

5. TRADE AND THE DEVELOPMENT GAP*

Robert A. Blecker and Gerardo Esquivel

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When Mexico, the United States, and Canada joined together to form the North American Free Trade Agreement (NAFTA) in 1994, many observers expected that this would usher in an era of greater continental integration that would propel Mexican economic growth and lead to its economic convergence with its richer neighbors to the north. At that time, few would have expected that, nearly two decades later, China would have displaced both Canada and Mexico as the largest exporter of goods to the U.S. market, or that Mexico's economy would have grown so sluggishly over the intervening years that it never converged to U.S. or Canadian levels in per capita income or real wages. Although Mexico and the United States did deepen their ties and traded proportionately more with each other during the 1990s, since 2000 both nations have been beset by various global forces that—at least in relative terms—have weakened regional integration and prevented some of the expected gains from U.S.-Mexican trade from materializing. In 2008-9, Mexico experienced a severe economic recession that, for the first time in the country's recent history, was precipitated by a financial crisis and economic downturn in the United States, rather than by domestic policy failures in Mexico. Since 2010, Mexico has had a modestly strong economic recovery, in which a recuperation of exports to the United States has played an important role.

In spite of these unexpected outcomes and many other difficulties, the potential for a Mexican-U.S. trade partnership to enhance economic performance and welfare in both nations remains, and if anything the Chinese challenge makes it more imperative than ever that policy

makers in both countries work to achieve that potential by creating a more competitive economic “space” in North America. Furthermore, the persistence or worsening of certain bilateral issues, such as undocumented migration and drug-related violence (covered elsewhere in this volume—see chapters 6 and 8), implies that efforts to close the “development gap” between Mexico and the United States are still very much in the national interest of both countries.

In this chapter, we analyze the realities of U.S.-Mexican trade and its impact on Mexico in terms of economic convergence, foreign investment, employment, wages, and income distribution since Mexico began to liberalize its trade in the late 1980s and subsequently joined NAFTA. We show that, up to the present, liberalized trade in general and NAFTA in particular have failed to fulfill the promise of closing the Mexico-U.S. development gap, and we argue that this was partly a result of the lack of deeper forms of regional integration or cooperation between Mexico and the United States. We also explore other factors that could explain this negative outcome, and we briefly discuss the opportunities for both Mexico and the United States to mutually benefit from a further economic integration process.

NAFTA Expectations and Current Realities

Although much has changed since NAFTA went into effect in 1994, a brief retrospective on the expectations it generated and the actual trends since that time is helpful for understanding the present context of U.S.-Mexican trade. The government of Mexican President Carlos Salinas de Gortari (1988–1994) pinned its hopes on NAFTA not merely to boost exports to the U.S. and Canadian markets, but also to attract large amounts of foreign direct investment (FDI), create a significant number of new industrial jobs, and give the Mexican economy the growth stimulus it had been lacking since the tepid recovery from the debt crisis of the 1980s.¹ Salinas famously

predicted that NAFTA would permit Mexico to “export goods, not people” and to join the ranks of “first-world” nations. NAFTA’s critics in the United States predicted that it would cause a massive relocation of U.S. industries and jobs to Mexico, while fostering greater inequality in both societies by creating a “race to the bottom” in social and labor standards. NAFTA supporters in turn promised that the agreement would stimulate U.S. employment via trade surpluses with a growing Mexican market, as well as the usual consumer gains from trade. Paradoxically, NAFTA’s original supporters and opponents seemed to agree that, whatever else it would do, this agreement would give a major impetus to Mexico’s industrial development and job creation.²

However, NAFTA did not go into effect in a vacuum, and it is perilously difficult to disentangle the effects of this trade agreement from the impact of other factors in the post-1994 evolution of the two economies. NAFTA built upon the base of the much larger tariff reductions and more far-reaching market-opening measures that Mexico had already adopted unilaterally after it joined the General Agreement on Tariffs and Trade (GATT) in 1986, so not all of the effects of trade liberalization can be attributed to NAFTA.³ In addition, macroeconomic factors such as financial crises, exchange rates, oil prices, and business cycles were important determinants of what actually occurred.⁴ Subsequent trade agreements, both multilateral (the formation of the World Trade Organization) and preferential (the many other FTAs entered into separately by Mexico and the United States), reduced the significance of the tariff preferences contained in NAFTA. China’s emergence as a global economic power and the rapid increase in its share of North American markets have also had an enormous impact on the region.

The fact that NAFTA was never supplemented by deeper forms of regional integration, social policies, or economic cooperation probably limited the benefits and exacerbated the costs.⁵

Domestic policies in both nations mattered, as did underlying geographic and demographic realities. U.S. efforts to stem unauthorized immigration, coupled with post-September 11 security measures, have made the border tougher, not easier, to cross, even for legal goods and services. Increased violence associated with narcotrafficking and other organized criminal activities along the U.S.-Mexican border, partly as a result of the failed “war on drugs” in both countries, has further complicated the picture in recent years. As a result of all these factors, it is generally safer to analyze what happened *after* NAFTA rather than *because* of NAFTA, but we will try to draw some inferences about causality where the evidence permits.

In fact, the trajectories of the U.S. and Mexican economies since NAFTA bear little resemblance to any of the more exaggerated forecasts on either side of the *ex ante* debate. NAFTA did not solve Mexico’s employment problems, raise its average real wages, or reduce migration flows, and it seems to have done little to raise the country’s long-run average growth rate. However, NAFTA did contribute to strong recoveries from the 1994–1995 and 2008–2009 crises in Mexico, as well as a short-lived boom in 1996–2000. Mexico did reap gains in exports, FDI, and other indicators, especially in the late 1990s, but NAFTA did not turn out to be the panacea promised by the Salinas administration.

The United States did not suffer a catastrophic loss of manufacturing employment immediately after NAFTA went into effect, although it began to hemorrhage manufacturing jobs more severely following the Asian financial crisis of 1997–1998 and especially after the surge in Chinese imports beginning around 2001. U.S. workers made significant real wage gains in the late 1990s in spite of increasing U.S. trade with Mexico, while Mexican workers suffered a sharp decline in real wages following the 1994–1995 peso crisis that was only barely reversed by the early 2000s. During the first seven years of NAFTA (1994–2000), North America showed signs

of becoming a more integrated and competitive regional market area, but much of the progress on the regional front was reversed in the next ten years (2001–2010), as we shall see below.

The Lack of Economic Convergence

When NAFTA was signed, one of the main objectives of the agreement (at least from the Mexican perspective) was to achieve a reduction in the historical gap of economic development between Mexico and the United States. Despite of all the anti-American rhetoric traditionally displayed by Mexican politicians,⁶ the truth is that many Mexicans have long aimed to benefit from being close to one of the biggest and richest markets in the world. Of course, this explains not only the large flows of migrants from Mexico to the United States over the past few decades, but also the close trade ties that have been established historically between the two countries. In that sense, when NAFTA was signed there were huge expectations that increased trade and FDI could help to reduce the Mexico-U.S. economic gap. From the perspectives of both countries, this could bring about multiple benefits for everyone involved in the agreement: for Mexican workers, this would imply higher wages and a better standard of living; for Americans and Canadians, this would imply having a more stable and economically sound neighbor that would become a good customer for their products. Under this scenario, Mexicans workers would have lower incentives to migrate and, since migration has always generated a heated debate in some segments of the U.S. population, this could also help to ease tensions in the Mexican-U.S. relationship. All in all, it was hoped that enacting NAFTA would be a win-win policy for all concerned.

The relevant question, then, is what has happened to the historical Mexico-U.S. economic development gap since (or as a result of) NAFTA? Has there been economic convergence

between Mexico and the United States since (or as a result of) NAFTA?⁷

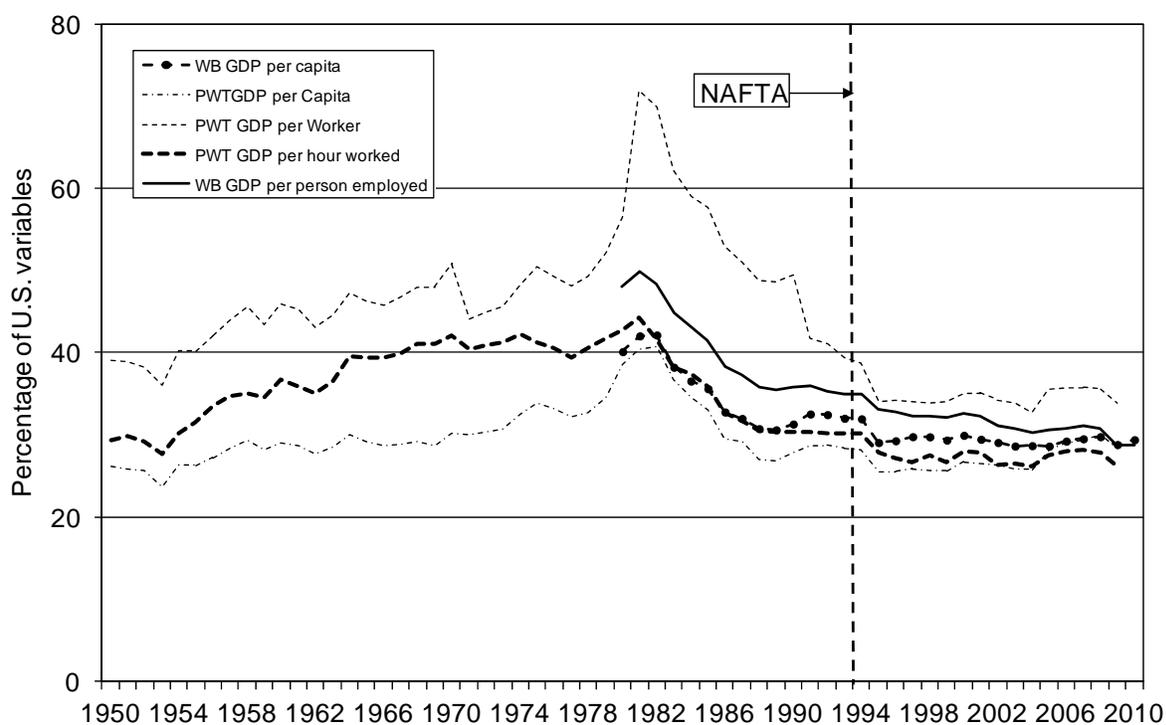
Figure 5.1 provides an answer to these questions. The graph shows alternative long-term measures of income per capita or income per worker in Mexico as percentages of the corresponding measures in the United States. The data are shown in relative terms to better capture the idea of economic convergence: if income per capita (or per worker) in Mexico increases relative to that in the United States, the relative variables will rise and we would therefore conclude that there was a process of economic convergence between the two countries. Otherwise, we would say that there was no convergence. Indeed, if the relative variables decline, we would then say that there was a process of economic divergence between the countries.

