37)	135,635	64,438

- 5 First 11 months of 1979 except for dollar outlays, which are for the calendar year.
- 6 332,410 less 269,221 (see note 4 above).
- 7 Washington Post, April 10, 1980.

Sources: U.S. House of Representatives, Hearings Before the Subcommittee on Foreign Economic Policy of the Committee on Foreign Affairs, Ninety-Second Congress, Second Session, April 24-26, May 9-11, 17; 1972, entitled Trade Adjustment Assistance (Washington, 1972), p. 49; President of the United States, Twentieth Annual Report on the Trade Agreements Program - 1975, pp. 47-50; Twenty-First Annual Report on the Trade Agreements Program - 1976, pp. 56-59, 74; Twenty-Second Annual Report on the Trade Agreements Program - 1977, pp. 65-70, 118; Twenty-Third Annual Report on the Trade Agreements Program - 1978, pp. 92-93, 163-166; U.S. Department of Labor (1979), Table entitled "Cumulative Program Activity."

n.a. = not available.

While the second change is laudable from the point of view of equity (and perhaps efficiency), the first raises awkward questions regarding a distributional defense of TAA -- that policy for the national interest not impose excessive burdens on any citizen. Why, for example, should workers be compensated at higher than UI levels for market-determined injury just because the markets are international? Is it economically defensible that the U.S. compensate domestic producers who are in an extreme case lazy or slow to adopt technological advances, thereby losing competitiveness to foreigners? Compensation for such injury is possible under the new adjustment-assistance program. The increasingly familiar answer is that "political reality" dictates such compensation as a super-normal bribe to mollify protectionists. But the potential conflict between this rationale and a society's distributional goals is apparent. Such bribes may create inequities rather than curing them. And they clearly distort market signals and incentives.¹³

¹³ Alan Deardorff has argued that one should not overemphasize the severing of TAA's link to trade concessions under the 1974 Act. TAA is still linked to government trade policy to the extent that if it were not there, then increasingly protectionist trade barriers would substitute for it. One can view the U.S. government thus as using TAA in the familiar historical way to facilitate "concessions" on potential trade barriers (that is, to reject recourse to them).

A second answer might begin with the observation that most foreign governments are committed to aiding industries that suffer structural dislocation and adjustment problems from any source, including the market.¹⁴

¹⁴ Recent summaries of foreign adjustment assistance programs, some trade-related and some not, exist in Frank and Levinson (1978, Chapter 9), Weisz (1978, Part III and Appendices B and C), and U.S. General Accounting Office (1979). Baldwin and Bale (1980) contains a useful summary of Canadian adjustment assistance programs, and on these, see also Jenkins et al. (1978).

In light of this, protectionist changes in U.S. adjustment assistance can perhaps be defended as defensive, equalizing retaliation to foreign beggar-your-neighbor policies with adverse consequence for the U.S. income distribution.

A general impression of the 1974 program in practice is that its assistance (equity) provisions have been considerably more successful than its adjustment (efficiency) provisions. And success for one is not necessarily unrelated to failure for the other. Insufficient attention has been drawn to the intrinsic incompatibility of "assistance" and "adjustment" programs as presently structured: one of the surest ways to bring about adjustment would be to provide no assistance, and assistance that compensated for every burden would leave no incentive to adjust. One of the surprising conclusions of the worker survey reported on in subsequent sections was the large number of TAA-supported workers who returned not only to their former industry, but to their former firm (roughly 3 out of every 5), and even to their former job.¹⁵ Generous TAA benefits may even

¹⁵This accords well with McCarthy's (1975c, p. 63) finding that roughly two out of three re-employed Massachusetts shoeworkers who received TAA benefits under the 1962 program remained in the shoe industry. By contrast Neumann et al. (1976, pp. 3-19, 22) found that only about one in five re-employed TAA recipients remained in their former industry.

have brought about a perverse expansion of the number of workers needing to be compensated -- if it made employers more willing to lay them off.¹⁶ Once

¹⁶Employers do not pay any supplemental financial penalty for laying off workers who will be supported by TAA supplements to UI. Yet they may take advantage of the fact that comparatively generous TAA benefits make workers less resistant to layoffs. On the possible implications of these matters for temporary unemployment, see Feldstein (1975, 1976, 1978).

a worker is certified eligible for TAA benefits, that eligibility is automatically activated for all layoffs covered by the petition in the subsequent two years.

Based on the survey of 1976 recipients that is described below, adjustment aspects of the 1974 program -- training, counseling, job-search, and relocation allowances -- were neglected about as much under the 1974 program as earlier. Less than 10 percent of TAA recipients took advantage of available employment services, and published figures on cumulated experience are even more discouraging (U.S. Department of Labor (1980)). Only 1 out of every 30 TAA recipients from 1975 through 1979 (November) entered training; only 1 out of roughly 200 received a job-search allowance; and only 1 out of roughly 350 received a relocation allowance.¹⁷

¹⁷Use of these adjustment services has increased markedly among recent TAA recipients, however. See footnote 2 of Aho (1980).

Distributional goals and realizations are by contrast much more consistent. Combined UI and TAA payments replaced 76 percent of after-tax income on average for as long as the eligibility of workers surveyed lasted. Nevertheless, the survey reveals that workers who are permanently displaced by trade seem to suffer a large income sacrifice even three or four years after displacement (10 percent lower incomes for men than in their former job, compared to 20 percent higher incomes for comparable UI recipients; 5 percent lower for women, compared to 16 percent higher). And it seems there still remained substantial unpredictability and unduly long delays in the process of petition, certification, and delivery of benefits. Despite the

attempt to streamline the process, the first TAA payment was still generally received more than a year after the separation that justified it.¹⁸ Lump

¹⁸Fourteen months on average from the survey, which applied to 1976. The average lag between separation and application was half of the total. Considerable improvement in this aspect of performance has taken place in 1979 and 1980, however. See Aho (1980, footnote 2) and Rosen (1980, p. 4).

sum payments were still received by almost 4 out of 5 surveyed TAA recipients, and delays in payments during the first year after separation caused workers' income losses to be more than 50 percent higher than if TAA payments had been made "as earned."

II. TAA EXPERIENCE UNDER THE TRADE ACT OF 1974: MEANS AND
CROSS-TABULATIONS FROM A COMPARATIVE SURVEY OF WORKERS

Describing the beneficiaries of the program, including the stability, level, and growth of their income, is more important for TAA than for many other government programs because of its distributional and political justifications. Sensible assessments of the program must identify whether those who are aided are in fact "deserving" by some measure of equity or political muscle. And such assessments should attempt to measure the extent to which program benefits offset injury.¹⁹ How the "deserving" are defined -- whether

¹⁹As described below, this aspect of any assessment is methodologically difficult. In principle, TAA benefits are paid whenever trade-related injury is documented, and are not paid when no injury is present. Thus in principle, one can observe instances only of simultaneous injury and benefit or of the absence of both. That is, one can detect only the net influence of injury and benefits. Short of social experimentation in which some economic agents experienced either the injury or the benefits, but not both, there seem to be only very subtle, uncertain ways of quantitatively assessing the scope of injury alone, the impact of benefits alone, or the "extent to which program benefits offset injury." A careful attempt is Jacobson (1979).

as poor, old, ambitious, productive, politically powerful, or some combination will not concern us here.

