
Overview

In June 1990, Mexican President Carlos Salinas de Gortari and US President George H. W. Bush announced a daring initiative: the creation of a free trade area between the United States and Mexico. When formal negotiations began one year later, Canada—spurred on by fears that its benefits from the 1989 Canada-US Free Trade Agreement (CUSFTA) might be diluted—joined the project. Negotiations on the North American Free Trade Agreement (NAFTA) proceeded to create one of the world’s largest free trade blocs.¹ Upon entering into force in January 1994, NAFTA represented a \$6 trillion economy with a population of 360 million. Ten years later, the NAFTA area grew to a \$12.5 trillion economy with a population of 430 million.

Of course North American economic integration was well under way long before NAFTA—building on the 1965 Canada–United States Automotive Agreement (commonly known as the 1965 Auto Pact), initiation of the Mexican *maquiladora* program of 1965,² Mexican economic reforms from the mid-1980s, accession to the General Agreement on Tariffs and Trade (GATT) in 1986, and the CUSFTA in 1989. For many decades before 1990, the United States accounted for the predominant share of trade and

1. The European Union has more members, a larger population, and somewhat larger GDP than NAFTA. By contrast with NAFTA, the European Union is a customs union with a common external tariff and substantial supranational institutions.

2. The Mexican *maquiladora* program (initially termed the Border Industrialization Program) was developed to create assembly jobs in border communities when the United States terminated its *bracero* program in 1964 (see chapter 2 on labor).

foreign direct investment (FDI) in both Canada and Mexico.³ Moreover, during the three years from announcement to completion of the negotiations, US trade with Mexico and Canada grew almost twice as fast as merchandise trade with other countries. North American economic integration would have continued to deepen—even *without* NAFTA—in response to new technology and competitive pressures in the world economy. But progress would likely have been slower.

Overall, the three economies of North America have grown significantly during the first decade of NAFTA. Average annual real GDP growth over 1994–2003 was 3.6 percent for Canada, 3.3 percent for the United States, and 2.7 percent for Mexico (despite the sharp recession in 1995). While all three countries grew faster than the OECD average during this period, Mexico’s progress was insufficient to address its long-run development challenges and well below its estimated potential growth rate.⁴

Since NAFTA, intraregional merchandise trade has doubled; US FDI in Canada and Mexico increased even faster. How much NAFTA has contributed to growth and efficiency is a tough analytical question that challenges scholars. It is important to emphasize, however, that NAFTA obligations are only part of the story. The trade and investment pact is only one component of the rich complex of economic relations among the three countries. Macroeconomic events—the Mexican peso crisis of 1994–95, the US high-tech boom of the 1990s, and Canadian budget and monetary discipline—clearly shaped the depth and pace of economic integration. The effects of the agreement are difficult to disentangle from these and other events in the North American and global economies.

For the United States, NAFTA was an economic opportunity to capitalize on a growing export market to the south and a political opportunity to repair the sometimes troubled relationship with Mexico. At the same time, NAFTA was seen as a way to support the growth of political pluralism and deepening of democratic processes in Mexico and as part of the long-term response to chronic migration pressures.

In addition, US officials hoped the regional talks would spur progress on the slow-paced Uruguay Round of multilateral trade negotiations, while providing a fallback in the event that those talks faltered. NAFTA reforms promised to open new doors for US exporters—who faced Mexi-

3. In 1990, US trade (exports and imports) with Canada and Mexico totaled \$170 billion and \$57 billion, respectively; Canada-Mexico trade ran about \$2.5 billion. US and Canadian companies invested heavily in each other’s economy (combined FDI of about \$95 billion), and US firms accounted for \$10 billion in FDI in Mexico.

4. The OECD (2004d) estimates that Mexico’s annual potential growth rate could be raised to 6 percent with structural and regulatory reforms. It argues that unless Mexico implements structural reforms to improve education and infrastructure and increase competition in the business sector, the Mexican economy will lag behind its 6 percent potential. See “Tequila Slammer—The Peso Crisis, Ten Years On,” *The Economist*, January 1, 2005.

can industrial tariffs five times greater on average than US tariffs—to a growing market of almost 100 million people. US officials also recognized that *imports* from Mexico likely would include higher US content than competing imports from Asia, providing an additional benefit. Increased Mexican sales in the US market would in turn spur increased Mexican purchases from US firms.

For Mexico, NAFTA represented a way to lock in the reforms of the *apertura*, or “market opening,” that President Miguel de la Madrid inaugurated in the mid-1980s to transform Mexico’s formerly statist economy in the wake of the devastating debt crisis of the 1980s. Mexico needed more rapid growth to provide new opportunities for its young, expanding population. Given the legacy of the debt crisis of 1982, low domestic savings, and an increasingly overvalued peso, the most practical way to propel growth was to import goods and capital, creating more competition in the Mexican market.

An FTA with the United States was crucial to maintain secure access to Mexico’s largest market and to blunt efforts to roll back Mexican reforms.⁵ NAFTA obligations sharply raised the political cost of reversing economic reforms and made it easier to deflect protectionist demands of industrial and special interest groups. The trade pact thus was an integral part of the plan to create a more stable policy environment so that Mexico could attract greater FDI inflows—with its embedded technology and management skills—to build and finance growth.

For Canada, the latecomer to the NAFTA table, the objectives were less ambitious. Initially, Canadian officials suspected that a new agreement with Mexico would erode the hard-fought gains of the CUSFTA, which had come into force only in 1989. Canadian unions felt that Mexico’s low wages would undercut Canada’s competitive advantage in the US market, possibly diverting US FDI away from Canada. Trade between Canada and Mexico was small, the prospective deal seemed unlikely to redress CUSFTA shortcomings on trade remedies, and Canadians were less worried about migration flows than their US counterparts.⁶ However, as it became clear in September 1990 that the United States and Mexico were going to move ahead with or without Canada, the Canadian government decided that it had more to gain by joining the negotiations than by stay-

5. President Carlos Salinas de Gortari used NAFTA ratification as political cover to reform the use of *ejido* lands (communal agricultural property). The Mexican Congress permitted the sale and consolidation of *ejido* lands when it ratified NAFTA, an important step toward the creation of economically viable agricultural units.

6. At first, Industry Minister John Crosbie vehemently denied any rumors of CUSFTA expansion: “It doesn’t matter to us how many powerful US senators are for free trade with Mexico. . . . There is an absolute zero pounds per square inch of pressure on the Mexico question.” Quoted in “Canada Is Free to Turn Down Mexico Deal, Crosbie Says,” *The Toronto Star*, June 27, 1989, B2.

ing on the sideline.⁷ Involvement allowed the government to minimize the risks to Canada of US-Mexico free trade and offered an opportunity to extract new commercial concessions from the United States.

At the time of its ratification, NAFTA was hailed by some and derided by others. Even after more than a decade of hindsight and data, the political debate over NAFTA remains confused and divisive. Much of what was promised from NAFTA could never be achieved solely through a free trade deal; much of what has occurred since NAFTA was ratified cannot be attributed to policy changes that the trade pact mandated.

Critics continue to berate the NAFTA partners for missed opportunities and misplaced priorities; some continue to recite misguided analysis put forward a decade ago during the NAFTA ratification debate. Before the pact was even concluded, NAFTA served as a lightning rod for attacks by labor and environmental groups against trade liberalization. NAFTA critics charged that the pact would encourage footloose plants to leave the United States and Canada, that low-wage Mexican jobs would displace US workers, and that the threat of relocation would suppress wage demands. While one would expect such effects to some degree, the critics grossly exaggerated their magnitude. Ross Perot's infamous "sucking sound" claims proved totally unfounded. Yet legendary tales still resonate in public debate.

However, NAFTA critics also cite an array of concerns that are harder to dismiss: continued high levels of illegal immigration, slow progress on environmental problems, growing income disparities (particularly within Mexico), weak growth in real wages, and trafficking of illegal drugs. Some of these problems are correlates of economic integration and higher incomes, though NAFTA is only a small part of the story. Nonetheless, these issues are often cited as evidence of a "failed NAFTA."

To their credit, the NAFTA critics have shone a spotlight on important problems, but most of them fail to offer constructive remedies. To redress decades of environmental abuse or labor and migration problems—not to mention the scourge of drugs and related crime—will require major initiatives well beyond the scope of a trade pact. NAFTA was never designed to address all the ills of society—though some political leaders during the ratification debate made inflated promises about trade's medicinal powers.

This book assesses NAFTA's first decade and speculates on prospects for deeper economic integration. Individual chapters provide detailed analysis of what has happened in three important sectors of the North American economy, which together account for nearly a third of intraregional trade (autos, agriculture, and energy); the varied implementation of key components of the trade accord (dispute settlement, labor, and en-

7. See "Canada Joins Trade Talks, Crosbie Foresees Deal with US, Mexico by End of 1991," *The Globe and Mail*, September 25, 1990, B1.

vironmental provisions); and US-Mexico migration. The concluding chapter offers recommendations for reforms by the NAFTA countries that could enhance the benefits of their partnership.

This chapter starts with a historical context for NAFTA, including why it arose, how it was received, and how contemporary events have affected North America since the pact came into force. From this perspective, we assess how well the NAFTA partners have achieved the goals set out in the agreement itself—as opposed to passing judgment on political leaders’ promises voiced during the overheated ratification debate. We consider NAFTA’s effect on trade, investment, and employment, as well as the operation of NAFTA’s dispute settlement provisions, and its side accords on labor and the environment.

Against the modest benchmarks set out in the agreement, NAFTA has been a success: The North American economy is more integrated and more efficient today than it would have been without NAFTA. Our assessment is critical in some dimensions: We find that important NAFTA institutions lacked adequate mandates and funding; consequently, they fell short of aspirations. However, we believe NAFTA’s failures are best addressed by building on its successes. Looking to the future, we highlight areas where North American partners can make progress on new challenges.

NAFTA in Historical Context

Trade agreements do not operate in a vacuum. How well the partners take advantage of the opportunities the pacts create depends importantly on overall macroeconomic policy and political stability in the region. In this regard, the three partners navigated rough shoals in the inaugural decade of NAFTA. Mexico’s financial problems in NAFTA’s early years provided an acid test for the regional alliance. The security demands of the post-September 11 era may pose greater challenges over the long haul. To understand how regional trade and investment have adapted to events, we first examine the economic and political forces that have shaped North American economic integration since NAFTA’s entry into force in January 1994.

The Making and Selling of NAFTA

Like all trade agreements, NAFTA is the outgrowth of complex negotiations both within and between nations. The negotiation of the NAFTA text took 14 months of haggling, with side agreements added later; the result is a far cry from an ivory tower FTA. More than 100 pages of restrictive rules of origin, especially in the textile, apparel, and automotive indus-

tries, are both trade-distorting and protectionist.⁸ Mexico retained its monopoly for the state oil company, *Petróleos Mexicanos* (Pemex), a symbol of national sovereignty and the cash cow of Mexican public finance.⁹ Free trade in agriculture between the United States and Mexico was delayed up to 15 years for the most import-sensitive products; the United States and Canada continued to exclude important farm products from free trade obligations. Other departures from the free trade ideal could be listed (for examples, see Hufbauer and Schott 1993).

Supporters of free trade minimized their criticisms of NAFTA's protectionist features, seeing them as the price of getting an agreement at all. Moreover, in the United States, free trade opponents—an ideologically diverse array including H. Ross Perot, Patrick Buchanan, and the AFL-CIO—likewise focused on the big picture. They were dead set against the agreement and succeeded in making NAFTA a leading issue in the 1992 US presidential campaign.

President George H. W. Bush was NAFTA's strongest supporter in the election, but the most virulent attacks on NAFTA came not from his Democratic rival, Bill Clinton, but from primary challenger Patrick Buchanan (and his political ally, if ideological opposite, Ralph Nader) and then from third-party candidate Ross Perot. These men charged that NAFTA would cause a "giant sucking sound" of US capital and jobs fleeing to Mexico, while also endangering the sovereignty of the United States. Environmental groups charged that Mexico would become the pollution haven of North America, attracting firms that wanted to evade higher US and Canadian standards. Bush defended NAFTA as a tool for job creation and said it was the greenest trade agreement ever (Hufbauer and Schott 1993). The "greenest" claim was true, but since environmental concerns were not previously incorporated in trade agreements, the standard was not demanding.

NAFTA presented a challenge and an opportunity for the Democratic presidential candidate, "New Democrat" Bill Clinton. Generally supportive of NAFTA, Clinton criticized Bush on the details: "If I had negotiated that treaty, it would have been better."¹⁰ Clinton argued that NAFTA needed to be improved by adding side agreements on workers' rights, environmental protection, and import surges. His nuanced position was

8. FTAs generally include rules of origin to prevent "trade deflection"—imports from non-FTA countries into the FTA member with the lowest most-favored nation (MFN) tariff for transshipment to other FTA members. However, the NAFTA rules of origin go far beyond the measures necessary to prevent trade deflection.

9. The Mexican Constitution bars all foreign companies from petroleum exploration and distribution. Mexican politicians see Pemex as a symbol of national patrimony and as the source of about 30 percent of government revenues. As a result, however, Pemex has been drained of funds needed for infrastructure and technology investments.

10. See "Mexico's President Hedges on Trade Pact Deals," *Washington Post*, October 10, 1992, C1.

successful in uniting the Democratic party under a banner of “fair trade” during the election.

Once elected, President Clinton persuaded Mexican President Carlos Salinas and Canadian Prime Minister Brian Mulroney to negotiate his proposed side agreements in order to secure NAFTA ratification in the US Congress. The resulting agreements, the North American Agreement on Environmental Cooperation (NAAEC) and the North American Agreement on Labor Cooperation (NAALC), were largely consultative mechanisms. Each created a supranational commission with limited means of enforcement to ensure that countries abide by their own laws.¹¹ The third side agreement on safeguards was nothing more than a clarification of the NAFTA text itself.

Although the side agreements won few converts from the anti-NAFTA side,¹² they did provide President Clinton with the political cover necessary to steer NAFTA through Congress (Destler 1995). To further smooth relations with his own party, Clinton attached a \$90 million transitional adjustment assistance program to the NAFTA legislation (NAFTA-TAA).¹³ NAFTA-TAA provided limited training and income support for workers displaced by trade or investment with Canada or Mexico, though the qualifying criteria glossed over the actual link between lost jobs and NAFTA (see chapter 2 on labor). To sweeten the NAFTA deal for the 14-member House Hispanic caucus, and particularly Representative Esteban Torres (D-CA), whose support turned on the issue, the United States and Mexico established a North American Development Bank (NADBank) to finance infrastructure projects (primarily wastewater treatment plants) on both sides of the border.¹⁴ However, NADBank financing rates were so high, and qualification conditions so onerous, that in five years (by 1999) the bank had committed to only five loans. More recently, activity has increased, and as of March 2004, the bank had approved 76 projects with a total authorized financing of \$642 million, \$186 million of which had actually been disbursed.¹⁵

11. The NAALC and NAAEC are analyzed in greater detail in chapters 2 and 3 on labor and environment, respectively.

12. A few environmental groups, such as the National Wildlife Federation, were among the converts. Subsequently, the meager impact of the NAAEC disillusioned them.

13. See “Clinton Turns Up Volume on NAFTA Sales Pitch,” *Congressional Quarterly Weekly Report*, October 23, 1993, 2863.

14. The United States and Mexico both authorized \$225 million in paid-in capital and callable capital of \$1.5 billion each to capitalize NADBank. As of March 2004, NADBank had received \$349 million in paid-in capital and \$2 billion in callable capital; see www.nadbank.org/english/general/general_frame.htm (accessed on April 22, 2005) and NADBank/BECC (2004).

15. The total authorized financing for the 52 approved projects in the United States is \$340 million. The 24 approved projects in Mexico have total authorized financing of \$302 million (NADBank/BECC 2004). For more information, see chapter 3 on environment.

Beyond these embellishments, Clinton's primary strategy for gaining NAFTA's passage could be summed up in three words: "jobs, jobs, jobs." Although most economists agree that employment levels are determined by macroeconomic policy in the short run, and labor skills coupled with workforce flexibility in the long run, both sides of the NAFTA debate put job gains or losses at the center of their talking points.¹⁶ Clinton was not the first to push this argument; Robert Zoellick, counselor at the State Department in the George H. W. Bush administration, suggested that the "bottom line" of NAFTA was the creation of 44,000 to 150,000 jobs over four years (Zoellick 1991). While this number sounds large, it was tiny compared with US employment at the time, some 110 million. Mickey Kantor, President Clinton's first US Trade Representative (USTR), raised the estimate slightly to 200,000 in only two years.¹⁷ Our own estimate was about 170,000 over several years—which we considered statistically insignificant (Hufbauer and Schott 1993, table 2.1). Not to be outdone, NAFTA opponents Ross Perot and Pat Choate projected job losses of up to 5.9 million.¹⁸

The jobs argument did little to convert anyone, though it may have hardened political positions. Clinton's Democratic administration was forced to rely on Republican support to ratify NAFTA. On November 17, 1993, the House of Representatives voted to pass NAFTA by a vote of 234 to 200; 132 Republicans and 102 Democrats supported the measure, while 143 Democrats and 56 Republicans plus the lone independent opposed it. Three days later, NAFTA passed the Senate by 61 to 38, with 34 Republicans and 27 Democrats voting in favor, and 10 Republicans and 28 Democrats against.

On January 1, 1994, NAFTA came into force. On the same day, Zapatista rebels in the southern Mexican state of Chiapas launched their uprising. Within a year, Mexico would be in financial crisis, and Clinton would ask Congress to bail out its new free trade partner.

The Peso Crisis of 1994–95

The peso crisis of late 1994–95, less than a year after NAFTA came into force, dramatically shaped the perceptions of the pact. To opponents, the

16. As then–Deputy Assistant Secretary of the Treasury for Economic Policy J. Bradford DeLong laments, political expediency usually trumps economics: "providing a short-run employment boost equivalent to an interest rate reduction of 0.1% gets turned into 'jobs-jobs-jobs' in the White House Briefing Room and then in the pages of the newspaper. . . . [National Economic Advisor Gene] Sperling always tried to keep the balance between number and quality of jobs: 'good jobs at good wages.' Clinton—on the few occasions I saw him in small groups—would always say, 'Yes, yes, I know, Gene. But that's too complicated. I need to simplify.' And he would always simplify to the 'more jobs' rather than the 'better jobs' position" (DeLong 2004).

17. See Mickey Kantor, "At Long Last, A Trade Pact to Be Proud Of," *Wall Street Journal*, August 17, 1993, A14.

18. See "NAFTA—The Showdown," *The Economist*, November 13, 1993.

temporal connection between NAFTA ratification and Mexico's economic collapse was too powerful to be mere coincidence. To supporters, the peso crisis was rooted in macroeconomic policy mistakes, far removed from the trade and investment bargain struck within NAFTA.

January 1994 marked both the start of the first year of NAFTA and the final year of the *sexenio* of the Salinas administration. Salinas anticipated a triumphal exit from Los Pinos and, with American support, an international perch as the director-general of the new World Trade Organization (WTO).

Salinas did several things—with varying degrees of disclosure—as he prepared for a glorious departure. Most publicly, in keeping with the tradition of the Partido Revolucionario Institucional (PRI) whereby each president selected his successor, Salinas anointed Luis Donaldo Colosio, his social development secretary, as the PRI candidate for president. Less obviously, but also consistent with PRI tradition, Salinas launched an off-the-books election-year spending splurge. To help finance Mexico's growing current account deficit—which reached almost 7 percent of GDP in 1994—Salinas authorized the Mexican Treasury to issue *tesobonos*, debt instruments with a new flavor. Tesobonos were short-term bills denominated in pesos but with a currency adjustment clause that effectively insured repayment in dollars. This feature attracted foreign investors, who were not inclined to buy high-yielding *cetes*, Mexican Treasury bills denominated solely in pesos.

In public pronouncements, Salinas asserted he would defend the dollar band—then about 3.3 pesos to the dollar.¹⁹ Alongside these financial maneuvers, Salinas tolerated lax private banking practices, some of which bordered on the corrupt (La Porta, López-de-Silanes, and Zamarripa 2002). Mismatched banking assets and liabilities (currency and maturity) and “connected lending” were the order of the day.²⁰ Finally, and most secretly—but again in PRI tradition—some members of the Salinas family collected illicit payoffs, especially from the privatization of public corporations. While there is no hard evidence that President Salinas himself took kickbacks, his brother Raul Salinas collected bribes amounting to tens of millions of dollars. All these actions were to haunt Mexico, and President Salinas personally.

The first disquieting notes had relatively little to do with the end-of-term machinations of the Salinas presidency. First came the Zapatista rebellion, on January 1, 1994, in the southern state of Chiapas. Grievances in Chiapas had practically no link to NAFTA, but the symbolic date chosen for the rebellion deliberately coincided with the pact's entry into force.

19. Salinas's determination to defend the peso echoed that of President Lopez Portillo on the eve of the 1982 debt crisis. Lopez Portillo's vow to defend the peso “like a dog” is frequently misattributed to Salinas.

20. Mexican banking regulations supposedly limited currency and maturity mismatches, but the banks were able to find ways around the rules.

The Zapatistas saw in NAFTA a symbolic manifestation of the huge attention the Mexican government paid to the modern northern states and the neglect of the historically poor southern states. Concerns were heightened further when Colosio was assassinated in March 1994 while campaigning in Tijuana. To this day, theories and rumors abound in Mexico: Drug killing? Political killing? Nominated to take Colosio's place was Ernesto Zedillo, a well-regarded but relatively unknown technocrat and cabinet member who had never before held elective office.

Meanwhile, pumped up by federal spending and a consumer buying binge, the Mexican current account deficit continued to widen. Savvy Mexican investors, and a few foreign holders of Mexican tesobonos, grew nervous. They sold, sending dollars out of Mexico and depleting central bank reserves.²¹

The Banco de Mexico did not respond according to orthodox central bank doctrine. To maintain a fixed exchange rate, the bank should have allowed the domestic monetary base to shrink and peso interest rates to rise as dollars were withdrawn.²² Instead, it purchased Mexican Treasury securities in sufficient volume to maintain the monetary base—and stave off soaring interest rates in an election year. This response ensured that as the year wore on and political troubles unfolded, the dollar reserve position of the Banco de Mexico would dwindle dramatically.

The crisis broke almost as soon as newly inaugurated President Ernesto Zedillo returned to Mexico City from the December 1994 Summit of the Americas held in Miami. The government first devalued the peso by 15 percent; then, unable to hold this line, it allowed the peso to float (Whitt 1996). The peso quickly collapsed from 3.4 to 7.2 per dollar, before recovering to 5.8 in April 1995 (OANDA Corp. 2004). Prices soared 24 percent in the first four months of 1995; December-over-December inflation for 1995 was 52 percent (INEGI 2004). With soaring inflation, domestic demand in real terms contracted sharply.