<Figure 5.1 about here>

The figure shows data from two different sources—the World Bank (WB) and the Penn World Tables v. 7.0 (PWT)—and includes different indicators from each source. From the WB we use the series for GDP per capita, which adjusts for price differentials across countries (this is the series WB GDP per capita) as well as the series for GDP per person employed (WB GDP per person employed). Both variables are measured as ratios of data in constant prices, expressed in terms of purchasing power parity (PPP). From the PWT we use three series: the Mexico-U.S. ratio of real income per capita (PWT GDP per capita); the ratio of real GDP per worker (PWT GDP per worker); and the ratio of real GDP per hour worked (PWT GDP per hour worked).

All five series show essentially the same result: the level of economic development in Mexico relative to the U.S. has been remarkably stable since 1995 (with the exception of GDP per person employed, which has declined steadily since then), which means that there has been no economic convergence between these two countries as a result of (or associated with) NAFTA. Notice that, even long after the recovery from the 1994–1995 crisis, the level of

Figure 5.1 Mexico's Economic Performance Relative to the United States, 1950–2010 (Mexican variables as percentages of U.S. variables)



Sources: Alan Heston, Robert Summers, and Bettina Aten, Penn World Tables (PWT), Version 7.0; Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, May 2011, pwt.econ.upenn.edu; World Bank, *World Development Indicators*; and authors' calculations.

economic development in Mexico relative to the United States (in either per capita or per worker terms) remained slightly below what it was before the passage of NAFTA. The data in Figure 5.1 show that Mexico's per capita income has remained relatively stable since 1994 at around 30 percent of U.S. per capita income, regardless of which source we use. The figure also shows that output per person employed (WB), per worker (PWT), and per hour worked (PWT) have all declined steadily since 1981, and that these are now just between one-fourth and one-third relative to the same U.S. indicators, depending on which source and variable we use. For comparison purposes, note that some of these ratios were closer to 40 percent in 1993, just before NAFTA went into effect.

In sum, the data show that there has been no economic convergence whatsoever between Mexico and the United States since NAFTA's enactment. As a result, the historical Mexico-U.S. economic gap in percentage terms has not been reduced after 17 years of free trade, and the income gap in absolute terms is now larger than it was 17 years ago. Furthermore, since the international financial crisis of 2008–2009 affected Mexico more negatively than any other country in the Western Hemisphere, the Mexico-U.S. gap has increased even further in recent years.⁸

Trade and Investment Flows

This lack of convergence did not occur because of a failure of trade to grow faster after NAFTA went into effect. On the contrary, Table 5.1 shows that U.S. nonpetroleum imports from Mexico accelerated to an average annual growth rate of 19.5 percent in the first seven years of NAFTA (1993–2000), after growing at an already rapid clip of 13.9 percent in 1987–1993 following Mexico's unilateral liberalization. As a result of this faster growth, Mexico's share of U.S.

nonpetroleum imports climbed from 6.7 percent in 1993 to 11.4 percent in 2000. The accelerated growth in 1993–2000 should not be attributed entirely to NAFTA, however, but also resulted from two other factors: the “new economy” boom in the United States in the late 1990s, which led to an enormous explosion of U.S. demand for imports generally; and the depreciation of the Mexican peso following the 1994–1995 “tequila” crisis, which left the peso at a more competitive exchange rate for the next several years.

<Table 5.1 about here>

However, U.S. import growth from Mexico slowed considerably after 2000. U.S. nonpetroleum imports from Mexico grew only at a 4.9 percent annual rate in 2000–2010, while U.S. imports from China rose at a faster 13.8 percent annual pace during that decade. To be sure—and this is where both NAFTA and geography may have helped—Mexico did better than most other countries in maintaining its share of the U.S. market in the face of increased Chinese penetration after 2000. The astounding increase in China’s share of U.S. nonpetroleum imports from 9.0 percent in 2000 to 23.2 percent in 2010 came entirely at the expense of other countries, as Mexico’s share actually rose slightly from 11.4 percent in 2000 to 12.8 percent in 2010.

Nevertheless, it seems likely that U.S. imports from Mexico would have grown even faster and increased their share further between 2000 and 2010 in the absence of the huge jump in imports from China.⁹ The disappointing growth of Mexican exports to the United States in 2000–2010 occurred after China joined the World Trade Organization (WTO) and obtained “permanent normal trade relations” (formerly known as “most favored nation”) status from the United States in 2001. However, other factors were also at work. As a side-effect of its inflation-targeting monetary policy, the Mexican central bank (Banco de México) kept the value of the peso at an uncompetitively high level during most of the 2000–2010 period, except for allowing

Table 5.1 U.S. Nonpetroleum Imports from Mexico, China, and Other Countries

Percentage share in total U.S. nonpetroleum imports				
	1987	1993	2000	2010
Mexico	4.5	6.7	11.4	12.8
China	1.7	5.9	9.0	23.2
Other countries	93.8	87.4	79.6	64.0
Total	100.0	100.0	100.0	100.0
Growth (average annual percentage rates)				
	1987-1993	1993-2000	2000-2010	
Mexico		13.9	19.5	4.9
China		30.8	17.9	13.8
Other countries		5.4	9.4	1.4
Total		6.6	10.9	3.7

Sources: U.S. Bureau of Economic Analysis, International Transactions Accounts, Tables 2 and 2a, Release of March 16, 2011, www.bea.gov; Petróleos Mexicanos (PEMEX), *Anuario Estadístico* (various years), www.pemex.com; U.S. Census Bureau, FT900: U.S. International Trade in Goods and Services, various December issues, www.census.gov; and authors' calculations.

a brief depreciation during the 2008–2009 crisis that was subsequently reversed.¹⁰ The end of the Multifibre Arrangement (MFA) in 2005 led other developing countries (largely, but not exclusively, China) to increase their shares of global textile and apparel production, thereby destroying a large part of the vertically integrated North American textile-apparel complex that flourished briefly under NAFTA’s rules of origin in the late 1990s. High-tech producers also discovered that they could find lower wages and more supportive government policies in various East Asian countries.¹¹

Mexico’s trade data show a similar pattern of regional integration increasing during the 1993–2000 period and then diminishing thereafter (see Table 5.2). On the export side, the largest increase in the U.S. share of Mexican exports occurred in 1987–1993; this suggests the natural pull of geography in stimulating intra-regional trade even when Mexico opened up its own economy unilaterally.¹² In spite of efforts by Mexico to diversify its export outlets, especially through the signing of numerous other bilateral FTAs, 80 percent of Mexican exports were still sold in the U.S. market as of 2010.

<Table 5.2 about here>

In contrast, while the U.S. share of Mexican imports remained relatively stable at around 70 percent from 1987 through 2000, it then fell to 48.6 percent in 2010. There were several causes of this sharp reduction in intra-regional trade post-2000. First, since both the U.S. dollar and Mexican peso were at relatively high values during the first several years of the 2000s, producers throughout North America had strong incentives to source products (both final and intermediate goods) outside the continent. Second, the penetration of Chinese and other Asian imports into the U.S. market not only displaced Mexican exports to the United States, but also displaced U.S. exports of intermediate goods that would otherwise have been shipped into

Table 5.2 Country Composition of Mexico's External Trade (percentages of total trade)

	1987 ^a	1993	2000	2010 ^b
<u>Exports: Destination country</u>				
United States	69.2	82.7	88.7	80.0
Canada	1.1	3.0	2.0	3.6
China	n.a.	0.1	0.1	1.4
Rest of world	29.7	14.2	9.1	15.1
<u>Imports: Country of origin</u>				
United States	74.0	69.3	73.1	48.6
Canada	1.7	1.8	2.3	2.9
China	0.2	0.6	1.7	15.3
Other Asia	4.5	10.7	10.0	16.9
Rest of world	19.6	17.6	13.0	16.4

Sources: Instituto Nacional de Estadística, Geografía e Informática (INEGI),

www.inegi.org.mx, except for 1987, and authors' calculations. Total trade includes maquiladora industries and petroleum. Percentages are independently rounded.

Notes: a. The U.S. percentages for 1987 were taken from Gary C. Hufbauer and Jeffrey J. Schott, *North American Free Trade: Issues and Recommendations* (Washington, Institute for International Economics, 1992), p. 48, Table 3.1, based on International Monetary Fund (IMF), *Direction of Trade Statistics*; data for other countries for 1987 were estimated using data from INEGI, *Anuario Estadístico de los Estados Unidos Mexicanos 95* (Aguascalientes: INEGI, 1996) in combination with Hufbauer and Schott's percentages for the United States.

b. Preliminary figures.

Mexico for assembly. Third, Mexican trade policy actively encouraged imports of intermediate goods from outside the region through the Pitex program of tariff exemptions.

