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Trade with Mexico and California Jobs

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SUMMARY

The effects of trade on labor markets have long been a point of conflict in the increasing globalization of the U.S. economy. The debate has been most heated when it involves trade between the United States and low-wage countries.

Trade expansion has little effect on the *number* of jobs. Rather, it *reallocates* jobs, causing some industries to expand and others to contract. Trade expansion brings economywide gains, but it also results in lost jobs in some industries, causing costs, sometimes severe, to some workers.

This issue of *California Economic Policy* investigates the issue of U.S. job displacement and trade, focusing on job displacements that can be traced to expanding trade and investment between the United States and Mexico from 1994 to 2002. To do so, it draws from a unique database of workers certified as displaced—that is, as having lost their jobs, or having their wages or hours reduced, because of trade and investment with Mexico.

Between 1994 and 2002, almost 425,000 U.S. workers were certified as displaced because of either imports from Mexico or production shifts—the decision of their company to produce goods in Mexico rather than in the United States. In California, during the entire period, almost 28,000 workers were certified, amounting to about 0.2 percent of average annual employment. For both California and the United States, the majority were certified because of production shifts rather than imports.

Workers certified as displaced by Mexican imports totaled between 13 percent and 16 percent of all U.S. workers certified as displaced by all imports. They totaled about 3 percent of all workers displaced in the United States for any cause but 11 percent of all job displacements in manufacturing. In addition, workers displaced as a result of economic integration with Mexico tended to come from low-wage industries.

Trade adjustment assistance programs have attempted to mitigate the costs to workers affected by increased economic integration, but such programs have room for improvement. New reforms might include expanding the definition of workers affected by globalization and changing benefits to include wage insurance, in which displaced workers who take a new job at a lower wage receive temporary additional payments to make up for part of the lost wages.

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If successful, such programs could be extended to workers displaced for other reasons. These workers may suffer costs similar to those suffered by trade-displaced workers but they do not receive as much postdisplacement assistance.

Introduction

The debate over the effects of trade on labor markets often considers trade as a driver of net job gain or loss, focusing on the number of jobs trade may create or destroy in the U.S. economy. The conflict has been most heated when it involves economic integration with low-wage countries. For example, in his message to Congress accompanying the proposed North American Free Trade Agreement (NAFTA), President Bill Clinton wrote that previous U.S. trade agreements have produced "more jobs here at home" (U.S. House of Representatives, 1993). In contrast, opponents of the agreement presented it as a job destroyer: "Reasonable people agree that NAFTA will cost jobs," wrote Jeff Faux, president of the Economic Policy Institute in Washington, D.C. (Faux, 1993).

However, in an economy with functioning labor markets, such as the United States, trade has little effect on the number of jobs because the overall job level is set by labor supply conditions, labor market rules, and monetary and fiscal policy rather than by tariff and trade policy. However, trade does reallocate jobs by creating more demand for some domestically produced goods and less for others, causing some industries—and regions where those industries are centered—to expand and others to contract. Increased foreign competition also introduces into the production process cheaper components used to make final goods and increases the variety of products available. The gains to the economy are positive on net, with higher overall income and faster economic growth the result, but some industries and workers do not share in those gains and in fact experience losses.

This edition of *California Economic Policy* will focus on U.S. and California job losses from increased economic integration with Mexico and will draw lessons from that experience. Economic integration encompasses all manner of closer international economic relations, including trade, investment, migration, and communication. (The term trade is often used as shorthand for economic integration, but the phenomenon encompasses

more than just the international exchange of goods and services.)

Whether or not job losses from economic integration are large as a proportion of total employment—and it will be shown that they are small, in the case of economic integration with Mexico—they have real human and social effects. In one evaluation of the effects of NAFTA on the U.S. economy, several economists argued that, "an honest argument for trade liberalization should recognize that an economy benefits from both imports and exports. However, to realize these gains, resources must be reallocated, and this entails adjustment costs" (Burfisher, Robinson, and Thierfelder, 2001, p. 132). The key adjustment costs fall both on companies that have trouble competing and on people who lose their jobs or see wages or hours fall. Although new jobs are created, people who lose their jobs as a result of trade may not be the people occupying these newly created jobs.

The focus on economic integration with Mexico is of value not only because it is California's leading export destination but also because Mexico was the first low-wage partner with which the United States signed a regional, reciprocal trade-liberalization agreement. The United States has since negotiated, and is negotiating, such agreements with other low-wage countries, and it is likely that the effects of economic integration with those countries will be similar in kind, if not in magnitude, with the effects of economic integration with Mexico. Industries in low-wage countries are most easily able to compete directly with U.S. domestic industries employing low-skill workers, and the added competition can lower both wages of less-skilled U.S. workers and the U.S. level of employment in these industries. With the Dominican Republic-Central American Free Trade Agreement (DR-CAFTA) signed in August 2005, and with other trade agreements under negotiation, the issue of the effects of trade on labor markets will remain active.

During the debate over NAFTA and jobs, economist Paul Krugman made several predictions about NAFTA's future effects. The first related directly to the jobs question: "NAFTA will have no effect on the number of jobs in the United States." He also suggested that "NAFTA will also probably lead to a slight fall in the real wages of unskilled U.S. workers" (Krugman, 1993). Although his analysis reflected much mainstream economic thought, it stood in contrast to work by other respected economists and trade analysts. For example, a widely cited analysis published by the Institute for International Economics predicted that in its first few years, NAFTA would create an additional 170,000 U.S. jobs (Hufbauer and Schott, 1993). Others estimated net employment gains as well (National Commission for Employment Policy, 1992).[1]

However, identifying net job effects for the economy is fraught with extreme difficulty.[2] In contrast, identifying industries and workers who may have gained from increased economic integration, and industries and workers who may have lost from increased economic integration, is more achievable. This paper will discuss employment losses. A focus on those who have lost can increase understanding of the price the United States pays for the benefits of increased economic integration and perhaps point the way toward achieving those gains while lowering the costs.

The next section gives basic details about a program designed to help workers who lost their jobs as a result of imports from or production shifts to Mexico. Data from this program are used in the following section to investigate the number of California and U.S. workers certified as displaced because of economic integration with Mexico. These numbers are then put in the context of other trade-related displacements and economywide displacements. In some sectors, integration with Mexico appears to have had a small but visible effect on the job market but does not appear to have caused the large-scale level of job destruction some had feared. A final

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section discusses policy approaches to trade-related and other types of displacements.

The NAFTA-TAA Program

Even while arguing for the support of NAFTA, the Clinton administration recognized the costs of increased globalization: "While the NAFTA will result in net economic benefits and increased job opportunities, some workers may have to find new employment" (U.S. House of Representatives, 1993, p. 223). Because of this concern, the administration created a new program to help those workers, called North American Free Trade Agreement-Transitional Adjustment Assistance (NAFTA-TAA). This paper uses data from the NAFTA-TAA program to identify industries and draw inferences about workers most affected by economic integration with Mexico. This section provides an overview of the rules and operations of that program.

