TESTIMONY SUBMITTED TO THE SENATE SUBCOMMITTEE ON INTERNATIONAL TRADE OF THE COMMITTEE ON FINANCE

THE EMPLOYMENT CONSEQUENCES OF NAFTA

BY
SANDRA POLASKI

DIRECTOR
TRADE, EQUITY AND DEVELOPMENT PROJECT
CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE
1779 MASSACHUSETTS AVENUE, NW
WASHINGTON DC 20036

202-939-2252
SPOLASKI@CEIP.ORG

SEPTEMBER 11, 2006

Main Findings

- Employment is the main source of household income for a large majority of the population in all the countries of North America. Therefore, one of the most basic measures of a trade agreement's impact on the well-being of real people is the number of jobs gained or lost as a result of the agreement and the quality of those jobs. NAFTA's most significant impact on employment has been felt in Mexico.

- NAFTA has produced a disappointingly small net gain in jobs in Mexico. Data limitations preclude an exact tally, but it is clear that jobs created in export manufacturing have barely kept pace with jobs lost in agriculture due to imports. There has also been a decline in domestic manufacturing employment, related in part to import competition and perhaps also to the substitution of foreign inputs in assembly operations.

- Mexican agriculture has been a net loser in trade with the United States, and employment in the sector has declined sharply. U.S. exports of subsidized crops such as corn have depressed agricultural prices in Mexico. The rural poor have borne the brunt of adjustment to NAFTA and have been forced to adapt without adequate government support.

- Productivity has increased in Mexico over the last decade. NAFTA likely played a significant role, because Mexico cut tariffs deeply and was exposed to greater

competition. The desirable growth in productivity may have had the unwanted side effect of reducing the rate of job growth, since fewer new jobs were created as workers already on payrolls produced more.

- Real wages for many Mexicans today are lower than when NAFTA took effect. The stunning setback in wages is mainly attributable to the peso crisis of 1994-1995. However, during the NAFTA period, productivity growth has not translated into wage growth, as it did in earlier periods in Mexico. Mexican wages are also diverging from, rather than converging with, U.S. wages.

- Income inequality has been on the rise in Mexico since NAFTA took effect, reversing a brief declining trend in the early 1990s. Compared to the period before NAFTA, the top 10 percent of households have increased their share of national income, while the other 90 percent have lost income share or seen no change. Regional inequality within Mexico has also increased, reversing a long-term trend toward convergence in regional incomes.

- The experience of Mexico confirms the prediction of trade theory, that there will be winners and losers from trade. The losers may be as numerous as, or even more numerous than, the winners, especially in the short-to-medium term. In Mexico, more farmers lost than gained from NAFTA-induced changes.

- In the United States, NAFTA has likely had either a neutral or very small net positive effect on employment.

- Because the net impact of NAFTA on overall employment in the United States is small, the impact on wages is also likely to be minor at the national level. But a widening gap between the wages of skilled and unskilled workers is partly attributable to trade, and NAFTA probably accounts for a small portion of the observed growth in wage disparity within the United States.

- There has been a decoupling of productivity growth from wage growth in the United States over recent decades. Increased trade and outsourcing of employment has led to a weakening of US workers' bargaining power and NAFTA is one factor, among many, causing that effect.

- In Canada, NAFTA's predecessor, the Canadian US Free Trade Agreement, led first to a significant net decrease in jobs in traded sectors, followed by a slow recovery of employment to pre-CUFTA levels after ten years, then a modest continued increase in subsequent years.

The Employment Consequences of NAFTA

Employment is the main source of household income for a large majority of the population in all the countries of North America. Therefore, one of the most basic measures of a trade agreement's impact on the well-being of real people is the number of jobs gained or lost as a result of the agreement and the quality of those jobs. A second important and closely related measure is the effect of trade liberalization on productivity, or how much workers actually produce in any given work session. If productivity rises, workers can be paid more without driving up inflation or cutting into business profits. Thus, rising wages can be sustained over the long term. Rising productivity that leads to higher wages will expand domestic consumer demand, stimulating further production of goods and services and creating a virtuous circle of growth. A third set of economic issues that must be addressed in measuring the impact of trade on average citizens is how the gains from trade are distributed. There are winners and losers from trade, and it is impossible to assess the effect of trade on societies without knowing which groups gained, which lost, and to what degree they were affected.

Beyond these economic effects of trade on real people, there is also an important political reason to study the employment impact of trade. Political leaders often promote trade in general, and particular trade agreements such as the North American Free Trade Agreement (NAFTA), as job creators. In the United States, for example, then-president Bill Clinton predicted that NAFTA would create 200,000 U.S. jobs in its first two years of existence.[1] Today, President George W. Bush promotes trade pacts on the same basis, promising that they will "generate high-wage jobs for American workers."[2] When trade pacts are sold to the public and to legislators on the basis of their potential to create jobs and raise wages, it is important to revisit those promises, once time has elapsed and data have accumulated, to determine actual results. Such retrospective studies can then be used to guide future trade policy.

As with other effects of NAFTA, it is not a simple or straightforward proposition to tally the impact of the agreement on jobs, wages, and incomes. Still, there are several aspects of NAFTA's effects that can now be estimated with some confidence. In my testimony, I review the impact of NAFTA on jobs, wages, and household income in each of the countries of North America, but focus primarily on Mexico, because the impact of NAFTA on employment has been much greater there than in Canada or the United States.

Employment in Mexico

Mexico has an abundance of labor. Very high population growth rates through the mid-1970s translated into a demographic bulge in the workforce in the 1990s and this century, as people born during the earlier high-growth years matured and began looking for work. In addition, during the 1980s and 1990s women joined the workforce at increasing rates, in part because of the decline in the reproductive rate, but also out of the need to support household incomes during recurrent economic crises. Overall, the Mexican labor force grew from 33.7 million immediately before NAFTA to 43.4 million in 2004, meaning that Mexico needed almost a million jobs a year simply to absorb the growth in labor supply.[3]

Economic theory suggests that opening to trade will increase the demand for labor in a labor-abundant country and therefore will increase the number of jobs, the wages paid, or both. Clearly, that would be a desirable effect for a country with a large and growing workforce such as Mexico. However, in practice, the effect of a trade pact like NAFTA depends on many factors, including which tariffs were reduced or eliminated by each country, in what sequence and at what pace. The following discussion focuses on tariff changes between Mexico and the United States, because trade between Mexico and Canada is a very small part of Mexico's total trade.[4]

Under NAFTA, the United States cut tariffs on most Mexican manufactured goods, with the largest cuts on textiles and apparel, followed by more modest but still significant reductions on footwear, chemicals, miscellaneous manufactures, and transportation equipment. The United States also cut agricultural tariffs and increased quotas, although one of Mexico's main agricultural products, sugar, continues to be restricted through tariffs and quotas. Other Mexican crops face seasonal restrictions that are scheduled to end by 2008. Meanwhile, Mexico cut tariffs dramatically on both agricultural and livestock products and virtually all manufactured goods from the United States. Some tariffs will be maintained on sensitive agricultural products such as maize and beans until 2008, but in practice the Mexican government has already allowed substantial above-quota tariff-free imports of corn.

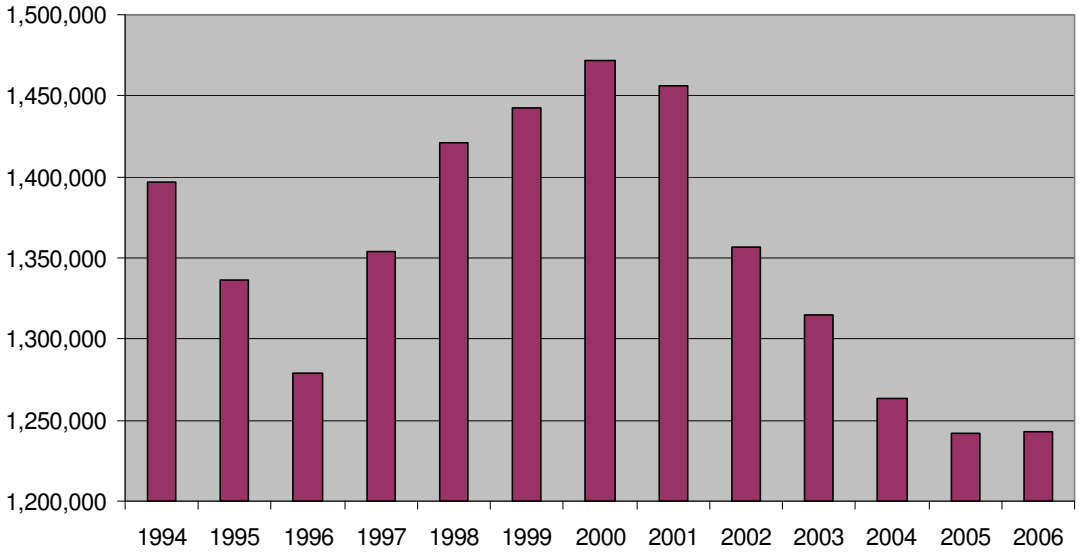
The pattern of trade between the two countries changed in a number of ways as a result of these cuts. From Mexico's standpoint, the cumulative changes resulted in a shift from a net trade deficit with the United States before NAFTA to a substantial net trade surplus in 2002. The overall net surplus masks a growing deficit in agricultural trade with the United States that is more than offset by a surplus in manufactured exports from Mexico. Trade in services shows a small deficit for Mexico.

