EPI Issue Brief

Issue Brief #120 Economic Policy Institute September 19, 1997

NAFTA'S CASUALTIES

Employment Effects on Men, Women, and Minorities

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Since the North American Free Trade Agreement (NAFTA) went into effect in 1994, there has been much debate over its effect on American jobs. This effect, measured as a number of potential jobs created or destroyed, is often used to gauge the impact of a trade policy on the economy. Unfortunately, most existing estimates of NAFTA's employment impact suffer from several serious oversights, ranging from failing to adjust for the effect of inflation on international trade to neglecting to differentiate between industries. Furthermore, many estimates consider only exports without looking at the offsetting effects of imports. In an effort to avoid these methodological pitfalls and to provide a more comprehensive, accurate picture of NAFTA's effects, the model used in this report takes into account both imports and exports and uses industry-level trade, price, and demographic data.

This study's new model indicates that the reduction in net exports to Mexico has eliminated 227,663 U.S. job opportunities since 1993, and the reduction in net exports to Canada has eliminated 167,172 job opportunities in the same period. In total, NAFTA resulted in a net loss of 394,835 jobs in its first three years.

This study's model also makes possible an analysis of the demographic composition of NAFTA's impact on employment. The analysis finds that NAFTA has eliminated significant numbers of jobs for women and members of minority groups, as well as white males. Between 1993 and 1996, women lost 141,454 jobs to NAFTA, blacks lost 36,890 jobs, and Hispanics lost 22,520 jobs, numbers closely reflecting these groups' shares in manufacturing industries. Moreover, a disproportionate number of the jobs eliminated by NAFTA were manufacturing jobs, which pay relatively high wages, further contributing to NAFTA's detrimental effect on the distribution of income and wages of working Americans.

Impact on U.S. Jobs

U.S. net exports to Mexico and Canada have declined dramatically under NAFTA (**Table 1**). According to the most recent measurements, real exports to Mexico grew by 31% and to Canada by 24% between 1993 and 1996. Import growth was far more dramatic, however, at 87% from Mexico and 33% from Canada over the same period. In 1993, the year before the agreement took effect, the U.S. had a trade *surplus* of $635 million with Mexico (all figures in constant 1987 dollars). By 1996, this had fallen to a *deficit* of $18.8 *billion*. The already existing deficit with Canada grew even larger, from $16.7 billion to $29.5 billion during those three years.

Although NAFTA's adherents claimed the agreement would create new jobs, growing imports from Mexico and Canada have cost the U.S. more jobs than exports have generated. While increased exports to Mexico created 158,171 jobs, this growth was more than offset by the 385,834 jobs displaced by an increase in imports from Mexico. Similarly, increased exports to Canada generated 244,309 jobs, but these were dwarfed by 411,481 jobs displaced by Canadian imports. On the whole, imports from Mexico and Canada destroyed a gross total of 797,315 job opportunities. Net losses, after including the gains from exports, were 394,835 jobs.

Even workers who found new jobs in the growing U.S. economy faced a reduction in wages, with average earnings dropping over 16% (Farber 1996). The new jobs created by NAFTA are most likely to be in the service industry—the source of 112% of net new jobs created in the U.S. since 1993—where average compensation is only 77% of manufacturing's average (Mishel et al. 1997, 185).

TABLE 1
U.S. Trade With Mexico and Canada, 1993-96,
Totals for All Commodities (Millions of Constant 1987 Dollars)

			Change Since 1993		
	1993	1996	Dollars	Percent	Jobs Lost or Gained
Mexico					
1. Domestic Exports	$35,450	$46,338	$10,888	31%	158,171
2. Imports for Consumption	34,816	65,162	30,346	87%	(385,834)
3. Net Exports	635	(18,824)	(19,458)	-3066%	(227,663)
Canada					
1. Domestic Exports	$80,970	$100,052	$19,082	24%	244,309
2. Imports for Consumption	97,713	129,555	31,843	33%	(411,481)
3. Net Exports	(16,743)	(29,504)	(12,761)	76%	(167,172)
Mexico and Canada					
1. Domestic Exports	$116,420	$146,390	$29,970	26%	402,481
2. Imports for Consumption	132,528	194,717	62,189	47%	(797,315)
3. Net Exports	(16,108)	(48,327)	(32,219)	200%	(394,835)

Source: EPI analysis of Bureau of Labor Statistics and Census Bureau data.