NAFTA-TAA was designed to help workers who lost their jobs or whose wages and hours were reduced by at least 20 percent because of either increased imports from Mexico and Canada or shifts of production from the United States to Mexico and Canada.

The NAFTA-TAA program certified for assistance workers who either lost their jobs or whose earnings or hours were reduced because of increased trade and investment with Mexico or Canada—the member countries of NAFTA with the United States. Although U.S. workers affected by trade or investment with both Mexico and Canada were certified, this edition of CEP will focus solely on U.S. workers affected by trade and investment with Mexico.

When using data from this program, there are some caveats to keep in mind. First, the number of workers certified within the program may not represent the total job displacement effect of trade and investment with Mexico—the number of certified workers may overestimate or underestimate job displacement. On the one hand, overestimates may occur because other factors, such as shifts in product demand or technological change, would have been greater factors than trade or investment, and yet workers could still have been certified as displaced because of trade or investment (Hecker, 1997). Furthermore, workers need not have actually been displaced—certifications could represent potentially affected workers, meaning workers who were *threatened* with job loss (Hecker, 1997). On the other hand, underestimates may occur because even though many states engaged in vigorous outreach efforts, workers may not have been aware of the program and not applied to it, or workers may have been incorrectly denied certification.

Second, NAFTA-TAA certifications do not necessarily represent displacements that result from NAFTA, the trade treaty, because the program applied to workers displaced by any type of imports from Mexico and production shifts to Mexico, whether or not the imports or production shifts involved specific NAFTA provisions or benefits.[3] That said, the NAFTA-TAA certifications provide valuable data because they represent the only source of information on worker displacements that can be linked directly to trade or investment with Mexico, rather than inferred from indirect methods.[4]

NAFTA-TAA has its roots in an older program, Trade Adjustment Assistance (TAA). Offering special assistance to workers and companies harmed by trade, TAA was established with the Trade Expansion Act of 1962.[5] The TAA program was aimed in part at forestalling calls for protectionism, and it helped retain the support of organized labor for trade liberalization. However, because of stringent eligibility criteria, no trade-displaced workers received assistance through federal fiscal year 1969, which started October 1, 1968. The program was reformed and liberalized in 1974, but program benefits were cut in 1981. It has gone through several more changes, with the most recent version established in the Trade Act of 2002.

The NAFTA-TAA program took effect on December 8, 1993, when President Bill Clinton signed the act implementing NAFTA (Public Law 103-182), and ran through November 4, 2002, the

date on which the Trade Act of 2002 (Public Law 107-210, signed by George W. Bush on August 6, 2002) merged the program with the traditional TAA program. NAFTA-TAA was designed to help workers who lost their jobs or whose wages and hours were reduced by at least 20 percent because of either increased imports from Mexico and Canada or shifts of production from the United States to Mexico and Canada. Shifts of production could take place, for example, if a U.S. firm decided to have something manufactured in Mexico under contract that it previously manufactured in the United States, or if it decided to build or buy a plant in Mexico to make the item.

Despite its relation to NAFTA, the NAFTA-TAA program was not aimed specifically at treaty-related dislocations. Rather, it applied to workers affected by any type of imports from Mexico or Canada or any type of production shift to Mexico or Canada, whether these were related to the provisions of NAFTA or to other causes. NAFTA-TAA ran at the same time as the traditional TAA program. Workers could apply to both programs and then choose to participate in whichever program they were approved for or whichever gave them benefits they preferred. About 75 percent of NAFTA-TAA certified workers were also covered by TAA petitions (U.S. General Accounting Office, 2000).

The NAFTA-TAA program was called a *transitional* adjustment assistance program rather than a *trade* adjustment assistance program because, according to the Statement of Administrative Action accompanying NAFTA approval, the program was meant to be temporary while policymakers developed a new, comprehensive program (U.S. House of Representatives, 1993). The new, comprehensive program envisioned by the Statement has not yet arrived. Despite its different name and expanded focus, the NAFTA-TAA program was run similarly to the TAA program. In fact, the U.S. Department of Labor, which administered both programs, never promulgated separate regulations for NAFTA-TAA, instead using the TAA regulations where appropriate (U.S. Court of International Trade, 2003, p. 10). Nonetheless, there were differences between the two programs, with NAFTA-TAA introducing some important innovations to the adjustment assistance granted by the United States.[6]

Under NAFTA-TAA rules, firms, unions, or groups of workers could apply for assistance. Unlike the traditional TAA, NAFTA-TAA also allowed community-based organizations to apply on behalf of workers. Another innovation NAFTA-TAA introduced was the extension of benefits to workers displaced by production shifts—a step beyond the traditional TAA, which covered only import competition. Yet another innovation allowed applications from secondary workers—that is, workers in firms that supply or assemble products produced by U.S. firms that are directly affected by imports or shifts in production.[7] NAFTA-TAA also introduced a dual review process, in which both state and federal officials would investigate claims. It also shortened the total review time from 60 days to 40 days and was designed to get some level of assistance to workers after only 10 days. However, as with the traditional TAA, NAFTA-TAA continued to deny assistance to services workers. Finally, NAFTA-TAA required that workers be enrolled in training to get benefits. In TAA, workers could receive a training waiver. The reason for the difference is that federal officials had discovered abuses of the training waivers and wanted to avoid these abuses for the NAFTA-TAA program (U.S. House of Representatives, 1993).

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To inform workers of the program, officials threw a wide net. By law, every state had to notify any worker applying for unemployment insurance that the worker could also be eligible for benefits under NAFTA-TAA and TAA (U.S. Code, 1994a). California threw an even wider net with a federally funded demonstration project, starting in 1995, to co-enroll trade-dislocated workers in

NAFTA-TAA and in other workforce and training programs.[8] As part of a federal-mandated integration of the delivery of all workforce and training programs, California directed officials involved with nontrade-related programs to make sure that workers seeking assistance knew about and applied for NAFTA-TAA (California Employment Development Department, 2000b). In fact, California was cited as a model of program integration by the federal government (U.S. Department of Labor, 2001a, Attachment B).[9]

The application process for NAFTA-TAA certification began at the state level. Once an application was made, states had 10 days to investigate the case and determine whether sales or production of the affected firm had fallen, whether imports similar to a firm's products had increased from Canada or Mexico, or whether the firm had shifted production to those two countries. If the state determined that there were increased imports or a production shift, regardless of whether these contributed to worker dislocation, it was required to "ensure that rapid response and basic readjustment services authorized under other Federal law are made available to the workers" (U.S. Code, 1994b). These services included information on available assistance programs, skill assessment, career counseling, and job placement services (Hecker, 1997).

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Regardless of the state's determination, the application for NAFTA-TAA went to Washington, where officials of the U.S. Department of Labor would investigate the claim and were required to reach a conclusion within 30 days. If federal officials confirmed state findings and then further found that the imports or production shift had "contributed importantly" to worker dislocation, then federal benefits under the NAFTA-TAA program would apply, including extended unemployment insurance, training, and job search and relocation assistance (U.S. Code, 1994b). The decision about whether the trade or production shift had "contributed importantly" was up to the federal government rather than the states.

