

Jobs, Wages, and Household Income

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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, the quality of those jobs, and the wages paid. 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 this chapter, I review the impact of NAFTA on jobs, wages, and household income in each North American country. The focus is primarily on Mexico, however, because the impact of NAFTA on employment has been much greater there than in Canada or the United States. I then discuss the policy implications for countries in the hemisphere that are confronting choices on trade that may have similar employment impacts.

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MAIN FINDINGS

JOBS

- 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. About 30 percent of the jobs that were created in maquiladoras (export assembly plants) in the 1990s have since disappeared. Many of these operations were relocated to lower-wage countries in Asia, particularly China.
- 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.
- NAFTA's net effect on jobs in the United States has been minuscule, given the size of the U.S. economy and the importance of other trading partners. The best models to date suggest that NAFTA has caused either no net change in employment or a very small net gain of jobs.
- NAFTA's predecessor, the Canada-United States Free Trade Agreement (CUFTA), took effect in 1989 and at first led to substantial net job losses in Canada's traded sectors. After about five years, the losses stopped and export manufacturing began to grow again. A decade after the enactment of CUFTA, manufacturing employment recovered to the levels seen before the trade pact and has continued to grow modestly since then.

PRODUCTIVITY

- Productivity has increased in all three countries over the last decade. NAFTA and CUFTA likely played a significant role in the observed productivity growth in Mexico and Canada, because both countries cut tariffs deeply and were thereby exposed to competition from their giant neighbor. In the United States, NAFTA probably has played a small or negligible role in productivity growth for two reasons: U.S. tariffs were already low before NAFTA and trade with the rest of the world plays a much larger role.
- 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.

WAGES

- Real wages for most Mexicans today are lower than when NAFTA took effect. This 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.
- Since the net impact of NAFTA on U.S. employment is small, the impact on overall wages is also minor. But a widening gap between the wages of skilled and unskilled workers is partly attributable to trade, and NAFTA as a factor in U.S. trade is thus likely to account for a portion of the observed growth in wage inequality.

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

INCOME DISTRIBUTION

- 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.
- Income inequality in the United States increased during the decade before NAFTA and has continued to widen. 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.
- Despite relatively more equal incomes in Canada than in either Mexico or the United States, income inequality has been on a marked upward trend since CUFTA's entry into force in 1989. The richest 20 percent of Canadian households have increased their share of national income during the period, while all others have experienced declines. Only the top 20 percent of households had higher real incomes in 2000 than in 1989. Because manufacturing wages performed better than wages in most other sectors, it seems clear that trade-induced wage changes were not the cause of the observed increase in inequality in Canada. 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 possibility that increased trade would weaken the Canadian social safety net was a concern of CUFTA opponents, but there is no clear evidence to support a causal relationship.

WINNERS AND LOSERS

- The experience of each of the NAFTA countries 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 Canada, it took a decade for manufacturing employment to recover from the initial displacements caused by CUFTA. In Mexico, 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 insufficient skills, meager savings, and limited mobility. It must also be recognized that there may be permanent losers from trade, due to these limitations.

Mexico

JOBS

Mexico has an abundance of labor. Very high population growth rates through the mid-1970s translated into a demographic bulge in the workforce through the late 1990s, as people born during the earlier high-growth years matured and began to look 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 32.3 million immediately before NAFTA to 40.2 million in 2002, 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, at what pace, and in what sequence. It also depends on other negotiated provisions of the pact—and related government policies—that affect decisions about investment, production, and jobs, and on the overall balance of gains and losses from the trade agreement as negotiated.

Thus, it is necessary to look at both the elimination of tariffs on exports from Mexico to its northern neighbors (which could increase exports and therefore increase jobs) and the elimination of Mexican tariffs on U.S. and Canadian goods (which could increase Mexico's imports from the United States and Canada and thereby eliminate jobs in Mexico) to understand the impact of NAFTA's tariff cuts on Mexican jobs. 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 (see Figure 1).

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 was lower in 2003 than 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, then began a recovery that produced an additional 91,000 jobs at its peak in May 2000 before declining again over the past three years. The recent decline has been caused in significant part by the U.S. recession. As NAFTA has linked Mexico more and more closely to the U.S. economy, the U.S. business cycle has come to play a dominant role in Mexico's economic fortunes. In May 2003 there were 1.3 million jobs in non-maquiladora manufacturing, about 100,000 fewer than when NAFTA took effect (see Figure 2).

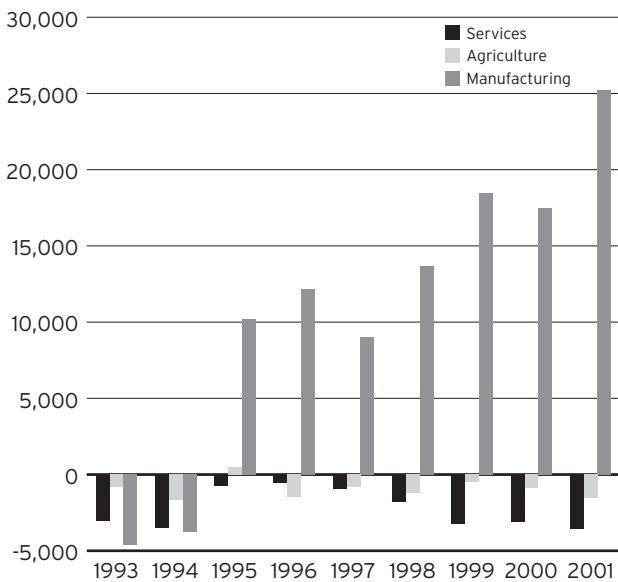
The maquiladora program was created by Mexico and the United States in 1965 to allow tariff-free and tax-free imports of materials and components into Mexico for assembly and re-export to the United

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. At the same time, NAFTA began a process of phasing out the unique tax and tariff advantages of the maquiladora program, while granting similar treatment to non-maquiladora manufacturers in Mexico. Many observers expect the maquiladoras' share of Mexico's manufactured exports to continue to decline over time.