Manufacturing Employment

Translating these changes in trade patterns into employment impacts is not easy, but approximate numbers of jobs can be determined with reasonable certainty. With respect to manufacturing, the task is complicated by data availability. The Mexican government tracks manufacturing employment through two separate data series. One survey covers medium-size and large manufacturing establishments that account for about 80 percent of industrial production, but excludes the maquiladora sector.[5] A separate survey covers maquiladoras, which are export assembly plants.

Overall employment in non-maquiladora manufacturing in Mexico is lower in 2006 than it was in 1994, except in microenterprises, which are mainly in the informal sector.[6] Employment in the non-maquiladora manufacturing sector stood at about 1.4 million in January 1994, declined sharply during the peso crisis, and then began a recovery that produced an additional 91,000 jobs at its peak in May 2000 before declining again over the past six years. In June 2006 there were 1.26 million jobs in non-maquiladora manufacturing, about 130,000 fewer than when NAFTA took effect (see Figure 1).

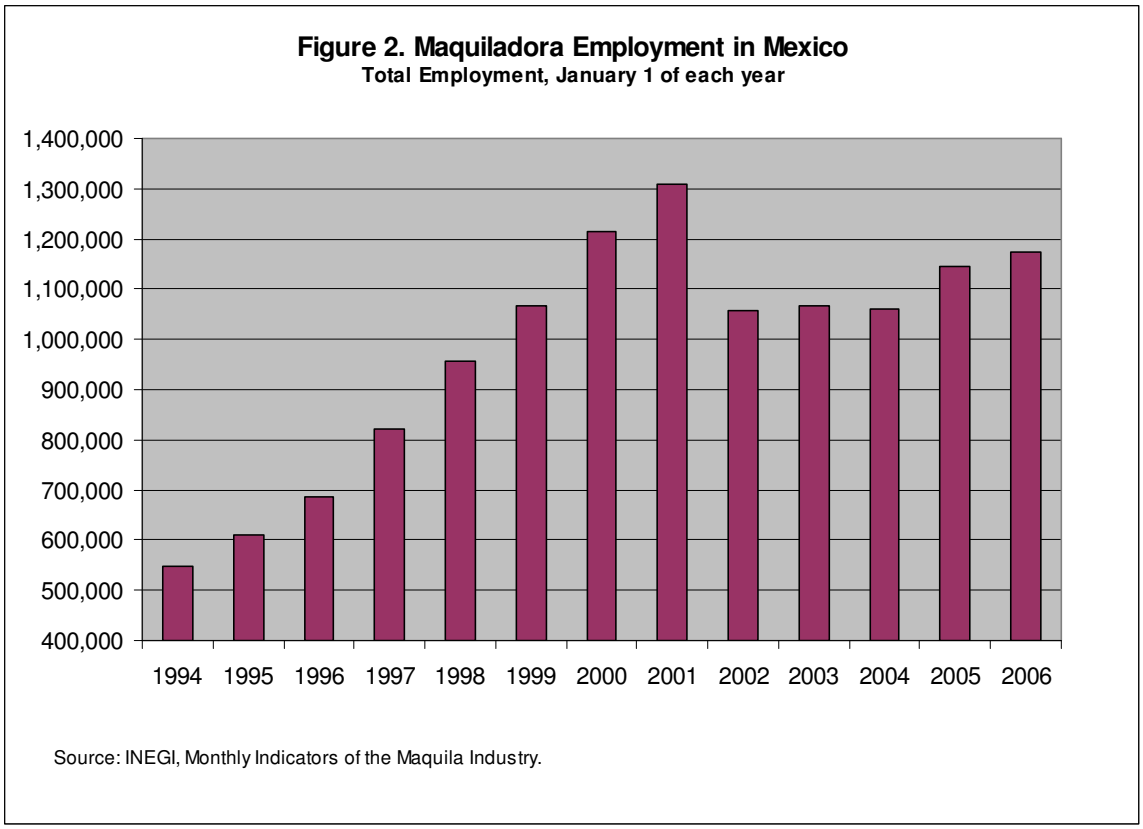
Figure 1. Non-Maquiladora Manufacturing in Mexico
Total Employment, January 1 of each year



Source: Mexican National Institute of Statistics, Geography, and Information (INEGI), Ministry of Employment and Social Insurance (STPS), Monthly Industrial Survey (EIM).

The decline since 2000 has been caused in part by the U.S. recession and weak recovery, as well as by global changes such as the rise of competitive exports from China.

The maquiladora program was created by Mexico and the United States in 1965 to allow tariff-free and tax-free imports of materials and components into Mexico for assembly and re-export to the United States. It is concentrated in the auto parts, electronics, and apparel sectors. The growth in maquiladora jobs is not primarily attributable to NAFTA, since the program predates that pact, but NAFTA did provide significant tariff cuts on apparel and as a result stimulated that subsector of the maquiladoras. Maquiladora assembly plants added about 800,000 jobs between NAFTA's enactment in January 1994 and the sector's peak employment in early 2001. They then shed about 125,000 jobs through January 2006. Currently, maquiladoras employ about 700,000 more workers than they did before NAFTA (see Figure 2).



Maquiladora plants produce almost entirely for export, so employment in that sector can be attributed largely to trade (although not exclusively to the terms of NAFTA). By contrast, the data on non-maquiladora manufacturing employment blend production for export with production for domestic markets; therefore, it is difficult to determine the proportion of employment attributable to exports. One study suggests that the share of non-maquiladora manufacturing employment associated with exports increased by roughly 500,000 jobs between 1994 and 1999, and then declined.[7] Of those jobs, some 450,000 were based on exports to the United States.

Only part of the growth in both maquiladora and non-maquiladora export employment can be attributed to NAFTA. The peso devaluation of 1994-1995 gave a very significant boost to all Mexican exports, as the dollar bought more than twice the value of Mexican goods after the devaluation. A study by the U.S. International Trade Commission (USITC) found that the peso devaluation of 1994-1995 had a larger impact on the growth of Mexican exports of manufactured goods to the United States than all NAFTA-related tariff changes combined.[8] If one uses the USITC's findings on the relative impact of various factors on changes in Mexican exports to the United States, NAFTA tariff cuts likely explain about one-quarter of the total growth in export manufacturing jobs (maquiladora and non-maquiladora), or the addition of about 250,000 jobs, while the peso devaluation, lower transport costs, and other factors account for the rest.[9]

The overall reality during the NAFTA years has been one of strong growth in the volume of manufactured exports but very disappointing growth in manufacturing employment. This unwelcome divergence between manufacturing output and employment growth emerged in

Mexico in the mid-1980s but appears to have widened since enactment of NAFTA.[10] A number of explanations for this outcome have been advanced. One obvious explanation is productivity growth, which reduces the amount of job creation for any given level of exports. While productivity did increase in Mexican manufacturing over most of the twelve years since NAFTA took effect, productivity gains alone do not account for the very slow growth in manufacturing employment.