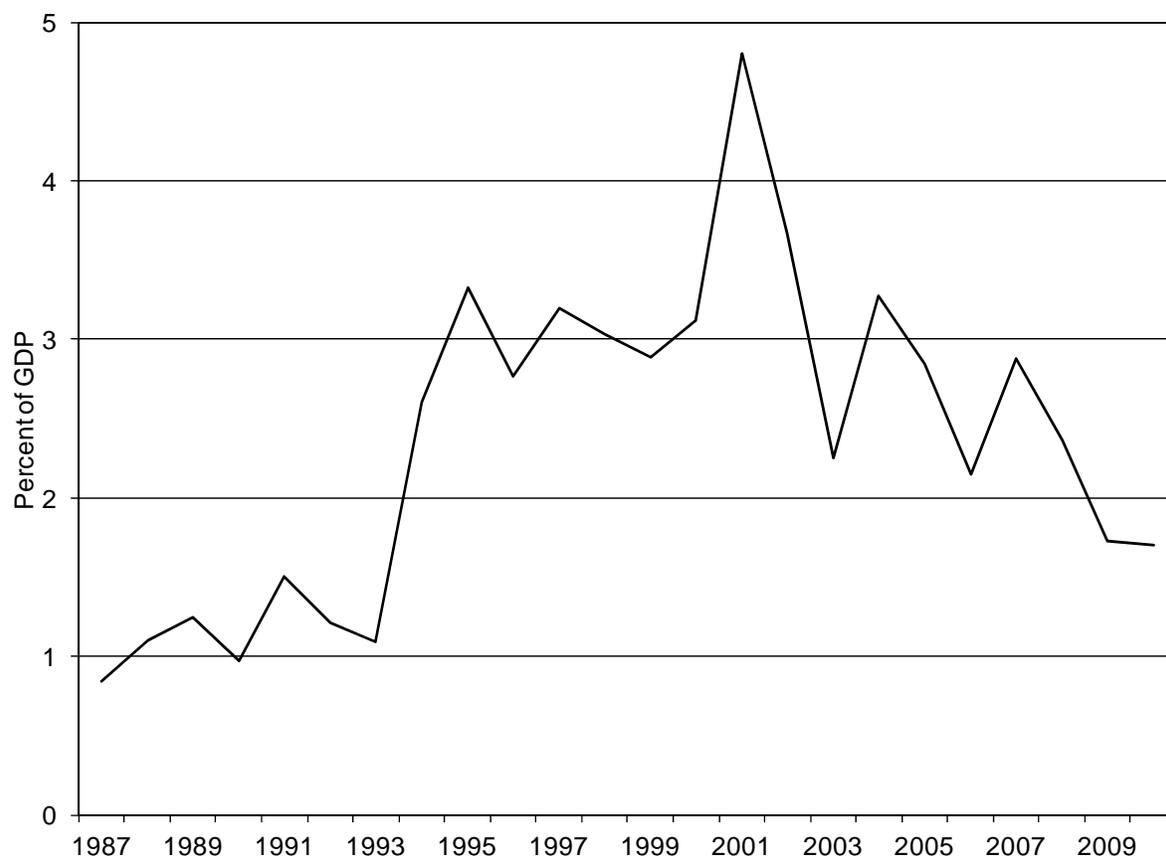
Mexico did succeed in attracting a notably increased level of FDI inflows in the first several years after NAFTA went into effect in 1994 (see Figure 5.2). Mexico's FDI inflows shot up from about 1 percent of GDP before NAFTA to about 3 percent of GDP on average in the late 1990s. However, after FDI inflows reached an unusually high level (nearly 5 percent of GDP) in 2001, when Citibank purchased Banamex, they have mainly drifted downward since then and fell below 2 percent of GDP in 2009–2010 in the aftermath of the Great Recession. Strikingly, the proportion of Mexican FDI inflows coming from the United States was notably lower in 2001–2010 compared with the previous decades.¹³ The falling U.S. share of Mexico's FDI inflows may also have contributed to the fall-off in the U.S. share of Mexico's imports after 2000, since U.S. corporations are more likely to source inputs from their U.S. affiliates while corporations from other countries are more likely to source inputs from their home countries or regions.

< Figure 5.2 about here >

Effects on Manufacturing Employment

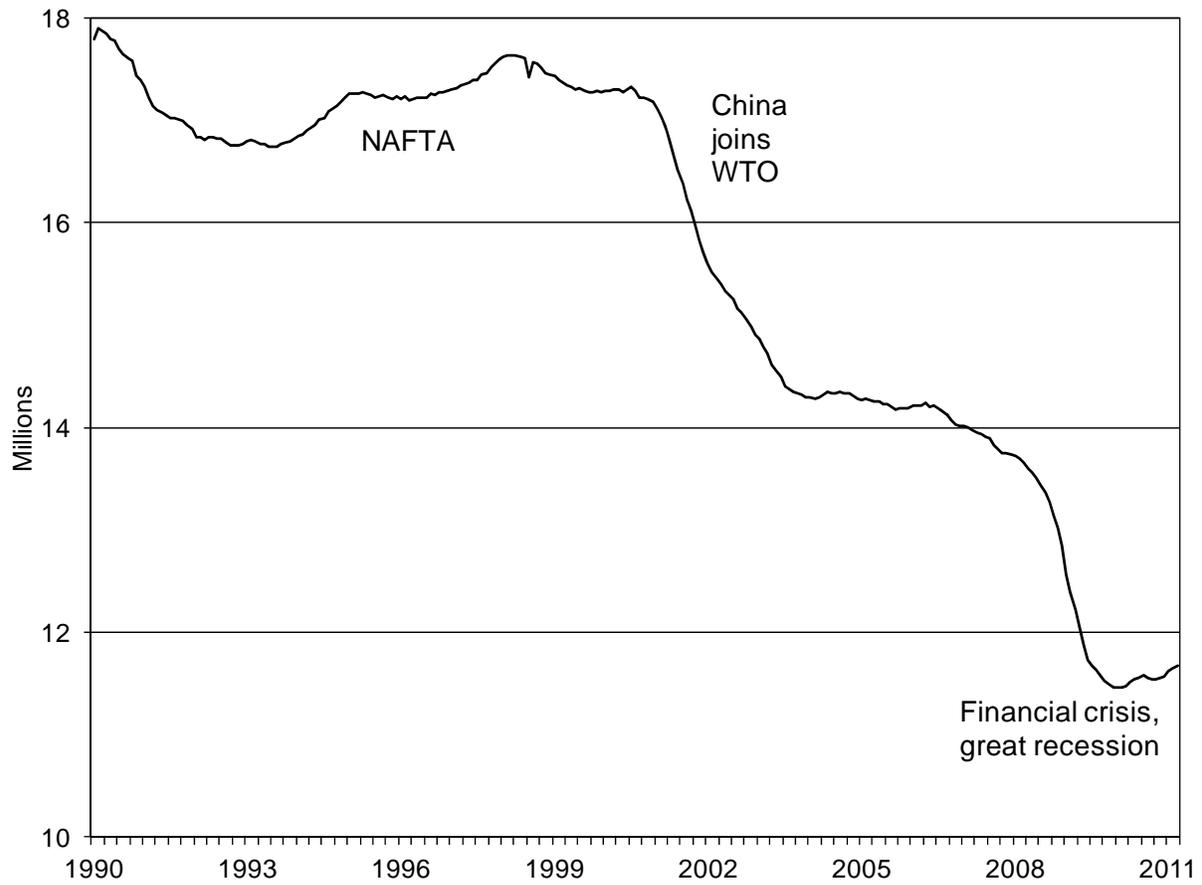
U.S. manufacturing employment did fall off a cliff—but not until after 2001, seven years after NAFTA went into effect (see Figure 5.3). Roughly three million manufacturing jobs disappeared following the 2001 recession and China's accession to the WTO in that year, and another two and a half million vanished in the financial crisis and “Great Recession” of 2008–2009. None of these events had anything to do with NAFTA or Mexico, however, and in fact Mexican manufacturing employment also fell in both periods.

<Figure 5.3 about here>

Figure 5.2 Mexican FDI Inflows as a Percentage of GDP, 1987–2010

Source: INEGI, www.inegi.org.mx, and authors' calculations.

Figure 5.3 Total Employment in U.S. Manufacturing, Monthly, January 1990 to March 2011 (seasonally adjusted)



Source: U.S. Bureau of Labor Statistics, www.bls.org. Data for February-March 2011 are preliminary.

Nevertheless, it does not follow that NAFTA (or U.S.-Mexican trade more broadly) had no negative impact on U.S. manufacturing employment, which might have been expected to have grown more rapidly during the economic boom of 1994–2000 than it actually did. U.S. manufacturing employment rose very little during that period, in spite of GDP growth that averaged 3.9 percent per year at that time. However, the highest credible estimate of the cumulative U.S. manufacturing job losses that can be attributed to U.S.-Mexican trade during (roughly) the first decade of NAFTA is about 500,000, and other estimates are lower (some even claim net gains).¹⁴ Even taking the high-end estimate of about a half million jobs lost over a decade, it is a relatively small amount in a country where payroll employment totaled 114 million in 1994 and reached 138 million in 2007, and smaller than the monthly job losses during the worst months of the recession of 2008–2009.¹⁵ Moreover, the 500,000 figure is an estimate of job losses due to the increased U.S. trade deficit with Mexico, not effects of NAFTA specifically.