We will characterize workers receiving TAA, and not firms. In this section we do so by comparing them one-dimensionally and two-dimensionally to a sample of peers, focussing on unconditional mean differences or else controlling for one other variable via cross-tabulations. In the next section we compare TAA recipients to their peers multi-dimensionally, controlling when feasible for all variables that are alleged to cause different worker experience via regression analysis.

A Recent Survey

The most recent survey of worker recipients of TAA was commissioned by the U.S. Department of Labor, and is summarized in Corson et al. (1979).²⁰

²⁰Previous surveys are referenced in note 12 above.

Sample design and survey methods are described at length in Appendixes A and B of that report.

Interviews were carried out from November 1978 through February 1979, virtually all of them in person, under the supervision of Mathematica Policy Research, Inc. (Princeton, New Jersey). Interviewees had received first TAA payments in 1976, and the survey sample was designed to represent the population of 1976 TAA recipients. 84 percent of those interviewed were separated from their employer in late 1974 or 1975; 16 percent were separated in 1976. For comparison purposes, a smaller sample of UI recipients (not receiving TAA) was selected from the same state unemployment offices that administered benefits to TAA recipients.²¹ The interview form was pre-

²¹For reasons described in Corson et al. (1979, pp. 195-198), the UI sample was not matched precisely to the TAA sample with respect to either industry (see below) or time of separation. Only 65 percent of the UI sample left their jobs in late 1974 or 1975. Several comparison groups other than comparably located UI recipients were considered, yet seemed like inferior choices for reasons described in Corson et al. (1979, pp. 191-96).

tested and modified accordingly. Interviewers were trained and continually supervised. Interview data were cross-checked through subsequent calls and visits by supervisors. The response rate among TAA recipients was 70 percent,

and among UI recipients 54 percent. A few known characteristics of non-respondents (from state unemployment office records) were compared to characteristics of respondents. These suggested little non-response bias, and no particular reason for believing that biases which remained affected one group unduly compared to the other. The ultimate survey sample consisted of

-- 963 TAA recipients --

-- 538 UI recipients --

The TAA sample was stratified by industry, represented in the same proportions that characterized the industry source of 1976 TAA payments. Columns (1) and (2) of Table 2 describe the inter-industry manufacturing distribution of workers in the survey (only one worker interviewed was in a non-manufacturing industry) and in the corresponding national population of TAA recipients. Column (3) suggests that the distribution has some claim to generality, having not changed significantly during the first five years of the new program. In late 1979 and early 1980 however, the auto industry's share of TAA certifications mushroomed. Column (4) describes the matched UI sample in the survey.

Interviews were conducted in 7 states, 3 chosen for the high proportion of TAA payments being made there (Ohio, Pennsylvania, and New York), and 4 chosen randomly (California, Indiana, Massachusetts, and Virginia) from a set of 4 industry groupings, with the probability of selection being proportional to the number of TAA payments in each state. 65 percent of the national population of TAA recipients resided in those 7 states. Equal numbers of interviews were conducted at each of 10 locations within each state. The locations were chosen from a random sample of TAA petitions classified by industry and weighted by the number of workers each petition covered. The locations ultimately selected reflected a significant variety of labor-market conditions.

TABLE 2

PERCENTAGE DISTRIBUTION OF TAA
AND UI RECIPIENTS IN MANUFACTURING: BY INDUSTRY

	<u>TAA RECIPIENTS</u>			<u>UI RECIPIENTS</u>
	(1)	(2)	(3)	(4)
	1976 Survey Sample	1976 National Population	1975-80 ¹ National Population	1976 Survey Sample
Footwear	7.7	8.4	10.3	0.4
Apparel and Other Nondurables	30.3	25.7	22.5 plus ²	22.8
Automobiles	23.7	28.7	22.6	12.7
Steel	20.6	18.1	18.9	19.2
Other Durables	17.7	19.1	11.8 plus ²	44.9

¹ From the start of the program through the first three months of 1980 only.

² 13.3 percent of TAA recipients are unaccounted for in the source cited below.

Sources: Column (2) from Corson et al. (1979, p. 192); Columns (1) and (4) from data tape underlying Corson et al. (1979); Column (3) from Rosen (1980, p. 3).

As this was the first comprehensive survey of worker experience under the Trade Act of 1974, some differences from previous surveys are due to the changes in the TAA program from the Trade Expansion Act of 1962.

Chief among them is the dramatic increase in recourse to TAA, due largely to the easing of the eligibility criteria. As a result there is some reason to believe that this survey is more representative and more reliable than prior ones because of the larger pool of TAA recipients to sample and because of the reduction in any systematic bias (e.g., against small petitioners) caused by excessive petition costs under the old program.

On the other hand, there are subtle differences between this survey and previous ones that arise because of changes in eligibility requirements. Because imports need now be only an important cause of injury and not the major cause, it is almost certain that workers in the current survey will be less injured by trade on average than workers in previous surveys. On the other hand, because TAA can now legally be awarded because of trade-related injury for any reason, whether due to prior government trade concessions or not, the current survey is probably more representative than earlier ones of workers displaced by imports as a whole, rather than just that portion of imports on which the government negotiated liberalization.

Characterizing TAA Recipients

The most important information in evaluating the TAA program concerns the characteristics and experience of workers receiving TAA. Some of these characteristics and experiences in our sample confirmed widespread impressions; many did not. Some are well-known from previous surveys; others have received little notice.

It is known, for example, but underemphasized, that almost all recipients of TAA work in manufacturing industries. Hence, their peers are most accurately other manufacturing workers, not U.S. labor at large. It is also well known that TAA recipients are more concentrated than their peers in footwear and apparel, as Table 2 reveals. It is less well known that the auto industry is the source of a much higher proportion of TAA recipients than of their peers -- even as early as 1976. These industry differences between the TAA and UI samples can be argued to be the sole source of differences between beneficiaries of TAA and others, without any reference to international trade. But this observation begs the question of what caused the industry differences -- to which a sensible answer is international trade.

Among the most important findings of this survey is that TAA recipients were much more likely than UI recipients to experience temporary unemployment or reduced hours, as revealed in Table 3. They were only barely more likely than UI recipients to have worked for a company that closed down, and much less likely to have changed their industry or occupation between separation and the interview, roughly three years later. For TAA recipients, worker experience differed significantly among those on permanent layoff, those on temporary layoff, and those on reduced hours. Workers on temporary layoff made up the majority of the TAA caseload. Since most previous commentary on TAA has focused on permanently displaced workers, it is useful here to describe the connection between temporary worker displacements, international trade, and the TAA program.