In January 1995, the Clinton administration crafted an international financial rescue package of historic proportion and committed the United States to almost \$20 billion in immediate US assistance to Mexico, plus \$30 billion from other sources—despite opposition in Congress and reservations by key donors in the International Monetary Fund (IMF).²³ In re-

21. Moreover, the Federal Reserve was raising short-term US interest rates in 1994. The target federal funds rate was raised six times from 3 percent in January to 5.5 percent in November, giving investors a further reason to shift dollars out of Mexico.

22. The extreme form of orthodox doctrine is a currency board system in which the monetary base responds one-for-one to any change in the central bank's foreign exchange reserves.

23. Much of the US support was channeled through the Exchange Stabilization Fund, thus avoiding the need for congressional approval. The total rescue package was roughly \$50 billion, including \$18 billion committed by the IMF, \$5 billion from the Bank for International Settlements, \$1 billion from four Latin American countries, and \$1.5 billion from investment banks (Williamson 1995).

turn, Mexican policymakers introduced stringent controls on monetary and fiscal policy. Due to NAFTA obligations, however, Mexico largely abstained from the traditional dollops of trade protection and capital controls usually deployed by developing countries in response to balance-of-payments problems. Harsh medicine induced a deep but short-lived recession. By 1996, the Mexican economy had revived. The US loans were fully repaid, with interest, ahead of schedule in January 1997.

In sum, NAFTA facilitated the recovery of the Mexican economy in three ways:

- The US-inspired financial rescue package helped Mexico restructure its short-term dollar-denominated debt and ease its liquidity crisis. The US Treasury loans were all repaid ahead of schedule, yielding a net profit of almost \$600 million (Rubin 2003, 34).
- Because of NAFTA obligations, Mexico followed a textbook recovery program based on fiscal constraint, tight money, and currency devaluation, rather than trade and capital controls.
- Open access to the US market, backed by NAFTA obligations, helped prevent an even more drastic recession in Mexico by spurring an export-led recovery in 1995–96.

If NAFTA had not been in place, the United States would surely have mounted financial assistance for Mexico, but the NAFTA partnership very likely enlarged the size of the rescue package and accelerated the speed of its delivery.²⁴

Did NAFTA Contribute to the Peso Crisis?

Some critics argue that NAFTA negotiators could and should have done more to guard against prospective financial crises. Two arguments are used to blame the crisis on NAFTA: inadequate monitoring of financial institutions and “irrational exuberance” over Mexico’s economic prospects.

Inadequate Surveillance. Arguably, NAFTA negotiators could have agreed to mutual surveillance of monetary, fiscal, and exchange rate policies and to mutual surveillance of banks and other financial institutions. Some analysts called for the negotiation of a side pact on macroeconomic policy to ensure more frequent consultations among the region’s treasury and cen-

24. By contrast, in the Mexican debt crisis of 1982, US support was far smaller and more measured; see Cline (1995). The Mexican recovery also was much slower. As Rubin (2003, 34) noted, “After the 1982 crisis, Mexico took seven years to regain access to capital markets. In 1995, it took seven months.” Moreover, US exports to Mexico declined almost 50 percent in 1983 from their precrisis peak and didn’t regain that level until 1988. In 1995, US exports dropped 9 percent from the previous year but surpassed precrisis levels in 1996.

tral bank officials (Williamson 1995). These subjects would be novel in an FTA. Even the European Union did not get around to mutual surveillance of macroeconomic policies until the Maastricht Treaty of 1992, and even today the regulation of European banks and other financial institutions remains a matter for national authorities. Low-key tripartite swap and consultation arrangements had been in place before the peso crisis. Evidently these were insufficient to head off financial mismanagement in Mexico City.

Moreover, it must be acknowledged that Washington would not welcome Canadian or Mexican criticism of US macroeconomic policy, and reciprocal sentiments prevail in Ottawa and Mexico City. Recent US corporate and accounting scandals ranging from Enron to mutual funds demonstrate two things: Mexico has no monopoly on lax regulation within North America, and no financial regulator has an unblemished record of initiating preemptive reform before something blows up. This is not an argument for abandoning regulatory vigilance; rather it is an observation that commends strengthened surveillance (at the national and multilateral levels).

In retrospect, NAFTA can be criticized for going light on macroeconomic and financial surveillance. But there was no appetite in the Bush or Clinton administrations to take on this agenda, and it would have met stiff resistance in Ottawa and Mexico City. It is a counsel of perfection to argue that free trade and investment in North America should have awaited macroeconomic and financial rectitude. Those goals are certainly worthy, but they remain distant beacons for North America.

Overconfidence. Did overconfidence in the wake of NAFTA intensify the rush of “hot money” into Mexico, increasing its vulnerability to crisis? Ratification of NAFTA in 1993, together with Mexican accession to the Organization for Economic Cooperation and Development (OECD) in May 1994, did create a heady mood. Wall Street awarded higher ratings to Mexican securities. Investors became less critical of Mexico, instead assuming that the economic gains to Mexico from NAFTA would translate into quick financial returns. However, we think it is unfair to blame NAFTA for fiscal splurge in Mexico and other machinations of the PRI. NAFTA enabled the Mexican kabuki show to go on longer than it might otherwise have (as foreign investors willingly acquired high-yielding tesobonos), but it did not put the show on stage.

Current Account since the Crisis

The peso crisis forced a dramatic reduction of Mexico’s then unsustainable current account deficit, which reached 7 percent of GDP in 1994. Since then, the Mexican current account balance has remained in the sustainable range and has attracted little attention (table 1.1). Larger trade

Table 1.1 Overview of the Mexican current account, 1994–2004 (billions of US dollars)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Current account balance											
Billions of US dollars	-29.7	-1.6	-2.5	-7.7	-16.1	-14.0	-18.2	-18.2	-14.1	-8.7	-7.4
Percent of GDP	7.0	0.5	0.8	1.9	3.8	2.9	3.1	2.9	2.2	1.4	1.1
Receipts											
Merchandise exports	60.9	79.5	96.0	110.4	117.5	136.4	166.5	158.4	160.8	164.9	188.0
Nonfactor services	10.3	9.7	10.6	11.1	11.5	11.7	13.7	12.7	12.7	12.6	13.9
Factor services	3.4	3.8	4.2	4.6	5.0	4.5	6.1	5.1	4.1	3.8	5.1
Total transfers	3.8	4.0	4.6	5.3	6.0	6.3	7.0	9.4	10.3	13.9	17.1
Of which household remittances	3.5	3.7	4.2	4.9	5.6	5.9	6.6	8.9	9.8	13.4	16.6
Total	78.4	97.0	115.3	131.3	140.1	158.9	193.3	185.6	187.9	195.2	224.2
Payments											
Merchandise imports	79.3	72.5	89.5	109.8	125.4	142.0	174.5	168.4	168.7	170.5	196.8
Nonfactor services	12.3	9.0	10.2	11.8	12.4	13.5	16.0	16.2	16.7	17.1	18.6
Factor services	16.4	17.1	18.1	17.3	18.3	17.4	20.9	19.1	16.5	16.2	16.1
Total transfers	—	—	—	—	—	—	—	—	—	—	0.1
Total	108.0	98.6	117.8	139.0	156.1	172.9	211.4	203.8	201.9	203.9	231.6

— = less than \$50 million

Sources: Banco de Mexico (2005), OECD (2004a, 2005).

surpluses with the United States have been offset by growing trade deficits with the rest of the world.²⁵ Growing remittances (almost entirely from Mexican immigrants in the United States) have contributed significantly to Mexican foreign exchange earnings, outpacing FDI in 2003 and reaching \$16.6 billion in 2004.

Current Challenges to Economic Integration

The peso crisis is now long past. While a fresh financial crisis cannot be ruled out, the prospects are more distant due to the tight fiscal and monetary policies pursued by Mexican officials.²⁶ But other problems continue to challenge the pursuit of economic integration in North America and the promise of greater prosperity in Mexico.

Mexico's Democratic Challenge

In 2000, the seven-decade political domination of the PRI ended with the election of Vicente Fox of the Partido Acción Nacional (PAN) to the Mexican presidency, the first peaceful transfer of power between political parties in modern Mexico.²⁷ The role of NAFTA, and the broader Mexican economic opening, in the realization of greater democracy are difficult to assess, although closer external scrutiny made the 2000 election much harder to rig.

Greater democracy has been a blessing for Mexico, but it has put demands on governance that did not exist under the one-party rule of the PRI. In the PRI era, the Mexican Congress dutifully approved the president's policies with little debate; the president secured support for his policies from state governments through revenue sharing and PRI party discipline. Without these carrots and sticks, Mexican leaders now need to forge coalitions among different parties and interest groups. In the long run, this process may lead to better and more stable policies; in the short run, however, it has often produced stalemate in Congress and the nation at large.

To be specific, President Fox has not enjoyed the same sway over the Mexican Congress and state governors as his predecessors. Nor has his administration been effectively managed. Fox's attempts to reform the Mexican tax system yielded modest results in 2004; his proposals to reform Mexican energy policies hit a stone wall (Ramírez de la O 2004).²⁸

25. Like the United States, Mexico imports most of its consumer electronics from Asia.

26. In January 2005, Moody's Investor Service raised Mexico's currency rating to Baa1, two levels above the lowest investment grade rating (*New York Times*, January 7, 2005, 5).

27. Although the PRI governed Mexico continuously for seven decades, with the party always choosing the occupant of Los Pinos, power did change hands peacefully between discordant factions within the PRI.

These failures have already affected the competitiveness of Mexican industry in home and world markets.

NAFTAphobia Redux

The mantra of “No More NAFTAs” of Pat Buchanan and Ross Perot was revived in 2004, complemented by attacks from antiglobalization polemicists. During the Democratic presidential primaries in early 2004, the 10-year-old trade agreement again became a campaign theme. Strong anti-NAFTA rhetoric played particularly well in midwestern manufacturing states and southern textile-producing areas. North Carolina Senator John Edwards, the son of a textile mill worker and eventual vice presidential candidate, declared he would have voted against NAFTA if he had had the chance.²⁹ Edwards blamed NAFTA in particular and trade in general for the sharp decline in US manufacturing employment in recent years: “I saw what happened in my hometown when the mill closed. . . . [T]hese trade policies are killing your jobs.”³⁰ The eventual Democratic nominee, Massachusetts Senator John Kerry, who voted in favor of NAFTA in 1993, argued that NAFTA should be renegotiated to cover more comprehensive labor and environmental obligations and enforcement procedures.³¹

While the inherently protectionist “trade policies are killing your jobs” argument is a campaign favorite, another group contends that free trade harms the developing world. Perennial presidential candidate Ralph

28. Mexico raised only 10 percent of its GDP in taxes in 2003, well below other countries at its stage in development (SHCP 2004, annex A). Consequently, the country remains highly dependent on Pemex revenues to finance government expenditures. Transfers from Pemex and oil-related rights and royalties accounted for 6.6 percent of GDP, with excise taxes bringing total oil-related revenue to 7.9 percent of GDP in 2003 (SHCP 2004, annex A). See Ramírez de la O (2004) for an accounting of Mexican finances that separates tax from nontax rather than oil from nonoil related revenue. In November 2004, the Mexican Congress approved a reform law; Mexican corporate income tax will gradually be reduced from a 33 percent statutory rate in 2004 to 28 percent by 2007. While the corporate tax reforms are a step in the right direction, the Mexican budget still depends inordinately on Pemex revenues—leaving Pemex little financial capacity for new investment. Moreover, the national tax revenues are completely inadequate to fund needed highways, ports, and other infrastructure.

29. In his run for the Senate in 1998, Edwards campaigned against NAFTA and fast-track trade negotiation authority, later renamed trade promotion authority (TPA).

30. See “In Ohio, Trade Talk Resonates,” *Baltimore Sun*, February 25, 2004, 17A.

31. In response to a question on how to fix NAFTA, Kerry said, “I want to put [changes] into the body of the treaty. I know the Republicans don’t like that approach. But I believe it’s important for sustaining the consensus on trade. And I’m not talking about draconian, counterproductive standards. I’m talking about doing reasonable things. . . . I’m for the trade laws we passed being implemented. In NAFTA, we have labor [and environmental] protections in the side agreements. But they have not been enforced.” (See “John Kerry’s To-Do List; Create Jobs, Get Tough with China, and Redefine NAFTA All High on the Democratic Hopeful’s Agenda,” *BusinessWeek Online*, February 26, 2004.)

Nader, along with Naomi Klein, led the “anticorporate” movement, relying heavily on worker exploitation anecdotes in the low-wage textile and apparel industries.³² The error we see is the implication that the developing countries would be helped by protection in the North, which interrupts trade and investment. For example, Klein observes that most of the workers in the Philippines factory she visited are the children of rural farmers (Klein 2002, 219–21) but ignores the fact that for rural farmers in the developing world, factory employment is a big step up. In a study on factory employment in Vietnam, Glewwe (2000) noted that at 42 cents per hour, “wages paid by joint ventures and [foreign-owned businesses] are but a small fraction of the wages paid for comparable work in the U.S. and other wealthy countries, [though] these workers are still better off than they would be in almost any other job available in Vietnam.” Indeed, empirical research by Graham (2000, table 4.2) found that US affiliates in low-income countries tend to pay twice the local manufacturing wage—which implies a high multiple of rural earnings.

Many critics of NAFTA (and free trade more broadly) form an ideological alliance around environmental and labor standards. A favored idea is to create rules against imports that are produced in violation of enumerated labor and environmental standards. To a considerable extent, such rules would deny comparative advantages to developing countries. NAFTA rules of origin and antidumping actions illustrate how new standards could be misused (or abused) to create nontariff barriers that promote neither the environment nor workers’ rights.³³

Balancing Trade and Security

The terrorist attacks of September 11, 2001, brought security to the forefront of the North American agenda. Following the attacks, the United States sharply elevated security measures along its borders, causing lengthy delays. Firms that ship goods across the NAFTA borders must now consider the “security tax” of border delays and the risk of a total

32. Anticorporate and antiglobalist arguments often call up images of 19th century worker tenements and textile sweatshops in the United States to bring home the reality of present-day conditions in the developing world. See Klein (2002) and Public Citizen (2004), founded by Ralph Nader, for an exposition of the anticorporate argument.

33. NAFTA’s excessively strict rules of origin suppress trade both by keeping foreign goods out and by forcing firms to keep lengthy paper trails to certify NAFTA origin. Similar problems could quickly arise with respect to imposing labor and environmental standards on trade. Who would certify that they were being upheld? If standards are applied and enforced at the national level, how much exploitation is too much? Should the standards apply to all industries or only those that export? And what type of enforcement measures would best promote compliance? In a constructive vein, Elliott and Freeman (2003) suggest that a “market for standards” can be fostered in trade agreements, whereby developed-world consumers can be encouraged by labeling and other means to award higher value to goods that were manufactured or grown under demonstrably acceptable working and environmental conditions.

border shutdown. The potential for security barriers of the future to replace trade policy barriers of the past is all too real.

In response to September 11, the United States negotiated two separate bilateral agreements—Smart Borders and the Border Partnership Action Plan with Canada and Mexico, respectively. These initiatives are designed to both improve security and minimize delays. However, the basic structure of border inspections—which was designed to collect tariffs and detect smuggling, not combat terrorism—remains in place. Better approaches must be implemented to plan for the eventuality of an attack (Dobson 2002, Goldfarb and Robson 2003). In the short run, there are reasons for envisioning how a security imperative might promote deeper US-Canada rather than US-Mexico bilateral cooperation.³⁴ Hufbauer and Vega-Cánovas (2003), among others, argue for an entirely new system of border management. The crux of their proposal is to allow joint inspections of low-risk trade to take place at a secure site at the point of origin and away from the border and then pass through the border with minimal delay. Tamper-proof containers and GPS tracking and other technologies could be used to ensure that precleared cargo remained secure from origin to destination. Preclearance would significantly reduce the strain on border inspectors. As a step in this direction, the Fast and Secure Trade Program was initiated to allow low-risk carriers a streamlined method of clearing customs. However, only 4.4 percent of trade crossing the US-Canada border uses the program. Ontario Premier Dalton McGuinty has urged cooperation to publicize the program and improve its effectiveness.³⁵ In the final chapter, we discuss our own proposals for improved border cooperation.

Assessing NAFTA

Different analysts use different standards to assess the NAFTA record. We try to judge the three countries on how well they have met the objectives that NAFTA negotiators set out in Article 102, which are summarized as follows:

- promote increased regional trade and investment;

34. Given the shared language and culture, the history of close cooperation on defense and intelligence issues, and effective Canadian government response toward terrorist threats, Bailey (2004) argues that national and public security cooperation with Canada will evolve more quickly than that with Mexico.

35. Delays are endemic on both the US-Mexico and US-Canada borders, due both to increased security measures and the dramatic increase in trade that came with NAFTA. McGuinty worries that “Border delays are making Ontario industry increasingly uncompetitive . . . [and] function as a quasi-tariff on Ontario goods and services heading south” (see “Wheels of Trade Seize Up at World’s Busiest Border,” *Financial Times*, August 3, 2004, 3; and BNA 2004).

- increase employment and improve working conditions and living standards in each country;
- provide a framework for the conduct of trilateral trade relations and for the management of disputes;
- strengthen and enforce environmental laws and basic workers' rights; and
- work together to promote "further trilateral, regional, and multilateral cooperation to expand and enhance the benefits of this Agreement."

Against these yardsticks, we find that NAFTA has been largely, but not totally, successful.

Trade and Investment

NAFTA has contributed to a sharp expansion of regional trade since the early 1990s. Table 1.2 summarizes US bilateral merchandise trade with its NAFTA partners. Since 1993, the year before NAFTA came into force, through 2004, US merchandise exports to and imports from Mexico have increased by 166 and 290 percent, respectively.³⁶ Total two-way US-Mexico merchandise trade has grown 227 percent; in contrast, US trade with non-NAFTA countries increased only 124 percent in the same period. Likewise, US-Canada trade continued the robust expansion inspired by the CUSFTA in 1989. Since 1989, US exports to and imports from Canada rose 140 and 190 percent, respectively; total US-Canada trade roughly kept pace with trade growth with the rest of the world. Trade with NAFTA partners in 2004 accounted for 31 percent of total US merchandise trade, up from 29 and 26 percent in 1993 and 1989, respectively.

Of course, an increase in trade *with* NAFTA partners is not in itself evidence of an increase in trade *because of* NAFTA. In appendix 1A, we survey the literature on the effects of NAFTA on trade volumes in North America. As in most integration arrangements, *ex ante* projections of trade growth seem to have underestimated the impact of NAFTA on the three economies. But we don't really know by how much. Estimates using computable general equilibrium and gravity models of the amount of two-way trade generated due to NAFTA vary greatly. Depending on the model selected, the trade gains from NAFTA range from modest (as low as 5 percent of two-way US-Mexico trade) to very large (greater than 50 percent of two-way trade). Disentangling the effect of NAFTA on trade

36. Much of the increased trade with Mexico reflects the expansion of assembly operations. Mexican plants registered under the maquiladora program and the Program for Temporary Imports used to make Exports (Programa de Importación Temporal para Producir Artículos de Exportación, or PITEX) accounted for 81 percent of total Mexican exports to the United States in 2003.

from the other events in the past decade is difficult, but the available evidence points to a strong positive impact.

Decadal trade statistics mask two distinct periods of trade integration: the US-led boom of the 1990s and the US-led recession and slow recovery since 2000. In the initial period, US exports to its NAFTA partners doubled in value and increased twice as fast as non-NAFTA shipments, while US imports from the region increased even more (though only slightly faster than imports from the rest of the world). The US trade deficit with the NAFTA region rose from \$9 billion in 1993 to \$77 billion in 2000. Canada accounted for the larger share of the increase in the NAFTA deficit, some \$42 billion, whereas the deficit with Mexico increased by \$26 billion. At the same time, the US trade deficit with the rest of the world rose \$301 billion.

NAFTA trade actually declined in 2000–03 before rebounding in 2004. Overall, US trade with its NAFTA partners rose 8.7 percent during 2000–04; exports grew by only 3.6 percent, while US imports increased by 12.8 percent. However, US exports to Mexico actually declined slightly compared with a modest increase of 6.4 percent (\$11 billion) in shipments to Canada.³⁷

Has US trade with Mexico “hit a wall”? One explanation for the drop in US exports is the sharp drop in Mexican demand during 2000–03, when Mexican GDP growth averaged only 0.7 percent compared with Canada’s modestly higher 2.3 percent. “When the US economy sneezes, the Mexican economy catches a cold,” and US exports take a hit—but that story is too simple. Despite stronger growth in 2004, the introduction of highly competitive suppliers from East Asia has severely cut into the US share of the Mexican market in several important sectors (see appendix 1B).

Taken together, trade in autos and parts, agriculture, and energy account for roughly one-third of intraregional trade. Later chapters discuss these sectors in more detail, but each deserves a preview in this chapter. We then assess the impact of the broader increase in trade and investment.

Autos

Autos and auto parts account for 20 percent of total intra-NAFTA trade, the largest single sector. Liberalization began well before NAFTA, but the agreement extended the process. Since the 1965 Auto Pact and the CUSFTA essentially integrated auto trade between Canada and the United States, NAFTA’s greatest contribution to the auto sector was to bring Mexico into the fold. NAFTA phased out purely national content requirements, but as a political price, it tightened the CUSFTA rules of origin and associated North American content requirements. NAFTA also phased out so-called trade-balancing requirements (a Mexican policy device) as well as tariff and nontariff barriers within the finished auto and parts trade.