If the U.S. job losses that can credibly be attributed to trade with Mexico (if not to NAFTA *per se*) are relatively small, by the same token the employment increases that Mexico achieved in its tradable goods industries were much more modest than the more optimistic *ex ante* predictions. According to Mexico's quinquennial economic census, total payroll employment in Mexican manufacturing increased from 2.5 million in 1989 to 2.9 million in 1994, and rose further to 3.8 million in 1999, but then declined to 3.4 million in 2004 and 3.3 million in 2009.¹⁶ Overall, the net increase in manufacturing payroll employment in Mexico in the first fifteen years after NAFTA (1994–2009) was roughly 400,000—around the same order of magnitude as the largest estimates of U.S. job losses due to post-NAFTA trade with Mexico. This a far cry from an amount of job creation that could have put a serious dent in Mexico's

employment needs (given that the labor force grows by nearly 700,000 workers annually) or stem the flow of migration (which is estimated to have been in the range of about 350,000 to 580,000 per year in the 1990s and early 2000s).¹⁷

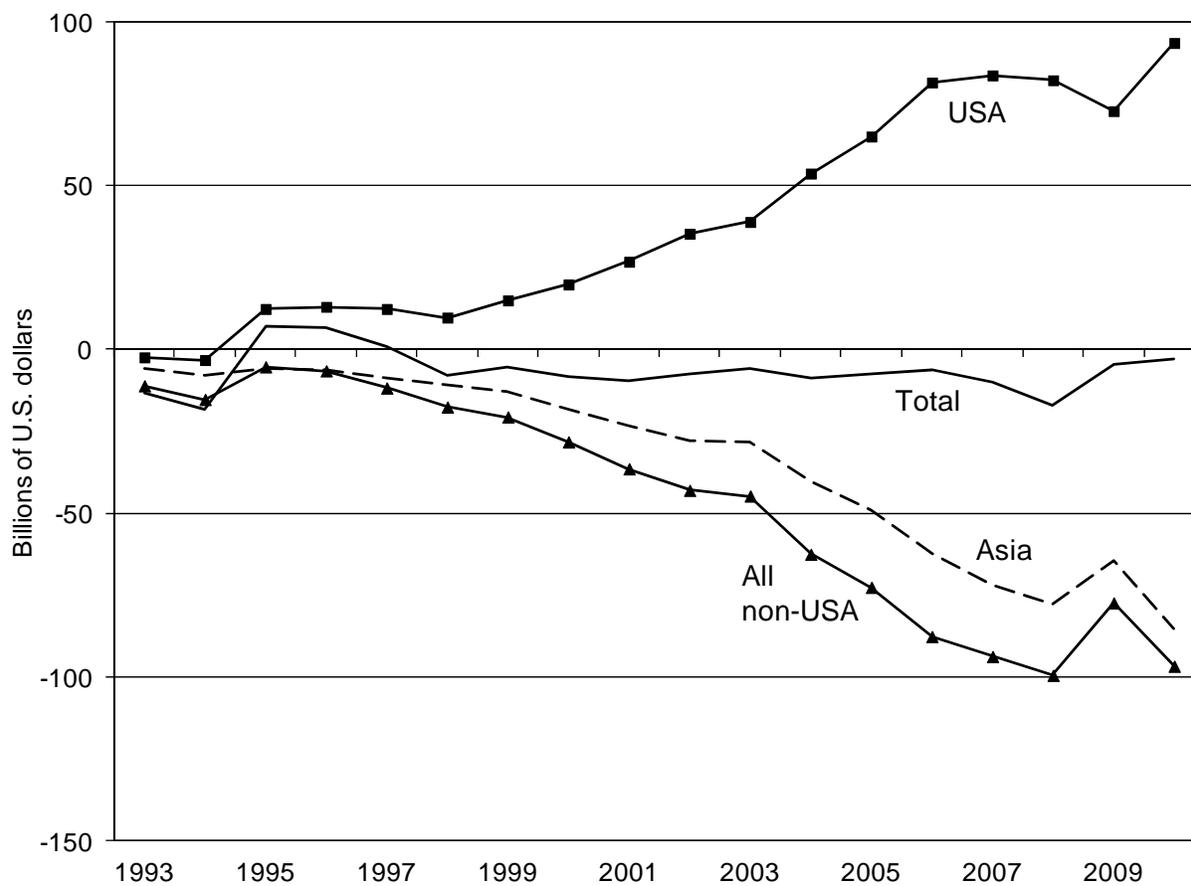
In retrospect, it should have been more obvious that trade liberalization would not have had an enormous impact on total industrial employment in Mexico. Trade liberalization increases imports as well as exports, and increased imports displace domestic jobs just as much as increased exports create them. Thus, an important perspective on the disappointing job gains in Mexico's manufacturing industries can be obtained by examining the country's trade balances with the United States and the rest of the world. While for the United States its growing deficit with Mexico was part of a much larger increase in its overall deficit, for Mexico its increasing surplus with the United States was completely offset by rising deficits with other countries, primarily in Asia (see Figure 5.4). Furthermore, many Mexican export industries are essentially assembly operations that rely heavily on imported parts and components, and which lack "backward linkages" to domestic industries.¹⁸ As a result, the increases in the gross value of exports are an exaggerated indicator of value added and employment generation in the export industries.

<Figure 5.4 about here>

Income Distribution, Relative Wages, and Inequality

Figure 5.5 shows one of the most widely cited indicators of wage inequality, the skilled-unskilled wage gap, measured by the ratio of salaries of employees (non-production workers, in the U.S. terminology) to wages of production workers, from the monthly survey of non-maquiladora industries in Mexico. The sharp rise in this measure of wage inequality in the first decade of trade liberalization (1987–1997) surprised most economists, since they had assumed that trade

Figure 5.4 Mexico's Trade Balance: Total and with USA, Asia, and All Non-USA, 1993–2010



Source: INEGI, www.inegi.org.mx, from integrated work group INEGI-BANXICO-SAT

(Servicio de Administración Tributaria) and Secretaría de Economía. Data for 2010 are preliminary.

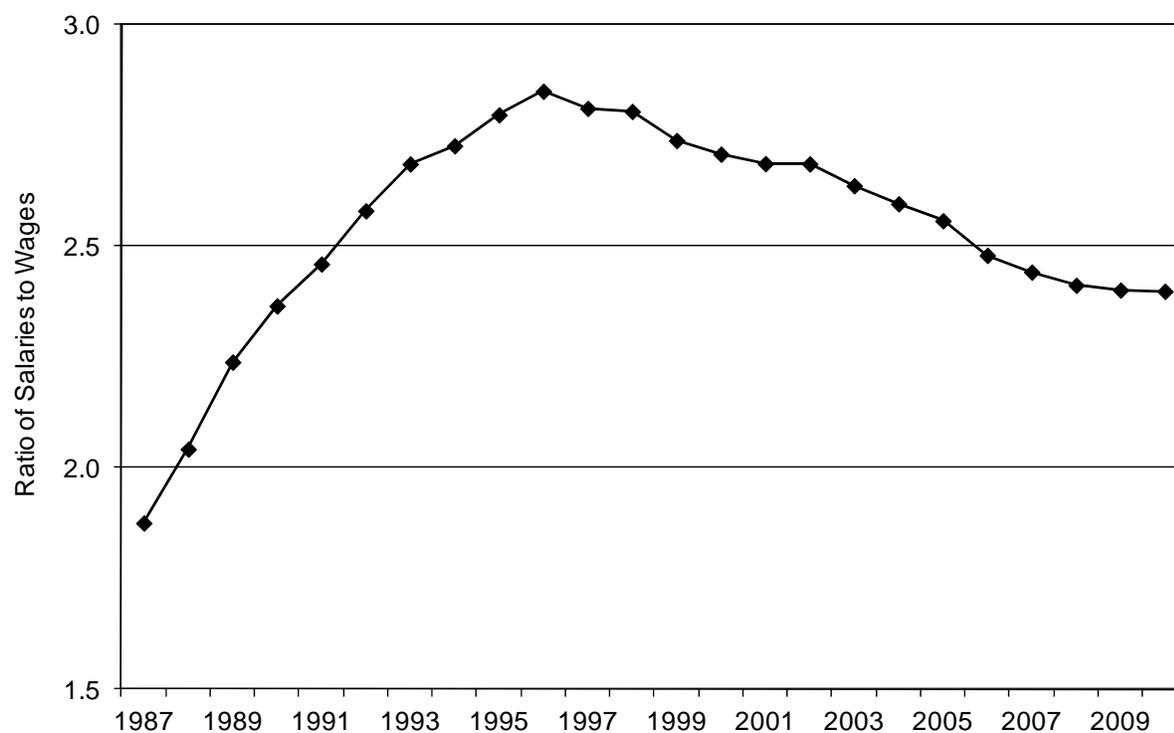
liberalization would boost the wages of less-skilled workers in Mexico due to a supposed abundance of less-skilled labor. One explanation for the rise in this ratio at that time is that the initial tariffs that were lowered in the trade liberalization of the late 1980s were higher in the industries that were most intensive in less-skilled labor.¹⁹ Another explanation is that skill-biased technological change during this period boosted demand for more educated workers—although this shift may have been at least partially an effect of trade liberalization rather than an independent cause.²⁰

<Figure 5.5 about here>

Of course, a rise in wage inequality that began several years before NAFTA cannot be attributed to this trade agreement (though it may be attributed in part to the earlier and more drastic trade liberalization of the late 1980s). This measure of wage inequality stopped increasing in 1996 and turned gradually downward from 1997 to 2010, although as of 2010 it was flattening out at around 28 percent above its 1987 level. While there are probably several causes of this reversal, the leading explanation is an increase in the relative supply of more-skilled labor due to the rising levels of education of the Mexican labor force, although the shift toward relatively more maquiladora employment could also have boosted relative demand for less-skilled labor.²¹

The changes in wage inequality in Mexico also have important regional and gender dimensions.²² Census data reveal that regional inequality between workers in the northern and southern Mexican states increased between 1990 and 2000. For the more recent period, studies have found that the decreases in the skill gap in the late 1990s and early 2000s were concentrated in the northern border states, which have the highest degree of “globalization” according to various indicators of exports and FDI. Furthermore, the decrease in the skill gap in the last decade occurred mostly among women workers in those states. In the rest of the country, where

Figure 5.5 The Ratio of Hourly Salaries of Employees to Hourly Wages of Production Workers in Mexican Manufacturing Industries, 1987–2010



Sources: INEGI, www.inegi.org.mx, and authors' calculations. Three different series were spliced together, using data from the old Encuesta Industrial Mensual (EIM) with 129 classifications for 1987–1994, the newer EIM with 205 classifications for 1994–2005, and the more recent Encuesta Industrial Mensual Ampliada (EIMA) for 2005–2010. Maquiladora industries are not included in these data.