TABLE 3

PERCENTAGE DISTRIBUTION OF
SURVEYED TAA AND UI RECIPIENTS (1976):

BY TYPE OF SEPARATION AND
ADJUSTMENT

	<u>TAA RECIPIENTS</u>	<u>UI RECIPIENTS</u>
TYPE OF SEPARATION:		
-- permanent	25.2	56.8
-- temporary	58.2	39.9
-- reduced-hours ¹	16.6	3.3
ADJUSTMENT:		
Company closed down	16.0	15.2
Changed industry	15.6	31.2
-- permanently displaced	67.5	68.0
Changed occupation	25.1	39.1
-- permanently displaced	54.0	60.8

¹The average reduction was from 41 hours per week to 23 hours per week, and the average spell of reduced-hours employment lasted 56 weeks.

Temporarily displaced workers have both unique advantages and unique problems when compared to the permanently displaced workers usually visualized as being primary recipients of TAA. Relative to permanently displaced workers, the duration of trade-related dislocations for those temporarily displaced is likely to be short, and their income loss only moderate. But if such short spells of unemployment occur more frequently because of trade, workers who are prone to temporary displacement may still suffer disproportionately from unpredictable and uncertain income streams.²² Compensation

²²This possibility rests on the assumption that wages and other provisions of contracts do not vary to offset the unpredictable and uncertain income streams. If contract terms do take account of this uncertainty, then there would seem to be no reason to believe that the uncertainty produces suffering over the long run, and no case for compensation. See note 5 above. This possibility notwithstanding, uncertainty is precisely the reason why many policymakers subscribe to the need to compensate nations (analogously to workers) for volatile export earnings through the IMF's Compensatory Financing Facility and the EC's STABEX. These are self-financing loan programs, however, which raises the question of whether the TAA program should include concessionary (but repayable) loans for certain purposes.

for such volatile incomes and job prospects might be an important justification for paying temporarily displaced workers. No clear adjustment (efficiency) motive exists for TAA in this case because it is not obvious that the workers should leave the industry on economic grounds.

But why should trade increase the volatility of worker incomes in import-competing industries? There seem to be a number of reasons. First, in industries such as steel, dumping is widespread and unpredictable, causing U.S. business to sag notably some years (even quarters) and rebound in others. Second, speculative import purchases may take place when dollar depreciation threatens, and then may be offset subsequent to dollar depreciation by abnormally

low import purchases. Domestic business can be correspondingly slack, then prosperous,²³ depending on product durability, substitution patterns, and

²³The opposite phenomenon occurs when dollar appreciation is expected, and then actually takes place.

buyer loyalty to competing varieties. Employment in domestic industries can thus be correspondingly slack, then prosperous. The auto industry seems to be a good candidate for sensitivity to exchange-rate related demand fluctuations. And speculation based on changes in orderly marketing agreements can have similar effects.

But does TAA cause some temporary unemployment while alleviating its burdens? An unanswered question is whether the liberal availability of TAA supplements to standard unemployment insurance increases incentives that encourage employers to lay off workers temporarily (because such workers are better accommodated), as discussed above. If so, any such additional workers will be worse off because their TAA payments do not match their straight salary. And there may be some cost to the economy as a whole if the temporary nature of a worker's dislocation inhibits job search and if TAA keeps workers affiliated with a declining industry when more productive positions are available elsewhere.

Similar questions arise with respect to the availability of TAA for workers placed on reduced hours by their employers. Presumably employers use the option of reducing or increasing hours for the same reasons they use temporary layoffs. And fluctuations in hours may be related to trade in the same way as temporary layoffs. But once again, to the extent that TAA availability for reduced hours encourages employer recourse to them, it increases

the need for compensation while simultaneously satisfying it. TAA availability may again undermine any adjustment goals of the program by indenturing workers to a declining industry and discouraging their job search. From an efficiency perspective, it is clearly better to have half as many workers full-time (with the remainder in other jobs) than the historical work force all working half-time.

Some findings from the present survey confirm common beliefs about TAA recipients, whether permanently, temporarily, or partially dislocated. Table 4 reveals that they are somewhat older, less educated, more stable in their employment history, and more likely to be union members, female, minority status, married, and the head of a household than the average unemployed worker.²⁴

²⁴All comparisons are to unemployed manufacturing workers who receive UI payments. Such comparisons must be treated with caution, however, because of their one-dimensional nature. Pro-TAA commentary, for example, tempts one to think of recipients as especially "deserving" because they are both older and less educated. It is probably more accurate to think of them as less educated because they are older. Similarly, age may explain marital status, and both explain stability. Industry mix may explain minority status. Structural expansions of the regression analysis outlined in the next section of the paper could in principle control for such internal causality.

But they are not likely to be poorer. Fewer fall below the poverty line. And their pre-dislocation incomes (principally for men) exceed the incomes of their peers, as do household incomes. This finding seems to preclude any relative-income, "progressive" motivation for maintaining TAA benefits that are more attractive than UI benefits.

The conventional belief that trade-displaced workers face more difficult short-run adjustment problems than a typical unemployed worker does seem to be borne out in Table 5, especially for those who are permanently laid off.

TABLE 4

DISTRIBUTION OF SURVEYED
TAA AND UI RECIPIENTS (1976):
BY PERSONAL AND PRE-SEPARATION
JOB/INCOME CHARACTERISTICS

	<u>TAA RECIPIENTS</u>	<u>UI RECIPIENTS</u>
PERSONAL CHARACTERISTICS:		
Mean age in years ¹	39.9	35.9
Mean years of education ²	10.4	11.4
Percent that had vocational or technical schooling ²	24.8	27.6
Percent female	38.5	35.5
Percent minority	20.9	19.7
Percent married ²	79.0	68.1
Percent head of household ²	94.5	87.7
PRE-SEPARATION JOB/INCOME CHARACTERISTICS:		
Mean years tenure	11.8	7.8
Percent quit or fired (not laid off)	1.1	6.8
Percent in union ³	81.3	65.8
Mean annual income of recipient ⁴	\$11,080	\$9,820
Mean annual income of spouse ⁴	\$2,690	\$2,820
Percent of households with income below poverty line ⁴	1.9	3.7

¹ at separation date

² at interview date

³ at separation date, not including workers on reduced hours in the base

⁴ in year before separation, 1975 dollars

Source: Corson et al. (1979, pp. 17, 21, 28, 38)

TABLE 5

DISTRIBUTION OF SURVEYED
TAA AND UI RECIPIENTS (1976):

BY JOB MARKET EXPERIENCE BETWEEN
SEPARATION AND INTERVIEW

	<u>TAA RECIPIENTS</u>	<u>UI RECIPIENTS</u>
BETWEEN SEPARATION AND INTERVIEW:		
Mean weeks of first unemployment spell after separation	21.9	21.9
-- permanently displaced	41.8	32.8
-- temporarily displaced	17.4	16.3
Percent of weeks unemployed	18.4	20.9
-- never recalled	28.0	25.4
-- recalled at least once	15.6	18.0
Percent of weeks out of the labor force	8.3	9.9
-- never recalled	26.3	20.5
-- recalled at least once	3.0	3.1
Percent of weeks employed	73.8	69.5
-- never recalled	46.0	54.6
-- recalled at least once	82.0	79.2
AT INTERVIEW:		
Percent unemployed	7.2	11.6
Percent out of labor force	11.9	12.0
Percent employed	80.9	76.4
Ratio of mean weekly wages: interview job to pre-separation job ¹		
-- permanently displaced	0.92	1.18
-- temporarily displaced	1.22	1.25

¹1975 dollars

Source: Corson et al. (1979, pp. 48, 58, 59, 64, 65, 69).