Although not defined in legislation or regulation, the "contributed importantly" criterion has been defined in the courts. They have ruled that the contribution of imports or production shifts need not have been greater than other causes of worker displacement but must be larger than a small or negligible amount. However, even with an increase in imports, if the displacement would have taken place anyway—for example because production was moved to another U.S. plant—then the increase in imports would not be considered to have "contributed importantly" (Hecker, 1997).

Courts have interpreted the law as requiring that the U.S. Department of Labor lean in favor of workers' claims. As Judge Delissa A. Ridgway wrote in several decisions:

> *The trade adjustment assistance laws are remedial legislation and, as such, are to be construed broadly to effectuate their intended purpose. . . . Moreover, both "because of the [lack of participation of workers in] the certification process, and the remedial purpose of [the laws], the [Labor Department] is obliged to conduct [its] investigation with the utmost regard for the interests of the petitioning workers." (U.S. Court of International Trade, 2003.)*

Indeed, government officials had wide latitude in their search for information, including subpoena power.[10] They surveyed the firm's customers to determine the level of import competition and compared current data with data from the two most recent full years (Hecker, 1997; U.S. General Accounting Office, 2000).[11]

Applications could be certified for a number of reasons, such as a shift in production to Mexico, increased customer imports from Mexico, or

increased company imports from Mexico. In some instances, the source of the increased imports could not be determined, in which case, for example, the certification would be linked to increased imports from Canada or Mexico.[12]

Once certified, displaced workers were eligible for four types of benefits. These included a trade readjustment allowance equal to weekly unemployment benefits and payable for up to 52 weeks after the end of unemployment insurance payments;[13] training for up to 104 weeks; a job search allowance of up to $800 total; and a relocation allowance of up to 90 percent of allowable charges (U.S. General Accounting Office, 2000).

The benefits offered to displaced workers through NAFTA-TAA were designed to mitigate the costs of economic integration. The analysis will return below to the issue of benefits offered to displaced workers. First, the paper will examine the number and characteristics of U.S. and California workers certified as displaced under NAFTA-TAA and then will discuss the patterns of those certified displacements.

California and U.S. Workers and NAFTA-TAA

During the life of the program, NAFTA-TAA certified 27,759 Californians as workers displaced as a result of imports from Mexico or production shifts to Mexico (Table 1).[14] This constituted 6.5 percent of all workers in the United States certified under the program as displaced because of imports from Mexico or production shifts to Mexico. California's share of certified workers was much smaller than California's share of total U.S. employment, which averaged 10.8 percent between 1994 and 2002.[15] Of those certified California workers, 26,227 displacements could be traced directly to imports from or production shifts to Mexico, and an additional 1,532 were certified in cases where the source of imports or the destination of the production shift was unknown but might have been Mexico. Production shifts—rather than imports—were the source of most Mexico-related job displacements in California. Of the nearly 28,000 workers who were certified, 22,046, or 79 percent, were certified as a result of production shifts. This figure was lower in the United States as a whole, at 62 percent.

An additional 11,284 California workers applied to NAFTA-TAA but were either denied certification or, in the cases of 25 workers, saw their cases terminated because of a lack of data. In 61 percent of the denials, there was either no shift in production or imports did not contribute importantly to job displacement; in 30 percent, there was a shift in production, but it was to another location within the United States. California applications had a slightly higher rate of denial than applications from the United States as a whole—26.7 percent versus 23.6 percent. However, this higher denial rate can be attributed completely to a much higher rate of applicants mistakenly attributing production shifts to Canada or Mexico rather than to elsewhere in the United States.[16]

California had the third-highest level of Mexico-related certified displacements among all states, but California is also the largest state. Between 1994 and 2002, California's total Mexico-

Table 1. NAFTA-TAA Certifications, Number of Certified Workers, 1994–2002

Reason for Certification	California Workers	U.S. Workers
Shift in production to Mexico	22,046	263,388
Increased customer imports from Mexico	1,438	34,393
Increased customer imports, Canada or Mexico	938	39,578
Increased company imports from Mexico	2,743	58,521
Increased company imports, Canada or Mexico	0	4,082
Increased aggregate imports, Canada or Mexico	594	24,492
Total	27,759	424,454

Source: North American Integration and Development Center (n.d.).

related certifications amounted to only 0.2 percent of average annual employment—in other words, about 0.02 percent of workers were affected each year—placing California 28th out of 45 states that had Mexico-related certifications. In California itself, Los Angeles County had the highest level of Mexico-related certifications, almost 9,200 (Table 2). However, as California is to the United States, Los Angeles is to California; it is by far the largest county. Total certifications measured only 0.23 percent of average annual Los Angeles County employment. No county except Amador experienced certifications higher than 1 percent of average annual employment, and only three other counties—Mendocino, El Dorado, and Santa Cruz—experienced certifications higher than 0.5

Table 2. Mexico-Related Certified Job Displacements in California by County, 1994–2002

County	Jobs	Share (%)	Certified Displacements Relative to Average Annual Employment (%)	
			Annual Average Displacements	Total Displacements
Alameda	796	2.9	0.01	0.12
Alpine	0	0.0	0.00	0.00
Amador	400	1.4	0.42	3.79
Butte	129	0.5	0.02	0.19
Calaveras	0	0.0	0.00	0.00
Colusa	0	0.0	0.00	0.00
Contra Costa	608	2.2	0.02	0.19
Del Norte	0	0.0	0.00	0.00
El Dorado	290	1.0	0.08	0.74
Fresno	0	0.0	0.00	0.00
Glenn	0	0.0	0.00	0.00
Humboldt	27	0.1	0.01	0.05
Imperial	0	0.0	0.00	0.00
Inyo	0	0.0	0.00	0.00
Kern	320	1.2	0.02	0.14
Kings	0	0.0	0.00	0.00
Lake	0	0.0	0.00	0.00
Lassen	0	0.0	0.00	0.00
Los Angeles	9,187	33.1	0.03	0.23
Madera	0	0.0	0.00	0.00
Marin	0	0.0	0.00	0.00
Mariposa	0	0.0	0.00	0.00
Mendocino	244	0.9	0.09	0.78
Merced	78	0.3	0.01	0.13
Modoc	0	0.0	0.00	0.00
Mono	0	0.0	0.00	0.00

Table 2. Mexico-Related Certified Job Displacements by County, 1994–2002—continued