37. USITC Interactive Tariff and Trade Dataweb, 2005, <http://dataweb.usitc.gov> (accessed on March 15, 2005).

Table 1.2 US merchandise trade with NAFTA partners, 1989–2004
(billions of US dollars)

Partner	1989	1990	1991	1992	1993	1994	1995	1996	1997
Canada									
Exports	78.3	83.0	85.1	90.2	100.2	114.3	126.0	132.6	150.1
Imports	88.2	91.4	91.1	98.5	110.9	128.9	145.1	156.5	168.1
Total	166.5	174.3	176.3	188.7	211.1	243.2	271.1	289.1	318.2
Balance	-9.9	-8.4	-6.0	-8.3	-10.7	-14.7	-19.1	-23.9	-17.9
Mexico									
Exports	25.0	28.4	33.3	40.6	41.6	50.8	46.3	56.8	71.4
Imports	27.2	30.2	31.2	35.2	39.9	49.5	61.7	73.0	85.9
Total	52.2	58.6	64.5	75.8	81.6	100.3	108.0	129.8	157.3
Balance	-2.2	-1.8	2.1	5.4	1.7	1.3	-15.4	-16.2	-14.5
World									
Exports	363.8	393.0	421.9	447.5	464.9	512.4	583.0	622.8	687.6
Imports	473.4	473.4	496.0	488.8	532.1	580.5	663.8	743.5	870.2
Total	837.2	866.4	917.9	936.3	997.0	1,092.9	1,246.9	1,366.3	1,557.8
Balance	-109.6	-80.4	-74.1	-41.3	-67.2	-68.1	-80.8	-120.7	-182.6
NAFTA									
Exports	103.2	111.3	118.4	130.8	141.8	165.1	172.3	189.3	221.5
Imports	115.4	121.5	122.3	133.7	150.9	178.4	206.8	229.5	253.9
Total	218.6	232.9	240.8	264.4	292.7	343.5	379.2	418.8	475.4
Balance	-12.2	-10.2	-3.9	-2.9	-9.1	-13.3	-34.5	-40.1	-32.4
Non-NAFTA									
Exports	260.5	281.6	303.4	316.7	323.0	347.3	410.7	433.5	466.1
Imports	358.0	351.9	373.7	355.2	381.2	402.0	457.0	514.0	616.3
Total	618.5	633.5	677.1	671.9	704.2	749.4	867.7	947.5	1,082.4
Balance	-97.5	-70.2	-70.3	-38.5	-58.2	-54.7	-46.3	-80.5	-150.2

Source: USITC Interactive Tariff and Trade Dataweb, <http://dataweb.usitc.gov> (accessed on March 15, 2005).

Phaseout periods of up to 10 years were granted to give the Mexican industry (including foreign-owned assembly plants) time to adjust.

The growth in auto trade owes both to Mexican domestic reforms and NAFTA liberalization. Mexico has attracted substantial investment from the United States, Japan, and Germany, increasing its auto production from 1.1 million units in 1993 to 1.8 million in 2002 (Ward’s Communications 2003).³⁸ Mexican auto trade in 2003 was five times greater than in 1993; the auto sector accounted for 22 percent of Mexico’s total exports in 2003.³⁹ Much of the trade increase can be attributed to specialization, as

38. A unit is a passenger car, truck (light or medium/heavy), or a bus. Light trucks have accounted for most of the production increase in Mexico.

39. This figure includes engines, wire harnesses, motor vehicle seats, and fuel pumps, which are not classified in Harmonized Schedule chapter 87.

1998	1999	2000	2001	2002	2003	2004	Percent change, 1989–2004	Percent change, 1993–2004	Percent change, 2000–04
154.2	163.9	176.4	163.7	160.8	169.5	187.7	139.8	87.4	6.4
174.8	198.3	229.2	217.0	210.6	224.2	255.9	190.1	130.7	11.7
329.0	362.2	405.6	380.7	371.4	393.6	443.6	166.5	110.1	9.4
-20.7	-34.4	-52.8	-53.2	-49.8	-54.7	-68.2			
79.0	87.0	111.7	101.5	97.5	97.5	110.8	343.7	166.1	-0.8
94.7	109.7	135.9	131.4	134.7	138.1	155.8	473.3	290.3	14.7
173.7	196.8	247.6	232.9	232.3	235.5	266.6	411.2	226.9	7.7
-15.7	-22.7	-24.2	-29.9	-37.2	-40.6	-45.1			
680.5	692.8	780.4	731.0	693.3	723.7	816.5	124.5	75.7	4.6
913.9	1,024.8	1,216.9	1,142.0	1,163.5	1,259.4	1,469.5	210.4	176.2	20.8
1,594.4	1,717.6	1,997.3	1,873.0	1,856.8	1,983.1	2,286.0	173.1	129.3	14.5
-233.4	-331.9	-436.5	-410.9	-470.3	-535.7	-652.9			
233.2	251.0	288.2	265.2	258.3	266.9	298.5	189.1	110.5	3.6
269.6	308.0	365.1	348.4	345.3	362.2	411.8	256.8	173.0	12.8
502.7	559.0	653.3	613.6	603.7	629.2	710.3	224.9	142.7	8.7
-36.4	-57.1	-77.0	-83.2	-87.0	-95.3	-113.3			
447.3	441.9	492.3	465.8	434.9	456.8	518.1	98.8	60.4	5.2
644.3	716.7	851.8	793.6	818.2	897.2	1,057.7	195.4	177.5	24.2
1,091.6	1,158.6	1,344.0	1,259.3	1,253.2	1,354.0	1,575.8	154.8	123.8	17.2
-197.0	-274.9	-359.5	-327.8	-383.3	-440.4	-539.6			

parts manufacturers and assembly plants have been reoriented to take advantage of economies of scale. As a result, supply lines for finished vehicles routinely cross national boundaries, as parts and assembly work is performed wherever it is most efficient.⁴⁰ In Canada and the United States, this process was far along when NAFTA came into force, but it has deepened in the NAFTA decade. While international supply lines are a boon to efficiency, reliance on just-in-time manufacturing processes makes the industry very sensitive to border disruptions.

40. Because trade statistics are kept as gross value rather than value added, international supply lines probably inflate trade figures in the auto sectors. For example, the value of a part that is produced in Mexico and then shipped to the United States for assembly will be counted as intra-NAFTA trade again if the assembled vehicle is shipped back to Mexico for sale. It is not unusual for auto parts to cross national borders several times during the production process (Hart 2004).

Agriculture

Agriculture remains the make-or-break issue for multilateral and regional trade agreements. This is equally true of NAFTA. US agricultural trade with NAFTA partners has more than doubled in value over 1993–2003 and has grown twice as fast as agricultural trade with the rest of the world.⁴¹ While agriculture accounts for only about 5 percent (\$35 billion) of total intraregional trade in NAFTA, this number understates its political sensitivity. Several NAFTA disputes have taken place in agriculture; we highlight the US–Canada disputes over softwood lumber and the Canadian Wheat Board, and US–Mexico disputes over sugar and high-fructose corn syrup, in chapter 5 on agriculture.

NAFTA does not have a unified text on agriculture. Instead there are three separate bilateral agreements: between the United States and Canada, the United States and Mexico, and Canada and Mexico. The US–Canada agreement maintains significant restrictions and tariff rate quotas held over from the CUSFTA, particularly on trade in sugar, dairy, and poultry. By contrast, the US agreement with Mexico is in theory far more liberalizing but with long phaseout periods for trade restrictions on sensitive products.⁴² Despite these long phaseout periods, Mexico has not made the infrastructure investment necessary to restructure its agrarian economy. The extent to which small Mexican farmers, cultivating traditional crops, have suffered is a matter of dispute. Chapter 5 on agriculture suggests that critics have exaggerated the adverse effects of NAFTA.

In the case of corn, the Mexican government chose not to enforce the tariff-rate quota NAFTA authorized, so the actual phaseout period was much shorter than was negotiated. Mexico is not self-sufficient in corn production, and the Mexican government waived at least \$2 billion in tariff revenues, using the argument that cheaper corn imports were necessary to meet growing domestic livestock demand and control inflation.

Energy

Energy trade has long been a key component of North American economic integration. Although prices are volatile, energy accounts for about 7 percent of intra-NAFTA trade, of which US imports from Canada and Mexico represent the lion's share. The value of total US energy imports from NAFTA partners was \$56 billion in 2003.⁴³ The United States imports

41. See table 5.2 in chapter 5 on agriculture.

42. Moreover, the United States has sidestepped its commitments on sugar, and both countries are using phytosanitary standards for protectionist purposes.

43. Defined as imports of coal (SITC 32), crude oil (333), refined oil (334), propane and butane (342), natural gas (343), and electricity (351) as reported by USITC Interactive Tariff and Trade Dataweb 2005, <http://dataweb.usitc.gov> (accessed on March 15, 2005).

more petroleum from Canada (2.1 million barrels per day in 2003) than from Saudi Arabia (1.8 mmb/d); Mexico is a close third with 1.6 mmb/d (EIA 2004b, table S3). Canada is by far the leading source of US natural gas imports; Canadian pipelines accounted for 3.8 trillion of a total 4 trillion cubic feet of natural gas imported by the United States in 2002. Mexico has gone from roughly balanced natural gas trade with the United States (importing 61 billion cubic feet and exporting 54 billion cubic feet in 1999) to become a significant net importer (importing 263 billion cubic feet and exporting only 2 billion cubic feet in 2002) (EIA 2004c, table 9). This shift of fortune reflects inadequate investment and rising demand rather than a shortage of Mexican reserves.

While both the CUSFTA and NAFTA liberalized energy investment between the United States and Canada, Mexico opted out of NAFTA's provisions in order to maintain its constitutional ban on foreign investment in the energy sector. As a result, inadequate investment has handicapped the Mexican oil and gas industry, threatening to make Mexico a net energy importer by the end of the decade. North American demand for energy is expected to grow by 1.5 percent annually through 2025 (EIA 2004a, table A1). Unless there is a dramatic push for greater energy production within North America and sharply increased conservation efforts, much of this demand will have to be met with extra-NAFTA imports.

Effects of Increased Trade

The increase in trade within North America since NAFTA is impressive. However, income gains depend importantly on whether intra-NAFTA trade resulted in an equivalent increase in global trade or whether the intra-NAFTA gains merely reflect trade diversion—shifting trade from countries that are otherwise more competitive but whose exports continue to face tariff barriers in the NAFTA region.

In a few industries, most notably textiles and apparel where “yarn forward” rules of origin were imposed specifically to make US textile firms the preferred suppliers for Mexican apparel manufacturers, NAFTA has indeed fostered trade diversion.⁴⁴ Burfisher, Robinson, and Theirfelder (2001) point out the connection between trade diversion and rules of origin: Industries with the strictest rules of origin appear to be the same ones where NAFTA has had a diversionary effect. Fukao, Okubo, and Stern (2002) empirically verify the diversionary effects of NAFTA on textile and apparel trade by examining the relationship between the US tariff barrier faced by a supplying country and the growth in its share of the US import

44. Since “yarn forward” rules strictly limited Mexican purchases of Asian fabrics, they severely limited the growth of Mexican apparel exports to the US market. At the same time, they diverted Mexican yarn and fabric purchases from Asian to US suppliers.

market.⁴⁵ Importantly, the authors do not find diversionary tendencies when they examine other important trading industries, such as autos and electronics.

The World Bank (2003, chapter 6) notes that the increase in Mexico's share of aggregate NAFTA imports from 1994 to 2001 (from about 6 percent to over 9 percent) mirrors the growth of Mexico's share of non-NAFTA imports (from 0.2 to 0.4 percent)—suggesting that the increase in Mexico's aggregate import share is not due to diversionary factors. The wider range of products traded provides additional evidence of NAFTA trade creation. In 1993, 5,814 tariff lines covered all Mexican exports to the United States; by 2002, this figure had expanded to 8,328.⁴⁶ On balance, the empirical studies find that NAFTA tends to promote trade creation far more than trade diversion.

The success of NAFTA comes despite its restrictive rules of origin. Such rules determine which products are eligible for NAFTA trade preferences. Rules of origin were built into NAFTA (as in nearly all FTAs) for the announced purpose of preventing "trade deflection." Without such rules, third-country exporters could ship their wares to the NAFTA country with the lowest tariff rate and then reexport them duty-free throughout the free trade region. The idea is to preclude products largely made in non-NAFTA countries from receiving NAFTA benefits.

That said, the NAFTA rules of origin had an intended and protectionist side effect in selected sectors (notably textiles and apparel and autos): to restrict the use of intermediate goods from outside NAFTA. Unintentionally, the rules created administrative barriers to trade on goods within NAFTA—by forcing importers to maintain a lengthy paper trail on components used in highly fabricated goods. These side effects impose significant burdens on NAFTA producers. For example, Carrère and de Melo (2004) found that compliance costs entailed by rules of origin significantly offset, and in some cases outweigh, market access preferences granted under NAFTA—particularly in textiles and apparel.

Recognizing this problem, NAFTA trade ministers agreed in July 2004 to liberalize rules of origin affecting more than \$20 billion in trade of foodstuffs and consumer and industrial products (NAFTA Free Trade Commission Joint Statement, July 16, 2004). We argue that such incremental reforms should be broadened. Distortions that rules of origin generate

45. Among 60 industries classified at the two-digit level, the authors detected evidence of trade diversion in 15 cases. Of these, four are within textiles and apparel. See Fukao, Okubo, and Stern (2002, tables 1 and 2).

46. See the World Bank's World Integrated Trade Solution database at <http://wits.worldbank.org> (accessed on February 23, 2004). Mexico did not report tariff line data in 1993, so we cannot compare the number of products exported to Mexico pre- and post-NAFTA. The growth in tariff line trade between Canada and the United States is much smaller, due to stronger integration before NAFTA.

should be redressed by harmonizing and reducing the most-favored nation (MFN) tariffs of all three countries, thereby eliminating the incentive for trade deflection, the legitimate rationale, if not the real reason, for such rules (see the final chapter for our policy recommendations on this issue).

Services

Intraregional trade in services also increased significantly during NAFTA's first decade.⁴⁷ However, the growth was less pronounced than in merchandise trade, and NAFTA reforms made a difference in only a few sectors. For some services, notably tourism, barriers were already very low before the trade agreements were ratified. For others, such as trucking and maritime transport, the barriers were not only high but also almost impervious to liberalization. Moreover, the number of NAFTA temporary work visas for professional workers was tiny, not enough to have much effect on the recorded flows of cross-border services income. The CUSFTA and NAFTA (beyond the WTO commitments made under the auspices of the General Agreement on Trade in Services, GATS) greatly liberalized some services sectors, particularly financial services, but other sectors were barely affected.

Overall, US services trade with its NAFTA partners grew more slowly than both merchandise and services trade with the rest of the world (table 1.3). From 1993 to 2003, US two-way trade in services with its NAFTA partners rose from \$44 billion to \$74 billion, or by 70 percent. Services trade with Canada and Mexico grew 78 and 59 percent, respectively. The US services trade *surplus* in 2003 with the NAFTA region was \$12.5 billion—about the same as in 1993. However, services trade growth in NAFTA was slower than growth with non-NAFTA countries (91 percent). In all, 14.2 percent of total US services trade was with NAFTA in 2002, down slightly from 15.7 percent in 1993.

Table 1.4 provides data on services trade by sector; these data do not include services provided both ways between affiliates and their parent corporations. In most sectors, both payments and receipts have grown significantly. However, in the telecommunications sector, payments to Canada and Mexico have both decreased, reflecting a sharp decline in so-called accounting rates (termination charges by the call-delivering carrier).

In the case of Mexico, telecom liberalization has been slow in coming. In response to a law giving the former state monopoly, Teléfonos de Mexico (Telmex), the right to negotiate terms and conditions for the ter-

47. Services trade data are much less comprehensive than merchandise trade data. With 48 million persons crossing the Canada-US border each year, and with telephones and computers allowing lawyers, architects, and other professionals to carry on international business from their own desks, it seems likely that official statistics significantly underestimate the exchanges taking place.

Table 1.3 US trade in cross-border services with NAFTA partners, 1989–2003 (billions of US dollars)

Partner	1989	1990	1991	1992	1993	1994	1995	1996	1997
Canada									
Exports	13.3	15.7	17.8	17.3	16.9	17.0	17.7	19.3	20.3
Imports	8.6	9.1	9.7	8.3	8.9	9.7	10.8	12.2	13.7
Total	22.0	24.8	27.5	25.6	25.8	26.7	28.5	31.5	34.0
Balance	4.7	6.6	8.1	9.0	8.0	7.3	6.9	7.1	6.6
Mexico									
Exports	4.8	8.6	9.7	10.5	10.4	11.3	8.7	9.4	10.8
Imports	6.7	6.7	7.1	7.3	7.4	7.8	7.9	8.9	9.8
Total	11.6	15.3	16.7	17.7	17.8	19.2	16.6	18.3	20.6
Balance	-1.9	1.9	2.6	3.2	3.0	3.5	0.8	0.5	0.9
World									
Exports	117.9	137.2	152.4	163.6	171.1	186.1	203.1	221.4	237.9
Imports	85.3	98.2	99.9	102.0	107.8	118.3	126.8	136.9	150.0
Total	203.2	235.4	252.4	265.6	278.9	304.4	329.8	358.3	387.8
Balance	32.6	39.0	52.5	61.6	63.3	67.7	76.3	84.5	87.9
NAFTA									
Exports	18.1	24.3	27.4	27.7	27.3	28.3	26.4	28.7	31.1
Imports	15.4	15.9	16.8	15.6	16.3	17.5	18.7	21.2	23.5
Total	33.5	40.1	44.2	43.3	43.7	45.8	45.2	49.9	54.6
Balance	2.8	8.4	10.6	12.1	11.0	10.7	7.7	7.6	7.6
Non-NAFTA									
Exports	99.8	113.0	125.0	135.9	143.8	157.8	176.6	192.6	206.8
Imports	69.9	82.3	83.2	86.4	91.5	100.8	108.0	115.7	126.4
Total	169.7	195.3	208.2	222.3	235.2	258.6	284.6	308.4	333.2
Balance	29.9	30.6	41.9	49.4	52.3	57.0	68.6	76.9	80.3

Source: BEA (2004a, table 2).

mination of *all* international calls, the United States brought a WTO case against Mexico in 2002.⁴⁸ The dispute settlement panel ruled substantially in favor of the United States in April 2004, and Mexico chose not to appeal. The Mexican government agreed to revise its law to comply with the panel recommendations by 2005. The new rules should benefit US carriers routing calls into Mexico as well as the affiliates of AT&T and MCI operating in Mexico.

One of the major sticking points of NAFTA implementation has been the liberalization of cross-border trucking. Eighty percent of bilateral trade between the United States and Mexico moves by truck (Moore 2004). NAFTA was intended to gradually allow Mexican trucks to operate in the entire United States and vice versa—first in border states by De-

48. See WTO case *Mexico—Measures Affecting Telecommunications Service*, WT/DS204, available at docsonline.wto.org. This was the first WTO case based solely on the General Agreement on Trade in Services (GATS).

1998	1999	2000	2001	2002	2003	Percent change	
						1989–2003	1993–2003
19.3	22.5	24.4	24.5	24.3	26.7	100.6	58.0
15.1	16.1	17.6	17.6	18.4	19.1	121.6	114.5
34.4	38.5	42.0	42.1	42.7	45.9	108.8	77.5
4.2	6.4	6.8	6.9	5.9	7.6		
11.6	12.8	14.3	15.2	15.9	16.6	244.2	59.7
9.8	9.5	11.0	10.5	11.1	11.7	73.5	57.6
21.4	22.3	25.3	25.7	27.0	28.3	144.8	58.8
1.8	3.3	3.3	4.6	4.8	4.9		
243.8	264.7	283.5	275.5	279.5	294.1	149.4	71.9
163.6	180.5	204.7	201.6	205.2	228.2	167.6	111.7
407.4	445.2	488.1	477.1	484.7	522.3	157.0	87.3
80.2	84.2	78.8	73.9	74.3	65.9		
30.9	35.3	38.7	39.7	40.2	43.3	138.8	58.6
24.9	25.6	28.6	28.1	29.5	30.8	100.6	88.7
55.8	60.8	67.3	67.8	69.7	74.1	121.2	69.9
6.0	9.7	10.1	11.6	10.7	12.5		
212.9	229.4	244.8	235.8	239.3	250.8	151.3	74.4
138.6	155.0	176.1	173.5	175.8	197.4	182.3	115.8
351.5	384.4	420.9	409.3	415.1	448.1	164.1	90.5
74.3	74.5	68.7	62.3	63.5	53.4		

ember 1995, then finally throughout the two nations in January 2000.⁴⁹ Both political foot-dragging and judicial challenges delayed implementation of this provision. President Clinton first delayed implementation of the trucking agreement in 1995, citing concerns about the safety of Mexican trucks voiced by the International Brotherhood of Teamsters. After several years of inaction, Mexico charged the United States with violating its NAFTA obligations. No one was surprised when the NAFTA arbitration panel ruled, in February 2001, that the US ban on Mexican trucking was illegal. In November 2002, President Bush agreed to bring US practice into compliance, but regulations implementing his decision were im-

49. The United States agreed to allow Mexican operation of cross-border trucking services in border states three years after the *signing* of NAFTA, which occurred in December 1992, while full-country access was to be allowed six years after the agreement *entered into force*— January 1994 (NAFTA, vol. II, annex I, I-U-20). A copy of the NAFTA text is available at www.nafta-sec-alena.org/DefaultSite/index_e.aspx?DetailID=78 (accessed on July 18, 2005).

Table 1.4 US unaffiliated services trade with NAFTA partners, selected sectors, 1993–2003 (millions of US dollars)

Partner/sector	1993		1994		1995		1996		1997		1998
	Receipts	Payments	Receipts	Payments	Receipts	Payments	Receipts	Payments	Receipts	Payments	Receipts
Canada											
Travel	7,458	3,692	6,252	3,914	6,207	4,319	6,900	4,670	6,945	4,904	6,245
Passenger fares	1,191	260	1,186	302	1,284	306	1,339	391	1,361	470	1,478
Other transport	1,791	2,012	1,973	2,330	2,275	2,513	2,394	2,790	2,414	3,037	2,317
Education	343	8	383	8	403	9	425	10	439	12	445
Financial services	428	97	389	121	580	190	593	173	593	200	768
Insurance	262	366	258	412	313	407	318	374	359	412	361
Telecommunications	252	361	244	391	299	381	294	350	305	332	306
Business, professional, and technical services	1,023	351	1,376	374	1,230	629	1,637	681	1,879	1,197	1,802
Mexico											
Travel	5,119	5,159	4,866	5,334	2,857	5,316	3,004	5,972	3,438	6,480	3,818
Passenger fares	554	641	733	601	515	569	761	650	859	777	958
Other transport	495	397	567	476	420	481	549	525	567	800	549
Education	120	95	131	112	151	119	153	157	167	170	183
Financial services	230	66	231	75	160	79	249	125	282	82	261
Insurance	31	0	27	0	23	0	30	1	43	1	57
Telecommunications	180	884	195	966	251	1,067	350	1,162	445	1,104	464
Business, professional, and technical services	546	82	714	105	683	102	648	89	796	136	854

n.a. = not applicable

Source: BEA (2004a, tables 3.9–3.18, 5.9–5.18).

mediately challenged in court on grounds that an environmental assessment was required—under the National Environmental Policy and Clean Air Act—before Mexican trucks could roll on US highways. In June 2004, the US Supreme Court unanimously ruled that the administration’s decision to comply with NAFTA does not require an environmental assessment.⁵⁰ However, the border remains closed to Mexican trucks pending the adoption of special regulations to ensure that they operate in a safe and clean manner. This delay has added to cross-border transportation costs, increased turnaround times at assembly plants, and worsened border pollution as older drayage trucks idle in lines to clear customs.