Maquiladora assembly plants added about 800,000 jobs between NAFTA's enactment in January 1994 and the sector's peak employment in 2001. They then shed about 250,000 jobs through May 2003. Currently, maquiladoras employ about 550,000 more workers than they did before NAFTA (see Figure 3). Maquiladora plants produce almost entirely for export, so employment in that sector can be attrib-

Figure 1. Mexico's Trade Balance with the United States, by Sector

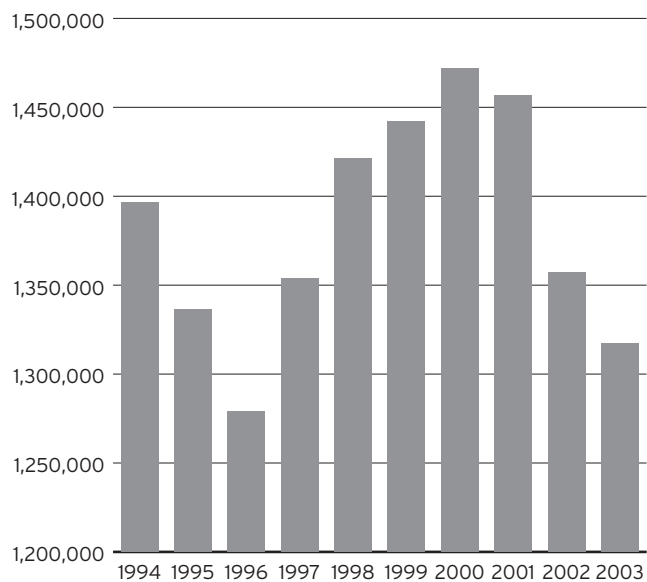
MILLIONS OF DOLLARS



Source: Compiled by the U.S. International Trade Commission from official statistics of the U.S. Department of Commerce, Bureau of the Census.

Figure 2. Non-Maquiladora Manufacturing

TOTAL EMPLOYMENT, JANUARY 1 OF EACH YEAR



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

uted largely to trade (although not exclusively to trade resulting from 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.

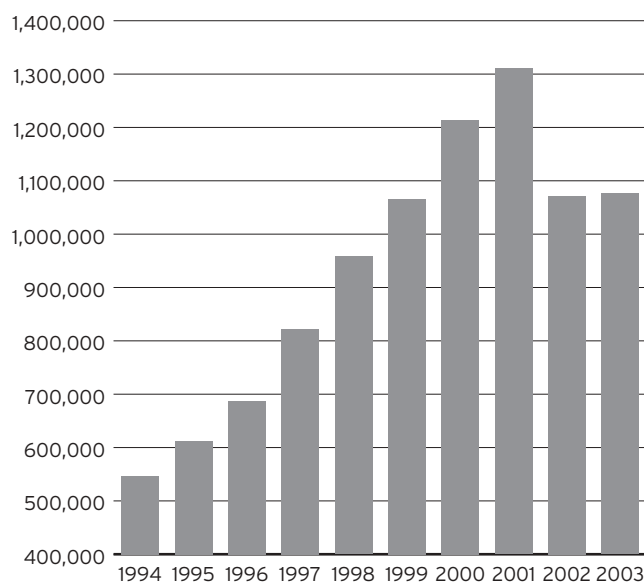
Only part of the growth in both maquiladora and non-maquiladora export employment can be attributed to NAFTA. The peso devaluation of 1994–1995 gave a very significant boost to all Mexican exports, as the dollar bought more than twice the value of Mexican goods after the devaluation. A study by the U.S. 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 through most of the 1990s, the gains were fairly modest, and alone cannot account for the very slow growth in manufacturing employment.

One 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. Forward and backward linkages, such as the stimulation of businesses that supply parts and materials, are not created, 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 intrafirm production carried out by multinational firms operating in Mexico in sectors

Figure 3. Maquiladora Employment in Mexico
TOTAL EMPLOYMENT, JANUARY 1 OF EACH YEAR



Source: INEGI, Monthly Indicators of the Maquila Industry.

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 in the decline of domestic manufacturing employment 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. 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 also means that the value of Mexico's market access advantages will erode as other low-wage countries gain similar access. For example, a proposed free-trade pact with Central America would add 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 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 actually increased somewhat in the late 1980s and early 1990s, employing 8.1 million Mexicans at the end of 1993, just before NAFTA came into force. Employment in the sector then began a downward trend, with 6.8 million employed

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UNDERSTANDING THE PESO CRISIS—WAS IT RELATED TO NAFTA?

The story of the 1994 Mexican peso crisis is basically a story of huge capital inflows from 1991 through early 1994, then abrupt outflows in late 1994 and 1995. As was the case in other developing-country financial crises of the 1990s, the volume and ultimately the direction of capital flows was partly a function of policy choices by the national government and partly the result of factors outside the government's control.

The inflow of capital investment in the early 1990s was a welcome change for Mexico after the lost decade of the 1980s, when the repayment of huge debt from earlier periods suppressed economic growth and living standards. A restructuring of that debt through the U.S.-led Brady plan of 1989, a series of privatizations in the early 1990s, and a rise in oil prices associated with the 1991 Gulf War together helped shake Mexico out of its economic doldrums. Meanwhile, Mexico began negotiations with the United States and Canada on what would become NAFTA, increasing investors' confidence that Mexican products would have access to the huge U.S. market and that investments in Mexico would be protected under an ambitious investment clause included in the new trade agreement. An important additional ingredient in the mix was that Mexico undertook financial liberalization beginning in the late 1980s that eliminated most capital and exchange controls, allowing much greater capital mobility.

Together, these policy choices accounted for one side of the attraction that Mexico began to hold for foreign investment and domestic flight capital. The other side was that the same period saw an economic recession in most of the developed world, beginning with contractions in Europe and Japan in 1990 and a downturn in the United States in 1991. Monetary authorities in those countries cut interest rates to try to revive their domestic economies, making higher returns in countries such as Mexico even more attractive to investors on a relative basis.

During the period leading up to the crisis, Mexico maintained a relatively fixed exchange rate regime, known as a *crawling parity band*, through which the peso was pegged to the U.S. dollar.¹⁴ Investors viewed this type of arrangement positively at the time. To the extent the government's monetary policies were seen as credible, the fixed regime created predictability about the exchange rate and relieved investors of exchange rate risk.