County	Jobs	Share (%)	Certified Displacements Relative to Average Annual Employment (%)	
			Annual Average Displacements	Total Displacements
Monterey	475	1.7	0.03	0.31
Napa	0	0.0	0.00	0.00
Nevada	0	0.0	0.00	0.00
Orange	6,435	23.2	0.06	0.50
Placer	0	0.0	0.00	0.00
Plumas	0	0.0	0.00	0.00
Riverside	1,142	4.1	0.03	0.27
Sacramento	45	0.2	0.00	0.01
San Benito	0	0.0	0.00	0.00
San Bernardino	179	0.6	0.00	0.04
San Diego	1,516	5.5	0.02	0.14
San Francisco	999	3.6	0.02	0.18
San Joaquin	194	0.7	0.01	0.10
San Luis Obispo	0	0.0	0.00	0.00
San Mateo	354	1.3	0.01	0.10
Santa Barbara	56	0.2	0.00	0.03
Santa Clara	1,771	6.4	0.02	0.19
Santa Cruz	692	2.5	0.08	0.68
Shasta	7	0.0	0.00	0.01
Sierra	0	0.0	0.00	0.00
Siskiyou	0	0.0	0.00	0.00
Solano	0	0.0	0.00	0.00
Sonoma	700	2.5	0.04	0.40
Stanislaus	54	0.2	0.00	0.04
Sutter	0	0.0	0.00	0.00
Tehama	0	0.0	0.00	0.00
Trinity	0	0.0	0.00	0.00
Tulare	0	0.0	0.00	0.00
Tuolomne	0	0.0	0.00	0.00
Ventura	1,061	3.8	0.04	0.39
Yolo	0	0.0	0.00	0.00
Yuba	0	0.0	0.00	0.00
Total	27,759	100.0	0.02	0.20

Source: North American Integration and Development Center (n.d.).
Note: Job totals are number of workers certified as displaced as a result of imports from or production shifts to Mexico, or imports from or production shifts to one of the NAFTA partners with the specific country not identified.

percent of their average annual employment from 1994 to 2002.

For the nation and California, the vast majority of certifications occurred in manufacturing (Table 3). In California, 93 percent occurred in manufacturing, slightly less than the nation's 97.8 percent. Total manufacturing certifications amounted to 1.4 percent of California's average annual manufacturing workforce, or slightly less than 0.2 percent each year. The only nonmanufacturing industry to experience large numbers of certifications in California was agriculture, with 1,288, or 4.6 percent of all certifications. In the nation as a whole, agriculture experienced only 1 percent of all certifications.

As in the nation as a whole, in California the apparel industry experienced the most certifica-

Table 3. Mexico-Related Certified Job Displacements in California by Industry, 1994–2002

Industry	Jobs	Share (%)	Certified Displacements Relative to Average Annual Employment (%)	
			Annual Average Displacements	Total Displacements
Agricultural crops	1,288	5.0	0.07	0.65
Food products	0	0.0	0.00	0.00
Tobacco products	0	0.0	–	–
Textiles	300	1.2	0.14	1.26
Apparel	6,498	25.2	0.50	4.50
Lumber and wood products	1,404	5.4	0.28	2.48
Furniture	506	2.0	0.10	0.93
Paper	54	0.2	0.02	0.14
Printing, publishing	155	0.6	0.01	0.10
Chemicals	254	1.0	0.04	0.34
Petroleum refining	0	0.0	0.00	0.00
Rubber and plastics	917	3.6	0.14	1.26
Leather products	226	0.9	0.38	3.43
Stone, clay, glass, concrete	759	2.9	0.18	1.61
Primary metals	140	0.5	0.05	0.41
Fabricated metal products	2,913	11.3	0.26	2.34
Machinery and computer equipment	2,220	8.6	0.11	1.03
Electronic and electrical equipment	4,463	17.3	0.20	1.77
Transportation equipment	947	3.7	0.07	0.59
Instruments	2,298	8.9	0.15	1.31
Miscellaneous manufacturing	1,768	6.8	0.43	3.91
Total manufacturing	25,822		0.15	1.38
Total agriculture and manufacturing	27,110		0.15	1.31

Sources: North American Integration and Development Center (n.d.); U.S. Bureau of Labor Statistics (2003); California Employment Development Department (2005).
Note: Job totals are the number of workers certified as displaced as a result of imports from or production shifts to Mexico, or imports from or production shifts to one of the NAFTA partners with the specific country not identified.

tions, with almost 6,500 workers certified.[17] Next leading industries were electrical and electronic equipment, agriculture, fabricated metal products, and machinery and computer equipment. As a proportion of each industry's workforce, apparel once again led the pack, with total certifications amounting to 4.5 percent of average annual apparel industry employment, or 0.5 percent each year.[18] Other leading industries for certifications, as a proportion of their industry employment, included miscellaneous manufacturing, leather products, lumber and wood products, and fabricated metal products.

Certified Displacements in Context

A number of patterns have emerged so far. First, the vast majority of certified job displacements involved production shifts to Mexico rather than imports from Mexico. Many of these production shifts, perhaps all, took place so that companies could make goods more cheaply and import them into the United States. The immediate cause of job displacement was not the imports, although it is possible that they later resulted in further displacements. Second, most certifications occurred in manufacturing. This is a function of the rules of the NAFTA-TAA program—to be eligible, according to the law, workers had to be involved in the production of an "article." In California, certified displacements amounted to about 1.4 percent of the average manufacturing workforce, whereas nationwide, they amounted to 1.9 percent. These manufacturing certifications were concentrated in a few industries, with apparel in the lead in California as it was nationwide. Third, the number of workers certified as displaced was very small as a proportion of the entire workforce. Even if certified displacements underestimated actual job displacements by a factor of 10, the number would still be small.

These three patterns provide basic details of the results of the program, but several other comparisons can provide an enhanced understanding of the effects on the labor market of economic integration with Mexico. These include a comparison between NAFTA-TAA certifications and certifications under the traditional TAA; a comparison between NAFTA-TAA certifications and total job displacements in the economy; and an examination of the earnings of certified workers. As will be seen, NAFTA-TAA certified displacements resulting from economic integration with Mexico constituted a small but visible share of overall manufacturing displacements but did not constitute the wholesale job destruction that some had feared.

In California, certified displacements amounted to about 1.4 percent of the average manufacturing workforce, whereas nationwide, they amounted to 1.9 percent.