The liberalization of financial services has profoundly altered the Mexican banking sector. Mexico had negotiated a long phase-in period for financial-sector liberalization but chose to accelerate the pace in the wake of the peso crisis. Also, while Mexico was required to open the financial-services sector only to North American firms, it chose global liberalization. In response, the foreign share of Mexican banking assets has increased from 1 percent in 1994 to 90 percent in 2001 (ECLAC 2003, table III.2), lead-

50. See *Department of Transportation v. Public Citizen*, Docket No. 03-358, laws.findlaw.com/us/000/03-358.htm (accessed on June 30, 2005).

1998		1999		2000		2001		2002		2003		Percent change, 1993-2003	
Payments	Receipts	Payments	Receipts	Payments	Receipts	Payments	Receipts	Payments	Receipts	Payments	Receipts	Payments	Receipts
5,692	6,740	6,233	7,188	6,284	6,595	6,345	6,268	6,489	6,844	6,376	-8.2	72.7	
587	1,540	712	1,640	795	1,768	685	1,717	594	2,114	406	77.5	56.2	
2,910	2,484	3,226	2,641	3,700	2,478	3,337	2,544	3,589	2,614	3,634	46.0	80.6	
14	474	14	511	19	568	18	617	28	647	56	88.5	579.5	
228	981	203	1,009	247	1,049	177	934	154	1,035	161	141.8	66.8	
429	415	278	412	308	392	343	459	554	660	525	151.7	43.4	
310	321	223	442	199	434	238	585	256	681	281	170.2	-22.2	
1,477	2,448	2,145	2,820	2,522	2,897	2,073	2,954	2,267	3,000	2,786	193.3	693.7	
6,396	4,114	5,805	5,162	6,646	5,320	6,711	5,688	7,061	5,861	7,404	14.5	43.5	
809	961	957	1,028	923	949	828	1,329	794	1,158	862	109.0	34.5	
958	690	1,070	683	1,318	720	1,031	790	993	882	1,040	78.2	162.0	
179	192	172	211	182	223	203	267	201	294	221	144.2	131.6	
31	347	54	383	46	376	60	309	87	388	99	68.4	49.8	
2	70	3	82	5	91	9	125	16	164	13	429.3	n.a.	
1,017	376	794	537	1,133	426	810	495	794	541	815	200.6	-7.8	
123	952	129	723	155	932	181	938	215	1,116	260	104.4	217.1	

ing a trend in foreign banking acquisitions throughout Latin America. Spanish banks BBVA and Santander made major acquisitions. BBVA controls BBVA Bancomer, currently Mexico's largest bank with \$46 billion in assets, and BBV-Probursa, with \$28 billion in assets, while Santander purchased Banca Serfin (\$20 billion) and established the subsidiary Banco Santander Mexicano (UNCTAD 2004, table 88). Citigroup and Bank of America of the United States and Scotiabank of Canada also invested heavily in the Mexican market. Citigroup's \$12.5 billion purchase of Banco Nacional de Mexico (Banamex) in 2001, at the time Mexico's largest bank, was unthinkable in a pre-NAFTA environment; Banamex now has \$40 billion in assets (UNCTAD 2004, table 88).

One consequence of this financial transformation is a drastic reduction of "connected lending," motivated by political and family relationships rather than sound commercial principles. Another consequence is a flourishing market for home mortgages and the growth of middle-class home ownership, long lacking in Mexico.⁵¹

51. See "Revolution in Mexico: Affordable Housing," *Wall Street Journal*, December 15, 2004, B1; and "Mexico's Working Poor Become Homeowners," *New York Times*, December 17, 2004, 1.

Direct and Portfolio Investment

One of Mexico's key objectives in NAFTA has been to attract FDI—from the United States, Canada, and beyond. For that reason, Mexico implemented its NAFTA obligations regarding investment on an MFN basis. The trade pact itself has fostered FDI by ensuring that firms with assembly plants in Mexico could import US and Canadian components and export finished products duty-free to the north. More important, NAFTA's rights and obligations toward private investors have contributed—in conjunction with stable and conservative macroeconomic policies—to a more inviting environment for FDI in Mexico.

Since NAFTA entered into force, Mexico has enjoyed an FDI boom; based on data reported in the UNCTAD *World Investment Report* (table 1.5), the stock of FDI in Mexico grew from \$33 billion in 1994 to \$166 billion by year-end 2003, despite the tribulations of the 1994–95 peso crisis.⁵² Based on US data, the stock of US FDI in Mexico increased from \$17 billion in 1994 to \$61.5 billion at year-end 2003 (table 1.6). About half of the US stock of FDI was accumulated after 1998 and reflects major investments in both financial services (led by Citibank's purchase of Banamex in 2001) and manufacturing. Mexico has attracted FDI not only from the United States but also from other countries (see table 1.5) and is now host to a larger stock of FDI than all other developing countries except China and Hong Kong.⁵³

However, like other developing countries, Mexico faces strong competition from China for FDI in manufacturing industries (particularly textiles and apparel). The China threat heightened in 2003, when FDI inflows to Mexico fell to \$11.4 billion (down from \$15.1 billion in 2002). Mexico's decline as a destination for FDI was consistent with broader trends: FDI flows to the developing world fell 34 percent from a peak of \$252 billion in 2000 to \$158 billion in 2002, before partially recovering to \$172 billion in 2003 (UNCTAD *World Investment Report 2004*). The decrease in FDI has been spread across almost all sectors of the economy (table 1.7), though low-skill, labor-intensive sectors—notably electronics assembly and the textile and apparel industries—have been particularly susceptible to competition from China. Nonetheless, preliminary data for 2004 indicate a resurgence of FDI in Mexico, particularly in the auto sector, with inflows valued at \$16.6 billion.

Unlike Brazil and Argentina, Mexico does not have commodity endowments (except in the petroleum sector) that complement China's develop-

52. In fact, the "insurance policy" of NAFTA may have given confidence to foreign investors in Mexico's recovery from the peso crisis, encouraging investment at fire sale prices (Schott 1997).

53. Note, however, the inconsistencies between the UNCTAD *World Investment Report* data (table 1.7) and the US Bureau of Economic Analysis data (table 1.8).

Table 1.5 Realized FDI inflows and stocks in Mexico, by investing country or region

a. FDI inflows, 1994–2004 (billions of US dollars)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Share 1994–2004
Total FDI	15.1	9.7	10.1	14.2	12.4	13.3	16.9	27.7	15.3	11.7	16.6	
Estimates ^a	4.4	1.4	2.3	2.0	4.0	0	0	0	0	0	.8	
Notified FDI	10.7	8.3	7.8	12.2	8.4	13.3	16.9	27.7	15.3	11.7	16.1	100.0
<i>By origin:</i>												
Canada	0.7	0.2	0.5	0.2	0.2	0.6	0.7	1.0	0.2	0.2	0.3	3.3
United States	5.0	5.5	5.3	7.5	5.5	7.2	12.1	21.3	9.7	6.4	6.9	62.2
European Union	1.9	1.8	1.1	3.2	2.1	3.8	2.9	4.2	4.3	4.3	7.3	24.8
Japan	0.6	0.2	0.1	0.4	0.1	1.2	0.4	0.2	0.2	0.1	0.1	2.4
Switzerland	—	0.2	—	—	—	0.1	0.2	0.1	0.4	0.3	1.1	1.8

— = less than \$50 million

FDI = foreign direct investment

a. Estimates of investment not notified to the Registro Nacional de Inversiones Extranjeras (RNIE), which are not attributed to any investing country. Estimates before 1999 include all reinvestment and exchanges between companies and their affiliates. These were included in notifications since 1999. Since 2002, the RNIE has made estimates of reinvestment that occurred but have not yet been reported.

Notes: Data presented are not comparable to official statistics before 1994. Pre-1994, statistics reflect realized investment in addition to unrealized notifications for the year reported. The data presented show realized investment credited to the year the investment took place. The peak in FDI in 2001 is due to the \$12.5 billion acquisition of Banamex by Citigroup.

Source: Secretaría de Economía (2005a).

(table continues next page)

Table 1.5 Realized FDI inflows and stocks in Mexico, by investing country or region (continued)

b. Inward FDI stock, 1994–2003 (billions of US dollars)

	1994	1995	1996	1997	1998	1999	2000	2001 ^a	2002 ^a	2003 ^a
Total	33.2	41.1	46.9	55.8	63.6	78.1	97.2	140.4	155.1	165.9
Canada	.7	.7	1.7	1.8	1.8	2.0	2.4	3.9	4.1	4.3
United States	23.5	26.1	27.9	33.4	35.0	42.9	55.0	88.3	97.6	103.6
European Union	6.0	7.5	8.1	10.3	17.6	20.9	26.8	33.3	37.5	41.4
Japan	1.6	.8	.8	1.3	1.5	2.8	3.3	3.6	3.8	3.9
Switzerland	1.2	2.0	2.2	3.0	2.5	2.9	2.8	3.0	3.4	3.7

a. Because UNCTAD does not report FDI position by country of origin, we estimate that increases in FDI stock are proportional to the national share of FDI inflow for 2001 to 2003 (table 1.5a).

Sources: OECD (2004a, 2005); UNCTAD *World Investment Report 2004*.

Table 1.6 US outward direct investment position (stock) at year-end, NAFTA and world (historical cost basis, billions of US dollars)

Sector	Canada		Mexico		World	
	1994	2003	1994	2003	1994	2003
Mining ^a	10.4	24.3	.1	.4	67.6	98.7
Utilities	n.a.	1.0	n.a.	.7	n.a.	26.9
Manufacturing						
Food	4.0	4.3	2.7	1.7	24.9	22.7
Chemicals	5.8	13.1	2.3	4.0	47.9	90.3
Primary and fabricated metals	2.2	4.1	n.a.	n.a.	9.8	23.0
Machinery	2.1	3.1	n.a.	1.1	25.0	21.4
Computer and electronic products	n.a.	5.3	n.a.	1.8	n.a.	57.6
Electrical equipment, appliances, and components	1.1	1.5	.9	.9	19.6	9.7
Transportation equipment	9.4	17.9	1.8	n.a.	28.0	45.4
Total	34.0	74.9	10.1	20.1	201.0	378.0
Wholesale trade	6.9	12.7	1.3	2.0	59.0	140.6
Information	n.a.	2.2	n.a.	1.2	n.a.	47.5
Depository institutions	.9	2.7	n.a.	16.9	27.4	63.7
Finance (except depository institutions) and insurance	13.0	34.2	2.2	7.2	195.9	299.8
Professional, scientific, and technical services	3.3	2.0	.4	.4	27.0	40.6
Other industries	5.8	38.5	n.a.	12.6	35.0	693.1
All industries	74.2	192.4	17.0	61.5	612.9	1,788.9

n.a. = not available

a. Values for 1994 are petroleum only.

Notes: Starting in 1999, the Bureau of Economic Analysis (BEA) updated its categorization for FDI abroad. Some investment may have shifted categories as a result of reclassification.

Source: BEA (2004b).

ment needs. But it does have two key advantages: geographic proximity to the world's largest market and membership in NAFTA. These factors do not guarantee success in the global competition for FDI, but they provide positive incentives if complemented by other investment-friendly policies. Unfortunately, Mexico has not fully benefited due to a variety of homegrown problems related to the general business environment.⁵⁴ To be specific, worries about personal safety (mugging and kidnapping),

54. An element of the country's 2005 tax reform legislation further threatens to discourage FDI. The amendment restricts the definition of business activities under the Mexican tax code. Because business activities are not explicitly defined in the US-Mexico tax treaty (and several other Mexican tax treaties), several payments generally thought of as business profits would become subject to a 25 percent withholding tax (e.g., technical assistance, advertising, financial services, construction services, time sharing, and reinsurance). Several lawyers who have examined the amendment believe that the Mexican Supreme Court will find it unconstitutional; it came into force on January 1, 2005. See McLees (2004) and McLees et al. (2004).

Table 1.7 Realized FDI flows into Mexico, by sector, 1994–2004 (millions of US dollars)

Sector	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1994– 2004 share
Manufacturing	6,207	4,858	4,815	7,295	5,157	8,994	9,502	6,032	6,500	5,045	8,246	49.3
Food, beverages, and tobacco	1,809	651	502	2,953	731	1,041	1,201	974	1,337	898	1,010	8.9
Machinery and metal products	1,889	2,893	2,212	2,757	2,344	5,396	4,445	3,362	2,926	2,597	3,869	23.6
Chemical products, including derivatives of petroleum, rubber, and plastics	646	573	1,197	820	1,166	950	1,444	412	1,133	687	1,857	7.4
Mineral nonmetallic products	54	90	37	6	20	236	143	102	-81	77	782	1.0
Basic metals	1,344	143	325	106	54	269	282	243	60	8	42	2.0
Other subsectors	466	509	542	653	842	1,102	1,986	940	1,126	778	687	6.5
Services	2,100	1,475	1,704	2,016	1,518	2,263	6,690	15,962	5,429	3,152	5,181	32.2
Real estate	222	65	64	59	59	179	329	143	152	49	100	1.0
Professional and technical services	266	140	211	144	313	703	1,143	954	411	566	68	3.3
Financial services and insurance	716	952	1,111	969	627	379	4,343	14,034	4,249	1,811	4,519	22.9
Restaurants and hotels	723	103	167	571	208	322	437	366	351	319	320	2.6
Other subsectors	174	216	150	273	312	680	438	465	267	407	174	2.4
Other	2,354	2,012	1,297	2,871	1,642	1,951	590	5,641	3,200	3,176	2,420	18.4
Total	15,067	9,667	10,055	14,216	12,360	13,207	16,781	27,635	15,129	11,373	16,602	100.0
Total notified	10,661	8,344	7,818	12,186	8,319	13,207	16,781	27,635	15,129	11,373	15,846	
Estimates ^a	4,405	1,322	2,238	2,030	4,041	0	0	0	0	0	756	

a. Estimates of investment not notified to the Registro Nacional de Inversiones Extranjeras (RNIE), which are not attributed to any host sector. Estimates before 1999 include all reinvestment and exchange between companies and their affiliates. These were included in notifications since 1999. Since 2002, the RNIE has made estimates of new investment and reinvestment that occurred but have not yet been reported.

Source: Secretaría de Economía (2005a).

widespread corruption, the absence of a stable legal framework, poor highways, and looming energy shortages all discourage new investment. However, these concerns vary widely among the 31 Mexican states. Nuevo Leon and Aguascalientes are known for a good business environment; Chihuahua and Jalisco have a different reputation.⁵⁵

Since 2000, Mexican FDI flows appear to have shifted from manufacturing toward financial services, transport, and communications. FDI inflows at the sectoral level can fluctuate dramatically from one year to the next, due to expensive acquisitions of established Mexican firms. This was a pronounced feature in financial services, but so much of the industry is now in foreign hands that additional large FDI inflows in this sector seem unlikely.

The increase in cross-border investment between the United States and Canada has been less dramatic. Two-way FDI stocks between Canada and the United States increased from \$104 billion in 1989 to \$298 billion by year-end 2003, a gain of 187 percent. By contrast, US two-way FDI with non-NAFTA countries increased by 333 percent between 1989 and 2003. Even before the CUSFTA was ratified, Canada and the United States had a mature two-way investment relationship, so the incremental liberalization was a small spark compared with new opportunities elsewhere. Much of Canada's post-NAFTA investment in Mexico has been concentrated in mining and tourism, two industries where Canada has traditionally been competitive.

Longitudinal data on private portfolio investment are unreliable, but a few inferences can be drawn from stocks of portfolio capital as of 2001–02. At the end of 2001, private US holdings of foreign securities (equities and long-term and short-term debt) totaled some \$2.3 trillion. Of this amount, \$201 billion represented claims against Canadian issuers and \$48 billion against Mexican issuers. In other words, claims against Canada were 9 percent of the global total, and those against Mexico were only 2 percent. Both figures were substantially less than the share of US merchandise exports destined for NAFTA partners (22 and 14 percent, respectively). Conversely, at the end of 2002, private portfolio investment in the United States totaled \$4.4 trillion. Of this amount, \$208 billion represented claims held by Canadian investors and \$52 billion by Mexican investors. As shares of the relevant totals, claims held by both Canadian and Mexican investors (5 and 1 percent, respectively) are much smaller than Canadian and Mexican exports (18 and 12 percent, respectively).

Nevertheless, through direct investment, a great deal of financial integration has taken place within North America—for example, the Manulife–

55. In 2003, Mexico was ranked third—behind China and the United States—in the A. T. Kearney FDI Confidence Index, but it fell to 22 in the 2004 rankings. The index is derived from a worldwide survey of business executives. Lack of reforms—particularly in energy, infrastructure, and telecom—were cited as reasons for Mexico's decline (GBPC 2004).

John Hancock merger, the acquisition of Harris Bank by the Bank of Montreal, the acquisition of Banamex by Citigroup, and the equity share operations of TD Waterhouse. Even without massive cross-border portfolio flows, the mortgage security, equity, and insurance markets should become more tightly linked—especially with the help of a sound regulatory environment in all three countries.⁵⁶

Summarizing the investment picture, it appears that the CUSFTA and NAFTA did little to enhance the already mature direct investment relationship between Canada and the United States. The growth of two-way US-Canada FDI lagged significantly behind two-way non-NAFTA FDI by the United States. By contrast, NAFTA significantly enhanced the direct investment relationship between Mexico and the United States. Two-way US-Canada and US-Mexico portfolio investment stocks are not particularly large, when contrasted with merchandise trade, but the most meaningful financial integration has probably taken place through cross-border mergers and new corporate subsidiaries.

While NAFTA appears to have boosted FDI in Mexico, the effect in Canada is hard to discern. In the United States, the effect has been minimal—no surprise considering the size of the US economy relative to its NAFTA partners. While complaints are still voiced about US plant closings and relocations to Mexico, in fact US FDI in Mexico has averaged less than one-half of 1 percent of nonresidential investment in the United States each year. Footloose plants are bad news for affected workers and their communities but represent a statistically insignificant share of US business investment. Furthermore, it is impossible to say whether these plants moved *because of* NAFTA or would have left in search of lower labor costs regardless. Nevertheless, in retrospect it is clear that US business groups worked hard to negotiate and ratify NAFTA partly because they anticipated the benefits resulting from cross-border investments.

Business Cycle Synchronization

A case can be made for free trade to have both synchronizing and desynchronizing effects on national business cycles. Synchronizing effects result from the stronger influence of partner-country demand on local business conditions. Desynchronizing effects result from production specialization within each country—increasing the country's exposure to industry-specific shocks. More time must pass before NAFTA's impact on the business cycles within North America can be definitively assessed. Preliminary studies appear to show, however, that synchronizing effects are

56. In Mexico, the effects of the peso crisis have dissipated enough to allow a \$100 million issue of mortgage-backed securities by Hipotecaria Nacional, a leading mortgage lender. Since the number of Mexican households is projected to nearly double from 22.3 million in 2000 to 42.2 million in 2020, there is urgent need for a secondary mortgage market to capitalize homebuilding (“A Mexican Bond that’s as Safe as Houses?” *Financial Times*, August 23, 2004, 25).

dominant. Kose, Meredith, and Towe (2004) find that regional factors became stronger determinants of the Mexican business cycle in 1994–2002 than in 1980–93. Cañas and Coronado (2004) confirm this result and point out that because over 80 percent of US-Mexican trade is intraindustry, the synchronizing effects should be expected to dominate. Cardarelli Kose (2004) adapt the model of Kose, Meredith, and Towe to evaluate the Canadian business angle and finds that while the regional factor has been important since the 1960s, its importance has grown since the early 1980s.

Increased synchronization, if it persists, will underscore the case for closer macroeconomic consultation within North America. Notably absent from the NAFTA experience has been any significant convergence in prices between Canada and the United States.⁵⁷ Engel and Rogers (1996) used price index changes (measured by standard deviations) across US and Canadian city pairs to determine a “border effect,” controlling for the distance between cities. They could not find a significant convergence in cross-border prices as a result of the CUSFTA or NAFTA. Baldwin and Yan (2004), using prices of individual goods rather than indices, also found that the hypothesis that trade liberalization in North America would lead to price convergence was “not supported by the data.” This result stands in contrast to the European experience (Rogers, Hufbauer, and Wada 2001; Engel and Rogers 2004) and invites the hypothesis that exchange rate volatility may be an obstacle to price convergence in North America.

To date, consultations between the three central banks and finance ministries are episodic and ad hoc; they have no institutional standing within NAFTA. NAFTA included no mechanisms for macroeconomic cooperation between member states, although Rubin (2003, chapter 1) reports that the US response to the 1994 peso crisis was stronger thanks to the creation of NAFTA. Since that time, stability has returned to the Mexican economy, and cooperation on macroeconomic policy has been limited to informal consultations between central banks and finance ministries. Given the economic preponderance of the United States in the region, sovereignty concerns are likely to obstruct closer forms of cooperation. The US Congress does not want to give Mexico or Canada a voice in the Federal Reserve System or a say on spending or tax priorities. Both Mexico and Canada would resist any formal US role in setting their fiscal and monetary policies. Indeed, the common currency debate underscores fierce Canadian resistance to “monetary domination” by Washington.

Remittances

Remittances have become an important source of foreign income for Mexico. Since 1994, when Mexico began keeping records on household remit-

57. Given the income and demographic differences between Mexico and its NAFTA partners, less price convergence would be expected between Mexico and the United States or Canada.

tances, they have grown from \$3.5 billion to \$16.6 billion in 2004, or by 374 percent (see table 1.1). The surge has coincided with an explosion in new services provided by banks and wire companies to facilitate remittances.⁵⁸ Approximately 9.9 million Mexican-born residents live in the United States.⁵⁹ A sizable fraction of them send a portion of their earnings home to relatives. In 2003, remittances from foreign sources (\$13 billion) actually surpassed foreign inflows from FDI. NAFTA bears little relationship to the remittance story; rather, the growth reflects a larger migrant population and new technology that makes remittance transactions cheaper, faster, and safer. Remittances are expected to continue growing, raising the profile of immigration issues in the US-Mexico relationship (see chapter 8 on migration).⁶⁰

Employment and Wages

What impact did NAFTA have on employment in each country? The short answer is positive, though less than promised by politicians and more than predicted by pundits. Economists know that employment gains essentially depend on macroeconomic policies, a flexible labor force, worker skills, and effective use of technology. Attempting to evaluate NAFTA based strictly on a jobs gained/lost measure leads analysts into a mercantilist trap of “exports good, imports bad” and distracts from the true source of gains from trade—more efficient production on both sides of the border.