The renewed inflows of capital were dominated by portfolio capital, that is, investment in government bonds and corporate stocks and bonds rather than direct investment in plants and equipment. About 60 percent of the portfolio investment was in bonds. As Table 1 shows, portfolio investment accounted for 63 percent, 76 percent, and 85 percent of capital inflows in 1991, 1992, and 1993, respectively. It was only in 1994, when NAFTA took effect, that foreign direct investment (in factories, equipment, farms, and other businesses) surpassed the shorter-term portfolio investments.¹⁵ Portfolio investment is much more mobile or "footloose" than foreign direct investment, as the latter entails activities such as actual construction of factories and acquisition of equipment that may be hard to resell. Investments in Mexican government bonds were particularly short range investments, as most of the bonds were issued for three-month terms.

Table 1. External Portfolio and Foreign Direct Investment in Mexico

MILLIONS OF U.S. DOLLARS

Year	External Portfolio Investment	Foreign Direct Investment
1990	3,369	2,549
1991	12,741	4,742
1992	18,041	4,393
1993	28,919	4,389
1994	8,185	10,972
1995	-10,140	6,963

Source: International Monetary Fund, International Financial Statistics, October 1996.

In February 1994, the U.S. Federal Reserve Board raised interest rates for the first time since the recession of the early 1990s, in what was to be a series of rate increases as the United States experienced a strong economic recovery. With the interest rate spread between the United States and Mexico narrowing, portfolio capital flows to Mexico contracted sharply during the next three months, to less than one-fifth of their previous level. At the same time, new political turbulence emerged in Mexico, including the uprising of an indigenous group in Chiapas and the assassination of the presidential candidate of the ruling party. The Mexican government had to roll over existing debt (the three-month bonds, called *CETES*) in this difficult environment. At this point, the government made two fateful decisions. First, it shifted the public debt out of pesos into dollar-based securities (called *tesobonos*) as the three-month bonds came due. It thereby agreed to assume the exchange rate risk (which investors had previously borne) if the peso's rate of exchange with the dollar became unsustainable. The second decision was to continue to "sterilize" funds from international exchange transactions—that is, keep them out of the domestic money supply. Just as some funds had been kept out of the domestic monetary base as they flowed into Mexico in the early 1990s (and held as foreign exchange reserves), so now the outflow was covered by those reserves, allowing the Bank of Mexico to intervene to maintain the peso in its parity band for most of 1994. This allowed the government to prevent a collapse of the peso and an economic contraction during the first three quarters of 1994, the period leading up to the Mexican presidential election.

However, by the end of 1994 these reserves were almost exhausted. The government did not publish data that would allow the exact situation to be known, but investors and speculators began to expect that the government would run out of reserves and be forced to devalue the peso. To beat that eventuality, investors scrambled to shift out of Mexican investments and to trade pesos for dollars in order to do so. In response to the growing demand for dollars and shrinking foreign reserves, the Bank of Mexico widened the parity band in which the peso could move from about 2 percent to 15 percent. This was contrary to investor expectations (and, indeed, government indications) that there would be no devaluation. Coming on top of the other pressures that had been building, there was a run on the peso. The Bank of Mexico suffered large reserve losses over the next two days and on December 22, 1994, announced that the peso would be allowed to float. Within ten days the peso had depreciated 55 percent. Continuing to fall, it hit a low of 7.64 to the dollar by the end of 1995.

In evaluating the policy choices of the Mexican government with hindsight, it is useful to remember that until 1994 Mexico was often held up as a model of economic development by U.S. and multilateral financial institutions. But significant aspects of Mexico's apparent success in attracting international capital were built on a factor—low world interest rates—over which Mexico had no control. Mexico compounded this vulnerability by relaxing all controls over capital flows through its aggressive financial liberalization policies, so that it had no levers under its control when investor sentiment changed. The capital inflows were huge compared to the size of the economy, inflating it like a bubble. The "shock" of the capital outflows was therefore also very large. The peso crisis became the first financial crisis of globalization, with others to follow. In light of the Mexican experience, it seems clear that very large capital flows, especially flows of footloose portfolio capital, can be destabilizing to any macroeconomic policy regime in developing countries.

The United States has recently adopted the position that trade partners must eliminate all existing capital controls as part of any free-trade agreement. But Mexico's experience with financial liberalization, which predates NAFTA, clearly demonstrates that this is not a prudent policy for a developing country interacting with much larger global financial forces. Developing countries would be wise to resist demands that they eliminate capital controls as part of free-trade agreements.

at the end of 2002, a loss of 1.3 million jobs.¹⁶ 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 short period 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.¹⁷ Thus, agricultural trade liberalization linked to NAFTA is the single most significant factor in the loss of agricultural jobs in Mexico (see Figure 4).

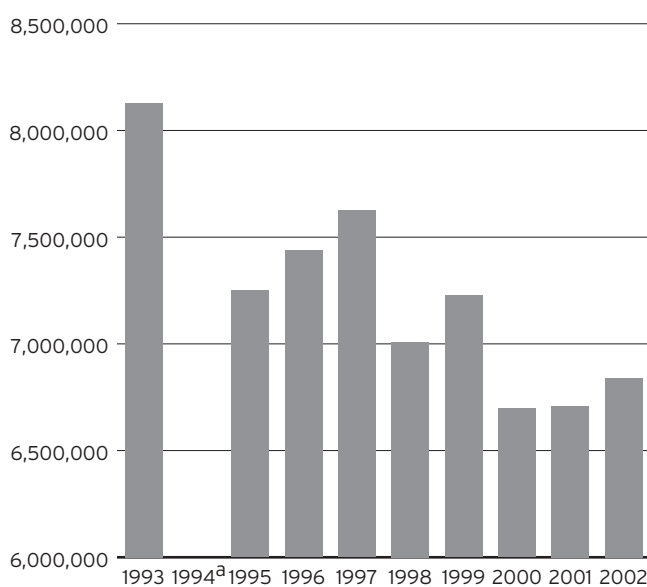
The release of labor from the agricultural sector largely offset the employment gains in the export manufacturing sector that occurred after NAFTA took effect. As noted earlier, it is impossible to establish precisely what proportion of the 1.3 million gain in export manufacturing jobs (at the peak of employment in 2000) and the 1.3 million loss in agricultural jobs between 1994 and 2002 was directly attributable to NAFTA. However, it is clear that the sum of the effects of the trade pact to date has not been a strong net gain in overall employment and may have been a small net loss of jobs for Mexico. Further, 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.