NAFTA-TAA ran at the same time as traditional TAA. U.S. workers displaced by imports from any country in the world could apply for assistance under TAA, but workers displaced by imports from Mexico could apply to and be certified under both programs. Data from both programs allow an estimate of the number of Mexico-related displacements relative to the number of all displacements related to imports from anywhere in the world. Assuming that no NAFTA-TAA certified workers were certified under TAA, and no TAA-certified workers were displaced by imports from Mexico, then an annual average 13.5 percent of all import-related displacements were related to Mexican imports during the eight full fiscal years that the two programs overlapped (Table 4). This is a lower-bound estimate, however. A higher estimate would be based on the assumption that all NAFTA-TAA certified workers were also certified under TAA.[19] The calculation based on this assumption results in Mexican-import-related certified displacements averaging 15.8 percent of all import-related displacements annually during the period.[20]

A comparison between NAFTA-TAA certified displacements and economywide displacements stemming from all causes (not just trade) reveals similarly small—but not trivially small—figures.[21]

Table 4. Import-Related Certified Job Displacements Under TAA and NAFTA-TAA

Fiscal Year	TAA	NAFTA-TAA	Share Certified as Displaced by Mexican Imports (%)	
			If No NAFTA-TAA Certified Workers Were Certified Under TAA	If All NAFTA-TAA Certified Workers Were Certified Under TAA
1995	86,405	11,510	11.8	13.3
1996	118,663	17,445	12.8	14.7
1997	91,493	23,147	20.2	25.3
1998	99,252	20,686	17.2	20.8
1999	155,026	16,716	9.7	10.8
2000	98,007	11,161	10.2	11.4
2001	139,587	24,754	15.1	17.7
2002	235,072	29,109	11.0	12.4
Annual average	127,938	19,316	13.5	15.8

Sources: U.S. Department of Labor (2005); North American Integration and Development Center (n.d.).
Note: NAFTA-TAA numbers include certifications in which the source country was either Mexico or either NAFTA partner when the country was not identified.

Here the comparison is a bit more difficult because the definition of economywide displacements is different from the definition of NAFTA-TAA certified displacements. The economy-wide figures include workers who lost their jobs because of plant closing, insufficient work, or the abolition of their positions, without the expectation of recall to their old jobs within six months. Furthermore, workers had to have been at their old jobs for three years.This definition is more expansive than that of displacement under NAFTA-TAA in terms of causes of displacement, but it is stricter in terms of job tenure requirements preceding displacement. Therefore, any comparison is imperfect but may still be useful.

NAFTA-TAA certified displacements averaged about 3.2 percent of all economywide annual displacements between 1994 and 2001.

NAFTA-TAA certified displacements averaged about 3.2 percent of all economywide annual displacements between 1994 and 2001, the years where data are most comparable (Table 5). For California, the figure was 1.6 percent. Again, these include NAFTA-TAA certifications where the source country was unknown. Using certifications traced only to Mexico results in 2.7 percent for the United States as a whole and 1.6 percent for California. However, most economywide displacements took place in nonmanufacturing industries, whereas nearly all NAFTA-TAA certifications took place in manufacturing industries, so a more useful comparison would be between economywide manufacturing displacements and NAFTA-TAA manufacturing certified displacements.

Once again, NAFTA-TAA certified displacements are low compared to manufacturing displacements from all causes. However, they are not trivial. For the nation as a whole, they averaged 11.1 percent of all manufacturing displacements each year, hitting a peak of 17.5 percent in 1997 (counting only

Table 5. All Displaced Workers and NAFTA-TAA Certified Displaced Workers

Year	United States				California			
	All Displaced Workers		NAFTA-TAA Certified Displaced Workers		All Displaced Workers		NAFTA-TAA Certified Displaced Workers	
	Total	Manufacturing	Total	Manufacturing	Total	Manufacturing	Total	Manufacturing
1994	1,208,432	340,520	14,400	13,004	152,733	35,825	473	430
1995	1,713,472	453,766	22,711	22,269	216,280	72,235	908	738
1996	1,213,233	383,141	40,734	39,302	150,573	43,633	3,548	2,948
1997	1,316,574	276,179	49,338	48,358	167,317	50,805	2,023	2,023
1998	1,000,231	289,035	43,895	42,378	123,647	46,893	3,359	2,884
1999	1,325,743	411,679	55,883	55,623	185,050	61,623	4,364	4,364
2000	1,003,725	294,801	40,860	40,571	145,371	23,753	2,621	2,572
2001	1,935,814	686,811	69,462	68,780	236,308	96,586	4,387	4,387
Total	10,717,224	3,135,932	337,283	330,285	1,377,279	431,352	21,683	20,346

Sources: U.S. Bureau of the Census, Displaced Worker Surveys; North American Integration and Development Center (n.d.).
Notes: NAFTA-TAA certified displaced workers include those workers for whom displacement can be traced to imports from or production shifts to Mexico or either NAFTA partner when the country was not identified. For the United States, for all industries, 58,600 certified displacements were recorded in cases when the country was not identified, and for California, for all industries, 707 certified displacements were recorded in cases when the country was not identified. As well, workers certified as displaced under NAFTA-TAA might not actually have lost their jobs.

certifications for which Mexico was the definite source gives a 9.1 percent average and a 13.2 percent peak, respectively). For California, NAFTA-TAA certified manufacturing displacements averaged 5.2 percent of all manufacturing displacements, hitting a peak of 10.8 percent in 2000, when the California labor market was unusually strong (these numbers are the same when only certifications for which Mexico was the definite source are included). Integration with Mexico appears to have had a visible effect on the manufacturing job market but has not caused the wholesale job destruction some had feared.

Another way to gain perspective on NAFTA-TAA certified displaced workers is to consider their earnings, specifically the wages of production workers. Production workers are those below the working supervisor level who are involved in the manufacture or warehousing of a product or who carry out such jobs as maintenance and repair.

Unfortunately, the NAFTA-TAA database has no information on worker earnings, so the next-best comparison is between the average wages of the industries in which displacements were certified and average manufacturing wages overall. In general, NAFTA-TAA certified workers came from low-wage industries (Table 6). The average hourly wage for manufacturing production workers between 1994 and 2001 ranged from $11.74 to $14.69 per hour. In each year, however, when taking account of the industries in which NAFTA-TAA certifications took place, the average hourly wage was lower, sometimes by more than $2 per hour.

The figures in Table 6 show that NAFTA-TAA certified manufacturing workers generally

For California, NAFTA-TAA certified manufacturing displacements averaged 5.2 percent of all manufacturing displacements, hitting a peak of 10.8 percent in 2000.

Of manufacturing workers displaced as a result of a plant closing, an employer going out of business, or a layoff from which the worker was not recalled, about 35 percent did not take new jobs because they could not find appropriate employment or for other reasons.

worked in low-wage industries before displacement.[22] This was in large part driven by apparel industry certifications. In the United States, 30 percent of all certified manufacturing workers came from this industry, which paid the lowest production-worker wages among all manufacturing industries. Likewise, in California, 25 percent of all NAFTA-TAA certified manufacturing workers came from this industry. And as in the nation, this industry paid the lowest production-worker wages. For example, in 1994, California production workers in apparel earned an average of $12,600 annually; the overall manufacturing average was $24,200.

Table 6. Wages of All Manufacturing Workers and NAFTA-TAA Certified Manufacturing Workers ($/hour)

Year	All Manufacturing Workers	NAFTA-TAA Certified Manufacturing Workers	Difference
1994	11.74	10.67	-1.07
1995	12.11	11.91	-0.20
1996	12.51	11.63	-0.88
1997	12.92	10.74	-2.18
1998	13.28	11.64	-1.64
1999	13.69	11.62	-2.07
2000	14.21	12.67	-1.54
2001	14.69	13.23	-1.46

Sources: U.S. Bureau of Labor Statistics, Current Employment Survey; North American Integration and Development Center (n.d.).
Notes: The average manufacturing wage is computed as a weighted average of the hourly wage in each of 20 industries, weighted by each industry's share of manufacturing production workers. The average NAFTA-TAA manufacturing wage is computed as a weighted average of the hourly wage in each of 20 industries, weighted by each industry's share of NAFTA-TAA certified displacements resulting from imports from or production shifts to Mexico or either NAFTA partner with the actual country unknown.