Another factor that likely explains part of the phenomenon is that export manufacturing in Mexico is increasingly based on a production model in which component parts are imported, then processed or assembled, then re-exported. In this model, the spillover effect of such operations on the broader economy is very limited, because only a narrow range of processing or assembly operations benefit the labor market. Vertical integration, including creation of businesses that supply parts and materials, has not occurred, limiting the multiplier effect of any growth in exports. This pattern is quite clear in the maquiladora sector, in which 97 percent of components are imported and only 3 percent are produced locally in Mexico. But the non-maquiladora export sector shows similar patterns. The intra-firm production carried out by multinational firms operating in Mexico in sectors such as the auto and electronics industries depends heavily on imported inputs. It seems probable that Mexican manufacturers that previously supplied inputs to large manufacturing firms have lost a significant share of input production to foreign suppliers, and thus account for part of the weakness in manufacturing employment.[11]

Another important factor limiting manufacturing employment growth is that some Mexican manufactures have been displaced directly by imports. The limited employment growth that has occurred in manufacturing for the domestic market has been mainly in very small firms and in the informal sector, with low pay and usually without benefits.

The export manufacturing model in Mexico has also failed to generate much growth in jobs at the high-skills end of the spectrum, in areas such as research, engineering, design, and accounting. One study of the skills component of manufacturing jobs in Mexico found that in 2000, the proportion of skilled labor in the manufacturing sector was only 9.9 percent. [12] The skilled labor component in manufacturing was actually less than the average share of skilled labor in the overall economy, 13.9 percent.

The limited job creation under the manufacturing model currently prevalent in Mexico is of particular concern when put in the context of other changes that are likely to affect future employment growth in the sector. Mexico enjoyed the advantage of being the first low-wage country to strike a free-trade agreement with the United States and Canada. However, as more free-trade agreements are negotiated, unilateral preference programs are expanded, and World Trade Organization (WTO) membership grows, the first-mover advantage is progressively diluted. The accession of China to the WTO, in particular, has meant mounting competition for Mexico's manufactured exports, particularly in labor-intensive sectors such as apparel and electronics. In 2003, China displaced Mexico as the second-largest exporter to the United States (after Japan). It is no accident that Mexico was the last WTO member to agree to the terms for China's accession to the trading organization. The proliferation of free-trade agreements by the United States and Canada also means that the value of Mexico's market access advantages will erode as other low-wage countries gain similar access. For example, the US free trade agreement

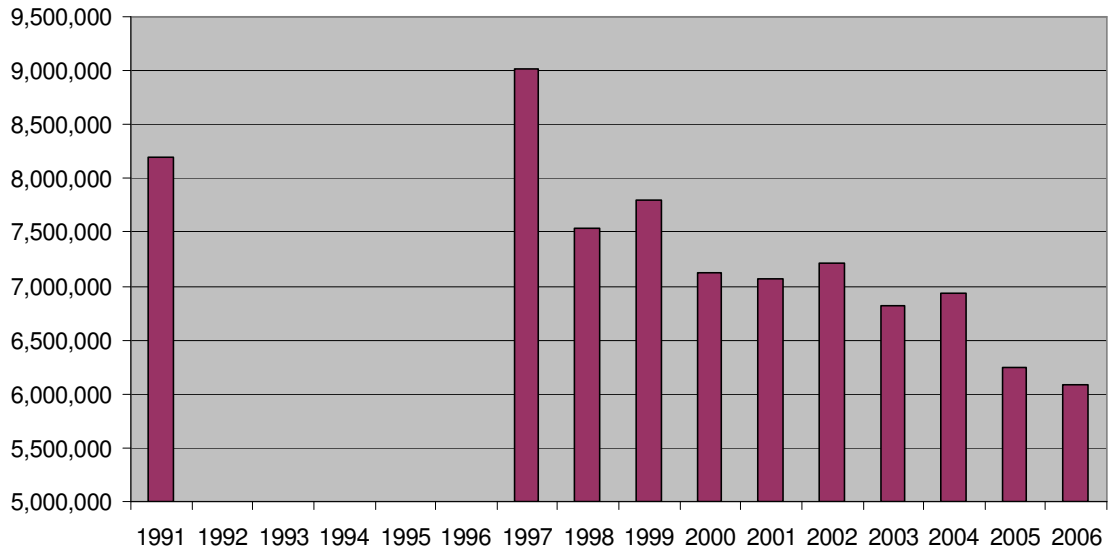
with Central America adds a sizable pool of lower-wage labor to the available regional labor supply, undermining Mexico's current advantage.

Agricultural Employment

As noted above, Mexico has had a net trade deficit in agricultural goods with the United States every year since NAFTA took effect, except the peso crisis year of 1995, when the huge devaluation of the peso made most dollar-denominated products too expensive for Mexicans. The agricultural trade deficit existed before NAFTA, but it grew after enactment of the trade pact and was larger in 2002 than in any previous year. Tariffs on the most sensitive crops in both the United States and Mexico have yet to be eliminated, and so the nature of bilateral agricultural trade will continue to evolve. However, the pattern to date challenges the conventional wisdom that agricultural liberalization is good for the developing country in a trade relationship with a developed economy. The one bright spot for Mexico, an increase in exports of fruits and vegetables, has not kept pace with Mexican imports of U.S. grains and oilseeds. This may be due in part to greater efficiency among U.S. producers, but it is also partly due to U.S. subsidies. By one estimate, U.S. corn was sold in Mexico from 1999 through 2001 at prices 30 percent or more below the cost of production.[13]

The increasing trade deficit has translated into job losses in agriculture. Agricultural employment in Mexico stood at about 8.1 million in the early 1990s just before NAFTA came into force. It actually increased slight in the aftermath of the peso crisis, when widespread unemployment led some workers back to the farm. Employment in the sector then began a downward trend, with about 6 million employed in the first quarter of 2006, a loss of over 2 million jobs compared to the pre-NAFTA levels.[14] While not all of that reduction can be attributed to NAFTA, other forces that affected trade, such as the sharp devaluation of the peso during 1994-1995, pushed in the opposite direction, toward greater growth of Mexican exports over imports. In fact, 1995 was the one post-NAFTA year in which Mexico had a surplus in its agricultural trade with the United States, and agricultural employment did improve modestly for a few years thereafter. However, once the peso stabilized, the agricultural trade balance again turned against Mexico and agricultural employment resumed its decline. During this period, Mexico was also liberalizing trade with other partners, so the entire impact cannot be ascribed to NAFTA. But the WTO has determined that Mexico reduced its agricultural tariffs much more for the United States than for other trading partners.[15] Thus, agricultural trade liberalization linked to NAFTA is the single most significant factor in the loss of agricultural jobs in Mexico (see Figure 3).

Figure 3. Mexican Employment in Agriculture
Employees



Source: For 1991 and 1997: INEGI-STPS, National Employment Survey (ENE). For 1998 to 2004: INEGI-STPS, Quarterly National Employment Survey (ENET). For 2005 and 2006: INEGI, National Survey of Occupation and Employment (ENOE). Note: All figures are for the second quarter of the year indicated except 2006, for which first quarter data is used; data for 1992 to 1996 are not available.

The release of 2 million workers from the agricultural sector more than offset the 700,000 jobs gained in the export-manufacturing sector in the twelve years since NAFTA took effect. As already noted, it is impossible to establish precisely what proportion of the gain in export manufacturing jobs and the loss in agricultural jobs between 1994 and 2006 was directly attributable to NAFTA. However, it is clear that the trade pact has not produced a strong gain in overall employment and, indeed, might have produced a net loss of jobs for Mexico. The long-term effects are still uncertain, as most manufacturing tariffs have now been eliminated, while the most sensitive agricultural tariffs have yet to come down.

Service Sector Employment

NAFTA has had little direct effect on employment in the Mexican service sector, because most services are not traded and those that are, such as financial and telecommunications services, are not very labor intensive. Mexico has had a small trade deficit in services with the United States, so any impact on employment is likely to be negative, although not large.

Nevertheless, the service sector is key to an overall understanding of the Mexican employment situation, because it is here that most Mexicans find employment. It is also the epicenter of the growth in the so-called informal sector. The share of total employment found in the service sector increased from 51 percent immediately before NAFTA took effect to 60 percent by June

of 2006. Most of this growth was due to absorption of labor from the agricultural sector, which decreased from 25.7 percent of employment in 1993 to 14.3 percent by June of 2006.[16]

Negative impacts on subsistence farmers, caused in part by increased agricultural imports from the United States, meant that rural households had to struggle to maintain adequate income levels. Due to sluggish employment growth in manufacturing, as well as the limited skills of many agricultural workers, employment was found (or created) mainly in low-pay, low-productivity jobs in the service sector such as domestic work, street vending, and personal services and repairs. Much of this was in the informal sector, which comprises self-employment, employment in microenterprises, and other forms of employment that do not provide benefits such as health care and pensions.[17] Overall, the informal sector grew during most of the 1990s, with employment in informal jobs approaching 50 percent of all employment in Mexico in 1995 and 1996, following the peso crisis and the subsequent economic contraction. After economic growth resumed in the late 1990s, the informal sector shrank somewhat, but still accounts for about 46 percent of Mexican jobs.[18] This reservoir of low-wage, low-productivity workers shows no sign of being absorbed by Mexico's export sector in the foreseeable future.