While the evolution of trade-related employment since enactment of NAFTA is disappointing, the substitution of manufacturing jobs for agricultural jobs is generally considered positive for development, representing a move up the production ladder. However, as noted above, there are some reasons for concern about the Mexican manufacturing sector. These include the limited development of forward and backward manufacturing linkages that would multiply job creation, the erosion of Mexico's first-mover advantage, and the decline in jobs in manufacturing for domestic consumption.

Service Sector Employment. NAFTA has had little direct effect on employment in the 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

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Figure 4. Mexican Employment in Agriculture
EMPLOYEES



Source: INEGI/STPS, National Employment Survey (ENE).
Note: Agriculture actually refers to the primary sector, which also includes fishing, forestry, and trapping.
a. Data for 1994 not available.

HOW RURAL HOUSEHOLDS SURVIVE¹⁸

The rural economy in Mexico has changed dramatically over the past decade, as a result of NAFTA, other trade pacts, and changing government policy. These factors have thrust the rural population into a maelstrom of change beyond its capacity to control. While some medium- and large-scale farmers have adapted to new market opportunities—often with the support of the Mexican government or foreign investment—much larger numbers of subsistence farmers have fared poorly. Rural households already suffering from low standards of living are under increasingly severe strain, while alternative economic activities are often unavailable or unpalatable.

In response, many rural households have adopted complex survival strategies that involve a mix of increased cultivation of basic crops, some diversification of agricultural production, increased day labor, and increased off-farm employment, often in the informal sector and in some cases in maquiladora plants that have relocated away from the northern border and into the hinterlands. It seems clear that these strategies also involve increased migration to other parts of Mexico as well as migration to the United States, although reliable data on either type of migration are not available. Despite the dispersal of work, sometimes to faraway locations, the families and communities involved maintain some cohesion as social and economic units. For example, rural households increasingly depend on remittances from household members who migrate, whether to other parts of Mexico or to the United States. Remittances from the United States have set records each of the last few years, amounting to US\$9.8 billion in 2002 and on course to reach at least US\$12 billion in 2003 at current rates.¹⁹

Rural Mexicans' diverse survival strategies help to explain some surprising developments that run counter to economic predictions but are well documented in Mexican statistics. For example, production of maize on irrigated lands (mainly larger commercial farms) has declined since cheaper, subsidized U.S. corn was allowed into Mexico and subsidies for water use were reduced. However, maize production on nonirrigated, rain-fed land (overwhelmingly small subsistence plots) increased when household incomes contracted sharply during the severe recession that followed the peso crisis in 1995. Production has continued at similar levels, despite imports of cheaper U.S. corn (see Figures 5–8. Data for 2001 and 2002 are preliminary).

Subsistence farmers produced primarily for their own consumption, although some of the increase was also destined for local markets. Either the cheaper imported corn did not reach markets in remote areas due to poor roads and other factors, or the lack of cash income influenced the “grow or buy” decision. An additional factor appears to be the preference for native varieties of maize over imported corn, among both rural and low-income urban families, which has helped to sustain the market for traditional maize and for value-added food products using maize as an input, such as *tamales*, *posole*, and *sopes*.

It also appears that as more rural workers have moved into nonagricultural activities as their primary occupations, a substantial number continue to perform some work in agriculture. Mexico's main statistical agency, the National Institute of Statistics, Geography, and Informatics (INEGI), began to include a special series of questions in its household survey in less urbanized areas in the 1990s, designed to elicit more information on rural economic behavior.²⁰ The survey showed that about 7 million people were involved in agricultural activities in 2000.²¹ However, when questioned further about their activities during the previous six months, an additional 1.5 million people who reported their principal employment as nonagricultural indicated that they had in fact worked in the agricultural sector at some time during that period.²² This represents an augmentation of the agricultural workforce by