Characteristics of the Lost Jobs

This study allows us to examine the demographic characteristics of NAFTA's victims. (See Rothstein and Scott 1997 for state-level estimates of NAFTA's employment impact.)

Most merchandise trade—which made up 79% of total 1996 U.S. trade including services —is in manufactured goods (U.S. Department of Commerce 1996a). Although only 16% of the U.S. labor force works in manufacturing, over 70% of the NAFTA job changes were in this sector. Unsurprisingly, when we examine the demographic composition of NAFTA job losses, they clearly correspond with that of the manufacturing sector, the highest-paid sector of our economy (**Table 2**). Women make up 35% of manufacturing employment and represent 36% of NAFTA job losses. Blacks and Hispanics represent 9% and 6% of the lost jobs, exactly corresponding with their representation in the manufacturing labor force. Fourteen percent of the job loss went to college graduates, 26% to workers with some college, 36% to workers with a high school diploma, and 24% to workers with less than a high school education—all of which closely reflect these groups' representation in the manufacturing workforce.

The manufacturing sector is an important source of good jobs for non-college-educated workers. These workers, who have few opportunities for high wages in other areas of the economy, are disproportionately represented in the manufacturing sector and, therefore, hit hard by the job losses precipitated by NAFTA. Workers without any college education make up exactly half of the U.S. labor force but 60% of the NAFTA victims.

In spite of their below-average education levels, manufacturing workers earn significantly more than workers in other sectors of the economy. *The NAFTA job losses are skewed toward high-wage jobs.* We divide wages into three brackets: low (paying less than the 20th percentile of the real 1979 male wage distribution, or $8.83/hour in 1996 dollars), medium (21st-74th percentiles, or $8.83-$19.08/hour), and high (above the 75th percentile, or more than $19.08/hour). Since 1979, the real wage structure of our economy has moved significantly downward, as increasingly more workers have slipped into lower income brackets. NAFTA contributes to this trend: while only 21% of jobs in the 1989 economy were in the high-wage bracket, 23% of the jobs eliminated by NAFTA trade fall in that category. In contrast, the low-wage bracket represented 36% of 1989 jobs but only 32% of NAFTA casualties (Table 2).

TABLE 2
Employment Impact of Increased Trade With Canada and Mexico, 1993-96
(Thousands of Jobs)

	Job Changes Induced by Net Exports:*		Share of Labor Force**	
			Whole Economy	Manuf. Only
Total	(395)	100%	100%	100%
Men	(253)	64%	53%	65%
Women	(141)	36%	47%	35%
White	(316)	80%	80%	81%
Black	(37)	9%	10%	9%
Hispanic	(23)	6%	5%	6%
Other	(19)	5%	5%	5%
College	(56)	14%	19%	14%
Noncollege	(339)	86%	81%	86%
Some College	(101)	26%	31%	26%
High School	(144)	36%	31%	38%
Less Than HS	(95)	24%	19%	23%
Wage Bracket***				
High (75-99)	(92)	23%	21%	25%
Medium (21-75)	(178)	45%	43%	48%
Low (0-20)	(125)	32%	36%	28%
Agriculture	(38)	10%	3%	.
Manufacturing	(283)	72%	16%	.
Services	(69)	18%	55%	.
Other	(4)	1%	26%	.

* Excluding effects on wholesale and retail trade and advertising.
** Census data on 1989 labor force.
*** Wage brackets are based on the real 1979 wage distribution: numbers in parentheses are percentiles. In 1996 dollars, brackets correspond to hourly wages of less than $8.83, $8.84 to $19.08, and above $19.09

Source: EPI analysis of Bureau of Labor Statistics and Census Bureau data.