NAFTA coincided with an extended period of strong economic growth in the United States—and positive knock-on effects for its neighbors. Employment levels increased in all three countries. US employment rose from 110 million in 1993 to 134 million in 2003 (BLS 2004a) and in Canada from 12.9 million to 15.7 million (Statistics Canada 2004). Jobs in the formal sector in Mexico increased from 32.8 million to 40.6 million (STPS 2004). But not every worker or community benefited, and national trade

58. HSBC, Citibank, Bank of America, and Western Union all have specific facilities geared toward remittances. Among the new facilities are accounts by which money deposited in the United States can be withdrawn by a relative abroad via ATM, regardless of whether the relative has a bank account. See Devesh Kapur and John McHale, “Migration’s New Payoff,” *Foreign Policy*, November 2003, 48–57.

59. Of these, roughly 1.6 million are naturalized US citizens, 3.5 million are nonnaturalized legal residents, and approximately 4.8 million are undocumented. See www.migrationinformation.org (accessed on January 13, 2004).

60. In 2003, Mexican households received over 42 million remittance transactions, of which 88 percent were wire transfers and 10 percent were money orders. The average remittance was \$321. To take advantage of the US-Mexico remittances market, Spain’s Banco Bilbao Vizcaya Argentaria SA (BBVA) purchased Mexico’s largest bank, Grupo Financiero Bancomer for \$4.1 billion (“Mexican Migrants Send Home Dollars,” *Financial Times*, January 31, 2004, 2, and “Spanish Bank Makes Bid in Move to Improve its Position in the US,” *Wall Street Journal*, February 3, 2004, A8).

adjustment assistance programs remain inadequate to the task. This section surveys what happened in each country with regard to employment and wages; more detailed analysis is in chapter 2 on labor.

United States

Like any trade agreement with a small economy, NAFTA never had the potential for luring droves of US firms abroad or sucking millions of US jobs into Mexico or Canada. Yet the original NAFTA political debate in the United States was centered on prospective job gains and losses. While claims by the most strident NAFTA critics have been discredited, some—such as the Economic Policy Institute—continue to rehearse the jobs-lost story. Using multipliers based on the bilateral trade balance, Scott (2003) argues that NAFTA caused a net loss of 879,280 jobs, and he has disaggregated the figure by US states. Such analysis is fundamentally flawed.⁶¹

To most economists, the debate over NAFTA and jobs is surreal. Trade pacts can affect the composition and quality of jobs by shifting output from less productive into more productive sectors. This process contributes to the normal churning associated with job creation and job dislocation in the huge US economy (see table 1.8a). Using data from the Bureau of Labor Statistics (BLS) Mass Layoff Statistics Program, Kletzer and Litan (2001) found that churning “dislocates” more than 1 million jobs per year through mass layoffs in the United States.⁶² Most of these workers “relocate” to other jobs, though in the process roughly 25 percent of them suffer pay cuts of 30 percent or more.⁶³ Trade pacts are far from the most prominent cause of job churn—and have only a third-order impact on the absolute level of employment.

Table 1.8a reports *overall* employment trends in the United States from the advent of NAFTA through 2003. Of course, NAFTA was a very small part of the overall picture. According to the Current Employment Survey, US employment expanded by about 15.6 million over this period, roughly in line with the expansion of the total US labor force. The lower part of the table is less familiar; it displays the gross job gains and losses over the period as calculated by the BLS using the Quarterly Census on Employment

61. The use of a multiplier to calculate employment effects from the bilateral trade balance rests on shaky theoretical ground. For example, does an increase in television exports from Mexico really cost US jobs, considering almost no TVs are manufactured in the United States, or do Mexican imports displace imports from Asia? Furthermore, Scott’s method assumes that the entire increase in bilateral trade with Mexico is attributable to NAFTA—a flattering but unlikely assumption.

62. A mass layoff is defined as a job loss action associated with 50 or more claims against an establishment’s unemployment insurance account over a five-week period.

63. Some 34 percent of dislocated workers report earning the same amount or more in their postdisplacement job. On average, workers take postdisplacement jobs that pay 17 percent less than their previous wage.

Table 1.8 US employment and NAFTA**a. US employment statistics** (millions)

	1994	2003	Change
Current Employment Survey			
Seasonally adjusted employment	114.3	129.9	15.6
Seasonally adjusted labor force	131.1	146.8	15.8
Quarterly Census on Employment and Wages			
Gross job gains (1994–2003)	327.8		
Gross job losses (1994–2003)	312.9		
Difference	14.9		

Source: BLS (2004a, 2004b, 2004c).

b. NAFTA total US job predictions (thousands)

	Gain	Loss	Net	Years
Perot and Choate ^a		5,900	–5,900	n.a.
Kantor	200		200	2
Zoellick			44 to 150	4
Hufbauer and Schott	316	145	171	5

a. Perot and Choate calculated jobs “at risk” due to NAFTA; no time period was specified.

Sources: Perot and Choate (1993); *Wall Street Journal* (August 17, 1993, A14); Zoellick (1991); and Hufbauer and Schott (1993).

c. Estimated annual NAFTA effects on US employment (thousands per year)

	Gain	Loss	Net	As of
NAFTA-TAA and jobs supported by exports	100	58	42	December 2002
Scott	88	186	–98	December 2002
Hinojosa-Ojeda et al. ^a	74	23	51	December 1997

n.a. = not applicable

a. Hinojosa-Ojeda et al. (2000) use data from 1990–97 in their analysis, arguing that the Canada-US Free Trade Agreement and Mexican market opening, and associated trade impact, pre-date NAFTA.

Sources: Public Citizen’s NAFTA-TAA database, 1994–2002; Scott (2003); and Hinojosa-Ojeda et al. (2000).

and Wages (a separate measure from the monthly Current Employment Survey). Over the NAFTA period, *every quarter* an average of 7.6 percent of total employment (10.5 million jobs at current employment levels) was displaced and 7.9 percent (11 million jobs) was created (BLS 2004c).⁶⁴ Oft-

64. The Quarterly Census counts a job gained only when an establishment opens or expands and a job lost only when an establishment closes or contracts. Therefore, persons changing jobs due to voluntary quits or retirement are not counted as long as the position remains intact. The size of the job churn is massive, but it is also surprisingly stable. Since 1994, the percentage of jobs lost has never been below 6 percent per quarter, and the percentage of jobs gained has never been below 7 percent.

reported statistics on net job gains or losses are the outcome of this massive churn process.

Tables 1.8b and 1.8c summarize some of the predictions and estimates of NAFTA's effect on US employment. All these estimates—even the most extreme—are minuscule compared with overall employment trends. Many focus only on jobs gained or alternatively jobs lost, without considering the other side of the churning equation. A one-sided look is questionable since the intended result of increased trade is to deploy labor more efficiently. Trying to tease out employment effects in the US economy of a trade agreement with two countries that, combined, are 18 percent of the US size (at purchasing power parity) may be a fool's errand. Nevertheless, our own estimate is included in table 1.8b.

Based on the NAFTA-TAA program, about 525,000 US jobs were dislocated in import-competing industries through 2002 when the program was consolidated with general TAA (about 58,000 jobs per year).⁶⁵ While this is the most solid figure available on the US impact, it contains elements of under- and overstatement. The figures are understated because not all workers who are displaced due to NAFTA apply for NAFTA-TAA benefits. They are overstated because NAFTA-TAA certification requires only showing that imports from Canada or Mexico adversely affected the job or that the firm moved to Canada or Mexico; no evidence was required that NAFTA liberalization *caused* either the imports or the relocation of the firm.

Comparable data are not collected on US jobs created in the United States in export industries. Given recent employment to value added ratio in manufacturing, we estimate that 8,500 manufacturing jobs are supported by every \$1 billion of US exports.⁶⁶ Applying this coefficient to the average annual gain in US exports to NAFTA countries between 1993 and 2003, about \$12.5 billion per year, over 100,000 *additional* US jobs were supported each year by the expansion of North American trade, though not necessarily as a direct result of NAFTA.⁶⁷ Even more important, Lewis and Richardson (2001, 24–27) found that export-oriented firms pay wages 13 to 16 percent higher than the national average.

65. See Public Citizen's NAFTA-Transitional Adjustment Assistance (NAFTA-TAA) Database, 1994–2002, www.citizen.org/trade/forms/taa_info.cfm (accessed on April 20, 2004).

66. In 2001, the manufacturing sector employed 15.9 million employees while manufacturing value added was \$1,853 billion (*Statistical Abstract of the United States: 2003*, 123rd ed., US Census Bureau, table 987). Our calculation assumes that \$1 billion of exports equates to \$1 billion of manufacturing value added (taking into account shipments of components between manufacturing firms). This method, in contrast to the method adopted by the USTR (see following footnote), ignores labor employed in nonmanufacturing sectors that supply inputs to the manufacturing sector.

67. USTR (2004) estimates that US goods and services exports “supported” 11.6 million US jobs in 1999. The study uses a ratio of 12,000 jobs per billion dollars of exports, significantly above our own estimate, to calculate the number of jobs directly and indirectly supported by exports (indirect jobs are those outside manufacturing).

Widespread fears that integrating Mexico into the North American auto industry would cause job flight and wage collapse north of the Rio Grande have not materialized. While the US auto and auto parts employment level (SIC 371), like the manufacturing sector as a whole, is lower than it was in 1994 (reflecting declines in manufacturing employment since 1998), it is hard to attribute the change to Mexican production. Indeed, Mexican auto employment has also declined, reflecting substantial productivity gains and the manufacturing slowdown during the economic downturn in 2001–02. While the wage premium paid to US autoworkers over other manufacturing production workers has declined slightly, it is still high, \$8.63 per hour.⁶⁸

Canada

In contrast to the United States and Mexico, Canadian employment levels rose steadily during 2000–03, from 14.9 million to 15.7 million. In manufacturing, employment has remained nearly flat at 2.3 million. But while Canada has maintained or modestly increased its employment levels, the “productivity gap” between the United States and Canada has widened. Indeed, labor-market watchers in Canada have been seriously concerned with the widening productivity gap.

Labor productivity is the leading determinant of the national standard of living, so it comes as no surprise that Canada’s lagging productivity growth, relative to the United States, is viewed with alarm. According to convergence theory, free trade agreements should spur productivity growth in both countries, but especially in the smaller and less productive country, Canada.⁶⁹ Trade should allow specialization and more efficient allocation of labor, facilitate technology transfers and information sharing (or spillovers), intensify competition and incentives to innovation, and facilitate economies of scale. However, since the CUSFTA came into force in 1989, Canada has experienced average annual productivity growth of 1.58 percent, compared with annual US productivity growth of 1.85 percent. The gap was particularly pronounced after 1995, with US productivity growth averaging 2.36 percent compared with only 1.64 percent for Canada (Sharpe 2003, figure 3).

Cardarelli and Kose (2004) believe that the larger impact of information technology (IT) on the US economy can explain much of the difference in productivity growth. NAFTA played a minuscule role in the IT component of the US productivity boom of the late 1990s. Canadian firms, with a few notable exceptions, neither produced nor adopted the new IT tech-

68. Calculated as the difference between the average per hour cost of employee compensation of production workers in SIC 371 and all manufacturing production workers. Data are from BLS (2003).

69. According to Trefler (2004), Canadian industries that faced the deepest tariff cuts under the CUSFTA raised their labor productivity by 15 percent, which translates into a compound annual growth rate of 1.9 percent.

nologies as rapidly as their US counterparts. This difference contributed to the widening of the productivity gap during the 1990s.

While the IT sector accounts for 6 percent of US GDP, the sector is only 4 percent of the Canadian economy. Moreover, evidence suggests that the United States has better used IT to enhance productivity in downstream industries.⁷⁰ Cardarelli and Kose found that the productivity gap was largest in IT-intensive industries, such as finance, insurance, and real estate. Energy and mining account for a larger share of output in Canada than in the United States. These sectors are highly capital-intensive, with rather few employees, and IT has fewer payoffs in raising labor productivity than in the manufacturing or services sectors.

Sharpe (2003) explores a variety of reasons why the *level* of productivity in the United States is higher than that in Canada.⁷¹ First, Canada has less capital for each worker. Despite a steady rise since 1955, the Canadian capital to labor ratio was only 84.3 percent of the US level in 2001 (Sharpe 2003, figure 10). Sharpe estimates that this difference accounts for 25 to 30 percent of the labor productivity gap. The second major difference is technological innovation, exemplified by research and development (R&D) outlays and institutions of higher education. Canada spent 1.67 percent of its GDP on R&D in 2000, a record since data were first tracked in 1963, but this level is still well below the US figure of 2.69 percent in 2000 (Sharpe 2003, figure 11).

Mexico

In Mexico, NAFTA forced structural adjustment among industrial firms and contributed to rapid job growth in the traded-goods sector. Mexican political leaders optimistically promised that NAFTA would generate one million new jobs each year and begin to address the misery of subsistence labor in rural areas. But the trade pact alone neither generated job gains of that magnitude nor alleviated rural poverty in many parts of Mexico. These goals will require a sustained period of strong growth and substantial income transfers to poorer states in the south of Mexico. The maquiladora sector exemplifies the role of NAFTA. From 1993 to 2000, the industry boomed, more than doubling employment from 540,000 to 1.34 million (October 2000), and at least some of the expansion absorbed migration from rural areas. But in the wake of the US industrial slowdown,

70. See Baily (2001) for a full discussion of the effect of IT innovation on the productivity of downstream portions of the economy in the United States and other industrial countries.

71. Sharpe focuses his research on the productivity level (output per worker), rather than on productivity growth (change in output per worker). While it is difficult to create comparable national statistics of productivity levels, Sharpe carefully outlines the methodology of his approach, which is designed to calculate meaningful level statistics. He concludes that the absolute “productivity gap” between the United States and Canada is between 10 and 20 percent; statistical difficulties prevent a more precise estimate.

and competition from China, maquiladora employment fell to 1.06 million in December 2003. By July 2004, there was a modest recovery to 1.13 million (INEGI 2004).

Since the introduction of NAFTA, Mexican manufacturing real wages (excluding maquiladoras) have declined by 5 percent (see table 1.9a).⁷² Some commentators have used this statistic to imply that NAFTA has hurt Mexican workers.⁷³ These commentators cite statistics from a report published by the Carnegie Endowment for International Peace (CEIP) (Audley et al. 2003, chapter 1, figure 10). In that study, the authors stress that the real wage decline “cannot be attributed primarily to NAFTA” but instead reflects inflated real wages in 1993 and steep declines during the 1994–95 peso crisis. The authors also note that productivity gains have not been translated into real wage gains and argue that this “decoupling” can be attributed to footloose global production and Mexico’s “institutional bias” against wage increases.

Table 1.9a displays data from the Encuesta Industrial Mensual (EIM), the same data source used by the CEIP study.⁷⁴ We select a different base year (1994 rather than 1993), but the underlying data on wages are the same.⁷⁵ The data do show a slight decline in real wages over the whole period 1994–2003. Real wages fell by 22 percent in the years immediately following the peso crisis; however, since 1997, real wages rebounded to reach 95 percent of the precrisis level in 2003. The decline in real wages triggered by the peso crisis is symmetrical to the increase in wages during the period of rising peso overvaluation from 1990 to 1993. Similar trends are present in real income per worker.

Our calculations of productivity, based on the same Mexican sources, are also shown in table 1.9a.⁷⁶ We report data for both nonmaquiladora and maquiladora manufacturing plants. These results do not agree with

72. Mexican manufacturing wages in foreign-owned manufacturing plants, however, have raised the demand for, and earnings of, workers with high and medium skills; see Feenstra and Hanson (1995).

73. See Thea Lee, “NAFTA: A Ten-Year Perspective and Implications for the Future,” testimony before the Senate Subcommittee of International Economic Policy, Export and Trade, April 20, 2004; and Charles Rangel, “Trade Alone Does Not Help Poor Countries,” *Financial Times*, April 27, 2004.

74. The CEIP study reports a decrease in real wages for 2003, while we report an increase. This is because we use an annual average, while CEIP uses a January-to-September average, since October–December 2003 data were not available at the time of the CEIP publication. A cursory examination of remuneration data reveals a pronounced seasonal spike every December (due to Christmas bonuses).

75. Data for the Mexican manufacturing sector were reclassified in 1994, so 1994 is a better year for comparisons with later years.

76. Tables 1.9a and 1.9b also display output per worker, which uses employment rather than hours worked in the denominator. The difference between these series is slight.

Table 1.9 Real wages and productivity trends (1994 = 100)**a. In nonmaquiladora manufacturing^a**

Year	Real output per worker	Real productivity	Real monthly income per worker	Real wages
1987	69.7	70.6	71.3	72.1
1988	74.0	73.9	71.0	70.8
1989	78.7	78.2	77.3	76.8
1990	79.6	78.7	80.0	79.2
1991	82.8	81.6	84.9	83.7
1992	86.2	84.9	92.3	90.8
1993	90.7	90.5	96.5	96.1
1994	100.0	100.0	100.0	100.0
1995	114.1	115.5	87.5	88.5
1996	119.2	119.4	78.8	79.0
1997	117.8	117.2	78.3	77.9
1998	119.1	118.5	80.5	80.1
1999	115.8	114.6	81.8	80.9
2000	118.7	117.2	86.6	85.7
2001	119.8	118.6	92.4	91.7
2002	123.4	122.4	94.1	93.5
2003	125.4	124.7	95.3	94.8

b. In maquiladora manufacturing^b

Year	Real value added per worker	Real productivity	Real monthly income per worker	Real wages
1990	96.2	99.6	96.2	99.7
1991	97.7	103.8	94.2	100.2
1992	95.7	99.7	95.9	99.9
1993	96.9	99.8	95.8	98.7
1994	100.0	100.0	100.0	100.0
1995	103.3	103.2	94.0	93.9
1996	98.7	96.9	88.8	87.1
1997	102.3	85.3	90.4	75.4
1998	110.4	92.5	94.0	78.8
1999	113.7	94.8	96.0	80.1
2000	113.2	94.5	100.3	83.7
2001	128.9	108.6	109.4	92.2
2002	141.1	118.9	115.5	97.4
2003	144.8	121.0	115.5	96.5

a. Pre-1994 statistics correspond to the 129 classification system, which was discontinued in 1995. Post-1994 statistics correspond to the 205 classification system, which was introduced in 1994. Data for real productivity are measured as peso-denominated gross output per hour worked. Nonmaquiladora value added data from the Encuesta Industrial Mensual were not available.

b. Data for real productivity are measured as peso-denominated value added per hour worked. Official Mexican productivity measures are typically reported on the basis of gross output; see INEGI (2002) and footnote 77.

Source: INEGI (2004).

those in the CEIP study.⁷⁷ Whereas CEIP reports that productivity in non-maquiladora manufacturing increased 59 percent between 1993 and 2003, we calculate a 25 percent increase between 1994 and 2003.⁷⁸

The divergence between productivity and real wages during the peso crisis is not surprising. In 1995–96, real wages fell sharply due to rapid inflation; meanwhile employment and hours decreased more than output, causing a rise in productivity. To some extent, the fall in real wages represented a correction of the 1990–93 period, when real wage growth outstripped productivity.⁷⁹ For the whole period between 1994 and 2003, real wages fell 5.2 percent, while productivity rose 24.7 percent. However, since the peso crisis, wages have been catching up with productivity gains. Wages rose 21.7 percent between 1997 and 2003 while productivity gained only 6.4 percent. We disagree with the CEIP study that these data demonstrate the “decoupling of wages from productivity” (Audley et al. 2003, 25). However, sluggish productivity gains in recent years are a cause for concern.

To this point, our discussion has focused on nonmaquiladora manufacturing.⁸⁰ Maquiladoras—in-bond factories that produce exclusively for export—are a growing proportion of Mexican manufacturing. They represented 30 percent of total manufacturing employment in 1994, rising to 45 percent in 2003. The maquiladora workforce is generally less productive and less well paid than nonmaquiladora manufacturing discussed

77. Our calculations use the raw series Valor de Producción divided by Horas/Hombre Trabajadas (both series are from the Encuesta Industrial Mensual), deflated by the producer price index. INEGI, the official Mexican statistics service, commonly reports the series presented by CEIP (INEGI 2002, figure 22). INEGI calculates dollar-denominated productivity using the gross output method (i.e., output including the cost of intermediate inputs). Our statistics are calculated with a peso-denominated measure of output and therefore are more appropriate when comparing productivity with real wages. A second productivity series produced by INEGI (INEGI 2002, figure 14), sourced to the Sistema de Cuentas Nacionales (National Accounts) is peso-denominated (and also based on gross output) and roughly corresponds to our constructed series through 2000 (the latest available year). Banco de Mexico (2005) publishes a productivity series based on employment rather than hours worked. This series also corresponds roughly to the one we have constructed. See INEGI (2002) for more on the methodology of Mexican productivity statistics.

78. Due to classification changes in 1994, we do not report a growth rate between pre- and post-1994 data. All of the indices presented in table 1.9 are based such that 1994=100. The same change in classification systems caused the apparent decline in the number of maize farmers between 1993 and 2003, reported in the CEIP study. Using only the new census methodology, the World Bank (2004) shows an increase in the number of maize farmers between 1994 and 2004.

79. As mentioned earlier, Mexico introduced a new classification system in 1994. Therefore, caution should be used when drawing conclusions about changes between 1993 and 1994. We examine the movement of productivity and real wages from 1990 to 1993, a period that uses the old classification system.

80. However, it should be noted that companies registered under PITEX accounted for about one-quarter of the Mexican manufacturing labor force. These include all auto manufacturers and most parts suppliers. PITEX firms enjoy almost the same benefits as maquiladora firms.

above. Table 1.9b presents the trends in maquiladora manufacturing since 1990 (the earliest year data are available). Real wages decline over the period, again due to the peso crisis. However, since 1997, maquiladora real wage earnings have grown 28 percent, while productivity was up 42 percent.⁸¹ In contrast to wage statistics expressed in hourly terms, real monthly income per worker rose by the lesser figure of 20 percent, reflecting fewer hours worked by each employee. Box 1.1 explains the boom and bust, and recent recovery, in the maquiladora sector.

The most likely explanation as to why real wage gains have lagged behind productivity growth is the large pool of unskilled Mexican labor. Rural agricultural laborers work under much harsher conditions and earn far less pay than urban workers, especially those in the manufacturing sector. Rural workers respond to higher urban wages by migrating from the farm to the city. Internal migration increases the supply of unskilled manufacturing labor and suppresses wage increases, though it often spells a dramatic improvement in the lives of erstwhile rural inhabitants. Since 1994, the share of agricultural employment in Mexico fell from 26 percent of total employment to 18 percent in 2001 (World Bank *World Development Indicators* 2004). Over the same period, employment in maquiladoras, which employ mainly unskilled workers, doubled to over 1 million (INEGI 2004). Rural to urban migration is a necessary part of development; in 2003, the agricultural sector produced only 5 percent of Mexican GDP (World Bank *World Development Indicators* 2004). Given that agriculture still employs almost a fifth of Mexican workers, the migration phenomenon, and its effect on manufacturing wages, will continue for the foreseeable future. As it proceeds, *average per capita income* will rise, even if manufacturing wages lag behind productivity growth.