Figure 5. Maize Imports to Mexico
THOUSANDS OF METRIC TONS

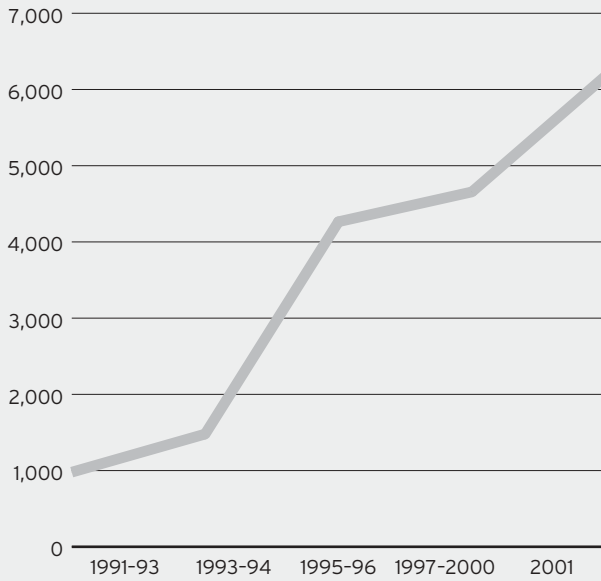


Figure 6. Total Maize Production in Mexico
THOUSANDS OF METRIC TONS

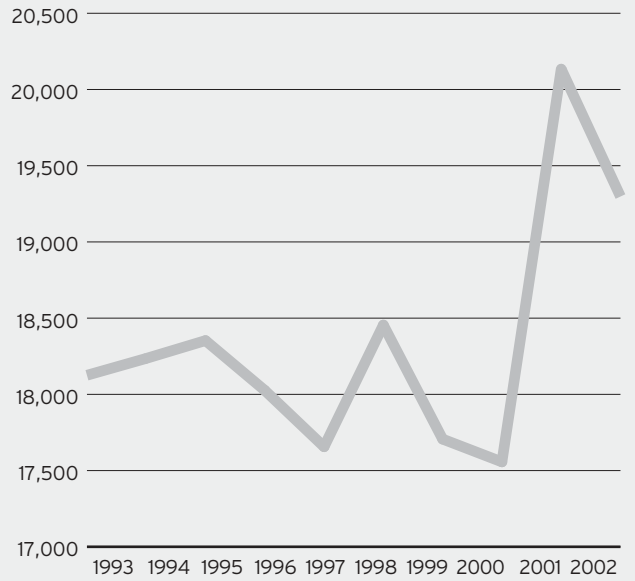


Figure 7. Total Irrigated Maize Production in Mexico
THOUSANDS OF METRIC TONS

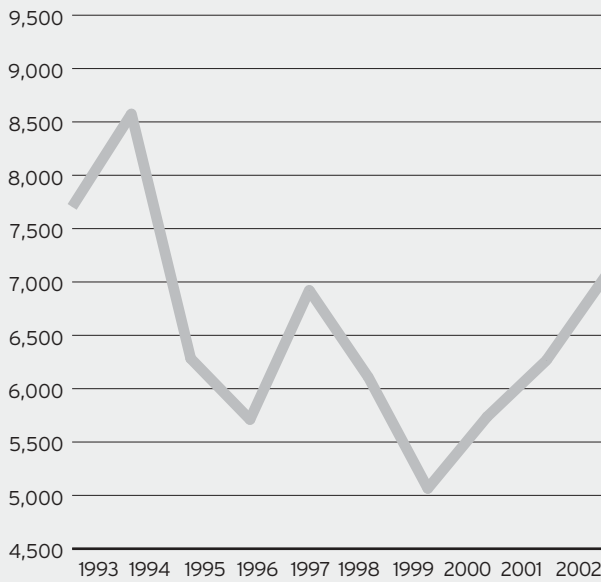
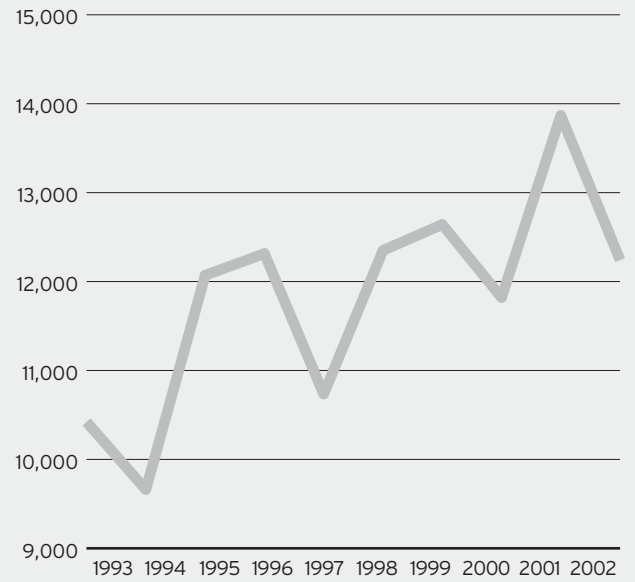


Figure 8. Total Rain-Fed Maize Production in Mexico
THOUSANDS OF METRIC TONS



Source: Mexican Secretary of Agriculture, Livestock, Rural Development, Fisheries, and Nutrition (SIAP-SAGARPA), available at www.siap.sagarpa.gob.mx.

about 20 percent for some parts of the year, presumably those times requiring the greatest labor, such as the times of sowing and harvesting. This part-time agricultural activity by workers employed elsewhere helps to explain how agricultural production on small farms has been maintained despite the sharp decline in overall agricultural employment that appears in the main employment data.

Day laborers, somewhat surprisingly, were more likely to work for small landowners (40 percent of day laborers) than for larger commercial agriculture or ranching operations (30 percent). The remaining workers were hired by *ejidos*, the communities of small-scale farms comprising the poorest segment of agricultural property owners.

A small proportion of rural households and communities have succeeded in establishing market niches for resources such as environmental services and ecotourism, and for products that can be certified as “organic,” “sustainable,” or “artisan,” all of which command more favorable prices in international marketing schemes (see chapter 3 for further discussion of these niche activities).

As already noted, remittances from household members who have migrated have become an increasingly important factor in the overall survival of rural households and the surprising staying power of rural communities. In addition to international flows, domestic remittances (transfers from within Mexico) are also an important factor in cash income for rural households. The remittances are used partly for consumption, but are also used for production purposes. For example, they allow subsistence farmers to surmount credit constraints to purchase agricultural inputs that ordinarily would be financed through borrowing. This is particularly important in light of the collapse of rural credit in recent years.

The portrait that emerges from these varied economic activities is of a population that combines nonagricultural activities and urban jobs (in Mexico and abroad) with continued agricultural production and remittances. The evident goal is to sustain the life of rural communities as both an alternative to and insurance against the precariousness of the informal economy, urban shantytowns, and illegal migration, which loom as the main alternatives for poor rural households.

took effect to 57 percent in 1997. 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 17.3 percent in 2002 (see Figure 9).²³

As discussed above, displacement of subsistence farmers, in part because of increased agricultural imports from the United States as a result of NAFTA tariff cuts, led rural households to struggle to maintain adequate income levels. Mexico has no unemployment insurance program, and so displaced workers must find alternative employment. 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.²⁴ 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.²⁵ 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

Real wages in Mexico are lower today than when NAFTA took effect. This stunning setback in wages cannot be attributed primarily to NAFTA, however. Indeed, wages today are below their 1980 levels. 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

demand 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.²⁶

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 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.²⁷ 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.²⁸ 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 1993.²⁹ The disappointing wage performance has occurred despite the fact that Mexican workers' productivity has increased since NAFTA took effect (see Figure 10).

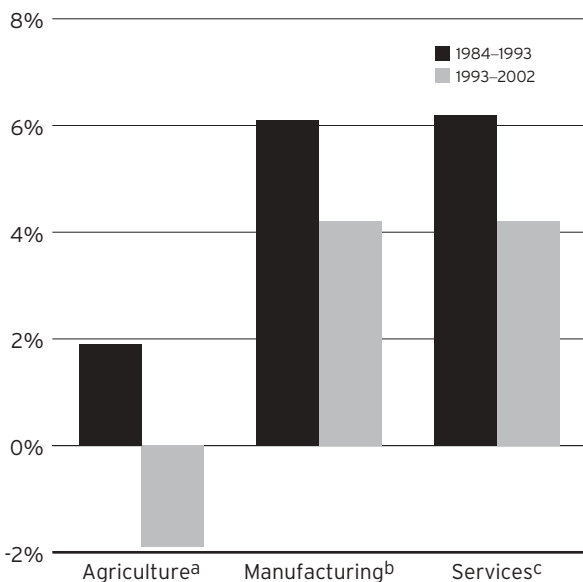
Increasing productivity is a necessary condition for sustainable increases in wages, since over time an

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. 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).