The duration of their initial unemployment spell is longer than for UI recipients, and the incidence of recurrent separations is slightly more frequent. Those TAA recipients never recalled to their previous job between separation and interview spend a larger proportion of weeks unemployed, and are more likely to be out of the labor force than their UI counterparts. The latter finding may reflect retirement or discouragement more than anything else, since TAA recipients were relatively less likely to receive training. There is, of course, a potential causality problem in these findings. Comparatively generous TAA benefits may have encouraged workers to take longer to locate a new job and hence increased their measured unemployment spells at first. This could be true despite the lumpiness and unpredictability of TAA payments.

By the interview date, roughly three to three and a half years after initial layoff, most differences in the adjustment burdens of TAA recipients and typical unemployed workers disappeared. TAA recipients are acutally less likely to be unemployed or out of the labor force (barely) than others. But those who have not returned to their earlier jobs are likely to have experienced a significantly greater decline in income than the average reemployed worker (and even the temporarily displaced TAA recipients suffer a small relative decline). They might have been presumed to lose rents on accumulated on-the-job skills that are probably greater than those of the average unemployed worker, since TAA recipients have a longer and more stable work history. They may also have lost some rents that are unrelated to skill and a function of their former industry's political pressure for protection against imports.

Some of these findings are surprising in light of previous surveys of

TAA recipients (note 12 above). Part of the explanation can be found in the rapidly shifting industrial incidence of injury from trade in the early 1970's. The relative importance of the footwear industry and the electronics industry declined in successful TAA petitions; the relative importance of apparel, autos, and steel increased (apparel has since declined and footwear has risen again, according to Table 2). This altered worker characteristics among TAA recipients because skill mix, ethnic concentration, job stability, and average wages differ substantially from industry to industry. And it was to be expected to the extent that cumulative and ongoing competitive pressures (many from newly industrializing countries) reduce the industrial importance of declining U.S. industries such as footwear and textiles by causing marginal firms to fail.

The Sample as a Reflection of the Effects of Both Trade and TAA

It would have been valuable to be able to measure separately the effects of import competition on workers and the effects of the TAA program itself (see note 19 above). No continuous measure of the former was employed besides the certainty that trade had been an "important" cause of dislocation, as prescribed by the legislation embodying certification requirements.²⁵

²⁵The same problem exists for Jacobson (1979) and is discussed by him. The technical counterpart to this statement is that the variable TAA (1 for TAA recipients, 0 for UI recipients), which underlies all the tabulations and regressions in this paper measures the influence on workers of both injury from trade and TAA itself. Tabular information on TAA recipients and regression coefficients, therefore, reflect the frequently offsetting influences of injury and its policy relief.

It was impossible to know just how important trade alone had been in altering wages and working conditions before and after TAA receipt. The survey

measured mixed effects of both trade and TAA on wages and working conditions. Since TAA in many aspects is designed to offset the impact of trade on U.S. workers, it seems likely that the survey and the analysis below understate both the (presumably unfavorable) effects of import competition on some U.S. workers and the (presumably favorable) effects of TAA. They do, however, probably reflect the net effect of both forces with considerably more accuracy. One test of the success of TAA in achieving its distributional goals would be that these net effects are small.

Measuring the impact of trade alone on workers is a difficult task. Yet it is done subjectively every day in administrative determination of certification. A valuable complement to surveys like the one summarized would be research on the certification process itself. What economic and other variables underlie decisions to approve or disapprove a TAA petition? Can one determine a set of variables and the weights attached to them that predict the yes/no decision on the petition with some accuracy?²⁶ If so,

²⁶ See Baldwin (1976) for an attempt to do this with Congressional voting patterns on commercial policy.

one could use those same variables and weights to measure the severity of workers' injury from trade. One might also be able to explore the budgetary and performance implications of changing the weights attached to the criteria underlying certification, as is implicitly proposed whenever TAA is legislatively reconsidered.

III. TAA EXPERIENCE UNDER THE TRADE ACT OF 1974: JOB AND INCOME RECOVERY IN A REGRESSION APPROACH

One- and two-dimensional comparisons of TAA and UI recipients are sometimes misleading. Many comparisons in Section II are explained not so much by TAA/UI differences in programs, labor markets, or competitive pressures as by TAA/UI differences in age, experience, industry mix, etc. Cross-sectional multiple regression provides a useful way to control for less important sample differences among workers while focussing on those that are most interesting.

Tables 6 and 7 provide examples of such regressions, each vector of estimated coefficients being displayed in a column. The dependent variable explained in Table 6 reflects medium-term employment recovery after initial separation -- it is the percentage of weeks employed in the three to three and a half years between initial separation and interview.²⁷ The dependent

²⁷ Because it is a percentage, the dependent variable is truncated (limited). Ordinary-least-squares regressions such as those summarized below may thus be inferior to those run to explain a logit transformation of the percentage of weeks worked.

variable explained in Table 7 reflects medium-term income recovery in the same period -- it is the log of the weekly wage (in 1975 dollars) of each individual in their job at the interview date, given (as an independent variable) their weekly wage (in 1975 dollars) before separation.^{28,29,30}

²⁸ The presence of past wages in the regression is what allows the coefficients to be interpreted as "income recovery coefficients." Each can be taken to record the impact of the relevant variable on the individual's change in weekly wage between separation and interview, given the pre-separation wage. This can be most easily seen by subtracting the

TABLE 6

JOB RECOVERY REGRESSIONS

DETERMINANTS OF PERCENTAGE OF WEEKS WORKED
BETWEEN SEPARATION AND INTERVIEW

Regression Coefficient
(Standard Error) 1
Significance level 1

Each column represents one regression

TABLE ENTRIES GIVE:

Extra percent-
age of weeks
worked...

ENTIRE
SAMPLE

ALL UI
RECIPIENTS

ALL TAA
RECIPIENTS

PERMANENTLY
DISPLACED
UI
RECIPIENTS

PERMANENTLY
DISPLACED
TAA
RECIPIENTS

SAMPLE IDENTIFIERS:

... If individual
received trade
adjustment
assistance

-4.56
(2.40)
.06

-

... If individual experienced
temporary separation

21.34
(2.01)
.00

23.66
(2.40)
.00

-

-

ADMINISTRATION OF BENEFITS
AND SEPARATION:

... for each extra percent that
UI and TAA benefits during
first spell of unemployment-
ment replaced after-tax 2
income before separation

-0.0481
(0.0480)
.32

0.0821
(0.140)
.56

-0.0538
(0.0518)
.30

0.156
(0.236)
.51

0.215
(0.124)
.09

TABLE 6 , Cont.