the effects of imports are likely to dominate the effects of exports and where there has been relatively less FDI, less-skilled workers (of either gender) do not appear to have benefited as much from trade liberalization either pre- or post-NAFTA. Thus, it is difficult to generalize about the effects of trade liberalization or NAFTA on Mexico's wage structure, as there were many effects that went in different directions for different groups of workers and regions of the country at different times (and not all of the distributional changes were caused by trade policy). If anything, the evidence seems more clear-cut that the initial liberalization contributed to the rise in wage inequality from 1987–1997, while NAFTA's effects are more muted and mixed. This is not surprising, since the earlier liberalization involved a more drastic opening of Mexico's economy compared to NAFTA.²³

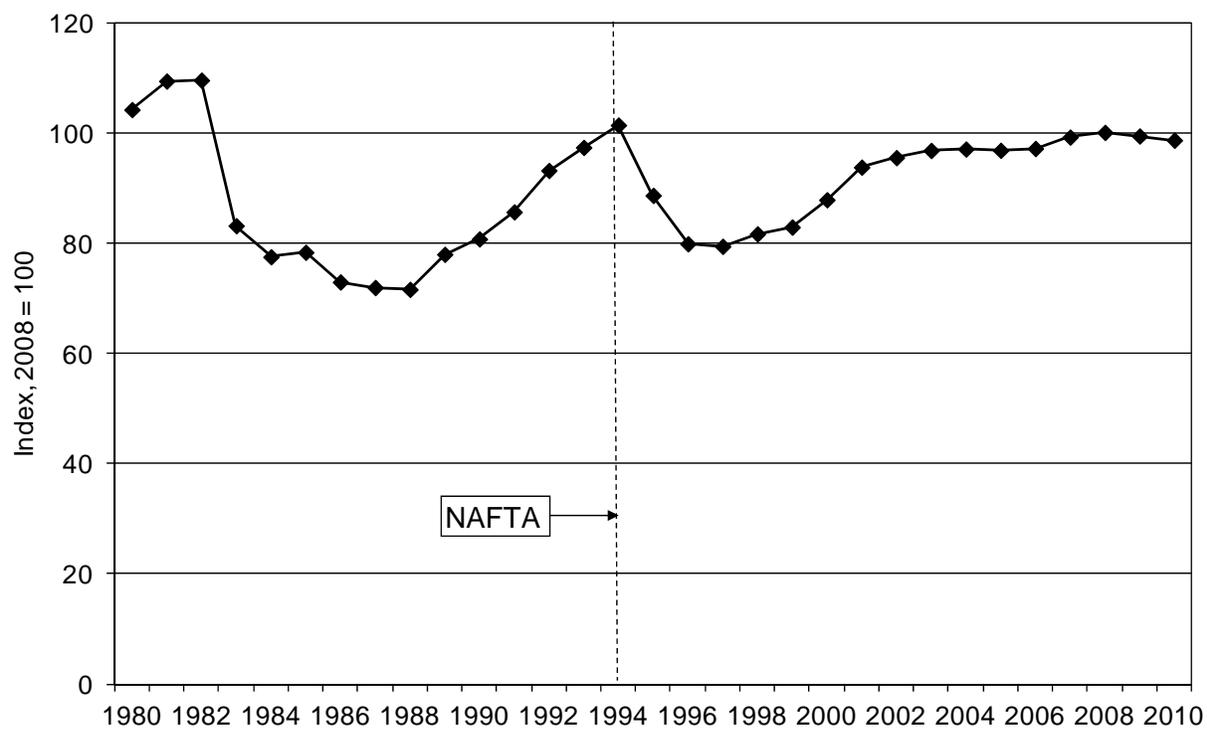
However, there are other dimensions of income distribution that can be affected by trade policy beyond the relative wages of more- and less-skilled workers, which have received perhaps disproportionate attention from economists. What Mexico hoped for when it opened its economy and joined NAFTA was not merely a reduction in inequality among different groups of workers, but more importantly a significant increase in the average wage level for all Mexican workers. This, in turn, could have contributed to a rising standard of living for most citizens and a diminution of outward migration. This simply has not come to pass, especially in terms of wages in the tradable goods industries that are most impacted by trade, even if migration flows were subsequently reduced for other reasons (that is, high unemployment rates and tougher border controls in the United States since about 2008).

<Figure 5.6 about here>

Figure 5.6 shows an index of Mexico's average real compensation per person in manufacturing since 1980.²⁴ Evidently, this index has followed the cycles in the Mexican

economy, as real compensation collapsed during the debt crisis of the early 1980s, partially recovered in 1988–1994, collapsed again following the peso crisis in 1995–1996, and recovered

Figure 5.6 Real Compensation per Worker in Mexico's Non-Maquiladora Manufacturing Industries, 1980-2010 (Index, 2008 = 100)



Source: Banco de México, www.banxico.org.mx. Data shown are chain-linked data obtained using a 1993-based series and a 2008-based series.

once more in about 1998–2003. However, average real compensation stagnated in the last seven years shown (2003–2010), and at the end of this period was barely back to its pre-crisis level of 1994. In the long run, average real labor compensation in Mexican manufacturing has not increased since the debt crisis of the early 1980s. Since average U.S. wages have risen since that time, the wage gap with the United States has increased rather than decreased.

In hindsight, the expectations of significant overall wage gains for Mexican workers as a result of trade liberalization alone were surely unrealistic. The prediction that Mexican workers in general—and less-skilled workers in particular—would benefit from trade liberalization hinged on the assumption that Mexico had a relative abundance of (less-skilled) labor compared with its trading partners. Although this is true in regional terms, i.e., in comparison with Canada and the United States, it is not true in global terms, i.e., in a world economy that includes the much more labor-abundant countries of South and East Asia. Mexico is close to the world average in terms of labor abundance, in-between highly labor-abundant countries like China and India on the one side, and relatively labor-scarce countries like the United States and Canada on the other.²⁵ Similarly, although Mexico is the low-wage country in North America, it is a medium-wage country globally.²⁶ Thus, Mexico does not have a global advantage in labor costs and should not have been expected to reap large gains in wages from opening up to trade, except in those sectors where the country can parlay its geographic proximity to the U.S. market into special competitive advantages.

Why Mexico Is Not Converging

In addition to what has already been mentioned, there are a number of domestic factors that explain why Mexico is not converging to U.S. levels in terms of income per capita, income per

worker, or average wages.²⁷ Among other aspects, we can mention the following: 1) badly implemented economic reforms, which instead of promoting economic growth have actually been a drag on it; 2) lack of other important economic reforms in areas such as rule of law, competition, financial sector, education, infrastructure, etc.; 3) lack of a domestic engine of growth that could complement the external one (mainly represented by the U.S. industrial sector and consumer market); and 4) restrictive macroeconomic policies. Let us review each of these aspects in more detail.

Badly Implemented Economic Reforms

In the second half of the 1980s and the early 1990s, Mexico undertook a series of economic reforms (trade opening, financial reform, and privatization of banks, highways, etc.) that were supposed to radically transform the semi-closed, inward-looking Mexican economy into a more modern and export-oriented one. Some of these reforms, however, were badly implemented and led to disastrous outcomes that in some cases were the opposite of what the policies were supposed to achieve.²⁸ The privatization of banks, for example, was done without having a proper institutional and regulatory framework, which then led to an unsustainable credit boom that exacerbated the costs associated with the currency crisis of December 1994. Something similar happened with the privatized highways, which were subsequently bailed-out by the Mexican government at an extremely high cost. Other privatizations, such as that of the state telephone company Telmex, only replaced a public monopoly with a private one, which has since then extracted huge rents from a captive and mostly uncontested domestic market.²⁹

Lack of Other Important Economic Reforms

The negative outcomes of some of the previous economic reforms, together with political gridlock in the newly multi-party Congress (since 1997), have led to a reform paralysis in Mexico. In fact, since the mid-1990s there have been no new important economic reforms in the country, despite the fact that everyone acknowledges the importance of undertaking certain changes in the economy. Of course, some of these reforms are highly controversial and there would hardly be a consensus on some of them, as in the case of fiscal or labor reform, where the approaches and proposed solutions of different political parties are completely different. However, there are certain reforms that could be easily approved and implemented and that would not engender ideological confrontation among the different political parties, although they would undoubtedly affect some special interests groups. So far, these groups have been successful in blocking or even avoiding discussion of these reforms, which include the rule of law, competition policy, and financial regulation.

Lack of a Domestic Engine

One thing that has definitely changed since NAFTA is the increasing correlation of Mexican and U.S. business cycles, presumably reflecting greater sensitivity of the Mexican economy to short-run fluctuations in the U.S. economy. Several studies using a variety of statistical methodologies have found large and significant increases in the “synchronization” of Mexican output growth and industrial production with the corresponding U.S. variables since NAFTA.³⁰ Figure 5.7 confirms graphically that Mexican GDP growth has been highly correlated with U.S. GDP growth since 1994, except for 1995 when Mexico suffered a steep recession during the peso crisis, while no significant correlation can be seen in the prior years. The large

impact of U.S. growth on Mexico benefited the latter during the U.S. boom of the late 1990s, but had a less favorable impact during the slower-growth years of the early 2000s and especially in the financial crisis and Great Recession of 2008–2009.