Over the long term, average real wages for the entire population—rural as well as urban workers—are strongly linked to *national* labor productivity.⁸² Productivity growth has been disappointing in Mexico. The prediction by NAFTA supporters that free trade would foster strong productivity growth has so far materialized only in export-oriented industries, such as autos (OECD 2004b). Mexico needs more, not less, productivity growth in services and agriculture, as well as manufacturing. Real wage growth will follow.

Per Capita Income Convergence

Whether or not Mexican GDP per capita income is “converging” to US levels due to NAFTA (or for other reasons) is the subject of hot debate and

81. Table 1.9b measures productivity on a value added basis, rather than a gross output basis.

82. Hanson (2003) argues that Mexican states with greater exposure to multinational firms, FDI, foreign trade, and migration enjoyed higher wage growth in the 1990s. Hanson finds a strong positive correlation between Mexican wage growth and the share of FDI in state GDP.

Box 1.1 The maquiladora boom and bust

Maquiladoras—Mexican firms with special legal status originally restricted to produce exclusively for export—are a closely watched feature of the Mexican economy.¹ A common *modus operandi* characterizes maquiladoras: import components, add value (mainly through labor), and export products (almost entirely to the United States). Mexican firms could follow the same business model without becoming a maquiladora, but membership had its privileges.² In the pre-NAFTA era, privileges took the form of duty rebates for imported inputs and a preferential corporate tax regime.

NAFTA has eroded the advantages of being a maquiladora. First, NAFTA extended free trade for components originating in North America to all firms, maquiladora or not. Second, in 2000, NAFTA ended duty rebates on imports of non-NAFTA components. Third, in the wake of NAFTA, Mexico cut back on the corporate tax benefits awarded to maquiladoras. Nevertheless, the maquiladora sector boomed during the 1990s and was often cited as evidence of NAFTA's success (table 1.10).

In 2001, the Mexican economy turned sour, and NAFTA opponents seized on maquiladora contraction as evidence that NAFTA did not work after all. Mexican protectionists cited shrinking maquiladora employment as evidence of debilitating competition from low-wage workers in China. The underlying causes of the maquiladora bust are primarily cyclical, and the decline in employment, while severe, must be considered in relation to the expansion of the late 1990s, which was equally steep (table 1.10).³ As the US economy recovered, the maquiladora industry showed signs of recovery.⁴ We believe the following forces contributed to the decline of maquiladoras, in order of importance:

- **US economic recession.** Some 98 percent of maquiladora output is exported to the United States, and much of this consists of intermediate goods. The largest

1. In 1993, Mexican legislation was modified to permit maquiladoras to sell 50 percent of their output to the domestic market. Under NAFTA, the export orientation requirement has been gradually phased down to 20 percent. However, in practice, maquiladoras still export most of their output.

2. In the 1960s, US, European, and Japanese firms invested in the Mexican automotive industry to supply the domestic market (which was then highly protected). When the maquiladora program was created in 1965, a parallel program, PITEEX, was created to give these existing foreign investors equivalent tax benefits. At the beginning of 2005, there were 3,016 maquiladora firms and 3,665 PITEEX firms in operation. For a description of the benefits available to maquiladora and PITEEX firms, see "Exports from Mexico: Comparing Tax Benefits of Maquiladora vs. PITEEX Regimes," *North American Free Trade and Investment Report* 15, no. 3, February 15, 2005, 1.

3. Most commentators count the decline from the peak maquiladora employment in October 2000 (1.35 million workers). From this base, employment is down 21 percent as of January 2004 (1.06 million). However, the January 2004 employment level is roughly equal to that of January 1999.

4. During January–August 2004, 800 new maquiladora companies were established in Mexico, which is 30 percent more than the same period in 2003—due to the improved health of the US economy and a modest real depreciation of the peso. See Morales (2004).

(box continues next page)

Box 1.1 (continued)

maquiladoras are foreign-owned and are organized so that they can be easily idled.⁵ Gruben (2004) describes the role of maquiladoras as that of “shock absorbers” for the US manufacturing economy.⁶

- **NAFTA Section 303**, which ended the duty rebates on maquiladora imports of non-NAFTA components came into effect in 2001. Section 303 was especially severe on Asian-owned electronics maquiladoras, some of which reported an overnight production cost hike of 20 percent (GAO 2003). Some of these firms decided to shut down rather than absorb the tariff charges on imported components.⁷
- **Mexican tax law** was changed in 2000 to classify maquiladoras as “permanent establishments” and therefore subject to Mexican income tax. This both raised maquiladora tax liability and invoked a complex web of regulations for determining tax liability.⁸ In 2002, maquiladoras were subjected to the Impuesto Sustantivo de Crédito al Salario, a payroll tax. The response was so negative that it was phased out in 2004. Maquiladora advocates claim the repeal will recover 50,000 jobs (UNCTAD 2004, box 1).
- **Competition from the developing world** severely affected textile and apparel maquiladoras and continues to do so. Competition comes not only from China (which benefited from the end of Multi-Fiber Arrangement quotas in January 2005) but also from the Caribbean and Central America. The Caribbean Basin Trade Partnership Act (CBTPA) grants Caribbean countries tariff-free status in the United States subject to rules of origin akin to preferences granted to Mexico under NAFTA.⁹ When the Central American Free Trade Agreement (CAFTA) enters into force, those countries will also be granted “NAFTA parity.”
- **The strong peso** had a marked impact as well. Just as the weak peso helped stimulate the maquiladora boom in the late 1990s, the overvalued peso in 2001–02 worked in the opposite direction (especially when coupled with an undervalued Chinese renminbi; see figure 1B.1).¹⁰

5. By number, about half of the maquiladoras are Mexican-owned, but these tend to be smaller firms that provide contract assembly services to foreign companies.

6. Maquiladoras made a comeback in 2004, due to the improved health of the US economy. The US upturn, and a modest real depreciation of the peso, are the significant factors that presage a rosier economic picture for maquiladoras.

7. To buffer these firms and avert more shutdowns, under its Programs for Sectoral Promotion, the government of Mexico issued a decree in November 2000 to allow duty suspensions for components that were not available in North America.

8. The tax structure is still evolving, and the Mexican Supreme Court has overruled some, not all, of the tax changes. Gerber (1999) explains the menu of tax options available to maquiladoras before the Supreme Court decision.

9. However, the CBTPA rules of origin are more onerous than NAFTA rules. This has limited the growth of apparel exports from the Caribbean to the US market.

10. The peso has actually depreciated somewhat in real terms against the dollar since April 2002, after appreciating steadily throughout the late 1990s.

Table 1.10 Maquiladora industry, 1990–2003

Year	Firms (units)	Employment (thousands)	Real value added ^a (billions of 2003 pesos)
1990	1,703	446.4	4.8
1991	1,914	467.4	5.1
1992	2,075	505.7	5.4
1993	2,114	542.1	5.8
1994	2,085	583.0	6.5
1995	2,130	648.3	7.4
1996	2,411	753.7	8.3
1997	2,717	903.5	10.3
1998	2,983	1,014.0	12.5
1999	3,297	1,143.2	14.5
2000	3,590	1,291.2	16.3
2001	3,630	1,198.9	17.1
2002	3,003	1,071.2	16.8
2003	2,860	1,062.1	17.1

a. Deflated with the Mexican national producer price index.

Source: INEGI (2004).

is part of the NAFTA controversy over the connection between openness, economic growth, and poverty reduction (box 1.2). To convey a broad impression, table 1.12 shows OECD data on the evolution of GDP and GDP per capita for NAFTA members, using market exchange rates.

The World Bank (2003) used a regression of the US-Mexico GDP per capita ratio to make the case that NAFTA, modeled as a dummy variable covering the period 1994–2002, increased the rate of convergence between the United States and Mexico relative to the period 1960–2002. Their estimates controlled for the episode of pre-NAFTA liberalization (1986–93) and the peso crisis (October 1994 to March 1995). The model suggests that the effect of NAFTA was to increase the rate of convergence between US and Mexican per capita income. Weisbrot, Rosnick, and Baker (2004) strongly question these results. Claiming to use more authoritative data, they estimate the same model and find that NAFTA may have actually raised the ratio between US and Mexican GDP per capita, causing divergence rather than convergence.⁸³ This debate is far from settled. As the World Bank authors freely admit, the “combination of big events and a

83. The World Bank (2003) used adjusted GDP per capita data from the World Bank’s *World Development Indicators*. Weisbrot, Rosnick, and Baker (2004) reproduced the study using data from the Penn World Tables and OECD national accounts to find a contradictory result.

Box 1.2 Poverty and income inequality in Mexico

Some scholars argue that the distributional impact of NAFTA within Mexico provides a cautionary tale. Although middle- and upper-class Mexican professionals have prospered since NAFTA, as have the northern states such as Nuevo Leon and Sonora, it is less clear that life has improved for unskilled and rural Mexicans, or the southern states such as Chiapas and Oaxaca.

In statistical terms, the poverty rate in Mexico, defined by the World Bank as the share of population living below \$2 a day, declined from 42.5 percent in 1995 to 26.3 percent in 2000. Trade inspired by NAFTA arguably contributed to this improvement. Total Mexican exports might have been about 25 percent lower without NAFTA, and FDI might have been 40 percent less without NAFTA (World Bank 2003). Even though poverty has lessened, it is still high in Mexico. By comparison, the poverty rate in Chile was only 9.6 percent in 2000 (table 1.11).

One reason for the continuing high level of Mexican poverty is inequality. Measured by the Gini coefficient, Mexico has about the same inequality as other large countries in Latin America.¹ The Mexican Gini coefficient declined slightly from 53.9 in 1994 to 51.4 in 2002.² By comparison, the Gini coefficient in the United States is around 45.

The key to poverty reduction is faster economic growth. In the long run, economic growth requires better human capital.³ According to the OECD 2000 Program for International Student Assessment, Mexico ranks last in the OECD on the combined score for reading and literacy among 15-year-old students.⁴ Reducing the education gap is essential if Mexico hopes to compete in the global economy.

Mexican growth is also constrained by inadequate physical infrastructure (highways, urban roads, water, and sewerage), corruption, and low savings. According to Transparency International, Mexico ranks 64 out of 146 countries with a score of 3.6 against a clean score of 10.⁵ The OECD notes a recent business survey that suggests new firms had to pay extraofficial sums around \$4,000 to start a business in Mexico (OECD 2004d). The gross national saving rate in Mexico is around 18 percent of GDP, well below Asian levels.

1. In rural Mexico, however, where about 65 percent of the extreme poor live, inequality has worsened. The richest 10 percent of rural households increased their share of total rural income from 27 percent in 1994 to nearly 32 percent in 1998. See ECLAC (2001) and World Bank (2004).

2. The Gini coefficient measures income inequality within a population, ranging from zero for complete equality to 100 for perfect inequality. See World Bank (2003).

3. Hanson (2003), for example, found that during 1990–2000, the better-educated Mexican workers enjoyed higher wage growth.

4. Based on completion rates of upper secondary level education over the last generation, Mexico fell from rank 29 to 30. Meanwhile, South Korea moved from rank 24 to 1. See OECD (2004b).

5. The Transparency International Corruption Perception Index ranks countries based on perceptions of the degree of corruption as seen by business people and country analysts and ranges between 10 (highly “clean”) and 0 (highly corrupt). In 1995, Mexico received a score of 3.18.

Table 1.11 Income inequality and poverty in Mexico

Country	Percent of population below \$2/day ^a		Human Poverty Index rank ^b	Gini coefficient ^c		
	1995	2000	2003	1990	1997	2002
Argentina	n.a.	14.3	n.a.	50.1	53.0	59.0
Brazil	n.a.	22.4	18	62.7	63.8	63.9
Chile	20.3	9.6	3	55.4	55.3	55.9
Mexico	42.5	26.3	12	53.6	53.9	51.4
Canada	n.a.	n.a.	12	40.0	43.0	42.0
United States	n.a.	n.a.	17	42.8	45.9	45.0

n.a. = not available

- Setting the poverty line at \$2/day reflects the World Bank methodology, which uses purchasing power parity at 1993 prices. For 2000, international poverty lines were equivalent to \$65.48 per month (1993 purchasing power parity).
- The Human Poverty Index is based on the United Nations HPI-1 and HPI-2 human poverty indices. The HPI-1 index for developing countries measures deprivation in longevity, education, and standard of living. The HPI-2 index (for selected high-income OECD countries) includes the three dimensions in HPI-1 plus social exclusion.
- The Gini coefficient measures income inequality within a population. The coefficient ranges from zero for complete equality (all residents receive exactly the same income) to 100 for perfect inequality (a single resident receives the total national income; other residents receive no income).

Sources: World Bank *World Development Indicators*, 2004; United Nations *Human Development Report*, 2004; ECLAC (2004); World Bank (2003); Statistics Canada, *Analysis of Income in Canada*, 2002; US Census Bureau, *Money and Income in the United States*, 1998 and 2002.

short experience with NAFTA increases the difficulty of empirically identifying the impact of the agreement on income and productivity gaps.”

In a more general and longer-term study, Arora and Vamvakidis (2004) make the case that increased trade with rich countries improves the growth rate of developing countries. They report several panel regressions across 101 countries over the period 1960–99. After controlling for demographics, investment, human capital, macroeconomic stability, trade openness, and other common drivers of growth, their study found that a 1 percent higher growth rate in the rich trading partners of a developing country (weighting the partners by exports) corresponds to a 0.8 percent increase in the growth rate of the developing country itself. Similarly, Bhalla (2002) argues that globalization disproportionately benefits the poorest households (the lowest 20 percent) in developing countries. Bhalla estimates that every 10 percent increase in total income in those countries is associated with a 5 percent decline in the poverty level. We report these global results while waiting for more complete evidence on NAFTA. As of now, however, it does not appear that Mexico’s GDP has converged toward the US level.

Other panel studies have found empirical links between increased trade openness and growth. Dollar and Kraay (2004) present regressions explaining national growth rates using (among other variables) decadal changes in a country’s openness to trade (measured as $X+M/GDP$) as an

Table 1.12 GDP and per capita GDP of the NAFTA countries, 1989–2004

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GDP at market exchange rates																
(billions of 2000 US dollars)																
Canada	534	535	524	528	541	567	582	592	617	642	678	714	727	752	767	790
Mexico	393	413	431	446	455	475	446	469	501	526	545	581	581	585	592	617
United States	6,988	7,110	7,075	7,292	7,486	7,792	8,002	8,290	8,661	9,035	9,409	9,765	9,790	10,024	10,330	10,783
GDP per capita, at market exchange rates																
(in 2000 dollars)																
Canada	19,599	19,339	18,701	18,641	18,869	19,560	19,897	20,006	20,649	21,313	22,326	23,280	23,441	23,982	24,254	n.a.
Mexico	4,907	5,088	5,088	5,177	5,184	5,319	4,946	5,088	5,330	5,490	5,606	5,886	5,804	5,765	5,765	n.a.
United States	27,998	28,200	27,773	28,321	28,707	29,514	29,907	30,667	31,681	32,636	33,713	34,575	34,479	34,775	35,488	n.a.
GDP annual growth (percent)																
Canada	2.6	0.2	-2.1	0.9	2.3	4.8	2.8	1.6	4.2	4.1	5.6	5.3	1.9	3.4	2.0	3.0
Mexico	4.2	5.1	4.2	3.6	2.0	4.4	-6.2	5.2	6.8	5.0	3.6	6.6	0.0	0.7	1.3	4.2
United States	3.5	1.7	-0.5	3.1	2.7	4.1	2.7	3.6	4.5	4.3	4.1	3.8	0.3	2.4	3.1	4.4
GDP per capita annual growth (percent)																
Canada	0.9	-1.3	-3.3	-0.3	1.2	3.7	1.7	0.6	3.2	3.2	4.8	4.3	0.7	2.3	1.1	1.8
Mexico	2.2	3.7	0.0	1.7	0.1	2.6	-7.0	2.9	4.8	3.0	2.1	5.0	-1.4	-0.7	0.0	2.8
United States	2.6	0.7	-1.5	2.0	1.4	2.8	1.3	2.5	3.3	3.0	3.3	2.6	-0.3	0.9	2.1	3.4

n.a. = not available

Sources: OECD (2004a, 2005); IMF World Economic Outlook database, 2005.

independent variable. On the basis of data from 101 countries, their findings indicate that a 100 percent increase in trade openness would result in a 25 to 48 percent increase in per capita income growth over a decade (Dollar and Kraay 2004, table 4).⁸⁴ Cline (2004, 228–38) surveys an earlier version of the Dollar-Kraay analysis and other studies and finds that all report significant and positive correlations between increased trade intensity and per capita income. Additional calculations indicate that free trade substantially reduces global poverty.⁸⁵ Within the Mexican context, these results suggest the wisdom of opening domestic markets to international trade, through NAFTA and other initiatives.

Dispute Settlement

Indirectly, NAFTA was designed to *increase* the number of trade disputes between the partner countries! The reason is straightforward: the larger the volume of trade, the greater the possibility of trade friction. Anticipating this equation, an important part of the negotiating strategy for Canada and Mexico was to restrain US antidumping (AD) and countervailing duty (CVD) actions and establish trilateral dispute settlement mechanisms to cover issues that might arise under the pact.

In the end, NAFTA incorporated *six* dispute settlement processes to manage and expedite the resolution of disputes among the three countries.⁸⁶ While AD and CVD cases are by far the most numerous, the most controversial dispute provisions cover investor-state disputes under Chapter 11. When investor rights were first conferred, the Chapter 11 provisions were relatively uncontroversial; in fact, they were hailed as a better forum than national courts for resolving investment disputes. In practice, however, the rules (e.g., the ban on indirect expropriation under Article 1110 and the minimum standards under Article 1105) have fostered litigation by business firms against a broader range of government activity than originally envisaged. We summarize in chapter 4 the caseloads under each class of NAFTA disputes and analyze in some detail the most contentious cases.

84. Birdsall and Hamoudi (2002), however, disagree with the methodology adopted by Dollar and Kraay. Specifically, they claim that using the trade/GDP ratio to measure trade openness is a poor proxy for government policy because it overstates the importance of trade policy in economic growth and excludes the “commodity dependence” variable. By including the effects of commodity-dependent exports, Birdsall and Hamoudi (2002) estimate a lower induced growth in per capita income.

85. After recalculating country poverty elasticities, Cline estimated that complete free trade could lift 440 million people out of poverty. His original estimate was 540 million. See technical correction to Cline (2004), www.iie.com/publications/chapters_preview/379/errataiie3659.pdf (accessed on December 30, 2004).

86. The six processes are Chapter 11 (investment), Chapter 14 (financial services), Chapter 19 (antidumping and countervailing duties), Chapter 20 (functioning of the agreement), the NAALC (labor), and the NAAEC (environment).

In general, the dispute settlement process has worked relatively well in cases where the NAFTA obligations were clearly defined (including most Chapter 19 cases involving AD and CVD) but poorly in big cases where domestic politics have blocked treaty compliance (notably, US-Mexico trucking, Canada-US softwood lumber, and US-Mexico sugar and high-fructose corn syrup [HFCS]). In areas where the specific procedures were intentionally cumbersome, and relied heavily on consultation rather than litigation (the side pacts and general disputes under Chapter 20), most actions have been hortatory. Even the WTO dispute settlement mechanism, however, has difficulty resolving politically sensitive cases (e.g., beef hormones and genetically modified organisms). The procedures for disputes on financial services (Chapter 14) remain untested.

Labor and the Environment

The North American Agreements on Labor Cooperation and on Environmental Cooperation (NAALC and NAAEC, respectively) were negotiated and appended to the NAFTA in 1993 at the behest of President Clinton to encourage US ratification of the pact. These side agreements had three specific objectives: monitor implementation of *national* laws and regulations pertaining to labor and the environment, provide resources for joint initiatives to promote better labor and environmental practices, and establish a forum for consultations and dispute resolution in cases where domestic enforcement proves inadequate.

Despite a slow and cumbersome start, the pacts have begun to show results. Both side pacts primarily focused on oversight of national laws and practices, sponsoring comparative studies, training seminars, and regional initiatives to promote cooperative labor and environmental policies. These efforts seem small in relation to the magnitude of the problems, but they have directed fresh attention and resources to old issues.

Dispute settlement provisions in the two side pacts were a major US objective, but the record to date has been mixed. Both Mexico and Canada resisted the incorporation of penalties in the side pacts and only accepted a compromise process that was long on consultation and short on adjudication. Contrary to expectations, there has been no flood of environmental dispute cases under the NAAEC, indeed not a single state-to-state case has been adjudicated. Even when environmental cases run the adjudication gauntlet, only a factual record (with no recommendation) is released, and no follow-up takes place.

Beyond dispute settlement, the side pacts have promoted increased cooperation on transboundary problems. They have directed additional attention, and a small amount of new resources, to labor and environmental problems. While fears of “downward harmonization” have not been substantiated, progress to date pales in comparison with the scarcity of water and the burden of pollution. In fact, the absence of specific envi-

ronmental indicators makes it difficult to set spending priorities, although the current level of public funding is surely inadequate. The trade pact cannot reverse decades of environmental abuse nor can it turn the spigot on billions of dollars of remedial funding. But the Commission for Environmental Cooperation (CEC) could do more to focus attention on areas where environmental conditions are substandard. With better information on environmental conditions, and a better assessment of needed environmental investments, the CEC could make a major contribution to informed policy making in all three countries.

Trilateral, Regional, and Multilateral Cooperation

The final touchstone, based on NAFTA Article 102, is quite broad. We consider NAFTA's contribution toward furthering regional and multilateral trade agreements and also whether cooperation within NAFTA has led to deeper cooperation in other areas of North American concern, most notably energy and migration policy.

For better or worse, many of these issues are linked politically. For the United States, faster economic growth in Mexico is critical to improving security on the southern border, while deeper post-September 11 cooperation with Canada is essential to ensure the efficient flow of goods and people across the long northern border. Mexico's economic prospects depend on radical reform of Mexican tax and energy policies to allow extensive investment in a sector that has been closed to foreign investment for seven decades. While this should be a standalone priority for Mexico, political realities may require more attention to the plight of Mexican migrants in the United States as an unstated *quid pro quo*. At the same time, much more could be done to address border environmental and health issues—led by urban water shortages and pollution—but only with substantial financial support from the US and Mexican federal governments.