Wages and Productivity in Mexico

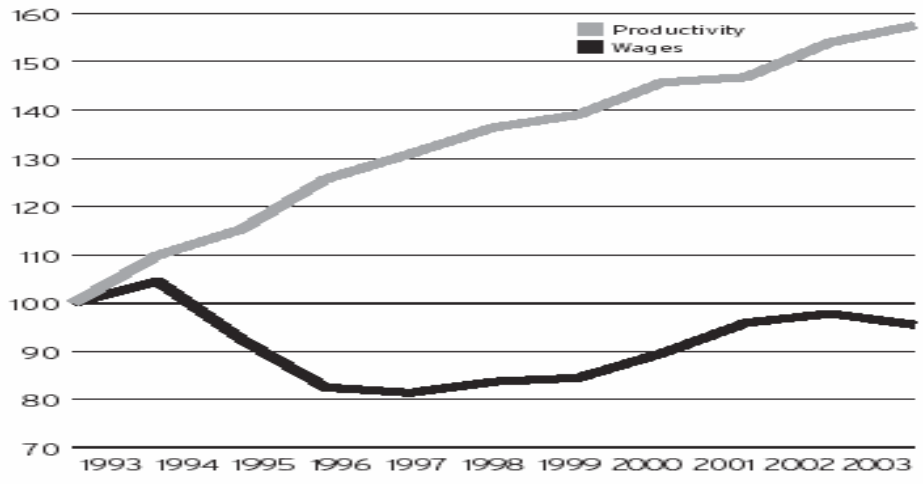
Real wages for many Mexicans are lower today than when NAFTA took effect. This stunning setback in wages cannot be attributed primarily to NAFTA, however. Most of the decrease in real wages observed over the last twenty years can be traced to two periods of sharp wage declines. The first was during the debt crisis of the early 1980s, when a devaluation of the peso and contractionary policies designed to achieve macroeconomic stability and meet the terms demanded by international holders of Mexico's debt led to a sharp drop in wages. The second decline occurred as a result of the peso crisis of 1994-1995. When the peso was sharply devalued in each crisis, the cost of imported goods and the rate of inflation both shot up, while wages were constrained by the government's monetary and wage-setting policies. Wages gradually recovered after each of those macroeconomic shocks. However, they did not grow enough in either recovery period to return to previous levels. This pattern is true of both traded and nontraded sectors of the economy, as well as for employees of small, medium, and large firms.[19]

While NAFTA is not the cause of the two major setbacks in Mexican wages, it is striking that a free-trade agreement that dramatically increased exports and foreign direct investment has not done more to increase wages and living standards for average Mexican workers--or even for workers in most export firms--relative to pre-NAFTA levels. Trade theory suggests that a country with an abundance of low-skill labor (such as Mexico) that opens to trade will experience increasing returns (wages) to its low-skilled workers. However, wages for most production workers in both maquiladora and non-maquiladora manufacturing are still below pre-NAFTA levels. Some analysts have suggested that, for a variety of reasons, trade increased the demand for highly skilled labor in Mexico relative to the demand for less skilled workers.[20] But even for highly educated workers in the manufacturing sector (such as professional, technical, and administrative staff), real wages in the late 1990s were below those in 1993, with the only exceptions occurring in a few regions along the U.S. border.[21] This same pattern holds for other sectors of the economy. Workers with university degrees and even postgraduate study received

lower real wages in 2000 than in 1993.[22] The disappointing wage performance has occurred despite the fact that Mexican workers' productivity has increased since NAFTA took effect (see Figure 4).

Increasing productivity is a necessary condition for sustainable increases in wages, since over time an economy can only afford to consume what it produces. But increased productivity is not sufficient to guarantee wage increases. Wage outcomes will depend in part on supply and demand in labor markets, and in part on the quality (and any bias) of institutions that have been established to determine how the gains from productivity are distributed. At present, labor market supply continues to exceed demand in most categories of labor in Mexico, contributing at least a partial explanation for poor wage results. In addition, the increasing integration of global production as a result of liberalized trade and improved protections for foreign investors has meant that, for many categories of unskilled and semi-skilled labor, competition is found not only in national labor markets but also internationally, as firms make production and sourcing decisions based in part on labor costs in various countries. The accession of China and other low-wage countries to the WTO has increased the supply of labor that firms can tap while still being guaranteed access for their output to the world's rich markets, including the United States and Canada. Differences in tariffs and transportation costs may not offset larger differences in unit labor costs. (Unit labor costs reflect the combination of wages and productivity).

Figure 4: Manufacturing Productivity and Real Wages in Mexico
Index: 1993=100



Source: INEGI/STPS, Monthly Industrial Survey (EIM), Economic Information Bank (BIE), Indicadores Economicos de Coyuntura
Notes: Productivity and wage data cover both production and non-production workers. The maquiladora sector is not included in this data series. Wages include salaries, bonuses, and benefits. Data for 1993–2002 are annual averages; 2003 is January–September average.

While labor market supply and demand and footloose global production undoubtedly contribute to the decoupling of wages from productivity seen in Mexico, it is also the case that Mexican institutions have been biased against wage increases. For example, it has been government policy

to hold down the minimum wage over most of the last two decades. This has been done both to increase global competitiveness of Mexican labor and exports and to meet structural adjustment goals. The minimum wage determines many other wages in Mexico, which are set as multiples of the minimum, and so the impact is felt beyond the lowest-paid jobs. Further, unionization and collective bargaining, among the main institutional mechanisms for determining how gains from productivity increases will be distributed between employers and workers, have been repressed in Mexico through weak labor laws. In the maquiladoras, for example, it is a widespread practice for employers to conclude "protection contracts" with corrupt or non-existent trade unions. Since Mexican labor law allows only one union to hold a contract in a workplace, these contracts preclude efforts by workers or more legitimate unions to bargain for wage increases. There have been numerous substantiated allegations of Mexican labor authorities allowing employers to collude with non-representative unions to avoid vigorous collective bargaining.[23]

Inequality and Poverty in Mexico

Gauging the effects of trade on real people requires an assessment of trade's impact on inequality and poverty, because the gains and losses from trade are not distributed evenly. Inequality in Mexico is high, as it is in much of Latin America. This is a cause for concern because it undermines social stability and political cohesion. Furthermore, societies with highly unequal economies have been shown to reduce poverty less effectively and at slower rates than more equal societies.[24] Some studies have also shown that overall growth is reduced over the long term by highly unequal income distributions, thus constraining the incomes of all.[25]

Income inequality had been declining in Mexico for several decades up to the early 1980s, but it reversed course after the debt crisis of 1982 and the resulting macroeconomic contraction and structural reforms. Inequality then increased for most of the following decade, but began to abate again in the early 1990s, the years immediately before NAFTA. However, since 1994 inequality has again been on the rise. Compared to the period before NAFTA, the top 10 percent of households have increased their share of national income, while the other 90 percent have lost income share or seen no change.[26]

Income inequality in Mexico has a geographic dimension as well. Historically, Mexico's southern states have been poorer, while the regions around the capital and along the U.S. border have been relatively more prosperous. From 1940 to 1980, targeted government policies led to an increasing convergence in per capita income among regions. However, following the macroeconomic crisis of the 1980s, the long trend toward convergence in regional incomes first stopped and then reversed, with regional inequality widening again in the 1990s.[27]

The share of people living in extreme poverty in Mexico has followed a similar pattern, shrinking dramatically during the 1960s and 1970s (from 61 percent to 30 percent) and then increasing after the 1982 debt crisis. Like economic inequality, the incidence of poverty increased through the remainder of the 1980s (reaching 41 percent by 1989) and then began to decline somewhat in the early 1990s, with the extreme poverty rate at 31 percent when NAFTA took effect. Poverty surged again during the peso crisis of 1994-1995, to over 40 percent. Since

then, it has again declined, but at 31 percent the proportion of Mexicans living in poverty is still slightly higher than the level seen in the late 1970s.[28]

Employment in the United States

The impacts of NAFTA on the United States' economy and employment are significantly less than on Mexico or Canada, for several reasons. The U.S. economy is much larger than that of either of its neighbors; it is less dependent on trade because of its huge (and wealthy) domestic market; and only one-third of its total trade is with its NAFTA partners. Further, U.S. tariffs were substantially lower than those of Mexico and Canada before NAFTA (and its predecessor, CUFTA), and its tariff reductions were proportionately much smaller than the tariff cuts made by those countries. Since NAFTA has had a much smaller overall impact on the U.S. economy, its impact on jobs and wages in the United States is also much less than in Mexico and Canada.