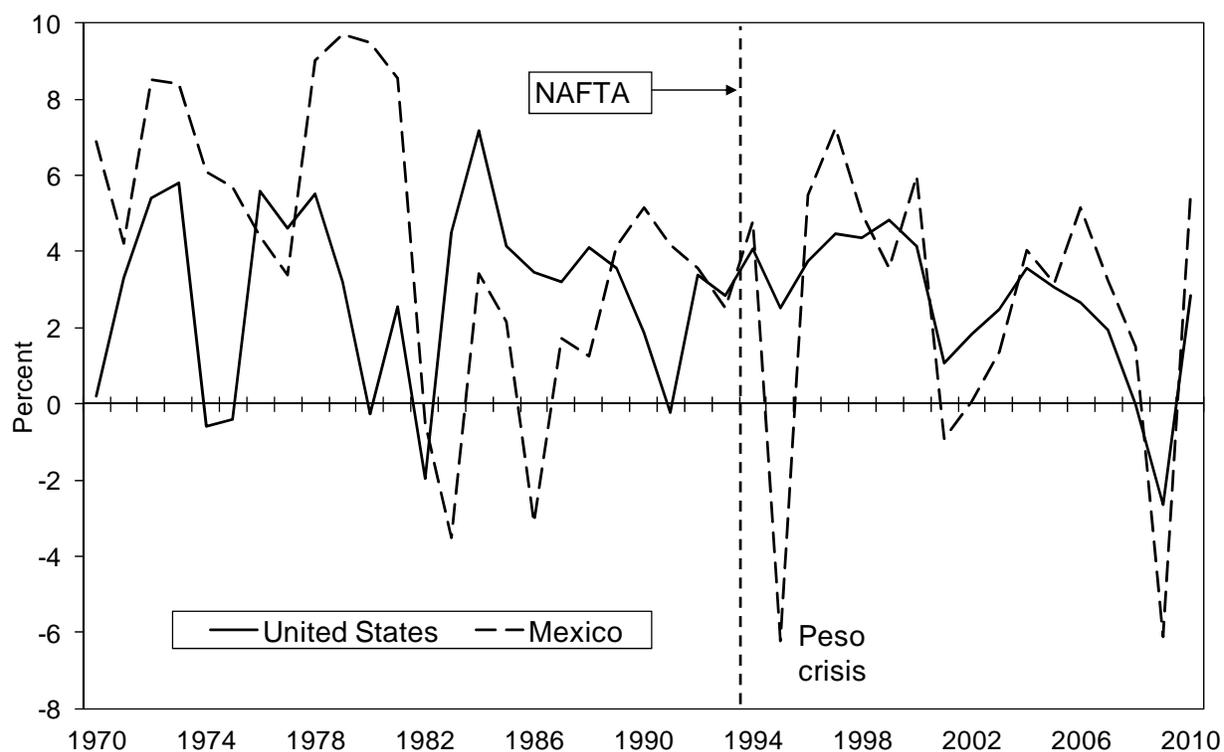
<Figure 5.7 about here>

The strong correlation between the Mexican and U.S. economies is partly behind the remarkably steady Mexico-U.S. ratios of income per capita and income per worker shown in Figure 5.1. Indeed, the fact that both economies have been growing at similar rates since 1996 (as shown in Figure 5.7) explains why those ratios look practically unchanged since NAFTA's enactment. Of course, such a strong correlation can only be explained by the lack of a domestic engine of growth in Mexico. This result is rather surprising considering that Mexico is one of the largest economies in the world and presumably would have a relatively large domestic market. However, Mexico's transformation into an outward-looking, export-oriented economy probably went too far and may have reached the point where the domestic market becomes almost irrelevant, thereby aggravating the country's external vulnerability especially to economic conditions in the U.S. market. This was particularly obvious during the Great Recession of 2008–2009, when the Mexican economy was severely affected (GDP collapsed by 6.1 percent in 2009) as a result of a financial crisis that originated in the United States. There is no doubt that the main channel for this impact was the regionally integrated industrial sector, which contracted by more than 11 percent in the United States in that same year.

Restrictive Macroeconomic Policies

In addition to the reforms already described, there have been two other important reforms in the conduct of macroeconomic policy in Mexico in recent years: on the one hand, the Central Bank

Figure 5.7 Annual Growth Rates of Real GDP, United States and Mexico, 1970–2010



Source: International Monetary Fund, *World Economic Outlook Database*, April 2011

Edition, <http://www.imf.org/external/pubs/ft/weo/2011/01/weodata/index.aspx>, and earlier editions.

is now independent and has price stability as its single objective; on the other hand, fiscal policy is conducted according to a highly procyclical rule, which mandates a zero deficit regardless of the state of the business cycle. This combination of policies, together with the strong correlation of the Mexican and U.S. economies, implies a straitjacket for the conduct of macroeconomic policy that severely limits the ability of Mexican policy makers to respond to external shocks in a countercyclical manner.³¹ This means that the Mexican economy absorbs all the external shocks and has no ability to pursue independent stimulus policies. Furthermore, the institutional design of macroeconomic policy in Mexico may even exacerbate negative shocks by inducing fiscal, monetary, and exchange rate policies that end up increasing exchange rate and output volatility.

The profound economic impact of the financial crisis of 2008–2009 on the Mexican economy is a case in point. During this crisis, the Mexican economy was much more volatile than the U.S. economy, despite the fact that the crisis originated in the latter. Indeed, during 2009 Mexican GDP contracted by 6.1 percent, whereas U.S. GDP declined by only 2.6 percent. During the recovery, the trend was similar since Mexico recovered in 2010 at a pace of 5.5 percent, while U.S. output grew at 2.9 percent. Notice that this performance implies that by the end of 2010 the U.S. economy had already returned to its pre-crisis level of output, whereas Mexico was still below its previous peak. This higher volatility pattern for the Mexican economy is precisely what we would expect considering not only the synchronization of both economies as discussed above, but also taking into account the important macroeconomic policy restrictions imposed upon the Mexican economic authorities, since these restrictions do not allowed them to use either monetary or fiscal policy tools in a countercyclical manner. For that reason, the Mexican economy heavily depends on the ability of the U.S. policy responses to mitigate the amplitude of the business cycle.

The only factor that actually reduced the magnitude of the negative shock for the Mexican economy was the exchange rate, which depreciated substantially in both nominal and real terms in late 2008 and early 2009. This had a positive effect on exports during the second half of 2009 and throughout 2010, which helped to compensate for the negative demand shock due to the lower level of economic activity in the U.S. economy during this period. However, the peso subsequently appreciated again, reaching a level (11.65 per U.S. dollar) in May 2011 not seen in nearly three years (since early October 2008).

New Opportunities and U.S. Interests

After the recovery from the financial crisis and global recession of 2008–2009, Mexico and the United States are likely to enjoy certain opportunities for renewing their economic cooperation in their mutual interest. One positive development on the Mexican side is that the crisis left the peso at a somewhat more competitive exchange rate than it had been at for most of the previous decade. Although the peso has recovered from its lowest value during the crisis (nearly 15 per U.S. dollar in March 2009), as of mid-2011 it was (at just below 12 per dollar) still about 10 percent lower in value compared to the pre-crisis period. If the peso is allowed to remain at such a competitive level going forward, Mexican industries can get a leg up in attracting FDI and exporting to the U.S. market and elsewhere.

Some press reports indicate that existing foreign investment in Mexico has been remarkably resilient in spite of the increased violence resulting from the government's crackdown on narcotrafficking;³² success in the latter effort could help the country attract yet more FDI inflows. A recent report by the American Chamber of Commerce of Mexico concludes that it "can attest to the fact that Mexico remains a country where it is safe to invest and where

there are very good business opportunities. Mexico is in fact a **highly stable country both economically and socially**.”³³ However, FDI inflows into Mexico were less than 2 percent of GDP in 2010, below the post-NAFTA average of about 3 percent (see Figure 5.2), and it remains to be seen whether drug-related violence will hold those inflows below the levels that would otherwise be expected as the U.S. and Mexican economies recover further in the next few years.

Just before the financial crisis worsened in September 2008, the business press was noting a trend toward the return of some manufacturing production from Asia to both the United States and Mexico, as a result of the high energy prices and transportation costs that had emerged at that time coupled with the then-lower value of the dollar and concerns over quality control in China.³⁴ The financial crisis and recession temporarily interrupted this process, as energy prices tanked, transportation costs fell, and the dollar temporarily recovered (not only against the peso, but against most currencies) in the fall and winter of 2008–2009. However, as the global economy began to revive in the second half of 2009, energy and commodity prices started to recover and the dollar resumed its previous downward course against the major currencies such as the euro. By mid-2011, the dollar was at historical lows relative to the currencies of the other major industrialized nations, while global energy prices and transportation costs remained relatively high. If these trends continue and the peso also stays low, the long-run potential for a revival of both Mexican and U.S. manufacturing is enormous. This revival, however, could only have a limited effect on employment creation in Mexico unless there were massive increases in both domestic and foreign investment, specifically directed to labor-intensive sectors.

In one of the most important sectors for bilateral U.S.-Mexican trade, although both countries' automobile industries took a big hit from the combined effects of high oil prices and a recession in 2008–2009, since the auto companies are now focusing on making smaller and more

fuel-efficient cars for the U.S. market, there is significant potential for a recovery of regional trade in automobiles and auto parts. Signs of this potential being realized are seen in the recent announcements by Ford and General Motors (GM) of new investments in Mexico for producing new (low-cost, fuel-efficient) models in their plants in Mexico.³⁵

The Ford and GM examples remind us of why U.S.-Mexican trade relations can be fraught with conflict, since the jobs that will be supported at the Mexican plants are jobs that will not be found in Detroit or elsewhere in the United States. Indeed, the likelihood of U.S. auto companies increasing their outsourcing was a major point of controversy in regard to the U.S. government bailout of two large automakers (GM and Chrysler) in early 2009. Nevertheless, there are many reasons why expanded trade with Mexico and efforts to promote Mexican convergence are in the U.S. interest.

First, trade with Mexico is more of a two-way street for the United States than trade with most Asian countries. Although the United States has a large overall trade deficit, its deficit with Mexico is *relatively* smaller in proportional terms. The average ratio of U.S. imports to U.S. exports in 2010 was 1.5:1; this ratio was only 1.4:1 for U.S. trade with Mexico but 3.9:1 for U.S. trade with China.³⁶ Thus, even though some Mexican production displaces some U.S. jobs, Mexico is a better customer for U.S. exports than most other countries, and hence trade with Mexico also supports relatively more U.S. jobs. Hence, a growing Mexican economy would be an opportunity for, not a threat to, the United States.

Second, the primary economic driver of migration from Mexico to the United States is the persistently large wage gap between the two countries, i.e., the lack of convergence in wages.³⁷ Although the high unemployment rates in the U.S. economy since 2008 along with tougher border controls have put a temporary damper on migration flows, it is to be expected that

such flows will revive if and when the United States has a more robust recovery and job opportunities are more abundant north of the border. In the long run, policies that could foster convergence between the two countries via increased wages in Mexico are the surest way to stem the tide of Mexican workers seeking to cross the U.S. border. Instead of the United States building walls or deporting people, regional efforts to promote Mexican growth and convergence would be the best way to alleviate migration pressures.