TABLE ENTRIES GIVE:	ENTIRE SAMPLE	ALL UI RECIPIENTS	ALL TAA RECIPIENTS	PERMANENTLY DISPLACED UI RECIPIENTS	PERMANENTLY DISPLACED TAA RECIPIENTS
... for each extra percent that UI and TAA benefits during <u>all spells</u> of unemployment <u>replaced</u> after-tax income before separation ²	0.0122 (0.00957) .20	-0.00433 (0.0355) .90	0.0212 (0.00974) .03	-0.0155 (0.0510) .76	0.0152 (0.0145) .30
... for every week of official employer notification prior to separation, or of " <u>suspected job loss</u> " prior to notification	0.0400 (0.0641) .53	0.0685 (0.120) .57	0.0527 (0.0838) .53	0.0620 (0.187) .74	0.226 (0.210) .28
ECONOMIC ENVIRONMENT:					
... if recipient was a union member in the pre-separation job	-4.67 (2.32) .04	-3.97 (4.80) .41	-5.94 (2.85) .04	-4.63 (7.36) .53	-7.31 (7.29) .32
... if the recipient's company <u>closed down</u>	4.19 (2.35) .07	7.75 (5.82) .19	5.54 (2.66) .04	0.373 (14.43) .98	4.74 (7.44) .53
... for each extra percent of labor force unemployed in state and industry group	0.216 (0.261) .41	0.264 (0.602) .66	0.199 (0.292) .49	0.215 (1.31) .87	0.319 (0.793) .69

TABLE 6 , Cont.

TABLE ENTRIES GIVE: Extra percent- age of weeks worked...	ENTIRE SAMPLE	ALL UI RECIPIENTS	ALL TAA RECIPIENTS	PERMANENTLY DISPLACED -UI RECIPIENTS	PERMANENTLY DISPLACED TAA RECIPIENTS
INDUSTRY:					
... if individual worked in the <u>apparel</u> industry rather than durables (less autos, steel)	14.27 (3.37) .00	15.66 (9.35) .10	15.67 (3.72) .00	17.07 16.62 .31	24.80 (9.45) .01
... if individual worked in the <u>footwear</u> industry rather than durables (less autos, steel)	6.67 (4.63) .15	No obser- vations	8.33 (4.76) .08	No obser- vations	15.09 (10.51) .16
... if individual worked in other <u>nondurables</u> indus- tries rather than dur- ables (less autos, steel)	-9.38 (4.34) .03	-11.80 (5.47) .03	No obser- vations	-13.35 (9.36) .16	No obser- vations
... if individual worked in the <u>auto</u> industry rather than durables (less steel)	-0.0268 (2.50) .99	0.534 (5.68) .93	1.96 (2.88) .50	-7.13 (15.05) .64	33.61 (9.93) .00
... if individual worked in the <u>steel</u> industry rather than durables (less autos)	0.216 (2.41) .93	0.750 (5.14) .88	0.249 (2.80) .93	3.38 (10.24) .74	0.387 (11.54) .97

TABLE 6 , Cont.

TABLE ENTRIES GIVE:	ENTIRE SAMPLE	ALL UI RECIPIENTS	ALL TAA RECIPIENTS	PERMANENTLY DISPLACED UI RECIPIENTS	PERMANENTLY DISPLACED TAA RECIPIENTS
Extra percent-age of weeks worked...	1.20 (0.826) .15	-3.00 (2.05) .15	2.99 (0.945) .00	-4.74 (4.14) .26	6.86 (2.13) .00
AGE, EDUCATION, AND EXPERIENCE:					
... for each year (X) of <u>age</u> ³	-0.0326X (0.0199) .10	+0.0561X (0.0510) .27	-0.0714X (0.0224) .00	+0.134X (0.118) .26	-0.117X (0.0510) .00
... for each year of <u>education</u>	36.8 0.311 (0.397) .74	53.5 1.35 (0.876) .16	41.9 -0.170 (0.461) .25	35.4 1.49 (1.56) .35	58.6 -0.441 (0.965) .65
... for each year (X) of <u>labor force</u> ³	-0.182 (0.548) .74	1.85 (1.31) .16	-0.78 (.621) .25	0.607 (2.51) .81	-2.99 (1.51) .05
... <u>labor force experience</u> at maximum/minimum value of dependent variable ⁴	+0.0102X (0.0214) .63	-0.0324X (0.0518) .53	+0.0212X (0.0240) .38	-0.0442X (0.111) .69	+0.107X (0.0553) .06
... <u>labor force experience</u> at maximum/minimum value of dependent variable ⁴	17.8	57.1	33.9	13.7	27.9

TABLE 6 , Cont.

TABLE ENTRIES GIVE:	ENTIRE SAMPLE	ALL UI RECIPIENTS	ALL TAA RECIPIENTS	PERMANENTLY DISPLACED UI RECIPIENTS	PERMANENTLY DISPLACED TAA RECIPIENTS
... for each year (X) of experience in the pre-separation job ³	0.408 (0.294) .17	-0.184 (0.603) .76	0.290 (0.385) .45	-0.161 (1.21) .89	0.835 (1.04) .42
... job experience at maximum/minimum value of dependent variable ⁴	-0.0147X (0.0160) .36	-0.00832X (0.0272) .76	-0.000255X (0.0228) .98	0.00458X (0.0294) .94	-0.0288X (0.0580) .62
SEX/MARRIAGE STATUS:	27.8	0 ⁵	> 60 ⁵	35.2	29.0
... if married male rather than unmarried male	3.54 (2.44) .15	1.68 (4.96) .76	3.71 (2.82) .19	4.05 (9.77) .68	8.48 (8.51) .32
... if married female rather than unmarried male	-8.49 (3.50)	-11.93 (7.72)	-5.48 (4.00)	-12.28 (14.48)	-7.01 (9.85)
... if unmarried female rather than unmarried male	-2.70 (3.67) .46	-12.93 (7.72) .10	-2.95 (4.36) .50	-9.81 (12.40) .43	-11.25 (10.79) .30
SOCIOECONOMIC:					
... if black	-3.18 (2.37) .18	-2.32 (6.13) .71	-2.10 (2.64) .43	-1.61 (33.46) .96	-21.72 (6.66) .00

TABLE 6 , Cont.