The actual impact of NAFTA on U.S. employment has been sharply disputed by proponents and critics of the agreement. Widely diverging estimates have been produced. Some proponents of NAFTA have approached the task by estimating the number of manufacturing jobs supported by a given level of exports and then multiplying the growth in exports to Canada and Mexico by that figure to arrive at job gains. Critics, on the other hand, have applied the multiplier formula to the overall trade deficit, (reflecting the greater increase of imports over exports). Advocates of NAFTA resist using the multiplier formula to identify jobs lost due to imports, since it is not certain that all imported goods substitute for U.S. goods that would have been produced in the absence of trade.[29] However, it is clear that NAFTA, like all trade agreements, has produced both winners and losers, and so estimates that focus only on jobs created and not those destroyed offer no insight into the agreement's net employment effects. A further limitation of this methodology is that it does not distinguish between changes in trade due to NAFTA and changes caused by other trade agreements, such as that creating the WTO, and does not take into account the impact of exchange rate fluctuations on trade. Due to these limitations, the estimates of the employment impact of NAFTA based on the multiplier approach, by both proponents and opponents, are unpersuasive.

The USITC recently developed a model to measure the impact of NAFTA and four other trade agreements on the U.S. economy which represents an advance over earlier studies.[30] The USITC model estimates that the combined effects of NAFTA and CUFTA had a positive impact on total compensation to U.S. workers of approximately $10 billion in 2001, compared to a scenario without the two agreements.[31] The model assumes that there is no net gain or loss of jobs due to NAFTA. This assumption is based on trade theory, which suggests that in full-employment economies, job composition will shift but there will be no net change in total employment. Labor market adjustment will occur by means of rising wages in the sectors that benefit from trade. However, the model can be used to estimate the order of magnitude of job gains or losses by changing the assumption about how labor markets adjust to changes in trade. If one assumes instead that wages are rigid and that the full adjustment occurs through increases in the number of jobs rather than increases in wages, the USITC model would produce a maximum net gain of 270,000 jobs. From 1994 until 2001, the US labor market could be considered at full employment. Under that condition, it is likely that gains from trade have translated into higher

wages rather than additional jobs. On the other hand, with U.S. unemployment rising in the recession of 2001 and for some time thereafter, it is reasonable to assume that some of the NAFTA/CUFTA impact would be seen in increased employment rather than higher wages. The combination of labor market conditions suggests that the overall impact of NAFTA on U.S. employment lies somewhere between a net gain of 270,000 jobs and zero net change.

An important limitation of the USITC model, which it shares with other methodologies, is that it does not capture the effect of investment decisions to relocate production from the United States to Mexico or Canada. To the extent that those decisions are based purely on market access (tariff and nontariff) considerations, the USITC model will capture them. But NAFTA also included important protections for U.S. investors that had not existed before the agreement, and those investor benefits may also affect decisions on where to produce. Further research and modeling work is needed to assess these effects.

Whether the *net* impact of NAFTA on employment is a small net positive (as the USITC model suggests) or neutral or weakly negative (as further elaboration, including research on investment impacts, might show), it is known that about a half-million U.S. workers lost jobs as a result of the agreement. While these lost jobs were likely offset by other jobs gained, the impact on losers is an economic and political concern. A useful source of information on NAFTA's impact on job loss can be found in data compiled under the NAFTA Trade Adjustment Assistance (NAFTA-TAA) program. This U.S. government program provided additional benefits for workers affected by NAFTA beyond those included in a general U.S. trade adjustment assistance program from 1994 through 2002. (Thereafter benefits were combined in a single trade adjustment assistance program.) During that time, about 500,000 workers were certified as having lost employment due to NAFTA. A detailed analysis of NAFTA-TAA data showed that about half of the job losses were due to production shifts to Mexico.[32] The apparel industry produced the greatest number of NAFTA-TAA certified job losers, about 28 percent of those eligible under the program, followed by electronics (13 percent), automobiles and parts (7 percent), and fabricated metals (6 percent). Other industries accounted for 5 percent or less of those certified eligible.

Wages and Productivity in the United States

Because the net impact of NAFTA on overall employment in the United States is small, the impact on wages is also likely to be minor at the national level. Still, important changes have occurred in the structure of U.S. wages that most studies attribute in part to trade; consequently, NAFTA is likely to account for some of those observed effects. The main structural change is the widening gap between the wages of skilled and unskilled workers that has been observed for the last three decades. There is a large literature that attempts to explain this divergence, with most economists identifying technological change as the main driver of this increasing gap. But most analyses find that trade has also played a role. While estimates of the impact of trade on low-skill wage depression vary depending on the methodology of the study, many researchers attribute about 20 percent of increased earnings inequality to trade. One study estimates that 40 percent of the growing wage gap can be attributed to a combination of trade and immigration.[33] This is potentially relevant to a discussion of NAFTA impacts, because immigration from

Mexico to the United States has increased since the agreement took effect, contrary to many predictions. Other studies look not at overall trade but at the growth of global production chains, or outsourcing, which allows U.S. manufacturers to maintain the high-skilled stages of production processes in the United States while sending low-skilled operations abroad.[34] This would tend to raise skilled wages (or depress unskilled wages) through the operation of supply and demand. To the extent that NAFTA reduced tariff barriers for the cross-border shipment of intermediate goods and provided greater guarantees for investments, it undoubtedly contributed to the observed growth of shared production between the United States and Mexico. However, this trend is also evident with respect to U.S. production chains involving many other low-wage countries.

Since the early 1990s, unit labor costs in U.S. manufacturing have fallen, because productivity has grown faster than wages. This decoupling of productivity from wage increases is seen in all of the NAFTA countries. In Mexico, the decoupling began after enactment of NAFTA, and in Canada it began after CUFTA took effect. In the United States, the trend began in the 1980s, when U.S. manufactured goods faced a serious challenge in the U.S. market from European and Asian imports. While this failure of wages to keep pace with productivity growth cannot be attributed directly to NAFTA, it is clear that increasing international economic integration has allowed employers to capture a greater share of productivity gains than had been the case during the period when these economies were less open to trade. It is not surprising that the trend in Mexico and Canada is so closely aligned with the advent of NAFTA and CUFTA, respectively, given that the United States is the dominant trading partner of each country. The U.S. economy, on other hand, was more affected by multilateral tariff reductions effected in successive rounds of General Agreement on Tariffs and Trade (GATT) negotiations, because two-thirds of U.S. trade is with partners other than Canada and Mexico. The likely channels through which this phenomenon operates include the integration of global labor markets for certain types of labor through outsourcing and production chains, which increase the available supply of low- and medium-skilled labor relative to demand. It is also likely that the relative bargaining power of labor is reduced by the possibility of outsourcing or plant relocation, even when it does not actually occur.

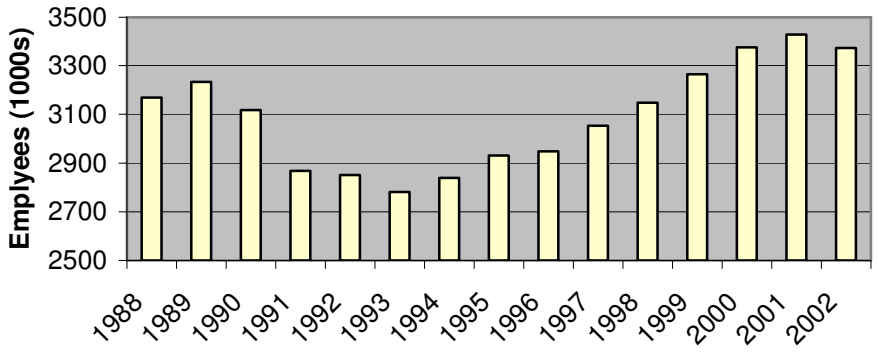
Employment in Canada

The impact of NAFTA on Canada cannot be understood without combining NAFTA's effects with those of its predecessor, the Canada-United States Free Trade Agreement (CUFTA), which took effect on January 1, 1989. NAFTA incorporated the provisions of CUFTA and also liberalized trade between Canada and Mexico. But trade with Mexico continues to be a small share of Canada's total trade—less than 1 percent of Canadian exports go to Mexico and 3.6 percent of its imports are from that country. Therefore, the main impact of NAFTA/CUFTA on employment in Canada and the Canadian economy in general can be traced to the phasing in of the CUFTA provisions.