Third, there are special opportunities for mutual gains from U.S.-Mexican cooperation in the areas of health care and elder care services. Given the aging of the U.S. population and the high and rising costs of medical and elder care in the United States, it would make sense to allow U.S. Medicare benefits and private insurance payments to flow to Mexican providers of medical care and elder services (e.g., assisted living or nursing homes), who can provide those services at a significantly lower cost. In fact, some U.S. senior citizens are already taking advantage of the lower cost of retiring and seeking medical treatments in Mexico, but their numbers could be vastly expanded if Medicare and insurance benefits were allowed to be spent there (subject, of course, to adequate quality controls). This could also provide enormous numbers of jobs for Mexicans not only in health and elder care directly, but also in various supplier industries. Given that the manufacturing sector does not seem capable of supplying adequate numbers of jobs in Mexico, for the reasons discussed earlier, Mexico needs to focus on other sectors, such as services and construction, to solve its employment problems. Since rising health care costs are threatening both the private and public sectors of the U.S. economy, both countries could reap enormous gains from such an arrangement.

This area of opportunity, however, will not be permanent since demographic complementarities between Mexico and the United States will eventually disappear. To convey

an idea of how important Mexico-U.S. demographic complementarities are and how long they are likely to last, we can examine the old-age dependency ratios for both countries for the 2005–2050 period. This ratio is defined as the number of people aged 65 and over as a percentage of the number aged 15 to 64, where the latter are considered to be the productive segment of the population. These data reveal two important elements: first, the old-age dependency ratio in the U.S. is currently twice as high as it is in Mexico and it will be greater than the Mexican ratio at least for the next 40 years; second, the gap in old-age dependency ratios will steadily increase until the mid-2020s, when the gap will start to decline gradually until it disappears around 2050. This means that the next ten or fifteen years will be the best time for exploiting the demographic complementarities between Mexico and the United States. For that reason, this area of opportunity is one that needs to be explored soon in order to reap the largest possible benefits for both countries.

Conclusions

The decision to convert North America into a free trade area with the adoption of NAFTA concealed a deeper clash of visions over what kind of economic integration was intended. On the one hand, some economists supported it reluctantly because of its preferential nature. These economists wanted a NAFTA that would keep North America wide open to trade with other global regions and that, in effect, would be little but a way station on the road to multilateral trade liberalization. On the other hand, some advocates of “industrial policy” sought a NAFTA that would function as a true trading bloc, transforming North America into a more internally integrated and externally competitive region. The industrial policy advocates were concerned mostly about competition from Japan, the four Asian tigers, and the European Union (EU) in the

early 1990s; China was not yet on their radar screens.

In reality, NAFTA—in spite of its many exceptions to pure free trade—ended up functioning more like a globally open regional market than a self-contained trading bloc, and this had a profound impact on what the agreement did and did not accomplish for the Mexican and U.S. economies in the long run. NAFTA was neither the panacea promised by the Mexican government nor the disaster predicted by some U.S. opponents. Although the agreement did have a significant impact on trade and investment flows, it had at most a modest impact on the variables that matter most, such as employment, income distribution, and growth. The biggest problem is not what NAFTA did, but what it didn't do, namely, to foster a regional integration process that could have lifted up the Mexican economy and produced a convergence in Mexican per capita income or average wages toward U.S. levels.

The point is not that NAFTA should have been an economic “fortress” defended by high protectionist barriers. Rather, the problem was that neither Mexico nor the United States ever adopted the complementary policies that could have promoted a more successful regional integration effort. These policies would have included promulgating adequate education and industrial policies, making the necessary infrastructure investments, and maintaining competitive exchange rates. Furthermore, the NAFTA countries did not adopt policies to promote convergence of the less developed regions of the sort used in the EU, such as its regional and social cohesion funds.³⁸ Although the United States extended some additional Trade Adjustment Assistance (TAA) for U.S. workers displaced by trade with Canada or Mexico, overall the NAFTA countries did not implement adequate social safety nets for groups adversely impacted by the agreement's adjustment costs. Mexico eventually adopted certain redistributive policies, such as the Procampo and Progres/Oportunidades programs, but Procampo was poorly designed

and all these programs came too late or were implemented on too small a scale to assist during the initial liberalization of trade or the first few years of NAFTA.

Although NAFTA did promote increasing regional integration in the late 1990s, in the early 2000s this trend was partially reversed as the lower trade barriers within North America were overwhelmed by other developments, including the lowering of global trade barriers under the WTO, the tightening of U.S. border restrictions, and the emergence of China as an economic powerhouse. In effect, the vision of NAFTA as a globally open trading region rather than a more competitive trade bloc won out, but the goal of promoting economic convergence of Mexico to U.S. and Canadian levels of per capita income lost out. The challenge for the U.S. and Mexican governments going forward is to see if they can find a way to rejuvenate the process of regional integration that can move toward that goal while serving the mutual interests of the U.S. and Mexican economies.

ENDNOTES

*An earlier version of this chapter was published as “NAFTA, Trade and Development” in *CESifo Forum*, 2010/4, 17–30.

¹ See Lustig, *Mexico: The Remaking of an Economy*, 2nd edition (Washington, D.C.: Brookings Institution, 1998), 134.

³ Furthermore, NAFTA contained many provisions that went beyond trade liberalization, such as guarantees of property rights for foreign investors, and was also intended to “lock-in” Mexico’s previous market reforms. In this sense, NAFTA may have had consequences beyond the direct effects of reductions in trade barriers.

⁴ For an analysis of the impact of these macroeconomic factors on Mexico, see Robert A. Blecker, “External Shocks, Structural Change, and Economic Growth in Mexico,” *World Development* 37, no. 7 (July 2009): 1274–1284.

⁵ See Robert A. Pastor, *Toward a North American Community: Lessons from the Old World for the New* (Washington, DC: Institute for International Economics, 2001), and Isabel Studer and Carol Wise, eds., *Requiem or Revival? The Promise of North American Integration* (Washington, D.C.: Brookings Institution, 2007).

⁶ Remember, for example, the famous expression attributed to Mexican dictator Porfirio Díaz: “Poor Mexico, so far from God, and so close to the United States!”

⁷ Note that the term “economic convergence” as used in this paper is different from how the term has been used in some other studies, particularly Daniel Lederman, William F. Mahoney, and Luis Servén, *Lessons from NAFTA for Latin America and the Caribbean* (Washington, D.C.: World Bank, 2005); and Stephen Haber, Herbert S. Klein, Noel Maurer, and Kevin J. Middlebrook, *Mexico since 1980* (New York: Cambridge University Press, 2008). These studies utilize a counterfactual analysis of the type: Is Mexico better off with NAFTA than without it? Or, could the Mexico-U.S. gap have been greater in the absence of NAFTA? The former study includes a time-series analysis that investigates whether Mexico is converging toward a constant per capita income differential with the U.S. (i.e., 50 percent of the U.S. level). These questions, although interesting by themselves, are not what is normally meant by convergence. For us, economic convergence means a reduction in the absolute Mexico-U.S. gap in terms of the

variables that affect economic well-being, such as income per capita, average wages, and labor productivity, and the eventual approach of Mexico to U.S. levels of these variables.

⁸ Mexico's per capita GDP fell by about 8 percent in 2009, whereas U.S. per capita GDP fell by about 3.5 percent. This effect was partly reversed in 2010, when Mexico's per capita GDP grew at a faster rate (4 percent) than its U.S. counterpart (2 percent). Overall, however, the effect of the crisis was a widening of the gap between the two countries. For an analysis of the severity of the crisis in Mexico see Robert A. Blecker, "Más Allá de la Crisis Actual en México: Cómo Fomentar Más Estabilidad a Corto Plazo y Mayor Crecimiento a Largo Plazo," in Ignacio Perrotini Hernández, Blanca Lilia Avendaño Vargas, and Juan Alberto Vázquez Muñoz, eds., *Estructural Económica y Estrategias de Crecimiento para América Latina con Especial Énfasis para México* (Puebla, Mexico: Benemérita Universidad Autónoma de Puebla, 2011).

⁹ For evidence of significant displacement of Mexican exports by Chinese exports see, among others: Kevin P. Gallagher, Juan Carlos Moreno-Brid, and Roberto Porzecanski, "The Dynamism of Mexican Exports: Lost in (Chinese) Translation?" *World Development* 36, no. 8 (August 2008): 1365–1380; Gordon H. Hanson and Raymond Robertson, "China and the Recent Evolution of Latin America's Manufacturing Exports," and Robert C. Feenstra and Hiau Looi Kee, "Trade Liberalization and Export Variety: A Comparison of Mexico and China," both in Daniel Lederman, Marcelo Olarreaga, and Guillermo E. Perry, eds., *China's and India's Challenge to Latin America: Opportunity or Threat?* (Washington, D.C.: World Bank, 2009), 145–178 and 245–263.

¹⁰ For evidence that the Banco de México's monetary policy was biased toward permitting the peso to appreciate in the early 2000s, see Luis Miguel Galindo and Jaime Ros, "Alternatives to Inflation Targeting in Mexico," *International Review of Applied Economics* 22, no. 2 (2008): 201–214.

¹¹ See Kevin P. Gallagher and Lyuba Zarsky, *The Enclave Economy: Foreign Investment and Sustainable Development in Mexico's Silicon Valley* (Cambridge, Mass.: MIT Press, 2007).

¹² It may seem paradoxical that Mexico's liberalization of *imports* made its *exports* to the United States grow so rapidly, but this seeming paradox is readily explained by the fact that the export products were very intensive in imported intermediate goods, and also because restrictions on FDI were liberalized around the same time.

¹³ According to our calculations, based on data from the Mexican Instituto Nacional de Estadística, Geografía e Informática (INEGI), www.inegi.org.mx, the U.S. share of Mexican FDI inflows went from about 61 percent between 1987 and 2000 to only 48.5 percent between 2001 and 2010.