TABLE ENTRIES GIVE:	ENTIRE SAMPLE	ALL UI RECIPIENTS	ALL TAA RECIPIENTS	PERMANENTLY DISPLACED UI RECIPIENTS	PERMANENTLY DISPLACED TAA RECIPIENTS
Extra percent- age of weeks worked...					
... if <u>Hispanic</u>	-5.07 (3.63) .16	-7.40 (7.67) .34	-5.27 (4.22) .21	-11.23 (14.10) .43	-12.99 (9.37) .17
... if <u>disabled</u>	-18.21 (7.38) .01	-59.62 (17.11) .00	-3.65 (8.42) .66	-53.31 (23.70) .03	11.74 (15.90) .46
INCOME POTENTIAL, ASPIRATION, AND MOBILITY:					
... for each extra \$100 of <u>weekly recipient</u> <u>income before</u> <u>separation</u> ²	-0.311 (1.38) .82	-4.66 (3.79) .22	1.46 (1.49) .33	1.28 (6.28) .84	1.57 (3.28) .63
... for each extra \$100 of <u>weekly income of</u> <u>other household</u> <u>members before</u> <u>separation</u> ²	0.932 (0.706) .19	2.32 (1.30) .08	0.211 (0.891) .81	2.19 (1.97) .27	-4.41 (2.66) .10

TABLE 6 , Cont.

TABLE ENTRIES GIVE:	ENTIRE SAMPLE	ALL UI RECIPIENTS	ALL TAA RECIPIENTS	PERMANENTLY DISPLACED UI RECIPIENTS	PERMANENTLY DISPLACED TAA RECIPIENTS
... if recipient was working a second job at time of separation	9.23 (4.81) .06	4.08 (8.73) .64	8.04 (6.22) .20	11.87 (20.35) .56	3.10 (13.01) .82
... if recipient expressed willingness to move to another area to find suitable job	-3.86 (2.07) .06	-5.33 (4.39) .23	-3.50 (2.39) .14	-6.74 (7.82) .39	5.13 (5.60) .36
CONSTANT	45.47	102.42	10.17	116.75	-58.37
R ²	0.304	0.408	0.323	0.393	0.411
CALCULATED F (SIGNIFICANCE LEVEL)	8.12(.00)	2.90(.00)	6.70(.00)	1.09(.39)	1.95(.01)
NUMBER OF OBSERVATIONS	589	152	437	76	107
DEGREES OF FREEDOM	558	122	407	47	78

¹Of the regression coefficient on the hypothesis that its value was zero.

²All nominal magnitudes deflated or inflated to 1975 dollars.

³Each regression includes the relevant independent variable (X) and its squared value. Each table entry records the marginal effect of the independent variable on the dependent variable, a derivative that varies with the value of X itself. The upper coefficient is that attached to the linear term (standard error in parentheses) and the lower coefficient is twice that attached to the squared term (twice the standard error in parentheses).

⁴Each table entry is that value of X (see note 3) for which weeks worked (Table 6) or weekly income (Table 7) is at a maximum or minimum value.

⁵Estimated maximum or minimum value of dependent variable takes place at infeasible values of X (see note 3).

TABLE 7

INCOME RECOVERY REGRESSIONS

DETERMINANTS OF WEEKLY INCOME (LOG) IN
JOB AT INTERVIEW

Regression Coefficient
(Standard Error) 1
Significance level 1

Each column represents one regression

TABLE ENTRIES GIVE:	ENTIRE SAMPLE	ALL UI RECIPIENTS	ALL TAA RECIPIENTS	PERMANENTLY DISPLACED UI RECIPIENTS	PERMANENTLY DISPLACED TAA RECIPIENTS
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TABLE ENTRIES GIVE:

Extra percent-
age of income
earned...

SAMPLE IDENTIFIERS:

... if individual
received trade
adjustment
assistance

... if individual experienced
temporary separation

ADMINISTRATION OF BENEFITS
AND SEPARATION:

... for each extra percent that
UI and TAA benefits during
first spell of unemploy-
ment replaced after-tax 2
income before separation

-0.831
(0.375)
.03

3.09
(0.312)
.00

4.16
(0.625)
.00

2.99
(0.370)
.00

0.00527
(0.00738)
.48

0.0235
(0.0200)
.24

0.00815
(0.00795)
.31

0.0501
(0.0386)
.20

0.0212
(0.0218)
.33

TABLE 7 , Cont.

TABLE ENTRIES GIVE:	ENTIRE SAMPLE	ALL UI RECIPIENTS	ALL, TAA RECIPIENTS	PERMANENTLY DISPLACED UI RECIPIENTS	PERMANENTLY DISPLACED TAA RECIPIENTS
... for each extra percent that UI and TAA benefits during all spells of unemployment replaced after-tax income before separation 2	0.00144 (0.00148) .33	-0.00485 (0.00504) .34	0.00322 (0.00151) .03	-0.00868 (0.00822) .30	0.00274 (0.00258) .29
... for every week of official employer notification prior to separation, or of "suspected job loss" prior to notification	0.0189 (0.00992) .06	0.0468 (0.0168) .01	0.0165 (0.0129) .20	0.0874 (0.0296) .00	0.0126 (0.0378) .74
ECONOMIC ENVIRONMENT:					
... if recipient was a union member in the pre-separation job	-0.259 (0.360) .47	-3.20 (0.680) .00	0.809 (0.439) .07	-4.52 (1.19) .00	0.113 (1.29) .93
... if the recipient's company closed down	0.429 (0.362) .24	-1.49 (0.822) .07	0.880 (0.409) .03	-2.46 (2.29) .29	1.06 (1.31) .42
... for each extra percent of labor force unemployed in state and industry group	-0.0177 (0.0402) .66	-0.00474 (0.0850) .96	-0.000795 (0.0450) .99	-0.148 (0.208) .48	0.0900 (0.140) .52

TABLE 7 , Cont.

TABLE ENTRIES GIVE: Extra percent- age of income earned...	ENTIRE SAMPLE	ALL UI RECIPIENTS	ALL TAA RECIPIENTS	PERMANENTLY DISPLACED UI RECIPIENTS	PERMANENTLY DISPLACED TAA RECIPIENTS
INDUSTRY:					
... if individual worked in the apparel industry rather than durables (less autos, steel)	1.48 (0.521) .00	1.86 (1.32) .16	0.887 (0.573) .12	5.46 (2.63) .04	1.15 (1.59) .47
... if individual worked in the footwear industry rather than durables (less autos, steel)	1.81 0.714 .01	No obser- vations	1.87 (0.736) .01	No obser- vations	0.128 (1.82) .94
... if individual worked in other nondurables indus- tries rather than dur- ables (less autos, steel)	0.197 (0.669) .77	0.935 (0.770) .23	No obser- vations	2.18 (1.50) .15	No obser- vations
... if individual worked in the auto industry rather than durables (less steel)	1.04 (0.387) .01	1.32 (0.796) .10	0.848 (0.445) .06	3.50 (2.39) .15	3.53 (1.81) .05
... if individual worked in the steel industry rather than durables (less autos)	0.971 (0.372) .01	1.29 (0.725) .08	0.940 (0.433) .03	2.92 (1.63) .08	0.719 (2.05) .73

TABLE 7 , Cont.