While labor market supply, 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,

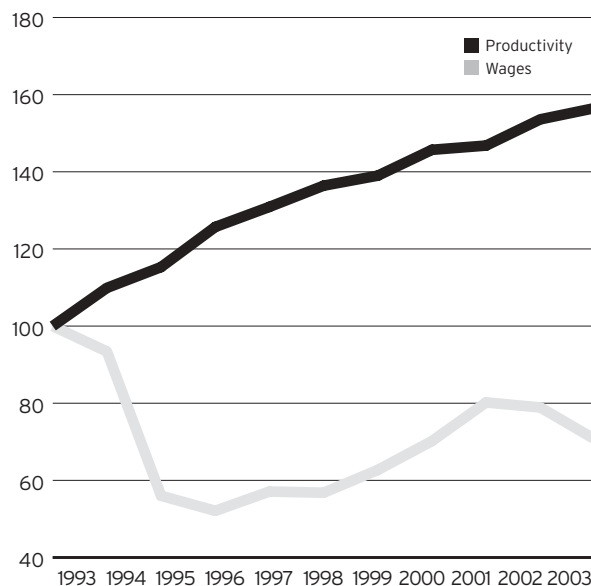
Figure 9. Average Annual Employment Growth by Sector, Before and After NAFTA



Source: INEGI/STPS, National Employment Survey (ENE).
 a. Primary sector includes agriculture, fishing, forestry, and trapping.
 b. Secondary sector includes mining, manufacturing, and construction.
 c. Tertiary sector includes transportation, utilities, communications, trade, financial, and social services. Mexican data are currently under revision by the STPS and INEGI.

Figure 10. Manufacturing Productivity and Real Wages in Mexico

INDEX: 1993=100



Source: INEGI/STPS, Monthly Industrial Survey (EIM).

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 nonexistent 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.³⁰

INEQUALITY AND POVERTY

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.³¹ 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.³²

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.³³

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.³⁴

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.³⁵

The United States

JOBS

The impact of NAFTA on the United States’ economy, employment, and the welfare of its citizens is significantly less than its impact 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, wages, and household incomes in the United States is also much less than in Mexico and Canada.

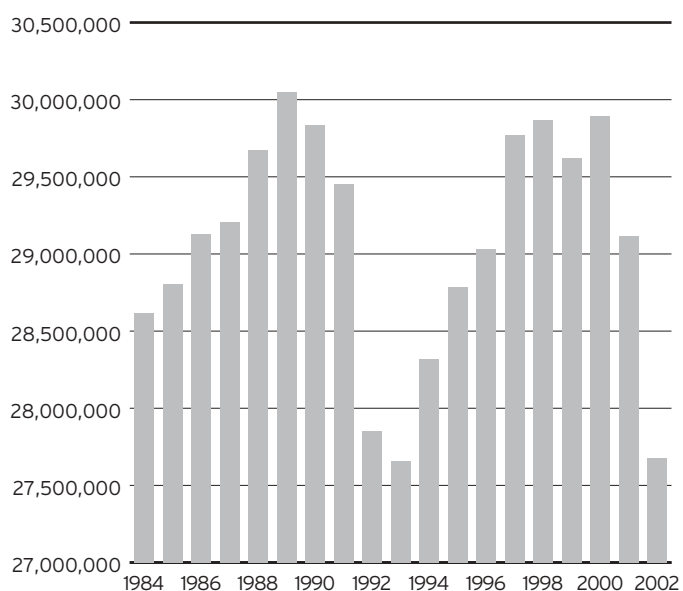
The actual impact of NAFTA on U.S. employment has been sharply disputed by proponents and critics of the agreement. Widely diverging estimates have been produced. Generally, analysts on both sides of the question have approached the task by estimating the number of manufacturing jobs supported by a given level of exports and then multiplying the growth in exports to Canada and Mexico by that figure to arrive at job gains. Using this methodology, the U.S. Trade Representative estimates that 914,000 jobs have been created due to NAFTA.³⁶ Critics, on the other hand, apply the multiplier formula to imports, with one study attributing a loss of 766,000 jobs to NAFTA.³⁷ If these estimates were accepted as credible, the resulting net effect would be an increase of about 150,000 jobs due to NAFTA (or less, given that the job increases cited cover eight years, while the job losses cover only seven years). Advocates of NAFTA resist applying 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.³⁸ 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. Further, this methodology 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 by both proponents and opponents have been unpersuasive.

The USITC recently developed a model to measure the impact of NAFTA and four other trade agree-

ments on the U.S. economy that represents an advance over earlier studies.³⁹ 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.

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.⁴⁰ As noted, the model assumes that the entire change occurred through changes in wages. If one assumed instead that wages were rigid and that the full adjustment occurred through increases in the number of jobs rather than

Figure 11. U.S. Employment in Manufacturing
EMPLOYEES



Source: United States Bureau of Labor Statistics, Current Population Survey.
Note: Manufacturing also includes mining and construction.

increases in wages, the USITC model would produce a maximum net gain of 270,000 jobs. However, for most of the period since NAFTA took effect, the United States has been 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 last three years, it is reasonable to assume that some of the NAFTA/CUFTA impact would now be seen in increased employment rather than higher wages. Since wages are not rigid and the economy is currently not at full employment, this model suggests that the overall impact of NAFTA on U.S. employment lies somewhere between a net gain of 270,000 jobs and no 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 by the NAFTA Trade Adjustment Assistance (NAFTA-TAA) program. This U.S. government program provides benefits for workers affected by NAFTA beyond those included in a general U.S. trade adjustment assistance program.

As of September 2003, a total of 525,094 workers had been certified as having lost employment due to NAFTA under the NAFTA-TAA program. A detailed analysis of earlier NAFTA-TAA data showed that about half of the job losses were due to production shifts to Mexico.⁴¹ 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

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.⁴² 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 (see chapter 2 for more discussion). 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 parts of production processes in the United States while sending low-skilled operations abroad.⁴³

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 or CUFTA, it is clear that increasing economic integration has allowed employers to capture a greater share of productivity gains than had been the case in the three countries during the period when their 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 are many, including 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 possi-

bility of outsourcing or plant relocation, even when it does not actually occur.