It is not clear how well NAFTA-TAA certified workers fared after their displacements. Although economic integration brings overall benefits, it does not do so equally. Data on postdisplacement experience can help illustrate the costs borne by some as a result of economic integration. Although data on specific NAFTA-TAA certified workers are not available, evidence from more general displacement data for the period 1979 to 1999 allows for some inferences.

Of manufacturing workers displaced as a result of a plant closing, an employer going out of business, or a layoff from which the worker was not recalled, about 35 percent did not take new jobs because they could not find appropriate employment or for other reasons. Of those who did find employment, about 65 percent suffered an earnings loss and on average their postdisplacement pay was about 12 percent lower than their predisplacement pay. For workers from manufacturing industries that faced high import competition, about 37 percent did not take new jobs. Of those who did find employment, about 64 percent suffered an earnings loss, and on average their postdisplacement pay was 13 percent lower (Kletzer, 2001). These types of costs have spurred continuing support for different versions of TAA and suggest that further policy innovations may be warranted.

Implications for Policy

Even if NAFTA-TAA certifications underestimate job displacements connected with economic integration with Mexico, available data indicate that the job security of far more workers was affected by other factors. However, workers affected by imports from and production shifts to Mexico may well have suffered significant costs. They clustered in specific industries, which in some cases were themselves geographically clustered, affecting specific states and communities. They also tended to come from low-wage industries, and if the track record of displaced workers generally is an indication, they ended up with even lower wages after displacement.

These are exactly the kinds of blows that TAA and NAFTA-TAA were meant to mitigate. Unfortunately, evaluations of these trade adjustment assistance programs have often indicated that they have not worked well and may not go far in repairing the costs of increased international economic integration. Historically, questions have been raised about whether the level of funding granted by the U.S. government has been enough to accommodate all eligible workers. Questions have also been raised about the value of training received through the adjustment assistance programs.

Outreach efforts and sectoral eligibility have constituted another source of problems. For example, NAFTA-TAA allowed secondary workers to gain benefits, but very few secondary workers were granted certifications. The failure to certify many secondary workers might have occurred because many people did not know about the program.[23] As well, services workers were ineligible under both NAFTA-TAA and traditional TAA, even though the services sector is becoming more exposed to international competition.

Finally, unlike traditional TAA, NAFTA-TAA allowed workers affected by production shifts to receive benefits. The fact that the majority of NAFTA-TAA certifications involved production shifts indicates that traditional TAA might have been missing many workers adversely affected by globalization and that the innovation in NAFTA-TAA represented a significant improvement.

Continuing international economic integration and continuing debates about the value of the adjustment assistance programs have led to reforms and improvements over the years. U.S. trade adjustment assistance underwent its latest major reform in the Trade Act of 2002, and the NAFTA-TAA and traditional TAA were merged.

The new TAA program allows benefits for workers affected by production shifts to a greater number of countries (specifically those with which the United States has free trade agreements or those to which the United States grants unilateral trade preferences) and for secondary workers but continues to disallow benefits for workers in the services sector. The new TAA also accelerates the time between application and decision. These changes do not necessarily mean that the new TAA is working effectively at mitigating the costs borne by some workers affected by globalization; rather, it has responded to a certain extent both to changes in the international economy and to evaluations of previous iterations of TAA.

Several innovations might improve the program further so that it can more fully serve its stated purpose. It would be most appropriate to implement these innovations at the federal level, but if this proves politically infeasible, then the California legislature could consider them as well. The legislature has already shown a robust interest in spending millions of dollars to protect certain jobs, in particular those of highly educated and articulate workers, such as technology workers, and politically connected workers, such as those involved in the film industry. In 2004, the legislature considered and passed bills that were intended to help protect workers from losing their jobs as a result of offshore outsourcing.[24] In 2005, the legislature considered a tax credit bill that would give as much as $50 million to the California film industry, designed to protect the jobs of film editors, camera people, truck drivers, location managers, and others involved in film production (Halbfinger, 2005).[25] Although these measures would have protected workers in very specific areas and industries, both measures would have left unprotected many thousands of other workers at risk of displacement from trade, production shifts, technological change, poor management, changing consumption patterns, or even environmental regulation.

Continuing international economic integration and continuing debates about the value of the adjustment assistance programs have led to reforms and improvements over the years.

Assistance to displaced workers could be broadened in two ways. First, services workers should be included. With the services sector more exposed to trade, there is no reason services workers should not get the same benefits as manufacturing work-

TAA benefits workers harmed by trade but ignores workers harmed by other factors that lead to job loss, even though these workers may suffer just as much, or more, than trade-affected workers.

ers displaced by trade, especially because increased trade in services holds the potential for large aggregate benefits (Haveman and Shatz, 2004). As with manufacturing trade, these benefits likely will be shared unequally, as will the costs.

Second, policymakers should consider including workers affected by production shifts regardless of the country to which production was shifted. As with trade, there is evidence that engaging in production abroad brings benefits (Desai, Foley, and Hines, 2005).[26] However, as with trade, shifting production abroad can put costs on specific workers.

The program might be reformed a third way. Specifically, it could provide wage subsidies, also known as wage insurance, instead of extended unemployment payments and training, changing the nature of how government mitigates the costs of economic integration. A modest program was included as part of the Trade Act of 2002 but remains underused and poorly run.[27] The idea is simple. Under one proposal, for example, a wage-insurance program would offer workers 50 percent of the difference between the wages on their old job and the wages on their new job, if those wages are lower, for two years. It would also offer subsidized health insurance for two years (Kletzer and Litan, 2001). These new benefits would have two positive effects. First, they would encourage workers to shorten the job search and return to work more quickly, since they would now suffer less of an earnings decline. Second, and related, returning more quickly to work would put workers in a position to receive on-the-job training, which may be more beneficial to experienced workers than a general training program not necessarily connected to a specific job. There is recent evidence that a wage-insurance program designed along these lines could be the most efficient way to compensate workers who lose their jobs because of trade (Davidson and Matusz, forthcoming).

Instituting a serious wage-insurance program could serve as a test for one other idea that has circulated for some time—specifically, a general benefits program for all displaced workers. Recall that NAFTA-TAA was termed "transitional" adjustment assistance, rather than trade adjustment assistance, because the program was meant to be short term and to be replaced by a new program aimed at all displaced workers: "This comprehensive program, which is expected to be introduced early in 1994, would establish a single standard of eligibility to encompass permanently laid-off workers without regard to the cause of their dislocation, including those job losses that may result from international trade agreements such as the NAFTA" (U.S. House of Representatives, 1993).