TABLE ENTRIES GIVE:	ENTIRE SAMPLE	ALL UI RECIPIENTS	ALL TAA RECIPIENTS	PERMANENTLY DISPLACED UI RECIPIENTS	PERMANENTLY DISPLACED TAA RECIPIENTS
Extra percent-age of income earned...					
AGE, EDUCATION, AND EXPERIENCE:					
... for each year (X) of <u>age</u> ³	0.123 (0.127) .33	-0.248 (0.286) .39	0.183 (0.146) .21	-0.478 (0.653) .47	0.806 (0.376) .04
... for each year (X) of <u>age</u> at maximum/minimum value of dependent variable ⁴	-0.00381X (0.00306) .22	0.00494X (0.00715) .49	-0.00532X (0.00345) .12	0.0107X (0.0187) .57	-0.0232X (.00898) .01
... for each year of <u>education</u>	32.2	50.2	34.4	28.1	35.7
... for each year (X) of <u>labor force</u> ³ experience in the labor force	0.0886 (0.0608) .15	0.123 (0.124) .32	0.0385 (0.0703) .59	0.0166 (0.255) .95	0.0968 (0.169) .57
... for each year (X) of <u>labor force</u> ³ experience in the labor force	0.0335 (0.0846) .69	0.00335 (0.184) .99	0.130 (0.0956) .18	0.0339 (0.396) .93	-0.0770 (0.266) .77
... <u>labor force</u> experience at maximum/minimum value of dependent variable ⁴	-0.00165X (0.00330) .62	.000231X (.00728) .97	-0.00570X 0.00369 .12	-0.00508X (0.0175) .77	0.00559X (0.00978) .57
	20.3	Zero ⁵	22.8	6.7	13.1

TABLE 7 , Cont.

TABLE ENTRIES GIVE:	ENTIRE SAMPLE	ALL UI RECIPIENTS	ALL TAA RECIPIENTS	PERMANENTLY DISPLACED UI RECIPIENTS	PERMANENTLY DISPLACED TAA RECIPIENTS
... for each year (X) of <u>experience in the pre-separation job</u> ³	-0.0179 (0.0454) .69	0.137 (0.0849) .11	-0.0902 (0.0592) .13	-0.129 (0.193) .51	-0.0500 (0.183) .79
... <u>job experience at maximum/minimum value of dependent variable</u> ⁴	-0.000116X (0.00247) .96	-0.00626X (0.00382) .11	0.00436X (0.00352) .22	0.00393X (0.00468) .41	0.00211X (0.010) .84
... <u>job experience at zero</u> ⁵	Zero	21.9	20.7	32.8	23.7
SEX/MARRIAGE STATUS:					
... if <u>married male</u> rather than <u>unmarried male</u>	0.615 (0.376) .10	-1.11 (0.699) .12	1.15 (0.434) .01	-1.27 (1.55) .42	3.58 (1.51) .02
... if <u>married female</u> rather than <u>unmarried male</u>	-0.353 (0.592)	-2.32 (1.10)	0.738 (0.629)	-3.13 (2.34)	1.99 (1.89)
... if <u>unmarried female</u> rather than <u>unmarried male</u>	-0.717 (0.575) .21	-2.59 (1.11) .02	0.0151 (0.681) .99	-2.43 (2.03) .24	1.94 (1.89) .31
SOCIOECONOMIC:					
... if <u>black</u>	0.0755 (0.366) .84	-0.112 (0.866) .90	0.162 (0.408) .69	-9.09 (5.31) .09	-1.51 (1.20) .21

TABLE 7 , Cont.

TABLE ENTRIES GIVE:	ENTIRE SAMPLE	ALL UI RECIPIENTS	ALL TAA RECIPIENTS	PERMANENTLY DISPLACED UI RECIPIENTS	PERMANENTLY DISPLACED TAA RECIPIENTS
... if <u>Hispanic</u>	-0.542 (0.560) .33	-2.48 (1.08) .02	-0.0779 (0.651) .90	-4.22 (2.23) .06	0.668 (1.64) .69
... if <u>disabled</u>	-5.22 (1.14) .00	-7.52 (2.43) .00	-4.50 (1.30) .00	-4.18 (3.84) .28	-3.97 (2.83) .16
INCOME POTENTIAL, ASPIRATION, AND MOBILITY:					
... for every extra percent of weekly recipient <u>income before</u> <u>separation</u> ²	0.655 (0.536) .22	0.982 (1.07) .36	1.40 (0.637) .03	2.92 (2.00) .15	-0.166 (1.68) .92
... for every extra percent of weekly <u>income of</u> <u>other household</u> <u>members before</u> <u>separation</u> ²	0.153 (0.329) .64	0.657 (0.590) .27	-0.226 (0.397) .57	0.301 (1.06) .78	0.274 (1.29) .83

TABLE 7 , Cont.

TABLE ENTRIES GIVE:	ENTIRE SAMPLE	ALL UI RECIPIENTS	ALL TAA RECIPIENTS	PERMANENTLY DISPLACED UI RECIPIENTS	PERMANENTLY DISPLACED TAA RECIPIENTS
... if recipient was working a second job at time of separation	0.938 (0.742) .21	0.0198 (1.23) .99	0.427 (0.955) .65	3.77 (3.21) .25	-0.420 (2.30) .86
... if recipient expressed willingness to move to another area to find suitable job	0.602 (0.319) .06	-0.169 (0.620) .79	0.981 (0.368) .01	0.181 (1.24) .89	2.56 (0.988) .01
CONSTANT	2.61	10.63	2.37	15.50	-13.33
R ²	0.33	0.51	0.37	0.56	0.48
CALCULATED F (SIGNIFICANCE LEVEL)	9.20(.00)	4.33(.00)	8.14(.00)	2.17(.01)	2.55(.00)
NUMBER OF OBSERVATIONS	589	152	437	76	107
DEGREES OF FREEDOM	558	122	407	47	78

¹Of the regression coefficient on the hypothesis that its value was zero.

²All nominal magnitudes deflated or inflated to 1975 dollars.

³Each regression includes the relevant independent variable (X) and its squared value. Each table entry records the marginal effect of the independent variable on the dependent variable, a derivative that varies with the value of X itself. The upper coefficient is that attached to the linear term (standard error in parentheses) and the lower coefficient is twice that attached to the squared term (twice the standard error in parentheses).

⁴Each table entry is that value of X (see note 3) for which weeks worked (Table 6) or weekly income (Table 7) is at a maximum or minimum value.

⁵Estimated maximum or minimum value of dependent variable takes place at infeasible values of X (see note 3).

(log of) pre-separation weekly wages from both sides of the regression equation.

²⁹Other dependent variables could be examined in the same fashion to discern other differences in TAA and UI experience, e.g., labor-force participation, search behavior (measured, say, by the number of job contacts), and adjustment to initial separation.

³⁰More precise descriptions of independent variables than provided in Tables 6 and 7 are available from the author.