Furthering Trade Negotiations

While NAFTA contains an accession provision, it has not been used so far. At the Summit of the Americas in Miami in December 1994, Chile was hailed as a future NAFTA partner. While the “four amigos” of Miami are joined together in a series of bilateral FTAs, they have made no effort to consolidate their ties into a common pact. Based on this experience and others, it seems likely that the Free Trade Area of the Americas (FTAA), if concluded, will coexist with NAFTA and other bilateral and regional pacts.

Although NAFTA itself has not expanded, its provisions have served as precedents for bilateral FTAs between the United States and other countries. Successive agreements—with Jordan, Chile, Singapore, Australia, Morocco, Central America–Dominican Republic, Bahrain, and others under negotiation—have drawn heavily on their predecessors, with NAFTA serv-

ing as the primary template. The basic NAFTA model has been refined in the years since the agreement. Most notably, environment and labor standards have been moved from side agreements into the treaty text. In response to sovereignty concerns, investor-state dispute settlement provisions have been weakened and ill-advised capital-market provisions have been added, but nothing akin to chapter 19 arbitration exists in post-NAFTA agreements.

Indirectly, NAFTA played a role in facilitating the liberalization of world trade at the multilateral level. The agreement helped provide the final push to the completion of the Uruguay Round, which was signed in April 1994. Mexico has become a world leader in bilateral FTAs, compiling agreements with 32 countries, including pacts with the 15-member European Union in 2002 and Japan in 2004.

US-Mexican Migration

The question of migration was too hot to handle in NAFTA negotiations. Proponents of NAFTA claimed that the agreement would support Mexican development and thereby stem the flow of unauthorized migrants to the United States in the long term; after 10 years, however, the economic incentive to come to the United States—legally or illegally—remains as strong as ever. In fact, the population of unauthorized Mexican immigrants—who constitute the majority of unauthorized immigrants in the United States—is growing faster than the total unauthorized immigrant population. Although statistics on undocumented immigrants are only rough estimates, table 1.13 displays US government figures on the number of unauthorized immigrants living in the United States. According to these estimates, the population doubled between 1990 and 2000, with an annualized increase of 400,000 per year.

Philip Martin, in chapter 8 on migration, offers a possible explanation for the surge in Mexican immigration: a “NAFTA migration hump.” In Martin’s scenario, NAFTA increased migration in the short term—due to dislocations in the Mexican economy, primarily in agriculture. Eventually, long-term declines will follow the “hump” as a result of faster development and an aging Mexican population.

For compelling reasons, both humanitarian and economic,⁸⁷ the Mexican government has attempted to open a dialogue on “regularizing” the status of its emigrant workers. In early September 2001, President Fox eloquently raised the question with President Bush and Congress during a visit to Washington and received a sympathetic hearing. But the September 11 terrorist attacks made border security an antiterror issue rather than an immigration issue. In 2004, President Bush sought to revive his earlier proposal for a guest worker program for Mexican migrants; possi-

87. Household remittances—many of them from illegal migrants in the United States—have become an important source of foreign exchange to the Mexican economy; see table 1.1.

Table 1.13 Estimated unauthorized resident population in the United States, 1990 and 2000 (thousands)

Country/state	1990	2000	Growth (percent)	Percent of total unauthorized population in 2000
By origin				
Mexico	2,040	4,808	135.7	68.7
El Salvador	298	189	-36.6	2.7
Guatemala	118	144	22.0	2.1
Colombia	51	141	176.5	2.0
Honduras ^a	42	138	228.6	2.0
China	70	115	64.3	1.6
By residence				
California	1,476	2,209	49.7	31.6
Texas	438	1,041	137.7	14.9
New York	357	489	37.0	7.0
Illinois	194	437	125.3	6.2
Florida	239	337	41.0	4.8
Arizona	88	283	221.6	4.0
Total	3,500	7,000	100.0	100.0

a. Includes 105,000 Hondurans granted temporary protected status in December 1998.

Source: USCIS (2003).

bly the Bush administration will press Congress for legislation in 2006 or 2007. So far, however, US-Mexican collaboration on migration policy—predicted to be a logical outgrowth of NAFTA cooperation—continues to languish on the policy drawing board.

Energy Security

The text of NAFTA leaves the continent a long way from an integrated North American energy market. This is particularly unfortunate when oil prices are above \$60 per barrel, and turmoil appears to be a long-term descriptor of the Middle East. As between the United States and Canada, NAFTA built on the CUSFTA by liberalizing energy investment in addition to trade. However, Mexico opted out of energy investment liberalization and also took exceptions on trade liberalization to protect its state monopoly in petroleum and electricity. US officials agreed, noting that the FTA negotiation should not be used to revise the Mexican Constitution.

Predictably, therefore, NAFTA has had little effect in reforming the Mexican energy sector. Over the next decade, Mexico must invest heavily in energy production and distribution or endure slower growth on ac-

88. In 1999, the Zedillo government announced that over \$59 billion in investment in power generation and infrastructure alone would be required to meet Mexican demand growth through 2009 (“Meeting Mexico’s Electricity Needs,” *North American Free Trade and Investment Report* 14, no. 2, January 31, 2004, 3). Nothing like this amount is built into Mexican investment plans. In fact, nearly all of Pemex’s revenue surplus is drained off to support the federal budget.

count of widespread energy shortages.⁸⁸ So far, Mexico clings stubbornly to provisions in its 1917 Constitution that declare all subsoil minerals the property of the Mexican people (i.e., the state) and prohibit private investment in the energy sector. President Fox tried but failed to enact even modest proposals directed at electricity generation and distribution. Underproduction, rising costs, and energy shortages thus loom on the horizon for Mexico. For energy resource-rich Mexico, inadequate supplies of energy will continue to act as a drag on economic growth.

North America's energy needs over the next 25 years can only be described as massive. Whether they will be met at current prices is an open question. Continental consumption is expected to rise by an average 1.5 percent a year through 2025 (EIA 2004a). Energy consumption in the United States dwarfs that in Canada or Mexico; however, the growth rate in Mexican energy demand may well be the fastest over the next 20 years. If current trends continue, the continent will drastically increase its energy imports.

In the United States, energy policy episodically overlaps with "energy independence," usually defined as a reduced reliance on foreign oil, especially from the Middle East. Energy security should instead be considered in a regional context. Canada correctly feels it has a part to play in the US energy strategy; Mexico can contribute as well. Several proposals should be considered to better equip North America to meet the growing demand.⁸⁹

Canada and the United States both have an interest in coming to agreement over appropriate routes for natural gas pipeline construction. The tar sands of Alberta and natural gas deposits in the Mackenzie Delta are promising sources of future Canadian production. At a minimum, Canadian oil and natural gas deposits should play a role as part of a North American "insurance policy" (in addition to the Strategic Petroleum Reserve) against acute shortages. Moreover, the United States and Canada should be working together to improve the reliability of energy transmission systems—especially electricity. This need was highlighted by the August 2003 blackout that spread across the northeast United States and eastern Canada, turning the lights out in both New York and Toronto.

Energy integration in hydrocarbons and conventional electricity has progressed between Canada and the United States since the CUSFTA entered into force in 1989. Looking to the future, Provincial Premier Dalton McGuinty envisions that Ontario will build multiple nuclear plants to satisfy its future energy needs. These plants could conceivably serve the

89. Moreover, if the United States chooses to enact a petroleum import duty, as a means both of promoting conservation and raising revenue, petroleum originating in Mexico and Canada should be excluded from the duty. However, the preference should be conditioned on Canadian and Mexican willingness to charge the same duty on their own petroleum imports.

northeastern United States as well, sidestepping America's not-in-my-backyard (NIMBY) complex over nuclear power.

Mexico's failure to invite energy investment from private firms is a missed opportunity for all three countries, although the costs fall most heavily on Mexico. Basically, Mexico has three choices: find tax revenue elsewhere and allow Pemex to reinvest its financial surplus in exploration and development; invite private energy producers into Mexico to drill for oil and gas; or slide into the ranks of energy-importing countries. While the decisions to find alternative revenue sources or open its energy fields to private (and foreign) investment rest with Mexico alone, other steps can be taken to advance energy cooperation on the continent. For example, the growing demand for natural gas presents an opportunity for Mexico and the United States to cooperate on liquefied natural gas (LNG) regasification terminals in Mexico. These terminals could supply both partners with imports from the Pacific region (e.g., Indonesia, Australia, and Peru), sidestepping another NIMBY complex in US coastal cities.

Rules of Origin Reform

In certain "sensitive" sectors (e.g., textiles, apparel, and some electronics) NAFTA rules of origin were intentionally distorting. Some progress has been made since NAFTA was ratified. In response to industry suggestions, NAFTA members have negotiated changes that allow somewhat more foreign content and reduce the administrative costs of qualifying for NAFTA treatment. The first changes were negotiated for alcoholic beverages, petroleum, pearl jewelry, headphones with microphones, chassis fitted with engines, photocopiers, and some food additives. These went into effect in January 2003 in Canada and the United States and in July 2004 in Mexico.

As noted earlier, in July 2004, NAFTA countries reached a "tentative" agreement for revised origin rules for a second group of products, which account for over \$20 billion in trilateral trade: spices and seasonings, precious metals, speed drive controllers, printed circuit assemblies, household appliances (except televisions), loudspeakers, thermostats, and toys.⁹⁰ These reforms came into force in January 2005 in Canada and the United States but still await ratification by the Mexican Senate.⁹¹

In a separate announcement, negotiators agreed to end the 55 percent value added requirement and allow the use of imported uppers in footwear; these rules will go into effect in January 2006.⁹² So far, changes in

90. See "Ministers Agree to Change NAFTA Rules of Origin on Nine Product Groups," *Inside US Trade*, July 23, 2004, 1.

91. See "The Continued Liberalization of NAFTA Rules of Origin," *North American Free Trade and Investment Report* 15, no. 2, January 31, 2005, 1.

92. Strict rules of origin have been blamed for the overall decline in US footwear imports from Mexico since 1997 and a 22 percent drop in US imports from Mexico in the first five months of 2004 ("NAFTA Chiefs Ease Footwear Rules," *Footwear News*, July 26, 2004, 14).

the rules of origin have been ad hoc, and more such changes are expected. However, ministers have “temporarily set aside” consideration of harmonizing MFN duty rates.⁹³

NAFTA Institutions

NAFTA was designed with minimal institutional structures; none of the partners wanted to grant authority to a new regional bureaucracy. The restraint was too severe. NAFTA’s skeletal institutional structure has impeded the achievement of certain core objectives.

In terms of political power, the institutional structure in NAFTA and the European Union are polar opposites. The NAFTA Commission—composed of the trade ministers of each country—is neither seen nor heard, aside from a semiannual meeting and joint statement. Beneath the commission more than 30 working groups toil on topics as diverse as goods, investment and services, rules of origin, agricultural subsidies, government procurement, sanitary and phytosanitary measures, and worn clothing. Working groups are intended to be apolitical bodies that explore and make recommendations. While the Working Group on Rules of Origin played an instrumental role in drawing up proposed reforms, and other groups have in some cases served as a forum to resolve disputes through negotiation, they remain weak and solely advisory. The NAFTA Secretariat is responsible for administering the dispute settlement processes (with the exception of those established under the side agreements); it also provides day-to-day assistance to the working groups and the commission. It has insufficient resources to do either job well.⁹⁴

The Bottom Line

The first lesson is the most fundamental. NAFTA was designed to promote economic growth by spurring competition in domestic markets and promoting investment from both domestic and foreign sources. It has worked. North American firms are now more efficient and productive. They have restructured to take advantage of economies of scale in production and intraindustry specialization. US-Mexico trade has grown twice as fast as US trade outside of NAFTA, and foreign investment in Mexico has soared—from both North American and outside sources.

The US and Canadian economies have performed well during the NAFTA era, growing by average annual rates of 3.3 and 3.6 percent, re-

93. See “Ministers Agree to Change NAFTA Rules of Origin on Nine Product Groups,” *Inside US Trade*, July 23, 2004, 1.

94. Pastor (2001) regards NAFTA’s institutional structure as grossly inadequate and proposes the establishment of several new trilateral bodies, including a North American Court on Trade and Investment and a North American Parliamentary Group.

spectively, over that period (OECD 2004a). Mexican growth has been a disappointment. Although Mexico grew at an annual rate of 2.7 percent between 1994 and 2003 (despite its sharp recession in 1995 following the peso crisis), this is well below Mexico's potential growth.⁹⁵ For better or worse, growth numbers cannot in the main be attributed to NAFTA—indeed NAFTA was a tiny factor in the US boom of the 1990s. While the agreement has played a positive role, particularly in Mexico, sectors that were shielded from NAFTA—particularly energy in Mexico—have also been shielded from its positive effects.

While NAFTA succeeded in its core goal—eradicating trade and investment barriers—trade pacts only create opportunities; they do not guarantee sales or new investment. In some cases, expectations (or fears) were overblown. NAFTA never had the potential for luring droves of US firms or sucking millions of US jobs into Mexico. Nor could NAFTA create “jobs, jobs, jobs” or significantly raise wages in the United States. Those gains essentially depend on good macroeconomic policies, a flexible labor force, better worker skills, and effective use of information technologies. With regard to the Mexican agricultural sector in particular, but on a wider basis as well, adjustment costs were underappreciated. Programs that were designed to alleviate adjustment burdens were inadequately funded.

In contrast to the European Union, the institutional mechanisms of NAFTA were designed to minimize interference with “business as usual” in the member states. A low level of commitment accurately reflected the political temperament of the time: There was no interest in a North American echo of European supranationalism. But NAFTA institutions were left with such minimal mandates and meager funding that they barely meet their original expectations. The prime example is NADBank, which approved only five loans in its first five years of existence. The pace has picked up sharply but still remains far below levels that would perceptibly improve border environmental conditions. Other institutions that focused on labor and the environment—the Commission for Labor Cooperation (CLC) and the Commission for Environmental Cooperation (CEC)—are similarly underfunded and have little power to influence national practices.

The dizzying mix of ad hoc NAFTA arbitration panels and standing committees (featuring six dispute settlement processes) if nothing else blurs the public image of NAFTA adjudication. In some cases, such as Chapter 20 hearings, the practice of nonbinding advisory opinions was intended to leave ultimate interpretation of NAFTA obligations in the hands of national authorities. In other cases, supposedly binding arbitration has not resolved long-running disputes because they were just too

95. The OECD estimates that Mexico's potential growth rate could be lifted to 6 percent through improvements in infrastructure and education (“Tequila Slammer—The Peso Crisis Ten Years On,” *The Economist*, January 1, 2005).

big—particularly the marathon battles involving Mexican trucking and Canadian softwood lumber. This led Canadian Prime Minister Paul Martin to complain that “we’ve got to find a way that disputes can not only be settled, but be settled permanently.”⁹⁶ On the other hand, NAFTA critics charge that Chapter 11 was a giveaway to foreign investors, citing \$13 billion of claims filed, even though Chapter 11 awards to date amount to only \$35 million.

A free trade area raises the premium on cooperation between partners. But the assumption that NAFTA would lead to closer cooperation on the environment, water resources, migration, and other issues has not been borne out—with the significant exception of the 1994–95 peso crisis. Meanwhile, border security concerns—not an issue during NAFTA negotiations—are now central to the national security of the United States. Security concerns have been dealt with on an ad hoc and bilateral basis rather than in a trilateral fashion.

With the benefit of hindsight, many of NAFTA’s successes and failures appear predictable. The primary focus of the agreement was to reduce barriers to investment and trade, and it succeeded in that goal. NAFTA was able to bring the continent closer to free trade; this alone will not guarantee prosperity, but without free trade, prosperity would prove more elusive. The agreement improved the quality of life in North America but clearly not enough. Other ingredients are essential—good governance, good infrastructure, and good education, which are conspicuously short in many parts of North America, not only in Mexico.

The bottom line is that NAFTA is a great building block, but much remains to be built. In the rest of this book, we analyze particular sectors and issues and offer recommendations for constructive work.

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96. See “NAFTA Needs Fixing, PM Says,” *The Globe and Mail*, July 8, 2004, A4.

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Appendix 1A

NAFTA and Trade Generation: Review of the Literature

Researchers have used two methods to attempt to answer the question, “How much trade did NAFTA create?” The first applies an ex ante construct: A computable general equilibrium (CGE) model compares the difference in trade with NAFTA against a hypothetical world without NAFTA. NAFTA itself is modeled as simply lower (or zero) tariff rates and ad valorem equivalents of nontariff barriers. This is a bare-bones conceptualization of the agreement. The second method applies an ex post regression: A gravity model explains the size of trade between nations in terms of several control variables.⁹⁷ NAFTA’s presence or absence for a given year is one of the variables. Any trade expansion associated with the NAFTA dummy variable is attributed to NAFTA.

CGE models could be (and were) deployed before NAFTA came into force, and this was an advantage. The disadvantage is that CGE models rely on a complex network of assumptions, and the results may change substantially with a small change in the assumed framework.⁹⁸ Also, these models take into account only quantifiable barriers to trade, not investment liberalization, dispute settlement, or other parts of the agreement that have an indirect effect on trade flows.

- Brown (1992) surveyed CGE models of NAFTA and found that while all of the models considered predicted an increase in trade within North America on account of NAFTA, the increase varied from less than 5 to over 40 percent of total trade depending on the assumptions.
- Burfisher, Robinson, and Theirfelder (2001) found the consensus of CGE modelers seemed to be that “the [welfare] effects of NAFTA would be positive but small for the US, and positive and large for Mexico.”
- Fox (2004) assessed the performance of the Michigan model for NAFTA (Brown, Deardorff, and Stern 1992) and added capital, labor, and balance of trade shocks to account for at least some of the exogenous events that occurred in the NAFTA era.⁹⁹ Using this model, Fox calculated that NAFTA generated a welfare gain of 0.1 percent of GDP

97. These models are called gravity models because two control variables are always country size and distance. Like Sir Isaac Newton’s theories on gravitational pull, trade is directly related to country size (measured in GDP terms) and inversely related to distance.

98. Some particularly hotly debated assumptions are constant versus increasing returns to scale, static versus dynamic effects, and the appropriate values of Armington elasticities. Brown (1992) provides a useful overview of the choices that must be made when constructing a CGE model.

99. All of these events are regarded as exogenous in the model, but NAFTA might have triggered or augmented some of them. The Brown, Deardorff, and Stern model accounts for capital accumulation and economies of scale as a result of the reduction in trade barriers.

for the United States, 0.7 percent for Canada, and 1.6 percent for Mexico. He then compared the model's predictions with the observed changes in trade flows. Fox concludes, "Initial results suggest that while the model does a reasonable job of capturing the general pattern of trade, it fails to simulate the magnitude of trade, especially in cases where observed trade growth is substantial."

Gravity models have the advantage of relative simplicity. Since NAFTA is one of the explanatory variables within a regression model, the coefficient on the presence or absence of NAFTA (modeled as a one or zero dummy variable) purports to capture the full effect of NAFTA, through direct and indirect channels. Simplicity can also be a fault: A gravity model may attribute some influence to NAFTA that is due to contemporary, unobserved events. Moreover, gravity model analysis works by comparing the size of trade flows before and after NAFTA entered into force. Since NAFTA liberalization was phased in over several years, to say that NAFTA fully took effect in 1994 is an oversimplification. Bearing these limitations in mind, here is a summary of gravity model results:

- Gould (1998) examined quarterly data from 1980 to 1996 in a gravity model framework and found that NAFTA was responsible for a 16.3 percent increase in US exports to Mexico and a 16.2 percent increase in US imports from Mexico. The gains in US bilateral imports and exports with Canada were much smaller, 8.6 and 3.9 percent, respectively. Between Canada and Mexico, the effect of NAFTA was estimated to be negative (but with no significance). Indeed, of all six estimations, only the estimate of US exports to Mexico was statistically significant at a 90 percent confidence level.
- Krueger (1999) examined pooled time series of intra- and extra-NAFTA bilateral trade data in a gravity model framework. She found that NAFTA had a positive effect, estimating a 3 percent increase in trade when both countries were in NAFTA, but again the result was statistically insignificant.¹⁰⁰
- Wall (2003) examined Canadian bilateral trade data from 1990 to 1998 between Canadian provinces and US states and Mexico, supplemented with international data. By treating states and provinces as individual units, Wall is able to alleviate the data scarcity problem.¹⁰¹ Employing a vector of NAFTA dummies for each bilateral relationship

100. Krueger (1999) uses data from odd years between 1987 and 1997. Her study includes non-NAFTA countries and seeks to find the effect on trade if both partners belong to NAFTA.

101. Mexico is treated as a single entity. For the purposes of estimation, Canadian provinces are aggregated into three regions, while US states are aggregated into 10 regions. To assess the effect of trade diversion, eight non-NAFTA countries, aggregated into two regions (Europe and Asia), are also included.

between states and provinces, the estimation yields a majority of statistically significant results showing an increase in Canada's trade with the United States (14.3 percent in exports and 29.2 percent in imports, once reaggregated to the national level) and with Mexico (11.5 percent in exports and 48.2 percent in imports).¹⁰²

- Helliwell (1998), following McCallum (1995), examined the same state-province data and found that the “border effect”—the difference between state-province and state-state trade, controlling for size and distance—between the United States and Canada fell from about 20 in 1988 to 12 after the ratification of the CUSFTA and NAFTA.¹⁰³ Anderson and van Wincoop (2003) argue that the McCallum method, which estimates the border effect only from the Canadian perspective, exaggerates the effect. Starting from a theoretical perspective, they estimate a model that suggests that the border effect is 10.7 from the Canadian perspective but only 2.5 from the US perspective (using data from 1993, the fourth year under the CUSFTA).¹⁰⁴
- Rose (2004, forthcoming) examined world bilateral trade data from the IMF and used a panel regression to find that trade is 118 to 156 percent higher between countries in a regional trading agreement than those that are not.¹⁰⁵ This analysis assumes that all regional agreements (e.g., European Union, NAFTA, and Mercosur) amplify trade to the same extent.

DeRosa and Gilbert (2005) examine the predictive capability of both gravity and CGE models. According to the authors, “although both models are found to be quite accurate in some instances, the overall results do not make a strong case for the accuracy of either the empirical gravity model or the applied CGE model in predicting trade flows.”

For the gravity model, DeRosa and Gilbert estimate gravity equations using two econometric techniques and data up to 1993 to “predict” that an

102. Since data are not available for trade between US states and Mexico, no state-by-state estimation was made for US-Mexican trade.

103. In other words, in 1988, Canadian provinces were 20 times more likely to trade with another province than a US state of the same size and distance; in 1993, they were only 12 times more likely to do so. Helliwell stresses a border effect of 1 should not be a policy goal, since cultural and other nondistorting differences between countries create a preference for intra-national trade relations.