A recent study of CUFTA effects on employment by Daniel Trefler advances considerably the level of analysis relative both to earlier studies of the Canadian experience and to studies that examine U.S. and Mexican employment impacts.[35] The carefully constructed model examines

the effects of CUFTA on employment, wages, and productivity in manufacturing industries in Canada. It controls for several other factors, such as the business cycle, that might account for changes. Trefler finds that in those industries that were most affected by Canadian tariff cuts and therefore were most exposed to import competition, employment fell by 12 percent. In the export-oriented industries that experienced the largest U.S. tariff cuts and therefore benefited most from the agreement, there was no increase in employment.[36] Insofar as Canadian tariff cuts under CUFTA were deeper than U.S. tariff cuts, the greater impact on import-competing industries is not surprising; but the lack of any net job creation in export industries is noteworthy. This result runs counter to the findings of earlier studies, which found that employment losses in U.S. and Canadian industries that compete with imports were more than offset by employment gains in export-oriented industries. Those studies suffered from serious methodological flaws, but the direction of the results seemed intuitively logical based on trade theory and they were widely accepted, despite actual observed net job losses. The Trefler study calls into question whether a net positive impact on jobs from trade liberalization can be inferred, at least between two industrialized countries and in the short-to-medium term (see Figure 5).

Figure 5. Canadian Employment in Manufacturing



Source: Statistics Canada, Labour Force Survey

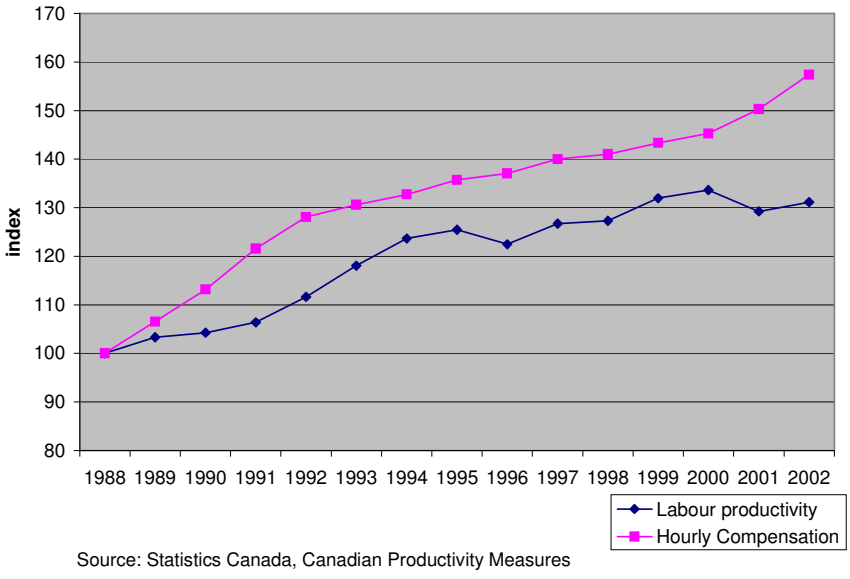
Trefler did find that both groups of industries experienced fairly strong productivity gains.[37] Over the medium term (in this case, a decade), employment in the Canadian manufacturing sector recovered, and by 1999 achieved levels last seen in 1989.[38] Growth continued in 2000 and 2001, with manufacturing employment hitting a peak in 2001 of 3.4 million jobs, about 250,000 more than pre-CUFTA levels, before declining again in the recession that began that year. In addition, the manufacturing sector constitutes a slightly larger share of the Canadian economy (22.4 percent in 2002) than its counterpart in the United States (20.6 percent the same year), which suggests that the productivity gains may have helped the long-term survival of Canadian manufacturing, although exchange rate movements undoubtedly played a role as well. The industries that showed positive employment trends by the late 1990s included automobiles and auto parts, electronics, plastics, and, somewhat surprisingly, apparel.[39] That industry underwent

significant restructuring, with higher-skilled operations becoming a larger share of employment than sewing and other lower-skilled jobs.

Productivity and Wages in Canada

Overall real wages in Canada were only slightly higher in 2002 than in 1989, but manufacturing earnings fared somewhat better.[40] This suggests that NAFTA/CUFTA or trade more generally did not have a negative impact on Canadian wages, since earnings in nontraded sectors increased more slowly than in manufacturing. As in the case of both Mexico and the United States, productivity increases in Canada significantly outstripped wage increases, in both manufacturing and nonmanufacturing sectors (see Figure 6).

Figure 6. Manufacturing Productivity and Wages: Canada



Source: Statistics Canada, Canadian Productivity Measures

Inequality in Canada

Incomes in Canada are relatively more equal than in either Mexico or the United States, but inequality has been on a marked upward trend since 1989.[41] The richest 20 percent of households increased their share of national income, from 40.7 percent of total income that year to 42.8 percent in 2000, while all other households experienced declines in their share. Only the top 20 percent of households had higher real incomes in 2000 than in 1989. The other 80 percent of Canadian households saw real incomes decline from 1989 to 1994 and then recover slightly, but not enough to make up for the earlier decline.

Given the relatively better performance of wages in manufacturing than in most other sectors, it seems clear that trade-induced changes in wage income patterns is not the explanation for the decline in incomes for 80 percent of Canadian households and the increasing economic inequality in Canada over the NAFTA/CUFTA period. However, a significant factor in household income in Canada is transfer payments from government, particularly to the bottom 40 percent of households, and these did decline due to cuts in government funding for social programs and changed eligibility requirements. For example, since NAFTA/CUFTA took effect, the proportion of unemployed workers receiving unemployment benefits declined from 87 percent to 36 percent. This decline is attributable to a number of factors, including macroeconomic policy. However, a strong concern of NAFTA/CUFTA critics was that trade opening to the United States would put downward competitive pressure on Canada's social safety net, which in most cases was superior to that of the United States. It cannot be ruled out that increasing liberalization of trade was a factor in the downward pressure on unemployment insurance and other social benefits in Canada and the resulting widening gaps in disposable household income. Further studies are needed.

Conclusion: Learning from the NAFTA Experience

At twelve years, the long-term effects of NAFTA on employment, wages, and incomes in the countries of North America cannot be judged definitively. However, short- and medium-term impacts can now be assessed on the basis of substantial, accumulating data, as presented above. That assessment also provides some potentially useful guidance for measures that might improve the employment and distributive outcomes of future trade agreements.

Employment

The most salient result of the NAFTA experience and the one most at odds with predictions of political advocates is that the trade agreement has produced disappointingly small net gains in employment in the countries of North America. In Mexico, employment destruction in domestic manufacturing and agriculture has all but swamped job creation in export manufacturing. In the United States, NAFTA has had either a neutral or very small net positive effect on employment. Meanwhile, in Canada, CUFTA led first to a significant net decrease in jobs in traded sectors, followed by a slow recovery of employment to pre-CUFTA levels after ten years, then a continued increase in subsequent years. The political and rhetorical claims for trade as an engine of net job growth are not borne out by experience, at least in the medium term.

Such claims have always been at odds with the predictions of trade theory. In theory, if an economy is at full employment before opening to trade, the shifting of resources into different productive activities based on comparative advantage will not result in a net gain or loss of jobs, but rather in a different mix of industries and employment. The gains from trade in a full-employment economy would be seen in rising wages and incomes, according to basic trade theory. The United States and, arguably, Canada have been at full employment during most of the NAFTA period. Thus, the lack of any significant job growth due to NAFTA in Canada and

the United States is not at odds with the predictions of economic theory, although it certainly contradicts the claims of NAFTA boosters. What is surprising, even from the perspective of economic theory, is the weak job creation in Mexico, which is far from full employment. As noted earlier, it is impossible to determine with certainty the precise share of agricultural job losses and manufacturing job gains in Mexico that resulted directly from NAFTA. However, the trade pact has been the single most important factor in Mexico's changing pattern of trade, and the overall growth of jobs in all traded sectors since 1993 has been very weak. It is thus evident that NAFTA has not been a robust job creator for the low-wage, labor-abundant trading partner.