INEQUALITY

Economic inequality in the United States has been increasing for most of the last two decades. Since the early 1980s, the richest quintile (top 20 percent) of U.S. households has increased its share of national income from 44 percent to over 50 percent.⁴⁴ Meanwhile, each of the other four household quintiles has seen its share of national income decrease. 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.

Canada

JOBS

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 by Daniel Treffer of CUFTA effects on employment advances the level of analysis relative both to earlier studies of the Canadian experience and to studies that examine U.S. and Mexican employment impacts.⁴⁵ 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.⁴⁶ 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 12).

Trefler did find that both groups of industries experienced fairly strong productivity gains.⁴⁷ Over the medium term (in this case, a decade), employment in the Canadian manufacturing sector recovered, and by 1999 achieved levels last seen in 1989.⁴⁸ 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.⁴⁹ That industry underwent significant restructuring, with higher-skilled operations becoming a larger share of employment than sewing and other lower-skilled jobs.

WAGES

Overall real wages in Canada were only slightly higher in 2002 than in 1989, but manufacturing earnings fared somewhat better.⁵⁰ This suggests that NAFTA/CUFTA or trade more generally did not have a negative impact on Canadian wages, since earnings in nontraded sectors increased slower 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 13).

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 1989.⁵¹ 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 do not explain 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 the government, particularly to the bottom 40 percent of households, and these declined 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 liberalization of trade was a factor in the downward pressure on unemployment insurance and other social benefits in Canada, or the cause of widening gaps in disposable household income. Further studies are needed.

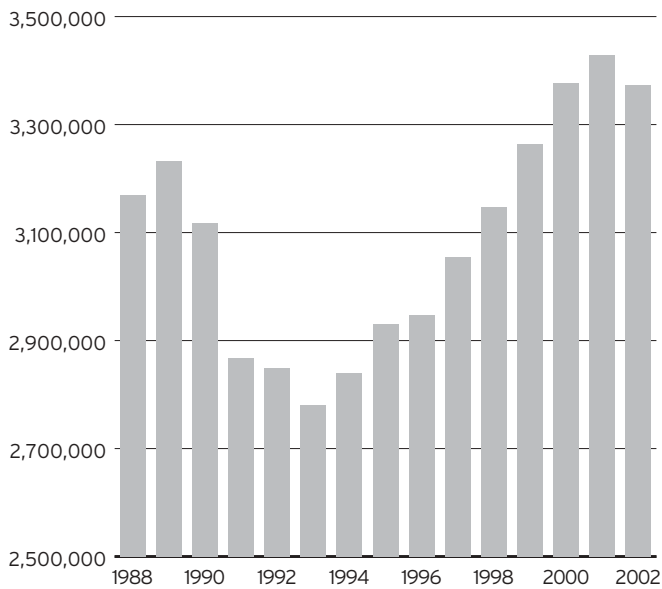
Learning from the NAFTA Experience

At ten years, the long-term effects of NAFTA on employment, wages, and incomes in the countries of North America cannot yet be judged.⁵² However, short- and medium-term impacts can now be assessed on the basis of substantial, accumulating data.

EMPLOYMENT

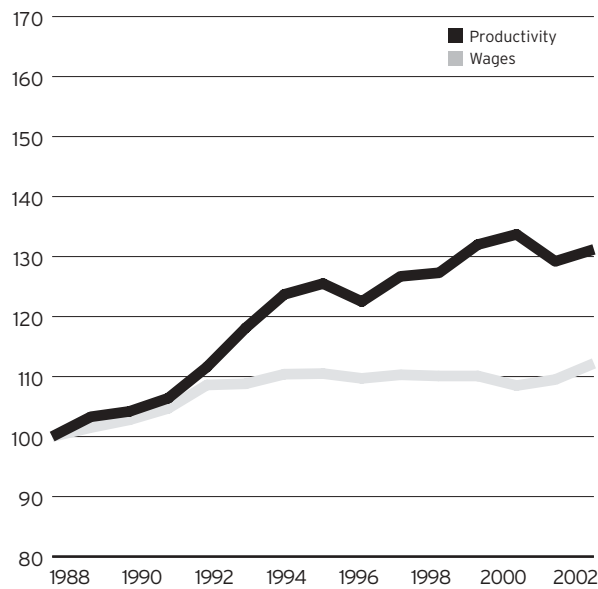
The most important result of the NAFTA experience, and the most surprising when compared with predictions of political advocates and opponents, is that the trade agreement has produced disappointingly small net gains in employment in the countries of North America. In Mexico, employment destruction in domestic manufacturing and agricul-

Figure 12. Canadian Employment in Manufacturing
EMPLOYEES



Source: Statistics Canada, Labour Force Survey.
Note: Manufacturing also includes mining and construction.

Figure 13. Manufacturing Productivity and Real Wages in Canada
INDEX: 1988=100



Source: Statistics Canada, Canadian Productivity Measures.

ture 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 predic-

tions 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.⁵³ 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 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, even for the low-wage, labor-abundant trading partner.

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 phaseout 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

LEARNING FROM NAFTA

- The experience of NAFTA shows that trade pacts will shift the composition of jobs, with some winners and some losers, but cannot be expected to create a net gain in jobs in economies that are at full employment, such as the United States and Canada. 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 supplier and support industries as well as terms in the trade agreement that reward rather than discourage the use of domestic inputs in the production of exported goods.

- In agriculture, 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. Developing countries with significant employment in subsistence agriculture 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.
- In negotiations over agricultural trade, developing countries should also insist on terms, including special safeguards, that will prevent a wealthier trading partner from dumping or distorting trade through domestic or export subsidies.

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 a farm bill in 2002 that increased subsidies. Successful competition will be impossible for the developing country under such circumstances.

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

Real wages for most Mexicans are lower today than when NAFTA took effect. This 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 toward, U.S. wages, as trade theory would suggest.

- Increased productivity appears to be a likely gain from trade, based on the North American experience. However, if such productivity gains are to be shared with workers as rising wages, the institutions and public policies that affect wage outcomes should be strengthened. Countries with weak laws and institutions related to freedom of association and collective bargaining should address these problems in conjunction with trade liberalization. Minimum wage policies may need to be reconsidered; dispute resolution mechanisms, such as arbitration, could also be strengthened.