104. As with the McCallum and Helliwell numbers, these values relate the likelihood to trade across the border to the likelihood to trade between states or provinces. Anderson and van Wincoop also estimate that trade across the border would be 1.8 times higher if the United States and Canada were a single political unit.

105. In Rose (forthcoming, table 1) this number is reported in log terms, 0.78 (exp [(0.78)] - 1 = 1.18). The higher coefficient, 0.94, is reported in Rose (2004, table 1). These estimates employ the country fixed-effects estimation technique; other econometric techniques have produced higher estimates of this coefficient.

FTA would increase bilateral trade between 185 and 250 percent (in real terms).¹⁰⁶ The predictions are based on FTAs in existence before 1993. In fact, real bilateral trade between the United States and Canada grew 70 percent between 1988, the year before the CUSFTA came into effect, and 1999, the final year in the dataset. (Andrew Rose compiled the dataset.)¹⁰⁷ Between 1993, the year before NAFTA, and 1999, US bilateral trade with Mexico grew 118 percent. Based on this analysis, NAFTA somewhat underperformed previous FTAs, possibly because North American trade was already relatively unhampered by barriers before the CUSFTA and NAFTA.

Turning to one variant of CGE models, DeRosa and Gilbert looked at forecasts generated from the plainest of “plain vanilla” Global Trade Analysis Project (GTAP) models. The model they examined utilized not only the contemporary GTAP databases (for 1995, 1997, and 2001)—a common practice in all CGE models—but also the GTAP model structure. The “plain vanilla” GTAP model structure assumes perfect competition (no monopolistic price markups), constant returns to scale (no scale economies or network economies), no factor productivity gains (stimulated either by foreign competition or by learning from foreign products and processes), and no induced investment (to take advantage of larger markets or new technology). In combination, these assumptions rule out most of the trade and welfare gains from policy liberalization that have been identified in recent empirical research (see Bradford, Grieco, and Hufbauer 2005).

The “plain vanilla” CGE model forecasts little change—in fact, small declines—in US-Canada and US-Mexico trade as a consequence of NAFTA liberalization. The forecast largely reflects the fact that in this model structure, adverse terms-of-trade effects for the exporting country exceed predicted trade volume gains. In addition, changes in the trade regime over the analyzed period may have been small, because many of the highest barriers are phased out slowly under NAFTA. Moreover, the calibration of the plain vanilla GTAP model to actual data is done in a way that attributes the bulk of trade expansion to factor endowment growth and higher total factor productivity—and trade liberalization is not allowed to change either of these drivers.

Accounting for changes in factor endowments and productivity *ex post*, the plain vanilla model comes moderately close to calculating the actual level of trade between country pairs in North America, but it does not explain why the basic trade drivers changed between two points in time. Our conclusion from this exercise is that for the CGE approach to be useful in predicting FTA outcomes, the model structure should be “flavored” by varying the assumptions enumerated earlier.

106. The two econometric techniques are clustered ordinary least squares (OLS) and generalized least squares with random effects.

107. Andrew Rose’s dataset is publicly available in STATA format at <http://faculty.haas.berkeley.edu/arose/RecRes.htm> (accessed on June 14, 2005).

Appendix 1B

Trends in Mexican Imports since 2000

Table 1B.1 displays total Mexican imports by exporting country according to Mexican customs statistics. Mexico's total imports rose by 13 percent (\$22 billion) between 2000 and 2004, but the share of imports from the United States fell from 73 to 56 percent (a \$17 billion decline, but note the discrepancy between Mexican and US statistics).¹⁰⁸ Most of the seven-point drop in the US import share was due to increased Mexican imports from Asian countries, whose share rose 11 points from 12 to 23 percent. Mexican imports from China rose 397 percent to \$14 billion in 2004; China's import share increased from 2 to 7 percent. The other gainers in import share were the European Union, up from 9 to 11 percent, and South American countries, up from 2 to 5 percent.

Weak demand for US products and increased competition from other nations (primarily Asian nations, led by China but including a resurgent Japan) contributed to the drop in the US share of Mexican imports. Increases in European market shares do not appear to be significant in industries where US exports are falling most sharply. While undervalued Asian currencies, led by the Chinese renminbi (figure 1B.1), may have played a role in the share decrease, "fundamentals," such as labor costs, are also at work.¹⁰⁹ In many industries, the share of imports from Asian countries has soared from near zero. In these cases, threshold effects (e.g., Asian "discovery" of the Mexican market and economies of scale in shipping) make it highly unlikely that US market share will fully recover even if Asian exchange rates are dramatically realigned. Indeed, in sectors where labor costs significantly affect the cost of production, Asian imports may continue to expand even after a revaluation of the Chinese renminbi.

Table 1B.2 displays import and share data on seven Harmonized Schedule (HS) two-digit industries, which together accounted for more than 60 percent of Mexican imports from the world and from the United States since 2000. These industries account for a dominant portion of the decline in imports from the United States.

Almost 90 percent of the total decline (\$6 billion) in Mexican imports from the United States since 2000 occurred in electrical machinery and parts (HS 85), mainly due to slack demand. Total imports of HS 85 by Mexico fell \$2 billion. However, this decline was accompanied by the influx of Asian competitors—China, Japan, and Taiwan. The import share claimed by China rose from 2 to 12 percent, while the import share for all

108. Unless otherwise indicated, all data are from Secretaría de Economía, Sistema de Inteligencia Comercial, www.economia-snci.gob.mx/sic_php/ (accessed on June 1, 2005).

109. While the renminbi is nominally pegged to the dollar, China experienced deflation or near-zero inflation between 1998 and 2002; whenever China's inflation rate is lower than the US inflation rate, the renminbi depreciates against the dollar in real terms (see figure 1B.1).

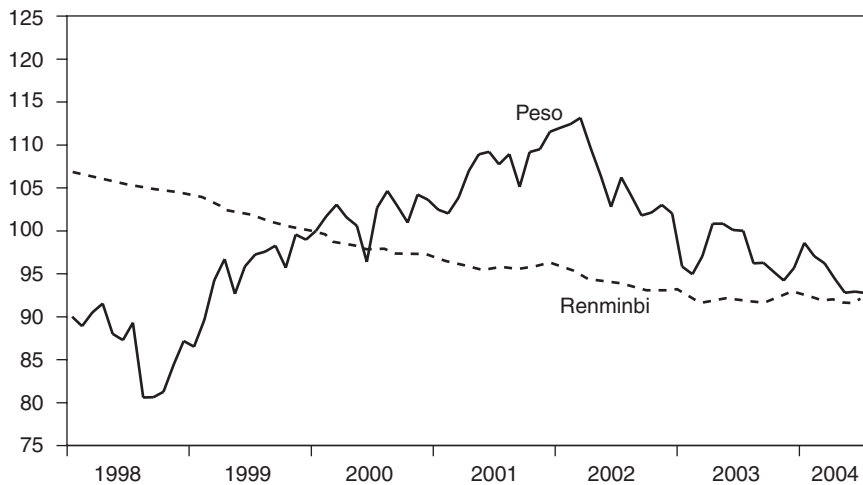
Table 1B.1 Mexican imports by country, selected years

Country/ region	Billions of US dollars										Share of total imports (percent)				Change 2000–04			
	1994		2000		2002		2003		2004		1994	2000	2002	2003	2004	Percent	Import share gain/loss	Billions of US dollars
North America	56.4	131.6	111.0	109.5	116.2	71.1	75.4	65.8	64.2	59.0								
United States	54.8	127.5	106.6	105.4	110.8	69.1	73.1	63.2	61.8	56.3								
Canada	1.6	4.0	4.5	4.1	5.3	2.0	2.3	2.7	2.4	2.7								
Central America	0.2	0.5	0.7	0.9	1.3	0.2	0.3	0.4	0.5	0.7								
South America	2.6	4.0	5.4	6.5	9.0	3.3	2.3	3.2	3.8	4.6								
Brazil	1.2	1.8	2.6	3.3	4.3	1.5	1.0	1.5	1.9	2.2								
Chile	0.2	0.9	1.0	1.1	1.5	0.3	0.5	0.6	0.6	0.7								
European Union	9.1	15.0	16.6	18.0	21.8	11.4	8.6	9.9	10.6	11.1								
Germany	3.1	5.8	6.1	6.2	7.1	3.9	3.3	3.6	3.6	3.6								
Italy	1.0	1.8	2.2	2.5	2.8	1.3	1.1	1.3	1.5	1.4								
Spain	1.3	1.4	2.2	2.3	2.9	1.7	0.8	1.3	1.3	1.4								
Asia	9.5	20.3	31.4	31.9	44.4	11.9	11.6	18.6	18.7	22.6								
China	0.5	2.9	6.3	9.4	14.4	0.6	1.7	3.7	5.5	7.3								
South Korea	1.2	3.9	3.9	4.1	5.3	1.5	2.2	2.3	2.4	2.7								
Japan	4.8	6.5	9.3	7.6	10.6	6.0	3.7	5.5	4.5	5.4								
Total	79.3	174.5	168.7	170.6	196.8	100.0	100.0	100.0	100.0	100.0								

Source: Banco de Mexico (2005).

Figure 1B.1 Peso and renminbi real exchange rate versus dollar

depreciation against dollar, January 2000 = 100



Note: All data are monthly through July 2004.

Source: USDA (2005).

three nations plus South Korea soared from 12 to 32 percent. The US share declined from 77 to 44 percent. Two forces are behind this shift: First, with rising income, middle-class Mexicans are purchasing more consumer electronics, almost all from Asia. Second, components made in China are displacing US parts in maquiladora assembly plants.¹¹⁰

China has also made its presence felt strongly in HS 84 (boilers, mechanical appliances, machinery and parts). Mexican imports in this category rose by \$8.4 billion since 2000, while imports from the United States fell by \$1.5 billion. Imports from China escalated from only \$400 million in 2000 to \$4.6 billion in 2004. Since 2000, the US market share dropped from 67 to 46 percent, while China gained 12 percentage points bringing its share to 14 percent. Computers and parts, and countertop appliances were responsible for much of the increase in imports from China to Mexico.

In the auto industry (HS 87), the \$2 billion decline in imports from the United States occurred while total imports rose only slightly. Competition reduced the US import share from 72 to 58 percent. Brazil increased its shipments from \$700 million to \$1.7 billion in response to the auto agreement between the two countries. Japan doubled its shipments and increased its import market share to 7 percent, while Germany's share fell 1 percent on weaker sales. Argentina, while still a small player in the

110. Between 2000 and 2003, China's share of imported components rose from 1 to 7 percent. The US share dropped from 81 to 69 percent. See Tafoya and Watkins (2005).

Table 1B.2 Mexican imports by country, selected sectors, 1994–2004
(millions of US dollars and percent)

	1994	2000	2001	2002	2003	2004	Change 2000–04	
							Level	Percent
Total and US imports to Mexico								
All imports	79,346	174,458	168,396	168,679	170,958	197,303	22,845	13.1
US imports	54,791	127,534	113,767	106,557	105,686	114,978	-12,556	-9.8
Subtotal of listed categories:								
World subtotal	40,737	113,039	110,649	108,556	108,390	125,264	12,225	10.8
Percent of all imports	51.3	64.8	65.7	64.4	63.4	63.5	-1.3	-2.0
US subtotal	29,598	85,452	75,096	67,911	65,993	67,746	-17,706	-20.7
Percent of US imports	54.0	67.0	66.0	63.7	62.4	58.9	-8.1	-12.1
Imports of HS 27: Combustible minerals and oils								
Total	1,468.1	5,305.7	5,308.2	4,452.7	5,688.7	7,493.6	2,188	41.2
Share of total imports	1.9	3.0	3.2	2.6	3.3	3.8	0.8	24.9
United States	1,127.5	4,181.9	3,976.9	3,302.3	4,592.3	5,634.1	1,452	34.7
Share of HS 27 imports	76.8	78.8	74.9	74.2	80.7	75.2	-3.6	-4.6
Share of US imports	2.1	3.3	3.5	3.1	4.3	4.9	1.6	49.4
Saudi Arabia	0.5	237.6	176.9	172.1	160.4	252.3	14.7	6.2
Share of HS 27 imports	0.0	4.5	3.3	3.9	2.8	3.4	-1.1	-24.8
Venezuela	31.8	71.8	118.6	136.3	67.1	251.2	179.4	250.0
Share of HS 27 imports	2.2	1.4	2.2	3.1	1.2	3.4	2.0	147.8
Colombia	4.8	41.2	62.3	6.1	28.2	179.3	138.1	334.8
Share of HS 27 imports	0.3	0.8	1.2	0.1	0.5	2.4	1.6	207.9
Australia	0.0	54.3	73.9	86.3	220.9	162.5	108.2	199.4
Share of HS 27 imports	0.0	1.0	1.4	1.9	3.9	2.2	1.1	112.0
China	21.2	91.6	96.0	161.7	80.6	157.6	65.9	72.0
Share of HS 27 imports	1.4	1.7	1.8	3.6	1.4	2.1	0.4	21.8
Imports of HS 39: Plastics and plastic manufactures								
Total	4,403.4	10,443.4	9,926.1	10,535.7	11,575.5	12,665.1	2,222	21.3
Share of total imports	5.5	6.0	5.9	6.2	6.8	6.4	0.4	7.2
United States	3,876.3	9,302.8	8,508.0	8,917.3	9,557.9	10,186.1	0,883	9.5
Share of HS 39 imports	88.0	89.1	85.7	84.6	82.6	80.4	-8.7	-9.7
Share of US imports	7.1	7.3	7.5	8.4	9.0	8.9	1.6	21.5
China	31.8	101.0	172.1	223.5	269.1	386.4	285.4	282.7
Share of HS 39 imports	0.7	1.0	1.7	2.1	2.3	3.1	2.1	215.6
Japan	105.8	153.7	233.1	261.6	329.2	372.7	219.0	142.5
Share of HS 39 imports	2.4	1.5	2.3	2.5	2.8	2.9	1.5	100.0
South Korea	16.6	122.3	132.5	161.5	207.3	289.3	167.0	136.5
Share of HS 39 imports	0.4	1.2	1.3	1.5	1.8	2.3	1.1	95.0
Germany	79.2	176.3	174.5	188.5	328.7	288.9	112.7	63.9
Share of HS 39 imports	1.8	1.7	1.8	1.8	2.8	2.3	0.6	35.2
Imports of HS 48: Paper and paper products								
Total	2,079.8	3,599.4	3,332.9	3,318.9	3,337.4	3,667.5	0,068	1.9
Share of total imports	2.6	2.1	2.0	2.0	2.0	1.9	-0.2	-9.9
United States	1,759.0	3,195.1	2,820.6	2,726.7	2,662.9	2,962.4	-0,233	-7.3
Share of HS 48 imports	84.6	88.8	84.6	82.2	79.8	80.8	-8.0	-9.0
Share of US imports	3.2	2.5	2.5	2.6	2.5	2.6	0.1	2.8

(table continues next page)

Table 1B.2 (continued)

	1994	2000	2001	2002	2003	2004	Change 2000–04	
							Level	Percent
Canada	73.1	93.8	109.6	109.8	122.6	140.9	47.1	50.2
Share of HS 48 imports	3.5	2.6	3.3	3.3	3.7	3.8	1.2	47.4
Germany	38.7	29.4	31.7	56.8	65.9	75.0	45.5	154.8
Share of HS 48 imports	1.9	0.8	0.9	1.7	2.0	2.0	1.2	150.1
Finland	26.6	16.0	34.2	54.7	51.6	52.6	36.7	229.5
Share of HS 48 imports	1.3	0.4	1.0	1.6	1.5	1.4	1.0	223.4
Spain	19.2	22.9	29.6	37.5	40.2	51.7	28.7	125.1
Share of HS 48 imports	0.9	0.6	0.9	1.1	1.2	1.4	0.8	121.0
Imports of HS 73:								
Manufactures of iron and steel								
Total	2,414.5	5,027.0	4,380.9	4,131.1	4,056.6	4,797.3	-0,230	-4.6
Share of total imports	3.0	2.9	2.6	2.4	2.4	2.4	-0.5	-15.6
United States	1,967.0	4,183.7	3,426.1	3,108.2	3,059.7	3,371.6	-0,812	-19.4
Share of HS 73 imports	81.5	83.2	78.2	75.2	75.4	70.3	-12.9	-15.6
Share of US imports	3.6	3.3	3.0	2.9	2.9	2.9	-0.3	-10.6
Japan	103.1	179.4	207.3	258.4	193.9	222.3	42.9	23.9
Share of HS 73 imports	4.3	3.6	4.7	6.3	4.8	4.6	1.1	29.8
China	9.8	53.7	76.8	90.4	118.9	200.9	147.3	274.5
Share of HS 73 imports	0.4	1.1	1.8	2.2	2.9	4.2	3.1	292.5
Germany	57.1	146.6	138.0	136.7	138.3	173.3	26.7	18.2
Share of HS 73 imports	2.4	2.9	3.1	3.3	3.4	3.6	0.7	23.9
Taiwan	27.6	56.2	69.3	87.5	93.2	154.0	97.9	174.3
Share of HS 73 imports	1.1	1.1	1.6	2.1	2.3	3.2	2.1	187.4
Imports of HS 84: Nuclear reactors, boilers, mechanical appliances, and machinery								
Total	11,356.0	25,339.7	27,354.8	27,997.1	29,221.1	33,734.8	8,395	33.1
Share of total imports	14.3	14.5	16.2	16.6	17.1	17.1	2.6	17.7
United States	7,006.9	16,880.7	16,141.6	14,938.6	14,571.0	15,389.1	-1,492	-8.8
Share of HS 84 imports	61.7	66.6	59.0	53.4	49.9	45.6	-21.0	-31.5
Share of US imports	12.8	13.2	14.2	14.0	13.8	13.4	0.1	1.1
China	43.4	414.7	683.7	1,386.4	3,272.0	4,581.4	4,166.6	1,004.7
Share of HS 84 imports	0.4	1.6	2.5	5.0	11.2	13.6	11.9	729.8
Japan	736.5	1,427.1	1,574.4	1,666.0	1,393.4	2,089.6	662.5	46.4
Share of HS 84 imports	6.5	5.6	5.8	6.0	4.8	6.2	0.6	10.0
Germany	828.4	1,721.7	1,953.6	1,663.8	1,687.5	1,957.4	235.7	13.7
Share of HS 84 imports	7.3	6.8	7.1	5.9	5.8	5.8	-1.0	-14.6
South Korea	133.6	653.4	803.3	1,114.6	1,322.9	1,483.1	829.7	127.0
Share of HS 84 imports	1.2	2.6	2.9	4.0	4.5	4.4	1.8	70.5
Malaysia	51.6	102.8	718.1	637.9	1,492.9	1,143.5	1,040.7	1,011.9
Share of HS 84 imports	0.5	0.4	2.6	2.3	5.1	3.4	3.0	735.2
Imports of HS 85: Electrical machinery and parts								
Total	15,704.6	46,262.7	43,235.1	39,695.3	37,216.7	44,432.2	-1,831	-4.0
Share of total imports	19.8	26.5	25.7	23.5	21.8	22.5	-4.0	-15.1
United States	11,450.0	35,393.0	28,432.9	23,397.1	21,257.3	19,545.3	-15,848	-44.8
Share of HS 85 imports	72.9	76.5	65.8	58.9	57.1	44.0	-32.5	-42.5
Share of US imports	20.9	27.8	25.0	22.0	20.1	17.0	-10.8	-38.7

(table continues next page)

Table 1B.2 Mexican imports by country, selected sectors, 1994–2004
(millions of US dollars and percent) (continued)

	1994	2000	2001	2002	2003	2004	Change 2000–04	
							Level	Percent
China	88.8	904.9	1,385.4	2,254.6	3,150.4	5,379.3	4,474.4	494.5
Share of HS 85 imports	0.6	2.0	3.2	5.7	8.5	12.1	10.2	519.0
Japan	1,437.1	2,174.5	3,863.9	4,355.9	3,100.1	4,437.2	2,262.8	104.1
Share of HS 85 imports	9.2	4.7	8.9	11.0	8.3	10.0	5.3	112.5
South Korea	351.2	1,517.7	1,507.6	1,614.6	1,572.5	2,411.1	893.4	58.9
Share of HS 85 imports	2.2	3.3	3.5	4.1	4.2	5.4	2.1	65.4
Taiwan	257.7	818.3	1,553.1	2,082.7	1,219.0	1,976.0	1,157.7	141.5
Share of HS 85 imports	1.6	1.8	3.6	5.2	3.3	4.4	2.7	151.4
Imports of HS 87: Motor vehicles and parts								
Total	3,310.5	17,061.2	17,110.9	18,425.6	17,294.4	18,473.8	1,413	8.3
Share of total imports	4.2	9.8	10.2	10.9	10.1	9.4	-0.4	-4.3
United States	2,411.7	12,315.0	11,789.7	11,520.8	10,291.7	10,657.4	-1,658	-13.5
Share of HS 87 imports	72.8	72.2	68.9	62.5	59.5	57.7	-14.5	-20.1
Share of US imports	4.4	9.7	10.4	10.8	9.7	9.3	-0.4	-4.0
Brazil	190.0	706.5	894.1	1,073.8	1,482.4	1,660.4	953.8	135.0
Share of HS 87 imports	5.7	4.1	5.2	5.8	8.6	9.0	4.8	117.0
Germany	152.7	1,457.5	1,492.1	1,664.5	1,525.4	1,389.7	-67.8	-4.6
Share of HS 87 imports	4.6	8.5	8.7	9.0	8.8	7.5	-1.0	-11.9
Japan	129.2	861.7	668.5	857.8	947.0	1,300.3	438.6	50.9
Share of HS 87 imports	3.9	5.1	3.9	4.7	5.5	7.0	2.0	39.4
Canada	107.6	881.6	945.9	1,528.3	1,075.8	1,055.1	173.6	19.7
Share of HS 87 imports	3.3	5.2	5.5	8.3	6.2	5.7	0.5	10.5
Argentina	1.2	45.6	78.0	269.5	331.2	466.5	420.9	922.8
Share of HS 87 imports	0.0	0.3	0.5	1.5	1.9	2.5	2.3	844.6

Source: Secretaría de Economía (2005b).

industry, now accounts for 2.5 percent of Mexico's auto import market compared with very little in 2000.

In iron and steel (HS 73), total Mexican imports fell by \$200 million while the decline in US imports was four times greater. Asian countries again eroded the US market share. The US market share fell from 83 to 70 percent, while the collective share of Japan, China, and Taiwan rose from 6 to 12 percent. Chinese shipments rose almost fourfold to \$201 million; imports from Taiwan jumped from \$56 million to \$154 million. Germany, the only other large player in the industry, saw only a small increase in its shipments to Mexico from \$147 million to \$173 million.