The justification for creating such a program is that people get displaced for many reasons, including technological change and shifts in product demand. Providing TAA benefits in effect creates a special class of workers, but many more workers may suffer similar displacements from policy or economic changes not related to the international economy. For example, in August 2005, the Parisian sourdough bread bakery in San Francisco closed its doors after surviving in business 149 years (Nolte, 2005). With this closure, 650 workers—all union members—lost their jobs. However, because the closure was not related to trade, none were eligible for the special benefits provided by TAA.

The United States benefits from the flexibility of its labor and capital markets—the ability to lay off workers and close down firms—which allows labor and capital to be reallocated to their most economically productive uses. However, as with trade-related displacements, there are transition costs, and some workers bear a significant burden because of this flexibility. TAA benefits workers harmed by trade but ignores workers harmed by other factors that lead to job loss, even though these workers may suffer just as much, or more, than trade-affected workers.

So far, creating a program for all displaced workers, as envisioned when NAFTA was passed, has proved politically infeasible. However, TAA

has proved politically feasible, and it is within trade-adjustment programs that most innovations for providing benefits to displaced workers have come about. If a well-run wage-insurance program actually assisted trade-affected workers, then it could easily be extended to all displaced workers. One estimate for this type of program places the net cost at $3.5 billion per year, or about $25 per U.S. worker per year (Brainard, Litan, and Warren, 2005). Such a program could result in shorter out-of-work periods for displaced workers and more effective retraining. At an aggregate level, it could allow the United States to continue to benefit from overall labor market flexibility while compensating workers who lose from the conditions and policies that allow for the increased aggregate gains. ❖

Appendix. Mexico-Related Certified Job Displacements by State, 1994–2002

State	Jobs	Share (%)	Certified Displacements Relative to Average Annual Employment (%)	
			Annual Average Displacements	Total Displacements
Alabama	15,791	3.7	0.09	0.85
Alaska	614	0.1	0.03	0.23
Arizona	4,440	1.0	0.02	0.22
Arkansas	8,776	2.1	0.09	0.79
California	27,759	6.5	0.02	0.20
Colorado	3,729	0.9	0.02	0.19
Connecticut	2,141	0.5	0.01	0.13
Delaware	0	0.0	0.00	0.00
District of Columbia	0	0.0	0.00	0.00
Florida	9,986	2.4	0.02	0.15
Georgia	23,396	5.5	0.07	0.64
Hawaii	0	0.0	0.00	0.00
Idaho	2,637	0.6	0.06	0.51
Illinois	13,504	3.2	0.03	0.23
Indiana	14,364	3.4	0.06	0.50
Iowa	1,913	0.5	0.02	0.14
Kansas	1,686	0.4	0.01	0.13
Kentucky	11,238	2.6	0.07	0.65
Louisiana	7,099	1.7	0.04	0.38
Maine	0	0.0	0.00	0.00
Maryland	593	0.1	0.00	0.03
Massachusetts	5,874	1.4	0.02	0.19
Michigan	11,631	2.7	0.03	0.26
Minnesota	5,974	1.4	0.03	0.24

Appendix. Mexico-Related Certified Job Displacements by State, 1994–2002—continued

State	Jobs	Share (%)	Certified Displacements Relative to Average Annual Employment (%)	
			Annual Average Displacements	Total Displacements
Mississippi	5,093	1.2	0.05	0.46
Missouri	10,521	2.5	0.04	0.40
Montana	174	0.0	0.01	0.05
Nebraska	503	0.1	0.01	0.06
Nevada	749	0.2	0.01	0.08
New Hampshire	352	0.1	0.01	0.06
New Jersey	7,224	1.7	0.02	0.19
New Mexico	808	0.2	0.01	0.11
New York	15,948	3.8	0.02	0.19
North Carolina	43,919	10.3	0.13	1.19
North Dakota	0	0.0	0.00	0.00
Ohio	12,079	2.8	0.02	0.22
Oklahoma	4,249	1.0	0.03	0.30
Oregon	6,952	1.6	0.05	0.46
Pennsylvania	29,372	6.9	0.06	0.54
Rhode Island	0	0.0	0.00	0.00
South Carolina	11,335	2.7	0.07	0.65
South Dakota	1,344	0.3	0.04	0.37
Tennessee	19,689	4.6	0.08	0.76
Texas	44,903	10.6	0.06	0.52
Utah	2,723	0.6	0.03	0.27
Vermont	386	0.1	0.02	0.14
Virginia	13,025	3.1	0.04	0.40
Washington	6,262	1.5	0.03	0.25
West Virginia	896	0.2	0.01	0.13
Wisconsin	12,478	2.9	0.05	0.47
Wyoming	325	0.1	0.02	0.14
Total	424,454	100	0.04	0.34

Sources: North American Integration and Development Center (n.d.); U.S. Bureau of Labor Statistics (2003).
Note: Job totals are number of workers certified as displaced as a result of imports from or production shifts to Mexico, or imports from or production shifts to one of the NAFTA partners with the specific country not identified.

Notes

[1] Since the passage of NAFTA, there have been studies of the sectoral, regional, and overall net employment effects on the United States. Examples include Bolle (2000); Canadian Department of Foreign Affairs and International Trade, U.S. Trade Representative, and Mexican Ministry of the Economy (2003); Audley et al. (2003); Lederman, Maloney, and Serven (2003); Hinojosa Ojeda et al. (2000); Scott (2001, 2003). The criticisms discussed in the next footnote do not necessarily apply to each of these works.

[2] Studies focusing on NAFTA and net employment in the United States generally find very small effects, relative to the overall size of the U.S. labor market, but they also tend to have analytic problems—sometimes significant—and therefore fail to provide convincing evidence of any net job effects. There are three main reasons for this. First, many studies do not account for policy changes. However, as noted above, the overall level of employment is set largely by labor market conditions and policies (such as the supply of labor and the rules regarding hiring and firing), monetary policy (such as the interest rate set by the Federal Reserve), and fiscal policy. Second, appraisals of the overall employment effects of NAFTA often fail to account for events and trends beyond the scope of NAFTA. For example, during the 1990s and throughout the era of NAFTA, Mexico changed its constitution regarding rural land ownership, went through a financial crisis, privatized a number of industries, and lowered its overall tariffs, not just those faced by American producers. At the same time, the United States went through a technology boom, lowered its worldwide tariffs, and offered new unilateral trade preferences to dozens of countries. In addition, countries with companies that compete with those in Mexico, such as China and Vietnam, experienced renewed growth and economic importance in the world economy. Finally, appraisals of the employment effects of NAFTA rarely take account of the many ways that trade can influence jobs. Specifically, some studies mistakenly claim that all exports to Mexico cause job gains and all imports from Mexico cause job losses, then look at the trade balance and calculate a net jobs balance. However, new exports can cause increased labor demand in industries producing the exports, and in their suppliers, but will have little effect on the number of jobs if they are goods that were already produced but sold elsewhere, either inside the United States or to other foreign countries. Likewise, new imports from Mexico may cause job loss, but not if the goods were already imported from other countries and the new Mexican imports simply reflect a change in sourcing, or if the imports provide cheaper components and parts that enable the importing company to produce its products more cheaply and sell more of them, perhaps leading it to expand employment.