¹⁴ The high-end estimate comes from Robert E. Scott, Carlos Salas, and Bruce Campbell, “Revisiting NAFTA: Still Not Working for America’s Workers,” EPI Briefing Paper #173 (Washington, D.C.: Economic Policy Institute, September 2006), 10, Table 1-1b, which calculates a net loss of 559,564 U.S. jobs between 1993 and 2004 as a result of the increased U.S. trade deficit with Mexico. In contrast, by comparing “jobs supported by exports” with NAFTA-related job losses as certified under the NAFTA Trade Adjustment Assistance (TAA) program between 1994 and 2002, Gary C. Hufbauer and Jeffrey J. Schott, *NAFTA Revisited: Achievements and Challenges* (Washington, D.C.: Institute for International Economics, 2005), 40, Table 1.8, find that NAFTA had a net positive effect of 42,000 jobs annually in the U.S. economy between 1994 and 2002. However, the latter study (which includes trade with Canada as well as Mexico) does not use a consistent methodology to estimate jobs gained due to exports and jobs lost due to imports, and neither study isolates effects of NAFTA as opposed to other determinants of trade flows.

¹⁵ Total payroll employment data are from U.S. Council of Economic Advisers, *Economic Report of the President 2009* (Washington, D.C.: Government Printing Office, 2009), Table B-46, www.gpoaccess.gov/eop/tables09.html. The estimated job losses do loom larger relative to manufacturing employment, which was about 17 million in 1994 (see Figure 5.3).

¹⁶ Data from the Censos Económicos were obtained from INEGI, www.inegi.org.mx. Since each census reports data from the previous year, the 2009 data are really for 2008 and therefore do not include the worst effects of the Great Recession. Other INEGI data, which are available on a monthly basis, show that most of the job creation in manufacturing in the 1990s occurred in the export-oriented maquiladora plants, and confirm that manufacturing employment peaked around 2000 and declined thereafter. See Robert A. Blecker, “Comercio, Empleo y Distribución: Efectos de la Integración Regional y Global,” in Nora Lustig, ed., *Los Grandes Problemas de México*, vol. 9, *Crecimiento Económico y Equidad* (Mexico City: El Colegio de México, 2010).

¹⁷ The migration estimates are from Gordon H. Hanson, “Illegal Migration from Mexico to the United States,”

Journal of Economic Literature 44, no. 4 (December 2006): 869–924. Of course, new undocumented migration flows were later reduced to nearly zero as a result of the economic crisis of 2008–2009 and the subsequent sluggish recovery and high unemployment rates in the U.S. economy, as well as tougher U.S. border controls and enforcement efforts, but are likely to resume when the U.S. economy recovers more fully (see chapter 6).

¹⁸ See, for example, Pablo Ruiz-Nápoles, “Exports, Growth, and Employment in Mexico,” *Journal of Post-Keynesian Economics* 27, no. 1 (Fall 2004): 105–124, and Juan Carlos Moreno-Brid, Jesús Santamaría, and Juan Carlos Rivas Valdivia, “Industrialization and Economic Growth in Mexico after NAFTA: The Road Travelled,” *Development and Change* 36, no. 6 (November 2005): 1095–1119.

¹⁹ See Ana L. Revenga and Claudio E. Montenegro, “North American Integration and Factor Price Equalization: Is There Evidence of Wage Convergence between Mexico and the United States?” in Susan M. Collins, ed., *Imports, Exports, and the American Worker* (Washington, D.C.: Brookings Institution, 1998), 305–347.

²⁰ See Gerardo Esquivel and José Rodríguez-López, “Technology, Trade, and Wage Inequality in Mexico before and after NAFTA,” *Journal of Development Economics* 72, no. 2 (December 2003): 543–565, and Eric A. Verhoogen, “Trade, Quality Upgrading, and Wage Inequality in the Mexican Manufacturing Sector,” *Quarterly Journal of Economics* 123, no. 2 (May 2008): 489–530. Robert C. Feenstra argues that trade liberalization “selects” for more efficient industrial firms and plants, resulting in increases in average productivity and decreases in the use of less-skilled labor as less efficient firms and plants are eliminated and more efficient ones expand. See “New Evidence on the Gains from Trade,” *Review of World Economics* 142, no. 4 (December 2006): 617–641.

²¹ See Gerardo Esquivel, Nora Lustig, and John Scott, “A Decade of Falling Inequality in Mexico,” in Luis Felipe López-Calva and Nora Lustig, eds., *Declining Inequality in Latin America: A Decade of Progress?* (Washington, D.C.: Brookings Institution, 2010), 175–217; and Raymond Robertson, “Trade and Wages: Two Puzzles from Mexico,” *World Economy* 30, no. 9 (September 2007): 1378–1398. In addition, average Mexican tariffs remained higher on goods that were more intensive in less-skilled labor after trade liberalization and NAFTA, according to Ernesto López-Córdova, “Economic Integration and Manufacturing Performance in Mexico: Is Chinese Competition to Blame?” Working Paper No. 23, Latin America/Caribbean and Asia/Pacific Economics and Business Association (December 2004).

²² This paragraph draws on the following sources: Gordon Hanson, “What Has Happened to Wages in Mexico since NAFTA? Implications for Hemispheric Free Trade,” in Antoni Esteveordal, Dani Rodrik, Alan M. Taylor, and Andres Velasco, eds., *Integrating the Americas: FTAA and Beyond* (Cambridge, Mass.: Harvard University Press, 2004), 505–537; Fernando Borraz and José Ernesto López-Córdova, “Has Globalization Deepened Income Inequality in Mexico?” *Global Economy Journal* 7, no. 1 (January 2007): Article 6 (on-line); and Daniel Chiquiar, “Globalization, Regional Wage Differentials and the Stolper-Samuelson Theorem: Evidence from Mexico,” *Journal of International Economics* 74, no. 1 (January 2008): 70–93.

²³ The average tariffs in effect at the time NAFTA was adopted were about 3.4 percent for U.S. imports from Mexico and 10 percent for Mexican imports from the United States, according to U.S. International Trade Commission (USITC), *The Likely Impact on the United States of a Free Trade Agreement with Mexico*, Publication 2353 (Washington, D.C.: USITC, 1991), p. 2-2. **[Note to Ed.: This is one page number, meaning page 2 in section 2 of the publication]**

²⁴ Compensation (*remuneraciones* in Spanish) includes fringe benefits in addition to wages or salaries.

²⁵ See Blecker, “Comercio, Empleo y Distribución.”

²⁶ See Edward E. Leamer, “In Search of Stolper-Samuelson Linkages between International Trade and Lower Wages,” in Collins, ed., *Imports, Exports, and the American Worker*, 141–214.

²⁷ Three recent papers discuss why Mexico has not grown at a faster rate in the past decades: Gordon Hanson, “Why Isn’t Mexico Rich?” *Journal of Economic Literature* 48, no. 4 (December 2010): 987–1004; Timothy Kehoe and Kim J. Ruhl, “Why Have Economic Reforms in Mexico Not Generated Growth?” *Journal of Economic Literature* 48, no. 4 (December 2010): 1005–1027; and Javier Arias, Oliver Azuara, Pedro Bernal, James J. Heckman, and Cajeme Villarreal, “Policies to Promote Growth and Economic Efficiency in Mexico,” National Bureau of Economic Research (NBER) Working Paper No. 16554 (November 2010). Although some of the factors mentioned by these authors to explain the low rates of economic growth in Mexico are common to our explanation for the lack of convergence between Mexico and the United States, we do not necessarily agree with all their conclusions or with the relevance of some of the aspects that they emphasize. A full discussion of these issues, however, would fall beyond the scope of this chapter.

²⁸ See Gerardo Esquivel and Fausto Hernández-Trillo, “How Can Reforms Help Deliver Growth in Mexico?” in Liliana Rojas, ed., *Growing Pains in Latin America* (Washington, D.C.: Center for Global Development, 2009), 192–235.

²⁹ See Rafel Del Villar, “Competition and Equity in Telecommunications,” in Michael Walton and Santiago Levy, eds., *No Growth without Equity* (Washington, D.C.: World Bank/Palgrave Macmillan, 2009), 321–369.

³⁰ See, for example, Robert A. Blecker, “External Shocks, Structural Change, and Economic Growth in Mexico, 1979-2007,” *World Development* 37, no. 7 (July 2009): 1274–1284, and the references therein.

³¹ See Gerardo Esquivel, “De la Inestabilidad Macroeconómica al Estancamiento Estabilizador: El Papel del Diseño y Conducción de la Política Económica,” in Lustig, ed., *Crecimiento Económico y Equidad*.

³² Pete Engardio and Geri Smith, “Business Is Standing Its Ground,” *Business Week* (April 20, 2009): 34–39.

³³ American Chamber of Commerce of Mexico, “Foreign Direct Investment in Mexico: Is Your Investment Safe?” (June 2010). Bold in original.

³⁴ Regarding the impact of exchange rates and transportation costs, see Ylan Q. Mui, “Ikea Helps a Town Put It Together,” *Washington Post* (May 31, 2008); and Jeff Rubin and Benjamin Tal, “Will Soaring Transport Costs Reverse Globalization?” *StrategEcon, CIBC World Markets* (May 27, 2008): 4–7. In regard to quality concerns about Chinese imports, see Engardio and Smith, “Business Is Standing Its Ground.”

³⁵ See Roig-Franzia, “Ford’s ‘Global Car’ To Roll Out in Mexico,” *Washington Post* (May 31, 2008), and Paul Kieman, “GM to Invest \$500M in Mexico,” *Wall Street Journal* (August 4, 2010).

³⁶ Calculated from data in U.S. Bureau of Economic Analysis, International Transactions Accounts, Table 2 (Release of March 16, 2011), www.bea.gov.

³⁷ See Hanson, “Illegal Migration,” for estimates of wage gaps for particular categories of workers.

³⁸ See Pastor, *Toward a North American Community*.