Wages

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 as a factor in U.S. trade probably accounts for a 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 fared somewhat better. This suggests that NAFTA/CUFTA did not have a negative impact on wages, since earnings in nontraded sectors increased slower 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 implicated as 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.

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

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■ 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.

■ Countries opening to trade should first strengthen social safety nets to assist those who lose as a result of trade-induced economic restructuring. Developing countries negotiating with wealthier trading partners should seek financial assistance from these countries, as part of the trade package, for transitional adjustment programs. Developed countries should strengthen their trade adjustment or general social safety net programs with a view to addressing the uneven consequences, for citizens, of opening to trade.

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 the 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.

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 adjust-

ment 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, meager savings, and limited 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. A trade adjustment assistance program exists in the United States, and a broad social safety net in Canada serves many of the same ends, although both countries' plans have critical gaps that should be addressed and both plans need financial strengthening. In Mexico, budget constraints and policy choices have precluded the establishment of even the most basic unemployment insurance. The harsh impact of agricultural trade liberalization on Mexican subsistence farmers has not been offset by appropriate government policies.

NOTES

- 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 María Elena Vicario, Sandra Polaski, and Dalil Maschino, *North American Labor Markets: A Comparative Profile* (Washington, D.C.: Secretariat of the North American Commission for Labor Cooperation, forthcoming). 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).
- 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).
- 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 a 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. José 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 Very gradual downward adjustments in the peso were allowed through this crawling parity band in which the peso was allowed to depreciate against the dollar at a very small preannounced rate, which was 0.00040 pesos per dollar for most of the period. This regime resulted in an exchange rate of 2.9 pesos to the dollar in 1990, depreciating to 3.4 pesos to the dollar in early 1994.
- 15 *International Financial Statistics* (Washington, D.C.: International Monetary Fund, October 1996).
- 16 *North American Labor Markets* (see note 3), based on INEGI National Income and Expenditure Survey (ENIGH) and STPS/INEGI National Employment Survey (ENE).
- 17 *World Trade Report 2003* (Geneva: World Trade Organization, August 2003), available at www.wto.org.
- 18 This section draws on two papers commissioned for this report: David Barkin and Edith Pacheco, *The Changing Meaning of Work in Rural Latin America*, July 2003; and Antonio Yúnez-Naude and Fernando Barceinas Paredes, *The Agriculture of Mexico after Ten Years of NAFTA Implementation*, July 2003 (see acknowledgments).
- 19 John Authers, "Mexicans Send More Than \$1 Billion Back Home in July," *Financial Times*, September 19, 2003, based on data from the Bank of Mexico. Remittances from the United States provide more foreign funds than either foreign direct investment or tourism.
- 20 INEGI, ENIGH, special "module" with questions on agricultural activity during the preceding semester of the survey. The survey, conducted during the second trimester of every odd-numbered year during the 1990s, was designed to improve understanding of rural labor patterns by inquiring about agricultural employment for those people whose principal occupation was nonagricultural. Data prepared by Edith Pacheco and David Barkin.
- 21 Differences between agricultural employment data discussed here and elsewhere in this paper arise because this series includes the economically active population aged twelve years and older, whereas the main employment data is for the economically active population aged fifteen years and older.
- 22 ENIGH special module for rural households (see note 20).
- 23 *North American Labor Markets* (see note 3).
- 24 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.
- 25 *North American Labor Markets* (see note 3).

- 26 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).
- 27 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.
- 28 Carlos Salas and Eduardo Zepeda, *Wages and Productivity in Mexico: Theoretical and Empirical Issues*, July 2003, paper commissioned for this report, on file with the author.
- 29 *The Mexican Economy* (see note 12), based on data from the Ministry of Labor and Social Welfare National Employment Survey.
- 30 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 found significant shortcomings in this area in many cases (see www.dol.gov/ilab/programs/nao).
- 31 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.
- 32 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 cataloged at the World Bank web site (www.worldbank.org/poverty/inequal/abstracts/index.htm).
- 33 *North American Labor Markets* (see note 3). Data based on INEGI, ENIGH, and *The Mexican Economy* (see note 12).
- 34 Gerardo Esquivel, *Sources of Regional (Non) Convergence in Mexico* (Washington, D.C.: World Bank, 2002), available at www.worldbank.org.
- 35 Diana Alarcon and Eduardo Zepeda, "Economic Reform or Social Development? The Challenges of a Period of Reform in Latin America," *Journal of Development Studies*, forthcoming.
- 36 U.S. Trade Representative, *NAFTA at Eight*, May 2002, available at www.ustr.gov.
- 37 Economic Policy Institute, *NAFTA at Seven*, April 2001, available at www.epinet.org.
- 38 Apparel imports, for example, come from many countries because of the quota system that exists under the global Agreement on Textiles and Clothing. Apparel imports from Mexico may have displaced imports from other countries rather than U.S. production.
- 39 *The Impact of Trade Agreements* (see note 8). 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.
- 40 In *The Impact of Trade Agreements* (see note 8), 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).
- 41 Mary Jane Bolle, *NAFTA: Estimated U.S. Job "Gains" and "Losses" by State over 5 1/2 Years* (Washington, D.C.: Congressional Research Service, February 2, 2000).
- 42 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.
- 43 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).
- 44 *North American Labor Markets* (see note 3). Data derived from the Current Population Survey, U.S. Bureau of the Census.
- 45 Daniel Treffer, *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/~treffer/fta.pdf.
- 46 The study actually showed a 3 percent employment loss in the export industries, but it was statistically insignificant.
- 47 However, the average annual productivity gains during this period were significantly less than those observed in the 1960s and 1970s.
- 48 *North American Labor Markets* (see note 3). Data based on Labour Force Survey, Statistics Canada.
- 49 Ibid.
- 50 Ibid. Data based on Survey of Employment, Payrolls, and Hours, Statistics Canada.
- 51 Ibid. Data based on Survey of Consumer Finances, Statistics Canada.
- 52 For CUFTA, fourteen years of experience and data are available.
- 53 The basic trade model assumes that capital and labor are immobile. In the real world of capital mobility, international investors may shift production of labor-intensive products to a labor-abundant country such as Mexico if they are assured of access to a rich market such as the United States. Additional labor would be employed, creating net employment growth.