Other Studies

Numerous estimates have been made of NAFTA's employment impact in the U.S. (e.g., Scott 1996; Hufbauer and Schott 1993; EOP 1997). Typically, these analyses use the Department of Commerce's calculation of the number of jobs supported by each billion dollars of exports. In 1994, this multiplier was 14,197 (U.S. Department of Commerce 1996b). Using this methodology, President Clinton's July 1997 report to Congress, *Study on the Operation and Effects of the North American Free Trade Agreement,* estimates that in 1996 2.3 million U.S. jobs were supported by trade with Mexico and Canada, an increase of 311,000 since NAFTA went into effect.

Single-multiplier models of the relationship between trade and employment (like the one used in the president's report) pose many serious problems:

- Total exports are used to estimate the employment impacts of trade. A significant share of U.S. exports consist of foreign exports, i.e., goods that are produced in other countries (e.g., grain grown in Canada that is trucked through the U.S. to Mexico). Foreign exports, also called transshipments, have increased sharply under NAFTA and do not generate jobs in the U.S.
- In the crudest models, only exports are considered; the offsetting effect of imports is ignored. This is comparable to balancing a checkbook by adding up the deposits and ignoring the withdrawals. If the U.S. exports 1,000 cars to Mexico, many Americans will be employed in the production and assembly of those cars. If the U.S. imports 1,000 cars from Mexico rather than building them domestically, then a similar number of Americans who would otherwise have been employed in the auto industry will have to find other employment.
- All trade is treated identically, with no consideration given to the significant differences in labor requirements between industries. For example, a million dollars of output in the high-wage, highly automated aerospace industry employs fewer than 14 workers, but the same amount of output in a lower-wage, labor-intensive industry like apparel employs about 27 workers (BLS 1996). Apparel exports will create more jobs—though lower-paying ones—than a similar volume of aerospace exports. A study that does not take into account such differences between industries overlooks an important part of the story.
- Trade data are rarely adjusted for inflation, resulting in measures of trade flows that trend upward far more than they should. If nominal net exports increase significantly, but real trade balances remain constant, most existing methodologies would find significant employment impacts. In reality, if inflation-adjusted net exports are stable, then trade-related employment should also be stable.

Methodology

The analytic techniques used in this study are designed to reduce or eliminate the various problems plaguing past research. While other studies have used total exports or the merchandise trade balance, which include several categories of goods that do not affect U.S. employment, this study analyzes *net exports—domestic exports* less *imports for consumption*. The net export measure excludes *foreign exports* (goods produced in other countries and exported to Mexico or Canada through the U.S.) and *imports not for consumption* (goods warehoused in the U.S. but with ultimate destinations in other countries), neither of which has significant impact on U.S. employment.

We use Census Bureau (1997) data on domestic exports and imports for consumption at the 3-digit SIC industry level. These data are converted into the 183 industries used by the Bureau of Labor Statistics and then inflation-adjusted to constant 1987 dollars using industry-level price indices (BLS 1997).[1] An input-output model, based on BLS calculations of the number and type of jobs created by production in each industry (BLS 1996), is used to estimate job impacts. These estimates include not merely the direct impact of trade on manufacturing industries, but also the indirect effects on nonmanufacturing industries (like business services) that supply manufacturers.

We assume that NAFTA's casualties and beneficiaries in each industry are demographically similar to that industry's workforce, using Census Bureau data (from the Public Use Microdata Sample of the 1990 Census) on the characteristics of the workforce in each of the 183 industries to estimate the impacts on various populations.

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1. An exception is made for the "Computer and Office Equipment" industry (BLS Industry 43), for which we use nominal dollars. The price index for this industry shows massive deflation, reflecting explosive improvement in computer technology. A given amount of money buys a lot more computer power today than in 1987; however, roughly the same number of worker-hours are used to produce a Pentium computer now as a 286 computer several years ago. Therefore, it is reasonable to assume that the number of workers employed by a million dollars of computer production has not changed dramatically. This assumption is not of great consequence for the results; deflating this industry normally produces only minor changes in the macroeconomic results.

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