In developing economies with surplus labor, such as Mexico, the NAFTA experience demonstrates that trade pacts cannot be counted on to produce much, if any, net employment growth in the absence of other targeted policies. Policies to maximize employment gains from trade would include measures to promote domestic supplier and support industries and terms in the trade agreement that reward rather than discourage the use of domestic inputs in the production of exported goods.

The experience of Mexico also suggests that a developing country with a high proportion of its labor force in low-productivity agriculture should negotiate very long transition periods for the phase-out of tariffs on basic crops. The negative situation currently faced by Mexico also demonstrates that a developing country must use that transition time aggressively to prepare the rural population for the wrenching adjustment it will face. Policies should be adopted to shift farmers to competitive crops, to develop alternative sources of employment in rural areas, and to invest heavily in education to prepare the population for more modern occupations. Another important factor for Mexico was that some of its most important basic crops, such as maize, were exposed to competition from subsidized U.S. crops that are sold at artificially low prices, sometimes below the cost of production. Further, U.S. policy on agricultural subsidies changed significantly in ways that were not foreseen during the NAFTA negotiations, most notably in the passage of the farm bill in 2002 that increased subsidies. Successful competition will be impossible for the developing country under those circumstances.

The transition times negotiated by Mexico were too short, and the government did not adopt sufficiently vigorous rural adjustment policies to help subsistence farmers adapt to the new trade conditions. In trade negotiations with developing countries with significant employment in subsistence agriculture, the US and its partners should carefully consider the sequencing of liberalization, to allow the absorption of rural workers into other sectors that expand due to liberalized access to foreign markets, before basic crops are liberalized. Developing countries will also need special safeguard mechanisms to protect the incomes of their rural households during the long transitional period.

The experience of Mexico also suggests that the government relied too heavily on export-led growth, adopting policies that repressed wages in order to pursue global competitiveness. These wage policies had the effect of depressing domestic demand in Mexico, which made the economy even more dependent on export sectors for job creation, in a vicious circle. A more balanced strategy of stimulating domestic demand through wage increases (commensurate with productivity gains) and support to rural households would likely produce better overall employment results.

Productivity

The one employment area where a clear positive impact has been seen during the NAFTA period is the growth of productivity in all three North American countries. At least in Mexico and Canada, which cut tariffs deeply and were exposed to competition from their giant neighbor, NAFTA likely played a significant role in the observed productivity growth. In Canada, increased productivity may have contributed to a medium-term revival and perhaps even long-term survival of the manufacturing sector.

However, the strong productivity growth in the United States and somewhat weaker growth in Mexico and Canada may have had the unwelcome side effect of reducing the pace of job creation in the three countries, as workers produced more and fewer new jobs were created.

Throughout North America, there has been a decoupling of productivity growth from wage growth over the last decade.

Wages

During the NAFTA period, productivity growth in Mexico has not translated into wage growth, as it did in earlier periods. Mexican wages are also diverging from, rather than converging toward, U.S. wages, as trade theory would suggest.

Because the net impact of NAFTA on U.S. employment is small, the impact on overall wages is also likely to be small. But a widening gap between the wages of skilled and unskilled workers is partly attributable to trade, and NAFTA probably accounts for a small portion of the observed growth in wage disparity within the United States.

Overall real wages in Canada were only slightly higher in 2002 than when CUFTA took effect in 1989, but manufacturing earnings had fared somewhat better. This suggests that NAFTA and CUFTA did not have a negative impact on wages, since earnings in non-traded sectors increased more slowly than in manufacturing. As in the case of Mexico, productivity increases in Canada significantly outstripped wage increases.

In all three countries, the evolution of wages and household incomes since NAFTA took effect has been toward greater inequality, with most gains going to the upper 20 percent of households and higher-skilled workers. While this trend is clearly compounded of many factors, more open trade appears to be one element—along with continental and global competition over the location of production—that restrains wage growth.

Whether productivity gains lead to higher wages also depends on the nature and quality of the institutions that determine the distribution of productivity gains within a society between the return to workers as higher wages and the return to investors as higher profits. Institutions that govern the ability of workers to organize unions and bargain collectively over wages are important determinants of distribution, as are government mechanisms such as minimum wage

policies. If productivity gains are to be shared with workers in the form of rising wages, the institutions and public policies that affect wage outcomes will need to be strengthened. Weak laws and institutions related to freedom of association and collective bargaining should be addressed in conjunction with trade liberalization. Minimum wage policies need to be reconsidered; dispute resolution mechanisms, such as arbitration, could also be strengthened.

Income Distribution

Income inequality has been on the rise in Mexico since NAFTA took effect, reversing a brief downward trend in the early 1990s. Compared to the period before NAFTA, the top 10 percent of households have increased their share of national income, while the other 90 percent have lost income share or seen no change. Regional inequality within Mexico has also increased, reversing a long-term trend toward convergence in regional incomes.

In a trend that predates NAFTA, income inequality in the United States has been increasing for most of the last two decades. The growing wage gap between high-skilled and low-skilled workers is one of the causes, and to the extent that trade is a factor in the wage gap, it is also implicated in growing inequality.

Incomes in Canada are relatively more equal than in either Mexico or the United States, but inequality has been on a marked upward trend since CUFTA's entry into force in 1989. Because manufacturing wages have performed better than wages in most other sectors, it seems clear that trade-induced wage changes are not the cause of the observed increase in inequality. Rather, a reduction in transfer payments from government, which play an important role in the incomes of the bottom 40 percent of households, accounts for most of the change. The weakening of the Canadian social safety net, which generates these transfer payments, was a concern of CUFTA opponents, but there is currently no clear evidence to support a causal relationship.

If the gains from trade are to be shared widely throughout a country, the institutional mechanisms that govern how costs and benefits of economic change are distributed may need to be strengthened. Government measures that affect income distribution, such as tax and transfer mechanisms, should be reviewed and fortified to deal with the impact of trade opening.

The experience of each of the NAFTA countries confirms the prediction of trade theory that there will always be winners and losers from trade. The number of losers may equal or even surpass the number of winners, especially in the short-to-medium term. In Canada, it took a decade for manufacturing employment to recover from the initial displacements caused by CUFTA. In Mexico, rural farmers are still struggling to adapt to NAFTA-induced changes. The short-to-medium term adjustment costs faced by the losers from trade can be severe, and the losers are often those segments of society least able to cope with adjustment, due to low skills, low savings, and low mobility. It must also be recognized that there may be permanent losers from trade, due to limitations of education, skills, geographic isolation, and other factors.

Because the impacts of trade are uneven, governments should establish mechanisms that help offset the losses suffered by those in declining sectors. Trade adjustment assistance should provide income support to workers and small farmers during transitional periods, as well as

funds for training for new occupations. Such policies are highly desirable complements to trade pacts. The existing trade adjustment assistance program in the United States and the broader social safety net in Canada serve these ends, although both countries' plans have critical gaps that should be addressed. In Mexico, budget constraints and policy choices have precluded the establishment of even the most basic unemployment insurance and social safety net. The harsh impact of agricultural trade liberalization on subsistence farmers there has not been offset by appropriate government policies. Developing countries negotiating with wealthier trading partners will likely need financial assistance from those countries, as part of the trade package, for transitional adjustment programs.

---

[1] William J. Clinton, Remarks at the Signing Ceremony for the Supplemental Agreements to the North American Free Trade Agreement, September 14, 1993. *Public Papers of the Presidents of the United States*, vol. 2, 1993 (Washington, D.C.: U.S. Government Printing Office, 1993).

[2] Remarks by the President at the Signing Ceremony for Chile and Singapore Free Trade Agreements, September 3, 2003. Available at www.whitehouse.gov.

[3] National Employment Survey (ENE), Mexican National Institute of Statistics, Geography, and Informatics (INEGI) and the Ministry of Employment and Social Insurance (STPS). Available at: www.inegi.gob.mx.

[4] In 2002, 89 percent of total Mexican exports went to the United States, while 1.7 percent went to Canada; 63 percent of total Mexican imports were from the United States and 4.2 percent were from Canada. (The data for Canada are from Statistics Canada, National Income and Expenditure Accounts; for Mexico, from INEGI, System of National Accounts; and for the United States, from the Bureau of Economic Analysis, National Income and Product Accounts.)