[3] Between 1994 and 2002, about two-thirds of U.S. imports from Mexico went through formal NAFTA treaty channels (U.S. International Trade Commission, 2005). Most of the rest went through other trade provisions. Under NAFTA, items traded had to follow specific rules of origin, and in many cases the NAFTA benefits were small enough that it did not pay for businesses to follow these rules of origin and deal with the paperwork and administrative requirements; instead importers used the rules available to trade more generally.

[4] These indirect methods generally involve looking at shifts in imports and exports and then computing how such shifts affected employment. Methods of analysis include statistical studies, theoretical models of the economy, and investigations of input-output linkages in which changes in demand for a final product are traced back to changes in production of that product's inputs.

[5] Information on the history of TAA is drawn from Hufbauer and Rosen (1986).

[6] Much of this discussion is drawn from U.S. General Accounting Office (2000) and California Employment Development Department (2000a).

[7] Certification of secondary workers initially did not work quite as well as many had hoped because of limited guidance from the U.S. Department of Labor, unclear authority, and an unwieldy funding mechanism (Hecker, 1997). Even after reforms, certifications of secondary workers remained low throughout the life of the program.

[8] Originally, these workforce and training programs were provided under the federal Job Training Partnership Act (JTPA). When the Workforce Investment Act of 1998 supplanted the JTPA, the U.S. Department of Labor moved to have states set up "one-stop" programs to fully integrate federal workforce training and federal assistance for trade-displaced workers (U.S. Department of Labor, 2000).

[9] Despite these efforts, there is evidence that, at least in the early days of the program, outreach to potentially affected workers differed among states (U.S. General Accounting Office, 1994). However, the Department of Labor claimed that there was no basis for determining whether petition filings were low or not. Later studies of the program did not indicate whether outreach continued to differ by state.

[10] As part of the investigations carried out by the state and the U.S. Department of Labor, officials distributed a confidential data request to the affected company, asking for such information as layoffs, sales and production, import competition, and production shifts (U.S. Department of Labor, 2001b). Under the NAFTA implementation act, filling out this form was mandatory. U.S. officials followed up with letters and telephone calls and could conduct on-site visits.

[11] U.S. Department of Labor officials did not always follow these standards or use their powers, as shown by the records of denials appealed by workers. Judges have criticized Labor officials for "'a sloppy and inadequate investigation' which was 'the product of laziness'"; efforts that were "'cursory at best,' and finding that 'there was actually no investigation done whatsoever'"; an investiga-

tion that was "'misguided and inadequate at best'"; and an investigation in which agency officials "failed to verify accuracy of company's questionnaire responses" (U.S. Court of International Trade, 2002).

[12] In the case of denials, workers had two levels of appeal. First, they could file an application for reconsideration with the U.S. Department of Labor. If that failed, they could then turn to the U.S. Court of International Trade, a federal court at the same level in the U.S. court system as federal district courts.

[13] Because unemployment benefits last for 26 weeks, this meant payments for up to 78 weeks.

[14] This total includes workers certified when the source of the imports or the destination of the production shift was unknown. See the Appendix for a state-by-state listing of workers certified as displaced by Mexico-related imports or production shifts.

[15] Most workers certified under NAFTA-TAA worked in manufacturing. California manufacturing employment as a share of U.S. manufacturing employment averaged 10.3 percent between 1994 and 2002 (actually rising toward the end of the period).

[16] Of all worker certification denials in California, 29.7 percent stemmed from this reason, compared to 18.4 percent in the United States as a whole.

[17] North Carolina, Alabama, and Arkansas, the three leading states in terms of certified displacements as a proportion of their total employment, all have large apparel industries.

[18] Apparel has traditionally been a highly protected industry in the United States. In 1993, the year before NAFTA started, the simple average tariff for apparel imports was 12.2 percent; at the two-digit level of classification, this was higher than the tariff for any other industry. On average, the tariffs faced by Mexican products in this industry were scarcely lower, at 11.7 percent. NAFTA gave Mexico significant tariff advantages in this industry. By 2001, the average tariff applicable to most importers had fallen slightly to 11.1 percent, but it had fallen dramatically for Mexican importers, to 0.3 percent. Controlling for a number of industry and state characteristics, the Mexican tariff differential has a strong statistical relationship with U.S. certified displacements resulting from imports, and this is driven in part by the apparel trade. Every one point of industry-specific tariff advantage Mexico gained is related to an almost 10 percent higher rate of certified displacements when the analysis is done with the displacements broken down by state and by industry. This suggests that specific NAFTA provisions, not just increasing economic integration with Mexico, were connected to trade-related certified displacements.

[19] This would be the upper bound if no workers who were displaced by imports from Mexico were certified under TAA.

[20] These figures may be overestimates because the NAFTA-TAA figures include certified displacements where the country at issue (Canada or Mexico) could not be identified. When certified displacements for which Mexico was the only import source are included, the lower-bound figure is 8.1 percent and the upper-bound figure is 8.8 percent.

[21] Figures on economywide displacements are from the annual Displaced Worker Survey of the Current Population Survey, a monthly survey conducted by the U.S. Census Bureau. For more information, see Schmitt (2004).

[22] Because of the problem of ecological inference and the ecological fallacy (Freedman, 1999), it is impossible to say from the data that workers certified under NAFTA-TAA earned less than similar workers not certified as displaced under the program. For example, without detailed wage data as evidence, it may be the case that high-wage workers in low-wage industries were certified as displaced under NAFTA-TAA.

[23] The U.S. Government Accountability Office, formerly the General Accounting Office, has used a rule of thumb that for every worker displaced directly by imports or production shifts, slightly fewer than one secondary worker is displaced.

[24] Some of these bills might have increased the state's contracting costs and were vetoed by Governor Arnold Schwarzenegger.

[25] The bill, AB 777, sponsored by Assembly Speaker Fabian Nuñez, currently resides in the Senate Revenue and Taxation Committee.

[26] Specifically, Desai, Foley, and Hines show that firms that invest abroad tend to later have higher employment at home, suggesting that the investment abroad actually helps them grow domestically.

[27] Wage insurance has been floated as a policy idea for more than a decade but not given a full test. In fiscal years 1989 and 1990, the U.S. Department of Labor was to establish a demonstration project regarding what the law called a "supplemental wage allowance" for workers who took new jobs that paid less than the jobs from which they had been displaced. The Labor Department was to report back to Congress by August 22, 1994, with further recommendations (U.S. Code, 1994c). However, the project never took place. A limited program was instituted for trade-affected workers over age 50 starting in 2002 but remains underused, in part because it has been poorly administered (Wessel, 2005).

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California Economic Policy

Trade with Mexico and California Jobs

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