Employment and income recovery were selected for emphasis in this section because they are thought to be the most important ways in which trade-displaced workers would suffer compared with others in the absence of the TAA program. The upper left entry in each table suggests that even with the TAA program, though, trade-displaced workers have less favorable experience than others. A TAA recipient who was identical to a UI recipient in age, experience, industry, socioeconomic status, etc. -- and even in the proportion of pre-separation income replaced by UI/TAA payments -- would nevertheless have worked 4.56 percent fewer weeks over the three-year period, and be earning almost 1 percent (0.831) less per week, than the otherwise comparable UI recipient.

The direction of these differences squares well with intuition, although it is not clear what variables that are excluded from the regression might account for it. But neither the direction nor quantitative size of these differences squares with the one- and two-dimensional comparisons of Table 5 -- an anomaly that reveals the advantage of a regression-based approach that holds all other things comparable (*ceteris paribus*). The left-hand regressions of Tables 6 and 7 suggest that the comparative employment recovery of TAA recipients was less favorable than suggested by Table 5, and that their comparative income recovery was much less unfavorable.

The left-hand regressions of Tables 6 and 7 were run over a sub-sample of both UI and TAA recipients.³¹ But such a regression forces the

³¹912 workers were excluded from the regression sub-sample because of missing or inconsistent data on some of the variables. Details are available from the author.

responses of each group to control variables to have the same magnitude. One might hypothesize to the contrary that trade-displaced workers have quantitatively different responses because trade dislocation is somehow different from dislocations for other reasons. For example, one could argue that TAA recipients might be more responsive to advance notification than others because of their firm's more precarious market position. Or TAA recipients might be less successful per dollar of income support because they typically have had less experience than others in job search.

Columns (2) and (3) of the tables permit such differential responsiveness by allowing regression coefficients to differ between a UI sample of workers and a TAA sample, as do columns (4) and (5) for further sub-samples of permanently displaced UI and TAA recipients.³² The results do not strongly

³²Of the 152 UI recipients in the sample underlying column (2), half were working for the same employer at the interview as when they were separated. Of the 437 TAA recipients in the sample underlying column (3), 76 percent were only temporarily displaced in this fashion.

support the hypothesis of differential responsiveness. The complementary hypothesis that the regression over the UI sample (column (2)) is the same as that over the TAA sample (column (3)) could be definitively rejected only for wage recovery.³³ The hypothesis of identical responsiveness of

³³ The calculated value of the relevant F statistic was 2.22, versus critical values of 1.46 for a 5% significance level and 1.70 for a 1% significance level. In the employment recovery regressions of Table 6, the calculated F statistic was 1.48.

permanently displaced UI recipients (column (4)) and TAA recipients (column (5)) was never rejected.³⁴ The appropriate conclusion seems to be

³⁴ The calculated values of the relevant F statistics for Tables 6 and 7 were 1.08 and 1.42, respectively, compared again to critical values of 1.46 (5% significance) and 1.70 (1% significance). Note that the job recovery regression run over the permanently displaced UI sample was not itself significant at conventional levels.

that although trade-displaced workers and others do differ in job and income recovery as summarized above, this difference is due primarily to unidentified variables. Their employment/income experience might otherwise be largely determined by the same conventional list of variables in a quantitatively similar way.

No attempt was made to test more subtle hypotheses, specifically that while responses were comparable to most independent variables, that the two groups of workers responded differently to one or more. Along these lines, there is at least some suggestion in columns (2)-(5) of Table 7 that wage recovery among UI recipients, but not among TAA recipients, was hurt by being married, female, Hispanic, unionized, or an employee of a company that closed.³⁵ Among TAA recipients, by contrast, wage recovery

³⁵ All these relationships appeal to intuition except that between marriage and wage recovery. The negative impact of unionism in the former job is sensible if union members are paid more than others, other things being comparable, since some union members will be forced to take subsequent jobs that are not unionized.

seemed importantly and positively determined by their willingness to move geographically, whereas that of UI recipients was not.

Most previous research has focussed on workers who are permanently displaced by trade, and the regressions corresponding to this focus are in the right-hand column of each table. Some of the more interesting findings are summarized below. But caution in generalizing is strongly encouraged given the small size of the worker sample (107).

For permanently displaced TAA recipients:

(1) The larger the proportion of pre-separation wages that UI and TAA benefits replaced, especially at the beginning of unemployment experience, the larger the proportion of weeks employed in the subsequent three or three and a half years, and the stronger the income recovery path. The latter finding is familiar; the former much less so. While the former is quantitatively tiny and questionably significant, it suggests a possibility worthy of further investigation. It is well established that generous benefits lengthen first spells of unemployment.³⁶ Yet they may also

³⁶Hammermesh (1977) provides a summary.

thereby reduce the incidence and duration of subsequent spells by increasing the "efficiency" of initial job search. The first job taken after separation may more likely be a "good match."

(2) Advance notification of an impending separation had a small and positive influence on job and income recovery, but the coefficients are not very significant by conventional standards.

(3) TAA recipients in apparel, footwear, and the auto industry had much more favorable employment experience than TAA recipients in other industries (from 7 to 17 weeks per year more work). It is hard to account for this finding. One might sensibly have conjectured exactly the opposite, especially in apparel and footwear, since industry variables in the regressions might have been supposed to measure the inter-industry intensity of import competition on workers. Perhaps in 1976 displaced garment and shoeworkers were sufficiently protected by orderly marketing agreements at the product level that their job recovery was faster than elsewhere despite the long decline of their industries.

(4) TAA recipients in the auto industry had much more favorable income recovery than TAA recipients in other industries (3.5 percent more growth in the weekly wage given what it used to be).

(5) Rather than being a liability, the combination of greater age and labor-force experience was favorable to employment recovery. Compared to an otherwise identical 40 year old TAA recipient with 20 years of labor force participation, a 50 year old with 30 years of participation worked $6\frac{1}{2}$ weeks per year more between separation and interview, and a 30 year old with 10 years of participation worked 7 weeks per year less.

(6) The combination of greater age and labor-force experience was favorable to income recovery only up to a critical level, represented by persons in their mid-30's with 13 years of labor-force participation. Compared to them, 50-year-old workers with 30 years participation recovered 2 percent less of their prior income stream.

(7) Being black or Hispanic impeded job recovery, and being black or disabled impeded income recovery.

(8) Job recovery was inversely related to labor-market incomes of other members of a household, and the quantitative response was surprisingly large (more than two weeks less work per year by the TAA recipient for every \$100 of other family income).

(9) The incomes of those workers who expressed willingness to pull up stakes and move to find suitable employment were 2.5 percent higher than the incomes of those who were not willing, whether or not a move actually took place.

It bears repeating that these nine conclusions are for permanently displaced TAA recipients only, representing less than one quarter of the TAA sample. Similar studies might profitably be carried out for temporarily displaced TAA recipients, although intuition regarding their experience is much less well developed. Finally, a great deal more work needs to be done along these lines before any assessment can be made of the robustness of the conclusions of this paper.

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