[5] INEGI, Monthly Industrial Survey (EIM). This survey also excludes microenterprises, small businesses with fewer than five employees that operate in the informal sector. Available at: www.inegi.gob.mx.

[6] Ibid.

[7] Enrique Dussel Peters, "Industrial Policy, Regional Trends and Structural Change in Mexico's Manufacturing Sector," in Kevin J. Middlebrook and Eduardo Zepeda, eds., *Confronting Development: Assessing Mexico's Economic and Social Policy Challenges* (Palo Alto, Calif.: Stanford University Press, 2003).

[8] *The Impact of Trade Agreements: Effect of the Tokyo Round, U.S.-Israel FTA, U.S.-Canada FTA, NAFTA, and the Uruguay Round on the U.S. Economy*, publication no. 3621 (Washington, D.C.: U.S. International Trade Commission), August 2003. Available at www.usitc.gov

[9] Ibid.

[10] Rogelio Ramirez De La O, "What Has Changed in the Performance of Employment and Wages in Mexico after NAFTA?" paper prepared for the Third Seminar on Income and Productivity of the North American Commission on Labor Cooperation (February 2000). Available at www.naalc.org/english/publications

[11] This effect could be amplified by a tendency in Mexican monetary policy to overvalue the peso as means of controlling inflation. This disadvantages Mexican producers when they try to export, while imposing less of a burden on U.S. multinationals using Mexico as an assembly platform, since the movement of components into Mexico and of finished products out will largely cancel out or at least smooth out the exchange rate effects.

[12] These figures are for overall manufacturing. The definition of *unskilled* here is possession of up to twelve years of formal education, while *skilled* is defined as possession of thirteen years or more. Jose Romero and Alicia Puyana, *The Mexican Economy after Two Decades of Trade Liberalization*," 2002. Paper on file with the author.

[13] *United States Dumping on World Agricultural Markets*, Cancun Series Paper no. 1 Minneapolis: Institute for Agriculture and Trade Policy), 2003. Available at www.iatp.org

[14] INEGI, National Income and Expenditure Survey (ENIGH) and STPS/INEGI National Employment Survey (ENE). Available at: www.inegi.gob.mx.

[15] *World Trade Report 2003* (Geneva: World Trade Organization), August 2003. Available at www.wto.org

[16] INEGI. National Occupation and Employment Survey (ENOE). Available at: www.inegi.gob.mx.

[17] There are a variety of definitions of the informal sector. The definition used here was developed for STPS by Clara Jusidman in 1993. It takes into account establishment size, the position held, and the industry involved.

[18] Maria Elena Vicario, Sandra Polaski, and Dalil Maschino, *North American Labor Markets: A Comparative Profile,* Secretariat of the North American Commission for Labor Cooperation, Washington, DC, December 2003). Available at www.naalc.org. The authors' calculations are based on data from the Mexican National Institute of Statistics, Geography, and Informatics (INEGI) and the Ministry of Employment and Social Insurance (STPS).

[19] Carlos Salas and Eduardo Zepeda, "Employment and Wages: Enduring the Costs of Liberalization and Economic Reform," in Kevin J. Middlebrook and Eduardo Zepeda, eds., *Confronting Development: Assessing Mexico's Economic and Social Policy Challenges* (Palo Alto, Calif.: Stanford University Press, 2003)**.**

[20] See, for example, Raymond Robertson, "Trade Liberalisation and Wage Inequality: Lessons from the Mexican Experience," *World Economy,* vol. 23, no. 6 (June 2000), pp. 827-49.

[21] Carlos Salas and Eduardo Zepeda, *Wages and Productivity in Mexico: Theoretical and Empirical Issues*, July 2003, paper commissioned for the report, *NAFTA's Promise and Reality, Lessons from Mexico for the Hemisphere,* Carnegie Endowment for International Peace, 2004. Salas and Zepeda study on file with the author.

[22]*The Mexican Economy* (see note 12), based on data from the Ministry of Labor and Social Welfare National Employment Survey.

[23] The labor side-agreement to NAFTA includes provisions for public petitions to any of the member governments if labor rights violations occur in any of the other NAFTA countries. Several petitions have been filed alleging interference with freedom of association and collective bargaining rights in Mexico. The petitions were filed with the U.S. National Administrative Office, the body that administers the agreement for the United States. While expressing its findings in diplomatic terms, the National Administrative Office did find significant shortcomings in this area in many cases (see www.dol.gov/ilab/programs/nao).

[24] See, for example, Martin Ravallion, "Can High-Inequality Developing Countries Escape Absolute Poverty?" World Bank Policy Research Working Paper no. 1775 (Washington, D.C.: World Bank), 1997. The World Bank Web site provides a useful summary of research on this topic at www.worldbank.org/poverty/inequal/abstracts/index.htm

[25] Dani Rodrik, *Where Did All the Growth Go? External Shocks, Social Conflict and Growth Collapses*, (Cambridge, Mass.: Kennedy School of Government, Harvard University), 1997, provides a political-economic model. Other models are catalogued at the World Bank Web site (www.worldbank.org/poverty/inequal/abstracts/index.htm).

[26] Data based on INEGI, ENIGH; and *The Mexican Economy* (see note 12).

[27] Gerardo Esquivel, *Sources of Regional (Non)Convergence in Mexico* (Washington, D.C.: World Bank), 2002. Available at www.worldbank.org

[28] Diana Alarcon and Eduardo Zepeda, "Economic Reform or Social Development? The Challenges of a Period of Reform in Latin America Case Study of Mexico," *Oxford Development Studies*, Vol. 32, No. 1, March 2004.

[29] Apparel imports, for example, come from many countries. Apparel imports from Mexico may have displaced imports from other countries rather than U.S. production.

[30] *The Impact of Trade Agreements: Effect of the Tokyo Round, U.S.-Israel FTA, U.S.-Canada FTA, NAFTA, and the Uruguay Round on the U.S. Economy*, publication no. 3621 (Washington, D.C.: U.S. International Trade Commission), August 2003. Available at www.usitc.gov. The USITC model is based on a computable general equilibrium model but uses actual trade flows and other macroeconomic and microeconomic data from the U.S. economy for the period 1978-2001. It controls for such factors as exchange rate shocks to isolate the effects of NAFTA tariff changes. It also takes into account the phased-in nature of the agreement and the growing share of trade in the U.S. economy.

[31] In *The Impact of Trade Agreements* (see note 30), the USITC estimates that U.S. labor income would have been $40 billion less if not for the effects of five trade agreements, including the Tokyo and Uruguay rounds of the General Agreement on Tariffs and Trade (GATT), NAFTA, CUFTA, and the United States-Israel Free Trade Agreement (p. 339). Separately, the study finds that 25 percent of the total impacts attributable to all five agreements were contributed by NAFTA and CUFTA (pp. 332-33).

[32] Mary Jane Bolle, *NAFTA: Estimated U.S. Job "Gains" and "Losses" by State over 5 ½ Years* (Washington, D.C.: Congressional Research Service), February 2, 2000.

[33] George J. Borjas, Richard B. Freeman, and Lawrence F. Katz, "How Much Do Immigration and Trade Affect Labor Market Outcomes?" *Brookings Papers on Economic Activity,* vol. 1, (1997), pp. 1-67.

[34] Robert C. Feenstra and Gordon H. Hanson, *Global Production Sharing and Rising Inequality: A Survey of Trade and Wages* (University of California, San Diego, and National Bureau of Economic Research, 2001).

[35] Daniel Trefler, *The Long and Short of the Canada-U.S. Free Trade Agreement*, University of Toronto, Canadian Institute for Advanced Research, and National Bureau of Economic Research, December 3, 2002. Available at www.chass.utoronto.ca/~trefler/fta.pdf

[36] The study actually showed a 3 percent employment loss in the export industries, but it was statistically insignificant.

[37] However, the average annual productivity gains during this period were significantly less than those observed in the 1960s and 1970s.

[38] *North American Labor Markets* (see note 18). Data based on Labour Force Survey, Statistics Canada.

[39] Ibid.

[40] Ibid. Data based on Survey of Employment, Payrolls, and Hours, Statistics Canada.

[41] Ibid. Data based on Survey of Consumer Finances, Statistics Canada.